UNIVERSAL
LIBRARY

OU_156841

UNIVERSAL
LIBRARY

OSMANIA UNIVERSITY LIBRARY

Call No. 330.97/S34R Accession No. 12757

Author Schmidt, L. B.

Title Ross, E. D.

This book should be returned on or before the date last marked below.

17 DEC 1955

READINGS IN THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE



THE MACMILLAN COMPANY
NEW YORK BOSTON · CHICAGO · DALLAS
ATLANTA SAN FRANCISCO

MACMILLAN & CO., LIMITED
LONDON · BOMBAY · CALCUTTA
MELBOURNE

THE MACMILLAN CO. OF CANADA, LTD.
TORONTO

READINGS IN THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE

EDITED BY

LOUIS BERNARD SCHMIDT

PROFESSOR OF HISTORY IN THE IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS

AND

EARLE DUDLEY ROSS

ASSOCIATE PROFESSOR OF HISTORY IN THE IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS

New York

THE MACMILLAN COMPANY

1925

COPYRIGHT, 1925,
BY THE MACMILLAN COMPANY

Set up and electrotyped. Published January, 1925.

Printed in the United States of America

PREFACE

These readings have been selected and edited to meet a practical and immediate teaching need in an important division of our economic history. It is hoped that the book will provide adequate discussion material for courses in the economic history of American agriculture which are being developed in our state colleges and technical schools; that it will supplement manuals in general economic history on a side relatively under-emphasized; and that it will furnish a much-needed historical background for courses in agricultural economics.

Since this book is intended to serve as a text, it has seemed better to bring together special studies of present day writers than to make selections from the sources. For the same reason, citations and footnote discussions essential for research purposes but merely confusing to the average undergraduate, have been consistently omitted. In a topical compilation of this kind a certain degree of overlapping and repetition is inevitable; and conflicting opinions remain for the exercise of the student's judgment. The selections involving points open to controversy have been chosen not to express the editors' opinions but rather to make available the most significant interpretations and points of view in the field. It is believed that the collection, incomplete as it is, indicates approximately the present state of development of this branch of our national history. For guidance in further reading the student is referred to the extensive classified bibliographies in L. B. Schmidt's *Topical Studies and References on the Economic History of American Agriculture.*

The editors make a grateful acknowledgment to the authors and publishers whose generous co-operation in permitting the use of comparatively recent copyrighted materials has made the project possible. To their colleagues, Professors C. L. Holmes and H. C. Nixon, they are indebted for helpful criticisms and suggestions.

L. B. S.
E. D. R.

Ames, Iowa
December, 1924.

CONTENTS

GENERAL INTRODUCTION

CHAPTER PAGE

I. AMERICAN ECONOMIC HISTORY AND THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE.
1. Problems and Status of American Economic History. Guy S. Callender 1
2. The Economic History of American Agriculture. Louis Bernard Schmidt 16

II. THE GEOGRAPHICAL BASIS OF AMERICAN AGRICULTURAL DEVELOPMENT. Charles Richard Van Hise 28

PART I

COLONIAL FOUNDATIONS

1607–1776

EDITORS' INTRODUCTION 37

III. ABORIGINAL AGRICULTURE.
1. Products and Methods of the Virginia Indians. Philip Alexander Bruce 40
2. Some Permanent Influences of Aboriginal Cultivation. Clark Wissler 49

IV. COLONIAL LAND SYSTEMS AND TENURES.
1. New England and Southern Settlement Systems. Payson Jackson Treat 53
2. Colonial Tenures. Beverley W. Bond, Jr. 55

V. TYPES AND PROGRESS OF COLONIAL AGRICULTURE.
1. General Survey of the Different Sections. Charles M. Andrews 73
2. The Great Colonial Staple. Meyer Jacobstein .. 82

CHAPTER PAGE

VI. COLONIAL TRADE AND MARKETS.
1. General Survey of Colonial Trade. Charles M. Andrews 93
2. Marketing of the Staple. John Spencer Bassett . . . 98

VII. THE COLONIAL FRONTIER. Frederick Jackson Turner 107

PART II

PLANTATION AND FRONTIER
1776–1860

EDITORS' INTRODUCTION 127

VIII. THE WESTWARD MOVEMENT OF POPULATION AND AGRICULTURAL SYSTEMS.
1. Expansion of Frontier and Plantation to the Southwest. Ulrich B. Phillips 131
2. Emigration from a New England State. Richard J. Purcell 137
3. Settlement of the New West. Frederick Jackson Turner 143
4. Immigration to the Middle West in the Fifties. Dan E. Clark 147

IX. PUBLIC LAND POLICIES IN RELATION TO AGRICULTURAL EXPANSION.
1. Effect of Land Legislation on Western Settlement. Payson Jackson Treat 153
2. Land Policies and the Wisconsin Farmer. Benjamin Horace Hibbard 163

X. PIONEER AGRICULTURE.
1. The Northeast. Percy Wells Bidwell 173
2. The Old Northwest and the Old Southwest. Isaac Lippincott 193

CHAPTER PAGE

XI. GROWTH OF HOME AND FOREIGN MARKETS.
1. The Internal Grain Trade. Louis Bernard Schmidt 197
2. The Cotton Factorage System. Alfred Holt Stone 209
3. Rise of an Agricultural Export Trade. Worthy Putnam Sterns 216
4. Expansion of Foreign Trade. Emory R. Johnson and Associates 230

XII. AGRICULTURAL READJUSTMENTS IN NEW ENGLAND. Percy W. Bidwell 235

XIII. NEW FACTORS IN THE AGRICULTURAL DEVELOPMENT OF THE NORTHWEST.
1. Developments in a Typical Prairie State. Agnes Wright, Theodore Calvin Pease, and Arthur Charles Cole 252
2. Experiences of a Southern Wisconsin County. Benjamin Horace Hibbard 262

XIV. AGRICULTURAL SYSTEM AND LABOR SUPPLY IN THE SOUTH.
1. Contrasting Types and Conditions in Southern Agriculture. Ulrich B. Phillips 271
2. Unsolved Problems in Southern Economy. Alfred Holt Stone 274

XV. AGRICULTURE AND THE SECTIONAL STRUGGLE.
1. An Agricultural Interpretation of the Civil War. Rose Strunsky 293
2. Wheat *vs.* Cotton. Louis Bernard Schmidt 304
3. Southern Agriculture During the War. John Christopher Schwab 321
4. Northwestern Agriculture During the War. Clyde O. Ruggles 324

PART III

THE AGRARIAN REVOLUTION AND THE SETTLEMENT OF THE FAR WEST

1860–1914

CHAPTER PAGE

EDITORS' INTRODUCTION 331

XVI. THE SETTLEMENT OF THE LAST FRONTIER.
1. SOME INFLUENCES OF THE PASSING OF THE PUBLIC LANDS. William J. Trimble 339
2. THE GOLD RUSH AND AGRICULTURE. M. L. Wilson 345
3. THE RECLAMATION OF AGRICULTURAL LAND. Katharine Coman 351

XVII. THE EVOLUTION OF FARM MACHINERY.
1. PROGRESS TO THE CLOSE OF THE NINETEENTH CENTURY. George K. Holmes 356
2. DEVELOPMENT OF MECHANICAL POWER FOR AGRICULTURE. Edward A. Rumeley 363

XVIII. THE WESTWARD MOVEMENT OF WHEAT. Louis Bernard Schmidt 370

XIX. THE RISE OF THE CORN KINGDOM. Louis Bernard Schmidt 381

XX. THE EVOLUTION OF THE LIVE STOCK INDUSTRY. Frederic L. Paxson 390

XXI. THE GROWTH OF THE DAIRY INDUSTRY AND DIVERSIFIED FARMING.
1. GENERAL SURVEY OF DAIRY DEVELOPMENT. Henry E. Alvord 405
2. MOVEMENT OF THE DAIRY INDUSTRY TO THE OLD NORTHWEST. Frederick Merk 415
3. EXTENSION OF DAIRYING TO THE LAST FRONTIER. E. D. Ross 419

CHAPTER PAGE

XXII. THE EXTENSION OF THE COTTON BELT AND THE NEW SOUTH. Matthew Brown Hammond 425

XXIII. EXPANSION OF MARKETS. William Trimble 436

XXIV. THE RISE OF FARMERS' MOVEMENTS.
1. Background of the Granger Movement. Solon Justus Buck 442
2. Developments in the Eighties and the Nineties. C. S. Walker 456

XXV. THE RELATION OF THE STATE TO AGRICULTURE.
1. Evolution of State Agricultural Departments. Edward Wiest 465
2. Origin and Expansion of Federal Activities. William L. Wanlass 473
3. Agricultural Education. John A. H. Keith and William C. Bagley 487

PART IV

REORGANIZATION AND READJUSTMENT
1914–1924

EDITORS' INTRODUCTION 497

XXVI. AGRICULTURAL CHANGES DURING THE WORLD WAR. Benjamin H. Hibbard 504

XXVII. AGRICULTURE IN RECONSTRUCTION.
1. The Present Crisis and the Probable Future of Our Agriculture. C. L. Holmes ... 529
2. Adjusting Production to the Home Market. David Friday 546

CHAPTER PAGE

XXVIII. RECENT TENDENCIES IN FARMERS' ORGANIZATIONS.
1. RISE OF THE FARM BUREAU MOVEMENT. Edward Wiest 557
2. A GENERAL SURVEY OF PRESENT-DAY FARMERS' ORGANIZATIONS. James E. Boyle 562

XXIX. AGRICULTURE AND MODERN INDUSTRY. E. G. Nourse 573

AUTHOR INDEX 583

SUBJECT INDEX 585

READINGS IN THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE

READINGS IN THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE

GENERAL INTRODUCTION

CHAPTER I

AMERICAN ECONOMIC HISTORY AND THE ECONOMIC HISTORY OF AMERICAN AGRICULTURE

1. Problems and Status of American Economic History[1]

The aim of this paper is first to show what ought to be the scope and purpose of economic history if it is to be pursued as a separate subject of study and then to note what progress has been made in that direction in American history. It will be convenient to begin by calling attention to the changes which have in recent years taken place in the attitude of our historians and economists toward this subject. No one who attended the meeting of the American Historical Association in Boston last winter could fail to be impressed by the interest which its members manifested in the economic side of history. Professor Turner in his presidential address two years ago called attention to its importance to all students of American history and there seems now to be a pretty general response to his words. In striking contrast to this interest among historians was the lack of it among the members of the Economic Association. Topics in economic history found no place upon their program. Their meetings were devoted entirely to the discussion of current problems and no one showed the slightest disposition to approach those problems from an historical point of view or to look to history for any light upon them. It was significant also that the project of the economic department of the Carnegie Institution for a co-operative economic history of the United States received no attention whatever. No inquiries were heard and no information was given to the association

[1] Guy S. Callender, "The Position of American Economic History," *The American Historical Review*, Vol. XIX, No. 1, October, 1913, pp. 80–97. Copyrighted by The Macmillan Company. Reprinted by permission.

concerning its progress. This difference in the attitude of the two associations is, I believe, typical of the attitude of historians and economists generally in this country.

If now we turn back a period of twenty years we shall find a situation in one respect exactly the reverse of the present one. Interest in economic history was at that time scarcely less marked than it is to-day, but historians had very little share in it. It was to be found chiefly among economists and was the result of the influence among them of the so-called historical school. This influence became strong in this country during the eighties and culminated in the establishment of professorships of economic history in the departments of economics in the leading universities. Harvard established the first of them in 1891 and other institutions soon after followed her lead. Economic history was everywhere expected to play an important part in that reconstruction of economic science which was then going on. Since that period there has come about the radical change to which we have referred. Interest in economic history among economists has steadily declined, while among historians it has as steadily increased. What are the influences which have produced these changes? An examination of them will do much to reveal the real nature of the subject and the reasons for its development.

The disposition of economists to regard economic history as of less consequence to their science is undoubtedly due to the declining influence of the historical school among them. As a separate branch of study economic history owes its existence to that school. Its early development was a part of the reaction against the classical political economy, for which that school stood. According to views of the historical school the science of economics ought to be made less abstract and deductive. It ought to take into account more of the concrete facts of economic life; and its laws and principles, if indeed there were to be any, ought to be derived from a wide survey of these facts by a process of induction. This, however, was not the chief criticism. Economic science should be dynamic rather than static. It ought to make proper allowance for change and development in economic life. No general truths concerning the production and distribution of wealth should be laid down independent of time and place. Everything must be relative to the particular stage of development which each country has reached at a given time; and the most important matters to consider are the forces which cause the changes. Economic science ought to be primarily a theory of development and not merely an explanation of the way in which human beings pro-

duce wealth and share it as income under a given set of social conditions. The great corrective to the old political economy and the chief means of building up the new was to be the thorough study of the economic life of the past.

Without attempting here any criticism of these views it will not be going too far to assert that they have ceased to have any considerable influence upon the development of economic science, and that their advocates have failed completely to reconstruct it to fit these ideas. Economic theory has indeed been pretty thoroughly overhauled and transformed during the last generation, but it has not been primarily a theory of development. Through all the transforming influences it has remained in that respect exactly what it was under the classical school—a body of generalizations concerning the way in which wealth is produced and distributed as income under a given set of social conditions; these conditions are what have come to exist in practically all civilized countries since the Industrial Revolution. Economic laws or principles as they are now formulated relate to these conditions and to no others. Economists are not chiefly interested in inquiring how these conditions came to exist nor in discovering the forces which may be at work to fundamentally change them in the future, though owing to the influence of the socialists they do not entirely ignore this phase of the subject. As to the process by which wealth was produced and distributed in society before it assumed this modern form, it is safe to say that economists as such are not interested in that at all. Nor can the science of economics be said to be any less abstract and deductive than it used to be. The old political economy was built up from a few general truths concerning wealth, capital, human nature, and the physical world, which were derived from observation of contemporaneous conditions. The new economics of our day is the product of precisely the same method. The leading principles are not drawn from any wide survey of economic conditions in the past, but are obtained directly from the observation and analysis of what goes on about us in the business world. So far as history furnishes any of the facts upon which they are based it is very recent history—what may be called contemporary history. The chief economic writers of our day are as innocent of any thorough knowledge of history in the broad sense as ever were Ricardo and his followers. Moreover not a few of them show even less familiarity with the concrete facts of the economic life of their own time and quite as great a liking for abstract treatment of the subject.

I do not mean to hold that the historical movement among economists has been entirely fruitless. It has certainly done much to reveal the economic life of the past, and that, as we shall see presently, is a service of great value to students of social evolution; but so far as economic science is concerned it has had no important results. The body of economic history which has been produced by it stands in no vital relation to the principles of the science. It is useful and convenient as a means of illustrating some of those principles and to some slight extent in testing them; but it has not in a single instance been the means of their discovery and establishment. Its chief value to the economist is that it familiarizes him with institutions and helps him to realize the organic nature of society. Economic history stands in about the same relation to the science of economics in which political and constitutional history stand to the new science of modern government. In the last twenty-five years such a science has been created. It attempts to describe and explain the working of popular government in the leading civilized countries in the same way in which the science of economics attempts to describe and explain the economic organization of those countries. It is more complex than economics because modern countries differ much more in their political than in their economic organization, and the science of government has to take these differences into account. But like economics it is based upon contemporaneous conditions and deals with institutions which in their present form have existed but a short time. Neither science owes much that is essential to the study of history.

The reason for this situation is not difficult to discover. In the case of economics it is due to two circumstances. In the first place it is practically impossible to gain a sufficiently detailed and accurate knowledge of the economic life of people a century or more ago to make their experience of any value in solving present problems. Men have never been accustomed to write very fully about their business affairs for publication and such records of private business transactions as have come down to us even in American history are extremely meager. This difficulty is not encountered to the same extent in political history, where public records and the writing of public men supply most of the information that is required. The second circumstance is however far more important. It is the fact that the Industrial Revolution has so changed economic life that even if we were able to gain sufficient knowledge of past conditions they would be of little use in helping to explain the present. Power-driven machinery, modern methods

of transportation and communication, the resulting territorial division of labor with the use of large capital, and the appearance of the captain of industry, have created a new world so far as the production of wealth is concerned, and one which has only a very remote resemblance to what existed a hundred years ago. In this respect the science of government is in much the same situation. The coming of democracy represents quite as great a break in political life as the Industrial Revolution caused in economic life. In both cases history has been made a thing of minor value in explaining contemporaneous affairs. It is interesting to know how the political and economic institutions of the present time have come to be what they are, but such knowledge is by no means essential to an understanding of their working. It is equally futile to seek light upon the present problem of the protective tariff from the history of the mercantile system of the eighteenth century and to expect to learn anything about the working of modern democratic government from a study of the French monarchy and the English aristocracy of that same period.

Turn now to the historians and consider the influences which have acted to arouse their interest in the economic side of their subject. American historians, like those of other countries, have been concerned primarily with politics, but they have always given considerable attention to economic affairs because American politics have turned so largely upon economic questions that no one could hope to understand and explain them without studying those questions. Moreover in a democracy, where the action of government is determined by the feelings and sentiments of the people, general economic conditions must profoundly influence political action. Some very good economic history is therefore to be found in the pages of our older historians like Ramsay and Hildreth. During the last fifty years, however, this connection between politics and economics in this country has become much closer. The character of the economic questions with which our government has had to deal has changed. Before the Civil War they related almost entirely to production. Should the powers of the government be used to aid production by levying protective duties, by establishing a national bank, by adopting some kind of policy of internal improvement? It was possible in all such cases to take a *laissez-faire* position and oppose government interference on the ground that private enterprise, stimulated and controlled by competition, would produce better results. There was always a strong party among the people who held this position and in most matters it was strong enough to determine the policy

adopted. The economic questions which came to the front after the war were of a different kind. They related to the distribution of wealth rather than to its production. Competition as an automatic regulator of economic life was breaking down at many points. Among the laboring class it was causing long hours, low wages, and the employment of women and children. In the railroad industry it was forcing many companies into bankruptcy and compelling all to discriminate in their charges, or to form pools to control rates. In many manufacturing industries it was giving rise to trusts and combines. In the growing cities an entire group of so-called public service industries, like water-supply, gas-supply, and street-railways, was springing up in which the operation of competition was obviously impossible. In all these matters the problem was, how to protect one class from another and the general public from the rapacity of individuals. There was no possibility of a *laissez-faire* position. Competition could no longer be relied upon to enable each person to secure his fair share of the product of industry, and there was nothing left but government interference in some form or other. It has come now to be recognized on every hand that the great problem of democratic government is, how to deal with these economic questions of distribution. Under such conditions it was obviously impossible to deal with politics without a thorough understanding of economic conditions, and our historians have been greatly influenced in recent years by this situation.

The effect of a similar situation in the world at large may be discerned. It is a familiar doctrine that every generation has to rewrite history from its own point of view. The historian's work is not simply to find out and record what has happened in the past. He must also select for treatment the events which are significant and important, and this work is no less essential than that of finding out the facts and explaining them. In it he is bound to be influenced by the spirit of his age—by the subjects which interest his generation and stir their thought and feeling. The middle portion of the nineteenth century furnishes a good example of this. After the Napoleonic wars, for fifty years or more, the people of all western Europe were engaged in the work of remodeling or entirely reconstructing their political institutions. The problems which touched them most closely and called loudest for solution were to be found in this field. Public men and all thoughtful people were eager to learn all that could be known about the political institutions of the past and the course of their development. Historians now began to give special attention to this aspect of

the past and to write constitutional history. As a separate branch of historical study it had not existed before this time. The first book in English with such a title was Hallam's *Constitutional History of England,* published in 1827. The rapid development of constitutional history from about 1830 to 1880 was due to the historian's response to the spirit and needs of the time. During the last quarter of the century the situation changed. After the Franco-Prussian War the work of political reconstruction was nearly finished. The economic problems to which I have referred now came to the front in all progressive countries and absorbed more and more the attention of their people. It was inevitable that historians should be affected by this situation in exactly the same way as they had been by the earlier one. They began now to give more attention to economic affairs, and while they produced few special works on economic history much more space was given to economic matters in the general histories that were written. The tendency showed itself in such titles as Green's *History of the English People* and McMaster's *History of the People of the United States.*

There is still another factor which has had perhaps more influence than anything else in determining the attitude of historians. It is the new conception of what history is, which they are gradually coming to hold. Freeman's idea that history is past politics, and the more modern notion of Seeley that it is the record of state-building, are being slowly relinquished in theory at least, although they still continue to determine the character of nearly all the general histories that are written. In their place has come a broader conception. It is not difficult to make out in general what this is, though as yet it has not been very definitely formulated. Probably the best way to describe it in a phrase is to call it the sociological view of history. As a rule historians will object to this term. It does not seem possible to them that any body of theory composed so largely of somewhat loose generalizations as sociology, can have anything in common with careful scientific history. Even more than the economist, the sociologist seems to them prone to play fast and loose with facts. He is an utter stranger to the chastening influence of "source materials." He rarely uses any documents except perhaps "human documents". Nevertheless it is to sociology that the new conception of history is most akin and it is with the sociologist that the historian is coming to have most in common. In spite of the great difference between them in the methods and materials used, and in the character of the results attained, their aims are to a large extent identical. The sociologist is seeking to

discover the process by which society or civilization in all countries has evolved from the lowest types to the highest. What the historian now tries to do is to tell the story of the social development or evolution of one country or group of countries so far as this can be made out from the records of the past. It is no longer the political activity of a people and the development of their political institutions that is the center of his thought. It is the development of the whole social fabric that he seeks to depict. It is this that gives unity and continuity to his subject and is coming to furnish a substitute for that political chronology which has so long provided the framework for all historical narrative. Thus the conception of society as an organism developing like other organisms under the influence of environment, which is the chief contribution that sociology has made to modern thought, is coming to affect fundamentally the historian's conception of his work. The failure of historians to recognize this kinship with sociology is matched by the indifference of sociologists to history. They are so preoccupied with primitive man that the course of social evolution among the great historical races is neglected. The institutions of the "Todas and the peaceful Arifuras" continue to receive more attention at their hands than the German kingship, the village communities of medieval Europe, or the feudal system. Few students of sociology in our universities are ever advised to take such an admirable sociological course as the early constitutional history of England.

It is easy to see how this new conception of history increases the historian's interest in economic affairs. It puts a premium on those matters which touch most closely the life of the masses of the people and so contribute most to determine the course of social evolution. It is not necessary to adopt Marx's view that all social structure is determined by economic life and all social development caused by economic changes: it is sufficient to recognize that here are to be found some of the great forces that have molded institutions. How to make a living and what things affect their ability to do so have been the principal objects of interest to most people at all times in the history of the world. If history is to tell the story of the social evolution of nations it must give a great deal of attention to that part of human activity.

All these influences have combined to give to economic affairs that prominence in historical writing which they are now coming to occupy, and interest in the subject on the part of historians bids fair to continue to increase rather than to decline.

We are now in a position to take up the question of what eco-

nomic history ought to include if it is to be developed as a separate subject of study. From what has been said above concerning its relation to other subjects it may be assumed that its value will be chiefly for historians and sociologists rather than economists. Accepting this view, what ought to be its aim and what kind of economic history do we need most to have written? We may answer at once that the aim should not be to turn out works on the general history of countries written from an economic point of view. Whatever need there may be for the rewriting of history in order to give to economic influences their proper weight in social and political development, that work may be safely left to the general historian. There is no reason why a body of specialists should be trained to do it; and certainly there is no occasion for economists to turn their attention to the writing of history in order to secure that end. Historians, in this country at least, are in no danger at the present time of neglecting the economic factor in history. They seem disposed to provide all the "economic interpretation" that is likely to be required.

What is needed in the way of special work is something which can be separated quite definitely from the proper work of the historian, something which he can use to great advantage but which he cannot well provide for himself. There is need for a description and explanation of the economic life of each country during the course of its history. The process by which wealth is produced and distributed among individuals in a civilized community is a very complex affair, especially where division of labor has made any considerable progress. It involves the interest of every individual, for no one can live to himself in such a community. It is affected by a great variety of circumstances which differ much in different countries and in the same country at different stages of its development. The special task of the economic historian ought to be to analyze this all-embracing process as it has existed in each country at different times, and to explain it. His subject ought to be the *wealth of nations* in the literal sense of that phrase. He ought to make clear what factors have determined the ability of each nation to produce wealth at any particular time and what ones have influenced its distribution; and he should also reveal the forces which have acted to change economic conditions from time to time, producing economic progress or economic decline.

This is by no means a simple or easy thing to do. It involves much more than merely finding out the facts concerning the industries carried on by a people, the nature and volume of a country's trade, the various economic institutions which have existed

in it, like the currency, the transportation system, land tenure, taxation, and the organization of labor and capital, together with the policy of the government in regard to these matters. All these facts and many more must be had, and it is difficult enough to ascertain them. But this work is not different from the ordinary work of the historian and requires no special training. What is far more difficult is the explanation of these facts. It is possible to know them without perceiving their significance and it is here that the chief difficulties of economic history are encountered. Economic conditions are all related. They are never isolated. They fit together to form that elaborate mechanism which creates and distributes the wealth of a nation. The important thing to determine concerning every event or fact is its relation to this process as a whole. It is not enough to know that New England had a large trade with the West Indies in certain commodities during the eighteenth century. The important thing is to understand just how that trade affected the ability of the community as a whole to satisfy its wants, and thus to be able to judge what the hampering of this trade or its interruption really meant to the people of New England. It is not sufficient to trace the growth of slavery in the Southern States and to show that it followed the invention of the cotton gin and the spread of cotton culture. What we want to know is why the introduction of cotton culture into this country should have produced such a result; and above all to know how the growth of slavery affected the ability of the country as a whole to produce wealth—not only the ability of communities where slavery existed, but that of the rest of the country as well, for it is not alone in the field of politics that slavery influenced the life of the nation; it had a national economic influence quite as important as the political. In all such subjects as these it is necessary to view a wide range of facts in their relations to each other and to ascertain the effect of each event upon the national economy.

In order to exhibit more concretely the nature and importance of the sort of work I am seeking to describe it will be worth while to consider an example of it in more detail. One of the striking features of the economic development of this country during the first half of the nineteenth century was the rise of internal trade. While such trade had existed to some extent even in colonial times, its amount was too small to be of much importance down to as late a date as 1815. The New Englanders carried a little fish and a few manufactures like shoes, tinware, and wooden clocks to the Middle States and the South and brought back a little grain and in later years a little cotton. They also did some carrying of southern

staples to Europe. The merchants of the seaboard cities sent a few articles of necessity and luxury to the back country and the Ohio Valley, and a few herds of cattle were driven eastward from these regions to the seaboard, and a little produce sent down the Ohio and Mississippi to New Orleans. But the value of all this trade was, I repeat, insignificant before 1815. As an element in the economic life of the average person it played no important part. During the forty-five years from 1815 to 1860 these small rivulets of internal trade swelled into a great volume which at the latter date equaled in value, if it did not exceed, the foreign commerce of the country.

It is extremely difficult to find out the facts concerning the growth of this internal trade. There are no statistics, however imperfect, by which to measure its volume and value. There are only indications of its growth more or less indefinite. Perhaps the best of these are the statistics of steamboat tonnage on the rivers and of sail and steam tonnage on the lakes and in the coasting service. In addition to these it is necessary to study the growth of commercial towns and cities in the various localities and collect scraps of information concerning their trade from such sources as gazetteers, newspapers, and the writings of travelers; and finally in the latter part of the period to follow the building of railroads and study the traffic of the principal trunk lines. In this way by diligent research it is possible to trace out the chief currents of the trade, to ascertain what commodities composed it, and to form a very rough guess of their value. There is nothing in all this different from the ordinary work of the historian except that the material is more fragmentary and incomplete than on most other subjects and requires to be pieced together with great care. But when this has been done and a fairly trustworthy result obtained, what does it all amount to? Is the development of this trade an important event or not? It certainly had no obvious, striking consequence, such as the rise of a slave power or the advent of a radical frontier democracy in our politics. Nor can its importance be inferred from its value alone. What then is its significance if it has any? It is only possible to answer that question by taking into consideration the economic life of the country as a whole and seeing exactly what change this trade brought about in the national economy.

From an economic point of view American society in 1815 can best be described as made up for the most part of small rural communities scattered over an immense area and having little commercial intercourse with each other or with the outside world.

The only part of the country where this was not the case was a narrow strip of territory along the seaboard. The communities near tide water and on or near navigable streams in this strip could and did carry on a small commerce with each other and a large commerce with foreign countries. But everywhere else the people lived in isolated, self-sufficing communities, which produced for themselves practically everything which they consumed. It may be noted that this feature of American society was much more prominent in 1815 than it had been before the Revolution. Then the settled area where these conditions prevailed could not have included more than about a third or possibly a half of the population. The rush of people into the West which followed the Revolution carried the settlements to the Mississippi and beyond by 1820 and spread the population over a large part of the intervening territory. The "back country," as it was called, where these conditions were most prominent, was expanded until it made up a large part of the country. Probably two-thirds of the population now lived under conditions of commercial isolation.

The effect of this great dispersion of our people upon their manners and political sentiments has received adequate attention, but its economic effects have been either ignored or treated very superficially. It did not, as is commonly assumed, bring any immediate economic advantage to the people as a whole; that is, it did not increase their ability to produce wealth, but had rather the opposite effect. It greatly increased what had always been the chief obstacle to the production of wealth in American society, namely, lack of division of labor. In spite of the great energy and efficiency of the individual laborers, American industry in general was not highly productive in colonial times. There was always plenty of rude comfort but not much wealth. It was easy to produce the bare necessities but very difficult to produce anything more. This was due to the lack of division of labor. This phrase refers to two distinct though related features of industry. One is the separation of the laborers of a community into distinct industries or employments—more properly called division of employments; and the other is the combination and organization of laborers in each industry. Now the only communities in America where either of these features of industry had ever been developed to any considerable extent before 1815 were those in the tide water region. Owing to the existence of domestic and foreign trade it was possible for a considerable part of the inhabitants of that region to devote their labors to a few industries in which natural resources were very rich and to depend upon the labor of others

to produce whatever else they needed—in other words, to develop division of employment. Here too there was some combination and organization of labor, chiefly in the South, where it was made possible by the existence of slavery. There was a beginning of it also in the North in fishing, lumbering, shipbuilding, and a few small manufacturing industries. But everywhere else over the whole country industry was undifferentiated and unorganized. In the back country almost every one tilled the soil and every farmer was a Jack-of-all-trades. Each family produced most of what it consumed and exchanged very little with other families in the same community. They all produced about the same things. Each little community produced within itself nine-tenths and more of what it consumed, drawing almost nothing from other communities. Combination and organization of labor in the modern sense were practically unknown, and division of employment had scarcely advanced beyond a rudimentary stage. And these back-country conditions, it must be remembered, had come to prevail over the larger part of the country. They were to be found everywhere except in the tide water strip and may be said to be typical of the country during this period.

If we bear these facts in mind the significance and importance of the rise of internal trade will at once become apparent. It was in fact the introduction into American society generally, for the first time, of the practice of division of labor, which Adam Smith rightly regarded as the most important circumstance affecting the ability of a community to produce wealth. As this trade grew it became possible for the first time for most of the people to devote themselves to the production of one or a few products in which their labor was productive, and to depend upon other communities in this country or the outside world for what they could produce only at a disadvantage. The markets which now arose for various commodities opened the way also for combination and organization of labor in various industries and localities where it had been unknown before. It began to show itself in the iron works of Pittsburgh, in the slaughter-houses and machine-shops of Cincinnati, the hemp mills of Kentucky, and the sawmills of Michigan. The economic advantages which had before been enjoyed only by the people of the seaboard were now extended to the whole country. There was nothing spectacular in these changes. They came about gradually and quietly. But in the course of a generation they wrought what amounted to an industrial revolution over the greater part of the country. This rise of internal trade must therefore be considered an event of enormous economic

importance, far transcending the introduction of the factory system into the textile industries of the country, to which so much attention has been given.

So much for an example of what is involved in the work of explaining and interpreting economic events. It is obvious that we have here something very different from the ordinary work of the historian. It can be done only by those who are familiar with economic science. It is in fact an attempt to apply that science to the facts of a country's economic life at a particular period of its history, and to make it serve as a guide for their explanation. Here is a kind of economic interpretation of history for which there is a legitimate basis and which historians need not regard as an impertinence on the part of economists. Here is an opportunity for the economist to render a genuine service to history by turning his attention to it, and confining himself to those aspects of it with which his professional training has fitted him to deal.

I do not of course mean that economic science can always be relied upon to furnish the true explanation of past economic conditions. Professor Ashley used to insist that we should never be able to understand the economic life of medieval Europe so long as we studied it from the point of view of classical political economy; and Professor Schmoller has shown us how inadequate as history is Adam Smith's account of the mercantile system. The danger of this sort of error is not so great in American history as in these cases, but examples of it are not entirely lacking there. It is not uncommon for economists who are much interested in the tariff controversy of our own time to fail to recognize how different were the conditions affecting this subject in Clay's and Hamilton's time. A similar defect appears in Professor Commons's otherwise admirable *Documentary History of American Industrial Society*. His mind is so preoccupied with trades unions and the present problems of the wage-earning class that he ignores entirely the real labor problem of American society during the first half of the nineteenth century. That problem was, not at all how to protect wage-earners from injury due to over-competition, as was the case in Europe, but how to induce people to become wage-earners and thus to secure that combination of labor which was the greatest economic need of the time. American society was not suffering from any of the evils of congestion of its population, but, as we have seen, from just the opposite thing—the too great dispersion of the population over a wide extent of territory. Such errors as these, however, can be easily avoided by the economist who becomes a

specialist in dealing with the economic life of the past. He will gradually come to recognize and make due allowance for the differences between present conditions and past. He will cultivate an historical sense and acquire historical-mindedness, and with these he can use his knowledge of present economic relations which economic science provides, to interpret past conditions without danger of serious error. This, it seems to me, is the special study which ought to be developed, and this is the kind of economic history we most need to bring into existence.

* * * * * * * * *

Before any such reasoned account of economic development as we have described can be written, a vast amount of preparatory work must be done. We must know in detail how individuals and communities have made a living and what circumstances have affected their ability to do so. The immediate need is for the same careful, painstaking study of economic activity which historians have given to political activity. We are fortunate in possessing in the Department of Economics and Sociology in the Carnegie Institution of Washington a well-organized and subsidized enterprise designed to accomplish precisely this work. For a decade it has been stimulating investigations by grants of money and seeking to initiate and guide them by its organization. To a large extent it is responsible for the work which has been done during that period, and a glance at the results of its activities affords striking evidence of the progress that has been made. According to its latest report fifty-two monographs prepared under its direction have been published and one hundred and eight have been finished but remain unpublished. Besides this, sixty-one shorter studies have been published in periodicals, a large portion of which, however, are merely parts of the published and unpublished monographs. To this must be added a considerable list of monographs that have originated in the graduate schools of the various universities and in the different departments of the federal government. Altogether these make up an imposing mass of material. It is only possible here to indicate in general terms how far it has prepared the way for an economic history of the country.

Broadly speaking, there are at least three well-defined types of special study which ought to be multiplied in order to make such a work possible. First, there should be histories of the important industries in agriculture, forestry, mining, and manufactures. Secondly, there should be studies of what for want of any other name may be called economic institutions—the currency, the transpor-

tation system, public finances, land tenure, and the various phases of the organization of labor and capital, such as slavery, trades unions, and corporations. Single great enterprises in transportation and banking as well as branches of foreign and domestic commerce belong to the first type. Studies of governmental policy naturally belong to the first and the second. The third type is quite different in character from the other two. It is synthetic, not analytic. It deals not with some one factor of economic life but considers in detail the whole economic activity of some one community or section where conditions are the same. The country naturally divides itself into regions according to differences in economic conditions and interests. These make up what may be called economic provinces. Such are New England, the Middle States, the Lower South, the Border States, the old Northwest, the Pacific coast, and the great mountain region of the Far West. Detailed studies of the economic life of each of these regions or of single states in them are examples of this type.

* * * * * * * * * *

It is clear from this brief survey that the work of investigation needs to be carried much further and to be systematized so that the most important subjects shall receive most attention. It is to be hoped that the Carnegie Institution will not relax its efforts to stimulate and direct such work. A closer organization of the collaborators, with a more definite plan of the work which they are seeking to produce, would be likely to secure more valuable results. Co-operative enterprises in historical research have never succeeded without such a plan and some one to hold the co-operators up to it. In view of the character of much of the work required as well as the present attitude of the two national associations toward economic history it would be well also to enlist the more active interest of historians in the enterprise.

2. The Economic History of American Agriculture [1]

* * * * * * * * * *

Of fundamental significance in the scientific study of American development is the economic history of our agriculture. This phase of our history has not hitherto received the attention at the hands of historians which its importance merits. It is time, therefore, first, to define the economic history of American agriculture

[1] Louis Bernard Schmidt, *Topical Studies and References on the Economic History of American Agriculture* (Revised Edition, Philadelphia: McKinley Publishing Company, 1923), pp. 11–26. Reprinted by permission of the publishers.

as a field for study; second, to suggest some of the more important problems which this field offers for investigation; and, third, to present the reasons why special attention should be given to the subject.

The economic history of American agriculture presents an inviting field for study and research. This subject includes much more than a mere account of progress in the technique of agriculture. It includes a consideration of all the facts, forces, and conditions which have entered into the development of agriculture from the beginning of the first settlements to the present time. Thus considered, it includes a study of physiographic conditions—topography, soil, climate, rainfall, and drainage systems; Indian economy; the migration of settlers; the occupation of woodland and prairie country; the disposal of the public lands; systems of land tenure and tenancy; and the types of farming developed in each new area reached in the course of westward migration. It includes further a study of the westward movement of crop and live stock areas; the introduction and popularization of labor saving machinery; the development of specialized farming; the transportation of farm products; the growth of markets; and the establishment of agencies for the promotion of scientific knowledge relating to agriculture. And finally, it includes a study of the relation of agriculture to other industries—flour milling, meat packing, and transportation; the problems engaging the attention of the rural population in the different periods—transportation, markets, currency, banking, and taxation; the relation of the farmer to politics and to legislation; the relation of the State to agriculture; and the influence of agriculture on our whole national life. Thus interpreted, the economic history of agriculture is closely interwoven with other phases of American history. It is a constituent part of the history of the entire people. To define the subject in this way is, therefore, to direct attention not to a separate or distinct phase of American history, but to emphasize a new point of view in the study of our national development.

These considerations show the broad scope of the economic history of American agriculture as a field of study and research. What then are some of the specific problems inviting the attention of the historian? The limits of space will permit but a brief statement of these problems.

The History of the Public Lands.—The first question in the agricultural history of any country or region is the relation of the farmer to the land. Fifty years ago there was little or no occasion for a careful consideration of this question. There was a

superabundance of virgin land which could be had for nothing and Congress was not much concerned over the methods of its disposal. The rapid transference of this vast heritage from public to private ownership constitutes an important chapter in American history. It has been involved with other public questions and it has been an important issue in American politics. The land question has now entered upon a new and complex phase. The speculative spirit which has been fostered by a liberal land policy seems to have become an ingrained American characteristic. It has contributed largely to an inflation of land values and to the present high rate of tenancy. In undertaking a study of the land question under both public and private ownership it should be remembered that the rapid disposal of the public lands is closely linked with the rapid growth of population, the change from extensive to intensive farming, and the increased cost of living.

The History of Leading Agricultural Industries.—Among these studies the grain growing, live stock, and cotton industries may be mentioned as of special interest and significance. Such studies should include a consideration of soil and climate, land tenure and tenancy, labor, the use of improved farm machinery, transportation, markets, and prices. The westward movement of production should be studied in relation to the westward movement of population and the accessibility of markets. The influence of agricultural prices on national politics and finance should receive careful study. The relation of these industries to other related industries, such as flour milling, meat packing, and textile manufacturing establishments, should also be considered.

Similar studies should be made of the dairy, tobacco, poultry, and fruit growing industries. The range is a subject of unusual interest and importance in the history of the Mississippi Valley. It still remains, however, a "no man's land" of the historian who seems to have been content to leave this subject to the novelist, the essayist, and the poet. This is shown by the fact that when the editors of *The Chronicles of America* planned for a volume on this subject, they were compelled to ask a novelist to prepare it. The time has come for a critical study of the range and its relation to our whole national development. Among the newer agricultural industries, the sugar beet industry may also be mentioned. These studies suggest other agricultural industries which await the labors of the historian.

The History of Agriculture in the Various States.—Such studies should include a consideration of economic geography, Indian agriculture, land policies, early settlements, relations with the

Indians, pioneer farming, early trade routes, use of improved machinery, development of specialized farming, transportation, and markets. Studies of this kind should include, further, a consideration of the systems of land tenure and tenancy, size of farms, land values and rentals, and the laws governing the inheritance of farm property. Attention should also be given to the sources of immigration, the types of farmers, the methods of farming, and the social phases of farm life including education, religion, amusements, and entertainments. Currency and banking facilities, rural credit, rates of interest, farmers' organizations, and the relation of the farming population to national politics and legislation are likewise among the important subjects to be considered. Finally, the economic history of agriculture in any given State should include an historical and comparative study of the problems confronting the agricultural class. Similar studies may, indeed, be profitably made of larger geographic areas or regions like the Middle West.

The History of the Transportation and Marketing of Agricultural Products.—Among the studies of this kind the history of the grain trade may be mentioned as worthy of primary consideration. Grain has always been the leading item entering into the internal commerce of the country. As an article of export it attained first place after the Civil War, thus superseding cotton, which formerly constituted the leading export product. This subject should include a study of the geographic distribution of grain production in the United States; the change in the areas of surplus production; the various routes—river, lake, canal, and rail—by which grain has been carried to market; the evolution of the leading primary grain markets; the transportation lines connecting the primary grain markets with the consuming States of the East and South; the development of the Atlantic and Gulf ports as local distributing and export centers for western grain and flour; and ocean steamship lines connecting these ports with the markets of Europe, South America, and the Far East. Attention should also be given to market conditions, price quotations and fluctuations, freight rates, terminal facilities, and charges for the handling of grain. Commercial agencies, such as boards of trade and produce exchanges, their functions and the part they have played in the development of the grain trade, should be considered.

The history of the grain trade is the history of a competitive struggle between commercial centers for the surplus grain and flour of the Middle West destined for the consuming States of the

East and the South and for the countries of western Europe. It is also the history of a competitive struggle between the water and rail routes and in turn between the rail routes themselves for this traffic. The inadequacy of our present transportation system for the handling of this traffic, combined with excessively high freight rates, has brought the entire Middle West into active support of the Great Lakes–St. Lawrence waterway project which is opposed by the commercial interests of Buffalo and New York City. These interests foresee, in the construction of that route and the consequent development of Chicago and Duluth as seaports, the destruction of a monopoly of the western grain traffic which they have held since the construction of the Erie Canal. This serves to illustrate the fact that the history of the grain trade of the United States, viewed in one way, is the history of the development of water, lake, canal, rail, and ocean transportation. To study the grain trade, therefore, is to study one of the fundamental problems in the history of the nation during the last one hundred years.

Similar studies should be made of the history of the provision trade—live stock and animal products; the history of the cotton trade; the history of the tobacco trade; and the history of the fruit trade. These subjects all occupy a place of fundamental importance in American history. They should, therefore, be studied by the historian. Moreover, such studies would furnish the necessary historical background for the consideration of present problems in the transportation and marketing of farm products which are engaging the attention of the economist and the lawmaker.

The History of Farmers' Organizations.—Studies of this kind may be divided into two groups: first, the organizations that seek to promote some special end or industry, among which may be mentioned the farmers' elevator companies, the meat producers' associations, the wool growers' association, and the co-operative creamery associations; and, second, those organizations that seek to unite the farmers as a class: as for example, the Grange, the Farmers' Alliance, and the American Farm Bureau Federation. In this group are included also political organizations such as the Greenback and Populist parties, which were principally western and to a large extent agricultural in origin. Such a study should include an investigation into the causes of agrarian discontent; the origin, formation, and growth of the organization; its functions and activities—political, economic, social, and educational; and its achievements and failures. The influence of the organiza-

tion on State and national politics should be given due weight. Studies of this kind should receive considerable attention in view of the recent active interest which has been developed in the various forms of farmers' organizations—local, State, and national. They will contribute very materially to a proper understanding of the farmers' co-operative movement in this country and they will help to point the way to more successful and fruitful co-operation in the future.

The History of Agricultural Education.—This subject offers a variety of problems for study and investigation. Mention should be made especially of agricultural societies and fairs, the agricultural press, farmers' organizations, the United States Department of Agriculture, the various State departments of agriculture, and the Agricultural Colleges and experiment stations, including rural extension work, the introduction of agriculture into the high schools, and the recent development of the county agent work. These agencies have all been potent factors in the promotion of scientific knowledge relating to agriculture. They have contributed in no small measure to the rapid transformation of American agriculture from a primitive, pioneer, largely self-sufficing type of agriculture into a modern business organized on a scientific, capitalistic, commercial basis. We are still without a satisfactory treatment of any of these agencies, the importance of which is now coming to be recognized as the nation is entering upon the period of intensive development. These subjects, therefore, await the attention of the historian.

The Biographies of Leading Men Who Have Contributed to the Advancement of Agriculture.—Our agricultural history is not devoid of the personal element. Reference need only be made to George Washington, whose extensive farming interests and activties and numerous writings on the subject of agriculture are sufficient to give him a prominent place in American history as one of the foremost agriculturists of his time. Consider also the place of Eli Whitney and his invention of the cotton gin in the history of the cotton industry and of Cyrus Hall McCormick and his invention of the reaper in the history of the wheat growing industry; of J. B. Turner and Justin S. Morrill in the movement for the establishment of colleges of agriculture and mechanic arts; of Oliver Hudson Kelley in the organization of the Grange; of James B. Weaver in the organization and history of the Greenback and Populist parties; of Seaman Knapp in the popularization of scientific farming in the Southern States; of James Wilson in the extension and development of the activities of the United

States Department of Agriculture; and of "Uncle Henry" Wallace in the promotion of scientific knowledge relating to agriculture. These names suggest at once a host of scientists, inventors, journalists, public men, and practical farmers who have rendered conspicuous service in the advancement of agriculture and who, therefore, deserve as prominent places in American history as our soldiers and our statesmen. The economic history of agriculture is, therefore, rich in the personal element.

The economic history of American agriculture as thus outlined, presents an inviting field for study and investigation. Although historians have not given this phase of our national life the attention and the emphasis which it deserves, it is encouraging to note an awakening interest in this direction. In evidence of this fact mention should first be made of the leading State historical societies of the Mississippi Valley. These societies are doing an important work in the collection and classification of the historical sources, many of which have a direct bearing on agricultural history. Several societies have made provision for researches in this field and a number of papers have been published; while two State agricultural histories are now in course of preparation. The departments of history and economics in some of the colleges and universities of the country have begun to direct graduate students to this field, as shown by the annually published list of masters' and doctors' dissertations; and some good monographs have been published. Some of the departments of history are now offering courses in agricultural history. The Department of Economics and Sociology of the Carnegie Institution at Washington has promised a comprehensive history of American agriculture, which is to be published in the near future.

Mention should also be made of the recently formed Agricultural History Society which has become affiliated with the American Historical Association. This society has become an active agency for the promotion of scientific work in the economic history of agriculture, as shown by the topics listed on the programs of the society and the volume of papers which has just been published by the American Historical Association. Finally, reference should be made to the Mississippi Valley Historical Association, which is an important agency for the encouragement of productive work in agricultural history.

These activities, however, represent only the pioneer undertakings which will need to be supplemented by numerous studies if the economic history of American agriculture is to be properly recorded.

The reasons for giving special attention to this hitherto neglected phase of American history may be briefly stated.

Agriculture as the Leading Occupation.—Viewed in one way, the history of the United States from the beginning has been in very large measure the story of rural communities advancing westward by the conquest of the soil and developing from a state of primitive self-sufficiency into a capitalistic and highly complex agricultural organization. Moreover, the great majority of the American people have always dwelt in rural communities. The United States census of 1910 showed that 54.2 per cent of the entire population was still classed as rural, the term rural population being interpreted to include towns having fewer than 2,500 inhabitants, since such towns are directly dependent on the surrounding farming population. An analysis of the distribution of population over ten years of age and engaged in gainful occupations shows that 33.2 per cent of such persons were engaged in the occupation of agriculture, forestry, and animal husbandry—a larger percentage than was engaged in any other occupation. The United States census of 1920 is the first to show that the greater portion of the population no longer lives in rural communities. According to this report 48.6 per cent of the population is classified as rural. It is also the first census to show that agriculture can no longer lay claim to the largest percentage of persons over ten years of age engaged in gainful occupations. That is to say, while 26.3 per cent of those so employed were engaged in agriculture, forestry, and animal husbandry, 30.8 per cent were engaged in manufacturing and mechanical industries. These facts show that agriculture has until the last few years played a larger part in the life of the American people than any other occupation, industry, or profession, and that this alone is sufficient to give it a place of predominant importance in the study of our national development.

Relation of the Economic History of Agriculture to the Political and Constitutional History of the United States.—National politics and legislation have to a large extent been concerned with the problems that have been evolved by a rapidly expanding agricultural empire. Among these problems may be mentioned territorial acquisitions, Indian wars and treaties, the public lands, internal improvements—roads, canals, and railroads—the extension of cotton and slavery, banking, currency, and foreign affairs. A study of agricultural history shows, for example, that it was the demand of the southwestern farmers for the free and unrestricted use of the Mississippi River as an outlet for the surplus products

and the use of New Orleans as an export trade center that led directly to the acquisition of Louisiana; that it was the interference with our agricultural export trade during the Napoleonic wars that constituted one of the principal causes of the Second War of Independence; that it was the grain and wool producing States, in support of the home market argument, that enabled the protectionist forces under the leadership of Henry Clay to enact the high tariff of 1824; and that it was the contest between two opposing systems of agriculture—the one aristocratic, with large plantations, slave labor, and cotton, the other democratic with small holdings, free labor, and diversified farming—for the control of the West and for supremacy in the national government that dominated national politics and legislation for nearly a generation and finally led to the Civil War. While it is generally conceded that cotton was the economic weapon with which the South hoped to secure British recognition of the Confederacy, it is no less significant that England's imperative need of northern wheat, due to the failure of the home and continental supplies, operated effectively to keep the British government officially neutral during the continuance of the struggle. Nor should we omit reference to the homestead law, enacted in 1862, the law providing for the establishment of colleges of agriculture and mechanic arts, the law creating the United States Department of Agriculture, and the law providing for a huge grant of land to aid in the construction of the Union Pacific Railroad. These laws represented a great triumph of the agricultural West in its demand for those agencies which were designed to promote the interests of the farming class.

The revolution in agriculture during the latter half of the nineteenth century gave rise to many problems which became the subject of national politics and legislation. New parties were formed which gave expression to agrarian demands. The Greenback and Populist parties became the rallying ground for the more discontented and radical farmers, who believed that needed legislation could be secured only by inaugurating a revolt against the major parties and organizing new parties dedicated to the cause of the farmer and the laboring man; while the majority of the farmers believed that their demands could be more effectively presented and secured through the major parties. The latter group, represented in the seventies by the Grangers and in our time by the Non-Partisan League and the American Farm Bureau Federation, remained in the old parties, nominated and elected candidates pledged to secure agrarian reforms, and incorporated their demands

in the major party platforms, with the result that they contributed in no slight degree to the enactment of legislation designed to promote the interests of the farmer. Among these measures may be mentioned the enactment in 1887 of the Hatch Act providing for the establishment of agricultural experiment stations, and in 1888 of the law advancing the United States Department of Agriculture to the rank of a cabinet office; the passage of the Interstate Commerce Act in 1887, the Sherman Anti-Trust Act in 1890, and the Federal Reserve Act in 1913; and the more recent agricultural legislation which has been enacted largely through the influence of the American Farm Bureau Federation, not to mention the formation of the agricultural bloc in Congress and the calling of the agricultural conference in Washington. These illustrations are sufficient to emphasize the fact that a proper interpretation of politics and legislation is dependent in no small measure on the study of agricultural history.

The Economic History of Agriculture as a Necessary Background for the Development of a Sound and Farsighted Rural Economy.—Economic History bears about the same relation to economic science that political history bears to political science. The value of political history to the political scientist is so obvious as to require no defense. History is the school of experience in which political theories are tried out and tested; and so it becomes the first duty of the student of government to inform himself concerning the nature and workings of political experiments in the past in order that he may draw upon these experiments in the formulation of theories, the soundness of which must in turn be tested in the school of experience. "I have but one lamp by which my feet are guided," said Patrick Henry, "and that is the lamp of experience." To which he added: "I know no way of judging the future but by the past." The value of the historical approach to the study of present day problems has recently been further emphasized by James Harvey Robinson thus: "Certain generally accepted historical facts, if permitted to play a constant part in our thought would automatically eliminate a very considerable portion of the gross stupidity and blindness which characterize our present thought and conduct in public affairs and would contribute greatly to the remaking and expansion of the mind."

This argument applies to the economist with quite as much force as it does to the political scientist. That is to say, the economist needs to be familiar with the economic life of man in the past in order to understand and appreciate the organic nature of society. He needs to be historically minded if he would deal efficiently with

the problems of the present. It goes without saying that too many economists are not properly trained in the historical method which constitutes the only safe and sane approach to the solution of present day problems. Too many economists have been content to work in the realm of abstract theories without giving adequate attention to the teachings of history. As a consequence economic theories have been advanced which ignored the lessons of experience; whereas, if these lessons had been understood and appraised at their proper value, proposed plans and theories for the solution of economic and social problems would have been inaugurated along more sane and constructive lines. The study of history is the only route by which this can be accomplished, though it is the sort of preparation which is often sacrificed by students who are interested in the solution of present day problems.

The great problems of rural communities are human rather than merely materialistic. That is to say, they are economic, social, and political, and they cannot be understood without due attention being given to their historical evolution. Questions of land tenure and tenancy, markets—including the complex problems of distribution and exchange—capitalistic agriculture, the rise of land values, rural credits, farmers' organizations with their economic, political, educational, and social functions, the rural school, and good roads are only a few of the vital problems which should be considered from an historical and comparative, as well as from a purely technical, point of view. These problems will henceforth demand a superior type of statesmanship, for we are to-day passing rapidly through a great transition period of our history. We have emerged from the period of colonization, of exploitation, of extensive development; and we have now entered upon a period of intensive development. There is a greater need than ever for calling upon the wisdom and experience of the past in the working out of a sound and farsighted system of rural ecomony. We are in need of a scientific treatment of the economic history of agriculture in this country to help supply this need.

The Economic History of Agriculture as Part of a Well Balanced History of the Nation.—Our history may, for convenience, be studied under the following heads according to phases of social life treated: (a) political, (b) constitutional, (c) military, (d) economic, (e) religious, (f) domestic, (g) history of morals, (h) history of intellectual life, and (i) history of the fine arts. Economic history is further divisible into: (a) the history of population and immigration, (b) the history of agriculture, (c) the history of manufacturing, (d) the history of mining, (e) the history of transportation,

(f) the history of domestic and foreign commerce, (g) the history of money and banking, (h) the history of the labor movement, (i) the history of industrial organizations, (j) the history of social legislation, (k) the history of federal and State finance, and (l) the history of the tariff. We have been supplied with histories galore dealing with the political, constitutional, and military aspects of American development; but we have scarcely as yet begun to make a scientific study of the other phases of our national life which have just been mentioned. While some attention has been given to the study and writing of economic history this phase of our history has been approached more from the industrial and economic point of view; while the agricultural point of view has received hardly any consideration whatever. Moreover, these various divisions of our history are, strictly speaking, not divisions at all, but constituent parts of our nation's history. They are rather phases or points of view in the study of human society; and no phase of the study can be properly understood or interpreted except in its relation to other phases of development. It goes without saying, then, that if we are to have a well-balanced history of the nation, no little attention must be given to the study of our agricultural history as well as to military and political history.

After all is said, however, it must be understood, as has already been shown, that our agricultural history is not to be viewed in the strict or narrow sense, but in the broad sense to include the whole life of the rural population, the conditions which have affected the progress of agriculture in the different periods, and the influence of agriculture on our whole national life—economic, political, constitutional, military, religious, intellectual, moral, and æsthetic. Thus defined the economic history of agriculture is closely related with other phases of our national development. To define it in this way is to direct attention not to a separate or distinct phase of American history, but to a new point of view in the study of our national development. "The marking out of such a field is only a fresh example of the division of scientific labor: it is the provisional isolation, for the better investigation of them, of a particular group of facts and forces," in order that a true history of our national progress and development may finally be written.

CHAPTER II

THE GEOGRAPHICAL BASIS OF AMERICAN AGRICULTURAL DEVELOPMENT [1]

Classification of the Land

The lands of the United States may be classified in various ways; they may be classified as areas of crystalline and sedimentary rocks; they may be classified as plains, plateaus, and mountains; they may be classified in reference to the covering which was originally upon them.

The crystalline areas have a wide variety of rocks, both igneous and metamorphic. For the most part the soils derived from them are relatively unfertile. They are likely to be rough, and are mainly upland, plateau, or mountain. The more common sedimentary rocks are limestones, shales, and sandstones. Where there are limestones, there are likely to be very fertile soils; where there are shales, the soils are reasonably fertile, but are likely to be somewhat heavy; sandstones are likely to give poor soils. The larger areas occupied by the sedimentary rocks are relatively smooth and commonly lowlands, although there are extensive plateaus and mountains composed of such rocks.

The plains comprise relatively smooth areas and are for the most part lowlands below 1000 feet. The plateaus are much rougher than the plains and have an elevation of 1000 feet or more. As indicated by the name, there are considerable areas which are relatively level, but these are likely to be cut by gorges and valleys. The mountains are both elevated and rough.

The lands according to their covering may be classified as forests, prairies, and deserts. The forests comprise those regions in which the precipitation is greater than forty inches per annum, the prairies those in which the precipitation varies from twenty to forty inches, and the deserts those in which the precipitation is less than twenty inches. You will understand that these statements are only broadly true. For instance, whether or not a forest is present in an area which has a precipitation between twenty

[1] Charles Richard Van Hise, *The Conservation of Natural Resources in the United States* (New York: The Macmillan Company, 1912), pp. 266–277. Copyrighted by The Macmillan Company. Reprinted by permission.

and forty inches depends upon whether in the past the fires have been allowed to run. When the Indians occupied the land, the areas having an annual precipitation between twenty and forty inches were very largely prairie; now that the white man has taken possession of the country and the fires are not allowed to run so extensively, even under natural conditions the forests are encroaching upon the prairies; and under settlement by the whites prairie areas have been planted with trees about the homes and along the fences, as have also occasionally fields.

It is by a combination of these factors, character of rock, elevation and covering, that I shall classify the lands of the United States into eight provinces.

The Atlantic and Gulf Plains

The first of the great provinces is the Atlantic and Gulf Plains. This includes the area of land running from Cape Cod along the border of the Atlantic and the Gulf of Mexico. It comprises a small part of Massachusetts, Rhode Island, and Connecticut, and large parts of all the States to the south bordering on the Gulf, and all of Florida. This land is for the most part that which is not more than 100 feet above the sea. It is the land which was easily occupied by the European immigrants, earlier along the Atlantic than along the Gulf, but comparatively early in both regions.

This lowland area is one of sedimentary rocks; it was originally covered by forests; in large part it had a soil rich and deep, and was the prize toward which looked those coming from Europe during the early settlement of this country. In this province is included the enormously rich and immensely deep soil of the Mississippi River delta. The region has extensive tracts of land lying near the level of the sea; it is the tide water country. As a result of this fact there are here included the largest areas of swamp land in the United States,—the Dismal Swamp of North Carolina, the Everglades of Florida, the bayous of Louisiana, Mississippi, and Arkansas, and the coastal swamps of Texas. While these lands are at present little utilized, in the future they will be one of the most valuable assets of the nation. In the Gulf Plains are extensive belts of sandy soil which are relatively poor and barren.

Along the Atlantic the western border of the lowland plain is somewhat sharply separated from the upland by an elevation known as the "fall line." The fall line limits everywhere navigation for ocean-going vessels, and for the great majority of the

streams limits navigation for any class of vessels. Therefore the fall line marks the place where transportation by water changes to transportation by land. This fact made of it a row of villages in the time of the Indians, and makes of it a line of cities in our modern civilization. Upon it are located the cities of New York, Trenton, Philadelphia, Baltimore, Washington, Richmond, Petersburg, Raleigh, Columbia, Augusta, Macon, and Montgomery.

The Eastern Ancient Plateaus

The second of the great provinces is the Eastern Ancient Plateaus. It includes the New England, Piedmont, and Lake plateaus. The larger part of New England, with the exception of southeastern Massachusetts and Connecticut, falls in this region, as does also a great belt between the coastal plains and the Appalachian Mountains, and the northern parts of Michigan, Wisconsin, and Minnesota. This region is mainly one of crystalline rocks; it is more than 100 feet in height and has altitudes varying from this amount to 1000 feet or more; here and there it rises into mountain groups, the more important of which are the White Mountains, the Green Mountains, the Berkshire Hills, and the Adirondacks. For the most part the northern half of the upland area is rather rugged and barren; it is covered by poor soil, strewn with stones and bowlders; it contains numerous lakes, ponds, and swamps. This is the great area of the Northern White Pine. The southern part, comprising the Piedmont Plateau, is south of the ice incursions, and there the uplands have a disintegrated rock soil, better than the upland of New England and the lakes, but still poor. However, in the New England and Piedmont plateaus are many valleys of varying magnitude which have rich and fertile fields. The largest and most important of these is that of the Connecticut River, and this valley has below it later sedimentary rocks.

The Appalachian Ranges, Allegheny Plateaus and Ozarks

The third of the great land provinces of the country is a region of mountains and plateaus. This province has a principal eastern region and a subordinate western one.

The first lies west of the New England and Piedmont plateaus and east of the prairie and gulf plains. Its larger elements are the Appalachian ranges and the Allegheny plateaus. This region is composed in part of sedimentary and in part of crystalline rocks; it was originally covered with forests, and of its higher parts this

is true in large measure to the present time. These uplands have a poor but frequently thick soil which, where denuded of the forests, is rapidly washed away. They should permanently remain as a part of our great forest reserve. The Appalachian ranges and Allegheny plateaus are cut by numerous valleys, of which the Appalachian limestone valley is by far the most important. This had originally high fertility. The Appalachian Valley is especially famous in the history of the country as being the first considerable belt of rich land available to the settlers after they broke across the easternmost ranges. It was, as you know, one of the main highways up and down which the armies of the North and South marched in the great struggle of the Civil War.

The western region of the third province is that of the Ozarks. This area lies in the states of Missouri, Kansas, Indian Territory, and Arkansas. It is an upland area of mountains, plateaus, and valleys, which constitute a relatively unfertile island in the midst of the prairie and Gulf Plains.

The Lake Plains

The fourth of the provinces is that of the lake plains. As indicated by the name, this region is adjacent to the great lakes; it includes western New York, the northern part of Ohio, the major part of Michigan, and a belt in Wisconsin and Minnesota. It is an area of sedimentary rock, much of which is limestone. The entire region was forest covered. The northern part of the lake plains is somewhat inhospitable in climate; the extensive limestone areas have a fertile soil; but the sandstone areas of Michigan and Wisconsin are poor.

Over the region of the lake plains came the latest ice incursion. In consequence of this there are extensive areas of stony moraines; there are innumerable lakes, ponds, swamps, and marshes. While no one area of wet land can compare in extent with the great swamps of the coastal plains, the total acreage is large, making the lake plains the second in the country in its total area of wet lands. As yet these lands are little utilized, but in the future they will constitute a highly productive part of the lake plains.

The Prairie Plains

The fifth province is that of the prairie plains. This comprises a great area south of the province just described, and west of the main area of the third province. It occupies a large portion of the Upper Mississippi Valley and extends to the southwest, west of the

Mississippi to the Rio Grande. It includes considerable parts of Ohio, Wisconsin, Minnesota, the Dakotas, Nebraska, Kansas, Oklahoma, and Texas, and practically all of Indiana, Illinois, and Iowa. The region of the prairie plains is the garden of the United States; it is the very heart of the country. This province is one of sedimentary rocks, largely limestone; it is of moderate altitude, being below 1000 feet in elevation. It is an area of neither too abundant nor too scanty rain; for the most part the annual precipitation being between twenty and forty inches. Originally it was largely covered with grasses, the trees being confined mainly to the borders of the streams. In passing from the center of this area to the provinces to the east and south, the area occupied by trees increases in amount, until adjacent to these provinces it approximates 50 per cent.

The entire province has a soil varying from eight inches to a foot in thickness, and locally the soil runs up to ten, fifteen, twenty feet or more in depth. Probably there is no other equally large area in the world which surpassed it in original fertility; and it is certain that no equally large area can be compared to it in present fertility. The nearest approaches are the densely populated regions of China and the black lands of Russia. Iowa, Illinois, Ohio, and Indiana have by far the largest percentage of improved lands of any states in the Union, varying in Iowa from nearly 90 per cent to more than 75 per cent in Indiana; whereas the next state in order is Delaware, a small state in the tide water country, with 60 per cent.

Many of those who live in the region of the prairie plains think that highly fertile land is the normal thing in the world. I once traveled by chance from this region to central Canada with a young woman who had been born and brought up on the prairie plains. She was greatly surprised at the number of stones that appeared as the prairie plains were left behind. First, a few small bowlders were seen, and then more and ever larger, until bowlders of all sizes, up to eight to ten feet, were abundant. With these, ledges of rock here and there protruded from the soil, until the earth became one dominantly of rock instead of soil. To that time this young woman had supposed that the world was made of soil to its very center, rather than made of rock with a thin and exceptional film of soil. My boyhood days were spent in an area of the prairie plains, in which there were no solid ledges of rock exposed, and I can well remember my surprise and thrill of emotion when I first went through a railway cut showing solid rock.

The strangely favored inhabitants of the prairie plains scarcely

realize that only exceptionally are there large and continuous areas of highly fertile soil. While there are a few such provinces on the globe, there are vastly larger and more numerous areas of thin and sparse soil,—the plateaus, the mountains, and deserts, which are either not productive, or only sparingly so under natural conditions.

The Great Plains

The sixth province is the great plains. They occupy a broad belt between the prairie plains on the east and the Rocky Mountains on the west, and extend from North Dakota and Montana on the north to Mexico on the south. For the most part they have an elevation of more than 1000 feet and less than 6000 feet. The higher elements are to the west and the lower to the east; thus the plains have an eastern slant. Like the prairie plains, this region is one of sedimentary rocks covered in large part with a deep and fertile soil, and if it had sufficient rainfall would be highly productive land; but it is an area in which the rainfall is less than twenty inches. It is therefore one in which a crop cannot be raised each year with certainty without irrigation, although dry farming may be practiced upon it over extensive areas. In early days the great plains were known as the Great American Desert. It is the region which . . . was settled up in a time of excessive rainfall; during the time following, when the rain was below the normal, the region was largely abandoned; and it is now again being settled rapidly on account of the excess of rain which has been falling for the past few years. It is like Palestine and Egypt, and like the Black Lands of Russia, an area in which there will alternate from time to time groups of lean and fat years; the lean years when there is deficient rainfall, the fat years when there is an abundance of rain. So far as the great plains can be irrigated they are highly productive; but for the most part they must remain the region of dry farming and grazing.

The Rocky Mountains and Western Plateaus

The seventh region is that of the Rocky Mountains and Western Plateaus. In this region, which occupies a very extensive part of the United States, from the west side of the great plains to the Cascades and Sierra Nevadas, there are many mountain ranges, there are great and extensive plateaus, there is the Great Basin, there are numerous valleys. The region has large areas of both sedimentary and crystalline rocks. The higher lands are or were

forest covered and should ever remain so. Upon the whole, the region is one of deficient rainfall. It is a great region of irrigation. . . . Already there are in this region some 4,500,000 acres of irrigated land, and this amount will be greatly increased in the future.

The Pacific Region

The eighth and last province of the United States is that of the Pacific region, including on the east the Cascades and the Sierra Nevada, and extending on the west to the Pacific Ocean. The mountains are largely crystalline rocks; the valleys are mainly sedimentary. The mountains in this area were and still are for the most part heavily timbered; the valleys between have comparatively little timber except in the north. Between the Cascades and Sierra Nevada and the coastal ranges are, in Washington and Oregon, the great valley of Puget Sound and the Willamette River; and in California, the great valleys of the Sacramento and San Joaquin rivers. The great northern valley is abundantly watered and has a highly fertile soil; indeed, the fame of the Willamette Valley early became known in the East and it was settled about the same time as the states of the Middle West. The great valley of California has a soil of wonderful thickness and fertility. It is sufficiently watered in the north, in the central part has less water, and in the southern part cannot be used for agricultural purposes without irrigation.

In the coast ranges are numerous intermontane valleys. These are comparable in breadth with the Appalachian Valley of the east. Some of the more famous of these are the Santa Clara and Napa valleys of central California, the Salinas in southern California, and the valleys in which are the cities of Los Angeles, Redlands, San Bernardino, and Riverside,—the orange-grove region of southern California. These valleys have highly fertile soil; in the north, they frequently have sufficient water so that ordinary crops and even fruit may be raised without irrigation; but in the southern parts, where citrous fruits, olives, and nuts are raised, irrigation is almost universal.

It is frequently supposed that southern California is an almost continuous orange, lemon, and grapefruit grove; but as a matter of fact the area set out to fruits does not reach 2 per cent; indeed, the total irrigated land of southern California is not more than 10½ per cent of the total. Why is this the case? Simply because the streams coming from the mountains will not supply a sufficient amount of water to irrigate a greater area.

General Statements

The foregoing paragraphs give a brief and inadequate description of the great land heritage which fell to our people. Considering the lands of the United States as a whole, not one-half of the area is adapted to agriculture under natural conditions; indeed, probably one-third is nearer the truth. We must subtract all the mountainous areas, from the Appalachians to the coast ranges; we must subtract large parts of the great plains and the high plateaus; we must subtract in large measure the rugged upland areas of New England and the Great Lakes; we must subtract the swamp land; thus leaving a mere remnant of the whole originally capable of high productivity. In the future, by reclamation of swamps, by the irrigation of arid lands, by the terracing of the steeper slopes, we shall add a large total acreage to the agricultural lands; but this addition will be but a small fraction as compared with the lands naturally agricultural.

PART I

COLONIAL FOUNDATIONS
1607–1776

EDITORS' INTRODUCTION

Having surveyed the nature, scope, and problems of our agricultural history, and having considered the basic physical factors conditioning its progress, we come to the developments of the formative period. The term, "colonial foundations" emphasizes the two main characteristics of the period: it suggests, first, that these were the years in which the foundations of our national agriculture were being laid; and, second, that these beginnings were made under the impetus and limitations of the "old colonial system."

The colonial period was of necessity a time of experimentation and adaptation. Native plants, soils, and climates must all be given rudimentary tests, with the aid of such knowledge as the native peoples had acquired by long and costly experience; European plants and animals must be acclimated; Old World systems of land tenure and methods of cultivation must be adjusted to the New; an adequate labor supply must be secured; and, when immediate needs were provided for, available markets must be found for the disposal of the surplus. Under the primitive conditions of seventeenth century colonization, geography was bound to be the determining factor in shaping economic systems, and, almost from the start, distinct types of agriculture based upon environmental rather than human differences began to emerge. Striking as were these contrasts in organization and products between the different groups of colonies, there was nevertheless one feature common to all three, the existence of an unsettled "back country"—the beginning of the agricultural frontier in our national development with its peculiar conditions, opportunities, and influences.

Down to the Revolution European agriculture in general continued to be medieval in organization and technique, and American conditions of land abundance and labor shortage inevitably made farming still more crude and inefficient. But, whatever its limitations, agriculture was the predominant colonial interest. Extractive industries were usually supplementary to farming; the bulk of native manufactures came from the farm home; and trade was concerned largely with the marketing of agricultural staples. As Callender points out, natural resources and foreign markets were the essential elements in colonial prosperity.

In the development of agricultural organization and methods colonial boundary dates have little significance; economic technique is never directly responsive to political changes, and in fact, as we shall note, methods of farming remained much the same down to the third decade of the nineteenth century. The distinctive organizing principle of the period is to be found rather in the fact of colonial status. The British colonies, in so far as officially promoted, were a practical application of mercantilism; they were to be "plantations" for the growing or extracting of needed raw materials and for the consuming of finished products from the homeland. British regulation of colonial agriculture was directed to the realization of this imperial aim.

The first matter naturally to be considered in connection with the legal regulation of agriculture is that of land tenure. English land in the seventeenth century was held under a modified feudal tenure, and attempts were made in the proprietary grants to transplant these survivals to the New World. But with the wholly different relations of land and labor feudal incidents, in practice, were not highly developed. In the corporate New England colonies the democratic group settlement system was accompanied by individual holding in fee simple, and in the provinces the quit-rents—the main application of feudal rights—met with constant protest and frequent evasion.

On the side of production, some attempts were made by Parliament, as well as by colonial legislatures to encourage the growing of certain much-desired products—notably silk and indigo—by the grant of bounties. But, as in the case of similar policies by federal and State governments in later years, such projects artificially to direct the course of production were in the end largely futile.

The most direct extension of mercantilist control to colonial agriculture was, of course, in the regulation of trade. The continental colonies met the demands of the British colonial system only in part. All of the colonies, it is true, secured the bulk of their manufactured goods from England, but in exchange they had comparatively few products that were desired by the home country. Tobacco, the great southern staple, was the only important agricultural product included in the "enumerated" list of English trade monopolies. The competing cereals of the "bread colonies" were excluded from home ports and had to find markets in the West Indies, Southern Europe, and, to some extent, in the neighboring groups. The return trade from Europe was subjected to the payment of duties under the Staple Act, and that from the West Indies to the nominal restriction of the Molasses Act. It was obviously in facilitating or obstructing the normal course of surplus disposal that British regulation of colonial agriculture had its chief significance.

In estimating the influence of imperial policies upon the course of colonial agriculture, we must keep constantly in mind the fundamental limitations of the period and not attribute to outside interference shortcomings that were inherent in colonial production and trade. Grain growers of New York and Pennsylvania found natural and highly profit-

able markets in the semi-tropical island colonies and in Europe, and if the importation acts, in so far as enforced, interfered somewhat with the return trade, the restriction was not serious. In the great staple trade Virginia and Maryland planters were placed at a disadvantage in having the carrying service confined to English ships and in the restriction of their product to the English market, but a considerable compensation was afforded by a monopoly of that market as well as by preferential duties at the ports of entry. The system of commodity marketing developed in the sale of tobacco while highly inefficient was continued in essentials in the national period in the export of cotton. With few exceptions it must be concluded that for the time being colonial agricultural production and trade followed, in practice, the natural course of development.

But to self-assertive Englishmen and Scotch-Irishmen established in the new land of opportunity such restrictions as did exist seemed increasingly galling and finally, after the reorganization following the Seven Years' War, intolerable. As always, the center of agricultural discontent was the frontier. The agrarian motive in the West combined with the trade movement in the East in precipitating the war for independence. The Revolution, in its internal aspect, was but the culmination of a long struggle, waged to some extent in all of the colonies, between frontier interests and town or tide-water interests; and more and more in the succeeding years frontier ideas and desires were to prevail.

Political independence, while at first it had its disadvantages in removing the benefits as well as the restraints of the imperial relationship, eventually brought economic independence. Feudal remnants were swept away and mercantilist restrictions on production and trade were ended. The winning of the Northwest and the holding of the Southwest already occupied by the advance guard of pioneer farmers, provided a new and greater frontier and, with no restraining imperial proclamations, the way was open for that great westward movement of our farming population which was chiefly to characterize the second period of our agricultural history.

CHAPTER III

ABORIGINAL AGRICULTURE

1. Products and Methods of the Virginia Indians [1]

The Indians laid off their maizefields and gardens in the vicinity of their wigwams, always selecting the most fertile land for this purpose; in later times, it was everywhere observed that the soil which had been under aboriginal cultivation was as a rule extremely productive. The maizefields spread over an area that ranged from twenty to an hundred acres in extent. There is some doubt as to the character of the tenure; each tribe possessed an absolute title to the division of country in which it was immediately seated, subject only to the general proprietorship of the king, to whom an annual tribute was paid in the form of a certain proportion of maize, beasts, fish, fowl, hides, fur, copper, and beads, but the relation of each family to the different plats of cultivated ground is not so clearly defined. Smith declared that each household knew its own fields and gardens, while Beverley asserted that no special property in land was claimed by individual Indians, but was held in common by the members of a whole tribe. He qualified this remark, however, by saying that the area of uncultivated ground was so extensive, that there was no room for quarrels among them about the appropriation of particular plats. The statement of Smith seems to be confirmed by the relation which the Indian householder bore to other forms of property; thus he could devise his wigwam to his widow, and after her death to his favorite child. Again, a theft of maize was regarded as so heinous an act that it was punished with death, an evidence that separate ownership in this grain was strictly recognized when it had been gathered. Furthermore, there is no record that after the annual harvest the crops were divided among the householders of the town. Being held for all practical purposes in separate tenure, the ground must have been cleared very largely by individual energy without special regard to the common interests, but this follows with certainty

[1] Philip Alexander Bruce, *Economic History of Virginia in the Seventeenth Century* (New York and London: Macmillan and Company, 1895), Vol. I, pp. 149–159, 160–165. Copyrighted by The Macmillan Company. Reprinted by permission of the author and the publishers.

only in those cases in which the open fields were not spacious enough to furnish soil for the young warrior who had just established family relations of his own, or for those members of the tribe whose plats had given indications of exhaustion from prolonged cultivation. As a rule, the land originally selected was so extremely fertile that an increase in population alone led to the extension of a clearing.

The method employed by the Indians for the removal of the forest, in spite of its primitive character, is still followed in many parts of modern Virginia. It consists in running a girdle around the trunks of the largest trees, by cutting away the bark with a rude stone instrument, the object of this being to intercept the flow of the sap; and to make this still more effective, the aborigines were in the habit of kindling fires around the exposed roots, further destroying the vitality of the trees. The trees exposed to this treatment lost all power of putting forth foliage, declined rapidly in vigor and died, leaving the trunk and limbs too bare to shut out the rays of the sun. In a few years they were blown down by the wind, having become too much decayed to remain erect. The smaller trees were either broken down or severed by the blows of a stone hatchet. The preparation of the ground for planting was practically the same whether the soil was that of an old or a new field. Manure was used in neither instance, most probably because it was not required. The instruments employed in cultivation were hoes, consisting of a crooked piece of wood fashioned like a gardener's paring iron, or of a stick to which the horn or shoulder-blade of a deer was attached; these rude instruments were used by the aboriginal laborers in a sitting posture, the tillers merely seeking to loosen the surface of the ground, the only object which they had in view being to dig up the weeds and grass and to remove the maize stalks. After this vegetation had been allowed to dry several days in the sun, it was brought together in small heaps and burnt, but no attempt was made to use the residuum of ashes as a fertilizer. If the ground consisted of virgin soil on which the belted trees were still standing, it was only sought to destroy the superficial network of roots. Beginning in one corner of the field, whether old or new, the Indian husbandman made a series of holes, separated from each other by intervals of four feet, and in each hole four grains of maize and two beans were deposited, each grain or bean being an inch apart from its fellows, special precaution being taken that they should not touch each other. In some instances the beans were sowed in the interval of four feet between the holes in which the maize was placed, and in this in-

terval there were also planted the seeds of peas, pumpkins, gourds, cymlins, and May-apples, doubtless upon some plan of alternation, as the soil would otherwise have been choked with vegetation. These seeds were not put in the ground until the blades of maize had not only risen above the surface, but also attained to a moderate size. The cymlins were planted in May, and the other seeds probably about the same time.

The first plantation of maize began in April and the second in May, and this was continued with interruptions until the middle of June, the object of this deferred planting being to secure until the arrival of frost a constant supply of roasting ears, of which the Indians were inordinately fond. The crop which was put in the ground in April was harvested in August; the May planting was harvested in September, and the June planting in October. As the young maize expanded in size, it was protected from the encroachments of weeds, the interval between the rows being kept as clean and well-ordered as a garden bed, and when the stalks had risen to one-half of their expected height, hillocks of earth were drawn around their roots. The average number of ears found on a plant were, according to Smith, two; three were occasionally observed, but four very rarely. Spelman, however, states that there were commonly four or five attached to a single stalk. There were from two hundred to five hundred grains on each. Four varieties of maize are said to have been cultivated by the Indians, two of which were only distinguishable from each other by the difference in the size of the ear and stalk, the time for the ripening of both being the same. The remaining varieties were unlike only in the size of the grain; both were frequently yellow, red, white, blue, and streaked. The Indians did not place any scarecrows in their fields; near the center of each they raised a scaffold, and upon this they erected a small cabin, in which a young Indian was stationed to protect the crops from every form of damage by birds or animals. Enjoying an extensive view from this elevation, he was able to detect the depredators at once. The beans put in the ground with the maize sprang up and were allowed to attach their vines to the stalks; their pods were smaller than the pods of the English bean, of greater diversity of color, and very different in the shape of the leaf. The peas were not so large as the beans, but were similar in their form. Both were sufficiently developed at the end of ten weeks to be eaten, and were therefore gathered before the last of the grain was harvested. The maracocks matured in July, and remained on their vines until September, while the pumpkins required a heavy frost to ripen them.

Many maracocks or squashes were in a ripe condition in September, and this vegetable continued to mature in turn until the end of October.

A field of maize on the Powhatan, long before the vessels of the first English explorers appeared upon its waters, was almost the exact counterpart of the same field, planted with the same grain, three hundred years afterwards by the modern Virginian farmer. There would be some difference in the height of many of the stalks on account of the rule which the Indians followed of planting their maize in relays, with a view of obtaining a continuous supply of roasting ears during the summer and early autumn, but in other particulars the aspect of the field, under the Indian and Virginian ownership respectively, would be substantially the same. There would be the same number of stalks to the hill, with the vines of beans clambering up the stalks, peas running over the ground between the rows, and pumpkins, bulky and yellow, peeping through the mass of green leaves. The May-apple alone would be absent. John Taylor, of Caroline, in his treatise on Virginian Agriculture, takes occasion to indulge his sarcastic humor at the expense of the farmers of his day, by declaring that as late as the nineteenth century the cultivation of maize in his native State remained as it was borrowed from the aboriginal planters of America, except "that if product was the test of science, the latter must be allowed to have been more accomplished husbandmen than their imitators." An accurate conception of the productiveness of an acre under Indian tillage is to be obtained from the statement of Hariot, that the average yield was, by London measure, two hundred bushels of maize, peas, beans, and pumpkins.

In the late autumn, when the grain was ripe enough to be gathered, the women and children entered the fields with hand-baskets manufactured from hemp, the bark of trees, or the blades of the maize stalk; the ears as they were pulled were cast into these receptacles, whose contents were afterwards poured into still larger baskets, which in turn were emptied on mats that had been placed in the sun, the maize being left there to dry thoroughly. At night it was collected into large piles, over which the mats were drawn to protect the grain from dew. When the maize had seasoned, the shucks were stripped from the ears, the grain rubbed from the husks, and subsequently deposited in long baskets in houses built especially for the purpose. In some instances, in its final state, it was concealed by the heads of families, the women and children being kept ignorant of the locality in the forest in which it was

buried, but the inconvenience of such an arrangement would appear sufficient to have made it exceptional.

If the Indians had been scattered over the face of the country, their fields of maize would hardly have been noticeable, but as these fields were concentrated for the most part on navigable streams, the English were led rather to exaggerate than to underrate the area of land under cultivation. Dale, writing to Salisbury only four years after the foundation of the Colony, mentions incidentally, that in the stretch of country lying between Point Comfort and the Falls there was a spacious and fruitful soil, and that at all points, both upon the one and the other shore, grain grew in abundance. The Indians of Kecoughtan, who were pronounced by Strachey to be admirable husbandmen, had, when they were first visited, as many as three thousand acres of cleared land, a large part of which was planted in maize. In the excursion which the voyagers made, a few days after their arrival in the Chesapeake, to Rappahannock, situated not far from Kecoughtan, they had to pass through a series of the most luxuriant maizefields before they could reach the village. Captain Smith, in his expedition up the Chickahominy River, discovered the greatest area of cultivated ground that he had seen in Virginia, on a peninsula to which the Indians had given the name of Moysonicke. Very extensive fields of maize were also found by him on the Nansemond. In the first voyage to the Falls of the Powhatan, special note was made of the plain stretching from the palace of the werowance to the banks of the river, and planted for the greater part in maize. The queen of Appomattox, who resided near the stream of that name, also had many fields in the same grain, one of these fields, in which vegetables and tobacco were also planted, spreading over an area of one hundred acres, and a field covering an equal area was also observed at Opechancanough's residence on the Powhatan. The most striking evidence, however, as to the extent of surface that the Indians had under cultivation at the time of the first discovery appears from the fact that after the massacre of 1622, the survivors consoled themselves for that sanguinary event with the reflection, that thereafter the settlers would be relieved of the exacting task of removing the forest, because they could now take possession of the open ground of the Indians, which constituted the most pleasant and fertile places in the country. Williams also described the Indian fields as being so numerous, that they would furnish ample cleared soil for the English colonists until they had increased to a large population.

At the time of the first colonization, before there had arisen

any foreign drain upon their stores, the different tribes possessed a great abundance of garnered maize, although, with the exception of the Accomac Indians, who were remarkable for their prudence and foresight, it was the custom of the Virginian aborigines only to produce as much as the needs of twelve months required. The English in the malarious confines of Jamestown were on several occasions saved from starvation by the generous supplies, principally in the form of this grain, received from the natives. In the records of the earliest excursions up the rivers and bays of Virginia there are many references to the large quantities of maize in all of the towns. When, in 1609, Captain Martin attempted to take possession of the country near the forks of the Nansemond, the Indians, who had fled on the first attack, returned, killed several of his men, rescued their king, and carried off one thousand baskets of grain which were stored in the houses. In the attack on Kecoughtan, whither Captain Smith and a small party of soldiers had gone in search of food for the colonists not long after the foundation of Jamestown, great baskets of maize were discovered, upon which they seized with eagerness. In a subsequent voyage to Moysonicke on the Chickahominy, a hundred savages came down to the banks carrying baskets of maize in expectation of the arrival of the English, and at Mamanahunt, another village on the Chickahominy, the Indians assembled with three or four hundred baskets of the same grain. So anxious for trade were these latter, that they followed Smith in their canoes, and were ready to dispose of their corn for the smallest trifle in return. From this voyage he returned to Jamestown with seven hogsheads of maize, and could easily have obtained a shipload if he had possessed the means of transporting it. In a number of instances we are incidentally informed that three or four hundred bushels were purchased from the Indians at a time, as on the occasion of the visit of Newport and Smith to Powhatan at Werowocomoco. In the expedition to the Nansemond, Smith forced the tribes in suing for peace to consent to deliver in the following year four hundred bushels of maize. Captain Argoll returned from the Potomac after a short voyage with his ship loaded down with over one thousand bushels of the same grain. At certain seasons of the year the tribes were compelled to rely to a large extent on their stored maize for subsistence, and any cause, however remote, which might lead to its destruction or removal, they regarded with natural objection. We have few more pathetic scenes in the early history of Virginia than that of the lamentation raised by the women and children, when the Eng-

lish in 1609 seized upon all the grain remaining in the villages of Mattapony and Youghtanund; even the hearts of the ruthless and famished colonists were moved by the outcries of the helpless savages.

* * * * * * * * * * *

The gardens of the Indians were situated in the immediate neighborhood of the wigwams, and, in general, each extended over an area from one hundred to two hundred feet square. In these plats were found the plants and vegetables not cultivated in the maize fields, such as muskmelons, gourds, and tobacco. Jefferson has called attention to the fact, that the first colonists failed to record whether tobacco was of spontaneous growth in Virginia, or whether tillage was always necessary to its production; he ventured the surmise that it was of tropical origin, and had been gradually transmitted from tribe to tribe until it reached this quarter of America. Whether indigenous or not, tobacco was held in the highest esteem by the Indians, and was considered to be a special gift from the Great Spirit; this seems to be all the more remarkable when it is recalled that the plant could be produced by the proper expenditure of labor in unlimited quantities, differing in this respect from copper, pearl, and puccoon, by which the aborigines set the same extravagant store. It was looked upon as possessing mysterious virtues, which led to its being cast by priests on sacrificial fires in the form of dust, or it was arranged in a circle of leaves, from the center of which adoration was offered up to the sun. These acts were accompanied by eccentric gestures and distortions of the body, by dances, stampings, and mutterings, and by an uplifting of the hands, and by fixed starings towards the sky. The object of this use of tobacco was to propitiate an evil intelligence, for the same tribute was paid to guns and swords. Crushed into a powder, it was sowed to the wind when a drought prevailed, or when a tempest was brewing on the water; or it was sprinkled over the weirs when the fish began their annual migration from the sea. Air, water, fire, the sun,—these were the terrible natural elements, the presiding genius of which demanded the most precious gifts as the condition of his favor.

* * * * * * * * * * *

Tobacco as cultivated by the tribes of Virginia was inferior in size and flavor to the same plant in the West Indies. In Virginia it rarely exceeded a yard in height. It bore a small yellow flower resembling that of henbane, and had short, thick leaves, which were discovered, when tasted, to be weak in flavor, but at the same

time very biting to the tongue. The plant of the West Indies, on the other hand, sprang up to the heights of nine or twelve feet, with very expansive leaves, and with a flower as large as the bell flower of England. The difference in size and flavor was probably attributable to the difference in climate rather than to any difference in methods of cultivation.

The authors of the first Virginian narratives have left a detailed account of the manner in which the Indian land was prepared for maize, and the system pursued in planting and cultivating it, but they failed to give a full description of the aboriginal methods respecting the corresponding processes for tobacco. Hariot informs us that the natives in the region of Roanoke, a division of country in which the same original customs prevailed as in Virginia proper, sowed their tobacco apart, but he did not intend by this to convey the notion that the seeds were scattered broadcast. There is no reason to doubt that the first settlers of Jamestown, who very soon began the production of tobacco for sale in England, adopted their general manner of planting from the Indians, which consisted of inserting the seed in the pulverized soil of their garden plats at regular intervals, as was done in the instance of maize. The plan of sowing broadcast in a separate bed and then transplanting, the plan which has come down to the present day, was suggested to the colonists by the rule followed in the case of so many vegetables in England. Forty years after the foundation of Jamestown, there was no information extant as to the aboriginal method of cultivating tobacco when it had attained a considerable size, beyond the fact that there was a tradition that the Indians permitted each stalk to run to seed, and that they removed the suckers in order to give it a somewhat greater bulk. When the plant began to show signs of ripeness, the leaves were pulled from the stalk and dried by the heat of the fire or the sun. In the use of fire, they set an example which the English colonists for a hundred and fifty years failed in the manipulation of their annual crop to follow, being content simply to hang it up in barns, where it was exposed to a free circulation of air. When the tobacco was thoroughly cured, stalk and leaf were crumbled together. It was turned to account in various ways. Among the Indians, however, enjoyment of it as a stimulant seems to have been confined to smoking. Their pipes were constructed either of clay or wampum peak, a species of shell, and differed in size and in length of stem among the several tribes. During the visit of Smith to the country of the gigantic Susquehannocks, he observed in their possession pipes with stems nearly a yard from end to end, upon which figures of birds and animals

had been carved with great dexterity. So large and heavy were these stems that a well-directed blow with them was sufficient to brain the strongest man. Among the most valuable treasures of each town was the peace-pipe, which, upon the arrival of a stranger, was filled in his presence with tobacco, and the tobacco ignited; first the chief drew several whiffs, and then offered it to the visitor, who, if his intentions were peaceful, accepted it, and after drawing several whiffs in turn passed the pipe to the second most important person of the village. When the adventurers reached Appomattox in the course of their first voyage up the Powhatan, they were confronted on the shore by a werowance, who stood with his bow and arrow in one hand, and a pipe full of tobacco in the other, intending thus to announce that the choice of war or peace was left to the English. During the visit of Smith to the Rappahannock in 1608, four kings on one occasion came to meet him, bearing only pipes and tobacco, and bows and arrows, signifying that the same alternatives were presented for his decision. The tobacco pouch was tied to the belt, but was easily detached. One of the most conspicuous portions of the dress of the conjurer was a bag of the same kind, in which, however, other articles of equal value in his estimation were doubtless carried.

There are many evidences that the aboriginal inhabitants of Virginia were in the full enjoyment of tobacco when the first adventurers arrived in the country. In the course of the earliest interviews of the English with them, after the hunger of both parties had been satisfied, this article was proffered the strangers, the Indians themselves smoking it in large clay pipes, with bowls held firmly together by pieces of fine copper. In the subsequent visit to the town of the Rappahannocks, situated on the southern banks of the Powhatan, the werowance began the audience by gravely seating himself on a mat and lighting his pipe. In the excursion to an Indian village, which a number of the colonists participated in soon after the landing at Jamestown, leaves were gathered by the natives from the tobacco stalks growing in the Indian gardens, and distributed among the members of the party, probably to gratify their curiosity rather than for use, as it was in May, when the plant had only reached a moderate size. In the different voyages of exploration, tobacco was always added to the generous presents of food which the Indians were constantly making, being coupled with gifts of nuts, mulberries, strawberries, and raspberries, as if it were regarded as a relish. The aborigines, in the valleys of the Powhatan and Pamunkey, continued to produce their usual amount of maize long after it had become possible to

purchase their annual supplies from the English colonists, who were gradually taking possession of so much of the country. They ceased, however, to plant tobacco as soon as their white neighbors began to cultivate it on an extensive scale, contenting themselves with obtaining as much by exchange as they wanted; they were probably, in a measure, led to adopt this course by the superior quality of the leaf which the colonists grew.

2. Some Permanent Influences of Aboriginal Cultivation [1]

In maize culture as practiced by American farmers we have a fine example of a borrowed culture trait. It should be especially interesting to anthropologists and historians since it is one of the few cases of culture transmission from a lower to a higher form of civilization concerning which we have much in the way of historical data. As every one knows, maize was found in cultivation among the Indian tribes of our Atlantic seaboard and the Gulf coast, and was carried to the Old World by the very first explorers, where its use developed and spread with great rapidity. Familiarity with the cultures of these Indian tribes reveals a large culture-complex based upon the production of this highly original New World food.

To set the case before the reader a brief enumeration of the elements making up this complex may be necessary. Naturally, the fundamental concept is the propagation of maize which embraces the related processes of preparing the soil, planting the grain, protecting the crop, gathering the ears, and preserving the seed. Each of these is a fixed procedure and must be followed in a definite order. While this is in itself a respectable complex, it is but the nucleus. The food production processes are numerous: maize was eaten green, hulled, and ground, with various forms for each. Mixed dishes of maize with beans, squash, or meat were prepared according to definite recipes. Looking in another direction, we find numerous religious ceremonies and social observances definitely associated with maize. Perhaps we have gone far enough to reveal the general characteristics of the maize-complex in the cultures of our North American Indian tribes, but, if not, the reader is referred to the literature of the subject, especially A. C. Parker's book on the *Iroquois Uses of Maize and Other Food Plants* (Albany, 1910).

[1] Clark Wissler, "Aboriginal Maize Culture As a Typical Culture-Complex," *The American Journal of Sociology*, Vol. XXI, No. 5, March, 1916, pp. 656–660. Reprinted by permission of the author and the publishers.

One striking characteristic of the Indian maize-complex is its similarity throughout. It should be noted that our Indians were composed of many small groups independent politically and in many cases distinct as to language and most traits of culture as well. If we pass in review the successive tribal cultures from the Gulf to the St. Lawrence we shall encounter considerable diversity of traits, but throughout we shall find the maize-complex almost entire, particularly in all but its ceremonial elements. So far as our data go, the same varieties of corn, the same methods of planting, fertilizing, and cooking prevailed everywhere in the Mississippi Valley and eastward. It is difficult to account for this uniformity in one culture trait unless we assume that it was distributed from one place in its complete form. In that case each tribe would be relieved of the necessity for devising ways and means of utilizing maize and so make no important original contributions.

After having made an inventory of Indian maize culture it may be interesting to examine our own maize culture to see how completely our ancestors took over this aboriginal complex and to what extent it still survives. Our farmers formerly planted, and often yet plant, maize in hills; this was the universal Indian mode, four or five grains being dropped at one place at regular intervals of about three feet, quite like a cornfield of to-day. In cultivation, the Indian hoed the earth up around the growing stalk, which is still the principle of the mechanical cultivator. For husking, our farmers use a husking pin, which, while now of iron, was not so very long ago of bone and wood, precisely like those still in use among our surviving eastern Indians. Ears of corn to be dried or preserved for seed often have their pendant husks braided together; this is typically Indian. The corn crib was used by the Indians and elevated on posts to keep the contents dry and to protect it from rodents. The type of crib which is larger at the top than at the bottom was also in use by the southern Indians.

The Indian planted beans and squashes among the corn. This has always been a favorite custom of our farmers. He also understood the art of testing his seed and of preparatory germination in warm water. Where fish were available they were used for fertilization, the rule being one fish to a hill.

The methods of cooking corn are, not only still about the same among us, but we also retain many of the Indian names for such dishes, as hominy and succotash. The famous roasting-ear in all its forms was known to the Indian. Then we must not forget the favorite mush, which is stirred with a wooden ladle strikingly like

those of the Algonkin tribes. Some years ago our country people still made "lye hominy" with wood ashes, just as described by some early observers of the Indian.

Corn-husk mats may still be seen in some country homes. As I recall a few specimens examined, the technique was the same as the Iroquoian examples to be seen in our museums.

The one important innovation of the white man was the substitution of the mill for the mortar. Later, of course, came various kinds of machinery for the cultivation and gathering of corn, but all such machines are but mechanical appliances to perform more expeditiously the same old processes. It is clear that in Pioneer days the white farmer took over the whole maize culture-complex entire, except its ceremonial and social elements. Even here we find some curious similarities. The husking-bee, which was one of the great social events of our fathers' times, is strikingly paralleled by an old Indian custom. No doubt if we knew more of the homely history of our forefathers we should find some surprising intrusions of ceremonial and superstitious practices to propitiate the growth of their crop.

If we reduce these data to a generalization, it appears that the white colonist took over the entire material complex of maize culture. He did not simply borrow the maize seed and then in conformity with his already established agricultural methods, or on original lines, develop a maize culture of his own. In fact, he has no basis for any claims to originality except in the development of mechanical appliances and the somewhat recent rationalization of agriculture by scientific investigation.

In this connection the maize culture of the Old World is particularly suggestive. At the discovery of America, samples of maize were carried home, seed was planted, and in a suprisingly short time its cultivation spread even so far as China; but the maize-complex of the Old World has scarcely anything in common with that of the Indian and the American farmer. The reason is plain—it was the isolated plant that came into European culture, necessitating original experimentations with the new seed, or, at least, the adaptation of its culture to the methods or "patterns" for the raising of other plants. The first American farmers, on the other hand, found themselves projected into the midst of a new culture, where it was much easier to adapt trait-complexes than to invent them. It is more than likely that we are here illustrating two characteristic modes of culture diffusion: in one case a new object or an isolated idea is carried far afield and dropped into the midst of a strange culture group, and in the other the

group itself is dropped into the midst of a strange culture, or merely brought into contact with it. In the latter, whole complexes will be taken bodily; in the former, a new trait will be originally developed or simply adapted to some already existing pattern.

The taking over of the maize-complex by the whites has its parallels. One striking example is the tobacco-complex, where again the colonists took over all the essential parts of the trait-complex. The manufacture of maple sugar is another. On the part of the Indians we have the taking over of the horse-complex of the Great Plains before the general assimilation of white culture began. Also, in the wide distribution of aboriginal traits we have presumptive evidence of intertribal borrowing, and the fact that distinct complexes like pottery making, coil basketry, acorn meal, soft buckskin tan, etc., are often found among many adjacent tribes without essential variations, indicates that one tribe after another took over these complexes entire in just the same way as our typical example of maize culture was taken over by the American colonists.

Returning to our discussion of maize culture, another suggestive fact is that the distribution of the American type of maize culture is the same now as in prehistoric times. In like manner, certain phases of Indian horse culture, which were derived from Spanish colonists and were somewhat different from those of the English colonists, still persist among the settlers of our Western States in contrast to those of the East. In general, students of the world's culture history have from time to time noted the tendency of specific culture traits to persist in one geographical locality regardless of racial and even linguistical change in the population. The preceding data suggest that the underlying condition of this is the observed tendency to take over entire culture-complexes instead of developing them from a single element. In other words, when a culture-complex once develops as an adjustment to a locality and works fairly well, it tends to persist in that locality and may prevail over complete changes in blood and language. It need not be the best adjustment of its kind, but it offers the practical advantage of immediate and certain return and, once adopted, inhibits other adjustments, however superior they may be.

CHAPTER IV

COLONIAL LAND SYSTEMS AND TENURES

1. New England and Southern Settlement Systems [1]

Two very definite land systems had developed during the colonial period—the New England and the Southern. "Township planting" was the basis of the New England system and this was perfected in the 18th century. The laying out of townships by the colony preceded private ownership, and there could be no title to land outside a township. Within the township the land was divided into tracts by the colony, the town, or the proprietors, these tracts were definite in amount, carefully laid out, plats were prepared and bounds were recorded. And the surveys almost always preceded settlement. The towns were responsible for the accuracy of the surveys and town-officers, fence viewers, took care that the bounds were accurately determined. In the Eighteenth Century groups of townships were frequently laid out, sometimes in tiers, and a favorite area was a tract of six miles square. The custom of selling these townships at auction also appeared. The success of the New England system of township planting so impressed the home government that the instructions of Robert Johnson, Governor of South Carolina, of June 10, 1730, contained directions to mark out eleven townships within sixty miles of Charleston, in square plats of 20,000 acres each. Ten townships were thus laid out. Others proposed to extend the system over larger areas. Kennedy's plan of 1752 would have used the township system in his western colony. Hazard's scheme of 1755 promised that the settlement would be laid out into townships and the tracts divided by lot. Connecticut men carried this township system into the Wyoming country, and also into West Florida in their Natchez Colony, and Connecticut, in 1780, tried to bind the nation to establish the system in the tract which she offered to cede. New England was strongly attached to this system. Grants of land for education and for religious purposes formed part of the

[1] Payson Jackson Treat, *The National Land System 1785–1820* (New York: E. B. Treat & Company, 1910), pp. 23–26. Reprinted by permission of the author and the publishers.

New England system and conditions for the improvement of the lands were frequently inserted in the grants.

In the South the land was taken up by the location of warrants on any part of the unappropriated area. The surveys were supposed to be made by public surveyors but as most of them were made by deputies of little experience the possibility of error was always present. The Virginia system of 1779 called for warrants, certificates, caveats, and grants—a clumsy system compared with the simple deed in New England—and the records were poorly kept. North Carolina had a similar system, and it was being extended over the present states of Kentucky and Tennessee.

So far as the acquirement of land was concerned the main difference between the two systems lay in the fact that in the South individual initiative played a larger part. A person could select a desirable tract of unappropriated land and he could have it laid off for him by a county surveyor under his direction. He did not need to consider the relation of other pieces of property to his own. This was properly called "indiscriminate location." But in New England the waste land in the township was laid off by colonial or local committees who fixed the bounds of the various tracts with reference to the neighboring allotments. These divisions were at once recorded so that the possibility of overlapping claims was very slight. An individual could not engross the best land for himself—the proprietors or the townspeople shared in each division of the unappropriated land. If the Southern system encouraged initiative and resourcefulness the New England system afforded a security of title which facilitated an orderly settlement of new lands.

The relative value of these systems is evident. The one provided a sure protection against overlapping surveys and title disputes, and it placed the town or colony as guaranty for the accuracy of the survey and the title which passed thereby. Also, as the settlement was made by townships it tended toward compactness over against the system of indiscriminate location in the South. The lack of proper surveys, the careless manner of recording titles, the use of natural bounds, caused constant confusion and endless litigation. Both systems were the embodiment of colonial experience. That of New England was adapted to a free population, loving community life and forced to it, as well, for protection against the savages and mutual help during the severe winters. The other was the development of a society where large plantations and slave labor, less hostile Indians and a favoring climate permitted the extension and scattering of settlement over the coast

lands, while in the back country the system enabled the pioneers to locate the good lands along the streams.

2. Colonial Tenures [1]

One of the most distinctive features of English land-tenure in the sixteenth and seventeenth centuries was the quit-rent. This customary charge upon the soil was naturally included in a colonial land system that was modeled after English precedents. But in establishing the quit-rent in the New World important problems were presented. In England it was the result of a gradual evolution; in the American colonies it was imposed as an initial charge upon a new soil. From this inherent difference arose many problems of effective collection and enforcement. The comparative isolation of the colonies from the mother-country, and the independent tendencies of the inhabitants, expressed through their representative assemblies, increased these difficulties. Inevitably the quit-rent system became involved in the numerous economic and political problems of the colonial era.

The quit-rent was a survival of feudalism. During the Middle Ages the villeins of England gradually commuted their food and labor dues to an annual money payment which came to be known as a quit-rent, because by it the land was freed from all feudal dues except fealty. This quit-rent became an annual fixed and heritable charge upon the land, and created a socage tenure. The statute *Quia Emptores*, the scarcity of labor resulting from the Black Death, and the fall in the value of land due to the rise of trade and industry, accelerated the process of converting the varied feudal dues into fixed quit-rents, and by the beginning of the sixteenth century money rents had become general.

The imposition of the quit-rents in the American colonies emphasized their relation to the mother-country as fiefs of the crown. The feudal notion of land-tenure, that the soil belonged to the crown, who either collected the feudal dues, chiefly in the form of quit-rents, or else transferred this right to the proprietors, was carried to the New World. This feudal notion may be traced in all the early charters. At first the right to reserve a quit-rent was not emphasized. The patents to Sir Humphrey Gilbert, Sir Walter Raleigh, Sir Robert Heath, and the Council of New England merely granted the land, to be disposed of as the patentees pleased.

[1] Beverley W. Bond, Jr., "The Quit-Rent System in the American Colonies," *The American Historical Review*, Vol. XVII, No. 3, April, 1912, pp. 496–516. Copyrighted by The Macmillan Company. Reprinted by permission of the author and the publishers.

This general provision was construed as conferring the right to reserve quit-rents by both Sir Humphrey Gilbert and the Council of New England. The charter of Virginia, which gave all landholders direct tenure under the crown, made a quit-rent possible when the land was finally distributed. With the gradual tightening of imperial control the feudal relation of the colonies to the crown, as indicated by the quit-rents, was made more definite. Beginning with the grant of Maryland in 1632, and including those of Maine, the Carolinas, and Pennsylvania, the proprietary charters expressly transferred the right of the crown to reserve a rent. Also, by waiving the statute *Quia Emptores*, they permitted subinfeudation. Quit-rents were mentioned in the grants to the Duke of York, and still later, in the charter of Georgia, by the reservation of a rent of 4 shillings per 100 acres.

The theory that the crown held a feudal ownership in the soil of new possessions was not confined to the thirteen American colonies. In the grant of Newfoundland in 1637 to the Marquis of Hamilton and his associates a proprietary control, involving a quit-rent, was created. A further extension of the feudal theory of land-tenure was made when the proclamation of 1763, which framed the governments of Quebec, East and West Florida, and Grenada, provided for a quit-rent system as a sign of the royal supremacy. A similar policy was observed in the British West Indies, where the land was granted to proprietors who collected quit-rents, or else bore a quit-rent charge payable directly to the crown. In fact, the quit-rent was a part of the general colonial policy of the British crown, and was not a charge imposed upon the colonies along the Atlantic seaboard only. As a means of emphasizing imperial control its success became of the utmost importance.

I

The first breakdown of the quit-rent system occurred in New England. The Council of New England reserved a quit-rent in all of their earlier grants, including the first patent to Plymouth. But by transferring all their rights in the soil of Massachusetts Bay and Plymouth colonies to the respective corporations in 1629, the Council wrote the doom of the quit-rent system in their remaining possessions. Though the associates of Plymouth and Massachusetts Bay might have established quit-rents, no definite steps to carry out such a plan were taken. Apparently there were no permanent quit-rents in the Plymouth colony, and few, if any, in Massachusetts Bay. In both colonies public opinion opposed

a quit-rent, and in 1650 the Body of Liberties, by forbidding all feudal incidents, effectually barred the quit-rent system from Massachusetts soil.

The establishment of free tenure of land in Massachusetts must be held to have been largely responsible for the failure of the quit-rent system in other parts of New England. This influence was a noteworthy factor in thwarting the elaborate scheme of Gorges to found a feudal state in Maine. When his government failed, his quit-rent system also collapsed. In 1664 his grandson attempted to collect rents in Maine, but with little success. Finally, the purchase of all rights in the soil by Massachusetts secured free tenure of land in Maine. The influence of the free land-tenure of Massachusetts was felt in New Hampshire also. Though John Mason apparently made no efforts to collect rents from his colony, his heir attempted to enforce his rights in 1661. Such bitter opposition arose that little was accomplished. A more determined effort was made in 1680, and Governor Cutt was instructed to bring about an agreement between Robert Mason and his tenants. Mason, himself, came as secretary of the province. His agents caused general uneasiness, threatening to sell the lands of all persons who did not comply with his demands, and the Council finally appealed to the king. The agitation was revived in 1683 when the governor issued a notice that, unless new grants which included a quit-rent were sued out within one month, all further right of appeal to the king would be forfeited. A number of suits were brought to oust landholders who refused to pay rents but no definite results were secured. Mason sold his claims to Samuel Allen, and they were finally dropped.

The fatal mistake, if a system of quit-rents was to be established in New England, had been made in the terms of the land patents of Massachusetts Bay and Plymouth colonies. Once the people of any one colony were allowed to institute a free tenure of land, the quit-rent in adjacent territories was doomed. Wherever the Massachusetts colonists went, they carried with them a spirit of opposition to any perpetual charge upon the land. This opposition spread to the Connecticut valley. When George Fenwick considered the imposition of a small rent charge upon lands at Saybrook, he found that the colonists would not permit it. With deep irony, he revealed the New England spirit of independence: "We must all here be independent and supreme lords of our own land." Reflecting this temper, the freemen of Connecticut and Rhode Island secured charters with provisions guarding against any future imposition of quit-rents.

Despite the former failure, the British government included quit-rents in the scheme for bringing New England under more stringent imperial control. Accordingly, the instructions to Andros required the reservation of a quit-rent in all future patents in New England. Maintaining that the annulment of the charter invalidated all titles to land in Massachusetts, Andros required a quit-rent as a condition of all renewals. Immediately there arose an indignant protest against this attempt to establish a general system of rents. A number of writs of intrusion were issued and many persons, frightened by these proceedings, sued out new patents which included a quit-rent. But popular indignation refused to tolerate such proceedings. This attempt to impose quit-rents upon estates which had for so many years paid no such charge, was cited by the men of Boston as one of the grievances justifying the revolution against Andros.

The failure of the quit-rent system in the New England colonies was a potent factor in stirring up opposition in New York, and also in East Jersey where there was a large Puritan population. The very attempt of the crown to re-establish quit-rents in New England was probably in part a recognition of this influence. Perhaps this same influence even spread to Pennsylvania, though here local conditions, also, militated against the effectiveness of the quit-rents. In Maryland, however, and the Southern colonies, the quit-rent system became firmly rooted during the colonial period. Doubtless a most potent factor in securing this result was the closer reproduction of English local institutions in these colonies than in those farther north. With the county and the parish, the quit-rent was accepted as the customary form of land-tenure.

Even in the colonies where the quit-rent system became established many influences were at work to prevent its complete success. The amount of the rent could be only nominal for, if the burden became too heavy, settlement would be retarded. Then the constant interference of the landholders, through their representative assemblies, with the quit-rent caused frequent clashes between two opposing points of view. The proprietor wished to obtain the greatest actual returns from the rents; the tenants were determined to reduce the burden or even to evade it. On the whole, these difficulties were more apparent in the colonies in which the rents were paid to the crown—New York, Virginia, the Carolinas after 1729, and Georgia—than in those in which the rents were paid to proprietors—the Jerseys, Pennsylvania, and Maryland. Yet in all the colonies important problems were

necessarily involved in working out a quit-rent system on a new soil and at a great distance from the overlord.

II

The difficulty of establishing a quit-rent system largely determined the amount of the annual rate. The rents varied in the different colonies, usually between 2 shillings and 4 shillings per 100 acres with a tendency to reach, but rarely to overstep, the latter rate. Where a uniform rate was established in the early days of settlement, and where few changes were made in the rate, the system was most successful. This was true especially of Maryland and Virginia. In Maryland a quit-rent of 2 shillings per 100 acres, which was reserved in practically all the early patents, was increased in 1671 to 4 shillings per 100 acres for all subsequent patents. In Virginia a rent of 1 shilling per 50 acres, reserved in 1618, continued throughout the colonial era.

On the other hand, the effect of varying rates with frequent changes was seen in Pennsylvania. Before 1713 the usual rent was 1 shilling per 100 acres, but on lands patented after 1719 the rent was increased to 2 shillings per 100 acres. In 1732 the rent to be reserved in new patents was fixed at one halfpenny per acre, and in 1768 at one penny per acre. In addition many special rates were made for various purposes. The rents varied from such mere tokens as a red rose, an Indian arrow, or a bushel of wheat, to several shillings per 100 acres. This confused policy was largely responsible for the unsatisfactory collections in Pennsylvania. Conditions were even worse in New York. The few rents under the Dutch were merely nominal, and the early British governors made little effort to found a uniform rent system. Frequently only mere signs of feudal tenure were reserved, such as one beaver skin annually for the great Mohawk grant. After 1710 a rent of 2 shillings 6 pence was reserved in all new patents, but the large holdings at nominal rentals greatly impeded collections.

An intercolonial influence, which kept the rents in all the colonies near a general level, was especially noticeable in North Carolina. In 1669 the original rent for the Carolinas, one halfpenny per acre, was increased to one penny per acre. Already Sir William Berkeley had signed a number of grants on the northern borders with a rent of 2 shillings per 100 acres, the usual rate in Virginia. Though these patents were confirmed, the proprietors of the Carolinas ordered that all future grants must pay the customary rate in the Carolinas. The people of North Carolina refused, and rather than lose intending settlers, the proprietors assented to the lower rate.

After the purchase of the proprietary rights by the crown in 1729 a rent of 4 shillings per 100 acres was reserved in both the Carolinas. This rate was eventually extended to Georgia. At first the trustees of Georgia had attempted to burden the land with an exorbitant rent of 20 shillings per 100 acres. This rate was impossible in view of the low rents in South Carolina, and formed one of the chief causes of the economic distress in the colony. After the surrender of the colony to the crown the rate in South Carolina, 4 shillings per 100 acres, was promptly put in force.

Few exemptions from the quit-rents were allowed. The general policy was to guard carefully the rights of the crown or the proprietor in the soil, and some form of rent was almost invariably charged. The most noteworthy exceptions were lands used for public purposes in East Jersey, Pennsylvania, and the Carolinas. Rents were occasionally waived in both Maryland and Virginia in order to secure settlers on the western frontier as a protection against the French and Indians. Yet the results were only moderately satisfactory.

Special rates were sometimes instituted for definite purposes. This was done by Maryland on lands under dispute with Pennsylvania, and by New York on the New Hampshire grants. In neither case were the results satisfactory in securing recognition in disputed lands. By far the most important instances of special rates were those inaugurated to encourage the building of towns. In Maryland, lots in St. Mary's, the first town projected, were offered free of rent, but in 1683 a special rent of one penny per acre was imposed upon all town lots. In Virginia, however, only the usual rent, 2 shillings per 100 acres, was reserved on town lots. As an inducement to improvements the law exempted from rents, land filled in for quays and wharf-space. Other colonies established special rates for town lots, but nowhere was the amount of the rents from this source large. In South Carolina the rents on town lots were even waived as not worth the trouble of collection. The comparatively few instances of special rates, or of exemptions, indicate an unmistakable policy to create a uniform quit-rent system within each colony. Such a policy was most important as securing better collections, and, above all, more effective imperial control.

III

After the determination of the amount of the quit-rents, the next important problem was the inauguration of adequate schemes of collection and enforcement. Though the working out of a

scheme of collection was properly the prerogative of the overlord, the assemblies frequently interfered. This tendency, however, was notably absent in Maryland where an excellent system of collection under direct proprietary supervision was one of the main features of the most successful quit-rent system in the American colonies. As established in 1733 this scheme provided for a collector in each county who was directly responsible to proprietary agents. By careful supervision of all accounts and the discharge of inefficient agents, the proprietors of Maryland were enabled to secure highly satisfactory returns. In the neighboring province of Pennsylvania were seen the results of interference by the assembly, and of unbusinesslike methods on the part of the proprietor. No adequate rent-rolls were ever made out, nor did the proprietor exercise sufficient authority over the receiver-general; consequently the system of collection was never satisfactory.

The ill effects of popular control of the rents were shown most markedly in the colonies where they were collected by the crown. In Virginia attempts to establish an effective system of collection involved a long struggle for control between the governor and the office-holding class. In the earliest days of the colony the treasurer or his deputy collected the rents; later the sheriffs assumed this duty. Many abuses attended such a scheme of collection by officers, themselves usually landowners, who sided with the tenants rather than with the crown. Attempting to secure more control over collections, Governor Spotswood proposed a scheme which, while reducing the commission allowed the sheriffs, offered inducements to tenants who paid their rents directly to the receiver-general. This plan was forced through the council in spite of the bitter opposition of the office-holding classes, led by Colonel William Byrd. The ultimate failure of this measure to secure the desired results showed that the only way to secure an effective system of collection was to appoint collectors who were directly responsible to the governor. The continued opposition of the office-holders, represented by the council, defeated this last reform, and the old abuses continued. As the sheriffs were under no adequate supervision, they became exceedingly careless. One particularly reprehensible individual settled for many years on the basis of a roll which he never altered. His successor found that the names of many persons who had been dead for years were listed, while many large landholders had never been entered. Such abuses were frequent and were the result of the failure of the governor, the natural guardian of the royal interests, to secure proper control over the rents.

The effects of popular control over the rents were accentuated

in the measures for their enforcement. While the assemblies allowed distraint upon personal property, they exhibited a strong opposition to forfeiture of the land as a penalty for failure to pay the rents. In Virginia this attitude was forcibly shown after Governor Spotswood had secured a law which declared the land forfeited after three years' failure to pay rents. In response to popular opinion the assembly soon annulled this measure by prohibiting any forcible means, except distraint, for the collecting of rents. A similar incident in South Carolina threatened at first to cause serious difficulty. The proprietors attempted to require from all patentees an agreement to forfeit the land if the quit-rent became six months in arrears. When the tenants refused their assent to this condition, they were informed they could leave the province. The controversy which followed was brought to an end by a compromise measure passed by the assembly which required that distraint, only, should be employed in collecting the rents. The independent tendencies of the people were again exhibited in 1731 by a law which excepted from distraint so many classes of property that this penalty was rendered practically impossible.

Occasional recourse to the courts to collect the quit-rents by suit usually failed, for the juries would side with the tenants against the proprietor. This method was a signal failure in Pennsylvania, largely owing to the bitter controversies between the proprietor and the people. In New York the tenants openly boasted that no country jury would enforce the rents. Governor Hunter met this braggart attitude by subpœnas to the chancery court, and many persons were compelled to pay their arrears. But so great was the popular uproar that later governors returned to the old, ineffectual system of collecting delinquent rents by distraint.

The reluctance of the assemblies to permit forfeiture of the land rendered practically impossible the enforcement of rents on unimproved tracts. This problem of the quit-rents was therefore closely connected with the effective organization of the land system in each colony. It was a general policy of the crown to render unprofitable, by the enforcement of rents, the holding of large unimproved tracts. Yet popular opposition usually frustrated such efforts even when the necessary measures had been secured. Numerous land frauds added to the large arrears of rent. For example, many persons held by fraudulent surveys more land than their patents called for, while the failure of others properly to register grants frequently prevented adequate rent-rolls. Whenever the governors attempted to remedy such conditions, they encountered bitter opposition. Where the land-office was well or-

ganized, and the governor persisted, a few reforms resulted. But, on the whole, the victory lay with the tenants.

The effect upon the rents of a badly organized land system may be traced in nearly all the colonies. In Virginia, especially, great losses resulted from large grants which had never been patented, and, consequently, were not entered upon the rent-rolls. Attempting to remedy this situation, Governor Spotswood secured a law which permitted any one to patent, on one year's notice, land that paid no rent. For a time the effect was good, but the law was easily evaded. Finally, it failed so completely that Governor Dinwiddie found fully 1,000,000 acres, which had been taken up by survey, but had never been entered upon the rent-rolls.

In South Carolina extensive land frauds caused much loss in the rents. Often patented lands were not listed in the rent-rolls. Also many persons held more land than their patents called for. Henry McCulloh, who was sent as special commissioner to secure the payment of rents, induced the assembly to pass a measure in 1744 which was designed to remedy these conditions. But by inserting measures which practically destroyed the force of the law, the assembly plainly showed the temper of their constituents. The old evils continued, and on the eve of the Revolution no adequate rent-roll had been made out in South Carolina. The receiver-general confessed that, had he not held office for twenty-five years and thus known the people, he could not have collected any rents at all. Great losses in the quit-rents of New York were caused by vast unimproved tracts that were held at only a nominal rental. On other large holdings no rent at all was paid, nor were the efforts to remedy the situation successful. In 1701 owners of unimproved tracts in Albany, Westchester, and Richmond counties were called upon to pay their rents, or else have their unenclosed lands entered upon. But popular opposition greatly hindered the success of this measure. The subdivision of many of these tracts by numerous sales added to the difficulties in collecting rents. Many persons feared that owners of single shares might be called upon for the rent of an entire tract. Finally the assembly provided for the partition of all joint holdings, except village commons. Unfortunately this law held the freeholders of each town responsible for the rent of a delinquent tenant, and though provision was made for reimbursement, this last clause stirred up great opposition. A few lots were offered for sale under its provisions but the popular opposition proved too strong, and the governors feared to enforce the law, owing to its bad effects upon frontier settlement.

The spirit of opposition that hindered the enforcement of the quit-rents was occasionally manifested in open hostility, especially in the middle colonies where the influence of New England was chiefly felt. Of all the colonies, outside of New England, East Jersey most bitterly and most successfully opposed the quit-rents, and of the people of East Jersey the most determined were the immigrants from New England who settled on the Monmouth and Elizabethtown patents. Claiming that the title to their lands rested upon Indian grants which had been confirmed by the governor of New York, they refused to recognize the right of the proprietors to reserve a quit-rent upon their holdings. The Monmouth patents were speedily brought under proprietary control, but the more determined associates of Elizabethtown would neither pay rents nor sue out new patents. In face of the energetic policy of the proprietors the active opposition collapsed. Yet the actual returns from the rents showed little increase, for the proprietors had to depend upon the assemblies, which represented the popular attitude, for measures of enforcement. When Willocks was sent in 1697 to receive the rents, the troubles broke out afresh. Finally, the proprietors surrendered the government of the province to the crown, though they still retained their rights in the soil.

As governor of East Jersey, Lord Cornbury was instructed to secure an act from the assembly recognizing the rights of the proprietors. The assembly promptly passed an ineffective measure which practically nullified any attempts to collect rents from the associates of Elizabethtown. Such a law represented the general attitude of opposition to rents. When a controversy arose between the governor and the board of proprietors, however, the assembly sided with the latter. This sudden change of front was probably due to the fear that the crown might eventually take over the quit-rents, and enforce collection.

In 1744 the proprietors made a vigorous attempt to enforce their rights in East Jersey. After a number of writs of ejectment had been served, the popular wrath broke forth. The rioters were imprisoned, but the people quickly released them. As the assembly sided with the people, force could not be employed, and a free pardon was offered all offenders. The board of proprietors then filed a test suit in the chancery court which demanded the payment of all arrears in rent by the associates of Elizabethtown, or the Clinker Rights Men as they were popularly called. This test case was greatly delayed, probably because the governor leaned toward the popular side. The French and Indian War, followed by the

Stamp Act agitation, diverted attention from the suit, and it was never heard. This virtual victory of the associates of Elizabethtown, which really ended all hope of collecting rents in East Jersey, had great influence in stirring up opposition in neighboring colonies.

Though no active hostility to the inherent right to impose quit-rents was displayed in the Southern colonies, there was a strong undercurrent of opposition. In Maryland it assumed the form of repeated attempts by the assembly to control the collections. This object was achieved from 1716 to 1733 when the quit-rents were waived by the proprietor in favor of a 2 shillings export duty on each hogshead of tobacco. At the expiration of this agreement, the lower house made a number of attempts to renew it, asserting that the old method of paying the rents was burdensome to the tenants. As the average quit-rent in Maryland was insignificant, only about four shillings four and three-fourths pence per taxable inhabitant in 1756, this claim was hardly sincere. The entire movement may be construed as a sign of the popular determination to free the colony, as far as possible, from external control. A similar intention was responsible, certainly in part, for the determination displayed by the office-holders of Virginia to control the collection of rents. This spirit went so far in Virginia in 1716 as to induce the assembly, with the connivance of the council, to petition the crown for the surrender of all rents.

The opposition in Virginia was largely due to arbitrary grants of the rents. In 1649 Charles II. granted to Lord Culpeper, Sir John Berkeley, and the Earl of St. Albans the quit-rents of the Northern Neck, lying between the Rappahannock and the Potomac. This grant was renewed in 1669, and in 1672 the rents of the entire colony of Virginia were granted for thirty-one years to Lords Culpeper and Arlington. Such vigorous protests followed this last attempt to convert Virginia into a proprietary province that in 1684 the crown brought back the rents of all but the Northern Neck. The tenants petitioned for the purchase of these latter rents as well, but their plea was not heeded. The rents of the Northern Neck descended to the Fairfax family by whom they were collected with little friction. Yet the arbitrary power exercised by the crown in these grants naturally provoked a feeling of unrest in Virginia, and a resulting opposition to the quit-rents.

A grant of part of the rents of North Carolina aroused more serious opposition than did the similar grants in Virginia. In 1743 the quit-rents of North Carolina, from the Virginia line to 35° 41′, were granted to Lord Carteret in compensation for his

share in the Carolinas. This grant led to great abuse. Many fraudulent acts were committed by the proprietor's agents, and a number of riots occurred. Yet the crown paid no attention to a petition from the assembly praying for the purchase of Carteret's rights. The grievances attending this special grant formed one of the chief causes for subsequent discontent in North Carolina.

The influence exerted by the tenants, through their representative assemblies, was frequently shown in determining the medium of payment. The scarcity of ready money, especially in the seventeenth century, made a specie payment practically impossible. The assemblies usually undertook to solve the difficulty by declaring legal the forms of payment that were economically convenient. As these laws were always subject to the royal or proprietary consent, compromises were frequently made in regard to the commodities to be accepted and the rate of exchange. Yet when controversies arose, the tenants, through the assemblies, usually won. During the seventeenth and the eighteenth centuries tobacco formed the chief medium of payment in Maryland and Virginia. In both colonies the rate of exchange and the quality to be accepted became important problems. The successive attempts of the assembly to fix the legal price of tobacco in Maryland threatened much controversy, until, in 1671 the proprietors agreed to accept tobacco in payment of quit-rents at 2 pence per pound, about twice its real value, in consideration of an export duty of 1 shilling per hogshead of tobacco. This agreement continued up to 1716 when a 2 shilling duty was accepted in lieu of all rents. The popular fear that the proprietor would make an undue profit ended this agreement in 1733. The rents then became due in money, but tobacco continued to be received, though the rate of exchange caused no further trouble.

Tobacco payments for rent caused much trouble also in Virginia. Until 1662 when the assembly fixed the legal value at 2 pence per pound, the tobacco was accepted at the current rate. As much unmerchantable tobacco was paid in, the crown finally repealed the law of 1662. The burgesses strenuously denied the constitutionality of this action, and by a compromise, arranged in 1688, the quit-rents were made payable in tobacco at one penny per pound. The continued use of trash tobacco was stopped in 1713 by a law that required all payments of the rents to be made in inspected tobacco. In 1754 the crown reduced the rate of exchange on tobacco payments of rents to three farthings per pound. But the price of tobacco fell so rapidly that the depreciated paper

money became the only possible medium of paying the rents. Though in 1765 the sterling exchange was only 65 per cent., the crown was obliged to accept this colonial currency, since to insist upon a money payment of rents in the midst of the Stamp Act agitation would have been suicidal.

A similar situation developed in the Carolinas also. At first the rents were payable in money or its equivalent. But in 1682 the proprietors ordered payment in money only. Immediately great opposition arose, and in 1696 the proprietors were compelled to accept a law which made the rents of South Carolina payable in commodities as well as money. As a compromise, however, the rate of exchange was to be determined by a board of appraisers, one-half appointed by the assembly, the other half by the governor and council. This agreement continued in force until the rents came under royal control when they became due in proclamation money. Apparently the medium of payment caused no further difficulty in South Carolina, but in North Carolina, where the rents had been settled in tobacco, strong opposition was shown to a settlement in proclamation money. The lower house maintained that the Grand Deed to Albermarle had given the tenants in North Carolina the perpetual right to pay their rents in the same medium as in Virginia. Though the council, sitting as an upper house, sided with the governor, the popular pressure proved too strong, and the lower house won their point. The abuse of this victory by the tenants, who proffered the worst grades of tobacco in payment of the rents, made a reform finally necessary. Native products continued to be accepted, but the governor controlled the rates of exchange and the quality.

The varied influences provoking opposition to the quit-rents greatly reduced the actual returns. In the middle colonies, where the most active hostility was shown, collections were proportionately unsatisfactory. The quit-rents reserved in Pennsylvania from 1701 to 1778 amounted to £182,248 12s. 10d., but only £63,597 8s. 3d., or a little over one-third was collected. Collections were equally bad in New York. In 1698, £3,000 was due from the rents, but only £200 to £300 was realized. In 1767 the rents of New York were valued at £1,806 7s. 9d., but the arrears were £18,888 16s. 10d., with little probability of collection. The situation was fully as bad in East Jersey. As a result of the long continued controversies the arrears in 1746 amounted to fully £15,000. In West Jersey no serious attempt was made to collect the rents at all.

In the Southern colonies, including Maryland, where there was

less active hostility, collections were somewhat more satisfactory than in the middle colonies. The slight opposition shown in Maryland, together with the well-organized system of collection, resulted in the largest returns from the quit-rents in any colony. The gross value of the rents in Maryland in 1690 was about £5,000, but nearly one-third was lost in collection. With a gradual increase in both gross and net value, the quit-rent, just before the Revolution, had an actual value of £8,297 11s. ¼d., with a loss of not over 10 per cent. in collection. In Virginia the failure to establish an effective system of collection resulted in less satisfactory returns than in Maryland. In 1697 the revenue from the rents was estimated at about £800. Though the rent-rolls showed a steady increase, inefficient collection prevented proportionately satisfactory returns. In 1762 the gross value of the rents in Virginia was £4,396, but £16,160 was due the crown on account with only £5,000 on hand. Collections in the Carolinas were proportionately even less than in Virginia, averaging in North Carolina only £1,000 annually between 1741 and 1744. In South Carolina the gross value of the rents was not over £1,800 and returns were exceedingly meager. The returns in Georgia were also insignificant.

IV

The right to appropriate the returns formed perhaps the chief advantage of the quit-rent as a means of imperial control. Theoretically, as representing the ownership of the overlord in the soil, the quit-rent was his private revenue. Yet this theory was more consistently observed in the proprietary colonies than in those in which the rents were paid to the crown. The absolute right of the proprietor to the revenue arising from quit-rents was unquestioned in Maryland. In Pennsylvania a tendency was shown to question this right, when the assembly asserted in 1701 that the rents were levied for purposes of government. This claim was summarily disposed of by Chief Justice McKean who held that the rents had been reserved as the private property of the proprietor and that they represented his ownership in the soil. Despite this decision, in 1756 the assembly levied a tax upon the quit-rents to help defray the expenses of the French and Indian War. The proprietors denied the legality of such a measure and their contention was upheld by the crown lawyers to whom the matter was referred. A compromise was finally effected by a gift of £5,000 from the proprietors.

In the royal colonies the revenue from the quit-rents was theoret-

ically under the control of the crown as overlord. Since the rents were frequently employed for local purposes, the assemblies tended to assert authority over them, but the policy of the home authorities was to allow expenditures from the quit-rents only with the royal permission. This policy was especially noticeable in Virginia. At first, when the amount was small, the quit-rents of Virginia were expended for local purposes at the discretion of the assembly. But in 1685, when the rents had become more valuable, orders were issued which strictly prohibited any expenditure from this fund, except on the personal warrant of the crown. This policy, which was reaffirmed under William and Mary, and Anne, created, from the quit-rents, a revenue of the crown the disposal of which was wholly independent of the assembly. The value of such a source of income, in rendering the royal government independent of local control, is obvious.

While maintaining control of the revenue from rents, the crown often issued warrants authorizing expenditures for extraordinary expenses. Lord Culpeper was allowed compensation from the rents for his claims to the quit-rents of all Virginia outside of the Northern Neck. Occasionally grants were made to aid local interests, including an appropriation in 1692 of £1,985 14s. 10d., to found the college of William and Mary. At the same time the crown issued warrants upon the rents, for £100 for the salary of the commissary of the Bishop of London, and for £400 annually for three years to supplement the meager stipends of the Virginia clergy. The salary of the commissary continued to be paid from the quit-rents, but only on special warrants. The college of William and Mary was also aided from time to time from this fund. Other warrants were often granted from the quit-rents for extraordinary military purposes. Such expenditures from the rents were made to defray the cost of erecting a fort at Jamestown, and for numerous shipments of military stores to Virginia. Occasionally the quit-rents were employed to supplement the royal revenue in other colonies. New York received aid from this source in her constant struggle against the French and Indians, while in 1711, the entire balance on hand of the quit-rents was granted to help equip the forces sent against Canada.

The quit-rents were also employed in Virginia to supplement the 2 shillings duty for the ordinary purposes of government. This aid, however, was granted only for the salaries of officers directly dependent upon the crown. It is interesting to note one exception: the commissioners appointed to settle the boundary between Virginia and North Carolina were paid from the rents in 1713. The

payment of royal officers from the quit-rents, in cases of emergency, continued throughout the colonial period. In 1766 when the colony was in the midst of the Stamp Act agitation, as much as £1,255 was drawn out from the rents for this purpose. This payment pointedly illustrated the inherent value of the quit-rent as a revenue, independent of the popular will, which might be employed for the support of royal officers.

Besides the allowances granted on special occasions, all the expenses of collection in Virginia were of course defrayed from the quit-rents. These expenses included the commissions of the sheriffs, the auditor, and the receiver-general. The balance was transmitted to the crown upon special warrants drawn on the receiver-general. Yet remittances were irregular and large amounts were frequently left in the custody of local officials. A lack of systematic supervision of accounts inevitably resulted in failure to make and transmit full collections. In spite of this laxity the royal prerogative to dispose of the rents was carefully guarded. In 1714 when the 2 shillings duty was not sufficient for current expenses in Virginia, the burgesses attempted to secure control of the quit-rents. They asserted that, until the crown answered a petition praying that the rents be devoted to the ordinary purposes of government, they would refuse to levy additional taxes. Through the representations of Colonel Byrd, a temporary grant was made. But the burgesses never won the constitutional right to direct the expenditure of the rents, even on extraordinary occasions.

The evident value of the quit-rent as a revenue free from colonial control was recognized by Governor Clinton of New York, who urged, in 1747, the necessity of some form of permanent revenue in order to meet the increasing factional spirit displayed in the colony. A quit-rent of 2 shillings 6 pence per 100 acres on all lands in the colony would, he believed, produce annually £4,000, a fund in excess of any ever allowed by the assembly. The practical value of this suggestion was shown in 1762 when Chief Justice Benjamin Pratt was allowed a salary out of the quit-rents of New York, in order to free him from any dependence upon the people. A similar use of the quit-rents was made in Georgia and the Carolinas, where they were employed to support the royal government, though, certainly in North Carolina, they were never adequate for that purpose.

V

As a general form of land-tenure in the American colonies the quit-rent system was not wholly successful. This failure resulted

from the fundamentally different character of the quit-rent in England and America. In England it had come as a relief from onerous feudal dues. As such it was accepted without question; at first, as a welcome relief, later, as a customary charge. In America the very circumstances attending the introduction of the quit-rent were different from those in England. The lands which the colonists rescued by their own labor from the primeval wilderness had paid no previous feudal dues. The quit-rent constituted, therefore, not a welcome relief, but a tax upon the land. The colonists finally came to look upon it as an imposition upon the land for the benefit of an outside power. Their independence of spirit added fuel to the hostility. Perhaps even then the quit-rent would have been accepted, such is the power of custom, had it prevailed in all the colonies. But when the plans of the New England Council failed, and the land-tenure in all the corporate colonies became free of feudal charges, the doom of the quit-rent system was sounded. The example of New England soon stirred up opposition in the neighboring colonies. As communication became more frequent, this influence would have made itself felt to a more marked degree in the colonies to the southward, had not the Revolution intervened.

The problems that confronted the crown and the proprietors in establishing the quit-rent system in a new country militated against its success. Separated by long distances from the home government, the colonial governors were at a great disadvantage in carrying out instructions. Their dependence upon the assemblies for measures of enforcement greatly added to their perplexities. In all the colonies, except Maryland, the history of the quit-rent was one of persistent struggles between the governor and the assembly, the former representing the crown or the proprietor, the latter the tenants. Compromises became necessary, but usually it was the overlord who surrendered a large part of his claims in order to secure even a measure of respect for his rights in the soil.

Yet from either an economic or a legal standpoint the quit-rents were neither illegal nor unjust. The rates were not excessive, the methods of collection never became burdensome, and the economic necessities of the colonies were usually regarded in the mediums of payment. Indeed the quit-rents might be regarded as a just recompense for the expenses incurred in founding a colony. Nor did they represent other than a customary form of taxation. As the colonial possessions formed a fief of the crown, their inhabitants were bound to pay the usual form of feudal dues, the quit-rent, unless such charges had been expressly waived. But with a

true spirit of opportunism, the colonial attitude of opposition to the quit-rents disregarded exact legal forms in favor of popular desires.

The quit-rent system assumes its most important aspect as a part of the scheme of imperial control. That the policy of the British government included the quit-rent as the general form of colonial tenure is apparent from its establishment in the West Indies, and in Canada, as well as in the thirteen colonies scattered along the North Atlantic. The determination to reduce all these colonies to this form of land-tenure is shown by the inclusion of the quit-rent in the scheme for strengthening imperial control in New England under Andros. The importance of the quit-rent in such a plan lay in its possibilities. Once established, it would have rendered the royal or proprietary officials free from that most effective limitation upon their power, dependence upon the assemblies for their financial support. This possibility was recognized in a practical fashion in New York, while the policy, so consistently observed in Virginia, of keeping this revenue free from control by the assembly, showed that the crown fully appreciated the importance for the purpose of the quit-rent then. Governor Dinwiddie recognized its value when he proposed a general land-tax, similar to the Virginia quit-rent, of 2 shillings per 100 acres. Such a tax, he believed, by bringing in fully £60,000 annually, would relieve the royal government of the necessity of depending upon unreliable assemblies for financial measures. Had the policy of buying out the proprietors, which was begun in the Carolinas, been continued, and had the New England colonies been brought back under the quit-rent system, this plan would have been altogether feasible.

Indeed, much of the opposition to the quit-rent system arose from a recognition of its possibilities as a perpetual revenue the expenditure of which was free from local control. This aspect of the quit-rents was pointed out by the Virginia assembly in the several acts which decreed the abolition of this system of feudal dues. This hostility was inevitable, even had the Revolution not hastened its expression. The possibilities arising from the use of the rents to strengthen imperial control were too apparent. Such an antiquated system of land-tenure was bound to fail when it came in contact with the independent spirit of the New World.

CHAPTER V

TYPES AND PROGRESS OF COLONIAL AGRICULTURE

1. General Survey of the Different Sections [1]

The tilling of the soil absorbed the energies of not less than nine-tenths of the colonial population. Even those who by occupation were sailors, fishermen, fur traders, or merchants often gave a part of their time to the cultivation of farms or plantations. Land hunger was the master passion which brought the men of the seventeenth and eighteenth centuries across the sea and lured them on to the frontier. Where hundreds sought for freedom of worship and release from political oppression, thousands saw in the great unoccupied lands of the New World a chance to make a living and to escape from their landlords at home. To obtain a freehold in America was, as Thomas Hutchinson once wrote of New England, the "ruling purpose" which sent colonial sons with their cattle and belongings to some distant frontier township, where they would thrust back the wilderness and create a new community. Throughout the whole of the colonial period this migration westward in quest of land, whether overseas or through the wilderness, whether from New England or Old England or the Continent, continued at an accelerating pace. The Revolutionary troubles, of course, brought it temporarily to a standstill.

* * * * * * * * * * *

The towns of New England were compact little communities, favorably situated by sea or river, and their inhabitants were given over in the main to the pursuit of agriculture. Even many of the seaports and fishing villages were occupied by a folk as familiar with the plow as with the warehouse, the wharf, or the fishing smack, and accustomed to supply their sloops and schooners with the produce of their own and their neighbors' acres. Life in the towns was one of incessant activity. The New Englander's house, with its barns, out-buildings, kitchen garden, and back lot, fronted the village street, while near at hand were the meeting-

[1] Charles M. Andrews, *Colonial Folkways, The Chronicles of America Series*, Vol. IX. (New Haven: Yale University Press, 1919), Ch. II. Reprinted by permission of the author and the publishers.

house and schoolhouse, pillories, stocks, and signpost, all objects of constant interest and frequent concern. Beyond this clustered group of houses stretched the outlying arable land, meadows, pastures, and woodland, the scene of the villager's industry and the source of his livelihood. Thence came wheat and corn for his gristmill, hay and oats for his horses and cattle, timber for his sawmill, and wood for the huge fireplace which warmed his home. The lots of an individual owner would be scattered in several divisions, some near at hand, to be reached easily on foot, others two or more miles distant, involving a ride on horseback or by wagon. While most of the New Englanders preferred to live in neighborly fashion near together, some built their houses on a convenient hillside or fertile upland away from the center. Here they set up "quarters" or "corners" which were often destined to become in time little villages by themselves, each the seat of a cow pound, a chapel, and a school. Sometimes these little centers developed into separate ecclesiastical societies and even into independent towns; but frequently they remained legally a part of the original church and township, and the residents often journeyed many miles to take part in town meetings or to join in the social and religious life of the older community.

The New Englander who viewed for the first time the list of his allotments as entered in the town book of land records had the novel sensation of knowing that to all intents and purposes they were his own property, subject of course to the law of the colony, which he himself helped to make through his representatives in the Assembly; subject, too, more remotely, to the authority of the King across the sea. But the King did not often bother him. He could do with his land much as he pleased: sell it if need be, leave it to his children by will, or add to it by purchase. The New Englander loved a land sale as he loved a horse trade and any dicker in prices; but he had a stubborn sense of justice and a regard for the letter of the law which often drove him to the courts in defense of his land claims. Probably a majority of the cases which came before the New England courts in colonial times had to do with land. Yet there was little accumulation of large properties or landed estates, for such were contrary to the Puritan's ideas of equality. Jonathan Belcher, later a Governor of Massachusetts, had in eastern Connecticut a manor called Mortlake, on which were a few unenterprising tenants, holding their land for a money rental. There are other instances of lands let out in a similar manner on limited leases, but the number was not large, for, as Hutchinson said, the Puritan's ruling passion was

for a freehold and not a tenancy, and "where there is one farm in the hands of a tenant," he added, "there are fifty occupied by him who has the fee of it."

Outside New England there was greater variety of landholding and cultivation. The Puritan traveler journeying southward through the Middle Colonies must have seen many new and unfamiliar sights as he looked over the country through which he passed. He would have found himself entirely at home among the towns of Long Island, Westchester County, and northern New Jersey, and would have discovered much in the Dutch villages about New York and up the Hudson that reminded him of the closely grouped houses and small allotments of his native heath. But had he stopped to investigate such large estates as the Scarsdale, Pelham, Fordham, and Morrisania manors on his way to New York, or turned aside to inspect the great Philipse and Cortlandt manors along the lower Hudson, or the still greater Livingston, Claverack, and Rensselaer manors farther north, he would have seen wide acres under cultivation, with tenants and rent-rolls and other aspects of a proprietary and aristocratic order. Had he made further inquiries or extended his observations to the west and north of the Hudson, he would have come upon grants of thousands of acres lavishly alloted by governors to favored individuals. He would then have realized that the division of land in New York, instead of being fairly equal as in New England, was grossly unequal. On the one hand were the petty acres of small farms surrounding the towns and villages; on the other were such great estates as Morrisania and Rensselaerwyck, where the farmers were not freeholders but tenants, and where the proprietors could ride for miles through arable land, meadow, and woodland, without crossing the boundaries of their own territory. If the traveler had been interested, as the average New England farmer was not, in the deeper problems of politics, he would have seen, in this combination of small holdings with large, one explanation, at least, of the differences in political and social life that existed between New England and New York.

What the traveler might have noticed in New York, he would have found repeated in a lesser degree in New Jersey and Pennsylvania. There, too, he would have seen large properties, such as the great tracts set apart for the proprietors and still awaiting sale and distribution, and such extensive estates as that of Lewis Morris, known as Tinton Manor, near Shrewsbury in East Jersey, and the proprietary manors of the Penns at Pennsbury on the Delaware and at Muncy on the Susquehanna. But there were

also thousands of small fields belonging to the Puritan and Dutch settlers at Newark, Elizabeth, Middletown, Bergen, and other towns in northern New Jersey, and a constantly increasing number of somewhat larger farms in the hands of the Germans and Scotch-Irish in the back counties of Pennsylvania. The traveler would have noticed also, as he rode from Perth Amboy to Bordentown or Burlington, or from New Brunswick to Trenton, that central New Jersey was a flat, unoccupied country, with scarcely a mountain or even a hill in forty miles, that the sort of towns he was familiar with had entirely disappeared, and that along the highway to the Delaware and even from Trenton to Philadelphia, the country had only an occasional isolated farmstead. He would have met with no plantations in the southern sense of the word, with almost no tenancies like those at Rensselaerwyck, and with only a few compact settlements, such as the large towns of Trenton, Bordentown, Burlington, Philadelphia, Germantown, and Lancaster, and the loosely grouped villages of the Germans, where the lands were held in blocks and the houses of the settlers were more scattered than among the Puritans. He would have learned also that, in Pennsylvania particularly, the needs of the proprietors, the demands of the colonists, and the character of the crops were leading to frequent sales and to the division of large estates into small and manageable farms.

What probably would have interested the New Englanders as much as anything else was the interdependence of city and country which was frequently manifested along the way. Unlike the Puritans, to whom countryseats and summer resorts were unknown and trips to mountain and seashore were strictly matters of necessity or business, the townfolk of the Middle Colonies residing in New York, Burlington, and Philadelphia had country residences, not mere cottages for makeshift housekeeping but substantial structures, often of brick, well furnished within and surrounded by grounds neatly kept and carefully cultivated. There were many stately "gentlemen's seats," belonging to the gentry of New York, between Kingsbridge and the city and on Long Island, for what is now Greater New York was then for the most part open country, hilly, rocky, and heavily wooded, interspersed here and there with houses, farms, fields, groves, and orchards of fruit trees, and threaded by roads, some good and some bad. Philip Van Cortlandt had his country place six miles, as he then reckoned it, from the city. Here at Bloomingdale, a village in a sparsely settled neighborhood—now the uptown shopping district of New York, somewhat north of the present public library—

he was wont to send Mrs. Van Cortlandt and his "little family" to spend "the somer season." The Burlington merchants had their country houses near the Delaware on the high ground stretching along the river and back toward the interior. On the other hand, Philadelphia merchants, mayors, and provincial governors, whose city life was confined to half a dozen streets running parallel to the Delaware, had their country residences often twelve or fifteen miles away, sometimes in West Jersey, but more often in Pennsylvania itself, adjacent to the familiar and well-trodden highways. These roads, which radiated northwest and south from the river, formed arteries of supply for the markets and ships along the docks and, during certain times and seasons, afforded means of social intercourse between the business of the countinghouse in town and the pleasure of the dining hall and assembly room in the country.

To the Southerner, on the other hand, who passed observantly northward and viewed with discernment the country from Maryland to that "way down east" land of Maine which was as yet little more than a narrow fringe of rocky coast between the Piscataqua and the Kennebec, all these conditions of housing and cultivation must have seemed to a large extent strangely novel and unfamiliar. The Southerner was not used to small holdings and closely settled towns; his eye was accustomed to range over wide stretches of land filled with large estates and plantations. The clearings to which he was accustomed, though often little more than a third of the whole area, consisted of great fields of tobacco, grain, rice, and indigo, and presented an appearance essentially unlike that of the small and scattered lots and farms of the New England towns. He was unacquainted with the self-centered activity of those busy northern communities or the narrow range of petty duties and interests that filled the day of the Puritan farmer and tradesman. Were he a landed aristocrat of Anne Arundel or Talbot county in Maryland, he would himself have possessed an enormous amount of property consisting of scattered tracts in all parts of the province, sometimes fifteen or thirty thousand acres in all. Many of these estates he was accustomed to speak of as manors, though the peculiar rights which distinguished a manor from any other tract of land early disappeared, and the manor in Maryland and Virginia, as elsewhere, meant merely a landed estate. But the name undoubtedly gave a certain distinction to the owner and probably served to hold the lands together in spite of the prevailing tendency in Maryland to break up the estates into small, convenient farms. Doughoregan Manor of the Carrolls, with its ten thousand acres, for instance, remains undivided to this day.

By the wealthy Virginian the term manor was used much less frequently than it was in Maryland, while in the Carolinas and Georgia it was not used at all. In Virginia, even though the great plantation with its appendant farms and quarters in different counties could be reached often only after long and troublesome rides over bad roads through the woods, the estate was generally kept intact. Though land was frequently leased and overseers were usually employed to manage outlying properties, the habit of splitting up estates into small farms was much less common than it was in Maryland. Councilman Carter owned, we are told, some sixty thousand acres situated in nearly every county in Virginia, six hundred negroes, lands in the neighborhood of Williamsburg, an "elegant and spacious" house in the same city, stock in the Baltimore Iron Works, and several farms in Maryland. It was not at all uncommon for men in one town or colony to own land in another, for even in New England the owners of town lands were not always residents of the town in which the lands were situated.

It would be a mistake, however, to think of Maryland and Virginia as covered only by great plantations with swarms of slaves and lordly mansions. In both these Southern Colonies there were hundreds of small farmers possessing single grants of land upon which they had erected modest houses. Many of these farmers rented lands of the planter under limited leases and paid their rents in money, or probably more often in produce, labor, and money, as did the tenants of William Beverley of Beverley Manor on the Rappahannock. As many of the large estates in Maryland could not be worked by the owner, the practice arose of renting some and of breaking up others for sale. In this way there came into existence numbers of middle-class landholders, who formed a distinctly democratic element both in Maryland and Virginia. They cultivated small plantations ranging from 150 to 500 acres, not more than a third of which was improved even by 1760. Daniel Dulaney, the famous lawyer of Annapolis who had made his money in tide water enterprises, bought land in central Maryland, which he rented out to Germans from Pennsylvania and thus became a land promoter and town builder on an extensive scale.

Though no such mania for land speculation seized upon the Virginia planters, they were equally zealous in acquiring properties for themselves beyond the "fall line" to the west, and some of them endeavored to add to their wealth by promoting the building of towns. It was in 1745 that Dulaney laid out the town of Frederick as a shrewd business enterprise. Eight years earlier, the second William Byrd, one of the farseeing men of his time, had adver-

tised for sale in town lots his property near the inspection houses at Shoccoe's. This was the beginning of Richmond, the capital of Virginia. Less successful was Richard Randolph when, in 1739, he tried to attract purchasers to his town of Warwick, in Henrico County, modeled after Philadelphia, with a hundred lots at ten pistoles each, a common, and all conveniences for trade thrown into the bargain. But the only really important towns in these colonies during the colonial period were Annapolis and Williamsburg. In these towns many of the planters had houses which they occupied during the greater part of the year, or at any rate when the Assembly was in session and life was gay and festive. Such other centers of population as Baltimore, Frederick, Hagerstown, Norfolk, Falmouth, Fredericksburg, and Winchester played little part in the life of the colonies except as business communities.

As the Albemarle region of North Carolina was settled from Virginia, the plantation and the tobacco field were introduced together, and along the sound and its rivers landed conditions arose similar in some respects to those in Virginia. The word "farm" was not used, but the term "plantation" was employed to include anything from the great estates of such men as Seth Sothell, one of the "true and absolute proprietors," and Philip Ludwell, Governor, to the small holdings of less important men, who received grants from the proprietors and later from the Crown in amounts not exceeding a square mile in extent. Though as a rule the holdings in Albermarle were smaller than elsewhere in the South and the conditions of life were simpler and less elaborate, the farmers were still freeholders, not tenants. The whole of this section remained less developed in education, religious organization, and wealth than other plantation colonies, and such towns as it had, Edenton, Bath, New Bern, and Halifax, were smaller and less conspicuous as social and business centers than were Annapolis, Williamsburg, and Charleston. Governor Johnston, who was largely responsible for the transfer of government from New Bern to the Cape Fear River, said in 1748: "We still continue vastly behind the rest of the British settlements both in our civil constitution and in making a proper use of a good soil and an excellent climate."

It was an important event in the history of North Carolina when Maurice and Roger Moore of South Carolina in 1725 selected a site on the south bank of the Cape Fear River, ten miles from its mouth, and laid out the town of Brunswick. With the transfer of the colony to the Crown in 1729, the settlement increased and prospered, lands were taken up on both sides of the river from its mouth to

the upper branches, and plantations were established which equaled in size and productiveness all but the very largest in Maryland, Virginia, and South Carolina. At first many of the planters purchased lots in Brunswick, but afterwards transferred their allegiance to Wilmington on the removal to that town of the center of social and political life. No people in the Southern Colonies were more devoted than they to their plantation life or took greater pride in the beauty and wholesomeness of their country. They raised corn and provisions, bred stock—notably the famous black cattle of North Carolina—and made pitch, tar, and turpentine from their lightwood trees, and these, together with lumber, frames of houses, and shingles, they shipped to England and to the West Indies. The Highlanders who settled at Cross Creek at the head of navigation above Wilmington brought added energy and enterprise to the colony and developed its trade by shipping the products of the back country down the river and by taking in return the manufactures of England and the products of the West Indies. Some of them built at Cross Creek dwellings and warehouses, mills and stores, and set up plantations in the neighborhood; others, among whom were a few Lowland Scots, spread farther afield and bought lands even in the Albermarle region. To this section, after it had stagnated for thirty years, they brought new interests and prosperity by opening communication with Norfolk, in Virginia, as a port of entry and a market for their staples. They thus prepared the way for a promising agricultural and commercial development, which unfortunately was checked and for the moment ruined by the unhappy excesses and hostilities of the Revolutionary period.

South of Cape Fear lay Georgetown, Charleston, and Savannah, centers of plantation districts chiefly on the lower reaches of the rivers of South Carolina and Georgia. These plantations were characterized by a close union between town and country. South Carolina differed from the other colonies in that a considerable portion of her territory had been laid out in baronies under that clause of the Fundamental Constitutions which stipulated the number of acres to be set apart for colonists bearing titles of nobility. Thus it was provided that 48,000 acres should be the portion for a landgrave, 24,000 for a cacique, and 12,000 for a baron. Many colonists who bore these titles took up lands at various times and in varying amounts, but their properties, which probably never exceeded 12,000 acres in a single grant, differed in no way but name from any other large plantations. The most famous of the landgraves were Thomas Smith, who was Governor in 1695, and his son, the second landgrave, whose mansion of Yeomans Hall

on the Cooper River, with all its hospitality, gayety, romance, and tragedy, has been graphically though somewhat fancifully pictured by Mrs. Elizabeth A. Poyas in *The Olden Time of Carolina.*

Most of the plantations of South Carolina and Georgia were smaller than those in Maryland and Virginia. A single tract rarely exceeded 2000 acres, and an entire property did not often include more than 5000 acres. These estates seem to have been on the whole more compact and less scattered than elsewhere. They lay contiguous to each other in many instances and formed large continuous areas of rice land, pine land, meadow, pasture, and swamp. Upon such plantations the colonists built substantial houses of brick and cypress, generally less elaborate than those in Virginia, particularly when they were described as of "the rustic order." There were also tanyards, distilleries, and soap-houses, as well as all facilities for raising rice, corn, and later indigo. At first the chief staple on these plantations was rice; but the introduction of indigo in 1745, with its requirement of vats, pumps, and reservoirs, and its plague of refuse and flies, though of great significance in restoring the prosperity of the province, gave rise to new and in some respects less agreeable conditions. The plantations were also supplied with a plentiful stock of cattle and the necessary household goods and furnishings. The following detailed description of William Dry's plantation on the Cooper River, two miles above Goose Creek, is worth quoting. The estate, which fronted the high road, is described as

> having on it a good brick dwelling house, two brick store houses, a brick kitchen and washhouse, a brick necessary house, a barn with a large brick chimney, with several rice mills, mortars, etc., a winnowing house, an oven, a large stable and coach-house, a cooper's shop, a house built for a smith's shop; a garden on each side of the house, with posts, rails, and poles of the best stuff, all planed and painted and bricked underneath; a fish pond, well stored with perch, roach, pike, eels, and catfish; a handsome cedar horse-block or double pair of stairs; frames, planks, etc., ready to be fixed in and about a spring within three stones' throw of the house, intended for a cold bath and house over it; three large dam ponds, whose tanks with some small repairs will drown upwards of 100 acres of land, which being very plentifully stored with game all the winter season affords great diversion; an orchard of very good apple and peach trees, a corn house and poultry house that may with repairing serve some years longer, a small tenement with a brick chimney on the other side of the high road, fronting the dwelling house, and at least 400 acres of the land cleared, all except what is good pasture, and no part of the tract bad, the whole having a clay foundation and not deep, the

great part of it fenced in, and upwards of a mile of it with a ditch seven feet wide and three and a half deep.

Most of the South Carolina planters had their town houses and divided their time between city and country. They lived in Charleston, Georgetown, Beaufort Town, and Dorchester, but of these Charleston was the Mecca toward which all eyes turned and in which all lived who had any social or political ambitions. Attempts were made in the eighteenth century, in this colony as elsewhere, to boom land sites for the erecting of towns on an artificial plan. In 1738, the second landgrave, Thomas Smith, tried to start a town on his Winyaw tract near Georgetown. He laid out a portion of the land along the bluff above the Winyaw River in lots, offered to sell some and to give away others, and planned to provide a church, a meetinghouse, and a school. But this venture failed; and even the more successful attempt to build up Willtown about the same time, although lots were sold and houses built and occupied, eventually came to nothing. The story of some of these dead towns of the South, whether promoted by natives or settled by foreigners, has been told only in part and forms an interesting chapter in colonial history.

In all the colonies, indeed, the eighteenth century saw a vast deal of land speculation. The merchants and shopkeepers in most of the large towns acted as agents and bought and sold on commission. Just as George Tilly, merchant and contractor of Boston, advertised good lots for sale in 1744, so John Laurens, Robert Hume, and Benjamin Whitaker in Charleston a little later were dealing in houses, tenements, and plantations as a side line to their regular business as saddlers and merchants. In the seventies the sale of land had become an end in itself, and one Jacob Valk advertised himself as a "Real and Personal Estate Dealer." The meaning of the change is clear. Desirable lands in the older settlements were no longer available except by purchase, and men were already looking beyond the "fall line" and the back country to the ungranted lands of the new frontier in the farther West.

2. The Great Colonial Staple [1]

Into the antiquities of tobacco, its origin and religious significance, it is not our purpose to enter. Our story begins with its

[1] Meyer Jacobstein, *The Tobacco Industry in the United States, Studies in History, Economics, and Public Law*, Edited by the Faculty of Political Science of Columbia University, Vol. XXVI, No. 3 (New York: The Columbia University Press, 1907), pp. 11–25, 27–30. Reprinted by permission of the author, the holder of the copyright.

introduction into Europe as a commercial crop, about the middle of the sixteenth century. Spanish merchants brought it into Europe from the West Indies. A European market for tobacco had therefore existed for about fifty years before permanent English settlements were made in America. At the opening of the seventeenth century its sale in England was large enough to arouse anxiety among the Bullionists, who hated to see the precious metals leaving the country in exchange for a "worthless weed." In order to check its consumption, Parliament increased the import tax on tobacco from two pence to six shillings ten pence per pound. That the tobacco trade had gained some importance at this early date may be inferred from the fact that by 1601 some individuals thought it worth while to buy a monopoly on the manufacture and sale of tobacco pipes. It remained for the American colonists to take advantage of the existing market and develop it still further.

Fortunately for the colonists, there were economic and political forces at work abroad co-operating with their own efforts to capture and develop the market. England's practical commercial policy laid emphasis on the necessity of having a favorable balance of trade, in order to prevent too much bullion from flowing out of the country. The House of Commons voted unanimously (1620) "that the importation of Spanish tobacco is one of the causes of want of money within the kingdom." Therefore, when it was learned that tobacco could be grown in the Anglo-American colonies, Parliament decided to cut off the importation of Spanish tobacco, which, in 1621, amounted to £60,000. In 1621 Parliament enacted a law practically prohibiting the importation of foreign tobacco by levying discriminating duties in favor of colonial tobacco and against all foreign tobacco. This preferential tariff remained in vogue during the entire colonial period, and was one important factor in the building up of the tobacco industry on this continent.

A second cause operating in favor of the American colonies was the general English colonial policy, which had as one of its aims the development of colonial natural resources, while at the same time, creating a colonial market for the home manufactures in the colonies. While closely akin to the Bullionist policy, the Colonial program was quite distinct, and operated long after the former was discarded. Speaking of the discriminating duty on foreign tobacco, Chalmers says, this is "the first instance of the modern policy of promoting the importation of the commodities of the colonies in preference to the production of foreign nations." This

policy was further re-enforced by prohibiting the cultivation of tobacco in the home country and in Ireland. In 1652, for instance, we find the following significant passage: "Whereas divers great quantities of tobacco have been of late years and now are planted in divers parts of this nation tending to the decay of husbandry and tillage, the prejudice and hindrance of the English plantations abroad and the trading and commerce and navigation and shipping of this nation" and so forth. Therefore a penalty was laid upon home cultivation of tobacco. The chief tobacco-growing counties of England, Gloucestershire and Worcester, offered resistance to this prohibition but finally gave in. Though no great sacrifice was entailed, since England's soil was not adapted to tobacco culture, the mere existence of the statutes indicates the consistency with which English statesmen pushed this colonial policy. Later developments of the tobacco trade fully justified England's policy, for she not only was able to import from her American colonies sufficient tobacco for home consumption, but profited greatly by supplying Europe with her surplus.

Nor was the King himself disinterested in the expansion of the tobacco trade. For in spite of his "Counterblaste" against the use of tobacco, King James I was not opposed to increasing his income by the sale of a monopoly in the trading of tobacco. Under the pretense that a monopoly enjoyed by a few individuals would check the consumption of tobacco, the King was able to harmonize his moral repulsion to tobacco with personal financial gain. In 1621 the patent yielded James I annually as much as £16,000. Out of deference to a protest from Virginia planters against the abuse of the Tobacco Monopoly, the patent was withdrawn in 1621, but again farmed out in 1625. The farmers of the customs demanded a tax of one shilling on each pound of tobacco imported into England. The colonists denounced this as a violation of their charter rights, which provided for a tax of only five per cent on all imported goods, and maintained that the monopoply granted to the "Farmers of Revenue" was equivalent to an additional and illegal tax. The Virginia Company fought so stubbornly against the monopoly that the King yielded and finally withdrew all monopoly rights from the "Farmers of Revenue."

If it was to the King's interest to have the tobacco trade grow, since the value of the monopoly privilege varied directly with the extent of the business done, all the more so was it to the interest of the Virginia Company to encourage it. The financial success of these colonizing companies depended upon the development of the natural resources. In the first charter of Virginia (1606) the Lon-

don Company was allowed to impose a tax of two and one-half per cent and five per cent on all goods "trafficked bought or sold" by English citizens or foreigners respectively. It was by no mere coincidence that the Virginia Company was always back of legislation that shut out foreign goods from England's market whenever Virginia's products could be substituted. Mr. Sandys, who was instrumental in pushing through this legislation, especially the prohibitory act of 1624, was the first treasurer of the Virginia Company. Economic self-interest reflected itself there as it does now in governmental policy. Prosperity in Virginia meant a greater demand for land, and a corresponding increase in quit-rents for the individual stockholders of the company. No small part of the company's profits came from trading, which in turn increased with the development of tobacco cultivation. Hence the Virginia Company was also a factor in the upbuilding of this industry in America.

Thus far, we have spoken only of what might be termed the external conditions that favored the cultivation of tobacco in the American colonies: first, the national financial policy, or Bullionist theory, desiring to check the exportation of bullion by prohibiting the importation of Spanish tobacco, thus creating a home market for colonial tobacco; second, the general colonial policy of encouraging the importation of raw material from the colonies, and exporting to them finished products, while at the same time, increasing the carrying trade for English ships; third, the increase in the King's revenues through the sale of tobacco monopolies; and fourth, the interest of the Virginia Company in booming land values, as well as in the direct profits resulting from the trade that was formerly in the hands of Spanish merchants who brought tobacco from the West Indies. All these forces combined to give the first impetus to tobacco cultivation in the American colonies.

We turn now to the more fundamental, internal causes, without which the above encouragements would have been in vain. First, and most essential, comes the soil. Southern soil was rich, fertile and plentiful, and favorably situated for tobacco cultivation. Flat river land with its rich, black mold was just the kind needed for this crop. And the situation of vast stretches of this fertile land along navigable streams in Virginia and Maryland, eliminated the expenses of inland transportation, which in those days were very heavy. Concerning the adaptability of the soil for tobacco, we have Captain John Smith's testimony before the Royal Commission; when asked why Virginia did not grow wheat instead of tobacco, he replied that a man's labor in a tobacco cultivation was worth six

times that in raising wheat. In his day wheat sold for two shillings six pence per bushel, tobacco for three shillings per pound, or, in terms of labor value, £10 for grain, £60 for tobacco, a ratio of 1:6 in favor of tobacco. One reason for the relative profitableness of tobacco culture was this: wheat was more of an extensive crop, requiring greater area than tobacco, which was always, relative to wheat, an intensive crop. To clear land in those days was an expensive undertaking, especially before slave labor was utilized. Fresh and newly-cleared land was highly productive for tobacco, and so we find that only the abandoned tobacco fields were given up to wheat or corn cultivation. Cotton production was not resorted to until there was an overproduction of tobacco, in 1660. More than once the English Kings attempted to persuade the colonists to grow grain instead of tobacco. So also, colonial legislation sought the same end, but artificial barriers could not overcome nature's predilection for tobacco. Without this fertile soil, favorably situated, the external encouragements, above enumerated, would have been fruitless.

It is commonly believed that the profits of tobacco cultivation depended on slave labor. This was certainly not true for the planters prior to 1619, since before that date there were no slaves in Virginia. The tobacco crop, however, in that year was a large one. For the first fifty years or more white indented or apprentice labor was more important than slave labor. As late as 1671 there were in Virginia three white indented apprentices to one negro slave, or six thousand of the former to two thousand of the latter, out of a total population of forty thousand. When, however, the white servant labor was cut off by the increasing demand for it in those mechanical trades requiring skill, both in England and in the colonies, then cheap negro labor was a boon to the tobacco planter. So it may be said that, while the cultivation of tobacco did not in the first instance depend upon slave labor, its expansion in the eighteenth century did rest upon it. It was a fortunate coincidence for the American planter that as white labor became scarcer and dearer, negro slave labor became more plentiful and cheaper.

We can not agree with those "abolitionists" and economists who maintained that the Southern planter was working against his best economic interests by employing slave instead of free white labor. The relative value, as a source of income to the large plantation owner, was on the side of the negro slave. The following table represents, in brief, the profits derived from the exploitation of slave labor:

ANNUAL OUTLAY		ANNUAL RETURN	
1. Interest on capital invested in slaves (£50)	£2 10s.	1. Two hghds. tobacco	£16
2. Interest on farm capital required per slave	£2	2. Corn, etc.	£4
3. Living expense of slave	£3		
	£7 10s.	Total	£20

Net profit, £12 10s. per year per slave.

The net cost per slave of seven pounds ten shillings represented an investment of about one hundred pounds. The income of twenty pounds was, therefore, equivalent to twenty per cent profit on the total capital investment, less the sum necessary to replace the fund. Just prior to the Revolutionary War the cost of maintaining a slave, seven pounds ten shillings, was low compared with the cost of a free worker per year, which was about twenty pounds (at the rate of one shilling six pence per day). As the opportunities for white labor increased with the industrial progress of the country the difference became still greater. We do not mean to maintain that the existence of tobacco cultivation was conditioned by slave labor for, as we pointed out above, cultivation had flourished before slave labor was important, and it has certainly flourished since the abolition of slavery. Slavery was merely a more lucrative means of exploiting the wealth of a rich and fertile soil. What cheap slave labor did do was to lower the cost of production and thereby cheapen the price of tobacco to the consumer, which in turn stimulated further consumption and cultivation. It may fairly be said that the consumer profited by this slave labor quite as much as, if not more than, the planter and landlord.

The unscientific method of cultivating tobacco, under the one-crop system, did not require more skill than the negro possessed. The planter, moreover, could not always depend on hired labor during the busy season, so that the slave labor was again an advantage over the hired help. Permanent possession of slave labor made possible constant employment throughout the year, especially where forests had to be cleared for further extension of arable land. In the manufacture of garments and the preparation of foods for plantation consumption also, the slave was serviceable. After the tobacco crop was harvested and prepared for shipment, the labor power of the slave was directed and utilized in these secondary occupations.

As the fertility of the Southern soil made the exploitation of slave labor profitable in the South, so the lack of it in the Northern colonies explains the slight development of slavery there. A number of attempts were made to grow tobacco in Massachusetts and Connecticut, as well as in New York and Pennsylvania, but they failed to produce a crop which could compete with the Southern leaf. As late as 1801 the entire New England crop was estimated at only twenty thousand pounds, or the amount which Virginia exported in 1620. Early Massachusetts records show that experiments were made to grow tobacco, but were soon abandoned as being unprofitable. In 1629, for instance, occurs the following statement: "For we find here by late experiences that it (tobacco) doth hardly produce the freight and customs duty."

Along with poor soil came legal enactments, for moral reasons, against the production and consumption of tobacco in the New England colonies. Buying and selling tobacco was prohibited by law, and in some places a high sumptuary tax was levied on tobacco. All these regulations were only of secondary importance in preventing the energies of the Northern colonists from being directed to the cultivation of tobacco. As early as 1646 New Amsterdam settlers turned their attention to tobacco cultivation, but soon gave it up on account of lack of fertile soil. In 1689 Pennsylvania attempted to grow tobacco, but failed for the same reason. The recent development of the industry in the Northern states begins about 1825, subsequent to the introduction of cigars and cigar leaf. But even in the cultivation of this cigar leaf, the Northern soil has to be nourished by a rich and expensive fertilizer. In the absence of the fertilizer in colonial days, Northern soil was not fitted for the tobacco crop.

We shall turn our attention next to the internal development of the industry in those colonies where it flourished most, Virginia and Maryland. In Virginia the tobacco crop and its value were the barometer that measured the material prosperity of the colony. Throughout the whole colonial period, tobacco was the chief and almost exclusive commercial crop of Virginia. In 1671 Governor Berkeley wrote in his census concerning the production of commodities, "Commodities of the growth of our country we never had any but tobacco." Eighty ships came annually from England to carry tobacco to England and the continent. At this time the exportation of tobacco amounted to about 1,500,000 pounds. Just prior to the French and Indian (Seven Years) War, in 1753, export figures reached 53,862,300 pounds. A large part of the laws enacted by the Assembly, as well as many of the proclamations

of the governors, are concerned with the production and sale of tobacco.

Over-production seems to have been a constant source of trouble for the Virginia planters. To check this, as well as to prevent the fall in price, numerous acts were passed by the Assembly. Prices fell from three shillings per pound in 1620, to three pence per pound in 1640. During this period, not only did the Assembly fix the price of tobacco in terms of English money, but it also fixed the price of other commodities in terms of tobacco. Finding that the fixing of prices failed to remedy matters, the government tried other means of State regulation. It attempted to limit the supply by fixing the maximum number of pounds each planter could produce per cultivator employed. Another method resorted to in order to increase prices, was the destruction, by government inspectors, of the poor grades of leaf. Finally, the condition of the market was so bad, and the debts of planters so high, that the Virginia Assembly declared all debts could be legally cancelled upon payment of forty per cent (forty cents on the dollar) in terms of tobacco, the price of which was already fixed by law.

Having secured only temporary relief by enactments directly regulating tobacco, indirect means were resorted to. Colonial authorities, as well as Parliament, tried to induce the colonists to substitute other crops for tobacco. Flax, hemp, cotton and silk were tried but these yielded an inadequate return. Even shipbuilding and trading were resorted to, but these also proved poor substitutes. The trouble with all these artificial regulations was, as the colonists themselves saw, that Maryland was able to increase her output when Virginia attempted to curtail her own. And when selling prices were fixed too high, English merchants would buy of Maryland. Besides, Spanish and Dutch traders were bringing tobacco from the West Indies to the continent. Virginia planters tried to get Maryland planters to agree to some plan whereby prices could be controlled. It was suggested that in years following heavy crops all production should cease in both colonies. Owing to mutual suspicion this plan, tried in 1666–1667, fell through. The poor farmers of Maryland, said Lord Baltimore, could not stand a year's cessation of crops, especially since their farms were mortgaged. It should be added that, had the plan succeeded, Lord Baltimore would have suffered a loss in his revenues which came from tobacco export duties and a tobacco poll tax.

The statistics of production and prices for this colonial period are not complete nor always reliable. From government figures

as well as from the colonial statutes we have been able to compile the following table:

Production		Price	
Year	Pounds	Year	Per pound
1619	20,000	1619	3s.
1620	40,000	1620	(not known)
1621	55,000	1621	(not known)
1622	60,000	1622	(not known)
1628	500,000	1628	3d.
1639	1,500,000	1631	6d.
1641	1,300,000	1640	12d.
1688	18,157,000	1645	1½d.
1745	38,275,000	1665	1d.
1753	53,862,000	1690	2d.
1758	22,050,000	1722	¾d.
		1753	2d.
		1763	2d.

During this period of unsteady crops and over-production, resulting in violent price fluctuations, the colonists charged the home government and English merchants with being partly responsible for the depression in trade. In 1732 the Virginia Assembly embodied the protests of the planters in a petition which was published and sent to the King of England. Among other things, the government is charged with imposing too high a tariff on tobacco imported into England, and the merchant is accused of charging too high commission rates. The planters also claimed that the great amount of smuggling of tobacco into England via Scotland depressed prices in England, and hence depressed the price at which it had to be sold in Virginia to English merchants. The colonists were not permitted to export their tobacco direct to Europe, for the Navigation acts required all shipments to be made in English vessels to England, where it was taxed before going to the continent. As tobacco was among the "enumerated" articles, it had to be sold to English traders, who often agreed among themselves to depress prices. Had the entire market been open to the American planter, there would have been some relief for him. For according to Chalmers, about two-thirds of the entire crop was reshipped from England to the continent. Adam Smith puts the figure still higher. According to Smith, "about ninety-six thousand hogsheads of tobacco are annually purchased in Virginia and Maryland with a part of the surplus produce of British industry. The demand of Great Britain does not require, perhaps, more than

fourteen thousand hogsheads." The American planter not only suffered from the low price at which he sold his tobacco, but from the correspondingly high prices he was forced to pay for the goods he received in exchange for tobacco. On the continent, furthermore, consumption was cut down by the high price of tobacco, fixed arbitrarily by the Farmers of Revenue. This was especially true in France, where tobacco was subject to monopoly throughout the eighteenth century. The cutting down of general consumption by government regulations and monopoly was, and still is, a constant source of complaint on the part of the tobacco planter.

* * * * * * * * * * *

Next to Virginia in the cultivation of tobacco came Maryland. Into its detailed history we cannot enter, nor would it be profitable to do so, since in many important respects it merely repeats that of Virginia. As in Virginia, so in Maryland, it was early discovered that the fertile soil was well adapted to the cultivation of tobacco, and it soon came to be the chief commercial crop. Government regulation was resorted to, as in Virginia, to maintain prices. It was frequently used as a medium of exchange. It was the fear lest Maryland should become a strong competitor that influenced the Virginia tobacco planters to oppose the granting of a charter by the King to Lord Baltimore. Although it never reached the dimensions of Virginia's cultivation, Maryland's tobacco exports came to be about one-fourth of the total colonial export trade.

North Carolina also took to raising tobacco at an early date. By 1775 its export trade amounted to eighty thousand dollars, or about twenty per cent of her total exports. It was not, however, until 1850 that tobacco assumed special significance in North Carolina. . . .

At the outbreak of the American Revolution, tobacco was second on our list of exports in value, reaching in 1775 over one hundred million pounds, or about four million dollars. This product alone represented over seventy-five per cent of the total value of goods exported from Virginia and Maryland. As a result of our independence, over seventy-five per cent of this tobacco was carried directly to the continent, no longer exclusively in English vessels or by English merchants, but by Dutch and French as well. England's revenues from her impost on tobacco was a handsome one. The tariff rates were very high, averaging from two hundred per cent to four hundred per cent *ad valorem* duty. As early as 1686 with a duty of four and three-quarter pence per pound (the price of tobacco being about two pence), she received from this

source exclusively about two million dollars. In 1764 the Crown of England thought it worth while to pay three hundred and fifty thousand dollars for the seignorial right over the Isle of Man to prevent smuggling into England via that place. In 1700 it reached three million five hundred thousand dollars. So far as the revenue on tobacco consumed in England is concerned, England lost nothing by our independence. Social wealth, however, she did lose by the shifting of trade profits from the pockets of English merchants to Continental merchants. The tobacco trade of Glasgow, which had been the leading tobacco center of the world, was ruined.

The reader will have observed that nothing has been said thus far concerning the manufacture of tobacco. Our trade in manufactured tobacco during colonial times was a negligible quantity. We exported the raw leaf, which was afterwards manufactured abroad, not only for foreign use, but often for re-exportation to our shores. Consumption, however, in our country was not very heavy, and the products used required very simple manufacturing processes. Snuff and pipe tobacco were the principal forms of the finished product consumed. For this purpose the tobacco needed only to be ground up into a powder, or else cut up into small flakes, much as our present day pipe tobacco is prepared. There were two distinct types: a "sweet scented," more expensive tobacco grown in Virginia; and the "Oronoko," a strong and cheaper type grown in Maryland in the Chesapeake Bay region. The more expensive type was consumed in Great Britain and at home; while the cheaper type went to Continental Europe. This is practically the distribution of our crop to-day.

CHAPTER VI

COLONIAL TRADE AND MARKETS

1. General Survey of Colonial Trade [1]

* * * * * * * * *

. . . In the far north, from Hudson Bay to Nova Scotia, Maine, and New Hampshire, furs, fish, and lumber predominated. These same staples were also of importance to central and southern New England, in addition to whale fins and whale oil, but the main products here were agricultural, including live-stock, naval stores, and also a great variety of provisions, many in their natural state and others dried, salted, and pickled, with some articles of wooden ware, among which were jocularly classed the wooden clocks and nutmegs of Connecticut. New England differed from her neighbor colonies to the immediate southward, not so much in the character of the staples exported as in the possession of large numbers of shipping ports through which she sent her surplus products to the world outside. New York, including within its area of supply Long Island, Westchester County, and the Hudson and Mohawk river valleys, exported a similar variety of domestic staples, with a greater amount of bread-stuffs and peltry, but lagged behind such towns as Salem, Boston, Newport, and Philadelphia in the extent of her export business. Though sharing with Albany and Perth Amboy the trade of the region, she surpassed all the others as an entrepôt for re-exported commodities from the tropical colonies. Philadelphia was wholly absorbed in commerce, and early became the main port, with Burlington and Salem as subsidiary, through which the farmers of Pennsylvania and West New Jersey and the tobacco raisers of Delaware sent their supplies. She specialized in wheat, beef, pork, and lumber, and during colonial times was the greatest mercantile city of the colonial world. She raised almost no staple suitable for export to England and did but a small re-exporting business. As she drew practically all manufactured commodities from England, the balance of trade in that direction was heavily against her. Thus we have in one group what are com-

[1] Charles M. Andrews, "Colonial Commerce," *The American Historical Review*, Vol. XX, No. 1, October, 1914, pp. 55–56, 58–61. Copyrighted by the Macmillan Company. Reprinted by permission of the author and the publishers.

monly known as the "bread colonies," possessed of diversified staples, similar in many cases to those that England produced for herself.

South of Mason and Dixon's line we enter the group of single staple colonies, in which the export was confined to a single commodity or to a small number of commodities. Maryland and Virginia raised very little except tobacco until after the middle of the eighteenth century, when the export of grain, largely to the West Indies, marked the beginnings of trade with the tropical colonies and laid the foundations of the prosperity of Baltimore and Norfolk. North Carolina in the seventeenth century was relatively unimportant as an exporting colony, supplying only tobacco to New England traders who shipped it to England; but afterwards, particularly in the southern section, from the plantations along the Cape Fear River, she developed a variety of staples, live-stock, naval stores, and provisions, and entered upon a considerable exporting activity. South Carolina was a long time in finding her staple industry, but the enumeration of rice in 1704 shows that out of the diversified commerce of the earlier era had come the one product that was to be the chief source of her wealth. In the eighteenth century rice, indigo, naval stores, furs, cypress, and cedar made up the bulk of her cargoes. Among the island colonies, Bermuda and the Bahamas, having no sugar and little tobacco, played but little part in the commercial life of the colonies. But with the West Indies—Jamaica, Barbadoes, and the Leeward Islands— we are face to face with that group known as the "sugar colonies" which formed till 1760 the leading factor in England's commercial scheme. Conspicuous among colonial staples were the products of these islands, sugar, molasses, and rum, with a small amount of indigo, cotton, ginger, allspice, and woods for cabinet work and dyeing purposes, some of which came from the mainland of Honduras. The contrast of the "bread colonies" and the "sugar colonies" forms one of the leading features of colonial history, and in their respective careers we have the operation of forces that explain many things in the course of colonial development.

* * * * * * * * * * *

Turning now to the complicated question of routes, which crisscross so bewilderingly the waters of the Atlantic, we can, I think, group the courses without difficulty, if we keep in mind the nature of supply and demand and the requirements of the Navigation Acts.

The first determining factor was the requirement that all the

enumerated commodities—tobacco, sugar, cotton, indigo, ginger, fustic and other dye woods, and later cocoa, molasses, rice, naval stores, copper, beaver and other skins—be carried directly to England, or from one British plantation to another for the supply of local wants, whence, if re-exported, they were to go to England. This requirement gives us our first set of trade routes. The chief staples of all the colonies from Maryland to Barbadoes were carried to England in fleets of vessels provided by English merchants that during the days of convoys went out in the early winter, about Christmas time, and returned to England in the spring. The providing of naval protection in times of war was a matter of constant concern to the Admiralty, while the gathering of vessels and the arranging of seasons was one of concern to the merchants. After 1713 when convoying became largely unnecessary except to the West Indies, individual ships sailed at varying times, frequently returning from Maryland or Virginia as late as the end of August. We may call this route back and forth across the ocean between England and her southern and West Indian colonies the great thoroughfare of our colonial commerce. It was regular, dignified, and substantial. Out of it grew two subsidiary routes, one from New York and New England with re-exported commodities to England, and one from South Carolina and Georgia to southern Europe under the privilege allowed after 1730 and 1735 of exporting rice directly to all points south of Cape Finisterre. Thus we have a series of direct routes from nearly all of the American colonies converging upon England and one route from South Carolina and Georgia diverging to any point south of France, but generally confined to the Iberian Peninsula and the Straits. Along these routes were carried a definite series of commodities, raised, with the exception of naval stores and beaver, entirely in colonies south of Pennsylvania. To this commercial activity must be added the traffic in these same commodities among the colonists themselves, a service chiefly in the hands of the northerners, who carried tobacco, rice, logwood, and sugar from the southern and West Indian colonies to their own ports and there either consumed them, reexported them to England, or in the case of sugar and molasses worked them over into rum and shipped the latter where they pleased.

When we consider the export activities of the northern colonies, we find ourselves involved in a more varied and complicated series of voyages. First, all the colonies north of Maryland, except Pennsylvania, had a certain but not very extensive trade directly with England. They carried in greater or less quantities an assortment

of furs, fish, rawhides, lumber, whale-fins, and whale-oil, naval stores, wheat, wheat flour, hops, and a little iron, though the largest amount of exported iron came from Maryland and Virginia. They also re-exported tobacco, sugar, molasses, rum, cocoa, hard woods, and dye woods. All these they carried in their own ships as a rule, and because their own products were not sufficient to balance what they wished to buy, they frequently sold their ships also to English merchants. Salem, Newport, and New York were the chief centers of the English trade. Secondly, the northern colonies carried on a very large trade in non-enumerated commodities with the countries of Europe. To various ports, from the Baltic to the Mediterranean, they sent quantities of "merchantable" fish, lumber, flour, train oil, and rice and naval stores before they were enumerated, chiefly to Spain, Portugal, southern French ports, and Leghorn, the mart of the Mediterranean. A few ships appear to have crept through the Sound into the Baltic; others, very rarely, went up the Adriatic to Venice; and in the case of a few enterprising merchants, notably John Ross of Philadelphia, vessels were sent to India and the East, though in 1715 New England reported no trade there, only a few privateers having occasionally "strol'd that way and [taken] some rich prizes."

The bulk of the northern trade, however, was not with Europe, but with the West Indies and with the other continental colonies. The ramifications of this branch of colonial commerce were almost endless, the routes followed were more diverse, and the commodities exported included almost every staple, native or foreign, that was current in the colonial world. Philadelphia and New York traded chiefly with the West Indies and concerned themselves less than did New England with the coastwise traffic; but the New Englanders, in their hundreds of vessels of small tonnage, went to Newfoundland and Annapolis Royal with provisions, salt, and rum, to New York, the Jerseys, Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Bermuda, and the Caribbee Islands, peddling every known commodity that they could lay their hands on—meats, vegetables, fruits, flour, Indian meal, refuse fish, oil, candles, soap, butter, cider, beer, cranberries. horses, sheep, cows, and oxen, pipe-staves, deal boards, hoops, and shingles, earthenware and woodenware, and other similar commodities of their own; and tobacco, sugar, rum, and molasses, salt, naval stores, wines, and various manufactured goods which they imported from England. They went to Monte Cristi, Cape François, Surinam, and Curaçao, to the islands off the coast of Africa, commonly known as the Wine Islands, and there they

trafficked and bargained as only the New Englander knew how to traffic and bargain. It was a peddling and huckstering business, involving an enormous amount of petty detail, frequent exchanges, and a constant lading and unlading as the captains and masters moved from port to port. Sometimes great rafts of lumber were floated down from Maine, New Hampshire, and the Delaware, and not infrequently New England ships went directly to Honduras for logwood and to Tortuga and Turks Island for salt.

Let us consider the return routes. With the southern and West Indian colonies the problem was a simple one. The merchant ships from England went as a rule directly to the colonies, generally laden with English and Continental manufactured goods that according to the act of 1663 could be obtained by the colonists only through England. They followed usually the same route coming and going, though occasionally a ship-captain would go from England to Guinea where he would take on a few negroes for the colonies. Maryland seems to have obtained nearly all her negroes in that way.

But with the northern colonies, where the vessel started in the first instance from the colony, the routes were rarely the same. A vessel might go to England, huckstering from port to port until the cargo was disposed of, and then return to America with manufactured goods. It might go to England with lumber, flour, furs, and naval stores, then back to Newfoundland for fish, then to Lisbon or the Straits, then to England with Continental articles, and thence back to the starting point. It might go directly to Spain, Portugal, or Italy, trying one port after another, Cadiz, Bilbao, Alicante, Carthagena, Marseilles, Toulon, Leghorn, and Genoa, thence to England, and thence to America. It might go directly to the Wine Islands and return by the same route with the wines of Madeira and Fayal and the Canaries, though it was a debatable question whether Canary wines were not to be classed with Continental commodities and so to be carried to America by way of England only. It might go to Spain or Portugal, thence to the Wine Islands, thence to Senegambia or Goree or the Guinea coast for beeswax, gums, and ivory, thence back to Lisbon and home by way of England; or, if it were a slave ship, it might go to the Guinea coast, thence to Barbadoes, and home, or as was probably common, to Barbadoes first, thence to Africa, thence back to the West Indies and home, with a mixed cargo of negroes, sugar, and cash. Frequently the captain sold his cargo and even his ship for cash, and if he did this in Europe, or in England to London or Bristol merchants, he would either return with the money or

invest it in manufactured goods, which he would ship on some homeward-bound vessel, returning himself with his invoice. With the New Englander, and to a somewhat lesser degree with the New Yorker and Philadelphian, the variations were as great as were the opportunities for traffic.

* * * * * * * * * * *

2. Marketing of the Staple [1]

* * * * * * * * * * *

. . . The Virginia traders, for reasons which I shall take up later in this sketch, never got beyond the stage of neighborhood storekeepers. They lived along the greater rivers, buying large quantities of goods for their own estates and somewhat more for the neighbors who lived on smaller plantations, and in the fall, if there seemed to be any chance to make money by the speculation, they bought tobacco in the country and sent it to England in the ships which came in the winter. They were traders and planters, and not seldom they added to these activities that of one of the learned professions. Thus the colony merchants, so far as they existed at all, were not a distinct feature of colonial life.

The trade, on the other hand, was immediately from the hands of the Londoner to those of the planter. Into the rivers the ships came early in the winter, loaded with goods which had been ordered the preceding spring by either the large planters or by these scattered smaller traders whom I have described. These goods were slowly disembarked as the ships moved lesiurely from wharf to wharf. The captains, in the meantime, were making engagements for tobacco with which to make their return loads. They proceeded about their business leisurely enough, and in the course of some weeks returned for the tobacco which they had agreed to take.

About this trade there was much indirection. The London merchant was not a merchant in the sense that a merchant is one who buys and sells commodities. He was more of a commission merchant than a dealer. The only article he handled directly was tobacco. This he disposed of to the best advantage when it was received in England, deducted from the receipts the necessary expenses of the transaction, and placed the balance to the credit of the planter. This balance was rarely remitted to the colony,

[1] John Spencer Bassett, "The Relation Between the Virginia Planter and the London Merchant," *Annual Report of the American Historical Association for the year 1901* (Washington: Government Printing Office, 1902), Vol. I, pp. 558–560, 564–571. Reprinted by permission of the author.

but it was laid out in goods of one kind or another to be sent to the planter by the ships which returned in the following season. Each ship which brought tobacco brought also orders for goods. These goods were bought from various shopkeepers in the city by the Londoner to whom the tobacco was consigned. If there were complaints, and such there frequently were, there was no easy redress for the person who bought the goods. The shopkeepers were so far away that it was a difficult matter to reach them. Frequently the orders sent over with the tobacco amounted to more than the crop realized. The result was debts were contracted by the planter. How much irritation came of these debts one may easily imagine. They served to produce some harsh feelings on each side of the water. The Londoner was apt to feel that his debtor was a little anxious to escape from his obligations; the planter was often led to think that his creditor was a Shylock. Each may have been to a certain extent right, but the fact that such feelings existed was unfortunate in its effect on the state of commerce.

This form of trade was expensive. The commissions of the London factor had to be paid in the first instance. Although he may not have charged anything for his services in buying the articles which the planter ordered, it is reasonable to think that he did not fail to include in his commissions enough to repay him for this trouble. Moreover, he was not enough interested in his purchases to buy with the same care for prices and for quality of goods as the planter would have done in person. It is evident, too, that there was opportunity for corrupt collusion between the factor and the shopkeeper; and it is not very improbable that it did sometimes occur. The item of freight was somewhat more expensive when goods had to be put ashore at the various landings than if they had been sent in bulk to one place.

The most permanent social result of this was that it prevented the development of a strong trading class. It served to turn the commerce of the colony away from the normal channel in other colonies of a trade through one or more strong trading centers, and it scattered the commerce in a thousand smaller parts among the richer planters themselves. Such a state of trade was a social disadvantage. It gave, no doubt, a certain modishness to colony manners, because it put the wealthy people into close touch with the best London shops; but it deprived the people of the more compact society which exists when it is centered around strong centers. Such centers bring to society a more intellectual life. They are usually accompanied by more of a turn to scientific method. Such,

undoubtedly, was true of such colonies as Massachusetts, New York, and Pennsylvania, where a strong trading class built up cities whose influences have been felt in the nation long after the influence of the Virginia planters has passed into decay.

* * * * * * * * * * *

One of the most serious features of colony trade was transportation. It was especially serious in Virginia. The system which came into use was slow and expensive. The ships which were sent to take the tobacco crop to England usually arrived late in the fall or early in the winter. The slow method of collecting freight, which has already been noted, delayed their return till late in the spring. The long period in the colony was a source of heavy expense to the planter. In 1659 it cost £7 to send a ton of tobacco to England. This was 17.9 per cent of the gross sales. At the same time the planter received, after paying the expenses of customs, commissions, freights, and other charges, 35.1 per cent of the gross sales. Thus he paid for his freight half as much as his crop netted him. In 1691 freight was £15 a ton, but this was during the war with France, and the danger of capture doubtless made the charges higher. In 1737, as we may see from the letters of Col. William Byrd, 2d, freight was considered low at £7 a ton. For all this the merchants complained that they made nothing out of them. There seems to be no good reason to doubt their statement. The expenses were sufficient to account for very high freights.

High as these freights were, there was continued and general complaint about the difficulty of getting opportunities of shipping. There often was a dearth of ships. The fault was usually charged, in Virginia, to the merchant. What the merchant would have said about it we do not know, for his evidence is not at hand. It seems probable that each side was partly responsible. The planter sent home in late spring or in summer reports of what kind of crops would be made. It was natural for him not to overestimate the yield, for that would mean low prices. The merchant was careful not to send more ships than would accommodate the crop. It was for his interest to send too few ships rather than too many. Moreover, the ships which came were chartered, frequently by the merchants, and if they did not take enough tobacco to repay the outlay the loss was the merchant's. Thus the normal condition was one of scarcity of ships.

How greatly a planter might suffer from this state of affairs may be seen from the letters of William Fitzhugh. In 1682 he was writing to his London correspondent, "I was intended to have sent you

ten thousand Pipe Staves and four hundred feet of two-inch black walnut Plank, but could not get freight for them." He explained that his long absence from home and his remoteness from shipping facilities had prevented his getting freight when there was an opportunity. In 1687 he wrote that "there was this year such plenty of Tob° and scarcity of ships that freight was hardly to be procured on any terms." William Byrd, the first of the name, had the same kind of experience. From a letter of William Byrd, the second of the name, we may see something of the same state of affairs a generation later. The letter is written to Mr. Hansbury, an English merchant, and the date is evidently 1736. To a former complaint of the writer Hansbury had replied that the merchants made nothing out of the Virginia trade. The reason of this, said Byrd, was that when the merchants sent out the ships they gave them instructions to take no tobacco except what was consigned to the merchants themselves. This caused long delays in Virginia, during which the ships were compelled to send sloops hither and thither collecting their cargoes. If a ship of 500 tons, he added, were to come to the colony with instructions to take freight as it was offered, she could load at once and make money with freight at £7 a ton.

The ordinary method of securing freight was for the planter to authorize some merchant in London, or elsewhere in England, to engage freight in the ships they sent from England. The planter could do this by the late ships, which usually left Virginia rivers in the summer. This was the only sure way of getting one's tobacco shipped. Tobacco left in Virginia for want of shipment was, said Fitzhugh, as good as lost. This deterioration in tobacco must have been due to imperfect methods of storage, since age is thought in these days to improve the quality of it. If it was to be stored it was necessary to examine it often to see that it was undergoing no damage. Sometimes the planters, in order to be sure of freight, made up a "charter party." How this was done does not appear, but it was probably arranged by some one in London, who took the names of the persons who entered into the affair and the amounts for which they were entered and made the contract with the ship captain, who went at the appointed time to the appointed place and took on board the specified tobacco.

The inconveniences of this trade induced Fitzhugh to make a proposition to his London factor, John Cooper, by which he hoped to remedy the inconveniences mentioned. He proposed that Cooper should send to Virginia a small vessel carrying from 200 to 250 hogsheads of tobacco. He offered to load her in thirty days

after her arrival, and that within a distance of 20 miles from his plantation. The ship must not arrive before "some time in December," and he must have notice of her coming by some of the early ships which were sent to the colony. The tobacco for her loading he seems to have expected to collect from the neighborhood, either storing it himself or holding it in readiness at the homes of his neighbors. So far his proposition related to freight only. He also made other proposals which related to the sale of the tobacco. It was that the tobacco to be sent to England by this scheme was to be paid for at the rate of 10 shillings a hundred, the goods to be valued as goods were valued which were bought for cash, and the tobacco to be delivered without charges for collecting or otherwise handling it. If these terms of sale were not acceptable to Cooper, he offered to sell the tobacco at the regular market price when the ships arrived and to charge 21 pounds of tobacco in the hundred weight for his services in collecting the cargo. The advantages to be expected by Cooper through this form of trade Fitzhugh summed up as follows:

> By this trade here will be a great charge Saved in the long stay ships generally make here, being often times forced to run from one end of the Country to the other almost, which eats out the profit of a good market, besides Sloop hire, the allowance to your factor, and merchants, the uncertainty of purchasing Tob° and if purchased many times lying out and behind, and some bad debts never to be recovered: on the other side, as soon as your Ship Arrive She may be taking Tob°, her whole Loading certain, the Distance the Tob° lies at small, so two or three flatts will presently load her and by that means save Sloop hire.

This scheme was not accepted by Cooper, but for what reason does not appear.

In 1687 Fitzhugh was coming back to the same basis, and was making a somewhat similar proposition to Thomas Clayton, another merchant. He referred to a letter from Clayton in which the latter said that he approved of the element of dispatch in the proposed scheme, but that he could not enter into it unless tobacco were to be bought in Virginia at very low prices. To this Fitzhugh replied that he well knew this to be true as long as he, Clayton, was forced to pay the expensive charges of loading the tobacco in Virginia. He then reiterated the reasons for this expense which he had given four years earlier in the letter to Cooper. His statement of the matter was no doubt exaggerated, but after due allowance is made for a man who was trying to get a favorable contract there was a great deal in what he said. The expenses

must have been serious on account of the delays in collecting the tobacco and in disposing at the same time of the cargo of European goods, on account of the expenses of storage and "drinkage" and of commissions to agents and factors, and on account of the bad debts which the agents were almost sure to make. Fitzhugh now promised that if his former offer, which seems to have been substantially the same as that made to Cooper, was taken up, he would load a ship with tobacco at 12s. 6d. a hundred. But if Clayton were unwilling to accept this offer, Fitzhugh made another, to wit, he would take all the goods sent over in two ships, one coming early and the other late in the season, selling in return his tobacco at 12s. 6d. a hundred; and he would do this every year. This was more than the market price, but the excess was calculated to reimburse Fitzhugh for his trouble and for the risk involved in the contract. If we may judge from his letter, he believed that by securing to Clayton a quick dispatch and security from loss by bad debts the latter could afford to give the proposed price for tobacco. If this proposition did not recommend itself to the good judgment of his correspondent, he had others. He would load the two ships, as aforesaid, at 2s. a hundred more than the ruling price of tobacco, and for a commission of 15 per cent on the gross amount of business. If this did not suit Clayton, he would make the level price of tobacco 8s. 6d., instead of counting the price at 2s. more than the market price, and charge the additional 15 per cent. If this was not acceptable, he had still another scheme. He agreed to load the two ships, as before described, at either the market price or at 8s. 6d., to assume all risk himself, and to charge a commission of 25 per cent and £30 in cash for each 300 hogsheads shipped. In justifying the commission of 25 per cent Fitzhugh gives an interesting view of trading expenses. It was the custom, he said, to charge 10 per cent to load vessels, 5 per cent to sell goods, 3 per cent for storage, and as he was sure to deal with the planters "less than 2 per cent will not afford drinkage." Insurance he put at 3 per cent, and the effort to get the ships away in time he thought ought to be worth at least 7 per cent. "But," he added, "I must caution you that I expect the goods bought well and with ready money, and the custom and other incident charges particularly mentioned, and not an advancement of the goods to make up those charges, as is in frequent use and practice." So far as is known, this elaborate scheme was not accepted by Clayton, to whom it was submitted.

Fitzhugh's experience in regard to opportunities to ship was shared by both of the Byrds. The elder of them wrote on July 21,

1690, to ask that some small ship be sent him and promised to load it. Forty-six years later the second Byrd wrote that the complaints of the merchants would be remedied if the ships sent were instructed to take freight from any one who offered it. The schemes all failed, perhaps because of the great distance between the two places. The trade having become established in the existing way, it was exceedingly difficult for the remote planters to get it changed into new channels. The naturally conservative feeling of commerce, as well as the pecuniary advantage of the merchants, made a bulwark against which the efforts of the more enlightened planters and traders of Virginia were of no avail.

The manner of the trade about which I have been speaking was such that the planter was obliged to allow to his English correspondent much discretion in disposing of the tobacco shipped and in buying goods out of the proceeds. This was frequently due to the uncertainty of the selling price of tobacco. Thus Fitzhugh writes to Cooper that if the tobacco and bills of exchange which he is forwarding shall come to more than the goods which he has ordered he is to send the overplus in linen. At the same time he wants a bricklayer and a carpenter for service on his building and gives instructions for having them sent to him. It might happen, also, that the proceeds would not be sufficient to pay for the goods ordered. In such a case the merchant might exercise his discretion about filling the order. It thus came about that many planters were slightly in debt to the merchants. A sagacious planter would avoid this state of affairs, since it gave the merchant a right to expect that such a debtor would continue to send tobacco to him. Fitzhugh, who was essentially a prudent man of business, said that it was his care to keep a credit with the merchant for "factoridge."

The relations between such a prudent person and the merchant might be very satisfactory, for as long as the planter was not in debt he was a man to be courted. In such cases it is noticeable that terms of intimacy between the two were frequent. Thus Fitzhugh does not mind putting in a piece of news in his letters of business, and Byrd, the elder, frequently sends his and his wife's regards to the merchant and the merchant's family. From the correspondence of the latter we learn that also certain "tokens" were regularly sent to Virginia to be drunk in remembrance of certain friends among the London merchants, and that Byrd, acting for himself and friends on the James, sent certain parcels of tobacco to England with instructions that the proceeds should be expended in wine to be used in the same way.

On the other hand, the relations between these two parties might be anything but pleasant. The very nature of the trade was such that it fell into the credit system from the beginning. When once a merchant had brought goods to America it was no practical thing to carry them back to England because the Virginia market was overstocked. He sought some other way to dispose of them. He might leave them in the hands of an agent, or he might sell them on credit and take a lien on the forthcoming crop of tobacco. In fact, each method was followed. Thus the credit relation got a deep hold on the economic life of the colony. It was the beginning of the expensive system of fall credits in the South. It gave ample room for the work of the lawyer, as we may see from the letters of Fitzhugh. Between the most reliable of the planters and the merchants it might not lead to complications. But there were always people among the Virginians, as among all other peoples, who were not thrifty. Here were causes of the merchant's continual losses. Here was the source of the planter's bitter feelings. The result was a certain jealousy of foreigners of means, which struck deep into the community's consciousness.

Besides this open disadvantage there were a number of unavoidable inconveniences in the trade. One often recurring was the slowness of the planter in finding out how his balance stood. This might happen through accident when the merchant was careful to forward reports, as by the loss of letters. It would more frequently happen through the carelessness of the merchant in not making prompt returns by the ships which took the goods back to Virginia. The slowness of intercourse might well make it two years after the tobacco was shipped before the planter knew certainly what it had netted him. Both Byrd and Fitzhugh had experiences confirmatory of this. The latter writes in 1695 to Cooper:

> I desire you Sr. to send my Account Currant by the first ships & send me two or three duplicates for fear of miscarriage, for not knowing how my Account stands, I dare not send for goods though my wants are very great and pressing.

A similar inconvenience was the irregularity of the mails. The post-office was introduced into Virginia in 1692. Before that time letters were left to the rather uncertain accommodations of the merchant ships. Fitzhugh frequently gives instructions to his correspondent in regard to their letters. Sometimes the letters went astray through being forwarded in any chance ship which came to Virginia. By this means they might be sent in a James

River ship and be as difficult to get on the banks of the Potomac, where Fitzhugh lived, as if they were still in London. The direction was to leave letters at Cooper's, who would forward them safely, or to give them to any captain who was coming to the Potomac River in Virginia. This condition of affairs evidently produced serious trouble when, as in 1693, there was not a London ship in the Potomac. Such an occurrence could not have happened often.

The position of Fitzhugh as community trader gave him to a certain extent the position of community banker. He became the owner in this form of business of various small bills of exchange, which he sent to his London correspondent for collection. Many of his business letters contain them. Rarely are they for more than a few pounds each, and the large numbers of persons who draw them is an indication of the widely extended scope of the direct trade between the planter and the merchant. When Fitzhugh himself gave such a bill, as he sometimes did, he gave notice of it to the drawee.

All kinds of commodities were ordered by the planter, and in the complexity of articles which the Londoner must select in order to fill the orders sent to him a high order of shopping skill must have been developed by the merchant and his assistants. All kinds of furniture for the planter's house, all kinds of clothing and dress goods, books, various tools, saddles, servants, orphan boys to be bred up as secretaries, and a hundred other similarly miscellaneous articles were to be looked after. A merchant who had this trade was a true factor. . . .

* * * * * * * * * * *

CHAPTER VII

THE COLONIAL FRONTIER [1]

It is not the oldest West with which this chapter deals. The oldest West was the Atlantic coast. Roughly speaking, it took a century of Indian fighting and forest felling for the colonial settlements to expand into the interior to a distance of about a hundred miles from the coast. Indeed, some stretches were hardly touched in that period. This conquest of the nearest wilderness in the course of the seventeenth century and in the early years of the eighteenth, gave control of the maritime section of the nation and made way for the new movement of westward expansion which I propose to discuss.

* * * * * * * * * * *

There is, then, a western area intermediate between the coastal colonial settlements of the seventeenth century and the trans-Alleghcny settlements of the latter portion of the eighteenth century. This section I propose to isolate and discuss under the name of the Old West, and in the period from about 1676 to 1763. It includes the back country of New England, the Mohawk Valley, the Great Valley of Pennsylvania, the Shenandoah Valley, and the Piedmont—that is, the interior or upland portion of the South, lying between the Alleghenies and the head of navigation of the Atlantic rivers marked by the "fall line."

In this region, and in these years, are to be found the beginnings of much that is characteristic in Western society, for the Atlantic coast was in such close touch with Europe that its frontier experience was soon counteracted, and it developed along other lines. It is unfortunate that the colonial back country appealed so long to historians solely in connection with the colonial wars, for the development of its society, its institutions and mental attitude all need study. Its history has been dealt with in separate fragments, by states, or towns, or in discussions of special phases, such as German and Scotch-Irish immigration. The Old West as a whole can be appreciated only by obliterating the state boundaries which

[1] Frederick Jackson Turner, *The Frontier in American History* (New York: Henry Holt and Company, 1921), pp. 67–125. Reprinted by permission of the author and the publishers.

conceal its unity, by correlating the special and fragmentary studies, and by filling the gaps in the material for understanding the formation of its society. . . .

The end of the period proposed may be placed about 1763, and the beginning between 1676 and 1700. The termination of the period is marked by the Peace of Paris in 1763, and the royal proclamation of that year forbidding settlement beyond the Alleghenies. By this time the settlement of the Old West was fairly accomplished, and new advances were soon made into the "Western Waters" beyond the mountains and into the interior of Vermont and New Hampshire. The isolation of the transmontane settlements, and the special conditions and doctrines of the Revolutionary era during which they were formed, make a natural distinction between the period of which I am to speak and the later extension of the West.

The beginning of the period is necessarily an indeterminate date, owing to the different times of colonizing the coastal areas which served as bases of operations in the westward advance. The most active movements into the Old West occurred after 1730. But in 1676 New England, having closed the exhausting struggle with the Indians, known as King Philip's War, could regard her established settlements as secure, and go on to complete her possession of the interior. This she did in the midst of conflicts with the exterior Indian tribes which invaded her frontiers from New York and Canada during the French and Indian wars from 1690 to 1760, and under frontier conditions different from the conditions of the earlier Puritan colonization. In 1676, Virginia was passing through Indian fighting—keenest along the fall line, where the frontier lay—and also experiencing a social revolt which resulted in the defeat of the democratic forces that sought to stay the progress of aristocratic control in the colony. The date marks the end of the period when the Virginia tidewater could itself be regarded as a frontier region, and consequently the beginning of a more special interest in the interior.

Let us first examine the northern part of the movement into the back country. The expansion of New England into the vacant spaces of its own section, in the period we have chosen for discussion, resulted in the formation of an interior society which contrasted in many ways with that of the coast, and which has a special significance in Western history, in that it was this interior New England people who settled the Greater New England in central and western New York, the Wyoming Valley, the Connecticut Reserve of Ohio, and much of the prairie areas of the Old North-

west. It is important to realize that the Old West included interior New England.

The situation in New England at the close of the seventeenth century is indicated by the Massachusetts act of 1694 enumerating eleven towns, then on the frontier and exposed to raids, none of which might be voluntarily deserted without leave of the governor and council, on penalty of loss of their freeholds by the landowners, or fine of other inhabitants.

* * * * * * * * * * *

In spite of such frontier conditions, the outlying towns continued to multiply. Between 1720 and the middle of the century, settlement crept up the Housatonic and its lateral valleys into the Berkshires. About 1720 Litchfield was established; in 1725, Sheffield; in 1730, Great Barrington; and in 1735 a road was cut and towns soon established between Westfield and these Housatonic settlements, thus uniting them with the older extensions along the Connecticut and its tributaries.

In this period, scattered and sometimes unwelcome Scotch-Irish settlements were established, such as that at Londonderry, New Hampshire, and in the Berkshires, as well as in the region won in King Philip's War from the Nipmucks, whither there came also Huguenots.

In King George's War, the Connecticut River settlers found their frontier protection in such rude stockades as those at the sites of Keene, of Charlestown, New Hampshire (Number Four), Fort Shirley at the head of Deerfield River (Heath), and Fort Pelham (Rowe); while Fort Massachusetts (Adams) guarded the Hoosac gateway to the Housatonic Valley. . . . At the close of the war, settlement again expanded into the Berkshires, where Lenox, West Hoosac (Williamstown), and Pittsfield were established in the middle of the century. Checked by the fighting in the last French and Indian war, the frontier went forward after the Peace of Paris (1763) at an exceptional rate, especially into Vermont and interior New Hampshire. . . .

* * * * * * * * * * *

For nearly a hundred years, therefore, New England communities had been pushed out to new frontiers in the intervals between the almost continuous wars with the French and Indians. Probably the most distinctive feature in this frontier was the importance of the community type of settlement; in other words, of the towns, with their Puritan ideals in education, morals, and religion. . . .

* * * * * * * * * * *

This practice, seen in its purity in the seventeenth century especially, was markedly different from the practices of other colonies in the settlement of their back lands. For during most of the period New England did not use her wild lands, or public domain, as a source of revenue by sale to individuals or to companies, with the reservation of quit-rents; nor attract individual settlers by "head rights," or fifty-acre grants, after the Virginia type; nor did the colonies of the New England group often make extensive grants to individuals, on the ground of special services, or because of influence with the government, or on the theory that the grantee would introduce settlers on his grant. They donated their lands to groups of men who became town proprietors for the purpose of establishing communities. These proprietors were supposed to hold the lands in trust, to be assigned to inhabitants under restraints to insure the persistence of Puritan ideals.

During most of the seventeenth century the proprietors awarded lands to the new-comers in accordance with this theory. But as density of settlement increased, and lands grew scarce in the older towns, the proprietors began to assert their legal right to the unoccupied lands and to refuse to share them with inhabitants who were not of the body of proprietors. The distinction resulted in class conflicts in the towns, especially in the eighteenth century, over the ownership and disposal of the common lands.

The new settlements, by a process of natural selection, would afford opportunity to the least contented, whether because of grievances, or ambitions, to establish themselves. This tended to produce a Western flavor in the towns on the frontier. But it was not until the original ideals of the land system began to change, that the opportunity to make new settlements for such reasons became common. As the economic and political ideal replaced the religious and social ideal, in the conditions under which new towns could be established, this became more possible.

Such a change was in progress in the latter part of the seventeenth century and during the eighteenth. In 1713, 1715, and 1727, Massachusetts determined upon a policy of locating towns in advance of settlement, to protect her boundary claims. In 1736 she laid out five towns near the New Hampshire border, and a year earlier opened four contiguous towns to connect her Housatonic and Connecticut Valley settlements. Grants in non-adjacent regions were sometimes made to old towns, the proprietors of which sold them to those who wished to move.

The history of the town of Litchfield illustrates the increasing importance of the economic factor. At a time when Connecticut

feared that Andros might dispose of the public lands to the disadvantage of the colony, the legislature granted a large part of Western Connecticut to the towns of Hartford and Windsor, *pro forma*, as a means of withdrawing the lands from his hands. But these towns refused to give up the lands after the danger had passed, and proceeded to sell part of them. Riots occurred when the colonial authorities attempted to assert possession, and the matter was at length compromised in 1719 by allowing Litchfield to be settled in accordance with the town grants, while the colony reserved the larger part of northwestern Connecticut. In 1737 the colony disposed of its last unlocated lands by sale in lots. In 1762 Massachusetts sold a group of entire townships in the Berkshires to the highest bidders.

But the most striking illustration of the tendency is afforded by the "New Hampshire grants" of Governor Wentworth, who, chiefly in the years about 1760, made grants of a hundred and thirty towns west of the Connecticut, in what is now the State of Vermont, but which was then in dispute between New Hampshire and New York. These grants, while in form much like other town grants, were disposed of for cash, chiefly to speculators who hastened to sell their rights to the throngs of land-seekers who, after the peace, began to pour into the Green Mountain region.

It is needless to point out how this would affect the movement of Western settlement in respect to individualistic speculation in public lands; how it would open a career to the land jobbers, as well as to the natural leaders in the competitive movement for acquiring the best lands, for laying out town sites and building up new communities under "boom" conditions. The migratory tendency of New Englanders was increased by this gradual change in its land policy; the attachment to a locality was diminished. The later years showed increasing emphasis by New England upon individual success, greater respect for the self-made man who, in the midst of opportunities under competitive conditions, achieved superiority. The old dominance of town settlement, village moral police, and traditional class control gave way slowly. Settlement in communities and rooted Puritan habits and ideals had enduring influences in the regions settled by New Englanders; but it was in this Old West, in the years just before the Revolution, that individualism began to play an important rôle, along with the traditional habit of expanding in organized communities.

The opening of the Vermont towns revealed more fully than before, the capability of New Englanders to become democratic pioneers, under characteristic frontier conditions. Their economic

life was simple and self-sufficing. They readily adopted lynch law (the use of the "birch seal" is familiar to readers of Vermont history) to protect their land titles in the troubled times when these "Green Mountain Boys" resisted New York's assertion of authority. They later became an independent Revolutionary state with frontier directness, and in very many respects their history in the Revolutionary epoch is similar to that of settlers in Kentucky and Tennessee, both in assertion of the right to independent self-government and in a frontier separatism. Vermont may be regarded as the culmination of the frontier movement which I have been describing in New England.

By this time two distinct New Englands existed—the one coastal, and dominated by commercial interests and the established congregational churches; the other a primitive agricultural area, democratic in principle, and with various sects increasingly indifferent to the fear of "innovation" which the dominant classes of the old communities felt. Already speculative land companies had begun New England settlements in the Wyoming Valley of Pennsylvania, as well as on the lower Mississippi; and New England missions among the Indians, such as that at Stockbridge, were beginning the noteworthy religious and educational expansion of the section to the west.

That this movement of expansion had been chiefly from south to north, along the river valleys, should not conceal from us the fact that it was in essential characteristics a Western movement, especially in the social traits that were developing. Even the men who lived in the long line of settlements on the Maine coast, under frontier conditions, and remote from the older centers of New England, developed traits and a democratic spirit that relate them closely to the Westerners, in spite of the fact that Maine is "down east" by pre-eminence.

The frontier of the Middle region in this period of the formation of the Old West, was divided into two parts, which happen to coincide with the colonies of New York and Pennsylvania. In the latter colony the trend of settlement was into the Great Valley, and so on to the Southern uplands; while the advance of settlement in New York was like that of New England, chiefly northward, following the line of the Hudson River.

The Hudson and the Mohawk constituted the area of the Old West in this part of the eighteenth century. With them were associated the Wallkill, tributary to the Hudson, and Cherry Valley near the Mohawk, along the sources of the Susquehanna. The Berkshires walled the Hudson in to the east; the Adirondacks and

the Catskills to the west. Where the Mohawk Valley penetrated between the mountainous areas, the Iroquois Indians were too formidable for advance on such a slender line. Nothing but dense settlement along the narrow strip of the Hudson, if even that, could have furnished the necessary momentum for overcoming the Indian barrier; and this pressure was lacking, for the population was comparatively sparse in contrast with the task to be performed. What most needs discussion in the case of New York, therefore, is not the history of expansion as in other sections, but the absence of expansive power.

The fur-trade had led the way up the Hudson, and made beginnings of settlements at strategic points near the confluence of the Mohawk. But the fur-trader was not followed by a tide of pioneers. One of the most important factors in restraining density of population in New York, in retarding the settlement of its frontier, and in determining the conditions there, was the land system of that colony.

From the time of the patroon grants along the lower Hudson, great estates had been the common form of land tenure. Rensselaerswyck reached at one time over seven hundred thousand acres. These great patroon estates were confirmed by the English governors, who in their turn followed a similar policy. By 1732 two and one-half million acres were engrossed in manorial grants. . . .

* * * * * * * * * * *

In 1769 it was estimated that at least five-sixths of the inhabitants of Westchester County lived within the bounds of the great manors there. In Albany County the Livingston manor spread over seven modern townships, and the great Van Rensselaer manor stretched twenty-four by twenty-eight miles along the Hudson; while still farther, on the Mohawk, were the vast possessions of Sir William Johnson.

It was not simply that the grants were extensive, but that the policy of the proprietors favored the leasing rather than the sale of the lands—frequently also of the stock, and taking payment in shares. It followed that settlers preferred to go to frontiers where a more liberal land policy prevailed. At one time it seemed possible that the tide of German settlement, which finally sought Pennsylvania and the up-country of the South, might flow into New York. In 1710, Governor Hunter purchased a tract in Livingston's manor and located nearly fifteen hundred Palatines on it to produce naval stores. But the attempt soon failed; the Germans applied to the Indians on Schoharie Creek, a branch of the Mo-

hawk, for a grant of land and migrated there, only to find that the governor had already granted the land. Again were the villages broken up, some remaining and some moving farther up the Mohawk, where they and accessions to their number established the frontier settlements about Palatine Bridge, in the region where, in the Revolution, Herkimer led these German frontiersmen to stem the British attack in the battle of Oriskany. They constituted the most effective military defense of Mohawk Valley. Still another portion took their way across to the waters of the Susquehanna, and at Tulpehockon Creek began an important center of German settlement in the Great Valley of Pennsylvania.

The most important aspect of the history of the movement into the frontier of New York at this period, therefore, was the evidence which it afforded that in the competition for settlement between colonies possessing a vast area of vacant land, those which imposed feudal tenures and undemocratic restraints, and which exploited settlers, were certain to lose.

The manorial practice gave a bad name to New York as a region for settlement, which not even the actual opportunities in certain parts of the colony could counteract. The diplomacy of New York governors during this period of the Old West, in securing a protectorate over the Six Nations and a consequent claim to their territory, and in holding them aloof from France, constituted the most effective contribution of that colony to the movement of American expansion. When lands of these tribes were obtained after Sullivan's expedition in the Revolution (in which New England soldiers played a prominent part), it was by the New England inundation into this interior that they were colonized. And it was under conditions like those prevailing in the later years of the expansion of settlements in New England itself, that this settlement of interior and western New York was effected.

The result was, that New York became divided into two distinct peoples: the dwellers along Hudson Valley, and the Yankee pioneers of the interior. But the settlement of central and western New York, like the settlement of Vermont, is a story that belongs to the era in which the trans-Alleghany West was occupied.

We can best consider the settlement of the share of the Old West which is located in Pennsylvania as a part of the migration which occupied the Southern Uplands, and before entering upon this it will be advantageous to survey that part of the movement toward the interior which proceeded westward from the coast. First let us observe the conditions at the eastern edge of these uplands, along the fall line in Virginia, in the latter part of the seventeenth

century, in order that the process and the significance of the movement may be better understood.

About the time of Bacon's Rebellion, in Virginia, strenuous efforts were made to protect the frontier line which ran along the falls of the river, against the attacks of Indians. This "fall line," as the geographers call it, marking the head of navigation, and thus the boundary of the maritime or lowland South, runs from the site of Washington, through Richmond, and on to Raleigh, North Carolina, and Columbia, South Carolina. Virginia having earliest advanced thus far to the interior, found it necessary in the closing years of the seventeenth century to draw a military frontier along this line. As early as 1675 a statute was enacted, providing that paid troops of five hundred men should be drawn from the midland and most secure parts of the country and placed on the "heads of the rivers" and other places fronting upon the Indians. What was meant by the "heads of the rivers," is shown by the fact that several of these forts were located either at the falls of the rivers or just above tidewater. . . .

* * * * * * * * * * *

By the opening years of the eighteenth century (1701), the assembly of Virginia had reached the conclusion that settlement would be the best means of protecting the frontiers, and that the best way of "settling in co-habitations upon the said land frontiers within this government will be by encouragements to induce societies of men to undertake the same." It was declared to be inexpedient to have less than twenty fighting men in each "society," and provision was made for a land grant to be given to these societies (or towns) not less than 10,000 nor more than 30,000 acres upon any of the frontiers, to be held in common by the society. The power of ordering and managing these lands, and the settling and planting of them, was to remain in the society. Virginia was to pay the cost of survey, also quit-rents for the first twenty years for the two-hundred-acre tract as the site of the "co-habitation." Within this two hundred acres each member was to have a half-acre lot for living upon, and a right to two hundred acres next adjacent, until the thirty thousand acres were taken up. The members of the society were exempt from taxes for twenty years, and from the requirements of military duty except such as they imposed upon themselves. The resemblance to the New England town is obvious.

* * * * * * * * * * *

By the beginning of the eighteenth century the engrossing of the

lands of lowland Virginia had progressed so far, the practice of holding large tracts of waste land for reserves in the great plantations had become so common, that the authorities of Virginia reported to the home government that the best lands were all taken up, and settlers were passing into North Carolina seeking cheap lands near navigable rivers. Attention was directed also to the Piedmont portions of Virginia, for by this time the Indians were conquered in this region. It was now possible to acquire land by purchase at five shillings sterling for fifty acres, as well as by head rights for importation of settlements, and land speculation soon turned to the new area.

Already the Piedmont had been somewhat explored. Even by the middle of the seventeenth century, fur-traders had followed the trail southwest from the James more than four hundred miles to the Catawbas and later to the Cherokees. Col. William Byrd had, as we have seen, not only been absorbing good lands in the lowlands, and defending his post at the falls of the James, like a Count of the Border, but he also engaged in this fur-trade and sent his pack trains along this trail through the Piedmont of the Carolinas, and took note of the rich savannas of that region. Charleston traders engaged in rivalry for this trade.

It was not long before cattle raisers from the older settlements, learning from the traders of the fertile plains and pea-vine pastures of this land, followed the fur-traders and erected scattered "cow-pens" or ranches beyond the line of plantations in the Piedmont. Even at the close of the seventeenth century, herds of wild horses and cattle ranged at the outskirts of the Virginia settlements, and were hunted by the planters, driven into pens, and branded somewhat after the manner of the later ranching on the Great Plains. Now the cow-drovers and the cow-pens began to enter the uplands. The Indians had by this time been reduced to submission in most of the Virginian Piedmont—as Governor Spotswood reported in 1712, living "quietly on our frontiers, trafficking with the Inhabitants."

After the defeat of the Tuscaroras and Yemassees about this time in the Carolinas, similar opportunities for expansion existed there. The cattle drovers sometimes took their herds from range to range; sometimes they were gathered permanently near the pens, finding the range sufficient throughout the year. They were driven to Charleston, or later sometimes even to Philadelphia and Baltimore markets. By the middle of the century, disease worked havoc with them in South Carolina and destroyed seven-eighths of those in North Carolina; Virginia made regulations

governing the driving of cattle through her frontier counties to avoid the disease, just as in our own time the northern cattlemen attempted to protect their herds against the Texas fever.

Thus cattle raisers from the coast followed the fur-traders toward the uplands, and already pioneer farmers were straggling into the same region, soon to be outnumbered by the tide of settlement that flowed into the region from Pennsylvania.

* * * * * * * * * * *

Spotswood's interest in the advance along the Rappahannock, probably accounts for the fact that in 1720 Spottsylvania and Brunswick were organized as frontier counties of Virginia. Five hundred dollars were contributed by the colony to the church, and a thousand dollars for arms and ammunition for the settlers in these counties. The fears of the French and Indians beyond the high mountains, were alleged as reasons for this advance. To attract settlers to these new counties, they were (1723) exempt from purchasing the lands under the system of head rights, and from payment of quit-rents for seven years after 1721. The free grants so obtained were not to exceed a thousand acres. This was soon extended to six thousand acres, but with provision requiring the settlement of a certain number of families upon the grant within a certain time. In 1729 Spotswood was ordered by the council to produce "rights" and pay the quit-rents for the 59,786 acres which he claimed in this county.

Other similar actions by the Council show that large holdings were developing there, also that the difficulty of establishing a frontier democracy in contact with the area of expanding plantations, was very real. By the time of the occupation of the Shenandoah Valley, therefore, the custom was established in this part of Virginia, of making grants of a thousand acres for each family settled. Speculative planters, influential with the Governor and Council secured grants of many thousand acres, conditioned upon seating a certain number of families, and satisfying the requirements of planting. Thus what had originally been intended as direct grants to the actual settler, frequently became grants to great planters like Beverley, who promoted the coming of Scotch-Irish and German settlers, or took advantage of the natural drift into the Valley, to sell lands in their grants, as a rule, reserving quit-rents. The liberal grants per family enabled these speculative planters, while satisfying the terms of settlement, to hold large portions of the grant for themselves. Under the lax requirements, and probably still more lax enforcement, of the provisions for

actual cultivation or cattle-raising, it was not difficult to hold such wild land. These conditions rendered possible the extension of a measure of aristocratic planter life in the course of time to the Piedmont and Valley lands of Virginia. It must be added, however, that some of the new-comers, both German and Scotch-Irish, like the Van Meters, Stover, and Lewis, also showed an ability to act as promoters in locating settlers and securing grants to themselves.

In the northern part of the Shenandoah Valley, lay part of the estate of Lord Fairfax, some six million acres in extent, which came to the family by dower from the old Culpeper and Arlington grant of Northern Neck. In 1748, the youthful Washington was surveying this estate along the upper waters of the Potomac, finding a bed under the stars and learning the life of the frontier.

Lord Fairfax established his own Greenway Manor, and divided his domain into other manors, giving ninety-nine-year leases to settlers already on the ground at twenty shillings annually per hundred acres; while of the new-comers he exacted two shillings annual quit-rent for this amount of land in fee simple. Litigation kept land titles uncertain here, for many years. Similarly, Beverley's manor, about Staunton, represented a grant of 118,000 acres to Beverley and his associates on condition of placing the proper number of families on the tract. Thus speculative planters on this frontier shared in the movement of occupation and made an aristocratic element in the up-country; but the increasing proportion of Scotch-Irish immigrants, as well as German settlers, together with the contrast in natural conditions, made the interior a different Virginia from that of the tide water.

As settlement ascended the Rappahannock, and emigrants began to enter the Valley from the north, so, contemporancously, settlement ascended the James above the falls, succeeding to the posts of the fur-traders. Goochland County was set off in 1728, and the growth of population led, as early as 1729, to proposals for establishing a city (Richmond) at the Falls. Along the upper James, as on the Rappahannock, speculative planters bought head rights and located settlers and tenants to hold their grants. Into this region came natives of Virginia, emigrants from the British Isles, and scattered representatives of other lands, some of them coming up the James, others up the York, and still others arriving with the southward-moving current along both sides of the Blue Ridge.

. . . In short, a society was already forming in the Virginia Piedmont which was composed of many sects, of independent

yeomen as well as their great planter leaders—a society naturally expansive, seeing its opportunity to deal in unoccupied lands along the frontier which continually moved toward the West, and in this era of the eighteenth century dominated by the democratic ideals of pioneers rather than by the aristocratic tendencies of slave-holding planters. As there were two New Englands, so there were by this time two Virginias, and the uplands belonged with the Old West.

The advance across the fall line from the coast was, in North Carolina, much slower than in Virginia. . . .

. . . Whereas Virginia's Piedmont area was to a large extent entered by extensions from the coast, that of North Carolina remained almost untouched by 1730.

The same is true of South Carolina. By 1730, settlement had progressed hardly eighty miles from the coast, even in the settled area of the lowlands. The tendency to engross the lowlands for large plantations was clear, here as elsewhere. . . .

* * * * * * * * * * *

The settlement of Georgia, in 1732, completed the southern line of colonization toward the Piedmont. Among the objects of the colony, as specified in the charters, were the relief of the poor and the protection of the frontiers. To guard against the tendency to engross the lands in great estates, already so clearly revealed in the older colonies, the Georgia trustees provided that the grants of fifty acres should not be alienated or divided, but should pass to the male heirs and revert to the trustees in case heirs were lacking. No grant greater than five hundred acres was permitted, and even this was made conditionally upon the holder settling ten colonists. However, under local conditions and the competition and example of neighboring colonies, this attempt to restrict land tenure in the interest of democracy broke down by 1750, and Georgia's land system became not unlike that of the other Southern colonies.

* * * * * * * * * * *

We have now hastily surveyed the movement of the frontier of settlement westward from the lowlands, in the later years of the seventeenth and early part of the eighteenth century. There is much that is common in the whole line of advance. The original settlers engross the desirable lands of the older area. Indented servants and new-comers pass to the frontier seeking a place to locate their head rights, or plant new towns. Adventurous and speculative wealthy planters acquire large holdings in the new

areas, and bring over settlers to satisfy the requirements of seating and cultivating their extensive grants, thus building up a yeomanry of small landholders side by side with the holders of large estates. The most far-sighted of the new-comers follow the example of the planters, and petition for increasing extensive grants. Meanwhile, pioneers like Abraham Wood, himself once an indented servant, and gentlemen like Col. William Byrd—prosecuting the Indian trade from their posts at the "heads" of the rivers, and combining frontier protection, exploring, and surveying—make known the more distant fertile soils of the Piedmont. Already in the first part of the eighteenth century, the frontier population tended to be a rude democracy, with a large representation of Scotch-Irish, Germans, Welsh, and Huguenot French settlers, holding religious faiths unlike that of the followers of the established church in the lowlands. The movement of slaves into the region was unimportant, but not unknown.

The Virginia Valley was practically unsettled in 1730, as was much of Virginia's Piedmont area and all the Piedmont area of the Carolinas. The significance of the movement of settlers from the North into this vacant Valley and Piedmont, behind the area occupied by expansion from the coast is, that it was geographically separated from the westward movement from the coast, and that it was sufficient in volume to recruit the democratic forces and postpone for a long time the process of social assimilation to the type of the lowlands.

As has been pointed out, especially in the Carolinas, a belt of pine barrens, roughly eighty miles in breadth, ran parallel with the fall line and thus discouraged western advance across this belt, even before the head of navigation was reached. In Virginia, the Blue Ridge made an almost equally effective barrier, walling off the Shenandoah Valley from the westward advance. At the same time this valley was but a continuation of the Great Valley, that ran along the eastern edge of the Alleghenies in southeastern Pennsylvania, and included in its mountain trough the Cumberland and Hagerstown valleys. In short, a broad limestone band of fertile soil was stretched within mountain walls, southerly from Pennsylvania to southwestern Virginia; and here the watergaps opened the way to descend to the Carolina Piedmont. This whole area, a kind of peninsula thrust down from Pennsylvania, was rendered comparatively inaccessible to the westward movement from the lowlands, and was equally accessible to the population which was entering Pennsylvania.

Thus it happened that from about 1730 to 1760 a generation

of settlers poured along this mountain trough into the southern uplands, or Piedmont, creating a new continuous social and economic area, which cut across the artificial colonial boundary lines, disarranged the regular extension of local government from the coast westward, and built up a new Pennsylvania in contrast with the old Quaker colonies, and a new South in contrast with the tide water South. This New South composed the southern half of the Old West.

From its beginning, Pennsylvania was advertised as a home for dissenting sects seeking freedom in the wilderness. But it was not until the exodus of German redemptioners, from about 1717, that the Palatinate and neighboring areas sent the great tide of Germans which by the time of the Revolution made them nearly a third of the total population of Pennsylvania. It has been carefully estimated that in 1775 over 200,000 Germans lived in the thirteen colonies, chiefly along the frontier zone of the Old West. Of these, a hundred thousand had their home in Pennsylvania, mainly in the Great Valley, in the region which is still so notably the abode of the "Pennsylvania Dutch."

. . . The entrance to the fertile limestone soils of the Great Valley of Pennsylvania was easy, in view of the low elevation of the South Mountain ridge, and the watergaps thereto. The continuation along the similar valley to the south, in Maryland and Virginia, was a natural one, especially as the increasing tide of emigrants raised the price of lands. In 1719 the proprietor's price for Pennsylvania lands was ten pounds per hundred acres, and two shillings quit-rents. In 1732 this became fifteen and one-half pounds, with a quit-rent of a half penny per acre. During the period 1718 to 1732, when the Germans were coming in great numbers, the management of the lands fell into confusion, and many seated themselves as squatters, without title. This was a fortunate possibility for the poor redemptioners, who had sold their service for a term of years in order to secure their transportation to America.

By 1726 it was estimated that there were 100,000 squatters; and of the 670,000 acres occupied between 1732 and 1740, it is estimated that 400,000 acres were settled without grants. Nevertheless these must ultimately be paid for, with interest, and the concession of the right of pre-emption to squatters made this easier. But it was not until 1755 that the governor offered land free from purchase, and this was to be taken only west of the Alleghenies.

Although the credit system relieved the difficulty in Pennsylvania, the lands of that colony were in competition with the Mary-

land lands, offered between 1717 and 1738 at forty shillings sterling per hundred acres, which in 1738 was raised to five pounds sterling. At the same time, in the Virginia Valley, as will be recalled, free grants were being made of a thousand acres per family. Although large tracts of the Shenandoah Valley had been granted to speculators like Beverley, Borden, and the Carters, as well as to Lord Fairfax, the owners sold six or seven pounds cheaper per hundred acres than did the Pennsylvania land office. Between 1726 and 1734, therefore, the Germans began to enter this valley, and before long they extended their settlements into the Piedmont of the Carolinas, being recruited in South Carolina by emigrants coming by way of Charleston—especially after Governor Glenn's purchase from the Cherokees in 1755, of the extreme western portion of the colony. Between 1750 and the Revolution, these settlers in the Carolinas greatly increased in numbers.

Thus a zone of almost continuous German settlements had been established, running from the head of the Mohawk in New York to the Savannah in Georgia. They had found the best soils, and they knew how to till them intensively and thriftily, as attested by their large, well-filled barns, good stock, and big canvas-covered Conestoga wagons. They preferred to dwell in groups, often of the same religious denomination—Lutherans, Reformed, Moravians, Mennonites, and many lesser sects. The diaries of Moravian missionaries from Pennsylvania, who visited them, show how the parent congregations kept in touch with their colonies and how intimate, in general, was the bond of connection between this whole German frontier zone and that of Pennsylvania.

Side by side with this German occupation of Valley and Piedmont, went the migration of the Scotch-Irish. . . . Their movement to America was contemporaneous with the heavy German migration. By the Revolution, it is believed that a third of the population of Pennsylvania was Scotch-Irish; and it has been estimated, probably too liberally, that a half million came to the United States between 1730 and 1770. Especially after the Rebellion of 1745, large numbers of Highlanders came to increase the Scotch blood in the nation. Some of the Scotch-Irish went to New England. Given the cold shoulder by congregational Puritans, they passed to unsettled lands about Worcester, to the frontier in the Berkshires, and in southern New Hampshire at Londonderry. . . . In New York, a Scotch-Irish settlement was planted on the frontier at Cherry Valley. Scotch Highlanders came to the Mohawk, where they followed Sir William Johnson and became Tory raiders in the Revolution.

But it was in Pennsylvania that the center of Scotch-Irish power lay. . . . [They] squatted on the vacant lands, especially in the region disputed between Pennsylvania and Maryland, and remained in spite of efforts to drive them off. Finding the Great Valley in the hands of the Germans, they planted their own outposts along the line of the Indian trading path from Lancaster to Bedford; they occupied Cumberland Valley, and before 1760 pressed up the Juniata somewhat beyond the narrows, spreading out along its tributaries, and by 1768 had to be warned off from the Redstone country to avoid Indian trouble. By the time of the Revolution, their settlements made Pittsburgh a center from which was to come a new era in Pennsylvania history. It was the Scotch-Irish and German fur-traders whose pack trains pioneered into the Ohio Valley in the days before the French and Indian wars. The messengers between civilization and savagery were such men, as the Irish Croghan, and the Germans Conrad Weiser and Christian Post.

Like the Germans, the Scotch-Irish passed into the Shenandoah Valley, and on to the uplands of the South. . . . This zone combined in part with the German zone, but in general Scotch-Irishmen tended to follow the valleys farther toward the mountains, to be the outer edge of this frontier. Along this with combined frontier stream were English, Welsh and Irish Quakers, and French Huguenots.

* * * * * * * * * * *

We are now in a position to note briefly, in conclusion, some of the results of the occupation of this new frontier during the first half of the eighteenth century—some of the consequences of this formation of the Old West.

* * * * * * * * * * *

A new society had been established, differing in essentials from the colonial society of the coast. It was a democratic self-sufficing, primitive agricultural society, in which individualism was more pronounced than the community life of the lowlands. The indented servant and the slave were not a normal part of its labor system. It was engaged in grain and cattle raising, not in producing staples, and it found a partial means of supplying its scarcity of specie by the peltries which it shipped to the coast. But the hunter folk were already pushing farther on; the cow-pens and the range were giving place to the small farm, as in our own day they have done in the cattle country. It was a region of hard work and poverty, not of wealth and leisure. Schools and churches

were secured under serious difficulty, if at all; but in spite of the natural tendencies of a frontier life, a large portion of the interior showed a distinctly religious atmosphere.

The Old West began the movement of internal trade which developed home markets and diminished that colonial dependence on Europe in industrial matters shown by the maritime and staple-raising sections. Not only did Boston and other New England towns increase as trading centers when the back country settled up, but an even more significant interchange occurred along the Valley and Piedmont. The German farmers of the Great Valley brought their woven linen, knitted stockings, firkins of butter, dried apples, grain, etc., to Philadelphia and especially to Baltimore, which was laid out in 1730. To this city also came trade from the Shenandoah Valley, and even from the Piedmont came peltry trains and droves of cattle and hogs to the same market. The increase of settlement on the upper James resulted in the establishment of the city of Richmond at the falls of the river in 1737. Already the tobacco-planting aristocracy of the lowlands were finding rivals in the grain-raising area of interior Virginia and Maryland. Charleston prospered as the up-country of the Carolinas grew. . . .

It was not long before this interior trade produced those rivalries for commercial ascendancy, between the coastwise cities, which still continue. The problem of internal improvements became a pressing one, and the statutes show increasing provision for roads, ferries, bridges, river improvements, etc. The basis was being laid for a national economy, and at the same time a new source for foreign export was created.

* * * * * * * * * * *

The creation of this frontier society—of which so large a portion differed from that of the coast in language and religion as well as in economic life, social structure, and ideals—produced an antagonism between interior and coast, which worked itself out in interesting fashion. In general this took these forms: contests between the property-holding class of the coast and the debtor class of the interior, where specie was lacking, and where paper money and a readjustment of the basis of taxation were demanded; contests over defective or unjust local government in the administration of taxes, fees, lands, and the courts; contests over apportionment in the legislature, whereby the coast was able to dominate, even when its white population was in the minority; contests to secure the complete separation of church and state; and, later, contests

over slavery, internal improvements, and party politics in general. These contests are also intimately connected with the political philosophy of the Revolution and with the development of American democracy. In nearly every colony prior to the Revolution, struggles had been in progress between the party of privilege, chiefly the Eastern men of property allied with the English authorities, and the democratic classes, strongest in the West and the cities.

* * * * * * * * * * *

The land system of the Old West furnished precedents which developed into the land system of the trans-Alleghany West. The squatters of Pennsylvania and the Carolinas found it easy to repeat the operation on another frontier. Pre-emption laws became established features. The Revolution gave opportunity to confiscate the claims of Lord Fairfax, Lord Granville, and McCulloh to their vast estates, as well as the remaining lands of the Pennsylvania proprietors. The 640 acre (or one square mile) unit of North Carolina for pre-emptions, and frontier land bounties, became the area awarded to frontier stations by Virginia in 1779, and the "section" of the later federal land system. The Virginia pre-emption right of four hundred acres on the Western waters, or a thousand for those who came prior to 1778, was, in substance, the continuation of a system familiar in the Old West.

* * * * * * * * * * *

The final phase of the Old West, which I wish merely to mention, in conclusion, is its colonization of areas beyond the mountains. The essential unity of the movement is brought out by a study of how New England's Old West settled northern Maine, New Hampshire and Vermont, the Adirondacks, central and Western New York, the Wyoming Valley (once organized as a part of Litchfield, Connecticut), the Ohio Company's region about Marietta, and Connecticut's Western Reserve on the shores of Lake Erie; and how the pioneers of the Great Valley and the Piedmont region of the South crossed the Alleghenies and settled on the Western Waters. Daniel Boone, going from his Pennsylvania home to the Yadkin, and from the Yadkin to Tennessee and Kentucky, took part in the whole process, and later in its continuation into Missouri. The social conditions and ideals of the old West powerfully shaped those of the trans-Allegheny West.

PART II

PLANTATION AND FRONTIER 1776–1860

EDITORS' INTRODUCTION

Territorial expansion—the continuous extension of the frontier from the Alleghenies to the edge of the Great Plains and, by passing over the region of the arid lands, on to the Pacific slope—is the underlying influence in our agricultural history from the Revolution to the Civil War. This expansion, by whatever formula designated—national rivalry, manifest destiny, slavery, involved fundamentally agricultural interests, in ways both causal and resultant. Restless pioneers and greedy land speculators began the occupation of the Old Southwest in the decade before the Revolution, and during that struggle Kentucky frontiersmen won the Old Northwest for future homesteaders; the Louisiana Purchase was negotiated to placate the new settlers; and in the acquisition of Texas, California, and Oregon the "peaceful penetration" of farmer, planter, or rancher prepared the way for formal annexation. In turn these vast accumulations of arable land prolonged the period of extensive cultivation and thus postponed technical advances. The virgin lands drew magnetically from all of the older sections, and they attracted as well the land-hungry from the Old World, bringing groups of immigrants whose economic and social traits were to make an enduring impress on the Nation. Regional specialization naturally developed. Finally, expansion created an intensified sectionalism, based at the start upon natural differences between the older sections and the frontier, but later upon the artificial differences of rival labor systems.

With the rapid increase of farm lands and with no corresponding permanent increase in markets, methods of production during the first third of the century were inevitably unprogressive. In the Northeast dependable home markets were available only in the vicinity of the larger cities, while the foreign demand for seaboard grain was highly fluctuating. Southeastern staples, before the full establishment of the factory system and during the shipping depredations of the Napoleonic wars, were dependent upon a precarious foreign trade. Early Western markets were restricted to the one-way river traffic to New Orleans or to the cross-mountain drive to Eastern markets. Inland agriculture the country over was largely self-sufficing; added exertion, physical or mental, found no adequate incentive. Any criticisms of pioneer agriculture on the basis

of modern standards are wholly lacking in point. The system met the needs of that stage of development adequately. It was only when new demands were made and new opportunities were offered that readjustments, conditioned and limited by sectional environments, were necessitated.

By the thirties remarkably favorable conditions of demand and supply were combining to put American agriculture on a commercial basis.

As always, new markets furnished the impelling force leading to the increased and improved production. From the beginning of the century the English cotton factories were making steadily increasing demands for the new Southern staple, and the consequent westward extension of the cotton plantation gave the Mississippi Valley farmers an enlarged outlet for their food products. The establishment of the factory system in the Northeast created expanding markets for both raw materials and food. Sectional specialization thus provided permanent and ever-growing home markets. By the latter forties liberalizing trade policies, war, and famine combined to open up new European markets—the real beginning of our permanent foreign grain trade.

Production adequate for the new markets thus opened up was made possible by a variety of influences. In the first place the prairie plains with their vast stretches of cleared, level, fertile land afforded an opportunity unparalleled in agrarian annals. The comparatively rapid settlement of this favored region was facilitated by ever-lenient and constantly liberalizing national land policies. The revolutionizing machinery—the most outstanding manifestation of Yankee inventive genius—came opportunely but inevitably, if the prairie farmer was to rise to the new demands. Marked improvements in breeds of animals and in varieties of plants and slowly improving methods contributed further to the transition.

The raw materials and food products made available by this revolution in agricultural production were brought to the markets created by the revolution in industry by utilities resulting from a revolution in transportation. Each decade of the period made its special contribution to the extension of the arteries of trade. In internal traffic the turnpike, river steamboat, canal, and railroad met successively the cumulating needs, while foreign shipping was characterized by the culmination of sailing types in the superlative clipper and by the introduction of the steamship.

These years of improvement were marked too by a notable extension of agricultural societies, state and national, and by the beginnings of federal and state aid. In the fifties, in response to the new "industrial movement", the pioneer steps were being taken in agricultural education.

Far-reaching as were these developments, the extent of the change should not be exaggerated. At most it was a time of beginnings rather than of full realizations. As conditions in the leading prairie states show conclusively, agriculture throughout the period remained in many respects largely pioneer. And the improvements, such as they were, were distributed very unevenly among the different sections.

The advances were naturally most marked in the Northwest, where the new machinery could be best utilized and where productive possibilities encouraged the largest expenditure of capital. The Northeast, unable to compete with the bulk food production of the prairies, was forced to confine itself more and more to the production of specialties for the local market. It was the fate of New England agriculture in particular to lose its food markets almost as soon as they had developed in the new industrial cities.

The transforming influences made least impression upon the South, where under the prevailing conditions extensive cultivation remained the most profitable, added returns coming not through improved methods but rather by increasing the supply of land and labor. The Old South presented a variety of agricultural types and conditions, but the slave plantation was the section's predominant interest to which all others were in strict subordination. By the thirties "the South" was a distinct economic unit.

The conventional view which attributes the ante-bellum differences between the South and the Northern sections wholly or mainly to the institution of slavery is far too simple an interpretation. It is evident that race, climate, and physiography must all be given their due weight in explaining the contrasts at that time as well as at the present day.

But whatever the influences determining their development, the Southern plantation and the Northwestern homestead stand out historically as the very antithesis of agricultural types. Apart the two systems were complementary; in the same area they were exclusive. The sectional problem, as it presented itself in a practical way, consisted thus in keeping the two interests confined to their respective areas, giving each a chance to develop in its own way, until nature rendered the ultimate decision. The failure to secure a decision by natural forces of a problem created largely by such forces precipitated the struggle that Bryce has characterized as the greatest failure in the working of the American governmental system. The labor-agrarian interpretation of the Civil War, while inadequate as a complete explanation of the influences involved, does, if fully developed, go a long way to establish the economic basis of the brothers' war. Had it not been for radical agitators and time-serving politicians, North and South, whose influence grew with the passing of the old leadership after 1850, and consequently had the contest for the territories been peacefully adjusted or postponed, the two systems might well have continued on their way north and south of the Ohio until in the natural course of industrial evolution the "relic of barbarism" became extinct.

In the war itself agriculture was a determining factor. A military contest demanding supplies on a scale unprecedented furnished a supreme test of the two economic systems. The superior strength and resourcefulness of the Northern economy was fully demonstrated. The blockade was fatal to the South's main and ultimate reliance upon the cotton trade, and the influence of Northern wheat in foreign markets helped appreciably to secure respect for that blockade. To a remarkable degree the

South adjusted its production in a way to establish and maintain the section upon a self-sustaining basis, but with the lack of machinery and improved methods and with the break-down of transportation the efforts were in the end unavailing. Northwestern agriculture, on the contrary, was actually advancing throughout the decade and met adequately the requirements of the army and of a greatly augmented foreign demand for grain. The drain upon man power was offset by immigration, by the labor of women and children, and especially by the utilization of the new machinery. The rhetorical statement that the McCormick reaper won the war has more justification than most historical exaggerations. This expansion of production, stimulated by abnormal demand and made possible by improved methods, new machinery, and new transportation facilities, forecasted the great Agrarian Revolution whose forces just getting under way were to be fully manifested in the succeeding period.

CHAPTER VIII

THE WESTWARD MOVEMENT OF POPULATION AND AGRICULTURAL SYSTEMS

1. Expansion of Frontier and Plantation to the Southwest [1]

By evolution in the one case and revolution in the other, two systems in American industrial society of the greatest historical importance have now almost wholly vanished. These, the frontier and the plantation system, form a large part of the American past, from which the present with its resources, its industrial and social constitution, and its problems has resulted. The frontier performed its mission in one area after another, giving place in each to a more complex society which grew out of the frontier régime and supplanted it. By this process the whole vast region of the United States, within the limits where the rainfall is sufficient for tillage, has been reduced to occupation in a phenomenally rapid process. The extension of settlement being now ended, the system has died from want of room.

The plantation system was evolved to answer the specific need of meeting the world's demand for certain staple crops in the absence of a supply of free labor. That system, providing efficient control and direction for labor imported in bondage, met the obvious needs of the case, waxed strong, and shaped not alone the industrial régime to fit its requirements, but also the social and commercial system and the political policy of a vast section; and it incidentally trained a savage race to a certain degree of fitness for life in the Anglo-Saxon community. Through the civil war and political reconstruction of the South, accompanied by social upheaval, the plantation system was cut short in the midst of its career. It only survives in a few fragments and in forms greatly changed from the characteristic types. Both the frontier and plantation systems can now be studied in the main only in documents.

The most perfect types both of plantation and frontier occurred

[1] Ulrich B. Phillips, *Plantation and Frontier 1649–1863, Documentary History of American Industrial Society* (Cleveland, Ohio: The Arthur H. Clark Company, 1910), Vol. I, pp. 70–74, 83–88. Reprinted by permission of the author and the publishers, The Arthur H. Clark Company.

in the Southern Colonies, including the West Indies, and the subsequent Southern States. A few plantations existed north of Mason and Dixon's Line; but the climate and crops were not suited to the full routine which typical plantations required. The wilderness of the Northwest was reduced by a great body of frontiersmen; but some of the features of the full type of frontier were usually lacking there, in that the United States army policed the Indians and the popular government was administered directly under the Federal authority. In the Southwest the settlers in general did their own fighting, their own land-office work, their own legislating, when any was done, and their own administering of the laws.

The South, then, gives type illustration of both plantation and frontier; and furthermore, it gives example of great regions in which one or the other of these systems controlled the lives and destinies of the people. In fact, these two systems dominated the whole South. Small farms of the normal type existed in great numbers; towns, factories and mines were not wholly absent; but in the several areas, as a rule, either the plantation system or the frontier shaped the general order of life without serious rival. Hence the ante-bellum South is peculiarly the region of plantation and frontier and a study of those systems may largely coincide with a study of Southern industrial organization and society.

To make the theme clearer it will be well to distinguish the types. A plantation was a unit in agricultural industry in which the laboring force was of considerable size, the work was divided among groups of laborers who worked in routine under supervision, and the primary purpose was in each case the production of a special staple commodity for sale. The laborers were generally in a status of bondage. Wage-earners might be employed; but for the sake of certainty in maintaining a constant and even supply of labor from season to season, indented servants and negro slaves were the commoner resort.

A farm, then as now, was an agricultural unit in which the laboring force was relatively small. There was no sharp distinction between workman and supervisor. A less regular routine was followed and the primary purpose was divided between producing commodities for market and commodities for consumption within the family. Farmers might hire help and might buy slaves. With unfree labor as such, however, they had little or no vital concern. Their need for assistance was in most cases not constant but intermittent; and wage-earning help, which might be hired for a period and then discharged, was better suited to their needs than long

term bonded laborers. Frontier industrial units were on an average still smaller, comprising in many cases only a single person; agriculture was pursued only to supply necessaries, attention was often given mainly to hunting or Indian trading, and the individual or group was in many emergencies concerned with the protection of life more than with the accumulation of property. On a plantation the workmen were distinctly of a laboring class. On a farm they were of the nature of help in the farmer's own work. In frontier industry there were usually no employers of labor at all and no employees of any sort.

These three types shaded from one to another with no distinct line of differentiation, though the types at the two ends of the series, plantation and frontier, were of course in strong contrast. At any given time, each of these types throve predominantly in certain areas in the South, while in others they existed only in subordination, if at all. Where two or all three coexisted in a single area, the systems usually competed for the supremacy; and in the outcome the most efficient for the main purpose at hand would conquer. The representatives of the other types would mostly have to move on. The location of these types, therefore, was somewhat transitory. The great abundance of land available and the short-lived fertility of the soil, together with the prevailing wasteful methods of tillage, caused a great hunger for land, and, to satisfy that hunger, a rapid extension of settlement. Thus arose the westward movement. In it each of the southern types of industrial society took part; and throughout the whole belt of country suitable for exploitation by these systems a running contest ensued between them.

* * * * * * * * * * *

The result of colonial developments may be pictured in a view of conditions prevailing on the eve of the war for independence:

1. The Chesapeake lowlands and the eastern part of the neighboring hill country were the seat of the tobacco industry, then yielding what was still the most important staple on the continent. By far the most of the output was produced in the plantation system and by far the most of the laborers were negro slaves. The units of plantation industry were relatively small, ranging usually below twenty and often below ten field hands to the plantation. There was a large number, also, of free farmers and an appreciable number of indented servants, especially in Maryland. The lands in the older parts of the districts were by this time largely exhausted and industry somewhat depressed. Eastern

Virginia on the whole had begun to pass the zenith of her prosperity. The tobacco staple was a resource of decreasing value, and many people were finding it necessary to resort instead to the production of foodstuffs for market. A readjustment was beginning, which involved the decline of the plantation system in that district. There was a striking dearth of towns and of manufacturing. The trade of most planters with London was inconveniently remote. The towns of Baltimore, Annapolis, Norfolk and Richmond were rising to some little consequence; but the Virginia-Maryland community on the whole was overwhelmingly rural. Across the North Carolina boundary, the district about Albemarle Sound was merely a subprovince of the Chesapeake region. By this time it had received some slaveholding immigrants from Virginia, and thus added to its small-farming population a certain number of tobacco planters.

2. The Shenandoah Valley and most of the Piedmont country from Maryland to eastern Georgia was now occupied by a large but thinly scattered population of backwoods farmers, whose area of occupation touched the plantation district in Virginia, but was widely separated from it in the Carolinas and Georgia by the intervening pine-barrens. The western portions of these settlements were much of the frontier complexion. The main advance guard of the pioneers, however, had now reached the "western waters" in what we now call East Tennessee, and the most adventurous of them had recently crossed the barrier of the Cumberland range and staked out claims in central Kentucky and the Nashville district.

3. The South Carolina-Georgia lowlands were a segregated area occupied by plantations of a large average size, and with but few nonslaveholding farmers. Most of the unattached working men who by chance entered this district either took employment in the commercial towns or pushed across the pine-barrens to join the backwoodsmen of the Piedmont.

4. St. Augustine, Pensacola, Mobile, Biloxi, New Orleans, Natchez, etc., in the provinces of Florida and Louisiana, both at this time held by Spain, were either feeble garrisons or trifling posts for the Indian trade. No considerable agriculture had been developed except in a few clearings upon the banks of the Mississippi; and even in them industry languished. The industrial future of the country was clearly in the hands of the Anglo-Americans; and the Gulf region awaited their coming.

The war for independence brought, of course, a severe economic depression; and this caused some geographical and industrial re-

adjustment. Eastern Virginia suffered a large emigration of its planters, many of whom removed only to the adjacent Piedmont; but some were bold enough to make the long journey to Kentucky with their slaves to exploit the newly famed tobacco lands there. Others inquired for openings in Georgia and Florida, and only awaited favorable reports thence to migrate southward. The planters in the rice district were also depressed for the time, because the withdrawal of the British bounty on indigo had ended their profits from that staple. As for the Piedmont, the number of farms was gradually being increased; and so also in east and middle Tennessee.

The depression of the planting industry lasted only until the resort to the new staple of cotton. Sea-island cotton was made available in 1786, and upland cotton by the invention of Whitneys' gin in 1793. The former revived the prosperity of the rice coast; the latter had tremendous results in revolutionizing the economy and the social constitution of the Carolina and Georgia Piedmont and developing the country westward as far as Texas and north to the southwestern point of Kentucky. Slaveholders from all of the older plantation districts now began to pour into the Carolina and Georgia upland. Very many of the farmers in that region at the same time advanced to the status of planters through the devotion of their earnings from high-priced cotton to the purchase of slaves.

In this newly developing cotton belt a pell-mell régime prevailed. In a scrambling scattered mass of many sorts of people, planters, slaves, farmers, poor whites, and frontiersmen nearly all were concerned with getting cotton lands. The Creeks and Cherokees resisted the pressure upon their hunting grounds; and there was accordingly a mixture of plantation and frontier régimes in middle Georgia, as also afterward in Alabama and Mississippi. The passage of years witnessed a systematizing process in the cotton belt, and in some measure a segregating process which put the planters in control of most of the fertile and accessible areas.

Meanwhile it had been discovered in Louisiana in 1794, that sugar could be produced there with success; and a development of sugar plantations on a considerable scale had begun in the brief remaining period of the Spanish and French dominations. The arrival of the American régime in the sugar district of Louisiana had much the same stimulating and systematizing effect as that which, as we have noted, followed the English capture of Jamaica. Large and thoroughly organized plantations became the characteristic feature. The sugar district was confined by climatic limita-

tions to the southern part of the present state of Louisiana. Soon after the Louisiana Purchase, it became known that the alluvial lands north of the sugar district could be used for short-staple cotton. The bottoms were relatively slow, however, in acquiring a good reputation except for sugar production. The Georgia and Carolina midlands were for a period in more active demand.

The War of 1812 brought another economic crisis, which again hastened the developments already in progress. Eastern Virginia and Maryland were further depopulated, and the Virginia Piedmont also supplied emigrants. The high cotton prices which came with the return of peace brought a new influx from these districts, and also from the Carolina coast, into the cotton belt. The defeat of the Creeks in war by Andrew Jackson had meanwhile forced a cession of a large part of Alabama; and within the next two decades the Southern Indians were obliged to give up all their remaining lands east of the Mississippi. Thereby a large territory was rapidly opened to receive the spread of settlement. The result was a thin occupation at the outset, in a wildly speculative régime, followed by a sobering process, in which a heavy fall in cotton prices assisted. The lowlands upon the Mississippi River, offering the attraction of inexhaustibly fertile soil, became a district of specially large slaveholdings, whether for cotton or sugar production, and specially subject to spasms of inflation and depression. In the same period the population was being increased in Kentucky and middle Tennessee in more sedate fashion, as well as in the territory north of the Ohio River. Florida, also, received some immigration after its purchase in 1819; but Florida lay without the cotton belt proper and suffered a relative neglect. The only great extension of the plantation area remaining to be mentioned was that into Texas. The attractions of that region were the prairies for cattle and the river lands for cotton. The process of occupation, from the industrial point of view, was not widely different from that of other new districts in the cotton belt, except that the farms and plantations were more sparsely distributed and industry was somewhat more diversified, and the proportion of negro laborers smaller than in the other cases. The occupation of Arkansas and West Tennessee was merely an extension of the movement into the Mississippi cotton region. Rough conditions prevailed for a period; but industry in sober routine was not slow in replacing the régime of legal and social chaos. The settlement of Missouri was marked by an effort to extend the plantation system into a region not suited to the staples. A considerable number of slaves were carried thither; but they were found relatively un-

profitable as laborers; and as years passed their number tended to diminish through sales to the cotton belt.

2. Emigration from a New England State [1]

Emigration, western lands, and the improvement of agricultural methods became questions of vital importance after 1800. They were so interdependent that the discussion of one involves the consideration of all. Emigration was caused partly by the knowledge that lands, cheap, fertile, and abundant, were available on the frontier. To prevent emigration, which was draining population and increasing the cost of labor, agriculture was encouraged. Something must be done, it was reasoned, to enable the high-priced Connecticut farm to compete with the enticing new lands of the West. Because of their close association, the three subjects will be treated in a single chapter.

"Emigration is a wholesome drain on a redundant population," said Edmund Burke. The word "wholesome" was used advisedly, for emigrants as a rule are from the discontented class. President Dwight believed and even rejoiced that the New Englanders who were going westward were shiftless, ne'er-do-weel persons. One might differ from Dwight by arguing that the emigrants, while poor, were men of energy and force, with the courage to venture on a new life in the wilderness. At all events, they were dissatisfied with conditions. They felt oppressed and desired change. They might not have been knowingly reformers or radical in politics, but there was within them a consuming fire which made of them potential revolutionists. Emigration offered a panacea to them, and to the state a safety-valve. To the Standing Order it was a Godsend; for otherwise this discontented mass must have broken down restraints and forced an earlier reform, if not a thorough upheaval.

The population of Connecticut could hardly be described as redundant, even though at first the economic life was agricultural, and intensive farming was unknown. From the time of the Revolution there had been a heavy emigration which continually increased until, by 1815, it became almost a migratory furor. In 1817 a western traveler could write: "Old America seems to be breaking up and moving westward."

For such a movement there must have been an occasion. The

[1] Richard J. Purcell, *Connecticut in Transition 1775–1818*, Justin Winsor Prize Essay for 1916 (Washington: The American Historical Association, 1918), pp. 139–152. Reprinted by permission of the publishers.

reasons are not far to seek, though their ramifications strike deep into the vitals of the state's life. Men were actuated by various considerations, some vital, others secondary. Some were discontented with the narrow religious system of a state church, the close scrutiny over morals and pleasures, the forced payment of tithes, and the oppressive ministerial influence which permeated the whole atmosphere. These were likely to be men of no religion or dissenters. Others, harassed by the social intrenchment, were attracted by the frontier, with its liberality and equality. Others were men of political ambition who saw no hope of advancement under the Federal Congregationalist régime. Still others were on the underside of the economic scale with small, worn-out and mortgaged farms. They might have been farm laborers or men displaced by the failure of the shipping business. To them the West offered land and dreams of a future. Finally, due to their enterprising character, Connecticut people, like all New Englanders, were supposed to have a natural touch of wanderlust quite in accord with the term "wandering Yankee."

Prior to the Revolution there was a decided interest in the West. The Delaware Company, which as early as 1760 undertook settlements, was a Connecticut company. The incorporators of the Susquehanna Company were for the most part from Connecticut, and chiefly from Windham County. In 1774–1776 the Susquehanna district, the ill-fated Wyoming Valley, was settled by Connecticut people and incorporated as a town attached first to Litchfield County and later as a separate county. Phineas Lyman, the hero of Lake George in the French and Indian War, migrated to West Florida, settling near Natchez. Litchfield County becoming fairly thickly populated, the Connecticut emigrant turned toward more distant frontiers. He made his way up the Connecticut River into the river counties of New Hampshire, settled in the Berkshires, or pushed into Dutchess or Columbia counties, New York.

The war stimulated emigration by making men familiar with new lands. It inaugurated the policy of paying off soldiers in land-script. By way of illustration the town of Salisbury found that of its war veterans few ever returned, preferring to settle in the new countries. Evidently the type of man who fought the war was represented in the intrepid, stirring emigrant. There was a steady increase in emigration, especially to western New Hampshire and Vermont. So great was the exodus to the latter state, that it was colloquially often spoken of as "New Connecticut." . . .

There was a rush before 1800 for New York. Enterprising

young men with their families were entering what was then termed the Genessee Country, now Ontario and Steuben counties. It was a Suffield man, the bank promoter, Oliver Phelps, who was a partner in the purchase of this huge tract of two and one-fifth million acres. Naturally, he exerted himself to the utmost to sell farms in this region. Through his efforts and influence the Genessee became characteristically Connecticut. . . .

No figures are available for emigration, but the movement was sufficient to arouse misgivings. Population was kept at a standstill. Statesmen were questioning if it was good policy to encourage this western movement, and if the land speculator, by arousing the migratory spirit, was doing a patriotic service.

From 1800 to the Second War emigration continued. New Hampshire, Vermont and Maine lands appealed to the few while Pennsylvania and western New York attracted large numbers. . . . Connecticut towns were pouring out their "surplus" population. Yet, great as was the movement into these states, the distant Ohio country was attracting even more emigrants.

The Western Reserve drew with magnetic force the emigrant. He knew that he was merely going to New Connecticut where the advantages of the old state in the way of people, schools, and churches, were to be found in conjunction with cheap lands and western freedom. Then, too, the Ohio Land companies were closely connected with Connecticut through officers or incorporators who were natives. Rev. Manasseh Cutler, whose son lived in Killingly, had for his surveyor a Connecticut man, Jonathan Meigs. James Kilbourne of Granby was prominent in the Scioto Company; and General Cleveland of Canterbury was associated with all these ventures. Harrison and Randolph counties were said to be in Connecticut hands. Five hundred thousand acres were offered on the Lake Erie turnpike road and four hundred thousand in Trumbull County by a Hartford dealer. . . . Business was done on a large scale, every inducement was offered, and words were not spared in the portrayal of rosy vistas for the prospective emigrant. Rivalry only stimulated their activity, their business shrewdness, and their descriptive vocabularies. The land agent was serving his purpose.

The extent of this migration can be seen in the rapid growth of the Western Reserve. As early as 1809 it was said to contain 15,000 to 20,000 persons, with four counties, courts, eighty mills, a furnace, ten stores, schools and a college. Rev. Thomas Robbins, while a missionary, met many Connecticut people and numerous personal acquaintances. Closely scrutinizing the newspapers,

one is surprised at the number of exiles whose names appear in the obituary columns. Margaret Dwight, traveling from Old to New Connecticut in 1810, was so impressed by the westward movement that she wrote: "From what I have seen and heard, I think the state of Ohio will be filled before Winter."

The War of 1812 brought a lull in emigration and a slump in land sales. With peace declared, the rush westward gained ever-greater momentum. Emigration in 1815 had become a mania. The state was in the throes of what was aptly termed the "Ohio fever." Newspapers were again filled with land advertisements by the New York and Ohio land agents. Western correspondents' letters were published along with articles descriptive of the West, in order to further encourage emigration. Widely circulated guides, gazetteers, and books of travel played their share in this general education. The omnipresent agent was nowhere inactive. Young men who built roads in New York or worked farther west during the dull season returned, praising the soil and climate. The New England peddler brought back his usual store of information concerning the new country and its opportunities. All classes were interested. The Yale Commencement oration in 1816, for instance, was on the "Spirit of Emigration from Eastern to Western States."

The Ohio emigrant had generally been of the laboring class, but by 1815 many an emigrant was a man of some means in his native state. No longer were western lands an experiment; men of capital were becoming interested, as the safety of investment was assured. No longer need there be that dread of Indians at which the most courageous quailed, for the whole region by test of arms was American and the frontier had been moved another stage westward. The depression and hard times which so injured shipping and manufacturing found the demand for agricultural products steady and prices high. The hopes of internal trade were being pointed out by far-seeing individuals and fostered by land speculators. Men were instinctively recognizing the West's future. Eastern capital was being invested in western roads and canals.

As early as 1806 a Maine land advertisement called attention to the importation of western wheat into Massachusetts and Connecticut. The Embargo days demonstrated the certainty of agriculture as compared with commerce. In 1817 the *Courant* noticed the driving of hogs from Kentucky to Georgetown, and from Ohio to New York, with the observation that they were in as good selling condition as if locally raised. Market prices were announced for grain, only to be followed in another column with accounts of

the bumper wheat and rye crops of the Lake countries. A Windsor dealer read the spirit of the inquiries after a market, when he lauded the Western Reserve because of the Philadelphia cattle market and the "newly discovered Lake market of Montreal." With markets available, men of means could afford to invest in the new lands and emigrate themselves. Only the "frontier farmer" class with its self-sufficient mode of life could go beyond the markets. The moving westward of the frontier was a question of market-stages quite as much as of classes of men.

Labor after the war received a low net wage, for the cost of living was relatively high, and work was scarce. Hence laboring men turned toward the West where labor was held in respect, as it was in demand. Wages were good and the necessities of life cheap. The Cincinnati *Liberty Bell* advised Yankee, job-hunting, street-walking mechanics to come to a rapidly settling locality which is self-supporting and democratic. The *American Mercury* encouraged out-of-work mechanics to take advantage of the attractive opportunities of Ohio. Such appeals were not made in vain to debtors and men who were willing to work with a future competency as their goal.

The democracy of the West was widely heralded. Travelers from abroad or the East noted that in the new country all citizens had a vital part in the government. Republicans of political aspirations saw a future in this promised land where there were no Tories, few lawyers or doctors, no tithe gatherers, and where ministers were only ciphers. To the West they looked for the preservation of Republican principles as a counterbalance for the growing aristocracy of the East. Men knew that the life led on the frontier could but breed equality and social democracy. It was this knowledge which proved one of the strongest incentives to emigrate.

Western lands, so easy of acquisition, were the main cause of the exodus. While these lands were not all the imaginative land agents portrayed in thier prospectuses, yet they were far more fertile and productive than the worn-out farms of Connecticut. Western lands required little care, while home farms needed painful attention. Connecticut farms were relatively small, though there was a tendency toward consolidation and inclosure—arrangements only possible for the wealthy farmer. For the poor man the purchase of local lands was out of the question, for prices ranged from about fourteen to fifty dollars an acre, and taxes were high. Better lands could be purchased for three dollars an acre in western New York, Pennsylvania or Ohio where taxes were at a minimum,

and transportation was becoming easier every year. No lands were sold for taxes in Ohio, while every year saw hundreds of small Connecticut lots sold under the auctioneer's hammer.

The purchase of western lands was made easier by the terms, often seven years, which the agent allowed. He would trade large tracts for small Connecticut plots; he would give special inducements to men of standing who were already freeholders; and to actual settlers he would sell lands cheaper. In this the agent anticipated the later national policy of selling lands at a low rate in order to further settlement. The agent took care of the poor man, selling farms as small as fifty acres at a slightly increased price, when the government would only sell to large purchasers. Here again Congress was to learn.

The number of emigrants cannot be estimated even in the roughest way. Were such data available, the result would be astounding. The census figures for the various towns picture the desertion of Connecticut. Many towns were as large or larger in 1790 than in 1820. Other towns were more populous in 1800 than in 1820. The greatest losses appear to fall between 1790 and 1810. While there was a distinct loss of population in a number of towns from 1810 to 1820, others remained about stationary, with a few, where manufactures were developing city life, actually making material increases. This is not surprising, for there are instances when enough emigrants left a town in a body to perpetuate its town life in the new country. Other towns long bore visible marks of their losses in the ruins of deserted houses and shops, or a chimney in a solitary field. Looking at the total population of the state, the percentages of increase from 1790 to 1800 are found to be five and four-tenths, from 1800 to 1810, four and three-tenths, and from 1810 to 1820, five as compared with thirty-five and one-tenth, thirty-six and four-tenths, and thirty-three and one-tenth for the United States.

Not only the number, but the quality of the emigrants must be considered, in order to understand the state's loss and the nation's gain.

Generally the emigrant was of the farming and laboring class, with a sprinkling of artisans and an occasional merchant of financial backing. Still, there were many professional men who sought relief from too keen competition. A number were Yale graduates. They were apt to be young lawyers who hoped for political preferment and wealth in the newer states. Some among them rose to high positions in their new homes, thereby demonstrating what their native state had lost in not being able to retain them by offering equal opportunities. This drain of the best blood dated back

of the Revolutionary War, but became more noticeable as the call of western democracy echoed louder.

3. Settlement of the New West [1]

By 1820 the effects of the War of 1812 and the rising tide of westward migration became manifest. Pioneers spread along the river courses of the Northwest well up to the Indian boundary. The zone of settlement along the Ohio ascended the Missouri, in the rush to the Boone's Lick country, towards the centre of the present state. From the settlements of middle Tennessee a pioneer farming area reached southward to connect with the settlements of Mobile, and the latter became conterminous with those of the lower Mississippi.

By 1830 large portions of these Indian lands, which were ceded between 1817 and 1829, received the same type of colonization. The unoccupied lands in Indiana and Illinois were prairie country, then deemed unsuited for settlement because of the lack of wood and drinking-water. It was the hard woods that had been taken up in the Northwest, and, for the most part, the tracts a little back from the unhealthful bottom-lands, but in close proximity to the rivers, which were the only means of transportation before the building of good roads. A new island of settlement appeared in the northwestern portion of Illinois and the adjacent regions of Wisconsin and Iowa, due to the opening of the lead mines. Along the Missouri Valley and in the Gulf region the areas possessed in 1820 increased in density of population. Georgia spread her settlers into the Indian lands, which she had so recently secured by threatening a rupture with the United States.

Translated into terms of human activity, these shaded areas, encroaching on the blank spaces of the map, meant much for the history of the United States. Even in the Northwest, which we shall first describe, they represent, in the main, the migration of southern people. New England, after the distress following the War of 1812 and the hard winter of 1816–1817, had sent many settlers into western New York and Ohio; the Western Reserve had increased in population by the immigration of Connecticut people; Pennsylvania and New Jersey had sent colonists to southern and central Ohio, with Cincinnati as the commercial centre. In Ohio the settlers of middle-state origin were decidedly more

[1] Frederick J. Turner, *Rise of the New West, The American Nation*, Vol. XIV. (New York and London: Harper and Brothers, 1906) pp. 74–83. Reprinted by permission of the author and the publishers.

numerous than those from the South, and New England's share was distinctly smaller than that of the South. In the Ohio legislature in 1822 there were thirty-eight members of middle-state birth, thirty-three of southern (including Kentucky), and twenty-five of New England. But Kentucky and Tennessee (now sufficiently settled to need larger and cheaper farms for the rising generation), together with the up-country of the South, contributed the mass of the pioneer colonists to most of the Mississippi Valley prior to 1830. Of course, a large fraction of these came from the Scotch-Irish and German stock that in the first half of the eighteenth century passed from Pennsylvania along the Great Valley to the up-country of the South. Indiana, so late as 1850, showed but ten thousand natives of New England, and twice as many persons of southern as of middle-states origin. In the history of Indiana, North Carolina contributed a large fraction of the population, giving to it its "Hoosier" as well as much of its Quaker stock. Illinois in this period had but a sprinkling of New Englanders, engaged in business in the little towns. The southern stock, including settlers from Kentucky and Tennessee, was the preponderant class. The Illinois legislature for 1833 contained fifty-eight from the South (including Kentucky and Tennessee), nineteen from the middle states, and only four from New England. Missouri's population was chiefly Kentuckians and Tennesseeans.

The leaders of this southern element came, in considerable measure, from well-to-do classes, who migrated to improve their conditions in the freer opportunities of a new country. Land speculation, the opportunity of political preferment, and the advantages which these growing communities brought to practitioners of the law combined to attract men of this class. Many of them, as we shall see, brought their slaves with them, under the systems of indenture which made this possible. Missouri, especially, was sought by planters with their slaves. But it was the poorer whites, the more democratic, non-slaveholding element of the South, which furnished the great bulk of the settlers north of the Ohio. Prior to the close of the decade the same farmer type was in possession of large parts of the Gulf region, whither, through the whole of our period, the slaveholding planters came in increasing numbers.

Two of the families which left Kentucky for the newer country in these years will illustrate the movement. The Lincoln family had reached that state by migration from the North with the stream of backwoodsmen which bore along with it the Calhouns and the Boones. Abraham Lincoln was born in a hilly, barren portion of Kentucky in 1809. In 1816, when Lincoln was a boy

of seven, his father, a poor carpenter, took his family across the Ohio on a raft, with a capital consisting of his kit of tools and several hundred gallons of whiskey. In Indiana he hewed a path into the forest to a new home in the southern part of the state, where for a year the family lived in a "half-faced camp," or open shed of poles, clearing their land. . . . In 1830 . . . his father moved to the Sangamon country of Illinois with the rush of land-seekers into that new and popular region. Near the home of Lincoln in Kentucky was born, in 1808, Jefferson Davis, whose father, shortly before the War of 1812, went with the stream of southward movers to Louisiana and then to Mississippi. Davis's brothers fought under Jackson in the War of 1812, and the family became typical planters of the Gulf region.

Meanwhile, the roads that led to the Ohio Valley were followed by an increasing tide of settlers from the east. . . .

The southerners who came by land along the many bad roads through Tennessee and Kentucky usually traveled with heavy, long-bodied wagons, drawn by four or six horses. These family groups, crowding roads and fords, marching towards the sunset, with the canvas-covered wagons, ancestor of the prairie-schooner of the later times, were typical of the overland migration. The poorer classes traveled on foot, sometimes carrying their entire effects in a cart drawn by themselves. Those of more means took horses, cattle, and sheep, and sometimes sent their household goods by wagon or by steamboat up the Mississippi.

The routes of travel to the western country were numerous. Prior to the opening of the Erie Canal the New England element either passed along the Mohawk and the Genesee turnpike to Lake Erie, or crossed the Hudson and followed the line of the Catskill turnpike to the headwaters of the Allegheny, or, by way of Boston, took ship to New York, Philadelphia, or Baltimore, in order to follow a more southerly route. In Pennsylvania the principal route was the old road which, in a general way, followed the line that Forbes had cut in the French and Indian War from Philadelphia to Pittsburg by way of Lancaster and Bedford. By this time the road had been made a turnpike through a large portion of its course. From Baltimore the traveler followed a turnpike to Cumberland, on the Potomac, where began the old National Road across the mountains to Wheeling, on the Ohio, with branches leading to Pittsburg. This became one of the great arteries of western migration and commerce, connecting, as it did at its eastern end, with the Shenandoah Valley, and thus affording access to the Ohio for large areas of Virginia. Other routes lay through the passes of

the Alleghanies, easily reached from the divide between the waters of North Carolina and of West Virginia. Saluda Gap, in northwestern South Carolina, led the way to the great valley of eastern Tennessee. In Tennessee and Kentucky many routes passed to the Ohio in the region of Cincinnati or Louisville.

When the settler arrived at the waters of the Ohio, he either took a steamboat or placed his possessions on a flatboat, or ark, and floated down the river to his destination. From the upper waters of the Allegheny many emigrants took advantage of the lumber-rafts, which were constructed from the pine forests of southwestern New York, to float to the Ohio with themselves and their belongings. With the advent of the steamboat these older modes of navigation were, to a considerable extent, superseded. But navigation on the Great Lakes had not sufficiently advanced to afford opportunity for any considerable movement of settlement, by this route, beyond Lake Erie.

In the course of the decade the cost of reaching the West varied greatly with the decrease in the transportation rates brought about by the competition of the Erie Canal, the improvement of the turnpikes, and the development of steamboat navigation. The expense of the long overland journey from New England, prior to the opening of the Erie Canal, made it extremely difficult for those without any capital to reach the West. The stage rates on the Pennsylvania turnpike and the old National Road, prior to the opening of the Erie Canal, were about five or six dollars a hundredweight from Philadelphia or Baltimore to the Ohio River; the individual was regarded as so much freight. To most of the movers, who drove their own teams and camped by the wayside, however, the actual expense was simply that of providing food for themselves and their horses on the road. The cost of moving by land a few years later is illustrated by the case of a Maryland family, consisting of fifteen persons, of whom five were slaves. They traveled about twenty miles a day, with a four-horse wagon, three hundred miles, to Wheeling, at an expense of seventy-five dollars. The expense of traveling by stage and steamboat from Philadelphia to St. Louis at the close of the decade was about fifty-five dollars for one person; or by steamboat from New Orleans to St. Louis, thirty dollars, including food and lodging. For deck-passage, without food or lodging, the charge was only eight dollars. In 1823 the cost of passage from Cincinnati to New Orleans by steamboat was twenty-five dollars; from New Orleans to Cincinnati, fifty dollars. In the early thirties one could go from New Orleans to Pittsburg, as cabin passenger, for from thirty-five to forty-five dollars.

4. Immigration to the Middle West in the Fifties [1]

* * * * * * * * * * *

During the ten years from 1850 to 1860 the total population of the eight States of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, and Missouri increased over 3,350,000—an increase of more than 167 per cent, which of course was due partly to natural increase, partly to foreign immigration, and especially to the internal migration of people within the United States. From the standpoint of numbers "Illinois presents the most wonderful example of great, continuous, and healthful increase. . . . So large a population, more than doubling itself in ten years, by the regular course of settlement and natural increase" was without a parallel up to that time.

From the standpoint of percentage of increase Minnesota stood in the lead with an increase of over 2,730 per cent in population during the ten years. In 1850 Minnesota contained only a few scattered settlements with a total population of 6,077, but in the years that followed such a stream of emigration set in that by 1860 there were 172,023 people in the State.

Viewed from the standpoint of both numbers and percentage of increase Iowa also presents a remarkable record of growth in population during this decade. There were 482,699 more people in the State in 1860 than there were in 1850—an increase of over 251 per cent.

In six of these States—all but Ohio and Indiana—the number of native Americans received from other Commonwealths during these ten years was considerably in excess of the number of native-born citizens of these States who emigrated to other regions. In this respect Iowa stood first, Illinois second, and Missouri third.

At the same time this period marks the first great rush of people from New York, Pennsylvania, and the States of the Old Northwest to Minnesota and Iowa. "The greatest number of emigrants have left Ohio, New York, Pennsylvania, and Tennessee," declared the Superintendent of the Federal Census of 1860, "seeking their 'allotted spaces' chiefly in Iowa, Illinois, Missouri, Texas." For instance, during this decade Iowa received more than 68,000 emigrants from Ohio, over 37,000 from each of the States of New York, Pennsylvania, and Indiana, and nearly 30,000 from Illinois.

[1] Dan E. Clark, "The Westward Movement in the Upper Mississippi Valley during the Fifties," *Proceedings of the Mississippi Valley Historical Association for the year 1913–1914*, Vol. VII. (Cedar Rapids, Iowa The Torch Press, 1914), pp. 212–219. Reprinted by permission of the author and The Mississippi Valley Historical Association.

A study of the migration during this decade reveals the fact that Illinois was one of the favorite places of settlement for emigrants from the largest number of States. Missouri attracted settlers in considerable numbers from the second largest number of Commonwealths, while Ohio and Iowa came third and fourth in this respect. On the other hand, the migrations of native-born citizens of the eight States under discussion exemplify the rule that emigration tends to follow parallels of latitude or to flow into adjoining jurisdictions. For instance, natives of Ohio migrated chiefly to Indiana, Illinois, Iowa, and Missouri; and natives of Illinois migrated chiefly to Missouri, Iowa, Kansas, and Wisconsin. The only striking exceptions to the rule are to be found in the emigration to California, Oregon, and Kansas—all of which was stimulated by extraordinary causes.

Again it is to be noted that it was during the decade from 1850 to 1860 that foreign immigrants first began to come to the Mississippi Valley in large numbers. The foreign-born population of these eight States was increased over 881,000 or more than doubled. Among the six States in the entire country having greatest increase in foreign-born population during these ten years Illinois, Wisconsin, and Ohio ranked second, third, and sixth, respectively. In this foreign immigration Germans and Irish predominated.

Thus it is apparent that the decade under discussion witnessed a remarkable immigration to the Upper Mississippi Valley, both of native American families and of home-seekers from foreign shores. Nearly 43,000,000 acres of land were taken up in this region during these ten years, and, to quote a contemporary, "the energies thus called into action have, in a few years, made the States of the Northwest the granary of Europe, and that section of our Union which, within the recollections of living men, was a wilderness, is now the chief source of supply in seasons of scarcity for the suffering millions of another continent."

But a more definite idea of the great wave of humanity which swept over this region during the fifties may perhaps be gained by a cross-sectional view of the emigration into one particular State. And for this purpose no better illustration can be found than the notable rush of settlers to Iowa during the two years from 1854 to 1856.

The causes for this emigration are not hard to find. The completion of railroad lines to the Mississippi River made access to the eastern border of Iowa easier, and railroad companies began that wide advertisement of Western lands which they have continued down to the present time. Furthermore, land companies

and land speculators had by this time begun to hold out alluring inducements to settlers to purchase at advanced prices the lands which they had acquired a few years before at the minimum price. Emigrant guides were also being published by the score and scattered broadcast wherever there were men to whom the ownership of a piece of Western land was an object much to be desired. Articles containing glowing accounts of the beauty, advantages, and fertility of the Iowa country appeared in hundreds of Eastern newspapers until the name "Iowa" became a household word; and those who were so fortunate as already to own a home in that far-famed State wrote enthusiastic letters to their relatives and former neighbors urging them to come and share in their prosperity.

Added to all the publicity which was thus given to Iowa is the fact that the farmers in the East and especially in the Middle States and in Indiana and Ohio had had cause for discouragement. During the summer of 1854 a severe drouth was experienced throughout the entire Ohio Valley and in the States to the eastward; while the Middle States suffered from a fatal epidemic of cholera. Hard times also knocked at the door of many an Eastern farmer during these years. Hence the prospect of securing a quarter section of cheap government land in healthful, productive Iowa was very attractive. And so they sold out, packed their goods in wagons or on boats or trains, and turned their faces westward toward the land beyond the Mississippi.

"The immigration into Iowa the present season is astonishing and unprecedented," ran the account in an Eastern journal in June, 1854. "For miles and miles, day after day, the prairies of Illinois are lined with cattle and wagons, pushing on toward this prosperous State. At a point beyond Peoria, during a single month, seventeen hundred and forty-three wagons had passed, and all for Iowa. Allowing five persons to a wagon, which is a fair average, would give 8,715 souls to the population." Commenting on this statement, an Iowa City editor added: "This being but the immigration of the month, and upon one route only out of many, it would not be an unreasonable assertion to say that 50,000 men, women, and children will have come into this State by the first of December, reckoning from the first of September."

At all the principal points along the Mississippi River an almost continuous stream of emigrants was crossing over the ferries into Iowa during the fall and early winter of 1854. Beginning at the north with the three ferries in the vicinity of Prairie du Chien and MacGregor, it was reported that "each of these ferries employs a horse-boat, and is crowded all the time with emigrants for Iowa.

Sometimes the emigrants have to encamp near the ferry two or three days to await their chance of crossing in the order of their arrival. They come in crowds a mile long; they come with wagon-loads of household fixings, with droves of cattle and flocks of sheep—they come from every land that ever sent adventurers westward, and the cry is 'still they come.'"

The same situation prevailed at Dubuque where emigrants were arriving daily and almost hourly, and at Davenport where the ferry was kept busy at "all hours in passing over the large canvas-backed wagons" filled with would-be Iowans. At Burlington it was declared that "20,000 immigrants have passed through the city within the last thirty days, and they are still crossing at the rate of 600 and 700 a day. . . . About one team in a hundred is labelled 'Nebraska'; all the rest are marked 'Iowa.'" And even at Keokuk such large numbers of settlers came in by boat that a journalist was led to say that "by the side of this exodus, that of the Israelites becomes an insignificant item, and the greater migrations of later times are scarcely to be mentioned." It was said that one thousand people from Richmond County, Ohio, alone, came to Iowa that fall; while long double-header trains brought into Chicago thousands of home-seekers every week.

The movement was checked temporarily during the coldest winter months, but with the opening of spring in 1855 it began again with full strength, if indeed it did not assume larger proportions than during the previous year. A Chicago paper saw no signs of "subsidence in the immense tide of travel setting westward" in May of that year. "The trains grow longer and fuller and more of them, and the hotels are constantly swarming." It was estimated that more than three thousand people a month made their way over the Galena and Chicago Railroad alone, seeking homes in the fertile lands beyond the Mississippi.

Throughout the summer the invasion continued. "Seek whatever thoroughfare you may," wrote a traveler in central Iowa in June, "and you will find it lined with emigrant wagons. In many instances large droves of stock of a superior quality are met with. On our last day's drive . . . we met 69 covered wagons seeking a home in the valley of the Des Moines." The report of the General Land Office for the year ending June 30, 1855, indicated that there had been taken up in Iowa during that year more than three million and a quarter acres of public land, which was more than double the amount sold in any other State of this region with the exception of Missouri.

The railroads reaching out to the Mississippi in Illinois had by

this time begun to be appreciated at their full worth by westward-moving emigrants. The Galena and Chicago Railroad was largely patronized by those who desired to settle in northern Iowa; while the recently constructed Rock Island and Burlington routes conveyed many others to the "land of promise."

The autumn of 1855 witnessed no appreciable diminishing of the stream of land-hungry settlers pouring into the newer counties of the State. "The National road is again lined with wagons on their way to Iowa, Wisconsin, and other Western States," said an Ohio newspaper. "From the general appearance of the movers, the fine outfits and stock driven in company with the long lines of wagons, it is plain to be seen that Ohio is losing many of her best citizens by this continuous emigration."

"The Immigration to Iowa this season is immense," wrote an Iowa editor in November, "far exceeding the unprecedented immigration of last year, and only to be appreciated by one who travels through the country as we are doing, and finds the roads everywhere lined with movers." At Rock Island, although two steam ferryboats made one hundred trips a day they were unable to handle all the business.

Typical of the difficulty of the home-seekers in securing an opportunity to enter lands at the land-offices was the experience of James Chisnell of Summit County, Ohio. Apparently he had gone out to Iowa late in the winter of 1855, but when he arrived at the Decorah Land Office he found that hundreds of settlers were there before him and had already waited weeks for their turns to enter the land they desired. According to the newspaper account, "the rush was so great that the crowd would fill up the passage way to the office at night and stand on their feet till morning, in order to be first in. Some froze their toes and some their feet waiting for the office to open." Finally, the scheme of drawing numbers for turns was hit upon, and since the land office could attend to only a certain number of purchases per day, those who drew large numbers betook themselves to their homes and returned a month or two later in time to take their turns.

Illustrations of this character might be multiplied almost indefinitely to show how the great tide of emigration spread out over the valleys and prairies of Iowa during the two years from 1854 to 1856. Suffice it to say that these years witnessed an increase of over 190,000 in population, which meant an increase in the density of the population from about six to nine persons per square mile. The effect of this emigration was felt in all avenues of life, social, economic, religious, and especially in the realm of

politics, since it placed Iowa solidly in the ranks of the new Republican States.

Perhaps enough has now been said to indicate the importance of the westward movement in the Upper Mississippi Valley during the fifties, for what was true in Iowa between 1854 and 1856 was true, though perhaps in a less degree, in the neighboring States throughout the decade. By 1860 the Commonwealths bordering the Mississippi had to a large extent passed the frontier stage, and were factors to be reckoned with in the affairs of the nation.

CHAPTER IX

PUBLIC LAND POLICIES IN RELATION TO AGRICULTURAL EXPANSION

1. Effect of Land Legislation on Western Settlement [1]

* * * * * * * * * * *

The movement of settlement beyond the Appalachian Mountains was well under way before the public domain was formed. At the close of the Revolution pioneer settlements were found in the back counties of Pennsylvania and in the western lands of Virginia and North Carolina, corresponding to the eastern portions of the present States of West Virginia, Kentucky, and Tennessee. For the next twenty years the westward movement, as generally understood, was confined largely to these regions, although in many parts of the original States frontier conditions existed, notably in Maine, Vermont, Western New York and Central Georgia. It was not until after 1800 that any great movement began toward the public lands in the Northwest. This fact is sometimes overlooked, but the early westward movement was made into state lands and not into the public domain. In theory after 1790 Tennessee was a part of the public domain, but, as has been shown, the lands there were being taken up under North Carolina laws.

In the period from 1800 to 1820, although emigration was moving into the public domain north and south of the Ohio and west of the Mississippi, it must be remembered that only a portion of the Western people were holding lands purchased at the land offices. Of the settlers west of the Appalachians in 1820 fully one-half had taken up lands in regions which never had come under the land system, notably in Kentucky and Tennessee. And of the settlers in the public land States and territories the greater part were located on land which had not been surveyed and sold under the general system. Most of these settlers held lands claimed under foreign titles, the investigation and confirmation of which had delayed the surveys and sales in the regions where they were to be found. Others had taken up military bounty lands, either in the

[1] Payson Jackson Treat, *The National Land System 1785–1820* (New York: E. B. Treat & Company, 1910), pp. 371–390. Reprinted by permission of the author and the publishers.

Revolutionary bounty land district in Ohio, or in the districts in Illinois, Missouri and Arkansas set apart for the bounties of the War of 1812. These lands could generally be had for less than the minimum price of the public lands. In Ohio were the reserves of Connecticut and Virginia and the tracts sold to the Ohio Company and to John Cleve Symmes, in all of which cheap lands were to be had. And in each State and territory one thirty-sixth of the surveyed lands were reserved for schools and other lands for universities. These reserves were later to be turned over to the States to be disposed of by them, but in 1820 no part of these reserves had been sold. Some of the States had tried to lease them, but in most cases the lands were being located upon by squatters. And this serves to introduce a most interesting character whose position was gradually changing throughout these years. The squatter took up lands in spite of the system and in order to bring him under it some sort of pre-emption was considered necessary. Enough has been said, therefore, to indicate that before 1820 the regulations for the sale of public lands affected only a portion, not more than a fourth at most, of the men who were engaged in the westward movement.

With these facts in mind it is easier to follow the development of the land laws and to note their relation to the westward movement. When the land ordinance of 1785 was enacted the only legitimate settlement in the Northwest was to be found around the French villages at Vincennes, Kaskaskia, Cahokia, and a few smaller posts—the settlements at Detroit, Green Bay and Mackinac did not come under American control until 1796. Some settlers had crossed the Ohio from Pennsylvania and Virginia at the close of the Revolution, a few settling along that stream and others taking up land near the French establishments. Congress took a high stand regarding these unauthorized settlements. It looked upon the Western lands as a great source of revenue and for that reason refused to allow them to be taken up by land-hungry settlers. Troops were sent along the Ohio in 1787 to drive off the intruders and destroy their cabins. More efficacious than the troops were the Indians, and their hostile attitude toward all settlement in the Northwest kept back the pioneers until a stronger Federal government was able to administer the public lands.

There can be little doubt but that, had the Indian relations been more settled in the Northwest, the national land system would have developed along entirely different lines. The settlers from Kentucky would have crossed the Ohio in such numbers that the weak government of the Confederation could not have dis-

possessed them and it would have had difficulty in extending the rectangular surveys over lands held by any considerable number of settlers under "tomahawk rights." A system of warrants and surveys, to which these settlers were accustomed, would probably then have been introduced. And with the land taken up in this way it is doubtful if the land sales to companies could have been effected. It was well for the national land system that the early westward movement was directed toward state lands.

The Ordinance of 1785 applied only to land northwest of the Ohio. Its terms entirely ignored the men who were then moving toward that region and who had the greatest interest in the lands. For they wanted cheap lands and without delay, whereas the system called for expensive surveys which took time for execution. And pending the surveys they wanted pre-emption, the right to locate where they pleased and then secure the tract for a nominal price when the lands were placed on sale. Instead of prior rectangular surveys the western pioneer at that time was in favor of a land system based on low-priced warrants and indiscriminate surveys so run that the first comer could secure the river-bottoms and other good land. The Ordinance of 1785 favored settlers accustomed to the methods of New England. The surveys, the land grants for education, the sale of half the land in entire townships, showed that township-planting was in the mind of Congress. The smallest tract a man could buy was a lot of six hundred and forty acres at one dollar an acre in depreciated paper, and only half the townships were offered in this way. It is not difficult to understand why the land sales under the Ordinance were so small. The Indian hostilities kept back all but the hardiest pioneers. Settlers demanded land along the Ohio, but the Seven Ranges (of which only four were placed on sale in 1787) extended forty-two miles from the river at one point. Less than 73,000 acres of land were actually sold in 1787, a petty figure compared with the great tracts being taken up in Kentucky and Tennessee under military bounty and treasury warrants. And not one entire township was sold, which showed that for the time being township-planting was not in favor in the West. Some settlement was at once made on the lands purchased in 1787 and the census of 1790 showed other settlements at Marietta, where the Ohio Company had founded a settlement in 1788, and in the Symmes purchase, while squatters had located on unsurveyed lands along the river.

The next sale of public lands took place in 1796, under the act of that year, but it, too, was confined to lands in the Seven Ranges. In 1800 Ohio had a population of 45,000 but only a small part of

this was settled on lands secured under the acts of 1785 and 1796. After Wayne's decisive defeat of the Indians in 1794 and the Greenville treaty of the next year the first considerable migrations began to Ohio. But no new "Congress lands" were open to selection, so these pioneers turned to the private holdings then in the market. Some located on the lands of the Ohio Company, but more preferred the fine lands in Symmes' purchase, between the Great and the Little Miami. And from Kentucky and Virginia came the holders of Revolutionary bounty warrants to locate them in the Virginia Reserve. Congress had thrown this region open to the location of these warrants in 1790 but settlement did not take place to any extent until after 1795, and in the following year Chillicothe, for a time the principal town, was founded. The population of Ohio was also swelled by the emigrants who were locating in the Connecticut Reserve, which, of course, was never a part of the public lands. In the last decade the population of Indiana Territory had increased, but the new settlers were locating on lands purchased from the French inhabitants or else were squatting near their villages. No provision whatsoever had been made for the survey or sale of any land in the present States of Indiana and Illinois because of the Indian title.

The Act of 1796 was of importance mainly as a statement of principles, for but little land was sold under it. And its terms again ignored the desires of the Western men, although a slight concession was made. The most important feature of the act was the indorsement of the system of surveys which had been under attack ever since the Seven Ranges were laid off. From this time no attempt was made to change the system although it was occasionally criticised. The accuracy of the surveys and the sure title conveyed by the deed served to minimize the delays caused by the system, and the inconvenient divisions occasionally created by the rectangular lines. These surveys were not popular in the West at this time because the bulk of the settlers came from the Southern States, where a different system was in vogue. The two dollars an acre minimum was not well thought of when coupled with only a year's credit, for in all the other Western regions land was much cheaper and the credit longer. And, finally, the minimum tract was still six hundred and forty acres. It was absurd to suppose a typical pioneer able to pay $1,280 within a year, yet the Senate had refused to permit the sale of quarter sections. The one-year credit was the only concession, although slight indeed.

Under this act less than 50,000 acres were sold in 1796 in the Seven Ranges. The next sales took place in 1800, under the act

of that year, but these were also in the same tract. It was not until 1801 that other land in Ohio was offered for sale.

Under the Act of 1800 the land system became a real factor in the westward movement, and it was the five-year credit period which rendered the act effective. Without the credit little land could be sold for two dollars an acre, but with it a man could pay fifty cents an acre and the balance within five years. The minimum lot was now reduced to three hundred and twenty acres, so that a payment of one hundred and sixty dollars entitled a settler to the use of a half section pending the payment of the balance—even if he were forced to forfeit the land he had had five years' occupation for that amount. And the land offices were brought nearer to the people—four being established in southern Ohio.

For twenty years the Act of 1800 regulated the sales of public lands, being only modified as to the computation of interest charges and by the introduction of quarter section tracts in 1804 and a limited number of eighty acre tracts in 1817.

During this period the public lands were administered as a source of revenue. For this and for other reasons the representatives of the Eastern States supported the existing land system and resisted all change. The two dollar minimum and the credit system were early denounced by men who best knew the conditions in the West, but Eastern men were unwilling to reduce the minimum further—the price still was considered cheap and land values had fallen in the East because of the abundant lands available beyond the mountains. It was believed that high land values in the West would stop the drain of population and prevent the rise of wages in the industrial States of the East. Moreover, even Western Congressmen supported the two dollar minimum because they realized that a reduction in price would be accompanied by an abolition of credit, and they felt that their constituents favored the credit system. The revenue theory of management clashed with the needs of the actual settler. It prevented a reduction in price, a granting of donations to pioneers, and even a general preemption. But at this period Congress felt that there were other interests to be considered aside from those of the advance guard of the westward movement.

This was the period of the credit system, when men were tempted to invest their entire capital in a first payment in the hope that good times or a generous Congress would easily provide for the balance. Although the extended credit was designed to help the settler it frequently served to imperil his solvency. As early as 1804 Gallatin pointed out that cash sales, based on a reduced

price and a smaller minimum lot, should be introduced, but it took sixteen years of increasing financial difficulties to finally arouse Congress against the evils of the well-intended system. As a matter of fact, the credit system did not have a fair opportunity to prove its worth. The passing of relief acts extending the period of forfeiture served to weaken the penalties of the system. Settlers began to believe that Congress would soon come to their rescue by reducing the outstanding debt, and the relief acts after 1820 justified this confidence. If Congress intended to insist upon using the lands as a source of revenue it should have insisted upon a strict enforcement of the terms of its land system. If penalties had been rigorously enforced there would have been less land speculation. The system in operation really discriminated against the faithful purchaser, for those who owed money in 1820 received later a substantial reduction in their indebtedness.

So much for the system—what, on the other hand, did the actual settlers desire during this period? First of all, they desired a wide choice of land. They wanted the land system extended rapidly and over a large territory. At times they could not wait for the Indian title to be extinguished, but must push on to the choice lands retained by the Red Men. At all times they urged the opening up of the Indian lands, and Government never could move fast enough along these lines. But this was not the fault of the land system, for until Government had acquired the lands the system could not be extended to them. So, when the lands were finally secured, the pioneers demanded that the tracts be at once opened for settlement. This meant the extension of the surveys, and once more Government could not keep pace with the settlers. The surveys took time and required money, and they were extended over good and bad land alike. The first comers naturally desired the choicest lands. They would push a few miles further into the wilderness in order to secure a choicer location. Soon the reports of the Surveyor-General showed that millions of acres of surveyed lands remained unsold, while settlers were complaining that the surveys were not being extended rapidly enough. This was one reason for the squatting evil. Many men took up land in that way, not because they could not afford to pay for their location, but because they could settle upon better land than was then open for sale at the nearest land office. These were the men who sought pre-emption.

Another complaint of the settlers was that the land offices were too widely scattered. Figures were prepared showing that intervals of from twenty-five to over one hundred and fifty miles existed

between the neighboring land offices. This was a real hardship in those days of difficult transportation, and yet it was but a condition of the frontier life. New land offices were established as business warranted. After an office was once opened it was not easy to close it. The five offices in Ohio transacted less business in 1819 than was handled at eight separate offices near the frontier. The late comers could secure their lands with less annoyance, but the choice lands had been taken in the meantime.

The greatest desire of the frontiersmen, so far as the land system was concerned, was for pre-emption. This was advocated as a merited right because of the delay in opening the land for sale. This delay was due in part to the execution of the surveys, but more troublesome were the delays occasioned by the private land claims arising from foreign titles. Until these claims were confirmed or rejected no public land sales could safely be made. But while the commissioners were struggling with the claims in Indiana, Illinois, Michigan, Alabama, Mississippi, and in the Louisiana country, the pioneers pushed into the newly acquired region and took up land, either under a foreign claim or else by calmly squatting on the public land or on the claim of some ancient resident. These settlers took the position that they would gladly have purchased the land if it had been on sale, but as the Government was dilatory, surely they should not be penalized by having their improvements bought in over their heads by some less adventurous settler. On the other hand, Congress as early as 1807 passed strict laws against unauthorized settlement, so that the men who demanded pre-emption were really violators of the law of the land.

But in this case, as in many others, the bark of Congress was much worse than its bite. Gradually it began to adopt the point of view of the pioneers, until by 1820 it had become the custom to grant pre-emption for a limited period in every region where, for special reasons, the land sales were delayed.

A rapid summary of this legislation shows how the pre-emption idea gained strength in Congress until it was finally recognized in the general pre-emption act of 1841.

Pre-emption for settlers was urged in the first debates on the land system in 1789, and it was accepted as a legitimate measure when, in 1790, Congress agreed, as a condition of the North Carolina cession, to confirm the pre-emption rights of settlers in Tennessee. In 1799 the first pre-emption act was passed, granting the privilege to those settlers in Ohio who had purchased lands from Symmes to which he had no title. This was an act of grace on the part of Congress.

The first act of a more general nature was in 1803, which offered pre-emption to persons resident in the Georgia cession at that date. But in this case no land was placed on sale for three years after the act, so settlers coming in during this interval had to become squatters or else purchase private claims, but to many of these a pre-emption was granted in 1808. The early acts for Louisiana offered no concessions to settlers after the date of the American occupation, although the opening of the land offices was bound to be long delayed by private claims.

At this time the surveys in Michigan were being delayed for the same reason, so in 1808 a pre-emption was granted to settlers who were there before 1804, which was the date of the act authorizing the sale of lands in Michigan. But, although the sale was authorized at that time, it did not actually commence until 1818, so the pre-emption was not a liberal one, and much squatting resulted. In Illinois the sales were also delayed, but there the act of 1813 granted a pre-emption of one hundred and sixty acres up to two weeks before the commencement of the public sale, and was therefore more satisfactory than any of the preceding measures. No land could be claimed under any of these acts until it had been surveyed. The next year a similar act was finally passed for Louisiana and Missouri. The last pre-emption act within the period was that applying to the "district east of the Island of New Orleans." This region, claimed by Spain, had been occupied by force, partly in 1810 and the rest in 1812. The Act of 1819 granted a donation to settlers there before April 15, 1813, and a pre-emption to settlers before April 12, 1814.

By 1820, therefore, Congress had recognized squatting to the extent of granting some measure of pre-emption to every one of the public land States and territories save Indiana. With these precedents in mind, a determined effort was made in 1820, at the time of the great alteration of the land laws, to enact a general pre-emption law covering one hundred and sixty acres up to two weeks before the commencement of land sales in any district. But although the Western Senators supported the measure, it was carefully laid on the table, for the revenue idea of administration was too strong to permit the sale of the choicest land at the minimum price to the law-breaking pioneers.

From 1820 to 1841 the representatives of the public land States urged the desirability of a general pre-emption act. Beginning in 1830, temporary pre-emption laws, covering a limited period but of a general nature, were passed. Finally, in 1841, a general pre-emption law was enacted and the long struggle of the pioneer for

recognition and for the right to reap the reward of his enterprise was won.

The growth of the sentiment in favor of pre-emption, therefore, was parallel to the changing conception of the ultimate object of land legislation. So long as revenue was the end to be sought, pre-emption was undeniably bad. But if the furtherance of settlement was to be the desire of Congress, then pre-emption was but a step toward the ultimate goal—the granting of homesteads to settlers. So during the half century of land legislation the squatter developed from a trespasser, a violator of the laws of the Union, to a public benefactor, a man whose bravery and whose sacrifices had opened great areas to peaceful settlement and who merited well of the nation. The "actual settler" always received a certain sympathy in Congress. The land laws were stringent enough to punish intrusions upon the public domain, but remembering how frequently squatters hold lands even within our cities, it is easy to understand how difficult it was to enforce the laws prohibiting unlawful settlement along the thousands of miles of the public land frontier. So it became the custom not to enforce these stringent laws. And after the pioneer had once crossed the line and made his improvements, it became more and more difficult for Congress to refrain from securing him in the rewards of his hardihood. Except where there were confirmed foreign claims, the frontier of settlement should legally have been along the frontier of surveys. But no Western Congressman expected that the more restless of his constituents would march in procession with rod-men and chain-carriers. The laws for the disposition of the public lands assumed that when a group of townships were cried at public auction the land would be virgin, untamed and unencumbered. But too often the surveyor's lines had run beside log cabins and half-faced camps, and the best tracts had been cleared and fenced. The land system demanded that these quarter-sections be sold to the highest bidder, and it frequently happened that these settlers who had pushed out from more developed regions had placed almost their whole capital in their little clearing. Without pre-emption, one of three things generally happened—the squatter, unable to pay anything at all for his land, would sell his improvements to the purchaser of the tract and would move further out into the wilderness, or he would bid the minimum price for his land and public sentiment would protect him from competition, or his land would be purchased by some one who would refuse to pay for his improvements and yet who would be strong enough to procure his eviction. The theory of the land system was best met by the latter

case. The land should be sold to the highest bidder—and there should be no sentiment about it.

It was not a pleasant rôle for Congressmen to denounce the squatters. They were law-breakers, to be sure, and yet in many cases they were very estimable criminals. And when the land revenue was no longer needed to help support the government, it became easy, even for Congressmen from the East and South, to favor more liberal treatment for the actual settler.

After 1820 the relation of the land system to the westward movement became more intimate. The reduction in price and the abolition of credit made it easier for the actual settler to secure a small tract of land. One hundred dollars would purchase outright eighty acres, whereas formerly eighty dollars would be but a first payment on a quarter-section. As the surveys were extended further away from the older settlements they were less hampered by the private land claims and so could better serve the rapidly advancing people. And then, in the 'twenties, began the system of land grants for internal improvements, which encouraged roads, canals, and railways, causing millions of acres of land to pass into private ownership through the agency of the State or the corporations rather than through the land offices, and opening up for settlement great regions away from the rivers, for the earlier settlements had clung closely to those avenues of transportation. Finally, in 1821, the public land States could muster fourteen votes in the Senate, and if the West might differ within itself on other policies, it stood as a unit on the great questions of land administration. Each new State increased this political strength. Pre-emption came in 1841, Benton's graduation act in 1854, and Homesteads in 1862. And during these years the railway land grants were becoming more lavish, culminating in the great grants to the Pacific railways, while the bounty land legislation of the 'fifties caused the issue of warrants for millions of acres which were sold for less than the existing minimum price. But this story cannot be narrated here.

Down to 1820, therefore, the land system paid more attention to revenue than to the settler, but the emphasis was slowly being shifted toward the more desirable side. And, in spite of errors both of commission and of omission, the system was, on the whole, commendable. Its surveys alone would have made it notable. They rendered the settlement orderly and afforded sound titles for all time. And, finally, it was a national land system. It is not difficult to imagine what would have happened if the old claimant States had held control of their Western lands, or if the new States had been intrusted with them on admission to the Union.

The national land system was subject to no little criticism, yet what would have been the case under a dozen or more systems? And as to the westward movement—the old land system encouraged it in many ways. The average settler welcomed the accurate surveys, the relatively cheap lands, and the credit system; the speculator saw in the extended credit an opportunity to make a fortune, and his class undoubtedly directed many real settlers toward the West; and the restless pioneer, whose only capital was an ax and a gun, was not troubled by the system. He moved in advance of the surveyors and settled for a while as a squatter. And when his land was placed on the market, he could generally choose between buying his land and becoming a settler or moving on again in advance of the civilization he could not endure.

2. Land Policies and the Wisconsin Farmer [1]

The land laws under which the land of Dane county was purchased from the federal government were comparatively simple. The system of credit had worked itself out into such a nuisance that after 1820 cash payments were required. The clamor of the poorer class of purchasers had resulted in a series of reductions in the minimum number of acres sold in a unit lot, until Congress, on April 5, 1832, passed an act requiring the public domain, still unsurveyed, to be divided into forties, and after that each forty was sold separately. This was just in time to insure the division of Dane county into these smaller lots, as the survey of southern Wisconsin was then in progress, this county being finished in 1834. There seems to be no particular order in the way land was put upon the market, except that it had to be surveyed. The land to be sold was "proclaimed" by the president not less than three months, or more than six months before coming into market, i. e., it was advertised in certain newspapers officially designated, and descriptions by number were given of each separate parcel offered. These proclamations were copied by Western newspapers so that ample notice was given to all interested. It is worthy of note that in most cases the land offered for sale was scattered promiscuously about, so that it was difficult to buy more than a quarter or half section in one block. It would appear that this was a precaution against purchase by speculators of large tracts in a body, purchase that would give them the power to control and retard actual settle-

[1] Benjamin Horace Hibbard, *The History of Agriculture in Dane County, Wisconsin, Bulletin of the University of Wisconsin*, Economics and Political Science Series, Vol. I, No. 2, (Madison, Wisconsin, September, 1904), Part I, Ch. III. Reprinted by permission of the author.

ment to a greater degree than where their holdings were more or less interspersed with actual home-seekers; but there seems to be no available testimony on the subject. At all events, the entry-book shows numbers of whole sections side by side sold to one man in 1836, while, in later instances, equally large purchases are distributed over perhaps a quarter of a town.

By act of Congress June 23, 1834, that part of Wisconsin east and south of the Fox and Wisconsin Rivers was divided into two land districts. The division line between them passed through what is now Dane county, that part west of the line between ranges eight and nine being in the Wisconsin land district, and the portion east in the Green Bay district. The Green Bay district was cut in two by act of June 15, 1836, and the southern part was called the Milwaukee district. A few pieces of land in Dane county had been entered at Green Bay previously to this date, but with this exception the entries were made at Milwaukee and at Mineral Point.

The method of selling government land was the same as had been followed almost from the beginning of public land sales, although some very important modifications had been imposed by the buyers themselves. The land was offered at auction to the highest bidder, with the minimum price set at one dollar and a quarter. It rarely happened, however, that the bids were above this minimum no matter how desirable the land or how numerous and keen the bidders. The buyers soon came to see that such an auction was an example of one-sided competition for as soon as the dollar and a quarter bid was made, no matter how little they had in common beyond the desire to buy at the cheapest figure, they managed to co-operate with great success for securing this result. That these organizations were wholly voluntary no one pretends. Neither can it be supposed that all the bidders present subscribed to the requirements for membership in the organization, but circumstantial evidence is abundant to show that the speculator rarely "volunteered" to overbid the humble settler who came with perhaps fifty dollars to pay for a forty, although it would appear that any bid above the minimum would secure him the land. The commissioner of the general land office at Washington in a circular letter dated April 11, 1836, complains that receipts from sales of public land had been cut down by some millions of dollars by these "unlawful organizations" of buyers who prevent many from bidding. It is further stated in the President's annual message of 1837 by way of emphasis of the same point, that the sales during the period from 1820 to 1837 had not

averaged more than six cents per acre above the minimum price. The President also advised that the squatters be given the preference in pre-emption privileges. This was really before a pre-emption act of general application existed, although something analogous to this right had been given some squatters on the Symmes tract in Ohio in 1801.

Mr. Donaldson in "The Public Domain" defines pre-emption as a "preference right" and states that, "The essential conditions of a pre-emption are actual entry upon, residence in a dwelling, and improvement and cultivation of a tract of land"; again it is "a premium in favor of, and condition for making permanent settlement and a home." It would require many pages to give the separate acts under which the land of this county was pre-empted, but it seems sufficient to state that the more important were those of June 22, 1838; June 1, 1840; and September 4, 1841. The many changes made in those various acts were designed to fit varying needs, but any one of them covered substantially the conditions existing in Dane county. The importance of this legislation is well shown by Mr. Donaldson: "The pre-emption system arose from the necessity of settlers, and through a series of more than fifty-seven years of experience in attempts to sell or otherwise dispose of the public lands. [He has reference to a time later than the one we are considering.] The early idea of sales for revenue was abandoned and a plan of disposition for homes was substituted. The pre-emption system was the result of law, experience, executive orders, department rulings, and judicial construction . . . it has always contained, and to this day contains, the germ of actual settlement under which thousands of homes have been made and land made productive. . . . The necessity of protecting actual settlers on public domain and giving a preference right to those actually desiring to make homes therein became more apparent in the years 1830 and 1840."

The act of September 4, 1841, was the most complete and specific of those that applied to Dane county. It provided that on any land already surveyed those who had, subsequently to June 1, 1840, settled, or who should in the future settle and improve a claim not exceeding one hundred sixty acres, could secure the claim by making an affidavit to the register of deeds, setting forth the time and nature of the settlement and improvements, and the intention to purchase the same within twelve months, at the regular minimum government price. Thirty days was allowed a settler in which to appear at the land office and file his pre-emption papers. A fee of fifty cents was required for the filing of these claims.

Squatters' Protective Association

Wisconsin was never noted for lawlessness, and the outlaw type was not in the majority, at least not after the real settlement began. This was principally owing to the steady, earnest character of the people who had come from civilization and had brought it along with them. To a less degree the policy of the Government in providing a judicial system fairly well organized, even before there was a demand for it from the settlers themselves, was, no doubt, a wise one for fostering good behavior. But although the frontiersmen were by no means strangers to courts, and were peaceably inclined, it must not be supposed that they were so effeminately law-abiding as to stand by and let their interests suffer at the hands of land grabbers, or to await the sluggish stages of legal process to overtake and punish the offender. The one great instance in which the law was made and enforced, independently of judge or code, was in the protection of the squatter against the claim jumper. Under the system then in use it was utterly impossible to offer the land for sale just as it was wanted, and no one who has any insight into frontier conditions can blame the frontiersman for taking possession of the land best suited to his purpose of making a home. After once settling down, building a house, clearing off the timber, or turning the sod, it is entirely contrary to the laws of humanity to allow the homestead to be usurped by some greedy interloper, whether or not the law is technically on his side. It is true the pre-emption act was supposed to give the squatter all needed advantage, but it is just as true that money was likely to be as scarce and as hard to get hold of at the end of the first year as at the beginning. The officers of the law and those who had charge of selling the land had no authority to show further favors to the man in possession, though in most cases they seemed disposed to do so.

It was at this juncture, when no help was to be had from others, that the Dane county pioneers showed themselves to be typical pioneers—thoroughly able to help themselves. The squatters were often sneered at and called outcasts by Congressmen and others who had interests at stake.

Agreements were made among the squatters, in fact among the great majority of the buyers on the occasion of public land sales, that no one should bid against another. Speculators often had agents on the ground to snap up bargains for them, agents who were more or less discreet and did not endanger their personal welfare by any overzealous efforts to buy land upon which the agents of

the squatters advised them not to bid. An exact record of the conversations of these two sets of agents on some occasions would, no doubt, be a delicious morsel of history, but none can be found.

There was no claim association in Dane county comparable to the "Johnson County Claim Association," of Iowa, but there were local associations—Squatters' Protective Societies—which, though lacking the elaborate machinery, were equally efficient in their workings and even more drastic in their measures. Nearly every town had its own loose organization and in practice these organizations co-operated without regard to town lines. The resolutions by which these bodies were governed were all about alike, probably copied in most instances one from another. The Sun Prairie draft is given as a sample:

> "At a large and respectable meeting of the inhabitants of Sun Prairie, convened at the house of A. W. Dickenson, March 5, 1845, for the purpose of deliberating upon and making arrangements with regard to their situation as squatters:
>
> '*Resolved*, That in case any persons shall purchase land in this vicinity at the time occupied by claimants; that they shall be disregarded as neighbors, and that no dealings of any kind be had with them. That we will neither lend to them, nor visit them, nor act with them in any capacity whatsoever, nor upon any occasion.
>
> '*Resolved*, That we will protect each other in the claim of a quarter section, admitting it should embrace no more than forty acres of grove timber.
>
> '*Resolved*, That in case any person or persons should violate the sense of this meeting and deprive claimants of their just expectations, that we will not fail to rebuke his conduct with such severity as has been common in the settlement of this western country.
>
> '*Resolved*, That opportunity be given to persons who have entered claims to settle with the claimants, previous to the institution of any other measures.
>
> '*Resolved*, That we pledge ourselves to be in readiness at the call of each other for the purpose of carrying the above resolution into full effect.
>
> '*Resolved*, That two registers be appointed to keep a record of all lands claimed in the vicinity, who shall receive twelve and a half cents for every record made. Whereupon, Volney Moore and Russel T. Bentley were appointed registers.
>
> '*Resolved*, That it be incumbent on every claimant, to enter his claim with one of the above registers, and that all such persons be recognized as members of this association.
>
> '*Resolved*, That all persons desirous of this association, shall enter their names on the book of the register.

'*Resolved*, That the registers be authorized to call a meeting of the people when they shall deem it expedient.

'*Resolved*, That the proceedings of this meeting be signed by the Chairman and Secretary, and published in the Madison *Express*."

WILLIAM LARABEE,
Chairman.

A. W. DICKENSON,
Secretary.

* * * * * * * * * * *

The usual mode of procedure in case a claim was brought by a "land pirate" was to visit the purchaser in case he were not too far distant, taking along a justice of the peace armed with a "warranty" deed ready for the offender's signature, which would constitute his conveyance of the land in question to the aggrieved squatter; the justice would then acknowledge the instrument. It was not unusual for the members of this committee to carry guns and ropes and to indulge in remarks calculated to stimulate the claim-jumper in his tendency toward a speedy and amicable settlement. Very rarely did he resist rigorously, but once in a while it required heroic measures to overbalance his greed. The story is told of one "jumper" who resisted, and addressed the committee in irreverent terms, daring them to do him physical injury and threatening to bring the strong arm of the law down violently upon their heads. The committee exhausted their verbal arguments in vain, then putting a rope around the waist of the culprit, led him to a pond, cut a hole in the ice, and immersed him. He was soon drawn out, but being still in a combative and profane frame of mind, was treated to another ducking and on his second coming out was unable to continue his side of the debate, so the negative was declared closed, and after returning to the house the dripping defender of that side set his signature to the papers and with uplifted right hand swore that it was his "voluntary act and deed." The squatter usually agreed to refund the money advanced by the "jumper," but custom allowed him to take his time to it and no interest was paid.

Thus in true western style the Wisconsin farmers enforced their own laws and fought their own battles. The justice who presided at their trials and rendered their decisions may have been lacking in knowledge of law, but he understood the men and the times which he represented. He tried to do the right as he saw it; he lived up to all the light he had, and having satisfied his contemporaries, history cannot call him to account for his methods or convict him for results obtained.

* * * * * * * * * * *

That land speculation had a bad effect on agriculture needs very little proof, as the holding of raw land in large quantities may be said to be *per se* a drag on enterprise. Perhaps it is not a monopoly, . . . but nevertheless, it has many of the attendant evils of a monopoly. Greedy as were the statesmen and other wealthy men who invested their money in western land during the palmy days of 1836, the very fact that they were unable to form anything approaching a monopoly in land rendered them almost as helpless as their unfortunate friends whose capital went down in mercantile disasters of the older States. As noted elsewhere, it is impossible to tell from the records much about the sums realized by these large holders when they finally parted with their land. The greater share of it was held by firms of several members and the number of quit-claim deeds with "consideration one dollar" fill many pages of the register's books. Nor is this all the difficulty: most of these firms owned land in different counties and even different states, and very frequently transfers were made of one-fourth, or one-tenth, or even one-nineteenth of these widely scattered acres, and exchanges of various kinds of property for land again complicate matters hopelessly. Occasionally where the sale was made directly to a bona fide purchaser previously to about 1850, the price was little more than the original figure—one and a quarter dollars.

Whether the allegation that the settlers imposed undue taxes on the nonresident landowner is true or false, it is clear that they had no legal rights to do so; yet it may well have happened that unimproved land was listed by assessors as high as improved land, and the nonresident in that case would pay a rate somewhat above the average.

The assessors and members of the boards of equalization were themselves residents, and it is safe to infer that they taxed the nonresident, while the latter was viewed as a speculator, as much as the law and public sentiment would allow.

The only possible means by which a speculator could dispose of any quantity of his land until about 1850, when desirable government land began to be scarce, was to offer some inducement to the purchaser better than a cash sale at a dollar and a quarter, and this was attempted in many ways other than actually cutting the price. The most usual inducement was an offer to sell on time which to the numberless home seekers without means was a strong point, but not a conclusive one while the opportunity to "squat" on vacant land remained. Another expedient of the poor speculator was to make some sort of improvement to tempt the prospec-

tive purchaser; a house of some sort was put up, or a few acres of breaking was done. The latter improvement was of particular consequence to those arriving in the spring with barely time for planting corn and potatoes, or sowing a little buckwheat. But breaking new land was a big bill of expense at best and a man with his money invested in unsalable land could hardly afford to put much more into improvements. . . .

Congress was not quite oblivious to the evils of land speculation and on January 8, 1841, a bill was introduced in the senate to limit the sales to 320 acres at one dollar and twenty-five cents per acre, the purchaser at the time to be worth not exceeding one thousand dollars. It probably was not intended that this bill should get very far. The limitation as to size of purchase was reasonable enough, but it is hard to see how the second stipulation could be enforced. Again in 1848 the senate made a like feint at limitation of the size of purchases, one hundred sixty acres being the proposed maximum. Whether these measures were in jest or in earnest, there was no limit set until the question had ceased to be a vital one in southern Wisconsin.

Another means of getting hold of land was the military land warrant, and many such warrants were used. They began to appear in great numbers about the year 1848, that is, at the close of the Mexican war. From that time till the land was all taken this scrip played a large rôle in acquiring patents. The men fortunate enough to hold the warrants were at a decided advantage over the average buyer. They were good for eighty acres, but until 1851, were not transferable. Here was a serious proposition, and owing to pressure from the holders of warrants who were not desirous of taking the land for themselves, and much importunity on the part of anxious buyers, Congress on December 11, 1851, voted that warrants should thereafter be assignable. Much complaint was manifested in the West over this action, as it was believed to be a move toward speculation instead of away from it, such as Congress had at times pretended to favor. Soon after this act, land warrants for eighty-acre entries in Wisconsin were quoted in New York along with stocks and bonds, and as land was at this time beginning to rise perceptibly in value, the warrants often sold for two hundred, or two hundred fifty dollars.

It remains to speak of one other method of gaining possession of land, viz.:—buying it of the State. As in older western states section sixteen of every township was school land. Wisconsin received the half-million-acre grant of land given to new States for internal improvement by act of Congress, September 4, 1841, some

of which was located in Dane county. The act was modified May 29, 1848, and such land as remained unsold in this tract was added to the school land; there was also some land within the county belonging to the State university and a considerable amount of swamp land which was given to the State in 1851. Under this grant, the object of which was to forward the drainage of swamps, the building of levees, roads through swamps, and the like, the state of Wisconsin claimed over four million acres and actually received more than three-fourths of that amount. The Swamp Act provided for an indemnity grant in case the swamps had been sold as arable land before the transfer was made to the State. The surveyors had listed each separate forty as *arable* or *swamp*, and it was on this basis that Wisconsin made her claim. As a matter of fact, much of the land listed as swamp was desirable, even more so than the average, and many pieces were taken by the earliest settlers. Thus under the indemnity proviso the state claimed a much larger amount of land than the swamp remaining unsold. It was several years before the legislature undertook the necessary work of locating these scattered fragments and as a result there is a very great deal of land on the list of "State Swamp Lands" which is among the driest of the state. Provision was made for cash indemnity in case lands were not available and this has led to long and tedious bickerings which are not entirely settled yet. Altogether the state owned 30,800 acres of land in Dane county, 16,480 acres of which was nominally swamp, the balance being school and university land.

The swamp land was sold at a dollar and a quarter per acre, some of it not being taken until 1896. The school land was appraised in 1850 at prices varying from ten cents to ten dollars per acre and was at once put upon the market. The money received for this land was to constitute a permanent fund, hence it was even more desirable to leave it in the form of good security than to have it paid in cash. This being the case, the sales were made on remarkably easy terms, one-tenth down and the balance on thirty years' time at seven per cent interest. By this means many a poor man was enabled to get a firm grip on a farm, and in not a few instances these lands are still in the hands of the original purchasers. The other state land was sold on twenty years' time at ten per cent interest, and even this was a desirable bargain owing to the low price per acre.

With the above facts before us it is easy to comprehend the force of the remarks already made as to the difficulty in making a fortune in holding land for a rise; there were too many alternatives

open to the buyer, and with all his hardships he was seldom at the mercy of the land shark until after the last of the desirable public land had become private property. It was during the early '50's that the greater part of the state land was sold and it was also at this time that the first considerable rise in the price of land occurred. Had the state during its early history adopted the policy of selling land for what it would bring, there would be a different story to tell in the matter of state finance, but they followed persistently the first determination to offer land at as low a price as possible and in this way encourage immigration, blindly trusting to the generosity of the tax payers to provide all necessary funds for future needs. This as a policy is as unfair as it is inexpedient. It is unfair because only a limited number of settlers can profit by the low prices; it is inexpedient because, as seen in the sequel, the men who get land for a tenth of its real value are not willing to give as freely as they have received when contributions are asked for public expenditures.

CHAPTER X

PIONEER AGRICULTURE

1. The Northeast [1]

Although agriculture was the chief means whereby more than 90 per cent of the inhabitants of southern New England got their living, yet it was most inefficiently, and, to all appearances, carelessly conducted. Very little improvement had been made over the primitive methods employed by the earliest settlers. As soon as the pioneer stage had been passed and the clearing of the land had been accomplished, the colonists settled down to a routine husbandry, based largely on the knowledge and practices of English farmers of the early seventeenth century, but in many ways much less advanced than the agriculture of the motherland even at that early date. In the century and a half intervening between the settlement of New England and the opening of the nineteenth century, improvements of far-reaching significance had been introduced in English agriculture, through the work of Tull, Bakewell, Townshend, Coke, and Arthur Young. The knowledge of these changes had spread quickly to this side of the Atlantic, and yet the bulk of the farmers had shown no disposition to adopt the new methods. On their poorly cultivated fields little fertilizer of any sort was used, their implements were rough and clumsy, live stock was neglected, and the same grains and vegetables were raised year after year with little attempt at a rotation of crops, until the land was exhausted.

Contemporary Criticism

The apparent lack of intelligence, and of any progressive spirit, exhibited by the New England farmers drew severe comment from both native and foreign observers. . . .

* * * * * * * * * * *

[1] Percy Wells Bidwell, *Rural Economy in New England at the Beginning of the Nineteenth Century*, John A. Porter Prize, Yale University, 1915, *Transactions of the Connecticut Academy of Arts and Sciences*, Vol. XX, April, 1916 (New Haven, Conn., 1916), Ch. V. Reprinted by permission of the author.

Farm Management in 1800

Postponing for the present an examination of the reasons for this inefficiency in the fundamental occupation, let us examine the routine operations of the farmer in the inland communities, in order to determine as nearly as possible how far these criticisms were justified.

Size of Farms

The 100 to 200 acres which composed a typical inland farm were divided into three roughly equal tracts, one-third being woodland, including wasteland, one-third pasturage, and the remainder divided between mowing lands and cultivated fields in varying proportions. The land under tillage, however, hardly ever exceeded ten or a dozen acres, except in the neighborhood of such commercial towns as would furnish a market. These fields were separated originally by rail fences or stone walls. In places where timber was beginning to be scarce the latter material was most generally used. When the farmer and his sons piled up these monuments of laborious toil they were accomplishing a double purpose, not only marking off the boundaries of their fields, but ridding their land of a great hindrance to cultivation as well.

The Importance of Indian Corn

Indian corn and rye were the staple grains cultivated on every inland farm. The first might have been called the cornerstone of New England agriculture. Next to grass its yield was more valuable than that of any other crop. Dickinson says of this crop: "Indian corn may justly be considered as our principal grain, and the most valuable in the whole circle of husbandry. Its increase, compared with that of any other grain, is in a greater degree independent of the season, and governed more by the attention and care of the cultivator. It is mixed in the proportion of one-third with rye, and constitutes the common bread of the inhabitants. The beef, pork, and poultry, fattened with it, are greatly superior to such as are fed on any other grain. Besides the crop, the average of which is about twenty-eight bushels per acre, the forage it affords is very considerable, every part of the stem and husk being applicable to the feeding of cattle." Dwight says that this crop is "nearly as valuable to this country as all other kinds of corn united, and yields a crop much more certain, and much more extensively useful than any other. Besides its advantage of hardiness which

made it surely dependable, and its general utility to man and beast, this crop was peculiarly adapted to a region in which labor was expensive. The system of planting in hills at the corners of a four or five-foot square, which the colonists had learned from the Indians, rendered cultivation by cross-plowing feasible and so reduced the necessity of hand hoeing. This is probably the reason why this crop was given more careful cultivation than any other. Besides rye which, combined with Indian corn, furnished the flour for bread, oats, barley, and buckwheat were regularly sown in small amounts. Both the oats and barley were recognized to be poor crops, but still they were necessary, and therefore, under the self-sufficing system of agriculture, they had to be grown. The buckwheat was a useful crop in many ways. Its value in cleaning the fields of weeds was already recognized and it was also occasionally ploughed under to serve as a "green" fertilizer. The blossoms furnished food for the farmer's bees and the grain was used as a food for poultry.

Why the Wheat Crop Failed

Wheat could not be successfully grown except in a few favored regions in New England, such as the valley of the Connecticut River and the western portions of Massachusetts and Connecticut, in Berkshire and Litchfield Counties. Other grains, as we shall see, yielded poor enough results, but the results of wheat cultivation were so disappointing that it was early abandoned in most regions altogether. Besides suffering from the inroads of the Canada thistle and the Hessian fly, it was repeatedly damaged by a sort of fungus growth, known to the writers of that time as blast, rust or mildew. Many attempts were made to explain this last phenomenon, which, as the investigations of the Massachusetts Society for Promoting Agriculture later proved, was really caused by the use of unselected, infected seed. Dwight went to work systematically to fathom the mystery and after examining and discarding such alleged causes as the character of the soil, the climate, and the "noxious effluvia" from barberry bushes, he concludes that the damage must proceed from the use of stable manure as a fertilizer. This, he believed, forced the growth of the plant too rapidly in its early stages. Harriott, the English traveler, came much nearer to a correct solution of the problem. He wrote: "In some of the farther inland parts, wheat is raised; but on the seacoast, it has never been cultivated with much success, being subject to blasts. Various reasons are assigned for this: some suppose these

blasts to be occasioned by the saline vapours from the sea; but I can not agree to this, well knowing that many of the best wheats that are grown in England in quantity and quality, are from sea-marshes and lands adjoining the sea. Others attribute it to the vicinity of Barberry-bushes of the truth of which I can not speak. But the principal cause appeared to me the poverty and sandy nature of soil in general, together with excedingly bad management.

The Lack of Root Crops

One of the greatest defects in the system of husbandry practiced in New England was the lack of root crops. Such crops, especially the turnip, were being extensively used in England as a winter food for cattle, making possible the keeping of more animals and in better condition, besides securing for the farmer a valuable addition to his supply of stable manure. The potato was, to be sure, cultivated to some extent, and principally as a food for cattle. Although indigenous in America, it seems not to have been well known until the early part of the eighteenth century. By the end of the century almost every farmer cultivated from one to four of five acres of potatoes, not in a separate field but along the borders of the corn or other grain fields. Occasionally we find turnips and carrots mentioned but their cultivation had not become at all general. A cheaper substitute for root crops which was used to some extent for winter fodder was the pumpkin. Planted in the hills of corn, it required no extra land to be cultivated and grew abundantly without attention. In the fall after the corn had been cut and shocked the pumpkins were easily gathered. Although they could not be preserved as long as the root crops, yet while they lasted they furnished a farily good substitute. Hay remained throughout all this period, however, the chief winter fodder for all sorts of live stock.

Flax was not a crop especially suited to New England at this time, since it required an amount of labor and fertilization inconsistent with the prevailing extensive system of cultivation. Yet flax was necessary for the production of the homespun linen and tow cloth and hence a small field, probably only a fraction of an acre, was regularly sown. A part of the flax was allowed to ripen and although this practice made the fiber less suitable for textiles, yet from the seed thus secured linseed oil was obtained. This, as we have seen, was in some regions a commercial product.

The smaller vegetables, such as peas, beans, onions, etc., were not given much attention except in the few favored regions in the

neighborhood of commercial towns, where a market for such produce was at hand. Gardening was much too intensive a process for the farmer at this time. Kitchen vegetables were therefore often lacking on his table, unless the women of the household could spare time from their multifarious other occupations to plant and care for a garden. The farmer had, however, learned the soothing effects of nicotine and consequently often grew a small amount of tobacco. Occasional instances of its export are found even at this early date.

A few unsuccessful attempts at hemp-growing had been made in the Connecticut Valley. Although there was a considerable demand for this product at the shipyards in the commercial towns, yet such intensive cultivation was required, and so much disagreeable labor in preparing the fiber for market, that the domestic supply was greatly inadequate. The breweries in Boston offered a market for hops, which were supplied by the farmers in the nearby towns. Hops were also grown in small amounts by some farmers for the production of home-brewed beer. None of these smaller crops had the importance to the self-sufficient farmer, nor occupied as much of his land or attention, as the grain and grass crops. New England was at this time a region in which grazing was of more importance than the cultivation of fields, and hence the latter operations were subsidiary to the former.

The Rotation of Crops

Very little progress had been made toward developing any systematic rotation of these crops. The simplest plan was a three-year course, alternating grain, grass and fallow, a system reminding one of the three-field agriculture of the Middle Ages. The first crop in this case was usually maize, followed by rye, oats or barley. It was the practice to sow one of the latter grains in the fall after the maize crop had ripened. After this second crop had been harvested, the ground was laid down to grass, or more regularly left to "sow itself"; which meant simply that it was allowed to grow up to weeds, producing the much-condemned weed-fallow. This primitive practice was varied by the extension of the alternating crops over a period of several years each, and also by the occasional interjection of other crops. . . . In general we may say that some farmers were making a conscious but unsystematized effort to secure a more beneficial alternation of crops, but because of the limitations of their knowledge on the subject and because of the necessity of getting certain staples, such as corn, rye, grass and

flax, under any conditions, they had made practically no progress along this line.

The Neglect of Manure

There are two means of preventing soil exhaustion and of restoring the fertility of mismanaged soils; one is by a system of scientific rotation of crops and the other is by the regular and liberal application of fertilizers. As we have seen, the farmers at this period had very little knowledge of the former method, even of an empirical nature. Although we could not expect them to understand the principles of soil chemistry, the beneficial effect of common fertilizers was so obviously apparent that their neglect of this method of enriching their soil seems at first glance astonishing. The barnyard and stable manure would, if carefully collected and preserved, have furnished a considerable supply of first-class fertilizing material, but this resource was uniformly neglected. The cattle and horses were turned out to pasture early in the summer and often were not put into stables again, even for over night, until late in the fall. Even the small amount of manure which accumulated during the winter was imperfectly protected from the weather and consequently a large proportion of it was wasted.

An artificial manure, or commercial fertilizer, as it would be called nowadays, known as gypsum or Plaster of Paris, had been introduced in a few towns as early as 1800. Like other calcareous substances, it did not furnish a lacking element of plant food, yet its action was beneficial in counteracting the acidity of certain soils, and it may have also aided in retaining moisture in dry soils. The gypsum used in New England was quarried in Nova Scotia and transported hither by water. Then it had to be ground, either in plaster mills erected for that purpose, or more often, in grist mills. The cost of this process plus that of transportation and of quarrying, made this form of fertilizer so expensive that only a few farmers could afford to use it. Consequently its use was confined to a few towns in sections from which crops could be exported, such as the wheat-growing regions of the western counties and in the Connecticut Valley.

On the seacoast two fertilizers were easily accessible, fish and seaweed. Along the Connecticut shore of Long Island Sound, whitefish were caught in great quantities and applied to the land at the rate of 10,000 to 12,000 per acre. Seaweed, or rockweed as it was called, was easily collected and served the same purpose to a less degree. Both at the shore and inland a variety of other

fertilizing agents was used, such as marl, potash and lime, but only sporadically, according to the enterprise of particular farmers and the accessibility of the material.

The prevailing neglect of fertilizers, to which the occasional use of gypsum and whitefish are merely exceptions, illustrates not so much the ignorance of the typical farmer, as the inhibitory effect of the lack of a market on all progress in the science of agriculture. Of course the farmers of that day did not understand why spreading the dung of their cattle on their fields increased the yield of their crops, but they knew very well that such was in fact the result. Even if they had had more knowledge, it is not likely that they would have modified their wasteful practice. For carting and spreading manure entailed labor, which meant expense either of money or of their own physical effort. And from what source was that expense to be repaid? Not, certainly, from the sale of crops, for without a market that was impossible. The old practices resulted in crops sufficient to feed the farmer and his family. Why should he exert himself to produce a surplus? The only return he could expect would be a sort of psychological income, a satisfaction in seeing his fields yielding more than those of his neighbors. Such satisfaction was a quite sufficient stimulus for the gentleman farmer of the commercial towns, who experimented along all sorts of lines, regardless of expense, but for the self-sufficient farmer it was a psychological luxury in which he did not feel he could afford to indulge. The farmers of Litchfield and Berkshire and of the Connecticut Valley had no more knowledge of the scientific principles involved in the action of gypsum as a fertilizer than had their contemporaries in the hills of Worcester or Tolland, but they had learned somehow that gypsum produced bigger crops. They wanted bigger crops because they had a market. Hence they were willing to invest their money and labor and make the experiment. Hence their progress in the science of agriculture.

The Farm Equipment—Buildings, Tools and Implements

It was this lack of a market which explains to a large extent the small investment of capital in agriculture at this time, either in permanent improvements, such as drains and buildings, or in tools and implements. A house and barn were necessary and these were in general conveniently and substantially built. The latter had a threshing floor in the middle and stables for horses and cows on either side. Some of the hay was mowed away above the stables and the remainder was stacked near the barn in sheds, open at the

sides and covered with a thatched or shingled roof. A corn-crib was always in evidence, set up on stilts as now, as a protection against mice and dampness. Of the tools and implements used on the farm we shall have occasion to speak in another connection. They were few and ill-contrived. One writer says that the farmer of this period could have carried them all, except the cart and harrow, upon his back. They included a plough, a hoe, a pitchfork, a manure-fork and a shovel, all of which were clumsily constructed of wood, often by the farmer himself, and plated with strips of sheet iron, perhaps by the local blacksmith; a flail for threshing grain and a fan and riddle-sieve for winnowing. The practice of treading out the grain from the straw by driving cattle over it, which had persisted since the days of the ancient Israelites, was still to be found in some of the Middle States, but seems to have been superseded in New England. The sickle, the most ancient of harvesting implements, was still used to some extent in reaping wheat; for cutting other grains and grass, the scythe and cradle were used.

For the all-important business of ploughing the farmer was but poorly equipped. Flint has given us a description of two of the types of ploughs most frequently used at this time. He says: "The Carey plough had a clumsy wrought-iron share, a land-side and standard made of wood, a wooden mold-board, often plated over in a rough manner with pieces of old saw-plates, tin or sheet-iron. The handles were upright, and were held by two pins; a powerful man was required to hold it, and double the strength of team now commonly used in doing the same kind of work. The 'bar-side plough' or the 'bull-plough' was also used to some extent. A flat bar formed the land-side, and a big clump of iron, shaped a little like the half of a lance head, served as a point, into the upper part of which a kind of coulter was fastened. The mold-board was wooden and fitted to the irons in the most bungling manner. The action might be illustrated by holding a sharp-pointed shovel back up, and thrusting it through the ground." With such unwieldy instruments, two men or a man and a boy, using three horses or two or three yoke of oxen, could turn over in a superficial manner the soil of one or two acres in a day. Some attempts had been made to improve this implement; a cast-iron plough had been invented in 1797 in which the mold-board and land-side were cast in one piece, but the mass of the farmers were ignorant of these improvements. The iron plough was even opposed because of the fear that it would poison the earth.

Harrows were used to further pulverize the soil. These had at

times iron, but probably more usually wooden teeth. Of the latter Deane says: " . . . they are so little advantage to the land, unless it be merely for covering seeds, that they may be considered as unfit to be used at all. The treading of the cattle that draw them, will harden the soil more, perhaps, than these harrows will soften it." All the transportation of crops, manure, timber and stone was done, except when there was snow on the ground, by means of ox-carts, ponderous two-wheeled vehicles, constructed almost entirely of wood. The carriage of goods for any distance was, if possible, postponed until winter when sledges or sleighs could be used.

The Yield per Acre of Various Crops

The best method of determining just how inefficient was the practice of husbandry outlined in the foregoing paragraphs, would seem to be an examination of the yield of the various crops cultivated. There are, of course, no government reports going back to those early days nor are there any other official publications covering this period. There exists, however, a considerable mass of information on this point scattered through the various gazetteers and statistical accounts of towns and in the writings of travelers. This material refers to conditions in various parts of southern New England, in general between the years 1790–1810. The following figures have been compiled from a digest of such scattered information, making allowance for exceptional conditions in certain localities which would cause variations from the normal figures. Indian corn produced on an average 25 to 30 bushels per acre. Occasionally crops of as high as 40 to 50 bushels were recorded, in the Connecticut Valley, and, on the other hand, on sandy soil such as that of Cape Cod and of Nantucket the yield fell to 12 bushels per acre or less. Rye was considerably less prolific, averaging about 15 bushels per acre. This crop was curiously uniform over the entire area, hardly any cases being found where crops larger than this were harvested, and only occasionally did the yield fall to 12 or 10 bushels. Potatoes are credited with 100 to 150 bushels per acre, a figure which compares very favorably with those of the latest censuses, but this is probably due to inaccuracy at the earlier date in estimating the crop, since, as we have seen, potatoes were rarely grown by themselves in fields of any considerable size. Barley produced about 20 bushels to the acre, and buckwheat from 15 to 20 bushels. The yield of wheat, in the limited areas in which it was cultivated, was miserably low, hardly ever rising above 15 bushels to the acre, and averaging between 10 and 15.

The Apple Orchard

Apples were the standard fruit of New England. As we have seen, every farm had an orchard of several acres, containing a hundred or more trees. The abundant yield of these trees seems to have been used principally for making cider, the favorite beverage of all classes and persons. Some was exported to the Southern states, either in its natural form or after being distilled into cider brandy, but the bulk of the product was stored away in the farmers' cellars for their own consumption. Apples were also preserved by slicing and drying for winter use in the household. In especially fruitful years there was still a surplus, which was fed to the cattle and swine. Other orchard fruits of less importance were pears, peaches, plums, cherries, and quinces. The orchards suffered much from the lack of care. After the original planting, practically nothing was done to preserve the trees or increase their yield except to allow cattle to pasture among them and, very rarely, to plough between the trees. The result of this neglect was becoming apparent at the beginning of the century. The first growth of orchards in many towns was dying out and often the trees were so infested with worms that the value of their fruit was largely destroyed.

The Management of Woodland

Every farm had also its woodland, occupying perhaps one-third of its total area, and every farmer was to some extent a lumberman and forester. The importance of wood in the farm economy we have already noted. Houses and barns, tools and vehicles, furniture and utensils, were constructed of this material to a much greater extent than now. Besides this, the consumption of wood for fuel was enormous. The open fire-places demanded constant replenishing during the winter months and consequently the woodpile formed an imposing eminence behind every farmhouse. In their wholesale and seemingly reckless destruction of timber in clearing the land, the settlers seem not to have anticipated the subsequent importance of this material to them. As a result of their improvidence there seems to have been in 1810 little first-growth timber standing, except in the more lately settled counties of western Massachusetts and Connecticut. And even in the management of such woodland as they had, the farmers of this period followed a bad system. The policy was to cut off close a certain tract every year, depending on the natural growth to replace it after a term of years. The better method, that of selecting cer-

tain trees over the whole extent of the woodland to be cut every year, was discarded because of the larger amount of labor which would have been necessary in gathering the wood. Ignorance of the better policy may also have been responsible. The scarcity of wood, which was inevitable, had begun to be felt, especially in the matter of fuel. In regions of naturally sparse forestation, as on Cape Cod, fire-wood was imported and experiments were being made with the use of peat as fuel.

Meadows and Pasture Land

The New England region was by nature better fitted for grazing and pasturage than for agriculture in the strict sense of the word. Its soil, although of a good quality, was thin and the fields were much encumbered by stones and boulders, varying in size from small pebbles to huge rocks and ledges. Hence the farmer's meadows and pasture lands tended to assume more importance than his tilled fields. The natural grass, which sprang up and grew abundantly as soon as the land was cleared, was of excellent quality. On the uplands it furnished good pasturage and from the meadows, which were almost always watered by a small stream, fair crops of hay could be secured with the labor only of harvesting. Grass was also cut on the tilled lands in the years in which they were lying fallow. Occasionally these fields were seeded down with clover or with timothy, sown in with a previous grain crop. This occurred only at long intervals, however, and the seed used was not only full of impurities but was insufficient in quantity. For the most part, in the intervals between its years of tillage the land was left to "seed itself." Just at the end of the period under consideration the sowing of clover seems to have spread quite rapidly. . . .

The pasturage furnished subsistence for the farmer's cattle, sheep, and horses during the summer months; the hay, supplemented to some extent with cornstalks, rye and wheat straw, and potatoes, supplied their winter fodder. Grain was rarely fed, except to hard-worked horses, or to beef cattle which were being fattened for slaughtering. A typical inland farm of 100 acres was able to support in this manner 10 or 15 cows, including young stock, one or two yoke of oxen, one or two horses, a flock of from 10 to 20 sheep and about as many swine as cows.

The Native Cattle

The beef cattle were the descendants of the Devonshire breed originally imported by the earliest settlers, but had received con-

siderable intermixture from the Danish breed imported into New Hampshire and probably also from the Holstein breed brought by the Dutch colonists to New York. These influences, as well as lack of sufficient winter fodder and inattention to selection in breeding, had developed in New England a breed known as "the native cattle," more remarkable for their hardiness than for the production of beef or dairy products. In a few sections, however, such as in the towns of the Connecticut Valley and along the shores of Narragansett Bay, where the pasturage was especially rich and a market for salted beef could be reached, some improvement in the breed was remarked. The dairy products from the farmer's cows were an important article of his diet. In cheese, moreover, an article was found for which the demand in the Southern states and in the West Indies was considerable. Cheese had also enough value in proportion to its weight to bear the expense of transportation by land for some distance. A few towns in Litchfield and Berkshire Counties, on the western edge of New England, and a few others in Rhode Island along Narragansett Bay, and in Windham County in Connecticut, exported large quantities of cheese and grew prosperous in consequence.

Oxen and Horses

The cattle not only supplied the farm with beef and dairy products but also furnished a part of its labor force. Oxen were from the beginning the favorite, and, in fact, for many years, the only draft animal on New England farms. Although horses were steadily coming into more general use, they did not seriously compete with the slower-moving steers for general farm work for many years after 1810. In 1784 there were about 45,500 horses in Massachusetts and over 162,500 oxen and draft cattle. In 1792 in New Hampshire the proportion of horses to neat cattle was only one in twenty. By 1812 this ratio had increased to about one in seven. In spite of their slowness of gait the oxen had certain advantages which justified the farmers in their use. These are succinctly set forth by President Dwight as follows: "The advantages of employing oxen are, that they will endure more fatigue, draw more steadily and surely; are purchased for a smaller price; are kept at less expense; are free from disease; suffer less from laboring on rough grounds; and perform the labour better; and, when by age or accident they become unfit for labour, they are converted into beef. The only advantage of employing horses instead of oxen, is derived from their speed."

The use of horses for travel and light transportation increased rapidly with the introduction of wagons and the building of turnpike roads in the first decade of the new century, the oxen being still retained for the heavier tasks of ploughing and of hauling crops, stone and timber. . . .

Swine were kept on every farm, furnishing the salt-pork which was a staple article of diet. They required but little attention; in the fall they were ringed through the nose as a precaution against rooting, and turned out into the stubble fields, as gleaners after the harvest. In the winter they were fed on anything which happened to be superfluous, hay, chestnuts, apples, potatoes, dairy and kitchen refuse. For a few months before slaughtering they were fed on Indian corn. They thrived under this treatment and seem to have been the most successfully developed animals on the farm. . . .

Sheep of the Common Breed

The flock of 20 or 25 sheep regularly found on every farm was a characteristic feature of the self-sufficient agriculture. So vitally important were they as the source of supply of wool that in spite of the constant discouragements of colonial days, the sheep had increased steadily in numbers in proportion to the growth of population. No feature of the farm economy shows more clearly than the management of sheep the neglect and want of progress which the lack of a market brought about; and on the other hand, no department of the agricultural industry responded more promptly in improvement when once the market was supplied. Up to 1800 no attempt had been made to improve the breed of sheep. They had, probably, in common with the cows and horses, degenerated since their introduction by the first settlers. They were long-legged, narrow in the breast and back, and slow in arriving at maturity. When fully grown, they yielded only 40 or 45 pounds of mutton, and about three or three and one-half pounds of coarse wool at each shearing.

The Importations of Merino Sheep

Between 1800 and 1815, a noteworthy effort was made to improve the native stock by the importation of rams and ewes from Spain. The Spanish Merino sheep had long been famous for the weight and excellent quality of their wool, but on account of rigid exportation restrictions it had been practically impossible to bring representatives of the stock to this country. These restrictions

were broken down about the year 1800, during the disorganization of the government of Spain following the Napoleonic invasion. Advantage of this state of affairs was taken by our ambassadors in Spain and France, Col. David Humphreys and Robert Livingston, as well as by certain other Americans who were abroad at that time. They secured a few of these valuable animals, which they shipped back to America. The only importations of importance into New England before 1809 were the flock of 70 ewes and 21 rams sent by Col. Humphreys in 1802. Although from the very first there was no doubt of the great improvement which the mixture of the Spanish with the native breed produced upon the latter, yet the ordinary farmer was slow in benefiting thereby. In the first place, the knowledge of the importations spread slowly, and then the prices at which the Merinos sold were so exorbitant, that few even of the most prosperous of gentlemen-farmers could afford to experiment with them. In general we may say that it was the lack of a commercial stimulus which retarded progress along this line, as well as along all others. The native breed, poor as they were, supplied enough wool and mutton for the farmer's own family. The demand for wool in the domestic industries was, it is true, steadily increasing, but it had not become strong enough to induce a systematic attempt to improve the breed. It was not until the newly established woolen factories had grown to be large consumers of wool that the New England farmers felt the impetus to increased production.

The attempts to improve the breed of sheep by the importation of the Merinos is a typical illustration of a larger movement towards the betterment of the agricultural industry as a whole, which began to make progress in the closing years of the eighteenth century. The impetus came from the patriotic impulses of men of education and of public affairs, who had come to learn of the "new husbandry" of Tull, Bakewell, and Young, which had created such a stir in England. Some of them had by personal observation been impressed with the contrast presented by the results of the improved system beside the wasteful and inefficient methods with which they were familiar at home. Others, like Washington, had learned of the English improvements at second hand but had increased their knowledge by active correspondence with the leaders of the movement on the other side. The Revolution itself had its part in furthering this new movement. Not only did it arouse a new patriotism, but, in conventions as well as on the field, it brought together and made acquainted the leading men from the various States. When, after these exciting days were over, they

had retired to their homes, they turned their energies to the improvement of agriculture.

The Agricultural Societies—Character of their Work

The influence of these societies on the progress of agriculture in this period, on the methods employed by the farmers in rural communities, was so slight as to be practically negligible. They were "a voice crying in the wilderness," forerunners of improvements comparable to those which had already taken place abroad. But for reasons which we shall presently set forth, the time was not ripe for the acceptance of their doctrines and propaganda. Their principal service was in preparing the way for future progress.

The Contemporary Criticisms were Deserved

Reviewing for a moment the evidence presented in the foregoing paragraphs, we can see clearly that the criticisms of New England agriculture at the beginning of the nineteenth century were fully deserved. The tillage of the fields was but a superficial scratching of the surface soil with clumsy tools; very little care was taken to preserve or increase the fertility of the soil by crop rotation or even by the simple and obvious method of applying manures; because of the neglect of root crops, the fodder for live stock was insufficient; the lack of nourishment, coupled with imperfect shelter and inattention to the principles of selection in breeding, had caused a general degeneration in practically all kinds of domestic animals. The same lack of intelligent effort, seen in the neglect of the productivity of his land and stock, is evident in the farmer's management of his orchards and woodlands. In general, the system of agriculture was not only extensive but even in many respects predatory; the farmers had little stimulus to get anything beyond a living, and in getting that they had little regard for the effects which their systems of husbandry might have on the prosperity of future proprietors of their land.

But the Explanation Given was not Sufficient

The reasons for the foregoing state of affairs generally given by contemporary and later writers on the subject may be grouped under three chief heads: (1) the ignorance of the farmers of what we now recognize as the fundamental principles of scientific agriculture; (2) the conservatism which bound them down to traditional methods; (3) the cheapness of land and the consequent

high price of labor. All of these conditions undoubtedly existed and each contributed in its own way to prevent progress, yet none of them, it seems to me, would alone, or in combination with the others, have been able to prevent progress in agriculture if it had not been for the presence of another and more decisive condition, the lack of a market.

Inefficiency of Agriculture was not Due to Ignorance

The typical inland farmer was undoubtedly ignorant of the best methods of tillage and of fertilization, and of the fact of increased productivity which the application of these methods would bring. But this was not a necessary or an inevitable state of affairs. The knowledge of the improvements which had been accomplished abroad was accessible in this country. Beginning with the publication of the first of the Reverend Jared Eliot's Essays on Field Husbandry in New England, in 1749, an unwearying attempt had been made by men of education to bring to the attention of farmers in the Eastern states, and particularly in New England, the importance of changing their methods. The result had been the publication of a respectable body of literature on the subject, including at least sixteen works of a general nature, in which the contrast between the methods employed at home and abroad were pointed out, the improvements introduced by Tull, Bakewell and Young were outlined and discussed in simple language, and suggestions were made for adapting their discoveries to the conditions prevailing here. Besides these there were published a considerably larger number of pamphlets, dealing with special branches of the agricultural industry, such as the use of gypsum as a fertilizer, the advantages of rotation of crops, the breeding of sheep and the management of bees. The agricultural societies were spreading similar information through their published reports, and such periodicals as The Old Farmer's Almanack and the American Museum were helping along the cause of education by repeated admonitions, "in season and out of season."

Little could have been expected in the way of results from this propaganda, if the farmers had not been fitted by nature or training to receive it. But it seems evident that the New England farmers were both intelligent and educated enough to see the advantages of the new husbandry and to apply its methods. It is universally recognized that the general level of education was at this time higher in New England than in any other part of the country. Common schools, at which attendance was compulsory,

were found in every town almost as soon as it was settled. The terms in these schools were, it is true, short, and the teachers often inefficient, but even if the bulk of the pupils never progressed beyond the rudiments, still the training was universal and furnished a valuable working equipment. There is also evidence at hand that the farmers showed a disposition to utilize and improve their knowledge by reading. "Social libraries" were found even at this early date in many of the older towns and parishes, and newspapers, both those which were published in the inland towns themselves and those from the commercial towns, were read everywhere with avidity. So widespread was this habit that not only did travelers comment upon it, but the conservative Dwight was moved to remark: "The reading of newspapers in this country is undoubtedly excessive, as is also the number of such papers annually published. . . . "

As an instance of the effects of this universal education in quickening intelligence, Dwight cites one of those "many original machines for abridging human labour, and improving its results," the stocking-loom. He might have cited the machine for cutting and heading nails and tacks, the system of interchangeable parts in the manufacture of muskets, perfected by Eli Whitney in New Haven, and improvements in a number of other lines of manufacture, such as the making of tin plate in Meriden, in Connecticut, and the manufacture of wooden clocks in Waterbury, all of which displayed the ingenuity of his countrymen along mechanical lines. Why was it that this spirit of progress and invention, this capacity to work out new ideas and to apply the ideas of others did not display itself in agriculture? Certainly there was a large field for improvement there. The answer is simple. The application of genius and energy along mechanical lines was profitable, because a market could be found for the improved and increased product; a market for increased agricultural produce was not at hand, therefore progress along that line was not remunerative.

Conservatism

Conservatism has always been acknowledged as a characteristic quality of any agricultural population, especially in countries where the land is held in small tracts in fee simple and cultivated by the owners. New experiments are always made reluctantly; with limited resources the failure of a single crop may bring disaster. The New England farmers were undoubtedly conservative, but it seems illogical to select this quality of their minds as a determining

factor in the explanation of the lack of agricultural progress. For if conservatism had been so important it would have affected not only the inland farmers but also those of the coast regions. The latter had behind them the same ancestry and the same traditions, the conditions of land tenure were the same; but yet, as we have seen, they did not hesitate to make new ventures, to invest labor and capital in their farms, to modify their practices in any way that seemed to offer more profit.

Land was Cheap and Labor Dear

The third argument, that concerning the relative prices of land and labor, deserves more serious consideration. It is given most prominence by those writers who were intelligently seeking an economic explanation of the phenomena they observed. . . .

* * * * * * * * * * *

The Effect of Cheap Land—The Frontier

In an examination of the influence of the relative values of land and labor on agricultural methods and progress, it seems to me that attention should be concentrated on the causal factor, the cheapness of the land. The high price of labor may have affected the calculations and management of the farmers in the few favored regions, such as the towns in the neighborhood of Boston, but it is difficult to see how this condition could have had any significance for the farmers in inland towns. To farmers who never hired any labor, what difference could it make whether the price of labor was high or low? For the ordinary operations of farm life, directed only to supply a single family with the necessaries of life, the labor force of that family was sufficient. To spend any amount, however small, in hiring labor to raise a surplus of crops or live stock for which no market could be found would have been economic folly.

The cheapness of land, on the other hand, was a matter of vital importance. In a new country where land is cheap we naturally expect to find an extensive system of agriculture. When, however, a country, or a section of it, becomes fully settled, as New England was in 1810, an increase in population demands an increase in the supply of foodstuffs. Under an extensive or a predatory system of cultivation, a stage of diminishing returns is soon reached at which this increased supply can be obtained only at a more than proportional expense of labor and capital. Two courses are then open to the farmers. Either they must send the surplus of their

population to new lands in another section of the country, or, if such lands are unavailable, they must if possible amend their methods, introduce improvements and so postpone the stage of diminishing returns. At any rate, an increased product must be forthcoming; either emigration will ensue or a more intensive system of cultivation must be adopted. Now it was the presence of large tracts of uncleared land, of as great if not greater fertility than that which the farmers of inland towns were then cultivating, to be had almost for the asking, which persuaded them to choose the former of these alternatives.

Emigration

Emigration began from the older towns before 1750, first to the as yet unsettled counties in the northern and western sections of Massachusetts, and after the Revolution to the states of northern New England. Thus the annual surplus of population was drained off and the remainder managed to get a living without introducing new methods of agriculture. Tudor describes this process and its results as follows: "The spirit of emigration, acting with full force on an enterprising people, easily induced them to go to new states in pursuit of the real or delusive advantages that were held out to them. This constant draining from our population, while it afforded a hardy, vigorous race for the cultivation of new territories; may have produced a greater increase to the ultimate good and power of the nation, than would have happened if these emigrants had remained stationary; still it occasioned some local disadvantages. In the first place it prevented the inhabitants from thinking of any improvement; if their farm was not sufficiently productive the easy remedy to a restless people was to sell it, collect their effects and go five or fifteen hundred miles (the distance, greater or less, was not thought of) in pursuit of a richer soil. It was not by the employment of greater skill, but by a change in location, that they sought to improve their condition."

The Real Cause of Inefficient Agriculture was the Lack of a Market for Farm Products

The ignorance and the conservatism of the farmers were undoubtedly to some extent hindrances to agricultural progress; cheap land on the frontier discouraged intensive cultivation at home; but these circumstances do not, either alone or in combination, furnish a sufficient explanation for the state of the industry which prevailed. In the background lay a condition of much more

significance, because of its determining force upon all the others. I refer to the lack of a market for agricultural products. Once given a market, neither ignorance of the improved methods of agriculture nor the reluctance to experiment along new lines, proceeding from a conservative disposition, nor the cheapness of land, inviting extensive cultivation, could long have stood in the way of progress. If the farmers of the inland towns had had an opportunity to exchange for the products of the outside world their grain, meat and dairy products, they would have seized upon every scrap of information regarding the means by which their fields and live stock could be made more productive; their adherence to traditional methods would have been weakened, and they would have applied to the conduct of agriculture the same adventurous and ingenious spirit which they displayed in the field of mechanical invention and in that of commercial enterprise. Labor might still have been expensive, yet they would have employed others to work for them. The expense of labor was at this time a hindrance to the growth of manufactures, also, but when the market was opened through the failure of European competition, during the period of the Embargoes and the War of 1812, manufacturers found it profitable to employ workers even at the high wages demanded.

In fact we have repeatedly noted in the preceding sections of this chapter that wherever a body of farmers were so situated as to be able to reach a market, whether in the commercial towns of the seacoast or in the West Indies, there these obstacles to progress had already, to some extent, been overcome. Dickinson recognized this fact when he wrote: "Our farmers prefer exerting their labor upon a large field, to employing the same on a small one. Deviating, however, from this rule, in the vicinity of populous towns, and on navigable waters, where the price of land enters more highly into the farming capital, they have paid more attention to husbandry, and increased their produce by additional expenditures of labor." Had this author carried his analysis only one step farther and asked himself the question, "Why is the price of land higher in the vicinity of populous towns and on navigable waters?" the answer would have given him a much more fundamental reason for the improvements which he observed. It was the presence of a market, an opportunity to sell produce, which increased the competition for these lands, which made the farmer willing to pay highly for the opportunity of entering that market.

On the other hand, all other stimuli to agricultural improvement were futile as long as the market was lacking. We have seen that the campaign of education of the latter part of the eighteenth cen-

tury was without results. It is difficult to see how a cheaper labor force could have produced any different results. The revolution in agriculture, as well as the breaking down of the self-sufficient village life, awaited the growth of a non-agricultural population. Between the years 1810 and 1860 such a population arose in the manufacturing cities and towns of New England, and the market thus created brought changes which opened up a new era to the farmers in the inland towns.

2. The Old Northwest and the Old Southwest [1]

In the early economic life of the West there was no one feature which accounted for more of its peculiarities than the single fact of its isolation. This situation determined in a large measure the character of the social life, affected strongly the nature of certain industries, and influenced the attitude of the pioneer toward the various great issues. The inaccessibility of this region was emphasized from the very beginning in the long and laborious journey of the immigrant into the valley; in the difficulty which he experienced, after he had once become established, in disposing of his surplus; and in the high prices which he paid for many articles now regarded as necessities, including coffee, tea, and sugar. The craze for internal improvements which characterized Western governmental policy in the years prior to 1840, and the great significance attributed to the introduction of the steamboat on "western waters," were directly traceable to the same cause, as was also the economic self-sufficiency of the farm and household. Further, it would be difficult to say how much of the hard times in this section, money evils, debts, agitation for paper money, "stay" laws, and loose commercial honesty, were connected with the fact that the West in its isolation was compelled to work out its own problems without substantial relief or influence from the older portion of the East. Finally, the fear of being shut out from the world determined the line of early settlements, which moved along the great rivers, and projected like fingers up the small streams, always keeping as near as possible to wood and water—a situation which is clearly shown by the early population maps of the West. The streams, therefore, offered the only hope for the marketing of the produce, and the timber usually found along the banks of the same provided the material for flatboats, upon which, long after the introduction of the steamboat, a great deal of the produce was floated to market.

[1] Isaac Lippincott, "Pioneer Industry in the West," *The Journal of Political Economy*, Vol. XVIII, No. 4, April, 1910, pp. 269–270, 274–278. Reprinted by permission of the author and the publishers.

To settle any distance inland was to condemn oneself to great hardships, and to make it impossible to raise money with which to pay off the debts on the farms.

* * * * * * * * * * *

From the point of view of industry, pioneer life in the central Mississippi Valley displayed three great features. First, the fewness and simplicity of the tools with which the newcomers did their great work; second, the fact that manufactures were, in the true sense of the word "manufactures," fashioned by hand; and finally, the home consumption of almost the entire product. "With no tools but an axe and an auger," wrote Judge Hall, "the settler built his cabin, with a chimney built of sticks, and a door hung on wooden hinges, and confined with a wooden latch; chairs, tables, and bedsteads were fabricated with the same unwieldy tools." "A horse, a yoke of cattle, a sheep or two, usually made up the list of their possessions, outside a few household goods of the most primitive kind. They would select the land for their future home, erect a rude log cabin, and begin the work of clearing the land of timber, ready for seed time and harvest."[2] For household utensils, there were a few pewter dishes and spoons, knives, forks, tin cups for coffee and milk, a water pail, and a small gourd or calabash for water, with a pot and an iron Dutch oven. The hominy mortar and the hand mill added to the equipment. Farm implements were of home construction. "Yokes for oxen, and harness for horses, the carts and wagons in daily use, without tires, boxes or iron were all manufactured as occasion required by the self-taught artificers." The harrow was constructed with wooden teeth, and when in use was turned with an end forward so as not to be obstructed in its course by stumps and the limbs of trees with which the pioneer fields were strewn. A sickle or reaping-hook was the only implement used to cut the wheat. There were no cradles as yet in the country, and reaping with the sickle was very severe labor. One of the greatest problems after the wheat was cut was to thresh and clean it. At times either it was threshed with a flail, or horses were employed to tread it out. On occasions, the grain was winnowed with a sheet. As late as 1833, T. Flint wrote of the West, "The people are not given to experiment; [they] continue to farm in the beaten way. Agricultural improvement proceeds at a slow pace." In Illinois, the first step forward was made about the year 1820, when a fan was invented to clean the wheat after it had been threshed. These implements were manufactured and sold at Edwardsville and at Alton, Ill. About 1835, the diamond

plow appeared in the country. During the fifteen succeeding years, however, very substantial progress was made; implements operated by horse-power came into use for the reaping, mowing, and sowing of the grain.

Of all the pioneer crops, that of Indian corn was by far the most important. Growing with great persistence in the half-tilled ground in the midst of dead trunks of trees, corn yielded an abundant first crop, giving the poor immigrant an almost immediate return for his labor. Though in itself possessing small value in large bulk, it was for various reasons the most valuable staple; either it was easily converted into whiskey, which was at all times a marketable article, or it was fed to hogs which were driven to market, thus in the first instance giving the settlers two salable articles with which to pay their debts. In addition, a long harvest-season, an abundant yield, and the utility of all parts of the plant, greatly increased its value. The contribution of corn to the early success of pioneer industry cannot, therefore, be overestimated. In the woodlands, the first settlers learned from the Indians the method of girdling the trees, and planting the grain in the midst of the standing dead-wood. On the prairies, after the sod had been turned, and while the tough grasses were being left for a season to decay, so-called "sodcorn," which had been dropped in the furrows, produced a good half-crop, and this was stacked for fodder. Frequently pumpkin seeds were scattered in the furrows at the time the corn was sown, and no further care was required except to throw the ripe product in a wagon at harvest time. When the corn was ripe, it was plucked by hand and hauled to a crib; and the people of the vicinity were invited to a corn-shucking—one of the great social events of pioneer life.

In addition to corn, wheat, oats, barley, buckwheat, Irish and sweet potatoes, turnips, rye for horse feed and for distilling, were important crops. Some tobacco was grown, and cotton, hemp, and flax for the supply of the household clothing industry.

The pioneer fields presented a dismal appearance. The underbrush and most of the small trees were removed, but the large ones were either cut down within three or four feet of the ground, leaving the stumps standing, or else the entire dead tree after girdling was left standing. Necessity forced upon the first comers this method of utilizing the land, since on the one hand, the labor of clearing was great, and on the other, an immediate crop was needed.

One of the greatest difficulties encountered by the pioneer was reducing his grain to flour and meal. The want of mills was for

years one of the most serious obstacles in the way of progress. When the settler did not do his own grinding he frequently traveled from twenty to fifty miles to find a mill. For some years after the founding of Indianapolis, Ind., in 1819, the colony was sixty miles from the nearest grist mill, and all grain had to be hauled that distance. The absence of good roads often rendered the expense of grinding a single bushel equal to the price of two or three. Those who manufactured their own grain resorted to various devices. "We had often to manufacture meal, when we had grain," said a pioneer of Ohio, "in any way we could get the corn to pieces. We soaked and pounded it; we shaved it; we planed it and at the proper season grated it. When one of our neighbors got a hand mill, it was thought quite an acquisition in the neighborhood." Owing partly to the difficulty in reaching the mills, even corn meal at certain seasons of the year was scarce. "To save meal," said another pioneer of Ohio, "we often used pumpkin bread, in which when meal was scarce, the pumpkin would so predominate as to render it next to impossible to tell our bread from that article. In after years, when in time of freezing or drought we could get grinding by waiting our turn no more than one day and a night at a horse mill we thought ourselves happy."

CHAPTER XI

GROWTH OF HOME AND FOREIGN MARKETS

1. The Internal Grain Trade [1]

* * * * * * * * * * *

The westward movement of population into the Mississippi Valley after the War of 1812 and the improvement of transportation facilities by the introduction of steamboat navigation on the Western rivers, the construction of canals, and the extension of railroads into the region beyond the Allegheny mountains made possible that territorial division of labor which fostered the growth of a mutual economic dependence between geographic sections and the establishment of a predominant type of industry in each. That is to say, there was developed a rapidly growing tendency for each section to restrict its economic activities more exclusively to the production of those commodities for which it was best adapted. In this way each section produced a surplus of given commodities which were offered in exchange for the surplus commodities of other sections. Thus, there was developed that economic differentiation and mutual interdependence between sections which enabled the manufacturing and commercial East to supply the South and West with merchandise, clothing, shoes, tools, and machinery, and the large quantities of imported articles required by these two sections; while the plantation South was able to furnish the East with cotton for its factories and for export to Europe, at the same time supplying the North generally with sugar and molasses. The food-producing West, on the other hand, was the region upon which the South and East were both becoming increasingly dependent for the breadstuffs and meat which constituted the leading products entering into the internal trade of the country.

* * * * * * * * * * *

A study of the grain trade of the United States shows that the production of corn has always exceeded that of wheat—amounting, as a matter of fact, to considerably more than half of all the

[1] Louis Bernard Schmidt, "The Internal Grain Trade of the United States 1850–1860," *The Iowa Journal of History and Politics*, Vol. XVIII, No. 1, January, 1920, pp. 96–124. Reprinted by permission of The State Historical Society of Iowa.

other cereals (wheat, oats, barley, rye, and buckwheat) combined. As an article of commerce corn has not, however, been as important as wheat. The reasons for this are, first, that wheat is the most important breadstuff, constituting the article of prime necessity in the food consumption of the American people; and, second, that wheat is especially well adapted to the requirements of commerce. It has therefore occupied the leading place in the grain trade of the United States since the beginning of the Colonial era. Corn does not possess these advantages. It is better adapted to the local markets for feeding purposes, going to the ultimate consumer largely in the form of beef, pork, poultry, and dairy products. Even so, however, corn forms an important article of commerce, second only to wheat in the list of cereals. Thus while primary emphasis should be given to wheat in a study of the grain trade of the United States considerable attention should be accorded to corn. Oats rank third in importance among the cereals; and barley comes next; with rye and buckwheat occupying positions of minor significance in the grain trade.

A comparison of wheat production by geographic sections for the decades ending with 1850 and 1860 shows that the six New England States in 1850 with a population of 2,728,000 produced 1,091,000 bushels of wheat, or two-fifths of a bushel per capita; in 1860 these States with a population of 3,135,000 produced 1,083,000 bushels, or three-eighths of a bushel per capita. In 1850 the five Middle Atlantic States with a population of 6,573,000 produced 35,067,000 bushels, or five and one-third bushels per capita; in 1860 these States with a population of 8,258,000 produced 30,503,000 bushels, or three and two-thirds bushels per capita. The eleven Southern States in 1850 with a population of 7,349,000 produced 17,796,000 bushels, or two and one-half bushels per capita; in 1860 these States with a population of 9,103,000 produced 31,442,000 bushels, or three and one-half bushels per capita. On the other hand, in 1850 the ten Western grain growing States with a population of 6,380,000 produced 46,076,000 bushels, or seven and one-fourth bushels per capita; in 1860 these States with a population of 10,219,000 produced 102,251,000 bushels, or ten bushels per capita. The whole United States in 1850 with a population of 23,192,000 produced 100,486,000 bushels, or four and one-third bushels per capita; while in 1860 the entire country with a population of 31,443,000 produced 173,105,000 bushels, or five and one-half bushels per capita.

A similar study of the corn production of the United States for this period shows that the New England States in 1850 produced

10,176,000 bushels, or four bushels per capita; in 1860 they produced 9,165,000 bushels, or three bushels per capita. The Middle Atlantic States in 1850 produced 61,414,000 bushels, or nine bushels per capita; in 1860 they produced 75,399,000 bushels, or the same number of bushels per capita as in 1850. The eleven Southern States in 1850 produced 238,210,000 bushels, or thirty-three bushels per capita; in 1860 they produced 282,627,000 bushels, or thirty-one bushels per capita. In 1850 the ten Western States show the relatively high return of 280,881,000 bushels, or forty-four bushels per capita, which in 1860 (including the returns from Nebraska which were now reported for the first time) was increased to 470,-190,000 bushels, or forty-five bushels per capita. The entire corn crop of the United States in 1850 amounted to 592,071,000 bushels, or twenty-six bushels per capita, which in 1860 was increased to 838,772,000 bushels, or a slight fraction over the per capita production of 1850.

Although oats are of less significance as an article of commerce than either wheat or corn, it should be noted that the New England States produced about the same quantity of oats per capita as of corn; but while there was a per capita decrease in corn production from 1850 to 1860, the same period shows a per capita increase in the production of oats from three to three and one-half bushels. The Middle Atlantic States produced more oats in proportion to the number of people than any other section, the increase from eight to eight and one-half bushels being more than sufficient to offset the slight decrease in the production of corn but by no means enough to make up for the great decrease in the production of wheat. On the other hand, the Southern and the Western States both show decreasing returns for this period, the oat production of the Southern group declining from four and one-half bushels per capita in 1850 to only two bushels in 1860; while that of the Western group decreased from seven and one-half bushels per capita in 1850 to six and one-half in 1860. The country as a whole shows a per capita decline in oat production from a little more than six bushels to less than five and one-half bushels. Other cereals—barley, rye, and buckwheat—occupy a very subordinate position in American agriculture as compared with wheat, corn, and oats. . . .

If the three principal breadstuffs—wheat, rye, and corn—be grouped together it will be found that New England in 1850 produced 12,837,000 bushels, or less than five bushels per capita, which was decreased by 1860 to 11,674,000 bushels, or less than four bushels per capita, or a decrease in proportion to population of twenty-seven per cent. The Middle Atlantic States in 1850 pro-

duced 105,859,000 bushels, or sixteen bushels per capita, which in 1860 was increased to 118,069,000 bushels—representing a decline to about fourteen bushels per capita, or a decrease in proportion to the number of inhabitants of nearly twelve per cent. . . . In 1850 the Southern States produced 258,916,000 bushels, or thirty-five bushels per capita, which in 1860 was increased to 316,272,000 bushels, or the same amount per capita as in 1850. The Western States in 1850 produced 328,212,000 bushels, or fifty-one bushels per capita, which in 1860 was increased to fifty-six bushels per capita, or a per capita increase of ten per cent. For the whole United States the production of wheat, rye, and corn amounted in 1850 to 706,746,000 bushels, or over thirty bushels per capita, which in 1860 was increased to 1,033,000,000 bushels, or nearly thirty-three per capita—an increase in proportion to population of eight per cent.

If all the cereals . . . be combined, it would be found that the per capita production of New England in 1850 amounted to only 7.99 bushels, which in 1860 declined to 7.77 bushels, thus showing a decline of .22 bushels per capita. The Middle Atlantic States produced 26.15 bushels in 1850 and 24.85 bushels in 1860, showing a decrease of 1.30 bushels per capita. In 1850 the Southern States produced 37.92 bushels and 36.81 bushels in 1860, which shows a decrease of 1.11 bushels per capita. The Western States, on the other hand, show an increase of from 59.62 bushels in 1850 to 62.96 bushels in 1860, or an increase of 3.34 bushels per capita, which was more than enough to make up for the decreased production of the East and South.

The foregoing analysis by geographic sections of the per capita production of the six leading cereals—wheat, corn, oats, rye, barley, and buckwheat—shows the extent to which the manufacturing-commercial East and the cotton-growing South had by 1860 given way to the food-producing West in the production of grain, thus illustrating the territorial division of labor—mentioned at the beginning of this paper—which determined the general character of the internal trade during this period.

But a small proportion of the wheat produced in the United States before 1860 was exported. Of the 100,486,000 bushels produced in 1850, only 7,536,000 bushels were exported, leaving 92,486,000 bushels, or four bushels per capita, for home consumption; while of the 173,105,000 bushels produced in 1860, only 17,213,000 bushels were exported, leaving 155,892,000 bushels, or five bushels per capita, for home use. While the production and export of wheat varied from year to year, due to seasonal variations and

foreign market fluctuations, the years 1850 and 1860 were comparatively normal years, hence the wheat available for home consumption, amounting to four bushels in 1850 and five bushels in 1860, represent a fair average for the ante-bellum period. The increase of one bushel per capita for home consumption during the decade shows a growing tendency on the part of the people to consume more wheat as transportation and milling facilities were improved.

Assuming an even distribution of wheat consumption throughout the country, it will be seen that in 1860 New England had a deficit of four and five-eighths bushels of wheat per capita, the Middle Atlantic States of one and one-third bushels, and the Southern States of one and one-half bushels; while the Western grain-growing States had a surplus of five bushels per capita. The East and the South were therefore placed in a dependent relation to the West which alone was able to furnish the wheat needed to supply the growing deficits of these two sections. The dependence of the East was still further accentuated by the fact that this section consumed more wheat than the five bushels per capita average for the entire country. This may reasonably be assumed for the following reasons: first, the Atlantic States were settled primarily by the English who for centuries had been consumers of wheat in their island state, and who upon emigrating to America gave special attention to providing themselves with this foodstuff; second, the milling industry was concentrated for the most part in the East, thus affording this section an advantage over the other sections in using wheat as a breadstuff; and, third, the East was provided with better means of transportation which facilitated the distribution of both wheat and flour among the people concentrated largely in the towns and cities on the seacoast and the rivers.

While these considerations lead to the conclusion that the East consumed more than five bushels per capita, it is reasonable to assume that the South used less than this amount. It is an established fact that corn rather than wheat was the principal breadstuff of the negro population. The same may be said to have been largely true of the white non-slaveholding population of the back country, living remote from the channels of the wheat trade and devoted principally to the raising of corn and hogs. The slaveholding population, too, was accustomed to using corn, though principally dependent on wheat, as a breadstuff. Even to-day it is conceded that the South generally consumes more corn than the North. These considerations justify the assumption that the South must have consumed less than the general average of five

bushels per capita for the whole nation, thus lessening its dependence on the West. But even so, it is estimated that the South purchased an average of 10,000,000 bushels of wheat annually from the North in the decade ending with 1860—which amount added to the wheat production of this section in the latter year, would give the South four and one-half bushels per capita for domestic use.

The pioneer West for obvious reasons (among which may be mentioned the type of settlers, the conditions of frontier life, and the comparative absence of the facilities enjoyed by the East for using wheat as a breadstuff), may be assumed not to have exceeded five bushels per capita for home use; though as transportation and market facilities were developed and the milling industry was moved westward, this section, showing a decided preference for wheat, increased its per capita consumption of this article.

As already explained, corn as an article of commerce is of less significance than wheat. Consequently, even a smaller proportion of the amount produced has been exported. Of 592,071,000 bushels produced in 1850, only 6,595,000 bushels were exported; while of the 838,772,000 bushels produced in 1860, but 15,449,000 bushels were exported. By far the greater proportion of corn was therefore consumed at home. But corn is largely an animal food, reaching the ultimate consumer mainly in the form of meat, dairy, and poultry products. In determining the actual extent to which the East and the South were dependent on the West in respect to this article, it therefore becomes necessary to consider the corn-growing industry in relation to the live stock, dairy, and poultry industries. But even so, the East and the South, as the United States Census of 1860 shows, were fast becoming dependent on the West for corn as well as for live stock and live stock products. Thus while corn goes to market principally in the form of the latter, and has an important relation to the live stock markets, its importance as an article of commerce only will be considered in this paper.

The rise and development of the internal grain trade of the United States may really be said to date from the completion of the Erie Canal in 1825. This new avenue to the West stimulated the westward flow of the tide of immigration from the Eastern States and from Europe into the fertile prairie country along the Great Lakes frontier, at the same time opening up a route for the direct shipment of Western grain to the East. Before that date the only outlet for Western products was the Mississippi River. The South therefore had become the market for the surplus grain and live

stock of the Upper Mississippi Valley, not only consuming increased amounts of this surplus as it devoted more attention to the raising of the staple plantation products, but also exporting great quantities to the Eastern States and to Europe. New Orleans thus had become the great export trade center.

The completion of the Erie Canal, however, and the construction of the Welland Canal in 1833, connecting Lake Erie with Lake Ontario, opened two avenues to the Atlantic Coast: one by way of the Hudson River to New York City and the other by way of the St. Lawrence River direct to Great Britain and the continent of Europe. As the settlement of the Great Lakes region proceeded, the amount of grain diverted to the eastward steadily increased. The development of the canal system in the thirties and forties, followed by the rapid extension of railroads into the Middle West in the fifties gave a further stimulus to the westward movement, at the same time diverting more and more of the Western surplus grain from the Southern to the Eastern routes and trade centers.

The Mississippi River no longer enjoyed a monopoly of the western surplus grain trade. But this fact should not be interpreted to mean that there was a decrease in the grain and flour traffic on that highway of commerce, for this traffic was maintained at a generally high level until the opening of the Civil War decade. . . .

. . . The grain and flour receipts of St. Louis maintained a high level throughout this period; while . . . the receipts of New Orleans likewise remained steady until 1858, after which there was a sharp decline in the wheat and flour receipts, though this decrease was in part offset by an increase in the corn and oat receipts.

But, while the grain and flour traffic of the Mississippi River continued to be in a flourishing condition from 1856 to 1860, the same period witnessed the total collapse of New Orleans as an export grain and flour center. . . .

. . . In 1860 New Orleans was no longer of any importance as an exporting center for the grain and flour of the West destined for the Eastern States and for Europe; . . . the Mississippi River continued, in the absence of north and south railroads, which were not constructed until after the Civil War, to be the great highway of commerce for grain and flour, not to mention the other surplus products which the South, as already pointed out, was purchasing in increasing amounts from the grain and live stock kingdom which was being founded in the North Central region. That is to say, while the rapidly growing export trade was being shifted from the Western rivers to the Eastern canals and railroads, the interior trade of the Mississippi Valley continued to remain steady, showing

no marked signs of being disturbed by the changing routes for the export trade. Steamboats conducted a huge traffic on the Ohio and Mississippi rivers, carrying large consignments of wheat, corn, flour, pork, bacon, poultry, hogs, horses, and mules down the river and returning up-stream with cargoes of sugar, molasses, cotton, and tobacco.

Cincinnati, Louisville, St. Louis, Nashville, Memphis, and New Orleans were prosperous trade centers in this north and south traffic. So extensive was this intra-valley trade that it gave the two sections a consciousness of economic interdependence, of solidarity and contentment, which had a potent bearing on the relation of the West to the South and East respectively during the first two years of the war period.

Thus, while the intra-valley trade had by 1860 developed to such proportions as to create between the West and the South a consciousness of economic solidarity, a rapidly growing volume of Western grain and flour destined for the Atlantic seaboard and for exportation was being diverted from the Southern to the Eastern routes. This traffic consisted largely of the surplus grain grown in the ever-widening area of cereal production in the new Western prairie country skirting the Great Lakes frontier. That there was a remarkable growth in the volume of this trade is shown by a study of the receipts of the primary grain and flour markets situated along the highways of commerce.

Among these primary markets Cincinnati may be mentioned as illustrating to a marked degree the change that was taking place in the general direction of the internal grain trade. As the chief distributing point on the Ohio River, it occupied a strategic position with reference to the intra-valley trade. By 1857, however, it had already become of greater significance as a distributing point for eastward shipments. . . .

The importance of Cincinnati as a primary grain market was due chiefly to the flour trade. Thus while the wheat shipments in 1859–1860 amounted to 321,000 bushels, the flour shipments totaled 478,000 barrels. The great bulk of both the wheat and flour was diverted eastward over the . . . canals and railroads, while only a relatively small remaining portion entered the intra-valley trade. The corn shipments were negligible but growing.

Buffalo, however, had for a number of years been the most important transit trade center for Western grain. As early as 1840 the total grain receipts of this trade center amounted to 4,062,000 bushels. Five years later the total receipts were 5,582,000 bushels, but in 1846 they suddenly mounted to 13,366,000 bushels. The

receipts continued to rise with slight fluctuations until 1856 when the figure of 25,754,000 bushels was reached. The next five years witnessed an increase of over 11,000,000 bushels. . . .

The growth of the grain trade on the Great Lakes was very rapid. West of Buffalo were Cleveland and Toledo, the two leading lake cities of Ohio. The Ohio Canal between Portsmouth and Cleveland (completed in 1832), diverted the surplus grain of Pennsylvania, Kentucky, and Southern Ohio, which had formerly gone down the Mississippi River, to the Eastern routes. In 1842 the shipments of farm products from Cleveland was valued at $4,431,000, which was equal to the value of shipments from New Orleans. By 1846 the wheat and flour receipts of Buffalo were equal to the receipts of New Orleans. Toledo for many years shipped more grain by way of the Great Lakes than any other city except Chicago, the receipts coming in from Ohio, Indiana, and Kentucky, and later from Illinois and Missouri. By 1859 Toledo's grain receipts amounted to 6,467,000 bushels, which in 1860 were increased to 14,505,000 bushels. Detroit was another important grain market on the Great Lakes. It was the market for the grain and flour of Michigan and the forwarding point for the large shipments that came from Chicago.

As the frontier became settled and grain raising developed in the interior, other primary markets were established on the highways of commerce. Among these was Chicago whose receipts far exceeded those of her competitors. The first consignment of grain, amounting to 78 bushels of wheat, was shipped from Chicago in 1838. This was rapidly increased until 1846 when the shipments amounted to 1,600,000 bushels. Corn, oats, and rye shipments were then added to supplement wheat and flour. The decade of the fifties witnessed a marvelous expansion of the grain and flour trade. . . .

By 1860 Chicago had achieved significance as the foremost primary market, the total shipments in that year amounting to 31,000,000 bushels, more than half of which consisted of wheat and flour.

Milwaukee meanwhile had forged ahead to third place among the primary grain markets of the western lake region with good prospects in 1860 of superseding Toledo, which held second place. The grain shipments from this trade center amounted to 133,000 bushels in 1845 and to 1,076,000 bushels in 1848. After 1850 the Milwaukee grain and flour shipments increased rapidly, . . . rising from 3,720,000 bushels in 1856 to 9,995,000 bushels in 1860.

Thus, by 1860 the internal grain trade of the United States had

become centered in five great primary markets: St. Louis, Chicago, Milwaukee, Toledo, and Cincinnati. These cities had become the centers where the vast surplus quantities of grain and flour were concentrated for shipment to the East and South for home consumption and to the Atlantic seaboard for exportation to Europe. Toledo had become the primary market for Ohio and Indiana, Chicago for Illinois, and Milwaukee for Wisconsin; while St. Louis continued to be the primary market for a vast portion of the Upper Mississippi River region, and Cincinnati the principal distributing center on the Ohio River, though the . . . territories surrounding the last two named cities were already being invaded by the railroads.

New York City had achieved the distinction of being the foremost grain market in the whole country; while Buffalo, by virtue of its strategic position between Lake Erie and Lake Ontario and at the western terminus of the Erie Canal, had become the great transit trade center for the Western grain and flour, the bulk of which was destined for that great Eastern commercial metropolis. . . . The total grain and flour receipts of New York City via the Erie and Champlain canals and the Hudson River—already considerable in 1850—had increased from 27,866,000 bushels in that year to 41,122,000 bushels in 1860, the receipts of the latter year consisting of 11,176,000 bushels of wheat, 1,149,000 barrels of flour, 14,156,000 bushels of corn, 6,491,000 bushels of oats, 2,968,000 bushels of barley, and 332,000 bushels of rye. The total receipts of New Orleans in the same year amounted to only 5,199,000 bushels. It will be seen, therefore, that the total grain and flour receipts of New York City in 1860 via the water routes were equal to eight times the receipts of New Orleans in the same year. Thus had New York City left New Orleans far behind in the competitive race for Western grain and flour, though what New Orleans lost in the products of the Upper Mississippi Valley she more than made up in the growth of her cotton trade in which she gained the ascendency.

Philadelphia and Baltimore, which had been the leading trade centers of the East before the Erie Canal gave the ascendency to New York, had again become active competitors for the Western trade. Threatened with the further loss of trade by the competition of the New York canals and railroads, the Pennsylvania and the Baltimore and Ohio railroads were built, the former being completed to Pittsburgh in 1852 and the latter to Wheeling in 1853. Philadelphia and Baltimore now had the advantage of shorter distances and more direct routes into the trans-Allegheny West,

which enabled them to win back a portion of the trade hitherto lost to New York; though the latter city was destined to remain far in the lead. Boston had also entered the field upon the completion of the Western Railroad to Albany in 1841. In the meantime, New York had strengthened its hold on Western trade by the building of the New York Central and the Erie railroads, the former making through connections with the lakes in 1850 and the latter reaching Dunkirk in 1851. New York was connected with Chicago by a direct rail route in 1853, and with St. Louis in 1855.

Thus the decade of the fifties witnessed the beginning of the competition between the railroads and the water routes for the Western grain and flour traffic which, however, was not finally decided in favor of the railroads until the seventies. The extent to which the water routes controlled this traffic at the opening of the Civil War period is shown by a comparison of the grain and flour receipts by all routes for the year 1860, which was a normal year in the development of the water and rail traffic. . . . Buffalo had become the great transit trade center for the shipment of grain and flour, which were sent eastward via the Erie Canal and Hudson River to New York City. Rochester, Oswego, and Cape Vincent on Lake Ontario, and Ogdensburg and Montreal on the St. Lawrence River were other shipping points east of Buffalo which received considerable quantities of grain and flour from the Northwest and Canada via the Lakes for the seaboard, the shipments being sent either southward from Rochester and Oswego via the Erie Canal and the Hudson River . . . to New York, or eastward to Montreal and thence via the St. Lawrence River to the coast for exportation to Europe or shipment down the Atlantic seaboard. The volume of Western grain carried eastward, via the railroads, was small, indeed negligible, as shown by the receipts at the Western termini of the Baltimore and Ohio, the Pennsylvania, the Erie, and the New York Central railroads.

Thus, while Boston, Philadelphia, and Baltimore diverted a considerable amount of Western produce via the railroad from New York, the latter city was destined to retain the unquestioned leadership. This is shown by a comparison of the total receipts of Western products at tide water by the various routes for the year 1860. The total receipts for that year amounted to 21,348,000 tons, of which 16,769,000 tons were shipped via the Erie Canal, 1,496,000 via the New York Central Railroad, 1,367,000 tons via the Erie Railroad, 804,000 tons via the Pennsylvania Railroad, and 913,000 tons via the Baltimore and Ohio Railroad.

The pre-eminence of New York is also shown by the relative

magnitude of the wheat and corn exports—including wheat and corn flour reduced to bushels—from these cities to foreign countries in 1860. New York exported 9,148,000 bushels, Boston 839,000 bushels, Philadelphia 1,390,000 bushels, and Baltimore 2,081,000 bushels, while New Orleans in the same year exported but 590,000 bushels.

It will therefore be seen that by 1860 a revolution had begun in the internal grain trade of the United States. The old theory that "trade will follow the rivers" had in some respects been disproved. The artificial channels of trade—the canals and the railroads—had tapped the West, diverting its products in rapidly increasing quantities eastward across the continent to the Atlantic seaboard. The comparative ease with which the growing surplus grain and flour of the Upper Mississippi Valley was diverted from the Southern to the Eastern routes is readily understood when the relative advantages of the latter over the former are considered.

It has already been shown that the Atlantic seaboard States were becoming almost entirely dependent on the West for an adequate supply of breadstuffs needed for home consumption, not to mention the fact that Great Britain after the repeal of the Corn Laws in 1846 afforded a promising and indeed growing market for American wheat. Before the direct routes between the East and the West were established, western grain destined for the East was sent down the Mississippi River to New Orleans and thence re-shipped around the Atlantic Coast to the various ports which served as distributing points for the seaboard States as well as export centers for transshipments of grain and flour to Europe. The risks thus incurred were heavy. The river traffic was none too safe, and coastwise traffic was hazardous to say the least. For this reason the merchants were never certain that a given consignment would be received. The time required to make this journey was another serious disadvantage, the uncertainty of river navigation often causing vexatious and ruinous delays. Consequently, it was natural that as soon as canals and railroads were projected from the East into the cereal kingdom of the West, that portion of the Western surplus which was destined for the East would pass over the shorter, quicker, and safer routes. Moreover, it had already been demonstrated that New York City possessed superior advantages and facilities as the great importing as well as exporting center of the country. And, finally, the westward movement of the plantation type of agriculture made New Orleans the great export trade center for cotton, sugar, and tobacco to the virtual exclusion of the products of the North Central States.

But while the competition between the Eastern and the Southern routes had already resulted in a victory for the former it must be remembered that the South had become a market for vast quantities of Western grain and flour, as well as meat and dairy products, which found their way into the Cotton Kingdom, thus accentuating the economic dependence of this section on the West. The significance of this fact must be kept in mind in a study of the internal grain trade during the decade of the Civil War which for several years virtually closed the long-established intra-valley routes of trade, thus suddenly leaving the West with a rapidly accumulating surplus of farm products which for a time depressed the market. The West charged the East with using its influence at Washington to continue the blockade of the Mississippi River, which had given the eastern routes a monopoly of the western grain trade and afforded them an opportunity to charge exorbitant rates, of which they quickly took advantage.

Meanwhile, the extension of railroads into the Middle West gave rise to keen commercial rivalry between the cities located on the highways of commerce. St. Louis and Chicago in the West were just beginning to develop an active competition as primary market centers which continued to the close of the century; while New York, Philadelphia, and Baltimore in the East developed a rivalry which began with the completion of the Erie Canal, and included Boston after the building of the Western Railroad. The commercial rivalry between these and a host of minor cities was expressed in the competition between transportation routes for the western traffic destined for Eastern and European markets. This competition between canals and railroads, and in turn among the railroads themselves, became keen in the sixties and seventies resulting in the rapid extension of railway facilities, the establishment of uniform gauges and consolidation of roads into through lines, and the improvements of terminal facilities, including elevators and warehouses. Thus did the decade of the fifties inaugurate those changes and tendencies which were to dominate the internal grain trade of the United States to the close of the century.

2. The Cotton Factorage System [1]

* * * * * * * * * * *

Like the plantation slavery system, the West Indian factorage

[1] Alfred Holt Stone, "The Cotton Factorage System of the Southern States," *The American Historical Review*, Vol. XX, No. 3, April, 1915, pp. 558–565. Copyrighted by the Macmillan Company. Reprinted by permission of the author and the publishers.

system, with various modifications, was transferred to the Southern colonies of America. It seems to have been the very corner-stone of large-scale, staple, slave-labor agriculture. When the Revolution destroyed the business of English factors, their places were taken by enterprising men in the more important Southern commercial towns. Some of these had been exporting agents and correspondents of English houses. Others were attracted to the business by the promise of large returns, and because it was from the first recognized as an eminently respectable and honorable form of employment for capital and brains; and the social prejudice against trade did not obtain against it.

The importance of the Southern factorage system developed with the growth of the cotton industry. Indigo planting disappeared with the destruction of the English bounty system by the Revolution. Tobacco culture was confined to a more or less restricted area, and did not offer an inviting field for wide-spread and large-scale capitalistic enterprise. Rice, which took the place of indigo in South Carolina, became an important crop and had its own system of development, in which the factor played a considerable part. In Louisiana the sugar factor became as important a part in the commercial system, as he had been in that of the West Indies. But it was in cotton that the factorage system reached its greatest development, became most powerful, and flourished longest. Cotton was a crop ideally adapted to a capitalistic system of agriculture. It grew through a wide range of geographical area. Its non-perishable nature lent itself peculiarly to a system which required the concentration of its product at seaboard, at a time when transportation and warehouse facilities were poor, and rough handling, exposure, and long delays would have destroyed the value of any other agricultural commodity. It is therefore the cotton region which offers the student the largest promise of reward for investigation of the system and its effects and ramifications.

The functions of the Southern factor were the same as those of his English progenitor. But the Southern system had one feature not contained in the English. The business here developed relations between factor and client not possible with the West Indian oversea system. The relations between the cotton factor and planter were of the most intimate and confidential character, as close probably as was ever the case between business associates. The ties between them frequently were life-long, and their relations were of a social and personal as well as business nature. How far this close personal association affected plantation policy, it is not possible to say. But it is certain that the counsel and advice

of the factor were frequently reflected in the planter's affairs. It was a relationship which often effected a close union of business interests and political, social, and economic policies between a large and dominantly influential body throughout the cotton-producing South, and the men who were the leading and dominant figures in the business and financial life of Southern cities. It also raised to the *n*th power the definite and tangible value of the moral hazard in business. It is not too much to say that the great factorage houses of the South looked quite as much to the character of a customer as to the securities he had to offer. Millions of dollars have been advanced by Southern factors upon the mere personal word of the planter, with no formal security at all, and with only a memorandum to witness the amounts involved. A unique basis of agricultural credit was established, which must be taken into account in interpreting such documentary evidence as plantation and slave mortgages and other securities of record. Another manifestation of the personal equation was in the opportunities offered by the factorage system to men of little or no capital, usually of the overseer class, to embark in business for themselves. An overseer identified with the successful management of a plantation estate was often as well known to his employer's factor by reputation as the planter himself was personally. Such a one, who possessed the necessary initiative, had little difficulty in establishing a factorage connection on his own account. Many of the largest and most successful planters of the South were men who got their start in this way.

It is not to be supposed that there were no cases of conflicts of interest and of opposing policies between the planter and the factor classes. The business was of too great magnitude and its ramifications far too extensive for this not to have occurred. As in the case of the earlier English factors, it was a business of considerable hazard and it had to carry a corresponding burden. It has always been the misfortune of large-scale staple plantation enterprises—that is, those requiring large capital and a heavy labor equipment—that the vicissitudes to which they were subject tinctured them with something of both the nature and the spirit of games of chance. With the planter it has always been either a feast or a famine. In the very nature of things this chance had in some measure to be shared by the factor, and naturally the system developed a scale of charges which were correspondingly high. I do not know that there was much complaint at these charges. They were accepted as the price to be paid for a necessary accommodation. But when, as was often the case, a few years of adversity

found the planter struggling under a burden of debt which was steadily increasing, it was natural that he should sometimes give utterance to the feeling that "in the fell clutch of circumstance" he was hopelessly harnessed to the factor's plough. On the other hand there were enough instances of abuse of confidence and credit on the planter's part; of the reckless squandering at Northern resorts and on European travel of funds furnished for purely business purposes; of neglect of their common interests, with resulting heavy losses to both, to make the factor feel that though his profits were many times greater than they were supposed to be, they would still be insufficient to balance the risks he ran. It was by no means a one-sided game.

We have seen that the factor furnished the planter with funds; that he acted as a commission merchant in the purchase of plantation supplies, and that he discharged the functions of an agent in selling the plantation product. What were the charges for these services, and what were the characteristic features of the system, which differentiated it from any other relation of principal and agent? And what were its general economic tendencies and effects? The interest rate varied with times, places, and conditions. It probably ranged between eight and twelve per cent. It was usually charted only as funds were actually drawn, though in some instances it was computed on the face of the loan, regardless of the average time of its actual use by the borrower. There was also in some cases a customary brokerage fee of from one-half of one per cent to two and one-half per cent added to the interest charge. To the price of the goods, wares, and merchandise purchased for the planter was added a commission which varied according to custom from two to ten per cent or more. The customary charge for selling the crop was a commission of two and one-half per cent, but sometimes this was as high as four.

These were the only items of open profit to the factor in the transaction. But there were others which helped to make the business attractive, notwithstanding its hazards. In the early days cotton sales were effected through a broker who acted as a middleman between the factor and the resident agent of a foreign mill or merchant. To this broker was paid a commission of one-half of one per cent, nominally borne by the mill agent. In practice and custom, however, one-half of this commission was paid by the factor and charged to the planter. This was supposed to be divided between the factor and the broker. The planter was taxed with various other charges, as freight, storage, insurance, drayage, weighing, sampling, mending, and repairing. These were returned

on the account of sale to the planter at a uniform rate, fixed by custom or agreement, and were supposed to represent the actual amounts paid by the factor for the service rendered in behalf of the planter. As a matter of fact, custom early developed a system of rebates to the factor on practically all these charges. This seemed to be an inevitable incident of the control by the factor of large quantities of cotton to be warehoused, drayed, insured, compressed, and otherwise handled solely at his direction. Those who were engaged in such business at cotton ports naturally offered the factor the inducements of special rates and drawbacks in consideration of the heavy volume of business which he could divert to their hands.

The exaction of one of these exerted a particularly baneful influence upon the plantation system. This was the penalty commission feature of most advancing contracts between factor and planters, incident to the repayment of all loans in kind, rather than in money. The fundamental consideration inducing extensions of credit under the factorage system was not the matter of interest on the funds advanced. This, indeed, was the least of such inducements. The very foundation of the system was the medium which it offered for the control and manipulation of large volumes of a great staple commodity holding a recognized position of prime importance in the commercial world. The planter's note, backed by his contract with the factor, with the latter's endorsement, could be rediscounted with the factor's correspondents in any financial centre in this country or abroad. The tremendous stocks of cotton accumulated in the factorage cities of the South, warehoused, insured, and controlled by the factor, furnished him a basis of credit unequaled by any other form of security the South had to offer. It was practically as convertible as the best forms of commercial paper. If cotton was king, the cotton factor was the power behind the throne. We do not need any documents to tell us that the inevitable consequence was the elevation of the mere volume of business—the naked number of bales of cotton grown by the planter and controlled by the factor—to a position of importance out of all true and proper economic relation to what should have been the primary considerations of cost and profit to the producer. The penalty commission was a simple expedient for stimulating the production of more bales of cotton. It was a proviso coupled to the agreement for paying the customary commission on sales, under which the planter bound himself to pay to the factor a certain sum per bale, sometimes ranging as high as four dollars, for each and every bale by which his actual production fell short of the stipu-

lated number of bales which he agreed to ship. This was in addition to the agreement to plant so many acres in cotton, calculated to produce so many bales. Travelers and foreign observers of Southern conditions were accustomed to comment on the South's devotion to cotton, to the neglect of the principle of proper diversification, so essential to a permanently prosperous and well-balanced system of agriculture, and to attribute the trouble to slavery. Such foundation as there was for this criticism was in large measure due to the influences which we have suggested. Cotton was the only cash crop. It was moreover the only crop which could be used as a basis of credit. Every planter who was in debt fondly dreamed of the year when through a combination of a bumper yield and a fair price he would be enabled to throw off his shackles. But the only avenue of escape was through this happy combination, and it was too seldom realized. Even when a planter did finally grow independent the impulse to enlarge his undertakings had become deep rooted and was apparently irresistible. There was a sort of atmospheric psychology in the situation which seemed to make a man forever dissatisfied with a stagnated sufficiency. He wanted more land and more slaves, which meant more cotton, and as more cotton was both a means and an end, the economic circle was thus easily established. But here again we have the personal equation. These men included in their ranks many who by inherent ability and force were as much captains of industry in their day and generation as were the cotton factors of the cities. Their activities simply found expression in expansion along lines normal to their period and environment, precisely as is the case in the industrial and financial world to-day. There need be no mystery about that phase of the matter.

In order to render absolute the factor's control of the entire crop, one of the cardinal features of the system was the requirement that every bale of cotton grown by the planter should be consigned to the factor. If the total crop were one thousand bales, and the first five hundred discharged the planter's debt, an exceedingly improbable supposition, the remaining five hundred bales must nevertheless go forward also. There were few, if any, agricultural lien laws in those days, but this requirement took their place. It also probably made their ultimate enactment less difficult, through common familiarity with the practical operation of their essential principle, which was a certain measure of control, by the financing agent, of the product grown through his assistance.

The broader economic effects of the factorage system would form in themselves alone an interesting and valuable field of in-

quiry. A primary incident was the concentration of Southern capital, and hence of its real wealth, in the few Southern cities which were its important factorage centres. Within the limitations of this paper, it would be useless to attempt even a casual consideration of this branch of the subject. But I am satisfied of the inaccuracy of the commonly accepted idea of ante-bellum Southern wealth as something naturally and essentially rural, as might be expected in a country whose sole business in popular estimation was that of agriculture.

One effect of the system was the retarding of the normal tendency toward the founding and developing of smaller urban communities, common even in an agricultural section. The factorage centres were enormous supply depots, from which were distributed to the interior South, through the factor in bulk, instead of through a local merchant by ordinary processes of retail trade, all the common necessities, comforts, and conveniences of daily life. And it is a mistake to assume that I am here dealing with ancient history. The system outlived by many years the ante-bellum era, and within my memory, in the case of my own family, all the staple articles of domestic and plantation use were bought through my father's factor in New Orleans, and shipped four hundred miles by river, and then hauled by wagons twenty-odd miles further into the interior.

When interior urban development at last took place, it was naturally patterned after that of the seaboard factorage centres. Prosperous and influential factorage houses grew up at what became important interior river points. Here we had a repetition on a smaller scale of the accumulation of cotton and the concentration of capital and wealth which were the rule at seaboard. But this was a step in the direction of the diffusion, not of the break-up, of the system. These interior houses were in the nature of tributaries to the larger streams.

The beginning of the end of the seaboard system did not come until some years after the Civil War. The two most potent instrumentalities in its final dissolution were the railroads and the land-mortgage companies. The development of railroads made it possible for cotton to be shipped direct from the field of its production to that of its foreign or domestic consumption, which in turn made possible a real interior market. The advent of land-mortgage companies made possible a refunding process whereby the whole, or a large part, of a planter's obligations could be financed on a basis of the land alone. His current business could then be transferred on the security of a crop lien and personal

property to smaller interior merchants and factors, whose capital, though limited as compared with the old institutions, had become large enough to meet the necessities of the business after the loan companies had assumed a large part of the burden. The country merchant had frequently become a factor through natural gradations, and he was at hand to take care of smaller business at first, and gradually to extend the field of his operations. Largely from his ranks was developed the country banker, who was an indispensable feature in the slow process of modifying and finally revolutionizing the ancient system. The country factor did business along the same general lines as his city prototype. But where he has taken over the factor's business at all, and this he has largely done, the country banker has practically abandoned the last vestige of the old system. He lends on the same security as the factor, but the business is on the same basis as any other commercial transaction. The railroad and the country merchant and factor, the country compress and the country bank, have been followed by the country buyer, who furnishes the last link in the chain between raw cotton production and consumption. The elimination of the entrepreneur has by no means been accomplished, but the industry has been relieved of a large part of the load which it carried for the greater portion of the first century of its existence. Even in the remote interior a planter can to-day gin the cotton which yesterday was in the field, and to-morrow receive a check for it from a buyer who will consign it from the planter's platform to its destination at Fall River, Bremen, or Liverpool. Within the span of my personal experience, I have seen the time when a similar transaction would require from two to six months for its consummation, with the intervention of a dozen different agencies of transportation and trade.

3. Rise of an Agricultural Export Trade [1]

. . . If an agricultural nation is to carry on any considerable commerce with the outside world it must necessarily involve the exportation of farm products; and we naturally turn to consider whether conditions were such as to encourage farmers in the United States to attempt to supply the world market. As a rule the cost of transportation of farm produce from any distance to the seaboard, was greater than the value of the produce when deliv-

[1] Worthy Putnam Sterns, "The Foreign Trade of the United States from 1820 to 1840," *The Journal of Political Economy*, Vol. VIII, Nos. 1 and 4, December, 1899, and September, 1900, pp. 40–45, 452–465. Reprinted by permission of the publishers.

ered. Robert Fulton, at an early day, enumerated the following products of the interior of the country, "wheat, flour, oats, barley, beans, grain, and pulse of all kinds, cider, apples, and fruit of all kinds, salt, salted beef, pork and other meats, hides, tallow, beeswax, cast and forged iron, pot and pearl ashes, tanner's bark, tar, pitch, rosin and turpentine, hemp, flax, and wool, plaster of Paris, . . . marble, lime, and timber." He states that none of these articles could pay transportation bills of five dollars per hundredweight. One might draw up a much longer list of the products of the Mississippi valley in 1820, but the cost of transportation as indicated by data already given was still five dollars per hundredweight from Buffalo to New York City. The heavy cost of transportation was no less effective in increasing the expense for commodities consumed by the farmer than it was in reducing the return for his products. Foreign countries were allowing drawbacks and paying premiums and bounties on exports to the United States to such an extent that their wares were selling in our seaports at prices even below their first cost, if we can trust a numerous array of witnesses. Yet in spite of this fact, the farmer who brought his products to Pittsburg had to give a bushel and a half of wheat for a pound of coffee; a barrel of flour for a pound of tea; and twelve and a half barrels for one yard of superfine broadcloth. That the farmer had any produce left to exchange for these foreign goods seems remarkable when we consider that in parts of Ohio he must give four bushels of wheat for a yard of domestic cassinet and twenty for a pair of boots. It was reported that in Kentucky wheat sold for twenty cents and corn for ten cents in specie. It has already been noticed that the products of the Western farm could at no time pay the expense of transportation to the Eastern market, and as late as 1820 flour manufactured from grain grown in central Pennsylvania netted the producers only $1.25 per barrel when marketed in Baltimore. The development of steamboat transportation on the Mississippi and Ohio gave the farmers near those rivers, at times when circumstances were most favorable, a profitable market in New Orleans. In January, 1820, fresh beef from Kentucky was sold in the Southern market. In that year, it is said, there were already seventy-two steamers on the western rivers. The result of this increase in the means of transportation was shown in heavy shipments from the North, the sales of which failed to pay the expenses of transportation.

The handicap on the farmers of the interior was increased by the position of the southern cotton planters. Their plantations, up to 1820, were so near to tide water that transportation con-

stituted only a small part of the expense of production. The steadily increasing European demand for cotton, while beneficial to the cotton planter, had a disastrous effect on the market for Northern farm and factory products in the South. The cotton ships on their return from Europe carried freight at the very lowest rates in preference to sailing in ballast. This enabled the French farmer and manufacturer even of bulky commodities to meet the American producer in successful competition in the New Orleans market. The list of French commodities on sale there in 1819 included among others such articles as sausages, butter, cheese, bricks, tile, hollow cast iron, etc. Moreover, the tariff legislation of Europe was far more successful against our farm products than when turned upon our merchant marine. The flour which in 1820 netted the producers but $1.25 per barrel in Baltimore paid into the treasury of Spain a revenue of three times that amount if exported to Cuba. This is a fair example of the tariff during that period on nearly all food products of the temperate zone which sought a market in foreign ports.

A third, and probably more important hindrance to the development of an export trade in agricultural products was to be found in the character of the people themselves. Their sanguine disposition, their fondness for speculation, in short their overweening desire to get something for nothing was already exhibiting disastrous results. On every side in stay laws, exemption laws, and sheriff's sales, the story is plainly told that the term agricultural industry had not been used to indicate plodding effort devoted to the production of foods for the world market. Farmers undoubtedly gave a part of their time to supplying the demands of the market, but it would seem that they depended for most of their expenditures upon the more exciting occupation of "buying land cheap and selling dear." This pursuit had been followed with eminent success during the boom that lasted from 1815 to 1819. Now the tables had turned and for years to come a desperate struggle was to be carried on in maintaining the fictitious values created by speculation. The passage of unconstitutional laws in favor of the debtor, the subversion of the courts when they failed to sustain such laws, the establishment of a state bank for the special purpose of making loans to owners of mortgaged lands, the sale of its notes when issued at a discount of 30 per cent, such is the record which is literally true for the State of Kentucky alone, but which is a fair type of the procedure in all those States where new lands were coming rapidly into cultivation.

Evidently the United States could not look forward to any con-

siderable exportation of the food products of the interior until the expenses of transportation should be greatly decreased, the tariff restrictions on their importation into foreign countries in some degree relaxed, and the over-capitalization of its farm lands much reduced. These hindrances to economic prosperity confronted over half the population of the country, and it is worth while to consider by what methods and in what spirit they were met.

The American pioneer was indeed fond of speculative gains, but this was by no means his only striking characteristic. His fondness for economic independence and for enterprises in which his own will furnished the initiative to every application of effort, affords us the only satisfactory explanation of his chosen mode of life. What that life involved in many cases is vividly portrayed in the words with which John Randolph sought to characterize the supporters of the tariff act of 1824. He said : "Men in hunting-shirts, with deer-skin leggings, and moccasins on their feet want protection for manufactures—men with rifles on their shoulders and long knives in their belts, seeking in the forests to lay in their next winter's supply of bear meat." Such men as these and the descendants of such men had gradually pushed the frontier of American settlements from the Atlantic seaboard far out into the central valley of the continent. When the difficulties of transportation are taken into consideration it is correct to say that already half the people of the country were living at a considerable distance from the sea. The progress they had made in the economic subjugation of the domain into which they had entered was remarkable. It is a matter of no surprise that the American characteristics of self-dependence and self-confidence found their earliest and fullest development and expression under such circumstances. It is true that they had no direct interest in the earnings of the merchant vessels of New England, yet one cannot doubt that it was the presence of a national spirit, too strong to submit to what they considered intolerable aggression and unjustifiable breaches of faith on the part of England, that caused them to force the country into the War of 1812. If the economic risk to themselves had been as great as it was to New England, they would have pursued the same course.

These men already felt that the economic interests of the country should be considered as a unit. They had an unquestioning and almost boundless faith in the future wealth of the territory in which they lived, but nothing approaching its immediate realization could be attained by them without the aid of the accumulated capital of the Eastern seaboard. Their only hope for the common

comforts of civilization lay in bringing the consumer and producer nearer together. If American capital and enterprise could be persuaded to flow inward instead of outward, to apply itself to inland transportation and manufactures instead of foreign commerce, they had the fullest confidence that our own remarkable resources would give such capital and enterprise higher rewards than they had ever before attained.

The vote on the tariff act of 1816 enables us to locate more exactly the strength of this movement for the development of our resources. The States of New York, Pennsylvania, New Jersey, Vermont, Kentucky, and Ohio cast fifty-six votes for the bill and only seven against it. It is true that New York and Pennsylvania are coast States and were, therefore, to some extent directly interested in foreign commerce. Yet they extend so far into the interior that their public sentiment at that time was rather Western than eastern. Moreover, New York City and Philadelphia already realized that our internal commerce would, in time, far surpass as a wealth producer, any conceivable traffic with the outside world. They also knew that their own interests were bound up with the development of the latter rather than the former.

The people of the far East were not able to look at the matter in this way. It might have been said in 1816 as John Randolph said in 1824: "When we look to Salem and Boston, to parts of the country where skill and capital, and industry notoriously exist, we find opposition to this bill." The national spirit of the South had been thoroughly roused by the war with England, and though it could see no direct profit to itself in the measure, a desire for greater industrial independence on the part of the nation led its statesmen to join hands with the Middle States and the West in passing the tariff act of 1816. The generosity of the South at this time was the decisive factor which determined that a protective policy should dominate the legislation of the country for many years. The tariff bill of 1820 failed to pass. The act of 1824 would have met a like fate had it not received decisive support from New England. This support was undoubtedly due to the remarkable development of the cotton industry from 1821 to 1824, under the stimulus of the heavy protection afforded by the act of 1816.

The great agricultural population of the country proposed to solve the difficulties which confronted it, as follows: They proposed to give to American inventiveness, capital, and industry the greatest possible inducement to apply themselves to improvement of the methods and reduction of the cost of inland transportation. They proposed to meet foreign legislation that restricted our oppor-

tunities for exporting agricultural products and carrying ocean freights, by domestic legislation that would restrict the importation of foreign manufactures into the United States, and that would retaliate in full for discrimination against our merchant marine. They proposed by a protective tariff to give capital an opportunity for enterprise in domestic manufactures, which they confidently believed would in time afford a home demand for farm products sufficient to justify the highest values that had been placed upon their lands.

* * * * * * * * * * *

The export of first importance during the third decade of the century was cotton. Its value for the ten years was 256 million dollars. This was 48 per cent of the total value of domestic exports and 44 per cent of the value of all imports retained for home consumption.

The cotton crop for the year 1820 was 160 million pounds. As cotton picking usually began in August, the period within which the crops were marketed probably coincided pretty closely with the succeeding fiscal year, which then opened October 1. The exports for the fiscal year 1821 were 78 per cent of the crop in 1820. The crop increased to 180 million pounds in 1821, but the European demand was growing so fast that our exports in the fiscal year 1822 absorbed 99 per cent of this 20 million pounds increment. This would indicate that practically all the increase in the demand for home consumption was satisfied from reserve stocks. . . . The probability that this home demand was not increasing very rapidly is suggested by the fact that the export price, which had been 16 1/8 cents in 1821, was increased only ½ cent by the remarkable growth of European demand. These prices seem to have been high enough to encourage the extension of cotton planting, for the crop in 1822 was 210 million pounds. In the next fiscal year 97 per cent of this 30 million pounds increment in the crop was exported. It was necessary to reduce the export price to 11¼ cents in order to market such a quantity abroad. Evidently domestic demand was still sluggish. Either these low prices discouraged the planting of so large an acreage, or 1823 was an unfavorable crop year, for the production declined to 185 million pounds. Our own cotton factory system had now developed to a point where its consumption began to be of more influence in the market. In 1823 but 17 per cent of the crop of the previous year had been retained for home consumption, but in 1824, 23 per cent was retained. This made necessary a decrease

in the quantity exported amounting to over 30 million pounds. England increased her imports from other sources over 17 per cent in the calendar year 1824. But, in spite of that, her demand was so active that the decreased supply from the United States in the fiscal year 1824 was valued at 15¼ cents a pound. Because of this increase in price the 143.4 million pounds exported in 1824 were worth more by 1.5 million dollars than the 173.7 million pounds exported the previous year.

The influence of a higher price upon the amount produced is at once observed. The crop of 1824 was 30 million pounds larger than that of 1823 and five million pounds in excess of that in any previous year. It came upon the market just in time to reap the benefit of the abnormal demand resulting from the great speculative movement in England in 1824 and 1825. The high prices resulting from the speculation in England discouraged purchases by our own manufacturers and those of France. However, exports to England alone increased over 42 million pounds in the fiscal year 1825, and the export price for the year was 21¼ cents. The value exported to England in 1824 was 15 million dollars, in 1825 30 million dollars. The increase in the total value of cotton exported was 59 per cent. There was no increase in the exports to other countries. The high prices greatly stimulated the opening up of new plantations and the crop of 1825 amounted to 255 million pounds, or 40 million pounds more than that of the previous year. The speculation in England had collapsed before any considerable part of this crop had been marketed. Fortunately, the stocks held in the United States were very low, and the brisk domestic demand enabled the planters to sell considerable quantities of the new crop in the fall of 1825 at quite high prices. A southern newspaper quoted in *Niles' Register*, gives the ruling price for cotton in the South during 1825 as 20 cents. England, however, was holding large quantities of the cotton purchased during the speculative movement, and cotton could not be sold there without great reductions in the price. Nevertheless, in spite of the fact that France imported twice as much as in the preceding year, and that the amount retained for home consumption increased nearly one-third, it was still necessary to sell 134 million pounds in England during the fiscal year 1826, at whatever price could be obtained. The consequence was that the export price for the year fell to 12¼ cents. But the influence of the English cotton speculation on the fortunes of the southern planter had not yet exhausted itself. As we have said before, the ruling price in the South during 1825 had been about 20 cents. Elated by

this high price, and with their customary blindness to the effect of oversupply on prices, the planters in the spring of 1826 seem to have put every available foot of ground into cotton. The result was a crop of 350 million pounds, an increase of 95 million pounds over that of the preceding year. The planter got from 6¼ cents to 12½ cents for this crop, and ought to have considered himself fortunate, for in order to dispose of it at all, it was necessary to export to France twice as much as her average import in 1824 and 1825, and to England more than twice as much as she had taken in 1824.

The decreased price resulted, as was to be expected, in a very large decrease in the crop for 1827. Its amount was but 270 million pounds. The importations of Europe, however, had been far beyond her capacity for consumption and in consequence our exports fell off even more than the crop. The decrease in the crop was 80 million pounds; in the exports 84 millions. This great decrease in production had hardly kept pace with the decreased demand for that year, and, as a consequence, the export price fell from 12¼ to 10 cents. Yet, for some reason, the planters thought fit to increase their output again, and the crop for 1828 amounted to 325 million pounds. They were not too sanguine in their operations if the prices they had been receiving were satisfactory, for the additional exports in 1829 absorbed the entire 55 million pounds increment in the crop at a slight increase in price. Encouraged by this rapid revival in the demand the planters again increased their acreage and the crop for 1829 was 15 million pounds in excess of the great crop of 1826, and 40 millions in excess of that of the previous year. There was very little change in prices, yet exports increased 34 million pounds.

Can we obtain any information in regard to the conditions governing cotton production and exportation in the United States from the data just passed in review? It is evident that for 1825 and 1826, they were indicative of speculative conditions in England, quite as much as of economic and industrial conditions in the United States. It will be easier, therefore, to deal with the years in which such complications do not have to be considered. During the years 1821–1824, 586.7 million pounds of cotton were exported. Its export valuation, as returned by the customhouse officers, was 87.49 million dollars. During the years 1827–1830 the quantity exported was 1,068.2 million pounds, and its value 108.1 million dollars. We had increased the quantity exported 82 per cent but while doing so had increased the value received in return only 23½ per cent. The improved conditions for cotton

production in the United States had reduced its price about five cents, or nearly one-third. This improvement in conditions had been brought about by the opening up of cheaper and better lands, by the increase in the number of slaves and the reduced cost of maintaining them, by the reduced cost of packing and transporting the cotton, and by the general reduction in the price of commodities purchased by the planters.

* * * * * * * * * * *

That the decrease in the price of cotton was largely due to the competition of these fresh fields is further evidenced by the restriction of production in South Carolina below the capacity of the State at higher prices. The extent of this restriction is indicated by the great increase in the product of that State in 1826, evidently in consequence of the high prices obtained from the previous crop. Her increase in that year was 52 per cent, while that of the Western States was but 31 per cent, and that of Georgia only 23. All these indications seem to warrant the conclusion that the cheaper and better lands of the new plantations were very largely responsible for the reduced cost of production. The extent of the exodus to these lands may be emphasized by further reference to the *Census Report*. The increase of the white population of South Carolina was only 8½ per cent or less than ¼ the rate for the entire country. The increase in Alabama and Mississippi was over 100 per cent. The absolute amount of increase in Tennessee was nearly ten times, and that in each of the States, Alabama and Georgia, was over five times as much as in South Carolina.

It is probable, however, that even South Carolina was able to push the production of cotton upon fields that could not have been profitably cultivated in former years. The increase in the planter's stock of negro laborers made it possible for him to cultivate an increased area at a less cost. The increase in the average planter's stock of slaves is shown by the fact that while in 1820 but 32 in every 100 persons in the State were slaves, in 1830 they had increased to 36 in every 100. The rapid opening up of plantations in the Southwest, was, however, the more important effect of the general increase in the number of slaves. The extent to which the increase was used in this way is indicated by the fact that while the white population in the Gulf States increased 74 per cent during the decade, the number of slaves showed the remarkable gain of 158 per cent.

Not only did the cotton planters have more slaves, but the indi-

vidual slave was a source of less expense to his owner. The food of the slaves was never a great expense, as they were expected to raise their own to a large extent, but the masters had to provide material for their clothing. The material generally used was called negro cloth. The price of this cloth was 50 per cent less in 1830 than in 1815, and from 20 to 25 per cent less than in the first half of the decade.

Although the prairie lands and river bottoms of the West were much more productive than the plantations in South Carolina, this alone could not have brought those located in Tennessee and northern Alabama under cultivation had it not been for the great reduction in the cost of transportation during the decade. This reduction had been brought about to a large extent in the South and West by the use of steamboats. The number of these boats in use on the Western rivers was 72 in 1820 and 213 in 1830.

The other expenses connected with marketing the cotton had also been reduced. The cost of cotton bagging in 1830 was less than half what it had been in the early twenties. A similar reduction had also taken place in the price of the strap iron used for cotton ties.

Cheaper transportation had decreased the planter's expense for supplies in general, as well as the cost of marketing his product. Moreover, in 1830, the factories of Pittsburg and Cincinnati were supplying the Southwest with machinery, steam engines, furniture, etc., at prices in those towns below what many of the same articles would have cost in Philadelphia or New York ten years before, and, of course, very much below Pittsburg and Cincinnati prices at that time. Some instances of changes in Pittsburg prices will illustrate the extent of this decrease. In 1820 the price of bar iron was $200 a ton, in 1830 $100 a ton. Prices of boiler iron for the given dates were respectively $350 and $140 a ton; sheet iron $18 and $8.50 a cwt.; hoop iron, $250 and $120 a ton; axes, $24 and $12 a dozen; other farm tools, steam engines, stoves, etc., from one-third to one-half as much in 1830 as in 1820. The average price of sugar in Philadelphia in 1820 was $10.50 a cwt., in 1830 only $7.62. Sheetings, the factory price of which was 18 cents in 1820, were sold for $8\frac{3}{4}$ cents in 1830.

It was the reduced cost of production brought about by the conditions that have been passed in review, that caused the increase of our cotton crop from 160 million pounds in 1820 to 365 millions in 1829, in spite of the decrease of $33\frac{1}{3}$ per cent in its price per pound. It would seem, indeed, that a man starting in the business in 1830 would have obtained a higher profit than one engaged in it in 1820, had it not been for the single item of increased cost of slaves.

The conditions that made 10-cent cotton a possibility in the United States from 1826 to 1832 were of special importance because the low price of this cotton in connection with its excellent quality established our position as the source of supply for the cotton manufacturers of Europe. Moreover, it gave the increase in the consumption of cottons throughout the world such an impetus that in the eight years following 1832, in spite of the great increase of raw cotton production, its average export price was over 25 per cent higher than in 1832.

The protection afforded the cotton manufacturers of the United States by the tariff, was effective in bringing about this increased demand for cotton. The difference between the total cotton production for the years 1820–1824 and the total exports of the years 1821–1825 was 188 million pounds. This must correspond roughly to the amount of home consumption during the first half of the decade. Estimated in the same way it amounted to 292 million pounds during the second half. This indicates an increase in the home consumption of about 55 per cent. This increase was by no means in proportion to the increase in the capacity of the factories, it must be remembered that during this period the household manufactures gave up to a large extent their unequal contest with the power looms. The manufacturers had been generally prosperous. They usually ascribed such trouble as they had to excessive competition and overproduction among themselves. One of them thus describes the conditions prevailing shortly before the passage of the tariff act of 1824: "By the present tariff, cotton yarn, as fine as No. 30, and the goods made out of such yarn, is fully protected, as it regards foreign competition; but in consequence of the business being good in the years 1820, '21 and '22, capitalists were induced to invest their money so plentifully, and spindles and looms multiplied so rapidly, that the consumption could not keep pace with them; in consequence, the domestic competition has rendered the business a losing one, and cotton goods of the description stated are sold . . . cheaper than they can be imported free of duty." A North Carolina editor expressed the opinion in the fall of 1825 that cotton was 4 cents a pound higher than it would have been, if there had been no demand from the Northern manufacturers. It is hardly necessary, however, to quote opinions to convince one that the demand of customers who took 20 per cent of the whole crop in the first half of the decade and 19 per cent in the second must have had a very decided effect on the price.

In closing the study of cotton production and exportation, the facts deserving emphasis may be summarized as follows: The

differential advantages of the United States as a producer of cotton were greater than in any other line; these advantages were so increased during the decade that cotton planting was probably as profitable throughout the country in 1830 as in 1820. This ability to produce at a low price at that time was of special importance, because it secured our position as the source of supply for European manufacturers. The great increase in the production of cotton had caused a similiar increase in the demand for the slaves raised in the border states, and the foods and other commodities produced in the upper Mississippi valley.

The export next to cotton in importance was tobacco. Its value for the decade was 56.9 million dollars, or but little over one-fifth as much as that of cotton. The value exported in 1830 was less than that in 1820. The value in the first five years was 1.4 million dollars more than in the last. The quantity exported in the first half of the decade was 403,000 hogsheads, in the last 421,000. These figures indicate that if the United States should have increased the quantity of her tobacco exports materially, it would have been as disastrous to the price as were the increased exports of cotton. Holland and England, who were our leading tobacco customers, both took less tobacco in the last half of the decade than in the first. France increased her purchases, but the change is to be attributed in part to our increased indulgence in the wines and silks of that country. Evidently the high-priced slave labor resulting from the expansion in cotton production restricted the planting of tobacco so that the area devoted to its culture did not generally increase much faster than the domestic demand. The variation both in the price and the quantity of exports from year to year were such as would be expected from favorable and unfavorable crop years rather than from any permanent change in the conditions of supply and demand. The decrease in the price of tobacco indicated that the domestic demand measured in money did not increase during the whole decade quite as fast as the supply, and that other sources of supply were opening up about as fast as the demand abroad increased. However, if we compare the two halves of the decades, it appears that the better facilities for transportation and the cheaper machinery and other supplies had enabled tobacco planters to decrease the money cost of production in spite of the higher cost of slaves. The price of tobacco had not decreased so fast as prices of other commodities, or, in other words, the demand for tobacco measured in other commodities was growing faster than the supply. The increased cost of the slave was the most effective single factor in restricting the production of tobacco,

but when the inelasticity of the demand for that commodity is taken into consideration this seeming misfortune of the tobacco planters must be counted a blessing in disguise.

Flour was the agricultural export third in importance. The shipments during the decade amounted to 9,120,000 barrels, valued at 49.1 million dollars. The exports for 1821–1825 were 4,460,000 barrels, valued at $5.46 a barrel; for 1826–1830, 4,660,000 barrels, valued at $5.24 a barrel. The second half of the decade yielded a slightly increased total value of exports, but at a slight decrease in the price received.

The inspections reported for 1821–1825 were 8,460,000 barrels and for 1826–1830, 11,451,876 barrels. This indicates that the domestic market for flour had increased in importance much faster than the foreign, since the exports in the first period were 53 per cent and in the last period but 41 per cent of the inspections. The inspections indicate quite plainly the importance of the Erie canal to the flour trade. Before its opening in 1825 there was no increase and in two years out of the three a decline in the amount inspected. After the canal was opened every year of the decade showed an increase in the amount of inspection. The total in 1830 was 67 per cent larger than in 1821. The importance of the canal is further emphasized by the increase in the value of the land in its immediate neighborhood, which is said to have amounted to forty or fifty million dollars in five years. But the inspection returns indicate that this improvement in transportation facilities was by no means confined to New York State. This is shown as well by figures on the actual construction of canals. In 1830 New York State had 564 miles of completed canals, Pennsylvania 480 miles, Virginia 120 miles. There were 70 miles completed in the West, 72 in New England, and 43 in the South.

The West Indies had been our most important customer for flour during the decade. Among them Cuba was the first in importance, the Danish West Indies and Hayti second and third. South America ranked next to the West Indies in the amount of flour taken. However, the exports to both of these customers were decidely less in 1826–1830 than in 1821–1825. The exports to England had been of but very little importance till 1829. It was only the exceptional demand from that country in the last two years of the decade that prevented the exports in 1826–1830 falling decidedly below those in 1821–1825.

Turning to a more detailed study of the reports we find that the quantity exported in 1821 was greater than in any other year except the last. Any increase in price was accompanied by a sharp

fall in the amount exported, and when prices declined again the old foreign markets were not regained. It would seem that the conditions of production were such that competition did not act as in the case of cotton to increase output in prompt response to every increase in price. The conclusion must be that in spite of some improvement in facilities for transportation the United States had not materially advanced her position as a producer of wheat flour for the world market. It does not follow from this that the condition of the wheat farmer was not greatly improved. The ruling value of wheat in other commodities was higher in the last part of the decade than in the first. The time and labor cost of producing and marketing it was considerably decreased, and in response to the increase of the consumption demand we find a steady increase in the amount of its annual production.

Among the agricultural exports, the various products of animals rank next in importance, though their total value for the decade was only 26.5 million dollars, or but 46 per cent of that of wheat flour. There are not sufficient data as to prices to render their presentation or discussion of any value. These exports in the last half of the decade were $100,000 in excess of those in the first half. So far as animal products were concerned the United States was practically of no more importance in the world market in 1830 than she had been in 1820. When we take into consideration the great increase in the number of farms it becomes evident that this part of our export trade had suffered a great decrease in importance from the individual farmer's point of view.

The report for rice was of a more satisfactory character to the planters. The total value exported in 1826–1830 was 11.4 million dollars, which was 30 per cent more than that for the first five years. This increased value of total exports had resulted from an increase in the total amount exported in the second half of the decade by 47 per cent. The southern planter had seen a relatively greater increase in the total returns from this product than from cotton, yet the quantity of rice exported had increased but little more than half as fast as that of cotton. Practically all the increased export of rice went to Europe. Holland, alone, increased her imports by over 160 per cent. The increase in France was just 100 per cent, while the other countries of central Europe all imported more. England did not increase her imports, and there was practically none exported to Spain or the other Mediterranean countries. The shipments to the West Indies were of considerable importance, amounting to nearly three-eighths of the total in the first half of the decade and to nearly one-third in the last half.

Corn and corn meal are the only exports that show an increase in price. In the first five years 3,520,000 bushels exported were valued at $1,870,000 while 3,530,000 bushels exported in the second half were valued at $2,010,000. The export value of 760,000 barrels of meal in the first half was $2,180,000; in the second half 780,000 barrels were valued at $2,400,000. These figures enforce the fact even more strikingly than those on the flour export, that even if there had been a demand from abroad at the ruling prices the transportation facilities of the United States had not yet brought the rich field of her interior near enough to the seacoast so that she could take her place as a producer of breadstuffs for the world at large.

4. Expansion of Foreign Trade [1]

After 1846 a series of events occurred which resulted in the rise of the foreign trade to a new high level.

(1) An event of far-reaching importance was the discovery of gold in California in 1848. When the news of the discovery reached the middle West and East, thousands of gold-hunters migrated in caravans across the plains and mountains, in sailing clippers around Cape Horn, and in steamers to and beyond Nicaragua and Panama. The Panama Railroad, which began operation in 1855, greatly increased the use of the Panama route. In 1851 gold was discovered in Australia, and in 1859 a gold stampede to Colorado began. The combined product of all the newly discovered gold mines increased the specie of the world sufficiently to raise the prices of commodities, to act as a powerful stimulus to production, and to enlarge the purchasing demand in this and other countries. For the time being, the money stringency, which had acted as a hindrance to production and commerce, was removed, and the country experienced an era of exceptional business prosperity.

(2) Another cause of great influence was the rapid construction of railroads. Stimulated by the abundance of money, by general business prosperity, by the opening of the West, by public-land grants, stock subscriptions, and other forms of public aid, and by the eagerness of the investing and speculative public to purchase securities, railroad construction advanced at a rapid rate and the railroad mileage of the country rose from 9,021 miles in 1850 to 30,635 in 1860. Not only were the leading trade centers of the

[1] Emory R. Johnson, T. W. Van Metre, G. G. Huebner, and D. S. Hanchett, *History of the Domestic and Foreign Commerce of the United States* (Washington, D. C.: The Carnegie Institution of Washington, 1915), Vol. II, pp. 46–50. Reprinted by permission of the authors and the publishers.

East joined by rail, but most of the large Eastern trunk lines were completed, and for the first time the Mississippi Valley was effectively connected with the Atlantic seaboard. Although construction was less active in the South, a group of railroads was built to connect the South Atlantic ports with the interior, and another group extended northward from the Gulf ports. Effective means of communication were simultaneously established. The postal system was rapidly extended, and by 1860 most of the large cities were connected by a telegraph system aggregating 50,000 miles of line.

(3) The rapid opening of the Mississippi Valley was of primary importance to the foreign trade. The westward migration and the land speculation of earlier years were now resulting in the rapid development of agricultural resources. In 1838 Chicago, a small fur-trading station, made its first shipment of wheat, amounting to 78 bushels. No other grain, no flour, or provisions were then shipped from the future metropolis of the West but in 1860 Chicago shipped 698,000 barrels of flour, 13,700,000 bushels of corn, and 12,402,000 bushels of wheat. Illinois, Indiana, Ohio, and Wisconsin outranked Pennsylvania and New York as grain-producing States, and promising beginnings were made in Michigan, in the trans-Mississippi States of Iowa, Missouri, and Minnesota, and in California and Oregon. The live stock and provision trade still centered mainly at Cincinnati and Louisville, but it had spread westward through Indiana, Illinois, and Missouri; and Chicago, Indianapolis, and St. Louis became shipping and packing centers. In 1850 Kentucky and Tennessee were the leading hog-raising States, but by 1860 they were superseded by Indiana, Illinois, and Missouri.

(4) The relatively prosperous decade and a half that preceded 1860 was an era of rapidly increasing agricultural production, compelling producers to seek foreign as well as home markets. The cotton crop, which even before 1846 had been so large as to embarrass the Southern planters with declining prices, grew from 1,424,000 bales in 1837 to 3,841,000 in 1860. The wheat crop rose from 84,823,000 bushels in 1840 to 173,105,000 in 1860; the corn crop from 377,532,000 to 838,793,000 bushels; the number of hogs from 26,000,000 to 33,500,000; the number of beef cattle from 15,000,000 to nearly 25,500,000; and the tobacco crop grew from 219,000,000 to 434,000,000 pounds.

The manufacturing industries also increased their output. In 1860 the cotton mills consumed 423,000,000 pounds of cotton as compared with 126,000,000 in 1840; and during the same period

the output of the woolen mills advanced from a value of $20,700,000 to $73,454,000. The official value of all the manufactures produced in the United States rose from $1,000,000,000 in 1850 to $1,886,000,000 in 1860. But the growth in home industries did not increase the domestic market sufficiently to counterbalance the rapid growth of the agricultural crops. Neither did it prevent a marked increase in the imports from foreign countries.

(5) It was fortunate that the foreign demand for American farm products grew rapidly during these years of increasing production. One of the greatest obstacles to the foreign trade in grain, flour, and provisions had been the corn laws of Great Britain. These were in 1846 superseded by a system of gradually declining import duties which, in 1849, reached a free-trade basis, thereby opening Great Britain to American foodstuffs under favorable conditions. Just as the tariff barriers were being removed, Ireland suffered a severe food famine and was obliged to import breadstuffs from abroad.

* * * * * * * * * * *

In 1854, moreover, the agents of the United States and Canada negotiated a reciprocity treaty which went into effect in the following year. This treaty provided for reciprocal freedom of trade in the chief agricultural and raw products of both countries, and the mutually free markets for these commodities increased to some extent both the export and import trade. The effect in the United States, however, was chiefly upon imports, for nearly all the articles included in the treaty, except rice, cotton, naval stores, and tobacco, were those of which Canada had a surplus. American manufactures, not being included in the treaty, were barred from Canadian markets by gradually increasing tariffs.

(6) While the export trade was encouraged by the adoption of the free-trade policy in Great Britain, public sentiment in the United States was once more swinging in favor of reduced import duties. In 1846 the protective-tariff policy of the United States was modified by the Walker Act, and in 1857 a still further reduction in the tariff rates was made. The moderated duties remained in force until the Civil War, and opened the door to foreign iron and other metals, to manufactures of iron, wool, cotton, leather, glass, paper, wood, wool, and sugar.

Stimulated by the various events mentioned above, the foreign trade increased with great rapidity. The value of all exported commodities rose from $113,489,000 in 1846 to over $158,649,000 in the following year, and to over $400,000,000 in 1860. The ex-

ports of domestic products advanced from a value of over $102,000,000 in 1846 to $373,189,000 in 1860, and during the same period the value of the import trade increased from $121,692,000 to over $362,000,000. The panic of 1857 caused a temporary decline, but within less than a year after the crisis there was a full recovery and both imports and exports steadily advanced.

The export trade was especially buoyant. Although exports had occasionally exceeded imports in the past, it was during this period that the favorable balance of exports became a feature of American commerce. With the single exception of rice, the increase in the exports of the leading agricultural commodities was general. Even had there been no progress in the shipment of farm products other than cotton, the export trade would have moved to a higher level, for cotton exports increased from 1,667,000 bales in 1846 to the unprecedented total of 3,774,000 in 1860, from a value of $42,767,000 to $191,806,000. Now. however, for the first time, Western grain and provisions became items of real importance in the foreign trade. It has been aptly stated that "one may perhaps date the creation of a world market for grain from the year 1846, when Great Britain became a large importer." In 1860, the United States exported 4,155,000 bushels of wheat and 3,314,000 of corn, 2,612,000 barrels of wheat flour, and provisions valued at $16,612,000. In 1840, the total exports of foodstuffs had been valued at $20,500,000, but their value in 1860 had risen to $50,791,000. A few years earlier, in 1857, when the grain crop was large and the home demand temporarily at low ebb, 14,570,000 bushels of wheat, 7,505,000 bushels of corn, and 3,712,000 barrels of wheat flour had been shipped to foreign markets. In that year the exports of breadstuffs alone was valued at over $55,500,000.

The foreign trade in forest products also increased. In 1853, lumber exports had been valued at $2,832,000, but during the following year they suddenly rose to $5,419,000, and by 1860 they had reached a value of $6,414,000. The exports of leaf tobacco advanced from $8,478,000 in 1846 to nearly $16,000,000 in 1860 and in 1857 aggregated $20,610,000. Substantial gains were made in the shipment of manufactured goods. In 1860 the exports of cotton goods were valued at $10,935,000, iron products at $5,870,000, wood manufactures at $10,048,000, and a promising beginning had been made in the foreign shipment of tobacco manufactures, leather goods, chemicals, vehicles, and copper manufactures. The total exports of manufactures rose from $15,425,000 in 1840 to $23,223,000 in 1850, and $48,453,000 in 1860.

The foreign trade in naval stores, which had long lost its prom-

inent position, increased in value from less than $1,000,000 to nearly $4,000,000. Exports of fish and whale products likewise advanced slightly, but the once controlling position of the fisheries in the foreign trade was permanently taken by the cotton of the South, the grain-fields and packing-plants of the West, and the factories of the East.

The export trade flowed in growing volumes to nearly all the great markets of the world. England afforded a large foreign market for cotton, flour, wheat, corn, and provisions. In 1846, American exports to England were valued at $42,781,000, and by 1860 they reached a total of over $187,000,000. The exports to France rose to over $59,000,000. In Ireland and Scotland, in Bremen, Hamburg, Holland, Russia, Norway and Sweden, and even in Spain and Italy, the market for American agricultural exports increased. In no part of commercial Europe did the American trade fail to grow except in Denmark, Austria, and Belgium. Many other parts of the world bought, in constantly increasing quantities, the products of the United States. The reciprocity treaty with Canada and the treaty of peace with Mexico opened the markets of the nearest neighbors of the nation, while Commodore Perry's famous visit to Japan and the treaty with China following the British-Chinese opium war secured the free admission of American vessels and products to various ports of the two great nations of the Far East; the "sugar-trade period" of the Hawaiian Islands began in 1853, and the discovery of gold in Australia in 1851 soon created in that continent a market for American foodstuffs and mining machinery. Larger markets were found in Brazil, Argentina, Chile, and Peru, in Cuba and the British West Indies, in the British East Indies, and in Africa. In fact, with but one important exception there was a constant expansion of the export trade to all markets. The exception was the West Indies. In Cuba and the British islands alone was there an increasing trade, the shipments to Haiti, the Dutch, French, and Danish islands either remaining about the same or declining to a lower level.

CHAPTER XII

AGRICULTURAL READJUSTMENTS IN NEW ENGLAND[1]

The half-century before the Civil War was, for the farmers of southern New England, a period of great stress. For two or three generations they had been engaged in well-stabilized, self-sufficient agriculture. Then came the development of New England manufactures and the rise of new factory villages and towns, which, by creating a new demand for foodstuffs and raw materials, opened a market at the farmers' very doors. Because of the inherent inflexibility of the agricultural industry, the first steps in the transition to commercial agriculture were slow. For a great many reasons it was difficult to leave off farming for a living and begin farming for profit. By 1840 the change was well under way. But just then the building of railroads so cheapened transportation that the New England farmers were exposed to disastrous competition in certain lines from the newer farms in western New York State, and in the Ohio and Mississippi valleys. A reconsideration of his economic problems was now forced on the New England farmer. He had to abandon his attempts to supply the factory population with breadstuffs, pork, beef, and wool, and had to find new kinds of specialization.

The readjustments in the farm business were made reluctantly, haltingly. Consequently the rural folk did not enjoy the rapid rise in their standard of living which we, at this distance, might have expected. The changes in agricultural technic and in the social life of the rural folk which did result, however, from these two great, new forces, the home market and Western competition, were so great and far-reaching that they may well be called an agricultural revolution. It is to a consideration of these changes that the present paper is devoted.

A brief review of the economic situation of the farmers of Southern New England in 1810 will furnish a background against which later developments stand out clearly. In Mill's *Principles of Political Economy* we read: "a country will seldom have a productive

[1] Percy W. Bidwell, "The Agricultural Revolution in New England," *The American Historical Review*, Vol. XXVI, No. 4, July, 1921, pp. 683–702. Copyrighted by The Macmillan Company. Reprinted by permission of the author and the publishers.

agriculture, unless it has a large town population, or the only available substitute, a large export trade in agricultural produce to supply a population elsewhere." Now the farmers in Southern New England in 1810 had neither a foreign nor a home market for their products, and the absence of such markets was the determining condition of their economic and social life. They raised no staples which could be exported to foreign markets, and, with the exception of a few small seaport towns, there was no non-agricultural population in New England which could furnish a home market. The results of the lack of markets were: lack of exchange; lack of differentiation of employments, or division of labor; the absence of progress in agricultural methods; a relatively low standard of living; emigration and social stagnation.

The distinguishing characteristic of farm life was its economic self-sufficiency. Being unable to sell his products, the farmer was unable to buy from outside. Consequently each farm was a unit or an economic microcosm, producing for itself practically everything that it consumed; food, clothing, furniture, and household- and bed-linen, soap, candles, and a great variety of minor articles. Of course, on farms in the vicinity of the port towns, self-sufficiency was far from complete, and even in the typical rural communities farther inland there was not an entire absence of trade. The country store was a regular feature of village economy, furnishing opportunity, in even the smallest communities, for the exchange of cheese, butter, salt pork and beef, and household textiles in return for salt, iron, sugar, and liquors. In general, however, farming was carried on not as a business, but for the satisfaction of the needs of the farm family.

In the half-century 1810–1860 there took place in New England an industrial revolution, comparable in its significance and in many of its characteristics to the Industrial Revolution in England of the last half of the eighteenth century. On this side of the Atlantic, as on that, power machinery replaced hand tools, and the processes of manufacture were transferred from the farmhouses and shops of craftsmen to factories. Railroads, furnishing the cheap transportation essential to industrial changes, were rapidly constructed after 1840 and assisted in breaking down the isolation of rural communities.

The rapid increase in the population of Southern New England is the most obvious evidence of a new economic situation. To the 811,000 persons living in the States of Connecticut, Rhode Island, and Massachusetts in 1810, there was added before 1860 a round million more, an increase of 130 per cent in the half-century. Emi-

gration to Western States, which had been keeping population stationary before 1810, was checked, and in addition to the natural increase of the native population there was found room for between three and four hundred thousand persons of foreign birth.

The explanation of the growth of population is to be found principally in the rise of manufactures and, to a less degree, in the prosperity of the maritime industries which were themselves stimulated by manufacturing progress. But this is not the place to review the fascinating history of the rise of New England manufactures; for the present we are interested in that branch of industry only through its effects on the life of the agricultural population.

The increase in population was accompanied by urban concentration. In 1810 there were in the three States only three towns containing as many as 10,000 persons: Boston, Providence, and New Haven. Taken together their population was only 56,000, less than seven per cent of the total population. In 1860 the towns of over 10,000 number 26, containing in all 682,000 persons, or 36.5 per cent of the total of Southern New England. The new population was a non-agricultural population, a fact of greatest importance to the farmers, for it meant that now for the first time they had a market for their products, and that market, moreover, was a *home* market.

We must be prepared to find the influence of the home market very small at first. The manufacturing boom of 1807–1815 was followed by a prolonged period of industrial depression after the panic of 1819. The few factories which survived, and the new establishments which were founded between 1825 and 1830, we should now consider insignificantly small. The cotton and woolen mills were the largest, but very few even of them employed as many as 100 persons each in 1830, and the great majority had less than 50 hands. The new industrial units were not only small, they were also widely scattered. In 1840 it would have been difficult to find 50 out of the 479 townships in southern New England which did not have at least one manufacturing village clustered around a cotton or a woolen mill, an iron furnace, a chair factory or a carriage shop, or some other representative of the hundreds of miscellaneous branches of manufacturing which had grown up in haphazard fashion in every part of the three States. In the absence of local concentration of industries, there could be no concentration of the industrial population. Consequently the effects of the home market were spread thin over

the entire area, and no single agricultural community received much benefit therefrom.

One of the earliest and most widespread effects of the new market was an increased interest in agricultural improvement. A new spirit was stirring among the farmers. They began to feel that they were living in a period of great changes, and they were unwilling to lag behind the age. At just this time the New England farmers were fortunate in having presented to them a form of organization by which the spirit of improvement might be fostered and turned into the most effective channels. I refer to the agricultural societies on the Berkshire plan. First founded in Pittsfield, in 1811, these societies spread into practically every county in Southern New England in the next fifteen years. In contrast to the older societies whose interest in agriculture was largely literary and philosophical, the Berkshire societies were made up of practical working farmers; their work was consequently far more important than that of their predecessors. The older societies had confessed their inability to interest the common farmers in their theories and schemes for improvement. The reason was not far to seek. The working farmer of an inland community could not be interested in schemes to increase production until some one could show him a market for his surplus. But as soon as the home market developed, it was not difficult to stimulate interest in better farming. The new agricultural societies owed their rapid growth and great popularity partly to their success in seizing upon the awakened interest of the farmer, instructing him by pamphlets and addresses, stimulating competition by annual cattle shows and exhibitions of agricultural produce. But their success is also explained by the skill with which they satisfied, in their annual gatherings, the farmer's deep-lying need for more social contacts, for closer relations with others in the community.

The immediate practical results of the new spirit were not revolutionary. Most farmers continued on about the same lines, doing somewhat better what they had for many years been doing rather poorly. There was, however, in the first quarter of the century the important change from wooden to cast-iron ploughs which took place with spectacular rapidity. Iron ploughs were practically unknown until 1828 or 1830, and then in a few years everybody had them. In spreading information about the new implements, the agricultural societies did valuable service, ploughing matches being regular features of their annual exhibitions.

The lighter draft of the new iron ploughs, and of the steel ploughs which succeeded them, made possible the substitution on the

farm of horses for oxen as draft animals. The displacement of oxen was well under way in progressive communities by 1840, but was not fully completed until after the Civil War. In fact, remote New England villages are now among the few spots in the United States where an occasional yoke of oxen may still be seen. The Yankee farmer was much attached to his oxen; they were stronger if not so fast as horses; they worked better in rough and marshy ground; and furthermore, they had food value after their working days were over. Besides, sentiment was involved. "The ox was a pioneer with the Pilgrim," we read in one of the reports of the Massachusetts agricultural societies, and the descendants of the Pilgrims did not willingly abandon the use of the faithful animals. The faster gait of horses made them better adapted not only for ploughing but for the operation of the various new agricultural machines, such as mowing machines and horse-rakes, which were invented between 1830 and 1840. On the small, uneven fields of the New England farms the new machines were at a great disadvantage and consequently were much more slowly introduced than in the States to the West and South. Mowing machines, for example, were still a curiosity in New England at the time of the Civil War.

A detailed review of the technical aspects of the revolution in New England agriculture cannot be attempted here. Confining our attention to the broader economic aspects of the transition from self-sufficient to commercial farming, we find increasing specialization of first importance. Adam Smith's familiar phrase, "the division of labor is limited by the extent of the market," finds clear application here. In 1810 farming was practically uniform throughout Southern New England. Every farmer distributed his land in about the same proportions into pasturage, woodland, and tillage, and raised about the same crops and kept about the same kind and quantity of stock as every other farmer. There were one or two unique regions, such as the Connecticut Valley, Nantucket, and Cape Cod, but for the most part it made little difference in the character of farming whether it was conducted in one county or in another. But the opportunity of selling farm products in the new home market stimulated differentiation. The market acted as a selective force, tending to encourage in various groups of townships the particular branch of farming for which they were best fitted. In the language of the economist there was developed a territorial division of labor in New England agriculture. The new specialization was of two kinds: (1) determined by location, (2) determined by advantages of natural

resources. Let us consider first the specialization determined by location.

In Essex and Middlesex Counties in eastern Massachusetts the advantage of situation in the immediate neighborhood of growing industrial towns, such as Lynn, Lawrence, Lowell, and Boston, had produced by 1840 well-defined specialization in market-gardening and in dairy-farming. Of Middlesex County Henry Colman wrote in 1841:

> Though in a great degree in its general aspect unpromising, yet no county in the State is more distinguished for its agricultural improvements than Middlesex. . . . The Capital, with the large towns in its vicinity and the several villages and manufacturing towns in the interior, afford a ready and quick market for all the products of agriculture. This condition determines in a great measure the character of the agriculture of the county—which is confined rather to the production of vegetables, fruits, butter, and articles that find an immediate sale in the towns, than to products on a large scale, to be sold in great quantities or consumed upon the farm.

An agricultural survey of Rhode Island published in 1840 describes the rapid development of intensive agriculture in the towns within market radius of Providence. Marshes were drained, land reclaimed, and record crops of onions, carrots, turnips, and potatoes were grown. The attention to root crops and the large proportion of farm areas in tillage were unusual in New England. Similar tendencies with less striking results were observed in the neighborhood of Fall River, New Bedford, and New Haven.

The peculiarities of natural resources, chiefly soil and configuration, gave rise to specialization in three branches: (1) the fattening of beef-cattle in the towns of northern Massachusetts in the Connecticut Valley; (2) the cultivation of tobacco on a narrow strip of Connecticut River lowlands extending from central Connecticut to the northern border of Massachusetts; (3) wool-growing in a number of rather widely separated, hilly regions, but principally in the western counties of Massachusetts and Connecticut. The history of each of the three branches of specialized agriculture forms in itself an interesting study, displaying the action of market forces and illustrating the difficulties which prevented the New England farmers from taking full advantage of their new market. But the brief scope of this paper will not permit their consideration here.

To summarize: the home market was the dominant influence affecting New England agriculture from 1810 to 1840. The new

market opportunities stimulated a new spirit in the farmers, leading to the introduction of important technical changes; also, specialized, commercial agriculture was developed in well-defined areas.

Now we are prepared to consider the effects of the second great influence, *viz.*, outside competition, chiefly from the West. It would be hardly accurate to fix the beginning of western competition at 1840, for the New England farmers had never enjoyed a monopoly of their market. Even before 1810 the trading and fishing population of the seaport towns had received large supplies of wheat-flour and corn from New York, Pennsylvania, Maryland, and Virginia. The opening of the Erie Canal and the introduction of steam transportation on Long Island Sound and the Connecticut River brought in steadily increasing quantities of foodstuffs for the supply of the new factory villages, so that the establishment of through railroad connection with the West between 1840 and 1850 marked not the beginning, but the culmination of a generation of growing pressure on New England producers from cheaper outside sources of supply.

The influence of the railroads was twofold. In the first place, the trunk-lines laid down between 1830 and 1850, such as the Boston and Albany and the lines running northward from Long Island Sound, brought in wool, wheat, and pork at prices so low as to discourage home production. And such cheap transportation tended to break down that division of labor which was based on the peculiarities of natural resources. Disaster overtook the new specialized agriculture in two lines, wool-growing and beef-fattening. The railroads brought in the cheaper wools of Michigan, Ohio, and Illinois at a transportation cost of only two or three cents a pound. The inevitable effect was the decline of wool prices in New England and the rapid abandonment of sheep-raising. The census figures show a general decline in sheep in each of the three States, amounting to a 50 per cent loss in 1840–1850, followed by a further decline of 35 per cent in 1850-1860.

The check imposed by outside competition on beef-fattening, while not as disastrous as in the case of wool-growing, was nevertheless severe. The shipment of dressed beef in refrigerator cars was of course still unknown, and freight charges were high on the live animals. Consequently a large part of the cattle received from outside came on the hoof from the bordering States, being driven in herds to local markets. In 1840 the reporter of the Brighton market, the most important live-stock market in Southern New England, wrote: "About two-thirds of the stall-fed cat-

tle are from this State, the balance principally from New Hampshire, Vermont, and Maine; now and then a lot from New York." In 1854 it was officially estimated that more than half of the beef supply of Massachusetts came from without the State, which meant outside of Southern New England, as neither Connecticut nor Rhode Island produced enough for even its own wants. Beef-fattening remained the most important and profitable branch of farming in Franklin County until the Civil War, but it failed to expand with the expansion of the industrial population and with the demand for beef.

But the railroads also provided cheaper internal communication and thus greatly promoted specialization in branches of the agricultural industry where nearness to the market was the determining advantage. The main lines of railroad were soon supplemented by a close network of branch and local lines. Thus the areas of profitable specialization in market-gardening, fruit-raising, and milk-farming were rapidly widened after 1840. A keen observer of agricultural change in Massachusetts writing in 1850 said: "Probably, in our State, there are now few farms not within ten or twelve miles of a railroad. They are thus enabled to send many articles to market, for which they before had none; while the transit of what they sell and what they consume is wonderfully cheapened." The results of cheap transportation he expressed as follows: "The former vegetable gardens for the metropolis are transformed into houselots, and their substitutes are found in the valleys or on the hillsides of Worcester or Middlesex, while her strawberry beds extend to the banks of the Connecticut."

In the dairy industries, contrasting effects of cheap transportation appear clearly. The production of cheese, for which the western counties of Massachusetts and Connecticut had become famous, declined rapidly between 1850 and 1860, when exposed to the competition of the newly established cheese factories of western New York and Vermont. But in the case of milk, and to a less degree in the case of butter, the absence of modern methods of refrigeration made nearness to the market decisive. The result was a marked increase in dairy-farming in the industrial counties. If reliable statistics were available, I believe we could show an interesting migration of dairy cows from east to west in the years 1820 to 1840 and a re-migration from west to east in the succeeding twenty years.

The full extent of the effects of cheap transportation on New England are not revealed in its effects on specialized agriculture alone. A large proportion of the farmers never went in for special-

ties. They felt the stimulating effects of the new market, and responded by attempting to increase production in the lines of general farming. They continued to keep cattle and pigs for their own supplies of meat and dairy products, hoping for the opportunity to sell a small surplus. The same policy was evident in the crops they raised, chiefly hay, corn, and potatoes. But even the general farmers could not remain unaffected by outside competition. They found their market for beef and cheese curtailed by the same influences which had destroyed the production of these articles in specialized areas. Western pork was making serious inroads into New England markets before 1840. In an agricultural address of 1836 the following statement was made: "Within a few years a mercantile house in Boston purchased in a single season, from the county of Worcester, nearly two million pounds of pork, the growth and produce of that county; and the same house is now employed in obtaining the same article of provision from the West, to sell for consumption in that very county." Importation of improved breeds and the selection of native stock bettered the quality of hogs, making them more valuable as pork-producers, but their numbers decreased rapidly. The census of 1860 showed only 175,000 swine in the three States, where there had been over 300,000 twenty years before.

Hay had always been of great importance in the New England farm economy. Protected by its great bulk from outside competition, this crop showed significant gains both in quantity and quality. The crop of 1860 was 25 per cent larger than that of 1840, and it was much better hay. Indian corn was at the beginning of the century the backbone of New England agriculture, an unfailing food for man and beast. The increased use of wheat bread checked the use of corn meal for human food, while its use as a food for cattle and swine was cut down by the falling-off in the production of beef and pork. There was increasing competition from the South and West. Nevertheless, so well adapted was corn to New England that production actually increased 25 per cent, 1840–1860.

The decline of the potato crop from 9,700,000 bushels in 1840 to 5,600,000 bushels in 1860, a loss of over 40 per cent, was one of the tragedies of the period. The decline seems to have been caused not so much by external competition as by a blight which affected the crops for a series of years before the Civil War. The secretary of the Massachusetts Board of Agriculture wrote regarding potatoes in 1854: "Most farmers place but very little reliance on this crop. So extensive were the ravages of the disease to which it has been liable for a few years past, during the last season, that it is likely to

receive even less attention hereafter, than it has heretofore." He observed that not only had the acreage planted to potatoes decreased, but the yield per acre had declined noticeably. It is interesting to note that the only counties in Southern New England which did not show in the censuses of 1850 and 1860 decreased production of potatoes were Dukes and Nantucket, both of which being islands separated by several miles from the mainland seem to have been immune from the ravages of the blight.

The agricultural revolution brought great changes in household economy. In fact the best evidence of the extent and rapidity of the transition from self-sufficient to commercial agriculture is to be found in the decay of the household industries. At the beginning of the nineteenth century, the typical New England farmer was still clad in homespun cloth made from wool sheared from his own sheep, spun, dyed, and woven in his own home by the women of his household. Many other articles of household furnishing such as blankets, towels, and sheets were made by these overworked women. Before the Civil War, however, the household textile industry was transferred entirely to the new factories. The graceful spinning-wheels and clumsy hand-looms were relegated to the attics of the farmhouses, there to accumulate dust and cobwebs until rescued and restored to posts of honor by the antique-collectors of our own generation.

The transfer of the textile industry from farmhouses to factories was an interlocking feature of both the industrial and the agricultural revolutions in New England. Until now the change has been studied chiefly with reference to the growth of manufactures; but from the standpoint of the history of the rural people it is hardly of less importance.

As soon as the cash income could be gained from the sale of wool, pork, butter, and cheese or vegetables, the farmers began to buy goods which they had formerly produced for themselves. The rapidity of the change from homespun to factory-made textiles bears eloquent testimony to the hardship which the household industries had imposed upon the farm women. The coincidence in time and place between the decay of household industries and the rise of the market is striking. The reports of agricultural fairs show that the exhibits of homemade textiles fell off rapidly between 1820 and 1830 in counties where industrial growth and urban concentration were progressing most rapidly. An official report from Connecticut in connection with the census of 1830 stated that "individual and household manufactures are so far abandoned as to be comparatively inconsiderable," and in his

agricultural survey of certain counties in Massachusetts ten years later Colman speaks of the household industry of that State as "completely destroyed." It seems safe to conclude that by 1860, although the use of homespun fabrics still continued, their further production in farmers' families in Southern New England had come to an end.

The significance of the decay of the household manufactures can hardly be exaggerated. Even before the change was wholly completed, its importance was recognized by the leading thinkers of the day. Horace Bushnell said to the Litchfield farmers in 1851: "This transition from mother-and daughter-power to water- and steam-power is a great one, greater by far than many have as yet begun to conceive—one that is to carry with it a complete revolution of domestic life and social manners." The prophecy proved true. As self-sufficient farming declined there went with it long-established habits and traditions, not only in the method of getting a living, but also in ways of thinking and of living. The *mores* of self-maintenance, to use Sumner's phrase, were revolutionized and there followed of necessity a change in the ideas and ideals of the rural folk, in family and in social relations.

The self-sufficient economy emphasized the virtues of self-reliance and independence, of frugality and thrift. As Bushnell remarked, it harnessed together in the productive process all the members of the family, young and old, male and female; it concentrated attention upon the interests of family group rather than upon the interests of its individual members. The introduction of the cash *nexus*, the selling of certain articles and buying of others, forced the farmers to confront a new set of problems, calling for the exercise of a new set of faculties. Shrewdness in buying and selling must now be added to the simpler qualities of hard work and saving. Farming became a more speculative business, for to the already existent risks of weather conditions was added the risk of price-fluctuations. Thereafter success in getting a living no longer depended on the unremitting efforts of the farm family, aided by Providence, but to a large extent also upon the unpredictable wants and labors of millions of persons in the industrial villages, and in the newer farms to the westward.

It is clear that, in the long run, the transfer of the production of textiles from the farmhouse to the factory must have been of advantage to the rural population. Production was far more effectively carried on in the factories, so that eventually the farmers got more goods for a given amount of labor by concentrating their efforts on purely agricultural operations. But only in the

long run were the advantages of the change clearly apparent. In the meantime, during the twenty or thirty years of transition, there were a number of discouraging difficulties. There was first of all the problem of finding a new employment for the farmers' wives and daughters. Remarks such as the following show how this problem was presented:

> It is a deceptive and dangerous economy, which induces a farmer to buy all his woolens of the manufacturer, merely because he can buy them cheap—cheaper even than he supposes he can make them at home. . . . While the farmer is buying at the store, what he could make at home, . . . the members of his family, whose labour could produce the same articles, are unemployed, or employed to little or no purpose.

Colman who was a clergyman as well as an agriculturist, speaks with regret in several instances of the decline of the household manufactures because the "healthy exercise of domestic labour" has been exchanged for "the idleness and frivolities of pride and luxury"; and again, emphasizing the economic rather than the moral aspects of the problem, he speaks of the "internal resources of the farmer" having "dried up."

Any one familiar with the exhausting toil of the farm women of the earlier years might have remarked that they had well deserved a rest. But habit and tradition, and economic pressure as well, decreed otherwise. The traditional Puritan ethics required all to be producers and none merely consumers. No one knew what evil work the Devil might find for idle hands, especially if these hands were women's. Moreover, even with improved agricultural technic, the income from a New England farm was meager, and the wants of the farm family were expanding rapidly. The urban population were establishing a new and higher standard of living; the farmers' daughters wanted better clothes, and pianos like those of their city cousins.

The problem of finding new employment for the farm women was solved in two ways: (1) by their leaving the farms and taking employment in the rapidly growing urban centers, either in factories, or as school teachers, or in domestic service; (2) by the introduction of new industrial occupations in the home. We know how important was the migration of the farmers' daughters to Lowell, Lawrence, and Fall River in the years around 1840, furnishing an indispensable labor force for the new factories, and it would be interesting to trace their fortune further, but we are concerned here chiefly with those who stayed on the farms. The employments to which the latter now turned their attention

were the sewing of shoes, the plaiting and sewing of straw and palmleaf hats and bonnets, and the production of men's ready-to-wear clothing. An extreme example of the efforts to utilize the surplus labor force on farms is seen in the misguided attempts to hatch silk-worms and produce reeled silk.

Most of the employments enumerated above were not new. The farm women had long been making their bonnets and their husbands' and fathers' shirts and underclothes, but whereas formerly such articles were produced principally for home consumption, after about 1830 or 1840 they were produced principally for sale. The organization of production was what is known to economists as the commission system, a transitional stage between household and factory production. The employer was a merchant who provided the straw, cloth, or parts of shoes. He also undertook to dispose of the finished product, paying the workers on a commission basis.

In the making of shoes, the most important of these domestic manufactures, the men were also employed. In some townships in Massachusetts a very large proportion of the population was actively engaged in shoemaking. In 1837, in the town of Grafton for instance, 1,400, or almost one-half of a total population of 2,950, were officially reported as making shoes. A writer in the *New England Farmer* said that the industry in that place "is a domestic manufacture, chiefly carried on by men at their own homes, with their own means, where their labors and those of their families alternate with the care of their gardens and farms, promoting wealth and furnishing recreation." Of Essex County, where the farmer shoemakers were most numerous, Colman wrote: "Farming in this county is scarcely pursued as a distinct or exclusive profession; but as subsidiary to some other business or pursuit."

The farmers carried on a wide variety of quasi-industrial pursuits, by industries which in some cases were more lucrative than agriculture. Building operations in the growing industrial communities demanded sand, stone, and timber. Besides these, the farms furnished to the city dweller enormous quantities of fire wood and charcoal, the products of the winter months. The Yankee had long been famous as a whittler and in these years he turned his experience in wood-working to good account. The extent and variety of the wooden wares produced in some of the more remote communities is astonishing. In various towns in Franklin County there were made, in 1855, surgical splints, faucets, canes, washboards, rolling-pins, pill-boxes, shingles, scythe-snaths, lemon-

squeezers, towel-rollers, twine-reels, match-boxes, brooms, broom-handles, and penholders. All of these were made for sale, either in the cities or in the Southern States. Partly they were made by farmers in small shops on their own premises, and partly in small factories utilizing a small water-power, where the farmers worked intermittently in the winter and between seasons. The numerous by-industries carried on by the New England farmers and by their wives and daughters provided an important supplement to the farm income. The prosperity of many communities out of reach of the market influence can be explained only by the existence of these quasi-industrial pursuits.

The general impression remaining after a careful survey of New England agriculture in this period is not one of great achievement or striking progress. There was undoubtedly prosperity in certain areas and probably a higher standard of living for the rural population as a whole. But somehow we cannot escape the feeling that the New England farmers had not lived up to their opportunities. Often in the comments of the best-informed contemporary observers we find frank dissatisfaction. They refer to the prevailing condition of agriculture as "common, irregular, rag-weed farming, helter-skelter farming," they condemn the "niggardly, shiftless, and slovenly manner in which the business of the farm is conducted," painting realistic pictures of poor crops, inconvenient houses, falling walls, and denuded hills and undrained swamps, debts, mortgages, and foreclosures.

In the transition period there was little uniformity in agricultural conditions. In a single county we might find, so one writer tells us, "every system of farm management practiced that has ever been followed since the days of Noah." In every community there were a few progressive farmers, but often in close proximity, perhaps on the next farm, there would be tumble-down buildings and a general slovenly appearance. The great majority of farmers were between these extremes. They were not badly off; their hundred acres were all paid for; and perhaps they had laid aside a little for a rainy day. They kept four or five cows, a yoke of oxen, a horse, some pigs. They sold a little butter, a little rye, a little pork, a pair of calves, possibly a little cider and a cord or two of wood, yielding a total money income of four or five hundred dollars. When out of this they had paid a hired man for services in planting and haying, the grocer, the tailor, and the shoemaker, the blacksmith, and taxes, there was very little left over.

There is an old French proverb which runs, "Tout comprendre c'est tout pardonner," and perhaps when we understand and fully

appreciate the difficulties and discouragements which the New England farmers of this period had to face, and the doubts and fears which harassed them, we shall be inclined to judge that they did well, rather than poorly. Changes in farming are always slower than in other industries because of the stronger hold of traditional habits. Rural folk tend to be conservative. It is harder for them to get out of the rut of the good old ways. Moreover, they lacked knowledge, for notwithstanding the educational services of the agricultural societies and of the farm papers, there was still much uncertainty on even such a familiar subject as the proper methods of planting and cultivating corn. Superstitions regarding the influence of the moon still lingered in the minds of intelligent persons.

The farmers suffered from the lack of consistent leadership. They got advice from all sides, but much of it was conflicting. Only rarely do we find before 1840 frank and clear-sighted recognition of the necessity of giving up the old-style, self-sufficient farming; for the most part the orators of the day at agricultural fairs were content to be followers rather than leaders of public opinion. They advised their hearers to continue to raise everything they needed "to eat, drink or wear." "The first of all rules in domestic economy," says Colman, "as far as the actual wants of his family are concerned, is for the farmer never to go abroad for what he can produce at home."

An important difficulty was the farmers' lack of business experience. Commercial farming involved the selling of crops and the buying of supplies. The markets for agricultural produce were still unorganized, the phenomena of price fluctuations unfamiliar. In buying machinery and commercial fertilizers the farmers were often the victims of sharp practices, and such experiences made them more reluctant than ever to invest their money in these very desirable improvements.

Then, also, they lacked capital, not only for permanent improvements, but also for running expenses. The farmers at a distance from their markets usually sold their pork, butter, cheese, and grain between January and April. Very few had sufficient working capital to support their families and pay for hired labor for nine months in the year. Hence they could often employ only half as much labor as could have been profitably used. Their supplies they got from the country store-keepers on credit, paying high interest rates in the shape of advances over cash prices. Banking facilities were no better adapted to the needs of the farmers then than now. The complaint of those days that banks existed for the

benefit only of merchants and manufacturers sounds strangely modern. Bankers were feared and distrusted, and the farmer was advised to "shun the door of a bank as he would an approach of the plague or cholera."

The disturbing effects of Western competition I have already mentioned, showing how the farmers had hardly entered upon their new business experience when the flood of competing products forced them to seek new lines of specialization.

I have reserved to the last what seems to me the most depressing and disastrous of all the hindrances to progress in agriculture: this was the wholesale desertion of the farms by the younger generation. Not only the farmers' daughters, but their sons as well, were leaving their homes throughout this period to seek their fortunes as clerks and factory operatives in the growing urban communities. The boys who wanted to pursue agriculture went West, although the lure of that region was not nearly as strong as in the generations before 1820. The kind of farming their fathers were carrying on seemed to promise nothing but "a fixed, dull round of listless toil." Besides having the idea that farming was bound to be unprofitable, the younger generation was oppressed with a growing sense of social inferiority to the city population. A writer in the *New England Farmer* about 1840 says:

> Every farmer's son and daughter are in pursuit of some genteel mode of living. After consuming the farm in the expenses of a fashionable, flashy, fanciful education, they leave the honorable profession of their fathers to become doctors, lawyers, merchants, or ministers or something of the kind.

The tendency to leave the farms deprived the farmers of the only available labor force, at a time when cheap and reliable labor was particularly necessary if they were to take full advantage of the new market opportunities. But the ultimate effects of the rural exodus were of greater importance. The best human material was selected out of the country; the best brains and the boldest spirits went to the cities. To the more timid and the slow and the plodders was left the great task of carrying forward the agricultural revolution. Shall we wonder that they failed to realize its full possibilities?

It should now be clear that in the fifty years before the Civil War, New England was making great strides in social evolution. Into the space of less than two generations had been compressed momentous changes—the transition from self-sufficient to commercial agriculture, and from household manufactures to the fac-

tory system—changes which in England and on the Continent of Europe had been spread over centuries. As in the case of organic evolution, so in the evolution of New England society, there was constantly progressing differentiation. Out of the simple rural communities which comprehended the bulk of New England life at the beginning of the nineteenth century there unfolded a varied urban, industrial life. The germs of manufacturing which had been developing in the farm household now split off as independent occupations. Farming itself became varied by the adaptation of its various branches to the soil and location of particular regions. The market worked as a selective force. Under its influence good land became more sharply differentiated from poor land. The poor land, even in entire farms, was abandoned to grow up to woods, while the farmers' efforts were concentrated on the best fields.

The differentiation of occupations led to a differentiation of customs and habits of life between rural and city folk. The urban population began to wear a different kind of clothes, to live in a different kind of houses from those of their country cousins. They began to think and talk differently, and eventually they began to look down upon the farmers as a backward race. Within the cities the factory system produced further differentiation between capitalists and laborers. The gulf was widened when the Irish arrived to swell the ranks of unskilled labor, adding to the economic conflict divergences of race and religion.

It was a time of storm and stress for both urban and rural New England. Men's minds and hearts in city and country alike were deeply stirred by a series of remarkable intellectual and social movements. In politics, Republicanism triumphed over Federalism; in religion, the struggles of Unitarians and Trinitarians for domination shook the established Congregationalism; a vigorous temperance reform swept through the rural communities; the anti-slavery movement foreshadowed the Civil War. Leadership in reform naturally came from the cities, but the strength of these movements and the measure of success they eventually attained depended upon the active response and hearty sppport of the countryfolk. One may not be ready to subscribe to a strict economic interpretation of history, and yet may recognize the inevitable connection between the changes in the external conditions of New England and the changes in its inner spirit. The New England farmers had been awakened; they had been encouraged, disturbed, disappointed, and perplexed. But most important had been the awakening, the preparation of their minds for the reception of new ideas.

CHAPTER XIII

NEW FACTORS IN THE AGRICULTURAL DEVELOPMENT OF THE NORTHWEST

1. Developments in a Typical Prairie State [1]

The closing years of the period under review witnessed the eager efforts of Illinois to find itself economically. From 1830 to 1840 the population had grown from 157,000 to 476,000; and still growing, the state was trying to give expression to the pent-up energy within it. Experiments flourished; the inhabitants of Illinois, conscious of hidden riches, sought by means of a diversity of crops, a multiplication of towns, and sectional divisions to discover the key which would unlock the treasure and open the way to high reward.

Farmers began to grope somewhat uncertainly for better methods in securing the bounty of the rich prairie soil. In the late thirties and early forties the dwellers in the Illinois river counties led in the formation of county agricultural societies for the discussion of farm problems. In 1841 the Union Agricultural Society began publishing the *Union Agriculturist and Western Prairie Farmer*, which two years later became the *Prairie Farmer*, a newspaper that in time both directed and reflected the agricultural activities of the State. Experiment followed experiment; flax, mustard seed, cotton, and tobacco, the cultivation of hemp, of the castor bean, and of the mulberry tree were in turn get-rich-quick crazes of the day. At one time a nursery in Peoria had 200,000 mulberries and 100,000 cuttings for sale; with every purchase of trees, silkworm eggs were furnished free. In 1841 agricultural societies were awarding prizes for the best cocoons. The great staple crop still remained wheat; in 1833 the Illinois crop was estimated at 1,500,000 bushels, and farmers were urged to plant more of it.

[1] Agnes Wright in Theodore Calvin Pease, *The Frontier State 1818–1848*, *Centennial History of Illinois*, Vol. II. (Chicago: A. C. McClurg & Co., 1922), pp. 383–385. Arthur Charles Cole, *The Era of the Civil War 1848–1870*, *Centennial History of Illinois*, Vol. III. (Chicago: A. C. McClurg & Co., 1922), pp. 75–85. Reprinted by permission of the authors and the Illinois Centennial Commission, the holder of the copyright.

There could be no great expansion in agricultural activities, however, without even greater improvements in implements. Throughout the thirties there was still in use the most primitive bar-share ploughs, which made no pretense of "scouring." In an effort to improve these, moldboards of cast-iron were first substituted, in turn to give way to those of polished steel. Necessity was, indeed, the mother of invention, and every blacksmith with a knack of "tinkering" was trying his hand at a plough. There was the early "Clark," then the "Diamond," the "Tobey and Anderson," the "Cary," the "Jewitt," with rivals not so well known in every county, all warranted to "scour."

Efforts to improve or invent farm machinery were not confined to one form of labor-saving device. Cotton gins, headers, self-rakes, corn planters were tried out with varying success. An advertisement in the *Illinois Advocate* in 1835 declared that a machine had been invented that successfully performed the five operations of harrowing, opening the furrow, dropping and covering the seed corn, and finally, removing all clods not broken by the harrow. A letter to the *Alton Spectator* as early as 1833, while urging the farmers to clean their wheat better, suggested the use of the threshing machine; and this continued to be discussed until in 1846 and 1847 the reaping machines of Bachus and Fitch of Brockport and of Cyrus McCormick absorbed interest. . . .

Throughout this period the handling of live stock in Illinois was, with a few rare exceptions, unscientific, inefficient, and haphazard. In the northern part of the state there was the very practical difficulty of housing and feeding during the severe winters. In 1836 Dr. J. W. S. Mitchell of Champaign county believed he had demonstrated that his herd of blooded shorthorn Durhams could be wintered as well as ordinary stock; a year later, however, he sold out.

Aside from these practical considerations stock improvement met a curious and unintelligent opposition from the small farmers. Among the influential the necessity of developing better herds was so clear that "the legislature passed a law," writes Governor Ford, "for the improvement of the breed of cattle, by which small bulls were prohibited, under *severe* penalties, from running at large. On this last occasion no one dreamed that a hurricane of popular indignation was about to be raised, but so it was: the people took sides with the little bulls. The law was denounced as being aristocratic, and intended to favor the rich, who, by their money, had become possessed of large bulls, and were to make a profit by the destruction of the small ones."

Leading stock growers of the day, notably Richard Flower, were as much interested in the raising of sheep as of cattle. Attempts were made to improve the breeds of sheep and to foster wool growing. Interest spread to such an extent that in 1842 wool in considerable quantities was brought to the Chicago market.

With the rush of immigration into Illinois new blood and energy was injected into all phases of agricultural activity. While the rest of the industrial population of the State increased only twenty per cent, the agriculturists more than doubled in the decade ending in 1860. The new settlers brought with them their own notions of successful farming, but their enthusiasm for the new environment tempered their devotion to old methods and inclined them to select only those features which might make for improvement. With the prairies thrown open for agricultural development and prairie farming only in its infancy this spirit of experimentation contributed to the important progress made in the last decade of the ante-bellum period.

Already by 1850 the adaptability of Illinois soil for specialization in corn culture had been demonstrated; a crop of 57,646,984 bushels of this staple represented an output nearly three times that of other grain crops. This emphasis on corn continued and was reflected in even stronger terms in 1860 when an output of 115,174,777 bushels moved Illinois from third rank as a corn growing state to the head of the column. In this decade the corn belt began to shift from the Illinois valley to the prairies of the eastern counties in the central division. Besides its supremacy in corn production, Illinois, the fifth wheat growing state of 1850, by more than doubling its wheat production, carried off first honors in 1860 with 23,837,023 bushels. In the early fifties the belief spread that the risks in wheat culture were less in southern Illinois where the grain matured earlier and was saved from the blight and rust caused by the June and July rains; and Egypt, which had been steadily losing ground during the forties, recovered with a sixfold increase while the northern and central divisions doubled their crops. The northern counties, however, still produced over one-half the wheat of the state. Northern Illinois also raised nearly three-fourths of the 15,220,029 oats crop of 1859, which represented a fifty per cent increase for the decade, and two-thirds of the rye crop of 951,281 bushels, and of the barley crop of 1,036,338 bushels, both of which represented tenfold increases.

With these important gains in the agricultural output of the state, Illinois became one of the most important granaries for the

supply of the industrial centers of the Atlantic seaboard and Europe. Illinois flour began to find its way into eastern and European markets, the southern Illinois product being especially favored. Chicago came into its own as the grain emporium of Illinois and the West, an "agricultural weathercock" "showing from whence comes the balmy winds of prosperity." Soon it was the largest primary grain depot in the world.

Grain buyers from Chicago scoured every section of the state, including even the extreme southern portion, and arranged to ship the crops northward. In order to hurry the grain to the eastern markets, eighteen of the most prominent mercantile houses organized a "Merchants' Grain Forwarding Association" in September, 1857. This represented a division of labor which changed the Board of Trade, organized in 1848, into a general commercial organization. Heavy grain speculation began to develop at Chicago; the operators worked incessantly at the exchange at the Board of Trade rooms and at a certain street corner known as "gamblers' corner." Many a fortune of $20,000 or $30,000 was made within a few weeks, though numbers of "lame ducks" appeared at the same time. The general effect upon the business of the city was extremely good, but the farmers were restive under this system and throughout the decade continued a spasmodic agitation for co-operative associations for the disposal of their produce. Finally in 1858, local agitation led to a farmers' congress at the state fair at Centralia which adopted a declaration in favor of wholesale purchasing and selling agencies in the great centers of commerce "so that producers may, in a great measure, have it in their power to save the profits of retailers." It was another matter, however, to translate this resolution into action.

Good crops prevailed generally throughout the decade except in 1854 when a general drought did especially heavy damage in the southern part of the state. Vegetation in many districts was entirely burned up, wells and creeks dried up, and farmers unable to secure water often sold their stock to be driven where feed and water could be had rather than see it perish. The corn crop was seriously damaged, but small grains suffered less. Although there was no danger of a food shortage, the food speculators were soon at work forcing prices up to new records. High prices had been prevailing since the European famine year of 1847 which drove wheat up to $1.25 a bushel; a gradual drop had ended with the Crimean War news in early 1854 which, followed by the activity of foreign buyers, brought back $1.10 and $1.25 wheat. By that time prices which had previously varied considerably were

becoming standardized by Chicago and New Orleans markets. The summer drought sent prices of breadstuffs higher than they had been for eighteen years, wheat selling at $1.25, corn at 40 cents and potatoes at $1.50. Normal prices had not been entirely restored when the panic of 1857 arrived. Speculators began to talk of short grain crops and of the rot in potatoes, but crowded cellars and bursting grain ricks contradicted their statements. They were able, however, to keep the bottom from falling out of the market, although the farmer suffered from the depression; the price of foodstuffs was prohibitive for the poor of the cities.

It was obvious to the more aggressive and progressive agriculturalists of the state that education could work a vast improvement in prevailing methods and practices. Even contemporary critics characterized the methods of cultivation as "most slovenly." "This is especially true in the Southern counties. The best farmers plough only four or five inches deep, never use a hoe, but do perhaps once in a season run a cultivator between the rows of Indian corn. Under such circumstances it is not probable that much more than half of what might be is raised." This was obvious, when in contrast with the general average of 35 bushels such large scale progressive farmers as B. F. Harris of Champaign county and David Strawn of La Salle county could raise over 60 bushels of corn per acre. B. F. Harris in 1855 harvested 700 acres of corn at 65 bushels per acre, 70 acres of oats at 30 bushels, 20 of wheat at 20 bushels, and 2 of potatoes at 75, besides raising 100 tons of hay, 360 head of cattle, 21 horses, 200 hogs and 12 sheep. In the same county Michael L. Sullivant planted over 7,000 acres in corn. There were farms with an acreage of 10,000 and even 27,000, one of the latter having 3,000 acres of corn in a single field. These large farms attracted considerable attention, but little was known of their methods by the small holders.

With the decade of the fifties, however, the Illinois agriculturist began for the first time seriously to analyze his weaknesses and to determine his future needs. Out of the agitation for industrial education came the proposition to organize a state agricultural society. Farmers' associations and agricultural societies already existed in several counties, and under the leadership of the Sangamon County Agricultural Society the Illinois State Agricultural Society was launched at Springfield on January 5, 1853. One function of the new organization was to encourage the formation of additional county agricultural societies; it drafted a model constitution; and by the direct co-operation of its officers new societies were formed, first in the northern and central counties and later

in southern Illinois. The legislature was induced to appropriate an annual sum of fifty dollars to each county society having an active existence. By the end of the decade, therefore, eighty-eight agricultural societies were to be found in Illinois, twenty more than in any other state in the Union. At the same time a broader connection was established when Illinois came to take part in the sessions of the National Agricultural Society, and when the Northwestern Agricultural Society established its headquarters at Chicago in 1859.

Both the state and county societies placed especial emphasis on their annual fairs; the first state fair was held at Springfield, October 11–14, 1853. It was the policy of the society at this time to pass the state fair around among the various cities of the state; a movement gathered considerable force to localize it at Springfield with permanent grounds, purchased with a legislative appropriation; but it was defeated by the combined opposition of rival places.

The premiums offered by the State Agricultural Society aroused general interest in new agricultural machinery. Several Illinois reapers were on the market, including, besides the Cyrus H. McCormick machine, the manufacture of which had come to be concentrated at Chicago, the inventions of Obed Hussey of Chicago, J. H. Manny of Freeport, Jerome Atkins of Will county, Charles Denton of Peoria, and G. H. Rugg of Ottawa. It was said that three of the four reaping machines that took prizes at the Paris exhibition in 1855 were owned and manufactured by residents of Illinois. Reaper trials were arranged to test the respective merits of the various machines; the State Agricultural Society held a trial at Salem in July, 1857, followed a few days later by a privately arranged contest at Urbana in which five reapers were entered. Advantages continued in favor of the C. H. McCormick machine which enjoyed special patent rights. The success of mowers and reapers was so evident that inventive genius was next directed toward raking and binding attachments; L. D. Phillips of Chicago patented such an invention in December, 1857. Others brought out improvements in old machines with special devices of their own. The desire to develop a "steam plough" which might be used to turn the prairie sod with more economy than the use of horses, oxen, or mules would permit, furnished an interesting field of experimentation. At a trial at Decatur on November 10 and 11, 1858, a demonstration was made under unfavorable conditions, which was voted satisfactory by the newspaper correspondents. Another trial was made at the state fair at Freeport

in 1859 with the Fawkes' steam plough, which had been awarded the grand gold medal at the United States Agricultural Fair the preceding year; the committee, however, was unable to arrive at a decision as to its success.

By this time a considerable amount of agricultural machinery had been introduced on the large farms in certain regions along the Illinois river and in the upper counties, so that cultivators, seed drills, reapers, and mowers became fairly common while even a threshing machine was occasionally seen. The value of farm implements and farm machinery increased from $6,405,561 in 1850 to $17,235,472 in 1860.

One of the chief difficulties of the Illinois farmer was that of securing a cheap and efficient fencing. Wood was too scarce and too expensive for its limited wearing qualities; wire and specially prepared sheet iron strips nailed to posts in the ground proved not altogether satisfactory; ditching and banking schemes and sod fences met with slight success, and though various kinds of hedges were tried, they were usually too slow of growth. Then Jonathan B. Turner introduced the Osage orange which had all the qualities most needed for a successful hedge—cheapness, certainty, quick growth, and unlimited endurance. By 1848 he had tried out two or three miles of hedge on his farm; and though it cost him $150 a mile for a three years' growth, he was able to sell plants at $10 per thousand. Turner immediately called the attention of leading agriculturalists to his experiments, and by 1851 so many were converted to the Osage orange hedge that it threatened to supersede all other kinds of fences in a few years.

Signs of a growing diversification of agriculture appeared during the fifties. Northern Illinois was raising potatoes in increasing quantities while in the southern counties castor beans became a favorite crop. The pioneer farmer and the recent settler had lacked the time to set out fruit trees and had later neglected this means of varying their hog and hominy diet. In 1850 there were few signs of fruit culture in Illinois. "Where the strawberry-bed ought to be, you will perhaps find a tobacco patch, and the hog-pen has usurped the place of the currant bushes," commented a thoughtful traveler.

Illinois farmers gradually became alive to this neglect of horticulture, especially as the demand arising for fruit and vegetables brought exorbitant prices for the available supply. Soon important developments were evident in the extreme southern counties of the state; by 1860 apples, peaches, and melons were shipped in

large quantities from the southern fruit farms. Alton became an important fruit market with large exports; its peaches were sometimes ordered direct by New York fruit houses. Peach orchards of 1,000 trees became fairly common. Isaac Underhill of Peoria had on his "Rome Farm" of 2,200 acres an orchard one mile square with 10,000 grafted apple trees and 6,000 peach trees. William Yates had a four hundred acre farm in Perry county with over 4,000 peach, pear, and apple trees besides a wide assortment of smaller fruits. Mathias L. Dunlap's nursery near Urbana came to have a wide reputation for its excellent fruit and filled orders from every part of the West. Grape culture flourished in the German districts around Alton and Belleville; many temperance advocates began to look to the use of native wines as the most satisfactory way of banishing drunkenness from the land. In October, 1851, the Northwestern Fruit Growers' Association was organized; and, supported almost entirely by residents of Illinois, it met in annual session until 1857, when it decided to merge itself into the Illinois Horticultural Society organized in 1856.

There were, of course, some unsuccessful attempts at diversification. In 1848 an enthusiastic campaign was inaugurated to develop hemp growing to the point of successful competition with the Missouri farmers; in a few years, however, the movement collapsed. Experiments were attempted with flax culture but without marked success, while the cotton crop of southern Illinois rapidly declined in spite of the previous success with it in that region.

The most exciting venture in the fields of agriculture during the decade was in the cultivation of the "Chinese sugar cane." The whole Northwest nourished the ambition to convert itself into a sugar-growing district. In 1856 J. M. Kroh and a few other farmers in Wabash county planted small plots of this "Chinese millet," "sorgo sucre" or "northern sugar cane" as it was variously called, and reported great success with an output of forty-five gallons of syrup from a half acre notwithstanding many unfavorable factors. Immediately the keenest interest was aroused in this new discovery. Kroh alone sold his seed to over 2,000 persons, and his neighbors distributed their surplus; seed was also distributed by congressmen as political favors to their constitutents. In the next season the cane was planted in every county in the state; in many districts nearly every farmer planted at least a few rows by way of experiment; and Kroh's neighbor, Edwin S. Baker of Rochester Mills, tried the experiment on the largest scale, with twenty acres. The success of these various enterprises aroused enthusiasm for the new crop; sorghum molasses was immediately enrolled as an

Illinois staple, and successful experiments in granulation made domestic sugar merely a question of the cost of manufacture. An Illinois State Sugar Cane Convention was held at Springfield, January 7, 1858; after an organization of the sugar growers was perfected, experiences were exchanged and important data assembled. The result was an increased acreage and harvest. Sugar mills were installed, and although the production of sugar was found impracticable, the extraction of syrup was very successful; one mill in Springfield was operated in season day and night with a three hundred gallon daily output. The Illinois advocates of the Chinese sugar cane were exultant; nowhere in the United States had its cultivation been so successful and so encouraging.

Stock raising was an especially important interest in central Illinois where it proved a most profitable business when practiced on advanced principles. Three of the most extensive cattle raisers were Isaac Funk of Bloomington, who in 1854 sold in a single lot 1,400 head of cattle averaging 700 pounds for $64,000; Jacob Strawn, who fed the first steers in Morgan county and who "has probably fed more since that time than all other men in the county together"; and B. F. Harris of Champaign county who made a fine showing at the World's Fair at New York in 1853; in 1855 he raised 500 head of cattle and 200 hogs and marketed a drove of 100 bullocks averaging 2,373 pounds. In the early days large cattle feeders like Jacob Strawn had to scour all central and southern Illinois and the settled parts of Missouri and Iowa to secure stock; now in the fifties cattle were brought in droves from Missouri, Texas, and even Mexico to convert the immense yield of Illinois corn into marketable form.

The more enterprising farmers of central Illinois were with decided advantage beginning to introduce blooded stock to improve the breed of cattle raised. It was next suggested that a joint stock company be organized to import first grade cattle from the East and from Europe. This suggestion was acted upon in December, 1856, when the Illinois Stock Importing Company was organized at Springfield with an immediate subscription of $12,700 worth of capital stock. A few months later its agents headed by Dr. H. V. Johns, former president of the Illinois Agricultural Society, were sent to England to make purchases. Some eighty head of imported stock arrived in Springfield in August, 1857, and were sold at auction to citizens of Illinois on the understanding that they should remain in the state for two years.

For pork growing few regions were as favorable as the Illinois prairies. Allowed to run at large upon the open plains as well as

in the few timbered districts, hogs multiplied so rapidly that it was often a matter of difficulty to decide to whom a lot of grunting porkers owed allegiance. For this reason there were many advocates of a law for their confinement. Since this was the only problem in hog raising—for there seemed to be no hog cholera or other disease until the spring of 1859—hogs were the chief means of converting the corn of the state into good marketable form. In 1850, 1,915,907 hogs were raised; by 1860 the number had increased to 2,502,308.

Woolgrowing met with less success than other live stock interests, in spite of the fact that Illinois seemed admirably adapted for sheep raising and although for some time the annual output of wool, chiefly from the northern counties and certain central districts, showed an increase. Extensive woolgrowers like Truman Humphreys of Peoria and James McConnell of Sangamon county insisted that wool could be grown in Illinois more profitably than anywhere else in the United States. With uncertain prices for wool, however, and with a more certain reward in other fields, most farmers were content to leave these opportunities to the advocate of woolgrowing. In the census of 1850, 894,043 sheep were listed with a wool crop of 2,150,113 pounds; but by 1860 an actual decrease of 14 per cent was indicated in the census total of 769,135 sheep.

The total value of the live stock of the state in 1850 was $24,209,258 and consequently meat packing had become an important industry; in that year animals to the value of $4,972,286 were slaughtered. Pork brought in this decade prices ranging from $2 and $2.50 per hundred in the early years to $5 and $6 in the latter part. For an average pork packing town 20,000 was a fair season's packing, and nearly a half million were packed annually in the state. In Alton and in the towns along the Illinois, notably Beardstown—the original Porkopolis—and Peoria, thousands of hogs were slaughtered each year; but with the opening of the canal and of the railroads more and more of the hogs were taken to Chicago to be slaughtered. By 1859 this tendency was so marked that Chicago had become the third pork-packing city in the West and promised shortly to eclipse its rivals in the hog trade. The same development in the beef-packing industry made Chicago in 1860 the greatest general meat-packing center in the West.

The decade of progress along agricultural lines increased 5,039,545 acres of improved lands in 1850 to 13,096,374 ten years later. Unimproved holdings of 6,997,867 acres increased to 7,815,615. This represented an increased acreage of 73.7 per cent. The number of farms nearly doubled and the value of farm property nearly

quadrupled. These statistics reflect the extraordinary demand for land that prevailed throughout the decade. Illinois, indeed, was still in the whirl of land speculation. The inpouring of settlers and the opening of the canal and of the railroads combined to produce a heavier demand and a greater accessibility for unoccupied holdings. Generally speaking, land sales came to involve fewer and fewer direct transactions between the government and the actual settler.

2. Experiences of a Southern Wisconsin County [1]

It will no doubt be objected that there never was in southern Wisconsin a time when one crop was raised so exclusively as to warrant the title given to this chapter. ["The One-Crop Period."] We look back to the tobacco culture of early Virginia, or to the cotton production of the Gulf States in ante-bellum days, and unhesitatingly speak of them as one-crop periods. We speak glibly of the old Norfolk four-course system as practiced in England for a century previous to the depression of 1875, yet does any one suppose that the tobacco growers of Virginia or the cotton planters of the South would have accepted the term "one-crop system" had they been accused of practicing it? Or does any student of English industrial history think that the Norfolk system was followed with such conscious care and precision that one could predict the periodic return of a certain cereal to a particular plot as an astronomer predicts an eclipse of the sun? However, the term "one-crop period" was chosen advisedly and serves the purpose of giving a general idea of the conditions of these different times and places. Likewise, it must not be understood that every other crop was insignificant; yet seen in perspective even at this short range, it appears to the observer that dairying, stock raising, the growing of other grains, were, all combined, but mere incidents in the general business of attempting to grow wheat. That is to say, wheat was the staple; it was the crop produced for the market; the crop from which a money income was expected.

The reasons for turning attention and energy so exclusively to wheat culture from the first settlement up to about 1870 are too numerous to be stated in a sentence. To begin with, the question as to what crop would flourish in the new country was a grave one. The belief was general that corn could not be raised to advantage.

[1] Benjamin Horace Hibbard, *The History of Agriculture in Dane County, Wisconsin, Bulletin of the University of Wisconsin*, Economics and Political Science Series, Vol. I, No. 2 (Madison, Wisconsin: September, 1904), pp. 121–130. Reprinted by permission of the author.

True it was raised by the Indians, but this was a small variety, and was not a sufficient testimony to overcome the preconceived notion that Wisconsin was a little too far North to be reckoned in the corn belt. Or, suppose corn could be raised in large quantities, it was too bulky and too cheap to stand transportation a thousand miles to market. This latter argument was also conclusive when applied to the alternative of raising oats, it being conceded that oats would do tolerably well, at least as to yield. Barley and rye did not seem to gain in favor for a long time, principally because there were greater possibilities in wheat. As a matter of fact they were both more certain to make a fair yield, and towards the latter part of the period barley did gain a considerable significance.

The reasons urged against stock raising were mainly two: first, it was not generally believed that grass or clover would flourish here; and second, quite as important, it was thought that the winters were so long and cold that the cost of housing and feeding must necessarily consume the profits. The poverty of the settlers was one of the most important factors in deciding the channels along which their energies should flow. It required capital to invest in stock, and the keeping of stock required the additional outlay for fences and barns.

The belief that feed could not easily be produced was only natural, since cultivated grasses and clover do not take kindly to the conditions of early pioneer life. They will not choke down weeds or brush in the woods; and not until prairie grass has been partially killed by cropping and trampling can anything better be induced to take its place; even if the wild land is first plowed, tame grass does not succeed well until after the sod is rotted.

In the case of wheat all seemed promising; it would do well on new land; in fact it was on new land that it did its best. Very little capital was required to begin wheat farming. A breaking team and plough, a harrow, and some seed wheat was enough for a start. While the acreage was small this was about all that was required with the exception of a wagon in which to haul the crop to market. The entire work of harvesting was done at first by hand. The sickle and cradle in the farmers' hands constituted the reapers. The flail was sometimes used in threshing, but more often oxen or horses were made to tread out the grain as in ancient times. Men even made it a business to go about the country to do threshing with a pair or two of cattle as the sole threshing outfit. The grain was stacked around a circle or open space some thirty or forty feet in diameter. Preferably the stacks were left till the ground froze and then on this open space, scraped as clean as

possible, the grain was spread, and the thresher, with his own oxen and those of the farmer for whom he was working, entered the ring and used alternately the lash and the pitchfork to keep the cattle in motion and the grain properly turned and shaken. In this way two men could thresh and clean in an indifferent manner fifty or sixty bushels of wheat in a day, and the thresher would take his pay in wheat, probably about four bushels.

These very primitive methods soon gave way to something more modern and effective. The fanning mill was introduced about 1840; a "moving threshing machine" came into use, and went out almost simultaneously, in 1846. This machine consisted of little besides a small cylinder and a set of "concaves," with the ordinary teeth. The machine was mounted on a wagon, the power being applied by a chain running on a sprocket-wheel attached to one of the rear wagon wheels, and the work done as the vehicle was driven about the field. The straw was scattered broadcast from the rear of the wagon while the grain, chaff, and dirt fell promiscuously into the box. It is needless to say that farming operations were not revolutionized by this invention. A year or two later, a small stationary threshing machine was imported from Scotland; still this was not a "separator" and it was not till the appearance of the well-remembered "Buffalo-Pitts Vibrator" about 1848, that anything striking was seen in the work of threshing. This with the appearance of the McCormick reaper in its various forms, the N. P. Many combined reaper and mower, and a little later the "Marsh Harvester," made it possible to raise wheat in large quantities.

The amount of wheat raised before 1840 was insignificant and was about all used up near the place where it was grown. The yield had been good and the anticipations of the farmer were aroused to fever heat. Yields as high as sixty or even eighty bushels per acre were reported and the quality was beyond anything else received in the Eastern market.

In 1840 the crop exceeded all previous records; the straw stood stiff and tall, yet loaded almost to breaking with heads filled with plump, hard grain. Everything favored a maximum yield. The soil was still rich in phosphates, due largely to the ashes from innumerable fires. It was principally winter wheat which was then grown and the deep snow of the previous winter had kept it blanketed from the weather and left it in prime condition for growth in the spring. Reports of Wisconsin wheat growing went the rounds of the press and it was made to appear that a few acres of this matchless soil would secure a family against danger of want

for all time to come. This was just on the eve of the great influx of Norwegians and Germans, who were accustomed to wheat fields in their native lands, and thus were easily convinced that wheat was the crop above all others to rely on here. Strange as it may seem, the question of markets did not become alarmingly important for some years, the immigrants requiring the bulk of the surplus. The milling industry was for a long time inadequate to the needs. Probably this was owing to the poverty of the settlers, and to poor communication with the East, for there was abundant opportunity to make good returns on an investment in grist mills.

With these conditions it can easily be understood why there was no great excitement over canals or railroads during the greater part of the decade between 1840 and 1850. The world had not then learned to want the news of the antipodes to be served at breakfast; the question of selling produce was not vital; and as to buying articles from the East, the Westerners were passively willing to be humbugged.

The first intimation that there was a limit to the wealth of the wheat fields came in the disguised form of some partial failures in the winter wheat crop during the '40's; that is to say, failure and prosperity had about the same start in the race. Part of the wheat winter-killed and it was soon noticed that the only place where it seemed reasonably safe from this trouble was in the well-sheltered fields in the woods and to a less degree in the oak-openings; on the prairie it uniformly failed. But spring wheat had been tried and found to produce a good crop in these open places, so the wheat fever was merely allayed a bit and showed no symptoms of subsiding. Spring wheat never equaled winter wheat at its best, either in quantity or quality, but while the land was new the returns were moderately good.

Being thus soothed and reassured, the farmer was ill prepared for the rude awakening which came with the failures of all varieties of wheat from 1847 to 1853. For a time he would not be persuaded that the shortage was anything worse than a mere temporary misfortune caused by unfavorable weather; his faith in the soil was unshaken; and his hopes for the future were slow in waning. But there were several dormant forces which now asserted themselves, and compelled the farmer to face the facts. First in importance and persistency were the debts, contracted recklessly, which now became due. Creditors had previously been satisfied with the interest, which at the rates charged would equal the principal somewhere within four to eight years. Now the

debtor's solvency came in question and the principal was demanded as soon as maturity was reached.

Another force which injured the farmer had been working away quietly—impoverishment of the soil. It was believed that the soil was good for an age without any attention to replenishment. How any intelligent set of men could be so blind to the fundamental truth of farming as to think it possible to subtract from a given sum without decreasing it, is beyond comprehension; but it must be remembered that Wisconsin soil did appear almost infinitely richer than the granite farms of New England, and even those who came from New York or Ohio had not, for the most part, lived in those States long enough to see the first virgin richness of the soil destroyed. At all events, the vision of a soil which could hold its own under the system of constant robbery was pretty thoroughly dispelled by 1851. No longer could the failure of wheat be charged to caprices of the weather, to poor seed, or to sowing in the wrong time of the moon; the fact of weedy, hard, unresponsive fields was in evidence. All at once there was great interest in scientific farming; the I-told-you-so prophets were ready to account for all the trouble; agricultural societies sprang into existence in nearly every county, and the poor farmer was berated and advised by editor, money lender and his own fellow sufferers. Accounts of the conditions, and some of the causes for them are given by contemporaries:

"As to the manner of cultivation it is rather slovenly. First they have attempted to cultivate too much land with very limited means; next, they have been deluded with the notion that wheat could be grown successfully for an indefinite period of time . . . that manuring, rotating crops, seeding down with timothy, clover, and other grasses . . . was altogether unnecessary. To surround a quarter section of land with a sod fence, break and sow it to wheat, harvest the same and stack it, plow the stubble once and sow it again with wheat, thresh the previous crop and haul it to the Lake, was considered good farming in Rock county and it continued from year to year; hundreds confidently expected to win by going it blind in this very unscientific manner. Three years out of eleven have produced good crops of winter wheat."

That the deterioration in quality was fully as serious as the decline in quantity of wheat, is shown by the fact that Wisconsin wheat brought the lowest price in the market wherever it sold. A little care on the part of the farmer would have served to keep the quality up somewhat, at least for a time. A few seemed to know

that ordinary barn-yard manure had a wholesome effect on land that was losing its available plant food, yet it was with rare exceptions that even the small amount of such fertilizer which each farmer had at his disposal was utilized. Handling manure was not fashionable, and no one wished to be thought eccentric. Yards were left till they could no longer be used conveniently because of annual accumulations; horse stables were moved when the available space for dung heaps around them was occupied. Occasionally the manure was carted off to a marsh or creek and there dumped where it would no longer offend the eyes and nostrils of the æsthetic farmer but would be carried as far as possible from his premises.

Occasionally a farmer tried the experiment of fertilizing a piece of land and published the results. The Englishmen were the exceptions to the general rule in this respect, they having learned the importance of fertilizers in their home country, and in consequence were among the most successful farmers of southern Wisconsin.

Even rotation of crops was not considered a serious matter and, therefore, received very little attention. Occasionally some one mentioned summer fallowing but it was seldom tried, in fact there is no reason to believe that it was practiced in this county at all, though it was not entirely unknown in other parts of the State. Fallowing has not at any time become common in this region, and for a very good reason: it is not needed; but at the time when small grain was raised eight or ten years in succession on the same land, it would have destroyed weeds and given the soil a tilth such as was unknown from the time the land was new till the advent of corn as a mainstay in farm economy.

Thus at the beginning of the second half of the century the Wisconsin farmer was involved in debt; was following the same groove which was started by the earliest settler; was thoroughly discouraged. He blamed the weather, the banker, and the legislator, but considered that he himself had done all that strength of body and mind could enable one to do under such adverse circumstances. The weather had for some years been unpropitious and a change for the better took place; the legislature also became kindly disposed and passed several bills in the interest of the farmer, among which was one appropriating one hundred dollars a year to the county agricultural societies; recommendations for tariff reform were made to Congress, and inducements were offered to manufacturers to establish industries within the State. These expedients were not wholly in vain, but they were inadequate to

repair the damage already sustained. The bankers showed no unwonted tenderness toward the embarrassed farmers, and the number of foreclosures of mortgages from 1846 to 1853 was not only great but continually on the increase. For the most part the whole farm was not taken at once, but a forty or two for part payment of a debt.

In very many cases the amount of encumbrance under which these executions were made was no more than two or three dollars per acre. Interest remained at about the same figure, that is, nominally at ten per cent for long-time loans, twelve per cent on short time, while practically it was whatever the exigencies of each particular transaction would bear,—often double these rates. The inability of the farmer to pay these absurd charges was the immediate cause of so many mortgage foreclosures. Many gave up farming as a bad job, others moved to newer country, not a few went to California.

Perhaps the hardest to be remedied of all the ills which beset the farmer were those acquired or inherent weaknesses of his own character, for with all his admirable qualities he was in many ways improvident. He complained that he could not keep cattle because it would take so much extra barn room and fence; yet there was plenty of material near at hand, often on his farm, to build all the fence he could possibly need; and as for barns, at least comfortable stables could be built with no other outlay than the labor required to cut the logs and put them in place; or they could be sawed and made into a fine frame building if a little money could be raised to pay for the sawing and carpenter work. In many parts of the country convenient building stone was to be had for the taking, and some very respectable houses and barns still standing were made of it. These are some of the historic possibilities; the facts are that the improvements up to the time under consideration were pitifully poor.

These conditions were in a great degree the outcome of wheat farming but, and this was more serious, these very conditions were beyond all else, the deciding influences in preventing a change to a better régime. Cows were to be had for twelve or fifteen dollars apiece, but this availed nothing to a man without money or credit even though he were paying twenty-five dollars a year for butter and cheese and letting grass and hay go to waste. The same difficulties confronted him at every turn and thus we have the anomaly of a class of intelligent men who could not raise wheat, yet who were unable to quit the attempt and begin one of a dozen things which offered more returns for less energy. It seemed that some-

thing would of necessity happen before long or the very inertia of the system would carry the farmer to the foot of the ladder and all but compel him to start on a new career in a rational way—and something happened. The price of wheat rose from thirty-one cents to a dollar seventy cents between May, 1854, and the same month a year later.

This remarkable rise in price is usually attributed to the Crimean War, and no doubt correctly. Other produce advanced in price, but not in the same proportion, as wheat was the specific article in demand. The effect of this boom was electric. There was no longer any thought of quitting the wheat industry, for even if the yield was small, the prospect of nearly twice as many dollars as bushels was enough to overcome all tendency to radical change. So the change that actually did take place was manifested in a new crusade in search of wheat land. Immigration from the Eastern States and from foreign countries took a new start. Prairie land which had once been black-listed, now became so much in demand that it would sell at almost any price and on any terms. One man who still lives in the town of Dane paid twenty dollars per acre for an eighty, with interest at twelve per cent and thirteen per cent commission, making it twenty-five per cent for the first year. As elsewhere noticed, it was under these conditions that the prairie was finally settled, and the prejudice against such land once for all silenced. The new impulse to wheat was sadly brief, but it was sufficiently long to bring with it evils which were long-lived. Prominent among these was the craze for horses to take the place of oxen; this was the first general move in that direction and the purchase of a team was in many instances the first act of a little play in which bankruptcy was the last. A span of good horses sold as high as four hundred dollars, and twenty-five per cent interest was not unusual.

It takes a year or two to subdue raw prairie and reap from it a crop of wheat, and by the time any considerable quantity had been produced on this high-priced land the price of wheat had dropped to its old level or thereabouts. Did the farmer then revive his disposition to try another form of agriculture? By no means; he had again renewed his vision of wealth to be gleaned from his wheat fields, and this vision, even if a trifle dim at times, kept him plodding faithfully along in its pursuit through the remainder of the decade. Prices were low, crops were poor, debts accumulated; but in 1860 when it again seemed that a change to profitable farming was imminent, another lease of life came in the form of a remarkably heavy crop. This is not hard to account for. The drought,

and rust, and rain, and blight, had in turn or in conjunction prevented the wheat from sapping the nutriment from the soil, and now they took a year off and the granaries were filled to bursting. The price was still low but this was offset by the yield, and again the farmer tacitly resolved to sink or swim with the wheat industry.

CHAPTER XIV

AGRICULTURAL SYSTEMS AND LABOR SUPPLY IN THE SOUTH

1. Contrasting Types and Conditions in Southern Agriculture [1]

A factor which strongly marked off the later period in the Old South's history and exerted great influence upon its industrial constitution was the closing of the foreign slave trade by the congressional act of 1808. Thereafter the tobacco and rice districts had a corner on the supply of slave labor which the cotton belt was demanding; slave prices entered upon a great rise and became subject to wild fluctuations; the industrial units and the several plantation districts competed strenuously for the possession of the available slaves; industry reached very much a speculative basis; crises of great severity became periodical; and the stress of the times quickened migration and hastened the segregation of types. Under these stimuli, the people of the South had gotten fairly acquainted with the quantities and relative advantages of every part of their country, by 1850 or 1860, and in each area had to a large degree developed that distinctive industrial system which, under the general circumstances of their legal system and their labor supply, served best to utilize local opportunities.

A survey on the eve of the War of Secession will show the conditions of industrial society as follows:

Tide water Virginia and the greater part of Maryland had long been exhausted for plantation purposes and were being reclaimed by farmers working with much the same methods as were followed in the Northern States. The large land- and slave-owners mostly followed an example which George Washington had set and divided up their estates into small units in each of which a few negroes worked in the raising of varied crops under the control of a white man who was more a foreman leading the squad than an overseer driving it. Planters, who adhered to the old methods, were now

[1] Ulrich B. Phillips, *Plantation and Frontier, 1649–1863, Documentary History of American Industrial Society*, Vol. I. (Cleveland, Ohio: The Arthur H. Clark Company, 1910), pp. 88–94. Reprinted by permission of the author and the publishers, The Arthur H. Clark Company.

of decayed estate, supported more by the sale of slaves than by the raising of tobacco. Incidentally, eastern Virginia and Maryland had come to have a very large number of free negroes.

The Piedmont in Virginia and the Carolinas had also reached a stage of some exhaustion and depopulation. The great liability of the hillsides to the washing away of their soil made the preservation of fertility peculiarly difficult in this rolling country, while the plantation system as generally administered was notorious for its carelessness of tillage.

The Charleston-Savannah district was moderately prosperous with its rice and sea-island cotton; and still excluded all small farmers except the poor whites, who were too low in the scale of industry and comfort to feel any effects of competition. The pine-barrens, including most of Florida, were vacant of people except for a thin sprinkling of farmers who tended more or less toward the poor white status.

The South Carolina and Georgia uplands were a fairly prosperous region dominated by planters but with a large portion of each neighborhood owned and cultivated by small farmers. The Alabama black lands, running across the State in a belt just below Montgomery and thence up the Tombigbee Valley, together with the Mississippi and Red River bottoms and a portion of Texas, formed the Western cotton belt, which for four decades had been buying all the spare negroes from any other part of the South and smuggling in some from abroad to help in meeting its demand. The cotton estates in the alluvial districts tended to have larger gangs than those elsewhere; but of course the greatest industrial units of all were the sugar estates, where the need of the large economies incident to the operation of a sugar mill on each plantation discouraged all small or medium-sized units from attempting to compete. It must be observed, however, that all the western cotton belt and the sugar district was interspersed more or less with barren or remote tracts where poor whites or other small farmers might live undisturbed by offers of tempting prices for their lands.

Kentucky and middle Tennessee were a region of diversified industry, producing grain and live stock, tobacco, some cotton, and in one district a large output of hemp. Manufacturing, too, reached appreciable dimensions. Some of the agriculture permitted the plantation system; some did not. Much of the region had a considerable minority of negroes in its population, but very few localities had a majority of them.

In the Shenandoah Valley, Northern models of farming were followed, producing large crops of grain, hay, fruit, etc. Attempts

by Eastern Virginians had been made to establish plantations in the Shenandoah, but only to fall. Slaves were sprinkled in the population but served only as help, not as gang labor. East Tennessee was practically a duplicate of the Shenandoah in its industrial society. It had long been shut out by the mountains from any access to markets for its produce; but the building of railway connection to the cottton belt brought a long delayed wave of prosperity. It of course produced none of the southern staples; it had no slaves to speak of, and no plantations.

As for the people living in the midst of the mountains, in West Virginia, Kentucky, Western North Carolina, etc., they were so completely isolated, self-sufficing and unprogressive as to have practically no influence upon the rest of the South and little development of their own.

* * * * * * * * * * *

Within the several plantation districts, the systems of labor were determined largely by the requirements of the staples. The size of the units was controlled in large measure by the degree of fitness of the soil and the staple for full routine in simple tasks. Sugar cane offered the best opportunity for plantations of great size, because no delicate work was required and there was employment throughout the year for crude muscular force with a minimum of intelligence and painstaking. The rice crop was next in the order of these qualifications. Indigo was so delicate a plant and needed so much care in preparing the product that negro labor was poorly suited for the work. Cotton had the disadvantage of needing delicate handling at some seasons; but it had the great staple virtue of keeping the laborers busy nearly all the year in a steady routine. No time of fair weather at any season need be lost in that idleness and unremunerative work which it was the planter's chief business to guard against. In tobacco, the routine season was shorter and the need of painstaking greater; and tobacco accordingly was abandoned by many planters who turned in preference to cotton or sugar. The cultivation of corn and wheat as main crops gave such long rest seasons, necessary to fill by job work in by-industries, that no slave-owning planter could well compete in their production for the market. Small farms abounded in the several Southern districts in inverse proportion to the fitness of their soil and their staple for full routine with crude labor. For example, the deep and durable soils of the Mississippi bottoms were more conducive to the use of large gangs in cotton raising than were the rolling lands of the Carolina Piedmont

which had only a surface fertility. In the Piedmont there was frequent need of clearing new fields in a process which disturbed the routine; and the uneven character of the land promoted a scattering of fields, which wasted the time of the gangs in going to and coming from work and made effective supervision more difficult. Farmers could there compete in producing the staple with less disadvantage than in the alluvial lands, and small planters could hold their own against the great ones. The Piedmont plantations on the whole were accordingly smaller on the average and less formal in system than those in the several lowland districts. That contrasts existed among the numerous frontier areas and types is obvious. The variations were too many and complex to permit of discussion here.

* * * * * * * * * * *

The temper and philosophy of the people were formed chiefly by the combined and interacting influence of the frontier and plantation systems. The frontier had a lasting influence only in its giving a stamp of self-reliance and aggressiveness to the character of men. The frontier influence was the more widely extended; for it affected nearly all the country, North and South. The influence of the plantation system and problems was more local and more lasting. The system gave a tone of authority and paternalism to the master class, and of obedience to the servants. The plantation problems, further, affected the whole community; for after the close of the seventeenth century the plantation problem was mainly the negro problem, and that was of vital concern to all members of both races in all districts where the negroes were numerous. The wilderness and the Indians were transient; the staples and the negroes were permanent, and their influence upon the prevailing philosophy became intensified with the lapse of years. It eventually overshadowed the whole South, and forced the great mass of the people to subordinate all other considerations to policies in this one relation.

2. Unsolved Problems in Southern Economy[1]

There are four primary factors in Southern economic history—the institution of slavery, the negro, the white man, and physiography. Within the limits of this paper I shall only attempt to

[1] Alfred Holt Stone, "Some Problems of Southern Economic History," *The American Historical Review*, Vol. XIII, No. 4, July, 1908, pp. 779–797. Copyrighted by The Macmillan Company. Reprinted by permission of the author and the publishers.

suggest certain lines of thought which have occurred to me in connection with a study of the relative influence of these factors in the economic life of the Southern States.

The time has come when we must study slavery as an economic institution without regard to its ethical or political aspects. I do not mean at all that the latter are to be ignored, but simply that the different phases must be considered separately, if we are ever to ascertain the actual effect of slavery upon the purely industrial side of Southern history. It must be studied as dispassionately as the history of the tariff is studied. Looked at from its economic side, we find at present certain fairly definite attitudes assumed by historians toward the institution. These views have become crystallized into traditions, and are accepted as mere matters of course by nearly all modern writers on ante-bellum conditions.

Under this traditional treatment slavery is held responsible for everything in Southern economic life and development which in any way differed from the economic life and development of the nonslaveholding states. For example: it is traditionally responsible for the fact that foreign immigration did not seek the South; for the fact that Southern manufacturing enterprise lagged behind that of the rest of the country; to it was attributed an alleged contempt for manual labor on the part of white people, which brought labor into disrepute and prevented white people from doing their share of such work; the difference between the respective values of Northern and Southern farm-lands, and the wasting of the latter, were charged to slavery; the use of crude and heavy farming implements was considered an inevitable incident of slave labor, hence also the backwardness of the South in adopting improved farm machinery. The catalogue could be almost indefinitely extended. All these things were the result of slave labor, ergo, if slavery were abolished such conditions would disappear and under the stimulus of free labor we should see the South approximate the economic life of the North. Slavery was abolished, the South has made tremendous progress, and the predictions of ante-bellum writers and travelers have been fulfilled.

My position is that in the first place we do not yet know enough about the internal economic conditions of the ante-bellum South to say just what the exact status of such development was at a given period. One of the problems which confronts the student is to lay the foundation of a real knowledge of Southern ante-bellum economic life. In the second place, I question the validity of the proof that the economic progress of the South since the war has been more rapid than it would have been had slavery not been

abolished. I also question the accuracy of the popularly accepted idea that there has been an economic revolution in the altered relative status of the South and the rest of the country since the Civil War. The common practice in considering the progress of the South is to lose sight of the even greater progress of the rest of the country. If the abolition of slavery caused the progress of the South, what caused the progress of the sections which had not felt "the economic blight of slavery"? The increased cotton production of the South since 1860 is no more attributable to the abolition of slavery than is the increased wheat production of the Northwest during the same period.

Again, if we find that there was a condition of relatively great economic backwardness in the South, to what is it to be attributed? The greatest problem in Southern economic history is that of determining the relative responsibility for its economic condition of the factors of race and of racial status. Was slavery primarily responsible, or was the fact that the slave was of a race of a normally low economic status?

Here we are confronted with the necessity of realizing the fact of a difference between slave labor and the slavery system. The economics of slave labor, *i. e.*, the labor per se, as controlled by a certain recognized system, has to do with the primary question of the adaptability of such labor to certain industrial pursuits, and with the secondary question of the purely productive efficiency of such labor in the fields to which it was adapted. The economics of slavery, *i. e.*, of the economic system developed for the control of a certain class of labor, has to do not only with the elementary questions just stated but also with such further considerations as the ultimate and larger effect on the economic life of the community of the locking up of capital in controlled labor, the other avenues of employment which such capital might have found or developed, and the relative potential wealth-producing capacity of capital thus differently employed.

It is only after we have determined these questions that we can measure the relative importance in Southern economic development of the racial and institutional elements in Southern negro slavery. It is only then that we can even approximately determine the part played by slavery as an institution in the economic history of the South and of the nation.

I shall not attempt to answer these questions. I merely advance them as suggesting proper fields of inquiry for such students of Southern economic history as may not be willing longer to follow in the beaten path of those, however eminent, who have inter-

preted everything in Southern life in terms of a single economic institution.

But while I am not yet willing definitely to commit myself to certain tentative conclusions of my own, I recognize the propriety of suggesting some of the grounds upon which I venture to question the validity and accuracy of the accepted conclusions of others.

A stock argument of those who attack slavery on its economic side is the difference between the value of farm lands in the slave and in the free States. Page 170 of the *Compendium of the Census of 1850* is a reference which is almost as sacred to some writers on slavery as the doctrine of predestination is to an old-school Presbyterian. Apparently, investigation stopped right there. We seem to have accepted as a matter of course that the contrary condition which was to follow abolition has been accomplished. As a matter of fact, the greatest decennial increase in Southern farm-land values which has occurred since 1850 was reached under slavery in 1860. In the latter year the average value per acre of farm-land and improvements was $10.19 in the Southern States, $23.68 in the New England States, and $20.04 in the Central States. After the expiration of forty years the value of Southern farm lands had fallen in 1900 to $8.96 per acre, while the New England States had increased to $25.71, and the Central to $37.52.

One of the severest economic indictments drawn against the entire Southern industrial system by ante-bellum writers, and one constantly repeated by present-day economists and historians, was that it retarded the development of manufacturing industry. In the growth of Southern manufactures in recent years, the Northern writer finds proof conclusive of the soundness of the ante-bellum contention, while the Southern man concedes that in this respect at least the argument was incontrovertible. But here again for more than forty years we seem to have been content to accept surface indications as established proof.

If we concede the fact as to the ante-bellum condition, where does responsibility for the condition properly fall, on slave labor or on the slavery system? If on the former, we are confronted with the fact that the abolition of slave labor did not alter the occupation of the slave. There were relatively no more negroes employed in manufacturing after emancipation than before. In fact the negro lost ground in some branches of manufacturing industry. At least a few cotton mills were operated with negro labor before the war, whereas no negroes are so employed to-day. With reference to slave labor, then, the class which were slaves have not been associated with the development of the one branch

of manufacturing in which the South has made its greatest progress, while with reference to the slavery system neither responsibility nor absence of responsibility is clear. The history of antebellum Southern manufacturing has not been written yet. When it is, evidence may be found to indicate that if its progress had not been checked by the war its development might easily have been as great under the continued existence of slavery as after its abolition. It was not a question of slavery, per se, but simply one of overcoming economic inertia, common to all long-established business conditions, and of accomplishing a diversion of capital into other channels. But even as the matter stood, the Southern States in 1860 contributed 12.5 per cent of the total value of the manufactured products of the country.

As with manufactures, so with the important basic product of pig iron. We are still being told how impossible it was for the iron industry of the South to be developed with slave labor, while the growth of recent years is a matter of common knowledge. Yet we have the authority of Mr. Edwin C. Eckel, late of the United States Geological Survey, for the statement that the South to-day contributes a smaller percentage of the total American pig iron output than it did in 1854. In that year the Southern States contributed 12 per cent of the total. After numerous fluctuations during the intervening fifty-three years this had fallen in the first half of 1907 to 10.5 per cent.

Here again we cross an apparently fixed tradition as to the economics of slavery, namely that this particular system of industrial organization was inherently limited to agricultural operations, and even to one specific type of such operations. Because mining was not a highly developed industry in the slave States, notwithstanding the existence of abundant mineral resources, the crude conclusion was that slavery was the cause behind the fact. There is no greater fallacy than this. Negro slave labor was originally transferred from Spain and gained its first foothold in America for the sole purpose of working the mines of Hispaniola. There is no warrant in fact for the opinion that mining would not have remained the chief occupation of such labor had the mines themselves not become exhausted. It is a feature of the natural economy of the earth that through the restricted distribution of minerals agriculture is a much more widely diffused, a much more general, industry than mining. It is a gratuitous assumption that slave labor is not as well adapted to the one as to the other. In so far as negro slave labor, per se, is concerned, we can still study it as applied to mining operations

in the use of convicts in the coal-producing territory of Alabama and Tennessee. The mines of those States could have been developed as efficiently with the purchased and controlled labor of negro slaves in 1850 as with the purchased and controlled labor of negro convicts in 1900. The per capita prodution of one class would have equaled the production of the other, and this is the prime feature as far as the labor itself is concerned. As to whether the ton cost and profit of production would be greater or less under one system of control than under the other, or greater under a free labor system than either, is a question which concerns the relative ultimate advantages of the combined features of the respective systems, and should not be confused with the potential producing capacity of the labor itself.

Probably the greatest economic argument agaist slavery was that it caused immigrants to shun the Southern States. Thorold Rogers declared in 1888 that European immigration was worth £100,000,000 a year to the United States, and that slavery had deprived the ante-bellum South of its share of this tremendously valuable importation. I know of no writer on the economic aspects of Southern slavery, from Cairnes to Rhodes, who has not insisted upon the same explanation of the course of the tide of foreign immigration, which set away from the South. Yet in 1860 the Southern States contained 9 per cent, of the total foreign-born population of the country, while in 1900, thirty-five years after the removal of the commonly accepted ante-bellum cause, the percentage had fallen to 5.2. In 1860, of the total population of the South 3.4 per cent were of foreign birth, while in 1900 only 2.2 per cent were foreign born. In 1860 the New England States contained 11.3 per cent of the total foreign born of the country, and 14 per cent in 1900. The Central group 36.8 per cent of the total in 1860 and 35.3 per cent in 1900. Of the total population of New England in 1860, 15 per cent were foreign born, and in 1900, 25.8 per cent. Of the total population of the Central States 17 per cent were of foreign birth in 1860, and 15.8 per cent in 1900.

It is, however, more interesting to examine the respective numbers and rates of increase of the Southern foreign-born population, before and since the abolition of slavery, without reference to what existed or took place along the same line in other parts of the country. The actual number of foreign born in these States in 1850 was 231,494, and in 1860 it was 370,783. This represented an increase of slightly more than 60 per cent of foreign born during the last decade of slavery. In 1900, forty years after 1860,

the foreign-born population of the South was 539,756. This represented a gain during the thirty-five years succeeding the war of only 29,684 in excess of the gain during the ten years which had preceded it. It represented an increase of only 45.5 per cent during the post-bellum generation, as against the 60 per cent just stated for the ante-bellum decade. It is also worthy of consideration that the States of Kentucky, Louisiana, Mississippi, South Carolina and Tennessee contained a smaller foreign-born population in 1900 than in 1860. In these five Southern States the aggregate number of people of foreign birth was 46,137 greater five years before slavery was abolished than it was thirty-five years after. It is significant that during the period of this decline in the actual number of foreign-born white persons in these States, there was an increase of 1,386,421 negroes.

As between the economic condition of the South and other sections of the country, I believe that practically all, certainly the far greater part, of such differences as once existed and do now exist, aside from such as are inherent in soil and climate, were and are embraced in differences of population.

It is population which creates the artificial differences between a prairie-dog village on a barren waste in 1800 and a city of two millions on the same spot a century later. In less extreme illustration, but no less true, it is population which lies at the foundation of the artificial differences of economic and social conditions between a Southern state with a density of 10.5 persons per square mile and a New England State with a density of 21. It is physically impracticable to develop a successful rural public school system in a thinly settled country district in which the children are few and scattered, whereas it is entirely feasible in a section thickly populated. Yet how much easier and simpler it was for the traveler in the South in 1859 to charge the absence of rural schools to slavery, as the most obvious and novel feature of the landscape to the stranger, than to go to the real root of the matter and ascertain what were the actual controlling differentiating factors between the sections or the countries which he was contrasting. Charles Dickens sinned as greatly against the light and against common sense in criticizing and ridiculing America in contrast with England in 1842.

In 1830, a generation before the Civil War, the aggregate population of the Southern States was 6.4 persons to the square mile. At that time the density of the Central States was much less than the Southern, being but 3.6. In the same year New England averaged 31.5 persons to every square mile of its area. The Central

group gained so rapidly on the Southern that at the end of the next decade, in 1840, their density was only .3 less than the latter, being 7.5 and 7.8 respectively. At no time since have the two been as close together. The New England States in 1840 had a density of 36.1. In 1860, New England had increased to 50.6 per square mile, the Central States to 20 and the Southern, Texas having been annexed, to 12.5. The density in the South at the outbreak of the Civil War was 19 per square mile less than that of New England thirty years before. Yet men wrote, and still write, as if all the ante-bellum differences of development and growth between these two sections were solely attributable to the existence of slavery, per se, in one of them, and its nonexistence in the other.

The census of 1900 showed a density of 90.2 persons in New England, 51.5 in the Central group and 27.4 in the Southern Group. In other words, the aggregate population of the territory embraced within the Southern States in 1900 averaged 4.1 fewer persons per square mile than the population of New England averaged in 1830, seventy years before. The excess of density of New England over the South had increased in this seventy years from 25.1 persons in 1830 to 62.8 in 1900. The excess of the Southern over the Central group of 2.8 in 1830 was converted in 1900 to an excess of 24.1 in the Central over the Southern, and these figures are for the aggregate population of these groups. The differences are greatly increased if we consider their respective white populations alone. A statement of the respective densities by races also sharply emphasizes the numerical insignificance of the negro population in the New England and Central groups. With an aggregate density of 31.5 in 1830, New England's white density was 31.2. The aggregate and the white in the Central States was 3.6 and 3.5 respectively. In the South the total was 6.4, which fell to 3.9 with the negro eliminated. In 1860, New England's total of 50.6 remained 50.2 for the white; the Central's total of 20 was 19.6 for the white; the South's aggregate of 12.5 fell to 7.8 for the white. In 1900, the total negro and white densities, respectively, were for New England, 90.2 and 89.2; for the Central States 51.5 and 50.5; for the Southern 27.4 and 18.4.

This difference of density, both total and for whites only, suggests another important though wholly ignored consideration as between the South and other parts of the country, and one with which slavery was not concerned. We must go below the surface of mere figures of population, and even beyond the analysis of distribution and density, if we would grasp the true significance of the figures themselves in their relation to economic conditions.

In 1874 Dr. Edward Jarvis, of Massachusetts, delivered a suggestive address on the "Political Economy of Health." He stated the truism that "the effective force of the nation is not represented by the total number of people, but by the number in the effective or producing age, and this is again qualified by the burden of supporting the dependent classes." He declared the strength of the state to be the sum of all its effective people, the strongest state being the one with the largest proportion of its people in "the sustaining period" of life, which he placed between the ages of twenty and seventy. He showed that in all the United States 49 per cent of the white population were in the sustaining period of life, with 51 per cent in the dependent class while 44.78 per cent of the colored population were supporters, against 55.22 per cent of consumers. He found a wide difference between the Northern and Southern States in this vital respect In Vermont the sustaining class was 53 per cent and in Massachusetts, owing, he said, to immigration in part, this class was 56.8 per cent. On the other hand, the sustaining classes in North and South Carolina were only 46 per cent, and but 47 per cent in Georgia. He said that the proportion of the sustaining class in Massachusetts exceded that of the white population of the Carolinas and Georgia by 38 per cent, while a comparison of the sustaining power with the burden laid upon it, showed the demand to be 50 per cent greater on the whites of the Carolinas, and 60 per cent greater on those of Georgia, than it was on the white population of Massachusetts.

There was probably no more eminent authority in the United States in his time than Dr. Jarvis, and I should hesitate to attempt to add anything to the value of his figures. But familiarity with the conditions of industrial organization in the South justifies me, in my own calculations, in changing the basis of comparison which he adopted. It seems to me fairer, and preferable, to make the inquiry on a basis of "wealth-creating," or "contributing," periods, rather than on an assumed self-sustaining period. Dr. Jarvis's maximum age limit of seventy years is sufficiently high for either purpose, but his minimum of twenty is not low enough for my inquiry. The necessity for agitation for child-labor legislation suggests that twenty years is too high a figure to adopt in such a calculation even in manufacturing states. In agricultural states it is certainly too high. This was peculiarly true of agriculture under the slave-labor system, a feature of which was that it provided some form of employment for nearly all ages. To be on safe ground, in studying the figures for 1860 and 1900, I have reduced Dr. Jarvis's minimum age to 15 years, and have considered such

wealth-creating period as from 15 to 69 inclusive. For purposes of comparison only, as between different parts of the country, the net results suggest that his conclusions would hold as well with fifteen as with twenty.

In 1860, of the total population of the United States, 57.9 per cent were within this contributing period; of the white population, 58.6 per cent fell within it; of the negro, 54 per cent. In the Southern States 55.1 per cent of the white population were in this period, as against 64.3 per cent of the white population of New England. Of Southern negroes 53.7 per cent were within these ages, as against 65.1 per cent of the negroes of New England. In New England 64.3 per cent of the total population were in this group, the same percentage as for the white population alone; in the South it contained 54.6 per cent of the total population.

In 1900, of the total population of the country, 63 per cent were within the potential producing period of life; in the New England States 68.7 per cent were within that period; in the South only 57.8 per cent. Thus the percentage in New England had increased from 64.3 per cent to 68.8 per cent while in the South it had increased from 54.6 per cent to 57.8 per cent. Of the white population of the United States in 1900, 63.7 per cent were within this period; with 68.7 per cent of the whites of New England, and 58.6 per cent of the Southern whites. Of the total negro population of the country, 60.5 per cent fell within these ages, while the percentages of the total negro in New England and the South, respectively, were 81.9 and 56.7.

We see here the effect of the immigration of both foreign whites and native negroes to the New England States. The former gave to these States a large population of men and women in the wealth-creating and sustaining period of life. The immigrant who left Europe was neither the dependent child nor the helpless old man. And therein lies the greatest potential economic value of that class of population. It secures to a state, a section or a country a people within the ages of greatest productive activity. The contrast between the negro population of New England and of the South is even more marked. It suggests the effect of the immigration from the South of negroes who probably were in the self-supporting ages, and who left behind both the old and the young as burdens upon the negroes who remained. And the difference was more pronounced in 1900 than in 1860.

But the true significance of such figures in a study of the economic life and development of the Southern States relative to that of New England, to continue to use these two groups in compari-

son, can only be appreciated when we adopt Dr. Jarvis's mode of expressing the burden which the dependent classes were upon the contributing. This was done with his figures by ascertaining the number of persons in the dependent age for each 1000 persons within the sustaining ages. These dependent persons constitute the dead load which the sustaining class has to carry. He did not compare the sections as wholes, but, writing in 1874, he showed, for illustration, that the "burden" on the white population of Georgia was 60 per cent greater than on the white population of Massachusetts.

Using our own figures, and comparing the dependents with the partly-sustaining or contributing group, we find that in the United States in 1860, for the total population, there were 728 dependent persons to each 1000 of contributing age. In the New England States the number of dependents was 554, or 174 less than the number for the entire country; in the South the number was 832, or 104 more than for the entire country. In comparing the white population of the country and of the two sections, the contrast is emphasized. In the United States in 1860 there were 707 white dependents per 1000 of contributing age; in New England 554; in the Southern States 815. This difference becomes even more marked in the case of the negro population. The number of dependents in this class was 851 for the United States, 539 for New England, and 862 for the South.

By 1900 there was a reduction in the proportion of dependents of both races, in all sections of the country. But the decrease was greater for other sections than for the South, and the difference of burden as between the total population of the New England and the Southern States, was slightly greater than in 1860. The proportion of dependents to 1000 contributing, for the entire population in 1900, was 587; for New England it was 454; for the South it was 729. For the white population the number was 571 for the whole country, 456 for New England and 706 for the South. For the negro population there were 649 in the entire country, 223 in New England and 762 in the South.

Adopting Dr. Jarvis's method of expressing this difference of econmic burden in percentages, we find that for the entire Southern population in 1860 the burden upon the wealth-producing portion was 50.2 per cent greater than the burden upon the same portion of the population of the New England States. Comparing the white population of the two sections the burden was 46.8 per cent greater in the South than in New England, while it was 59.9 per cent greater upon the Southern negro population than upon the

negroes of New England. The difference between the relative weights of this load, if I may so express it, had still further increased in 1900. For the total population it was 60.6 per cent greater in the South than in New England, and 54.8 per cent greater as between the respective white populations. The greatest increase, however, was on the negro population of the South, their burden of dependency being 241.7 per cent greater than that upon the New England negro.

The signifiance of these figures, in comparing the economic condition of the South with that of any other section, or with the country as a whole, it seems to me, can hardly be ignored if we would attach its true value to each factor which contributes to regional or sectional differences. It is apparent that immigration is partly responsible for the disparities which these figures indicate. How far climatic and health conditions are also responsible is simply another question which has to be answered, another problem for the student to solve.

For purposes of discussion we may admit the relative economic backwardness of the Southern States as compared with the Northern. There need be no debate over the matter of fact. The problem before us is that of locating the cause. This challenges consideration of another question which we shall some day have to answer, no matter how long it may be obscured and postponed. This is: Was the fundamental difference between the economic development and history of the Northern and Southern States, respectively, down to 1861, a difference between two *systems* of labor, plus the natural differences of physiography, or was it a difference between two *classes* of labor, plus the factor of physiography? In shorter terms: was it a difference between free and slave labor, or was it a difference between white and negro labor? How much of that difference was due to slavery, and hence was of institutional responsibility, and how much was due to the negro, and hence was racial?

No writer on ante-bellum Southern conditions, in so far as I now recall, whether considering their concrete manifestations only, or discussing the abstract cause of such manifestations, ever took account in specific terms of the factor of race. From De Tocqueville to Olmsted and Cairnes and the post-bellum school, they constantly confuse racial status with race, and thus fail to differentiate between negro slave labor and white free labor. In its last analysis the economic argument of these writers was an attempt to establish the hypothetical dictum of Adam Smith, that the physical productivity of a man or group of men must

necessarily be greater under a system of voluntary labor than under a system of controlled labor. In doing this they entirely ignored the economic force of racial differences. Their arguments and methods were probably justifiable as part of a social and political propaganda. But we can neither follow the one nor adopt the other in treating the question forty years after their object has been accomplished, and with an entirely different purpose in view. When these writers ignored the factor of race, and all but disregarded that of natural physical conditions, they ignored the only permanent elements in the Southern economic situation—the only factors sufficiently persistent to constitute an element of continuity in Southern economic history.

The negro was a negro before he was a slave and he remained a negro after he became free. I recall no sound economic argument against slave negro labor per se (aside from the system of slavery) which is not to-day equally as sound against free negro labor, per se. There is scarcely a passage in the writings on the economics of slave labor which would not be rendered more accurate by substituting the word "negro" for the word "slave." Hinton Rowan Helper is one of the mainstays of anti-slavery economists and historians. Yet I have never known one to quote the post-bellum statements which indicated the main purpose of his opposition to slavery to have been his desire to see the South rid of the retarding presence of the negro.

I believe that the only economic indictment which will hold against what is popularly called "slavery" will finally lie against the slavery system and not against slave labor. Though apparently hopelessly confused, the two are economically easily distinguishable. This distinction I suggested in the opening of this paper. Convict labor in 1907 is as much controlled labor as slave labor was in 1860. Convict labor may or may not be efficient in the manufacture of shoes in Massachusetts or in the growing of cotton in Mississippi. That is a question of fact. But however it may be decided, we do not have as a necessary corollary any valid conclusion whatever as to the effect upon the general economic welfare of either State of such a system of convict employment. The primary productive efficiency of a given class of labor under a given system of control is one thing; the larger economic results to the community or commonwealth of a general adoption of such a system is quite another and one in which the question of the orginal cost of the controlled labor is an element of first importance. The difference between the two is the difference between "slave labor" and the "slavery system." The slavery system was a

temporary expedient for controlling and directing a certain class of labor. The system has disappeared, but the labor remains, and must be taken account of in the economic life of the South and of the country.

Second only to the erroneous conclusions into which we have been led through the confusing of slave labor with negro labor, and the failure to recognize the continuity of the influence of the latter factor in Southern economic history, are the fallacies arising from the failure of historians and economists to recognize the importance of the white factor. "Slavery" has loomed so large upon the horizon of Southern history that apparently it has obscured our view of both the negro and the white man. Cairnes laid down the proposition that the existence of slave and free labor in the same community was "a moral impossibility . . . precluded by a cardinal feature in the structure of slave societies." He therefore disposed of five million white laboring people in the Southern States by consigning them to "a condition little removed from savage life," to use his own language. Yet what was theoretically a "moral impossibility" to the closest philosopher in Dublin, was a stubborn fact of everyday experience in the States which constituted the field of his over-sea speculations.

One of the chief problems before the student of Southern history is that of determining this question—the part played by white labor in Southern economic life. The evidence is clear enough that the white laborer's share in that life was far greater than was once supposed, but investigation has thus far barely touched the surface of the field. As yet we know only enough to know that white labor furnished a considerable percentage of the Southern cotton crop before 1861, just as we know that it is producing a heavy percentage of the same crop to-day—now probably more than one-half. We do know that the Southern industry which has made the greatest advance since 1870, the manufacture of cotton, is wholly dependent upon white labor for its development. We also know that the State which has exhibited the most remarkable increase in the production of raw cotton is the State which, above all others in the South, is dependent upon white labor for its growth. This is Texas, in which most of the cotton is grown by white labor, which contains the smallest percentage of negro population of any of the cotton states, which in fact calls itself a "white state," and which in 1906 produced more cotton than was produced by all the Southern States combined in 1860.

I have suggested that in discussions of slave labor per se, we might substitute the word negro and make a sounder argument.

It is strikingly true that in pointing out the great economic advantages of free labor over slave labor, ante-bellum writers were simply contrasting white labor with negro labor. Their arguments are good to-day if we only substitute the word "white" for the word "free." In 1861 Mr. Edward Atkinson wrote a pamphlet to demonstrate that cotton could be grown to better advantage by free than by slave labor. His entire argument is based upon the superior results accomplished throughout the South, chiefly in Texas, by white labor as against the labor of negroes. He thought he was making an anti-slavery argument, while in fact he was simply giving unconscious recognition to the white factor, actual and potential, in Southern economic life. The title of his pamphlet was *Cheap Cotton by Free Labor*, which was misleading. It should have been "Cheap Cotton by White Labor."

But in riveting our attention upon slavery to the exclusion of all other factors in the South, we not only have failed to give credit to the Southern white laboring man, but we have also shifted wholly to an institution a responsibility which, if it is to be placed at all, should rest in large part upon the shoulders of another class of Southern white men.

If the white capitalist class devoted itself more to agricultural than to manufacturing or mining industries, slave labor should not be held to account. If larger use was not made of such labor, this was due either to individual judgment or to the fact that slave labor was negro labor, or to the slavery system, or to all combined. It cannot successfully be charged to the mere status of the laborer. Again, if the white planter did not require his slave labor to keep up his property, it was his fault and not that of either the labor or the system. Probably the most untenable argument ever urged against slave labor or against the slavery system was the popular one that it was responsible for the wasting of the soil. That was a common charge against all pioneer agriculture. Professor J. F. W. Johnston, probably the most scientific English student of agricultural economics who ever visited America, made precisely this charge against the wheat farming methods of New England and New York in 1849, which he described as "scourging the earth." He also declared that the white farmers in that section were growing corn after the same methods followed by the Indians two centuries before. Edmund Ruffin exposed the fallacy of the argument of the responsibility of slave labor for soil exhaustion in 1852. The two were related only in the respect that slave labor, being under control, could be handled with greater facility in all agricultural operations. It could as easily have been used in build-

ing up the soil as in wasting it, as was demonstrated time and again in localities throughout the South, and particularly in the agricultural revival in lower and middle Virginia. The "run down," impoverished, and generally dilapidated appearance of most Southern plantations to-day, under free negro cultivation, should suggest that slave labor was not responsible for similar conditions fifty years ago.

I have suggested that in the matter of the course of immigration away from the South, the presence of the free negro since 1865 is as much entitled to consideration as a contributing cause as was the presence of slavery before 1861. But it has often occurred to me to question how far the South really desired foreign immigration before the Civil War. It is not possible to sustain the contention that the tide of immigration could have been turned positively to the South, or that the immigration which entered America through Southern ports could have been induced to settle permanently on Southern soil. It is none the less true, however, that the attitude of Southern white people toward the question of encouraging immigration, as a matter of public policy, is still an undetermined factor in its influence upon an economic condition heretofore ascribed wholly to the existence of slavery. This is equally true of the situation to-day. It may be answered that after all slavery was responsible, in that it influenced Southern public opinion on the matter of state or local aid to immigration. Certainly this is true of the presence of the negro in influencing the attitude of many Southern people to-day. Here again we have the persistence of the racial, the negro, factor in Southern economic conditions long after the passing of slavery. Many thoughtful people in the South are unwilling to run the risk of complicating their existing racial difficulties through the addition of a foreign element to the population. Indeed, it is safe to say that the only positive opposition to immigration which exists in the South is based upon this fear.

Finally, much might be said of the factor of physiography. Though too prominent to be wholly ignored, it is seldom given its proper weight. In the chapter on the Colonists and the Inferior Races in his last volume on *The English Colonies in America* (p. 243), Doyle says: "There is no feature of Colonial history with which moral and sentimental considerations have so closely combined themselves as the question of slavery. Yet there is hardly any which has been so largely determined by physical causes . . . so little by the deliberate volition of men."

The importance of such physiographical considerations in

influencing the course of political and social history is nowhere better illustrated than in the economic history of Virginia. That State was dismembered and the State of West Virginia created purely as a political measure. But the economic aspect of that transaction lies far deeper and beyond the political events of 1861–1865. The foundation for the latter is grounded in the facts of Virginia economic sectionalism—the barriers created by nature in the western part of the State against the slavery system as it was organized at the time. All the artificial conditions within the State—laws, dominant policy, political considerations—necessarily applied to the State as a whole, at least in so far as they could override physical obstructions. Yet in the counties of western Virginia the negro population decreased 1.8 per cent in number between 1840 and 1860, while it increased 10.6 per cent in the rest of the State. During the same period the white population of the West Virginia counties increased 75.1 per cent, while that of the other counties of the State increased but 28.6 per cent.

Thus were natural laws operating to divide slave labor from free, black population from white, and laying the foundation for the white state which was carved out of a black state in 1862. And thus Virginia in 1861, within the limits of her own economic sectionalism, epitomized and typified the larger economic sectionalism of the country as a whole, which had made possible the political sectionalism which in turn probably rendered inevitable a civil conflict at some period in our national development, whether it came through slavery or the tariff. As a result of the play of purely economic forces there was created in a Southern slave State a State just as thoroughly dedicated to "free labor," just as truly "free," as was any in New England. The same forces which made the North a white labor country had by 1861 cut the Southern States in part with a chain of white counties, which extended from the Pennsylvania line practically unbroken to the Mississippi River in Tennessee, to the Gulf of Mexico in Alabama, and to the Atlantic Ocean in Georgia. These same forces operate today, and in their processes we may read an explanation of much which we have formerly attributed to purely human or artificial agencies, rather than to natural laws.

In trying to reach the real causes which underlie the relative movements of negroes and foreign born—I mean the fundamental, persisting causes—we must be impressed with the force of conditions for which slavery was and is in no wise responsible. Here the study of the influence of comparative physiography assumes more than local importance. Though not within the province of this

paper, I venture the suggestion that one of the most important studies yet to be made in the field of American economic history is that of the significance of the relative similarity of American and European physiographic conditions in affecting the course and final habitation of the millions which Europe has contributed to the upbuilding of various regions in America, outside the South. In this connection, we may glance at the relative physical situations of our negro and foreign-born populations forty years after the passing of the institution which was once supposed to exercise almost absolute control over their respective movements.

How far racial antipathy and the presence of the negro were responsible, I shall not consider here, but certainly it was not chance and it was not slavery which in 1900 so distributed our population that while but little more than one-fifth of the total and less than one-sixth of the foreign born lived between 100 and 500 feet above sea level, nearly one-half of the negro population lived between those altitudes. The percentages were 21.8 per cent of the total, 15.5 per cent of the foreign born, and 48.2 per cent of the negroes. These percentages, furthermore, decreased between 1880 and 1900 for both the total and foreign born, while that of the negro showed an increase. And it should be borne in mind that differences of altitude are not dependent on sectional or geographical lines. Some of the highest peaks east of the Rockies are found in the Southern States.

So also with the movement when tested by distribution according to technical physiographic regions. The distribution of negroes shows an almost complete reversal of that of the foreign born. Of the latter 28.2 per cent live in the New England hills region, which contains but 1.5 per cent of the total negro population. On the other hand, 41.1 per cent of the negro population lives in the coastal plain region, which contains but 1.7 per cent of the foreign born.

In measuring the influence of temperature and rainfall, we find still further confirmation of the other results. In 1900, more than three-fourths (76 per cent) of the foreign born lived in regions in which the mean annual temperature was between 45 and 55 degrees, more than seven-eighths between 40 and 55 degrees, and more than one-half between 45 and 50 degrees. Negroes, on the contrary, are found to be most numerous between 60 and 65 degrees (37 per cent), while 83.7 per cent of the total negro population lived between 55 and 70 degrees. Between 1880 and 1900 the foreign born drift was toward lower temperatures, while that of the negro was toward higher.

The distribution according to mean annual rainfall showed that 82.6 per cent of foreign born lived in regions with a rainfall of from 30 to 50 inches, while 90.8 per cent of the negroes were found where it lay between 40 and 60. Only 1.6 per cent of foreign born lived where the rainfall was from 50 to 60 inches, and this proportion showed a declining tendency. Between the same limits of rainfall there lived 60.1 per cent of the negro population, and this proportion had steadily increased since 1880.

I submit these considerations with this reflection: It seems to me that a final recognition of the far-reaching influence of the play of natural economic forces suggests a broader view of Southern history. In this larger view we may see in the phenomena of Southern economic life the operation of a human nature common to the white population of the entire country, acted upon by economic conditions largely of nature's own creating, rather than a mere manifestation of pecularities incident to an artificial and a perverted economic growth. I do not mean to insist that any one factor which I have suggested is entitled to the weight which I, individually, might attach to it. I do believe that, taken in their entirety, they constitute a group of influencing causes which cannot properly be disregarded in any comprehensive study of Southern Economic history.

CHAPTER XV

AGRICULTURE AND THE SECTIONAL STRUGGLE

1. An Agricultural Interpretation of the Civil War [1]

* * * * * * * * * * *

We are usually told that the nation went to war over the question of slavery. True, on the surface. But, when one begins to analyze that slavery, to which one-half the nation objected so strongly, and for which the other half went to the length of declaring war, one finds, beneath the phrases of the time, that not slavery but property in land was the real cause of the Civil War. It was not the three million negroes in chains, not the tortures of the Uncle Toms at the whipping-posts, or the thought of the Elizas running over the broken ice with the bloodhounds behind them that set the non-slaveholding whites so resolutely against the institution, but the fact that slavery meant large plantations and that they drove the small homesteader from the land. Even then the large landlord of the South might have traveled along peaceably toward the Southwest and the small homesteader toward the Northwest had not the sudden rise of railways brought the frontier close to civilization and thrust upon the people the problem as to whether the large or small property owner was to be the first to rush into these newly-opened Eldorados and claim them for his own.

Slavery, from the point of view of the slave, had very little to do with the American Civil War. The freed negro was not welcomed to the North as a competitor with free labor nor as a fellow property owner with his white neighbor. Slavery was objected to by the small homesteader only because he objected to the large landlord. True, the unskilled workers opposed slavery, on the ground that it degraded their labor and prevented their employment. But the unskilled worker was in a fair way in the fifties and sixties to becoming a small homesteader himself. He was not a laborer "fixed in that condition of life," to quote Lincoln. The skilled who worked in the cities and were "fixed in that condition" were in no way touched by the

[1] Rose Strunsky, *Abraham Lincoln* (New York: The Macmillan Company, 1914), pp. xv–xxxiv. Reprinted by permission of the author and the publishers.

problem and remained, if anything, hostile to an agitation of abolition. "We too are slaves," they said, "and we have not time to see to the liberation of others." Besides the alignment of forces between the large landlord and the small landlord there was an antagonism between the merchants of the East who desired a high tariff and the planters of the South who were free traders. But the more serious division lay in the West, and was fought over the control of the new territories that were about to be opened.

It was property then, and not liberty, which animated the American people in their struggle against the southern slave power. Yet it is typical of American democracy that the words liberty and property should have been interchangeable. The fact has a distinct potent significance in American history. With the riches of nature lying open and unexploited, the liberty to go out and acquire property was the main factor in American democracy, so that all through the country's history we see these successive risings of the many to power. Abstract French ideas of the rights of man were not lacking to sustain the people in what they called "the right to life, liberty and the pursuit of happiness," but these ideas translated meant for the American only the right of an equal economic opportunity to the bounties of nature.

The historic details which lead up to the crisis of 1860 have behind them the same significance—the struggle over property and the winning of the rights to property by the people—that is, by the many.

From the very beginning the approach of the Old World toward the New was only for exploitation and profit. Private monopolies were formed to hold her, which were followed by the monopolies of governments, but the onrush of numbers into the New World kept hammering down the most impregnable of special privileges. In the first years of exploration and colonization monopoly of the land was easy, but labor was difficult to find. The wild back lands gave ready room for the laborer to escape and slavery was resorted to as a means of tying him down to the soil. In those days slavery took no account of race or color. Native Indians, Negroes, indentured servants, company immigrants, all who could be impressed to work had to work. But the natives revenged themselves by massacres, the indentured servants and company immigrants escaped into the woods to acquire property of their own, and it was only the bewildered Negro who could be brought into this strange land and be kept in bondage forever by the brand of color.

The discovery of the black race in the same era which produced

the discovery of the New World helped to free the white man and the Indian from a serfdom which existed all over Europe at this time. If one could forget that slavery in America was based on color, the history of American slavery would become simple and readily understood. It was not at all an institution peculiar or indigenous to America, but was part of the problem of large landlordism which existed in Europe even long after the Napoleonic period.

Slavery, it is true, was intensified in America by the home governments in the interests of the home slavers, so that there was often an overimportation of slaves against which the large landlord in the colonies himself protested. "He has prostituted his negative," wrote Jefferson, indicting George III, "by suppressing every legislative attempt to prohibit or restrain this execrable commerce." He had indeed! But the legislative attempts on the part of the colonies were made much more to restrain than to prohibit the trade, for as long as tobacco brought $12 a pound in the London market slaves would be called for. It was the fear of servile insurrection and the fact that in the hundred years of colonization there were already enough slaves in Maryland and Virginia to build up an inter-colonial slave trade that caused the various attempts to place taxes on the importation of slaves—often enough disallowed by the Crown. However, so little were the colonists themselves against slavery that a prohibition against it in Georgia lasted hardly fourteen years. The colony was founded for military purposes, and therefore large landlordism and slavery were prohibited in the hope that a sufficient population of small landowners would settle and form an effective outpost against a Spanish invasion. But from the first the regulation against slavery was violated by "hiring" Negroes "for life," and finally by 1749 the restriction against slavery and large estates had to be annulled by the Board of Governors of the colony.

And yet at the very same time patriot parties were forming, and ideas of freedom were running riot. They were directed against old-world traditions of hereditary aristocracy and class privilege, and not against the monopoly of wealth. The large manorial estates of Maryland never attained any higher distinction than plantations, the theocracy of Massachusetts was early overthrown, primogeniture did not last many generations, and the wrenching of Home Rule from the Crown began long before the Revolution. "Liberty and Property" was the slogan of the American patriot. "Liberty to property" would have been more accurate. Nowhere in the world was property so general as it

was in the New World, and consequently nowhere was there so much liberty.

Who could keep the people back? There lay the treasure very much as it did in Ali Baba's cave. One had but to say "Open Sesame" and the treasure was one's own. How then begrudge one's neighbor? No wonder then that, in spite of the idealistic theories of freedom, the actual practice in government and in property control as laid down by the colonial governments and by the new Republic itself held contradictions and gaps which, from the point of view of statesmanship, are difficult to reconcile. No safeguard was thought of to prevent a collapse of the free society of the American patriot. To Ali Baba's supposedly inexhaustible cave was left the fortunes of that eternal freedom that was to reign in the New World.

* * * * * * * * * *

As to the matter of slavery, the Constitutional Convention politely and discreetly refrained from mentioning so painful a subject frankly. Slavery was not popular at the time. Louisiana had not yet been purchased, nor had the machine revolution begun, so that the institution seemed to be on the verge of extinction for want of space and use. In the legislature of Virginia itself, only a few years before the revolution, slavery had failed of abolishment by only two votes.

As early as 1774, in the first flare-up of revolution, three States in the association that was formed to boycott English goods—Rhode Island, North Carolina, and Virginia—mentioned slaves especially. It happened, however, that the slave markets were overstocked and it was to the interest of the planter to have an interim in which to extricate himself from debt to the merchants. As the boycott succeeded in the good work of causing the slave merchants in Liverpool to fail to the sum of £710,000, slaves became scarce in America and smugglers made fortunes. It is difficult to divide idealism from practicality.

However, the First Continental Congress, following along the ideas of the Association, went so far as to resolve to "wholly discontinue the slave trade." But the virtuous resolution meant nothing, for the strain of the war, which soon brought with it the problem of getting bread for the people, was too great for pure idealism to last long. In the second year Congress began permitting the importation of certain British goods, but held out against the slaves, this time in a temporary resolution, not in a promise as in the year before. . . . Thus, on the question of slavery, though South Carolina and Georgia were the only states

which still held a strong brief for it, the Constitutional Convention consented to formulate its plans of taxation and representation with the institution as an *a priori* condition. The North accepted the fact that slaves were property and even haggled over the tax on them. The South would have liked to consider them men as far as votes were concerned. A compromise was agreed upon by which the South paid a three-fifth tax on the slaves provided they had a three-fifth representation in Congress. The compromise was not at all as even as it sounds, for neither the North nor the South meant that the negroes were to have the suffrage or were to represent themselves. The South gained a reduction of their taxes on slaves and the power to count them as electoral material. Thus a man with a thousand adult male slaves might consider his plantation six hundred votes for Congressmen. Of course the planters with a thousand slaves were few. Even as late as 1850 there were only two whose slaves amounted to a thousand or more. The total number of slaves in the South at the time of the revolution was half a million. The North, in making the bargain, was not very much aroused over the existence of slaves—it was over the subject of the slave trade that the tug came. Here, they thought, lay the cause of slavery, never having known one without the other.

It was over the third bargain then that the country was stirred. Besides philanthropic reasons, there were practical ones for its hostility to the slave trade. The commercial interests of the East were very anxious to gain Navigation Acts and the privilege of enacting import duties. The steady increase in slaves might give the South, with its privilege of a three-fifth vote on its slave population, the preponderance of political power. The South, on the other hand, was bent upon denying to Congress any power to pass Navigation Acts except by a three-fifths vote, and refusing it the right to tax exports. It was finally agreed upon that the slave trade should be prosecuted for another twenty years, and that Congress be empowered to pass Navigation Acts. . . .

Yet the constitutional contradictions which bound the nation together were not of such an insurmountable nature after all. Lying inherent in this new land were factors which actually made possible the ideals of freedom and democracy. . . . As a guarantee of life and freedom to the New Nation the original thirteen states gave over to the Federal Government the keeping of the vast stretches of land to the West which had been theirs by the original charters. To this new Western world the people surged and built for themselves a free society. They had looked upon this land as theirs, even before the Revolution. One of the grievances against the king had

been the attempt to hold a monoply of these Western lands and to prevent emigration. But the valleys of the Mohawk and the Monongahela were being peopled by the mass of pioneers, and before a plan of government could be made for the nation at large, this West came demanding that some plan for its own organization be agreed upon. It had to live and grow and could not wait for bargains. The Northwest Ordinance had to be passed quickly, and when, in the parlance of the American, it was "dedicated to freedom," the immigrant and the Continental soldier, and the already disappointed farmer from the rocky New England soil, could, by pushing along the borders of Lake Champlain and by going down the Mohawk and Genesee rivers come upon rich land open to all. Though the land speculator was there ahead he could not disinherit them to the same degree as could the large landlord with his slaves.

True, the older states, watchful of their privileges, took advantage of their constitutional rights. Quickly South Carolina and North Carolina ceded strips of land to Congress, so that a Southwest territory that was slave soil might be formed to preserve the southern equilibrium in the New Republic. But the westward march of men kept increasing year by year, and the great converging highways led always to the North, from Kentucky, from Tennessee, along the Cumberland and the Ohio. Very early the population of the free North outnumbered the slave South. To maintain its power the South needed only land, not men. Tobacco, rice, indigo, cotton, these made new lands continually profitable. Besides a need for territorial expansion for its economic growth, it needed land for its political growth. Here came in for the South the value of the work which the framers of the Constitution had accomplished. The slave South kept creating as many states as the free North, so that despite the disparity in population a political equality could be maintained. So earnest was the South in its desire to enlarge itself that the slave States were almost invariably brought up for admission before the free, the latter generally following a year later. Before the year 1808 came, when the slave trade was actually abolished by law, Louisiana had been bought, the cotton gin had been invented, and the slaveholding emigrant of the Southwest found land and opportunity for his institution. By 1820 he had pushed himself toward the Gulf, had so intrigued and fought in Florida, that it was sold to him for a song by Spain, and was about to cross over the Mississippi and establish himself there. But there the dangerous rivalry began to be felt, and when Missouri was ready

for admission into the Union a two-years' struggle ensued in which were heard the threats of secession and the arguments for strict limitations of Congress which were to be the motifs of the great drama of 1860.

Though the Northwest and the Southwest were friends, the products of one going to the markets of the other down the great artery of the Mississippi, and though both were alike in a spirit of aggressive democracy, in a suspicion of central power and of class rule, their friendship could only last as long as there was no encroachment of the one upon the territories of the other. Already the plantation system in the South had extended from the tide water to the uplands. The non-slaveholding white was pushed into the barren sand hills and pine regions of the South, or, to extricate himself, was forced to migrate into the free lands of Indiana and Illinois. To permit slavery to cross the Mississippi was to permit it to exclude him from his right to the land for which he had defied the regulations of the central government and all the titles of the Indians. But with the characteristic constitutional mind of the American he made a bargain which, as bargains go, and with the future still undisclosed to him, must have seemed pretty well done after all. "There," he said to the slaveholder, "we will put a line (very far down, if you please) below which shall be slaveland, and above which shall be free." The line was 36° 30′, . . . the southern boundary of Missouri, and . . . left very little which was not already slave territory to be considered as such. The Northerner lost somewhat in the bargain by permitting Missouri, which had the institution already well established within it, to be admitted as a slave state. To preclude an overbalance in the nation, Massachusetts ceded her western lands, and Maine was created, free of course. Thus in the Union, in 1820, there were eleven free states, and eleven slave states, and, west of these, what is known as the Missouri Compromise Line, which seemingly left very little more to slavery toward the south and gave a vast tract of land leading up to the Canadian border to freedom.

This would not have been so bad a bargain between brothers who understood one another and were really friends at bottom, had not the miracles of the future come in such numbers and in such quick succession. The Compromise of 1820 came when the transition era was hardly a decade old and its import was not yet felt. Steam appeared upon the Northern waters in 1811 and by 1820 there were already two and a half million souls in the trans-Allegheny States, while the older slave sections remained almost stationary. The rush westward kept increasing. In 1820 land could

be bought in lots of eighty acres at $1.25 an acre instead of as heretofore, in one hundred and sixty acre lots at $2.00 an acre.

The constantly-improving transportation not only sent the emigrant westward in increasing numbers, but created an internal commerce of a wide radius. The surplus production was sent down the Mississippi and along the roads of the East. Pork, flour, tobacco, whisky, the raw materials of primitive agriculture, but to the value of many millions, were the products of this vast colonial society. It needed money and it took to itself the right of banking, destroying the National Bank through its first emissary into the National Government, President Jackson; it needed internal improvements and it took the revenues of the Government, supplemented them with the paper currency and promissory notes of its own States, and went into the business of better transportation; it needed home markets and it created for itself the "American system" of tariff protection, under which the young industries of the East joined with the infant cities of the West.

Had there been no possibility of land expansion in the very noonday of their power, the democracy of the Northwest and the democracy of the Southwest could have traveled along side by side, growing toward an adjustment to each other without much regard to the problem of negro slavery. But the very factors which drew the Northwest and Southwest together for a score of years separated them in the succeeding score. By 1840 a new South and a new North were in existence. The marvellous inventions in cotton machinery and the improved transportation had turned the South into a homogeneous whole. Though the plantations shifted toward the Gulf States, the tide water States became the slave-breeders for them, and a strong feeling of solidarity resting on a mutual interest existed in this section.

What is known as the Cotton Kingdom arose, which, alert and self-conscious, no longer apologized for its "peculiar institution," but justified it economically, politically and morally. Its whole social order was arranged and specialized to feed its one great industry—cotton. The slaveholders did not compose more than one-sixth of the white families of the South, but they knew the art of class-rule and successfully dominated their section. . . . Thus it had a united oligarchy which stood ready and on guard to further its interests or prevent attack from opposing forces. "The South" became a term in politics to denote an almost separate national entity, and so while development in the North was manifold, development in the South was single. Even the railways, which produced so extraordinary a growth in the North, and were a factor

in its unification, were made use of in the South only as a means to bring cotton to the rivers. By 1860 three parallel lines of railways were running, though intermittently, from the coast to the Mississippi. But it was not until late in the fifties that the lines had begun to be laid, and the through line from Charleston to the river was not completed until two years before the war.

In the North they crossed and recrossed themselves, forming a network which lay spread from the Great Lakes to the Ohio, and reached to the edge of the Atlantic. By 1860 they looked very much like a spider's web, whose threads were joined to rivers and towns and farmlands. As they developed the land intensively they kept continually pushing the frontier line farther away. Development for the North meant land and citizens, for the South land and slaves.

* * * * * * * * * * *

From the annexation of Texas there followed the war with Mexico, also undertaken for the purposes of slavery, but ultimately to accrue to the advantage of the stronger force—the free States. The North supported the war with men and money, . . . It tried to keep the lands to be won by the war with Mexico for itself by a proviso which sought to apply the Northwest Ordinance of 1787 to them and thus keep them free soil.

But the South became wary and shrewd. It evolved two policies, one for the administration which was frankly pro-slavery, the other for the people which hedged. "Slavery," it said to the people, "was not the issue before the nation, but the right of the individual settler to the choice of any institution he saw fit to establish." It played to the inherent distrust of central government felt by the Westerner. State rights and limitations of Congress were again urged despite the fact that it was the Democracy of the South which used the powers of State, the Supreme Court and the Administration to further its ends. This theory of popular sovereignty, as it was called, saved the Democratic Party for another ten years, for with the persistent alignment of new forces the old political parties of the country had soon to go.

The Whigs, the party of Conservative business interests and commerce, of tariff and protection, the inheritors of Hamilton and Adams, could find no such happy solution as "popular sovereignty," and were soon to be wrecked before the great obstacle of slavery. A new party entirely was being born in the forties, based frankly and squarely upon the true issues before the growing country. This was the Radical Free-soil party of the West, whose

one cry was, "A free soil for a free people." It offered no theories of abolition of slavery, and was not concerned with it as was the philanthropic Liberty Party of the East. It was concerned only with the problem of holding the new land for itself. Its ranks were made up of disaffected Whigs and Democrats. The Free-Soilers were ultimately to join with the Liberty Party and create the party of the Republicans, whose conservative but practical platform of the nonextension of slavery into the territories was to sweep the North in 1860.

But before this event could take place, the American spirit of Compromise was again to be invoked. When the question of organization of the new territories acquired by the Mexican War actually came up before Congress—territories equal in size to all of Eastern Europe put together—the new Democratic theory of popular sovereignty was incorporated. New Mexico was organized without any restriction to slavery, and without the Compromise of 1820 being applied to it. On the other hand the democratic policy of administrative control was far from being abandoned, and a new stringent fugitive Slave Law was passed which almost forced the recognition of the institution by the free States.

But popular sovereignty, even when manipulated by administrative control, could not be forced to act in favor of a class and against the interests of the people to whom sovereignty is given. Already by 1849 California was sufficiently peopled by the rush to the gold diggings to form a State and to demand admission into the Union on an absolutely free basis, . . .

For the doctrine of "popular sovereignty" to accrue to the benefit of its promoters it was necessary that the sovereign people themselves be slaveholders, or at least that the new lands to be acquired be suitable for slavery, so that the institution could be easily planted and would take root quickly. Here too the alert and eager Cotton Kingdom developed two policies: one was the acquiring of lands to the south, the other was the peopling, with slaveholders, of the territory next to be admitted into the Union. The Democracy cried loud that the "Manifest destiny of America" needed Cuba, Central America and Mexico. But much as the Administration helped with its Ostend Manifesto, with the fomenting of insurrections, and with Walker's filibustering expeditions, the day for territorial aggrandizement toward the South in the interest of slavery was over. The North and Northwest stood watchful.

The last expedient before the final breaking away was then attempted. The Missouri Compromise Line of 1820, which had been placed across the Louisiana purchase, was repealed (annulled,

the Democrats said, by the Compromise measures of 1850, which had failed to apply the Line), and the test of "popular sovereignty" with the attempt to supervise the type of settler to be given sovereignty was inaugurated in Kansas and Nebraska—the regions thus opened. Civic-minded Southern gentlemen funded societies for the emigration of slaveholders and settlers in general who would promise to hold Kansas, the immediate territory in question, for slavery. But it was a precarious matter, bringing slave property to a region unstable in its protection of it. The best that could be done was the pouring in of transients for a day who would do their duty at the polling booths and then return to their homes.

Here the North obviously had the advantage. On its part emigrant aid societies were formed which sent in *bona fide* settlers by the thousands, whose property lay secure in their own labor and who came to claim the land for themselves and not for a class. The test of "popular sovereignty" was a test between the classes, and the people won. For two years civil war reigned in Kansas. Troops were sent in by the Administration to take the side of the Southern democracy, blood was spilled, but Kansas came forth from the clash of interests a free State.

The South felt itself too strong and vital to be beaten. It snapped its Democratic Party in two with its hedging theories of "popular sovereignty," and came out boldly for the recognition of slavery in the territories and the protection of it by the Federal Government. Upon the sea of this divided Democracy the Republican Party rode into power, and Abraham Lincoln, its candidate for President, was elected as the executive of the people's will. The course of the Republic was again to flow along the ideals and doctrines which first animated it. The meaning of the framers of the Constitution was studied. The principle of economic opportunity for all was again asserted and in the name of the fundamental laws of the country the new President entered upon his duties.

But the South, unable to control the government constitutionally, made a desperate attempt to control it by force. A union of eleven slave States was formed, secession proclaimed and a new Republic based on landlord and slave established. "The irrepressible conflict" had begun, for by virtue of the territories won, and the development of industries and transportation the United States of America by 1860 was a nation. For four bitter years the conflict raged over a battlefield colossal in size. It was a revolution, a struggle of the people for the maintenance of their rights against vested interests. . . .

2. Wheat *vs.* Cotton [1]

* * * * * * * * * * *

It is the aim of this paper to emphasize the fundamental significance of wheat and cotton in the study of Anglo-American relations during one of the most critical periods of our history: the period of the Civil War. In essaying this task it is proposed: first, to determine the extent to which Great Britain was economically dependent on the American supply of these two staple commodities while the North and South were engaged in civil conflict; and, second, to inquire how far this double dependence on America was recognized when intervention in behalf of the Confederacy was most seriously threatened. It will then be possible to estimate the relative influence of these factors in determining Great Britain's official attitude toward the Union and Confederate governments.

The Confederacy was dependent upon the outside world for many of its necessities. The first problem of the Union government therefore was to cut off the commerce of the South and then exhaustion of the Confederacy would be only a matter of time, whereas, with commerce open, the war would continue indefinitely, with strong chances that the Confederacy would ultimately be victorious. The maintenance of the blockade proclaimed by President Lincoln on April 19, 1861, depended: first, upon the efficiency of our navy; and second, upon the neutrality of foreign nations. The policy of the Confederacy, on the other hand, was to break the blockade: first, by the use of privateering vessels; and, second, by the aid of European intervention.

To accomplish the latter object the South possessed, as it believed, an effective economic weapon: namely, the cotton monopoly which, together with the promise of free trade, would enable it to secure Great Britain's interference in its behalf. The Confederacy, therefore, immediately endeavored to make effective use of this weapon, by prohibiting the exportation, and indeed ordering the destruction of, cotton in order that it might bring pressure upon the industrial classes and through them upon the governments of Europe. Moreover, while attempting to secure foreign intervention, the Confederacy endeavored also, in violation of the neutrality laws of foreign countries, to purchase fully equipped iron-clad ships abroad for the destruction of Northern commerce. Inasmuch as Great Britain was the great cotton

[1] Louis Bernard Schmidt, "The Influence of Wheat and Cotton On Anglo-American Relations During the Civil War," *The Iowa Journal of History and Politics*, Vol. XVI, No. 3, July, 1918, pp. 402–439. Reprinted by permission of The State Historical Society of Iowa.

importing and manufacturing nation of the world and the course of other nations would be largely determined by its official attitude, attention should be given primarily to the attitude of this country toward the two belligerents. Great Britain's relation to the cotton kingdom will be first considered.

Influence of Cotton on Anglo-American Relations

The rapid growth of cotton manufacturing in Great Britain is one of the most remarkable chapters in the history of industry. Introduced into England in the early part of the seventeenth century, this industry was still in its infancy when the American colonies established their independence. The industrial revolution marks the sudden rise of cotton to first place in the manufacturing of textiles, thus superseding wool which had ruled British industry since the Middle Ages. Cotton production was stimulated throughout the world, particularly in the United States, and British imports rose rapidly from an annual average of nearly 7,000,000 pounds for the years from 1776 to 1785 to 56,000,000 in 1800, and 152,000,000 pounds in 1820. By 1841 cotton imports had increased to 488,000,000 pounds and in 1861 the high figure of 1,391,000,000 was reached. The cotton manufacture of Great Britain quickly rose to such importance that by 1846 the British government, by its formal adoption of the policy of free trade, recognized the cotton industry as the principal business of the country. J. R. McCulloch wrote in 1850 that the industry offered "an advantageous field for the accumulation and employment of millions upon millions of capital, and of thousands upon thousands of workmen! The skill and genius by which these astonishing results have been achieved, have been one of the main sources of our power: they have contributed in no common degree to raise the British nation to the high and conspicuous place she now occupies." This able authority estimated that 542,000 people were directly employed in the different departments of the manufacture of cotton. If to these are added the workers engaged in the construction and repair of machinery and buildings required to carry it on, the cotton industry furnished subsistence for 1,000,000 to 1,200,000 persons, not counting old and infirm persons and children who were dependent on those directly employed.

The following decade witnessed the most marvelous growth of the cotton industry. The extension of the cotton plantations of the South, improvements in transportation and shipping, the

accumulation of capital, the concentration of population in the great industrial centers of England, and the development of the market for cotton textiles: all combined to stimulate the manufacture of cotton textiles and to accentuate Great Britain's economic dependence on this industry. In 1860 Great Britain had 2,650 cotton factories containing over 30,000,000 spindles and 350,000 looms run by 300,000 horse power. "The cotton manufacture," according to *The Economist*, "from the first manipulation of the raw material to the last finish bestowed upon it constitutes the employment and furnishes the sustenance of the largest portion of the population of Lancashire, North Cheshire, and Lanarkshire, of a considerable number of Derbyshire, Leicestershire, Nottinghamshire, and Yorkshire and of scattered industries in several other parts of England, Ireland and Scotland." Using McCulloch's estimate of 1850 as a basis, this journal concluded that "if we take into account the subsidiary trades and occupations, coal mines, machine workers, etc, and add all the unemployed families of the workmen," it was safe to conclude that nearly 4,000,000 persons were dependent for their daily bread upon the cotton industry.

The bearing of these facts on the study of Anglo-American relations during the Civil War can readily be understood when we come to consider the extent to which Great Britain drew her cotton supply from the United States. During the four-year period, 1857–1860, inclusive, the British consumption of cotton amounted to 9,062,700 bales, of which 7,140,000 bales, or 78.8 per cent, came from the United States. During the year 1860, which was a normal year, imports totaled 3,365,700 bales, of which 2,580,700 bales, or 76.6 per cent, were imported from the United States. The remainder, or 785,000 bales, came from other countries: the East Indies furnishing 16 per cent, and Egypt, Brazil, and the West Indies supplying in the main the other 7 per cent. It will therefore be seen that Great Britain's supply was drawn almost entirely from America and that a vast population was dependent for a living on the cotton industry. These are the facts which explain why the South attached so much importance to the cotton monopoly. It was firmly believed that Great Britain was so wholly dependent on American cotton that in the event of a war between the North and the South, England would interfere in behalf of the latter to keep open her source of supply; and that intervention would in turn precipitate a conflict between Great Britain and the United States which would insure the triumph of the Confederacy.

The establishment of an effective blockade of the Southern ports by the Union navy suddenly threatened the English manufacturers with a cotton famine. Importations from America declined from 2,580,700 bales in 1860 to 1,841,600 bales in 1861, and to only 72,000 bales in 1862, in which year the cotton famine reached its height, though it continued well into the year 1863. The average Liverpool price for middling uplands cotton increased from 5.97 pence per pound in 1860 to 18.37 pence in 1862, and finally reached 27.17 pence in 1864. Mills were stopped, cotton operatives were thrown out of employment, and 500,000 people were dependent upon public charity. Relief contributions poured in from India, Canada, Australia, and also from New York City; while the sum of $12,000,000 was distributed among the distressed.

It was in the midst of the cotton famine that there appeared to be real danger of intervention. The hope that the war would be of short duration was dispelled, and the manufacturing and commercial classes clamored for recognition of the Confederacy in order that the struggle might speedily be brought to a close. Lord Palmerston (Prime Minister) and Earl Russell (Minister of Foreign Affairs) seriously considered recognition. Parliament took up the cotton situation and debated the feasibility of recognizing the independence of the Confederacy. Recognition implied intervention and the breaking of the blockade, which would release American cotton for shipment to England, and thus relieve the distressed mill owners and operatives and bring about a general mercantile trade revival.

Lord Campbell argued in the House of Commons that recognition would be of interest to the cotton manufacturers. He stated that it had been reported to him by credible authorities that the Southern planters had during the previous year begun to grow cotton in anticipation of recognition and that they had plowed it under when their hopes expired. He contended, therefore, that the first and most important reason for acknowledging the independence of the Confederacy was the Lancashire distress, which would experience no relief until cotton rose in abundance and fell in price; and that result, he said, could hardly be expected to occur until the end of the war. In reply to the argument that the deficiency should be supplied by encouraging the production of India cotton, Lord Campbell declared that "no man, conversant with political economy, supposes that cotton crops will start into existence in other portions of the world while an avalanche of 4,000,000 bales impends upon the market from America."

The Marquess of Clanricarde attacked the legitimacy of the

federal blockade of the Southern ports, basing his argument on the Declaration of Paris, which declared that blockades to be legal must be effective. He read a letter from a merchant of Manchester stating that the American blockade had been run by four ships, which in less than four months had made seventeen successful journeys carrying in 120,000 pounds sterling worth of British goods and taking out 200,000 pounds sterling worth of cotton. One steamer alone, it was reported, had run through the Charleston blockade with a cargo of 1,750 bales of cotton and 500 barrels of rosin. Mr. Russell dismissed this argument by reminding the Marquess that the United States had not ratified the Declaration of Paris, and that under similar circumstances England had blockaded "the whole coast of France, from Brest to Dunkirk; and when we were at war with America, we proclaimed a blockade of not less than 2,000 miles of coast; and if we ourselves held legitimate a blockade of 2,000 miles of coast, we should still . . . if we were at war with the United States hold that such a blockade was a legitimate one." Mr. Russell urged further that before taking any action it would be better to await developments in America.

The Parliamentary debate on the question of interference in the American struggle entered its final stage on June 30, 1863, when Mr. Roebuck introduced his resolution calling for the recognition of the independence of the Confederacy. In defense of this resolution, Mr. Roebuck argued: first, that a large portion of the population were "suffering in consequence of the cotton famine"; second, that the time had come for the recognition of the Confederacy because it had "vindicated the right to be recognized"; and third, that the Southern people were by the continuance of the war being driven to become a manufacturing nation, producing their own woollen, cotton, and iron manufactures, which would foster a protective system and thus destroy the market for British goods. On the other hand, intervention would be reciprocated by free trade and the British market would be retained. "The cry about slavery," he continued, "is hypocrisy and cant. We shall do no harm to the black man if we adopt my Resolution."

But recognition of the Confederacy was complicated by other questions. Russell defined the position of the government on the American question by explaining that England had never taken part in interventions, except "in behalf of the independence, freedom, and welfare of the great portion of mankind"; that no interests, deeply as they might affect England, would induce the government to interfere, except "in the cause of liberty and to promote

the freedom of mankind"; that England as the champion of free institutions could not afford to take any step which would involve the recognition and perpetuation of the institution of slavery; and that so far as he was concerned he hoped "with regard to this Civil War in America" that the government might be able to continue an "impartial and neutral course." Again, recognition of the Confederacy would constitute a plain violation of international law. This view of the question was well stated as follows by *The Economist* on July 4th, when the Roebuck Resolution was before the House of Commons:

> Two conditions, and two only, are necessary for a just recognition:—first, that the future existence—not only the present momentary life, but the indefinite future continuance of the new State—should be really and truly certain; next, that the recognising State has no sinister by-thought that warps its judgment. A recognition from partiality to the insurgents—a premature recognition while the existence of the seceding State is as yet insecure and unreliable—is a good casus belli to the residuary State against the recognising State.

The Economist went on to show that neither of the two conditions was applicable to the American question, and that recognition would therefore constitute a just cause of war on the part of the North against England. The writer further expressed his views as follows:

> As neutrals, we cannot recognise the Confederacy while it only *may* be independent, while its independence is only one event in a host of probabilities, while it is only in Paley's celebrated phrase, "one guess among many": if we do so, we help it to become independent; we make that particular solution of events more likely than it was before. As neutrals, we can only recognize a new State when it *must* be independent, for then we can neither aid the acquisition of that independence or prevent it.

Even if England did recognize the independence of the Confederacy it was "very dubious whether the effect of recognition would not be to prolong the war which it is sought to terminate. The most natural termination would be caused by the decline of the warlike spirit in the North, and the intervention of England would more than anything else excite and fan this spirit just when all other events and the evident diminution in the probability of success ought to weaken it."

"Mere recognition," continued the writer, "would, therefore, when the subject is examined, be a breach of international law,

without even the base merit of a corresponding advantage. It would not relieve our manufacturing districts. It we chose to intervene by war, to break the blockade, to create the 'South' as we created Belgium and as we created Greece, we should at least gain much. But the objections to this course are so many and so obvious that no one even proposes it."

But the recognition of the Confederacy was urged to be impracticable, not only because it would in all probability precipitate a conflict with the North, but also because there were more feasible methods for temporarily relieving the cotton situation until the American supply should become available. As early as January, 1861, *The Economist* called attention to the disastrous effects which civil war in America would have on the cotton manufacture and trade of Great Britain, but predicted that these effects would be reduced by degrees in various ways. In the first place, a great stimulus would be given to the already awakened activity of British merchants in procuring supplies of raw material from regions that were only then just beginning to be thought of, but from whence under sufficient pressure considerable quantities might within a reasonably short time be procured. India, Egypt, Brazil, Australia, the West Coast of Africa, and Asia Minor would be able to supply a considerable portion of the deficiency caused by the cutting off of American cotton. In ordinary times India alone supplied a considerable amount, as was shown by the cotton receipts of 1857, when this region sent 680,000 bales to England, other districts sending 255,000 bales. Under extraordinary pressure and inducements, India, Egypt, Brazil, and other regions would be able to supply a third more than in 1857, or about 1,200,000 bales, which would be equal to one-half of the total consumption (after deducting exports) in 1860.

In the second place, a considerable economy would at once be effected under the influence of the high rate of prices by a general tendency of manufacturers toward the production of the finer fabrics. This possibility was discussed as follows:

> Manufacturers who now use weekly 100 bales, could easily by turning to finer fabrics reduce their consumption to 70 or 75 bales . . . . "Domestics" as they are called, or strong cotton cloths and shirtings, and coarse yarns would be discouraged; and, as their price approached more nearly to that of linen and woollen fabrics, would be to a considerable extent superseded by them. This would cause an increase in the production of these latter articles, and a consequent increased demand for work-people; and by this process a considerable number of the hands thrown out of work in the cotton trade would

be absorbed and the suffering to the operatives, though not the loss to the masters, would be greatly mitigated.

These two measures for industrial relief received serious consideration as the cotton famine became more acute and the hope for an early termination of the war was abandoned. It was urged at considerable length that special encouragement should be given to the production of India cotton. But India cotton, known by its trade name as "Surat," was of an inferior quality as compared with the American product, while the cost of production, including transportation from the interior, was considerably higher. It could not, therefore, compete with the Southern staple. While India might be encouraged to supply the deficiency caused by the Southern blockade, English capitalists naturally hesitated to make heavy investments in India cotton fields; and manufacturers were reluctant to institute expensive changes in machinery for the utilization of the Eastern staple. They realized the fact that upon the termination of the war American cotton would in all probability regain its former position of supremacy in the British markets, and thus great financial losses would be incurred by investors in the India product.

The growing industrial distress, nevertheless, served as a stimulus for the gradual establishment of new and extended sources of supply. India in particular began to respond to England's imperative needs and to correspondingly higher prices for cotton. . . .While cotton imports from America declined, the imports from other countries rose rapidly from 785,000 bales to 1,445,000 bales in 1862 and 1,932,000 bales in 1863, finally reaching the high figure of 2,587,000 bales in 1864, which equaled the imports from the United States, or four-fifths of the total imports from all countries, in 1860. In the meantime, the industrial situation was further relieved by extension of the linen and woolen industries. Thus, while industrial distress still continued, business conditions improved materially, the number of people dependent upon public charity decreased, and the economic necessity for interference in the American struggle was felt to be less acute. At the same time, the destruction of American shipping gave Great Britain's merchants a monopoly of the trade which was rapidly developing in spite of the cutting off of the Confederacy by the Union blockade.

Finally, mention should be made of John Bright and Richard Cobden, who continually kept before the people the fact that their economic well-being, as well as the cause of democracy, would be promoted by the triumph of the North. These two

popular leaders addressed the masses in great gatherings on the cotton situation, and reminded them that the cotton supply of the South would be much better secured by free labor than by slave labor. Said Mr. Bright, in June, 1863:

> I maintain, that with a supply of cotton mainly derived from the Southern States, and mainly raised by slave labor, two things are indisputable: First, that the supply must always be insufficient; and Second, that it must always be insecure.—I maintain and I believe my opinion will be supported by all those men who are most conversant with American affairs—that with slavery abolished, with freedom firmly established in the South, you would find in ten years to come a rapid increase in the growth of cotton, and not only would its growth be rapid, but its permanent increase would be secured.—There is no greater enemy to Lancashire to its capital and to its labor, than the man who wishes the cotton agriculture of the Southern States to be continued under slave labor.

It will therefore be seen that while cotton was the economic basis for England's ultra-partisan sympathy for the South, culminating in threatened recognition of the Confederacy, the following factors contributed in varying degrees to the decision of the government to remain neutral in the conflict.

In the first place, recognition of the Confederacy involved the recognition and perpetuation of the institution of slavery, which would be inconsistent with the established policy of the English government not to interfere in the civil dissensions of foreign states except to promote the cause of liberty and freedom throughout the world. Again, recognition would constitute a plain violation of international law: first, because "the indefinite future continuance" of the Confederacy was so uncertain as to make the recognizing power a participant in helping the new state to establish its independence; second, because recognition, accompanied "by a sinister by-thought which warps its judgment," would be premature and therefore a good *casus belli* on the part of the residuary state against the recognizing state; and, third, because recognition would not even have the base merit of a corresponding advantage, namely, the relief of the manufacturing districts, inasmuch as it would involve the risk of war with the United States, with the result that the struggle which recognition sought to terminate would be prolonged rather than shortened.

Moreover, . . . while American cotton imports declined, imports from other countries increased rapidly, until in 1862 they amounted to two-fifths and in 1864 to four-fifths the total imports in 1860. These importations, together with the extension of the

woolen and linen industries, brought considerable relief to the industrial classes, thus lessening the economic necessity for interference in the American quarrel. It was even urged that with proper encouragement of the production of India cotton, Great Britain would become independent of the American supply, but this opinion was not entertained to any marked degree. American cotton was so superior to any other product that it was bound to regain its former place in the British market upon the conclusion of hostilities. But as long as the war continued India cotton supplied to an increasing extent the deficits caused by the cutting off of the American product. These facts were duly emphasized when recognition of the Confederacy was proposed as a remedy for the cotton famine. Finally, it was urged by Bright and others that with England so largely dependent on American cotton, the supply would under a system of slave labor always be insufficient, not to say insecure; whereas, with slavery abolished and freedom established (which would be the inevitable consequence of the war if the combatants were left to themselves), the South would in a few years be able to increase its cotton production sufficiently to insure a permanent supply for the British mills.

Influence of Wheat on Anglo-American Relations

While these forces were all contributing to the maintenance of neutrality, various agencies were employed by the North to prevent British recognition of the Confederacy. These agencies were: first, the diplomatic mission of Charles Francis Adams who, in co-operation with President Lincoln and Secretary Seward at home and with John Bright and William E. Forster in England, handled American affairs so tactfully when there appeared to be real danger of intervention; second, the Emancipation Proclamation, which cleared away British misconceptions concerning the real nature and purpose of the struggle and convinced all classes that democracy was the fundamental issue at stake; third, the military victories of July 4, 1863, which gave evidence of the ability of the North, if left to itself, to preserve the Union; and fourth, Great Britain's dependence on Northern wheat, which was greatly accentuated during the period of the cotton famine and which therefore operated as a contributing influence in keeping the British government officially neutral while the war was in progress. With due recognition of the part played by the first three of these agencies in the maintenance of Great Britain's neutrality, the writer desires to direct special

attention to a consideration of the fourth influence, which seems to have been consistently overlooked by all students of Anglo-American relations during this critical period. Attention, therefore, will now be given to Great Britain's relation to the cereal region of the Northwest.

The United Kingdom had by 1860 become a great wheat importing country. The Industrial Revolution had transformed the nation from an agricultural community exporting grain and live stock into a manufacturing state, dependent to a considerable degree upon foreign nations for an adequate food supply. Although agriculture had indeed expanded and prospered after the close of the Napoleonic wars, due to inclosures and the improvement in the technique of farming, it had not as a matter of fact continued to keep pace with the rapid industrial development of the country. Population increased more rapidly than did the supply of foodstuffs, and the British Isles were compelled to rely on foreign importations to meet the annually recurring deficits in the home supply which, heretofore negligible, had now begun to assume vast proportions. Particularly was this true in the case of wheat: the first article of prime necessity in the food consumption of the United Kingdom. In respect to this important food product British agriculture experienced a retrogressive movement, not only falling behind the real needs of the people, but actually supporting a smaller number of people in 1860 than in 1830. The repeal of the Corn Laws in 1846, in response to a popular demand on the part of the industrial classes for more and cheaper food, was immediately followed by a rapid increase in the importations of wheat and flour. Imports increased from an annual average of 900,000 quarters for the decade 1831–1841 to 2,948,000 quarters for the decade 1841–1851, and finally reached the high figure of 5,030,000 quarters for the decade ending with 1861. The average annual home production of wheat for the five-year period ending with 1859 was estimated at 16,000,000 quarters which, together with the annual importations, supplied 21,000,000 quarters: the total amount available for home consumption. The United Kingdom had therefore by 1860 come to depend on foreign countries for one-fourth of the total supply of wheat required for a population of 29,000,000.

The principal granaries of Great Britain were the United States, Russia, Germany, and France. To what extent, then, was Great Britain dependent on the American wheat supply during the years 1860 to 1865, and what effect did this dependence have on the attitude of that country toward the North in the critical period of the

war? In answering this question it will be necessary to inquire into the condition of the British and continental harvests; how far the grain-raising States of the Northwest were able to respond to Great Britain's imperative needs; and to what extent this dependence on Northern wheat was recognized when intervention was seriously threatened.

The United Kingdom in 1860, 1861, and 1862 had a succession of crop failures. The wheat harvest of 1860 returned only 13,000,000 quarters, or 3,000,000 quarters below the general average for the two preceding years. In 1861 occurred one of the worst crop failures in the history of the country, when production fell to 11,000,000 quarters, while in 1862 the harvest amounted to only 12,000,000 quarters. During this three-year period Great Britain was therefore confronted with a huge deficit in her wheat supply. To provide the usual amount of food for the nation required the importation of a quantity of wheat equal to nearly one-half of the supply needed. Great Britain's dependence on foreign wheat was therefore accentuated to a degree hitherto unknown. The wheat-exporting countries of continental Europe, however, failed Great Britain in the hour of need. Imports from Russia and Prussia remained steady, but these two countries were unable to respond to Great Britain's greatly increased demands. Imports from France suffered a sharp falling off, owing to crop failures in 1861 and 1862. Nor were Egypt and the South American countries able to furnish sufficient wheat to meet the shortage. It was the United States alone that was able to supply the deficiency.

The United States had already by 1860 become a great wheat-producing nation, with the prospect of becoming the successful competitor in the world's markets. The development of water transportation and the extension of railroads into the Middle West opened up this region as the great wheat emporium of the world. The production of wheat increased from 100,000,000 bushels in 1849 to 173,000,000 bushels in 1859—an increase of seventy-three per cent in the decade preceding the threatened disruption of the Union. Of this amount, the free States and Territories contributed 142,000,000 bushels, or eighty-two per cent, while the seceding States contributed only 31,000,000 bushels, or eighteen per cent, as their share of the wheat harvest in 1859. By far the greater proportion of the wheat crop was marketed at home, the rising industrial centers consuming increasing quantities from year to year, and the Southern States purchasing on an average about 10,000,000 bushels annually from the North in the decade ending with 1860.

The Civil War cut off the Southern market and thus left the North with a rapidly accumulating surplus, which now became available for shipment to England. Moreover, the high prices of wheat in the fifties, due in large measure to the Crimean War and the consequent interruption of the wheat supply from southern Russia, continued to rule throughout the war period, with the result that the increased production of wheat was greatly stimulated. The enlistment of hundreds of thousands of men in the army, not to mention the great overland migration to the Western gold fields during these years, threatened the grain-raising States with a serious shortage of farm labor. This deficiency, however, was more than counterbalanced by the popularization of improved farm machinery, the work of women and children in the fields, and immigration from foreign countries and from the Eastern and the border States.

Agriculture, as a matter of fact, expanded and prospered during the war period. The forces which had already begun to revolutionize agriculture, transforming it from a primitive, pioneer, self-sufficing industry into a highly complex business, organized on a capitalistic commercial basis, were all brought into play by the exigencies of the war. In no line of agricultural production was this expansion more self-evident than in the wheat-growing industry. The loyal States and Territories increased the total production of wheat from 142,000,000 bushels in 1859 to 187,000,000 in 1862; while in 1863, the banner year of the war period, the harvest returned 191,000,000 bushels. This increased production of wheat immediately reflected itself in the export trade, which suddenly mounted from 17,000,000 bushels in 1860 to 53,000,000 bushels in 1861, reached 62,000,000 bushels in 1862, and still remained at the high figure of 58,000,000 bushels in 1863. Almost the entire shipment of wheat and flour went to England.

British importations rose rapidly . . . increasing from an annual average of 5,000,000 quarters to 7,334,000 quarters in 1860, to 8,618,000 quarters in 1861, and finally to 11,548,000 quarters in 1862. Whereas the United States supplied only 11.2 per cent of Great Britain's wheat imports in the two years 1858 and 1859, in 1860 this country supplied 29.2 per cent; in 1861, 41.5 per cent; in 1862, 43.5 per cent; and in 1863 the United States still supplied 38.4 per cent of Great Britain's imports, which totaled over 7,000,000 quarters. Or taking the three-year period from 1861 to 1863, inclusive, the United States supplied nearly forty-one per cent of Great Britain's wheat and flour imports. It will therefore be readily seen that Great Britain's dependence on

American wheat was most acute when the cotton famine was at its height; for while Southern cotton was withheld from shipment to England, Northern wheat supplied the deficits in breadstuffs which other nations were unable to furnish. These facts go to show that wheat was an economic weapon of considerable weight in the hands of the Federal government just at the time when recognition of the Confederacy was proposed as a remedy for the cotton famine; for while recognition might have enabled England to procure cotton, it would have involved risk of war with the North and the consequent cutting off of the bread supply. That this fact did not escape the attention of the English government is clearly evident from the emphasis accorded to the wheat situation by the leading journals and public men of the time.

The Journal of the Royal Agricultural Society of England called attention to England's increasing dependence on foreign wheat; it emphasized the uncertainty of the continental supply, owing to the unsettled political and economic conditions then prevailing throughout Europe; and it reminded its leaders that the United States possessed superior advantages for supplying the markets of the world. *The Economist,* while according much space to cotton, recognized the primary importance of wheat in an editorial which appeared on October 25, 1862, just when the cotton situation was most serious. After reviewing in detail the development of the corn trade, it observed that this was "one of the most remarkable, perhaps the most remarkable commercial fact of modern times. As respects the mass of the people, it is little to say that their comfort is enhanced by these vast importations, for the truth is that without such importations our people could not exist at all. If we could not subsist our population without foreign aid in 1847, we certainly can not subsist them in 1862." *The Mark Lane Express,* one of the leading agricultural journals of the country, took a similar view of the food situation, but expressed the fear that the United States could not supply England's needs, owing to reduction of the rural population by enlistments in the army and to the devastation of a considerable portion of the wheat-growing area; but the greatly increased importations from the Northern States corrected this assumption.

No less significant were the observations of James Caird who traveled extensively through the rural districts of England and recorded his views of the food situation. In speaking before the Statistical Society in 1868 he referred to Great Britain's imperative need of foreign grain in past years and in the following terms emphasized wheat as the first article of necessity:

> The consumption of bread is very constant, . . . everything must be given up before bread, . . . bread being the staff of life, it must be had by the people whatever the price may be. This view is confirmed by inquiries which I have since made among some of the leading bakers in the most densely peopled quarters of Whitechapel in the east, and the Harrow Road in the northwest, one of whom has been 30 years in business, and has now three shops in a district entirely inhabited by the working classes. Their testimony is, that the consumption of bread is at present very large, for although dear, it is still the cheapest article of food within reach of the poor; the next substitute, potatoes, being scarce and very dear.

Mr. Caird added that the "one circumstance which might severely affect us, would be a continued cessation of supplies from America. Of the 11,000,000 quarters we imported in 1862, she gave us five; and as the figures show, we have received for many years from her, on the average more than one-third of our yearly supply."

While the press emphasized Great Britain's dependence on American wheat, leading public men of the country, such as Bright, Cobden, and Forster, did not fail to impress this fact upon the people and upon the governing authorities. In a speech delivered before the Manchester Chamber of Commerce on October 25, 1862, Mr. Cobden, in reviewing British foreign policy in relation to the cotton situation, called particular attention to the importance of American wheat in these significant terms:

> Recollect that half, at least, of all the exports from America come in ordinary times to this country. But our imports from America do not consist solely of cotton. It would be bad enough to keep out the cotton, to stop your spindles, and throw your work-people out of employment. But that is not all. You get an article even more important than your cotton from America—your food. In the last session of Parliament, an Hon. Member, himself an extensive miller and corn-dealer, moved for a return of the quantity of grain and flour for human food imported into this country from September of last year to June in the present year. His object was to show what would have been the effects on the supplies of food brought to this kingdom if the apprehension of war, in relation to the Trent affair, had unhappily been realized. Well, his estimate was, that the food imported from America between September of last year and June of this year was equal to the sustenance of between 3,000,000 and 4,000,000 of people for a whole twelve-month, and his remark to me was . . . that if that food had not been brought from America, all the money in Lombard street could not have purchased it elsewhere.

Mr. Cobden further contended that Great Britain's power to interfere in the American war had been exaggerated; that the

policy to be pursued by the North was in the hands of the great grain-raising States of the Mississippi Valley situated remote and inaccessible from the sea; and that if this region, populated by 12,000,000 people, was determined to continue the war "all the Powers of Europe can not reach that 'far West' to coerce it." Bright spoke in a similar vein to large crowds of people, urging that it was for the material interest of England to remain neutral in the struggle. While, therefore, meetings were called to memorialize the government to recognize the independence of the Confederacy, such gatherings were counterbalanced by other meetings where it was pointed out that recognition would be a false step and that it would not bring to England's shores a single ship-load of cotton, unless followed up by intervention, which if adopted would mean war: a "war in favor of the Slave Confederacy of the South and against the free North and Northwest whence comes a large proportion of our imported corn."

Nor was British dependence on American wheat ignored in the Parliamentary debates. On the very same day that the Roebuck Resolution was presented, Lord Robert Montague argued that intervention to be successful must exhaust every point in dispute. It was complicated, he said: first, by the slavery question; second, by the fact that the North had now become a great military power; third, by the prospect of the seas being covered with Alabamas and Floridas which the North would fit out to prey on English ships; and fourth, by the question of the grain supply. Regarding this latter question he said:

> We import largely of grain, our two chief sources of supply being Poland and the North West States of America. Was it likely that we should be able to get much from Poland under her present circumstances? No. Then we must rest mainly upon supplies from North America. But how would war affect that? Would not the distress in England be aggravated by a war with America? From the Northern States of America we received 5,500,000 quarters of corn, whereas from the north of Europe we received only 2,000,000. The total imported into England in 1861 was 16,094,914 quarters, of which more than one-third came from the North Western States—namely, Illinois, Michigan, Indiana, and Wisconsin—whose yearly available produce was not nearly exhausted by their exports.

These facts led Lord Montague to add:

> If these states could find a market for their corn in England, it would promote a good feeling between them and Canada; but if this country went to war with America that good feeling would be

> prevented. In fact, a desire for alliance with us was already growing up in those States. By holding back from war those North Western States will force trade with us, through Canada; and perhaps, with that object, enter into close alliance with us, while the transit of the goods would be of material benefit to Canada; while by running the risk of war we should be injuring ourselves commercially in the greatest degree.

Mr. Forster stated that the Roebuck Resolution meant war; that the country at large was not in favor of war; and that unless the harvest was better than it promised to be, the sufferings of the people would be great indeed if they were deprived of the American wheat crop of this year. In the light of these facts, Mr. Forster begged the House of Commons to consider what the cost of a war for cotton would be in corn.

Meanwhile events brought the Ministry to a clear realization of the fact that it was to Great Britain's interest to remain neutral throughout the continuance of the struggle. Northern resources now began to tell heavily against the South, thus foreshadowing the ultimate triumph of the Federal army and navy. The Emancipation Proclamation united Northern sentiment in favor of the prosecution of the war and strengthened the support of the Union cause among all classes of people in England. No less important was Mr. Adams' calm but firm and tactful insistence on the claims of the Union government, which won for himself and the cause which he represented the respect of British officialdom. But it was Northern wheat that may well be regarded as the decisive factor, counterbalancing the influence of cotton, in keeping the British government from recognizing the Confederacy.

That the wheat situtation in England was a serious one can not be denied. It became a subject for detailed investigation, it received extended treatment in the leading journals of the time, and it was accorded considerable emphasis in public speeches and in the debates of Parliament. That the wheat situation must have exerted a profound influence on the government may reasonably be concluded from the evidence presented. The Ministry must have realized that a war for Southern cotton would have to be paid for in Northern wheat, which would in consequence be witheld from shipment to England, and that a food famine would entail more serious consequences for England than a cotton famine. The Ministry must, in short, have clearly understood what Bright and Cobden repeatedly urged—that it was for Great Britain's material interest to maintain a position of official neutrality. These are the facts which help to explain why Mr. Roe-

buck on July 13th— several days before the news of the Northern victories of Gettysburg and Vicksburg was received—decided to withdraw his resolution asking for the recognition of the Confederacy. This action marks the turning point in Anglo-American diplomacy during the Civil War period. The danger of English intervention in behalf of the Confederacy now quickly passed away and Lord Palmerston hastened to state publicly that it was consonant with the interests and foreign policies of the British government to remain neutral in the American war.

It will therefore be seen that Great Britain's dependence on the United States was greatly accentuated during the period of our civil conflict. The blockade of the Southern ports and the consequent interruption of the cotton supply occasioned widespread distress throughout the manufacturing districts, leading to a demand for the recognition of the Confederacy which the government appeared for a time hardly able to resist. It was while affairs thus hung in the balance that England's dependence on Northern wheat was most pronounced. When it is remembered that the question of an *adequate* and *cheap* food supply concerned the masses of the people to no less degree than did the question of the cotton supply, it may be seriously questioned whether the government would have ventured in the face of public opinion to recognize the Confederacy; for recognition implied forcible intervention and the risk of a war with the North and the consequent cutting off of the wheat supply when England could ill afford to do without it. Thus did economic forces contend for the mastery in the field of Anglo-American diplomacy during one of the most critical periods in the history of our foreign affairs. In this contest wheat won, demonstrating its importance as a world power of greater significance than cotton, which the South had by 1860 come to regard as an effective economic weapon with which it could bring England to its aid and thus establish its independence.

3. Southern Agriculture During The War [1]

Of the state of the agricultural industries in the South during the war we have little authentic information. The newspapers of the time reported abundant crops in 1861 and of excellent quality. There was a good grain and sugar harvest, but a falling off in the tobacco crop.

[1] John Christopher Schwab, *The Confederate States of America, 1861–1865—A Financial and Industrial History of the South During the Civil War, Yale Bicentennial Publications* (New Haven: Yale University Press, 1913), pp. 275–280. Reprinted by permission of the publishers.

In 1862 the conditions were not so favorable, though in parts of Georgia the corn crop was abundant. Little rice was raised owing to the Federal troops overrunning the sections along the coast. However, there could not have been any scarcity of food products, as cotton as a crop gave way largely to the raising of grain, corn, and fodder. In South Carolina the planters were said to have doubled their corn acreage.

In 1863 this movement to raise food products in preference to cotton continued. We hear of large corn crops, and of especially large wheat crops except in Virginia, where there are complaints of scarcity, which on closer analysis are seen to be due, not to small crops, but to the familiar unwillingness of the farmers to send their produce to Richmond for fear of having it impressed at unremunerative prices. . . . In August, 1863, the receipts of wheat in Richmond fell off from 700,000 bushels in former years to 75,000.

In 1864 the corn crop is reported to have been unusually abundant in most of the States, while the production of wheat is said to have fallen off except in Virginia; and in 1865 the condition of the crops in March is reported as having been exceptionally favorable in the States south of Virginia.

We are forced to the conclusion that whatever scarcity of food was felt in the armies and in the cities was due not to deficient harvests but to the difficulty of attracting produce to the markets under the currency and impressment *régime*. The destruction of food products by the advancing Federal armies —which was no doubt very considerable, especially after the Spring of 1864, and is indicated in the changes and reductions in the soldiers' rations, in comparison with the Federal regulations—was much more than counterbalanced by the increased attention given by the Southern planters to raising grain and corn to the exclusion of cotton.

Popular appeal and legislation discouraged the raising of cotton. Some urged the planters to stop planting it altogether on the plea that such action—like an embargo—would bring the Englishmen to terms. The same reasoning led to the advice to burn the cotton crop when harvested with a view to throwing the English cotton operatives out of employment and coercing their government into recognizing the Confederacy. The newspapers joined in friendly admonition to planters to raise no cotton, but as much grain, fodder, and meat as possible. Such friendly advice was given more formal expression by the authorities making similar recommendations. So, for instance, a grand jury in Georgia in its presentments advised planters not to grow cotton. The Mississippi legislature

followed suit. Even the Congress, after protracted discussion, passed a joint resolution in the spring of 1863, authorizing President Davis to issue a proclamation embodying a similar recommendation, which he did. Incidentally, it may be mentioned that much opposition was expressed in the Senate to the passage of the resolution, one Senator opposing restriction on the ground that it would build up the East India cotton interest. Governor Vance supplemented the President's proclamation with a similar appeal to North Carolina planters.

As is customary in the South in more recent times, the planters met in convention during the war, and pledged themselves to limit their production of cotton to a certain amount. Those of a Louisiana parish resolved in a public meeting held in January, 1862, that none of their number should plant or raise more than 2,500 pounds of cotton during the coming season, unless the blockade were removed by March 1. At a convention in Memphis in February there was some talk of petitioning the Congress to impose a tax of $20 a bale, with a view to discouraging cotton raising. In the following months numerous meetings were held to create a sentiment against planting cotton and in favor of raising food for the army; those planters who exceeded the quota allotted them were dubbed unpatriotic.

As has generally been the case with more recent attempts to restrict the cotton crop by mutual agreement, the temptation to exceed the quota of bales allowed each planter was too great to be resisted. The agreements were evidently broken. The desire to raise cotton for purposes of speculation often outweighed the more patriotic desire to raise food for the army. And, in fact, it would seem that the interests of the army were best served by raising cotton and shipping it abroad in exchange for war materials. In any case, it is evident that the Southern farmer forsook his cotton crop with evident unwillingness, for he might expect large profits by holding it till the end of hostilities. His food products he was in danger of losing to the government at arbitrary and unremunerative prices. The friendly admonition of the newspapers and the mutual agreements of planters' conventions did not suffice to bring about a change of production, at least not to the degree desired by the buyers of farm produce; and we find a striking though ineffectual movement on the part of the State legislatures to legally restrict the planting of cotton. A limit was set to the number of acres per hand employed, varying from 1 to 3; or the number of plants or of bales was fixed by statute. Heavy penalties were imposed for exceeding these limits, though

we never hear of their being inflicted. Similar provisions were made to apply to the tobacco crop.

Whether as a result of this agitation and legislation or not, the amount of cotton raised in the South during the war fell off greatly. The 1860 crop had amounted to more than 4½ millions of bales; the figure for 1861 fell below 4 millions. In 1862 over one million bales were raised; and in 1863 somewhat less. The crops of 1864 and 1865 probably did not exceed half a million bales. Cotton was accumulated in large amounts on the plantations and by the government with a view to finding a profitable market at the close of the war. Most of it was ruined by exposure or destroyed on the approach of the Federal armies. There was a deep-rooted notion that the South was increasing its wealth by the rise in the scarcity value of cotton abroad. One writer gave expression to this feeling by figuring out an increase in the value of the products of the South —cotton, tobacco, and naval stores—of $200,000,000; he claimed that the expenses of the war were being met by the increased value of agricultural products, in consequence of its continuance.

The same motives which actuated the restriction of cotton planting and the encouragement to raising food products were shown in the movement to forbid the distilling of grain and corn, as had been the case during the Revolution. The Confederate Congress was petitioned, in December, 1861, to take such action; and the War Department seized a quantity of corn in the hands of distillers a few months later to prevent its scarcity. Governor Brown of Georgia took similar action six weeks later. Beginning with the spring of 1862, the State legislatures passed drastic measures to forbid distilling, though their frequent re-enactment indicates that people evaded the law, finding it more profitable to turn their produce into spirits. Moreover, the Governors were generally given authority to suspend the prohibition in certain cases and to license individuals to distill spirits for medicinal or manufacturing purposes.

4. Northwestern Agriculture During the War [1]

* * * * * * * * * * *

The increase in the population of the United States during this decade was 22.6 per cent, of Wisconsin 35.9 per cent, and of Iowa

[1] Clyde O. Ruggles, "The Economic Basis of the Greenback Movement in Iowa and Wisconsin," *Proceedings of the Mississippi Valley Historical Association for the year 1912–1913*, Vol. VI. (Cedar Rapids, Iowa: The Torch Press, 1913), pp. 142–150. Reprinted by permission of the author and The Mississippi Valley Historical Association.

76.9 per cent. In addition to more than a million acres disposed of by the United States Government in each of these States, the States themselves sold hundreds of thousands of acres. Out of all of this land many new farms were made, the number increasing during the decade from 61,163 to 116,292 in Iowa, and from 69,270 to 102,904 in Wisconsin, or an increase of 90 per cent in Iowa, and 48 per cent in Wisconsin. This enormous increase in area under cultivation, of course, meant a great increase in production. The statistics of production, the receipts of grain in Chicago and Milwaukee, the complaints of the press, and the memorials of the two State legislatures to Congress, all tell the same story—an enormous increase in production. However, the statements of the press and of public men must not be taken too literally. They are doubtless somewhat exaggerated. It was policy for those in public office, especially during the War, to make their reports as favorable as possible. The various memorials to Congress, too, which maintained that production had far outrun the facilities for transportation, doubtless tell more than the truth, for this was a decade in which it was thought that high freight rates could best be reduced through the establishment of competing lines. Much stress was put upon the importance of water transportation to the seacoast as a regulator of freight rates. But after allowance is made for the exaggeration, it is evident that the decade 1860 to 1870 was one of marked expansion and great prosperity for the farmer.

During the decade Iowa almost doubled the amount of corn and wheat produced. The increase was not so marked in Wisconsin. Corn production doubled in that State but there were actually fewer bushels of wheat raised there in 1870 than in 1862. The statistics for live stock with but few exceptions, notably sheep, do not show such marked increase during this decade, for this branch of husbandry was slighted on account of the high price of grain, because profits are more quickly realized in grain farming, and because that kind of farming requires less capital. The fact that it took two bushels of corn to buy a pound of butter in Sioux City, Iowa, in 1868 is an indication of the fact that grain growing was receiving more attention than was dairying.

When it is remembered that during the war Iowa furnished about 75,000 men and Wisconsin about 90,000, it seems rather unusual that there should have been such a marked increase in production from 1860 to 1865. Some 40 out of the 99 counties in Iowa had less male population in 1863 than in 1860. The withdrawal of the able producers was seriously felt in both of these

States. But from the reports of the condition of agriculture in these States one would not surmise that war was being waged. The Secretary of the Iowa Agricultural Society said in 1863: "Should a stranger to our nation's struggle visit us he could observe no external sign to warn him that this land was engaged in a most gigantic struggle for the perpetuation of its free institutions. New fields have been daily added to our breadth of cultivated land. Houses and barns and orchards have sprung up as if by magic." A similar statement was made by the same official the following year and by the Secretary of the Wisconsin Agricultural Society in 1861.

One reason why these States could lose so many able producers, and still forge ahead at such a rapid rate, was because of the introduction of agricultural machinery, and the change also enabled women and children to work in the fields. But it must be remembered also that the industry of agriculture had received a powerful stimulus through the bounty system of the Homestead Law, and through the War prices received for its products.

About a year before the War the following statement was made in a report from one of the oldest southeastern counties of Iowa: "Of corn planters the only one used at the present time is a two-horse planter and that to a limited extent. The different hand planters have been tried and entirely abandoned. The general prevailing opinion among farmers is that the best method of planting corn is to drop carefully by hand and cover with the hoe." This prevailing opinion did not long exist after the War broke out. In both States laborers became scarce and wages high. Especially during harvest it was necessary to buy machinery if the crop was to be saved. In 1859 there were 26 entries of agricultural machinery at the Iowa State Fair; in 1863, 126; in 1864, 181; and in 1865, 221. In Wisconsin, too, there was a similar increase in the use of machinery and the school attendance in both States shows that children were kept out of school to some extent to help operate this machinery.

But there would probably not have been such extensive use of machinery and such a great expansion of agriculture in these States and in the country generally had it not been for the stimulus of War prices. The Superintendent of the Census, writing in 1864, made the following statement: "There can be little doubt that the war is destined to make a great change in our agriculture. Farming never was so remunerative as at the present time. . . . Prices have increased to a figure never before reached in this country. Everything that the farmer can raise is in demand at rates

which are highly remunerative." He believed that this would cause many to enter agriculture. A writer in the *Cultivator and Country Gentleman* maintained that the profits of agriculture, taken as a whole during the few years preceding 1869, were such as to invite thousands of men into this branch of industry.

An examination of the prices of agricultural products from about 1863 to about 1869 will convince one that during this time farmers were easily able to pay off previously contracted debts and unload many mortgages. The *Prairie Farmer* observed in 1864 that "There must be something radically wrong with the farmer that does not now free himself from debt. Never in the lifetime of the present generation will such another opportunity present itself. Every cultivated product of the temperate latitude bears a highly remunerative price." The status of agriculture in the loyal States was summed up as follows in the *Report of Agriculture* in 1866: "The agricultural condition of the northern states was never more flourishing. High prices, accessible markets and crops of average abundance have insured good profits, and as a result mortgages have been paid, farm buildings erected, permanent improvements accomplished, farm implements and machinery obtained and in thousands of instances a surplus invested in government funds."

Turning to Iowa it is seen that these statements of the status of farmers in general throughout these years, apply without qualification to conditions in that State. In a report for the year 1863 the statement was made that "During the past year our farmers have had a season of financial prosperity, seldom equaled, and the times have been good for making money, everything bringing a good price." "During the past fall," the report continued, "many of our farms have been released from under the pressure of the money lenders' mortgages, and those just starting, partly on borrowed capital feel relieved and breathe much easier than before at the enlarged prospects now spread out before them." In 1864 the reports from various parts of the State were equally buoyant. Said one: "Every element of prosperity seems to flourish here in this land of freedom." In the report of the Secretary of the Iowa State Agricultural College Farm, written in 1864, the following statement was made: "Whether our figures of production are correct or not, within the past five years our people have recovered from the pressure of heavy indebtedness and are now in a position generally of comfort and ease. Those who were borrowers of money five years ago in many instances now have money to loan. . . . Our people are comfortable

and prosperous and with a prospect in the future not excelled by any people on the face of the globe." In an address before the Union Fair at Wheatland, Iowa, in September, 1864, Judge J. F. Dillon presented figures to show that a young man could come from the Eastern States, buy a farm of 80 acres, break the ground, fence the farm, and build upon it a modest house and barn, and with the proceeds from the crop pay for the land, the fence around it, and the improvements upon it, and have $545.00 besides. He appealed to the young men of the country to leave the crowded cities of the East and come to the Mississippi Valley to make their fortune.

There is plenty of evidence that this and similar appeals were heard. In 1865 there was much complaint in Iowa, both in towns and in the country, of the lack of houses, and the demand for improved farms could be but partially supplied. So great was this scarcity of houses in some places that building associations were organized to erect houses to sell and rent. An Iowa correspondent of the *Cultivator and Country Gentleman* said in August, 1866, that rents were higher in all the Iowa towns he had visited than they were in Albany.

Judge Dillon's invitation had been accepted. Moreover, statements similar to the one he made in 1864 concerning the great profit to be made in farming were to be multiplied many times in the agricultural papers and State reports down to about 1869. It would be tedious indeed to present even a fractional part of the evidence of the prosperity of the Iowa farmer during the years 1867 and 1868. A few short sentences from reports from various parts of the State must suffice. "It affords me pleasure to record enterprise, plenty and prosperity. Contentment was never more widespread. Good prices and plenty of the good things of this life infuse spirit into every department of industry." "Our agricultural interests are prosperous. Our farmers are acquiring wealth quite rapidly." "More material progress has been made in the last six months than during any former period." "The agricultural interest has never been in a more flourishing condition. Good crops and good prices have made the farmers full handed." Cases were frequent like that which Judge Dillon cited in 1864.

No such expansion as has just been described in Iowa is to be found in Wisconsin during this decade. Attention has already been called to the fact that the increase in population in Iowa during the decade was 76.9 per cent and in Wisconsin but 35.9 per cent. Nevertheless there was substantial progress in the

latter State. The Secretary of the Wisconsin State Grange testified to the special correspondent of the *New York Tribune* that "at the close of the war and for a year or two afterward the Wisconsin farmers were generally out of debt and a little 'forehanded'"; that "the high prices which they had received for their products of every kind had enabled them to pay off what they were before owing, to purchase farm machinery in abundance and to indulge in many luxuries which had before been unknown to them." There is much evidence to substantiate this statement.

* * * * * * * * * * *

PART III

THE AGRARIAN REVOLUTION AND THE SETTLEMENT OF THE FAR WEST 1860–1914

EDITORS' INTRODUCTION [1]

The Civil War marks the beginning of an economic revolution in the United States which is characterized by two closely related lines of development: the one industrial and the other agricultural. The revolution in industry was the change from hand production in the home to machine production in the factory; while the revolution in agriculture was the transformation of farming from a primitive, pioneer, largely self-sufficing occupation into a modern business organized on a scientific, capitalistic, commercial basis. These two aspects of the economic revolution, although closely related, may for historical purposes be conveniently studied as distinct phases of recent economic history. With these definitions and distinctions in mind attention will now be given to the leading aspects of the agrarian revolution and the settlement of the Far West.

The principal features of the agrarian revolution in the United States were: first, the existence of a vast empire of virgin land and the liberal policy of the government in its rapid transference from public to private ownership; second, the growth of population and immigration; third, the introduction of improved farm implements and machinery; fourth, the extension and development of transportation facilities; fifth, the growth of domestic and foreign markets; and sixth, the establishment of various agencies for the promotion of scientific knowledge relating to agriculture. The revolution in agriculture which these and other contributing factors brought about covers the half century from 1860 to the opening of the World War. By 1914 the various elements entering into this revolution were in full operation. While the forces bringing about a transformation in agriculture had already been set in motion in the fifties, the real significance of these forces was not apparent until the Civil War which hastened the changes and tendencies that were destined to produce a revolution in agriculture, industry, and commerce.

Among the factors contributing to the revolution in agriculture, the existence of the public domain and the policy of the government favoring

[1] Louis Bernard Schmidt, "Some Significant Aspects of the Agrarian Revolution in the United States," *The Iowa Journal of History and Politics*, Vol. XVIII, No. 3. July, 1920, pp. 371–395. (Revised.)

its rapid transfer to private ownership commands primary consideration. The entire land area of the United States (contiguous continental possessions) amounts to 1,903,289,600 acres. The public domain originally included about three-fourths of this area, or 1,442,200,320 acres; while the remaining one-fourth, embracing the original thirteen States and the States of Kentucky, Tennessee, and Texas, amounted to 461,089,280 acres which did not come under the control of the federal government and so was not included in the public domain. Of this vast domain, the government had by 1860 disposed of 394,088,712 acres, thus leaving for future disposition an area amounting to 1,048,111,608 acres, the greater portion of which lay in the public land States and territories west of the Mississippi river. The rapid disposition of the public lands dates from 1862, the year of the enactment of the homestead law. Under the provisions of this law, the government during the period ending with June 30, 1914, patented 147,146,830 acres of land—an area equal to more than four times the State of Iowa. The rapid alienation of the public lands was further encouraged by the pre-emption act of 1841 which remained on the statute books until 1891, the timber culture act of 1873, the desert land act of 1877, and the timber and stone act of 1878, which together with the right granted under the homestead law enabled any person to acquire title to 1,280 acres; while large areas of timber and mineral lands were acquired under other acts. Mention should also be made of disposition of arid lands under the Carey Act of 1894 and the Reclamation Act of 1902. These methods of disposing of the public lands to individuals were further supplemented by huge grants of land to States and corporations for the construction of railroads and the advancement of education. Finally, reference should be made to the establishment of Indian and forest reserves, including national parks and the like, which embraced large areas of land in the trans-Mississippi West. This legislation made possible the rapid disposition of the public domain which characterized the period from 1860 to 1914. During this period, 757,352,475 acres of land were alienated, which together with the 394,088,712 acres disposed of before 1860 amounted to 1,151,440,187 acres—the total area alienated during the period from 1785 to 1914. Of this amount about 950,000,000 acres were appropriated by individuals, States, and corporations; while about 200,000,000 acres were set aside in reserves. The public domain remaining unappropriated and unreserved on June 30, 1914, amounted to 290,759,133 acres, the greater portion of which will never be available for agricultural purposes. The rapid alienation of the public lands during this period was accompanied by a correspondingly rapid increase in the farming area of the country. The number of farms was increased from 2,044,077 in 1860 to 4,564,641 in 1890. In 1910 there were 6,361,502 farms in the United States. This was more than double the increase in the number of farms from the settlement of Jamestown to the opening of the Civil War. The average number of acres in farms was reduced from 199.2 in 1860 to 133.7 in 1880, increased to 146.2 in 1900, and reduced again to 138.1 in 1910; while the average number of acres of improved land

in farms was reduced from 79.8 in 1860 to 71 in 1880, increased to 78.3 in 1890, reduced to 72.2 in 1900, and increased again to 75.2 in 1910. The area of land in farms (both improved and unimproved) was increased from 407,212,538 acres in 1860 to 623,218,619 acres in 1890, which was further expanded to 878,798,325 acres in 1910; while the area of improved land in farms was increased from 163,110,720 acres in 1860 to 357,616,755 acres in 1890. This was further expanded to 478,451,750 acres in 1910—an area thirteen times the area of Iowa. The farming area of the United States, in short, was increased during this period by the addition of 4,317,425 farms embracing an area of 471,585,787 acres of which 315,341,038 acres were improved land—a fact which is of primary importance in the study of the agricultural development of this period.

Another important factor in the agrarian revolution was the rapid growth of population and immigration during this period. The population of the United States (excluding non-contiguous possessions) increased from 31,443,321 in 1860 to 62,947,714 in 1890 and reached 91,972,266 in 1910—an increase of 60,528,945, one-third of which was composed of foreign immigrants who came in to recruit the labor forces of the country. The abundance of new and cheap land in the West led to the emigration of great numbers of people from the Atlantic seaboard States. Hither came also a large immigrant population which was, as a rule, industrious, thrifty, and experienced in European methods of agriculture. Population therefore continued to move westward in the conquest of the soil. The farming States of the trans-Mississippi West were rapidly settled. The rural population, including towns and villages with less than 2500 inhabitants, was rapidly increased until by 1880 it numbered 35,383,345, or more than the total population of the United States in 1860. This was further increased to 40,227,491 in 1890. In 1910 the rural population numbered 49,348,883, which represented 53.7 per cent of the total population of the United States. The number of persons over ten years of age engaged in agricultural pursuits was increased from 7,713,875 in 1880 to 9,148,448 in 1890. In 1910 this number was further increased to 12,567,925, which represented 33.2 per cent of all persons over ten years of age engaged in gainful occupations. The addition of these great numbers to the agricultural population of the country was in itself a fact of profound significance in the transformation of farming from the pioneer into the commercial stage.

Of fundamental importance, also, as a factor in the agrarian revolution was the invention and introduction into general use of improved implements and machinery and the consequent transformation in the methods of farming. Although most of the epoch-making machines—notable among which were the plough, the corn planter, the two-horse cultivator, the mower, the reaper, and the steam thresher— had been invented in the period ending with 1860, and although the application of these inventions had spread to a considerable extent in the fifties, it was not until the decade of the Civil War that farm implements and machinery were popularized and brought into widely extended use. The withdrawal of

hundreds of thousands of men from the farm to enlist in the army greatly stimulated the use of machinery while the war was in progress. Improved ploughs, cultivators, mowers, reapers, and threshing machines, and other labor-saving devices, including the substitution of horse-power and steam-power for manual labor, overcame the conservatism of the farmers, who, before the war when labor was plenty and cheap, had failed to appreciate the advantages of labor-saving machinery. Confronted with the alternative of losing their crops for want of labor the farmers became thoroughly interested in these new inventions, only to become convinced of their utility when they saw it demonstrated that a reaper operated by one man could cut from ten to twelve acres of wheat in a day, whereas one man with a grain cradle was able to cut only an acre and a half to two acres in the same length of time. New implements and machines of many kinds were henceforth widely introduced. The value of farm implements and machinery in use increased from $246,118,141 in 1860 to $494,247,467 in 1890. In 1900, this was further increased to $761,261,550 and in 1910 to $1,265,149,783. The use of improved labor-saving machinery not only made possible the cultivation of a much larger area of land but it also added greatly to the productivity of each unit of land and of labor, the productive capacity of an individual farmer being multiplied more than twelvefold in the period from 1830 to 1880. With the introduction of this machinery into general use and the consequent improvement in the methods of farming which this machinery made possible, agriculture passed definitely into the commercial stage in which the products were raised primarily for the market and only incidentally for the use of the farmer and his family.

The revolution in agriculture would have been impossible, however, had it not been for the rapid extension and development of the transportation system which enabled the Western farmer to dispose of his surplus products in the distant markets of the East and South and of Western Europe. Before 1850 the only avenues for the disposal of these products were the two great waterways of the country: the Mississippi River with its navigable tributaries; and the Great Lakes with their eastern connections, the Welland Canal and the St. Lawrence River and the Erie Canal and the Hudson River. The early railroads in the Middle West were not regarded as competitors of the waterways but as tributaries to them; for it was believed that the waterways would continue to be the principal avenues of transportation. The rapid extension of railroads throughout the country after 1850 was destined, however, to effect profound changes in the whole course and conditions of internal trade. In 1850 there were but 9,021 miles of railroad in the United States, nearly all of which had been built in the Atlantic seaboard States. In 1860 there were 30,626 miles in operation distributed about equally among the three great sections of the country: the East, the South, and the West. The rate of construction was halted somewhat during the Civil War but immediately after the war the entire country was seized with a mania for railroads. In 1870 there were 52,922 miles of railroad in operation. This was ex-

panded in 1880 to 93,922 miles; in 1890 to 166,654 miles; in 1900 to 198,904 miles; in 1910 to 249,992; and by 1914 there were 263,547 miles of railroad in the United States. The entire country was spanned with a network of railroads. The North Central States were well supplied with railway facilities; many new lines were added in the South; thousands of miles of track were built in the Eastern States; and five transcontinental railroads were completed, thus bringing the Pacific Coast States into close economic relations with the Mississippi Valley and the manufacturing-commercial East. Great improvements accompanied this development in rail transportation, among which should be mentioned the reduction of grades and curves, improved drainage and ballasting, better bridges, the introduction of steel rails, the improvement of rolling stock, the adoption of uniform gauges and belts of standard time, the consolidation of connecting roads into trunk lines, the construction of terminal facilities, and scientific rate-making. These improvements, in connection with the advantages afforded by rapid transit and reduced risks, tended to increase the value of the railroads as commercial highways so that by the close of the decade of the seventies the railroads had become effective competitors of the waterways in the transportation of Western agricultural products to the seaboard. The introduction of the iron steamship on the ocean after 1860 and the formation of combinations between railroad and steamship lines, which made possible the shipment of products on through bills of lading from interior points to the markets of Europe, further increased the importance of the railroads as carriers of Western agricultural products. The development of railway and ocean transportation was accompanied by improvements in the facilities for communication which served to bring all sections of the country and the nations of Western Europe into close business relations. Of these the telegraph was the most important agency for the rapid dissemination of information without which the organization and management of the modern commercial system would have been impossible. This was further supplemented by the improvement of the postal system, the growth of newspapers and trade journals, the invention and extension of the telephone system, the organization of produce exchanges, and the modern system of banking and exchange, all of which agencies performed incalculable services in commercial operations.

No less significant as a factor in the agrarian revolution was the growth of domestic and foreign markets. The westward movement of population into the Mississippi Valley, the application of labor-saving machinery to agriculture, and the development of the transportation system made possible that territorial division of labor which enabled each section to devote itself more exclusively to the production of those commodities for which it was best adapted: the East to manufacturing and commerce and specialized agriculture, the South to the raising of cotton and other staple products, and the West to food production. Thus there was developed that economic differentiation and mutual dependence between geographic sections which characterized the period from the close of the

War of 1812 to the opening of the World War. Each section occupied a position of dependent relationship to the other two sections: the East becoming to a very large degree dependent upon the food-producing West for the breadstuffs and meat which were needed to furnish its rapidly growing population with an adequate supply of foodstuffs while the South continued to purchase large quantities of produce from that section. But rapidly as the home market expanded, the increase in the volume of production was considerably greater, thus giving rise to an annual product far in excess of the needs of the country, but for which there fortunately existed a growing demand abroad. The development and expansion of the facilities for the transportation and handling of bulky products and the reduction of freight rates transformed the local into the world market, the effect of which was twofold: first, it stimulated the production of food in the great agricultural regions which now had access to the markets of the world; and, second, it subjected the agricultural systems of the western European countries to a severe strain of competition which compelled large numbers of the rural population to abandon farming. As a result, they either migrated to the industrial centers to enlist in the army of wage-earners or emigrated to the New World, by far the greater proportion of them settling in the United States which furnished unequalled opportunities for the making of an independent living. The countries of Europe thus became the natural market for the breadstuffs and provisions and the cotton and tobacco which entered into the export trade of the United States. The most important market for these commodities was Great Britain, which after the repeal of the Corn Laws in 1846 became rapidly transformed from an agricultural into an industrial nation, largely dependent on foreign nations for an adequate supply of foodstuffs and raw materials; while the nations of Western Europe were second in order of dependence on American agricultural products, the countries of South America and the Far East coming next in order of importance. These countries all furnished markets that absorbed the surplus agricultural products which the United States had available for export. The value of domestic agricultural exports, though fluctuating more or less, rose rapidly throughout the period, increasing from $260,280,413 in 1860 to $694,315,497 in 1880, when the value of domestic agricultural exports constituted 84.3 per cent of the total domestic exports. In 1900 the value of domestic agricultural exports amounted to $844,616,520 which was further expanded to $976,047,104 in 1906, finally reaching $1,123,651,985 in 1913. This rapid expansion in exports enabled the United States by 1880 to become the foremost surplus cereal and live stock producing country in the world—a position which this country had long since attained and continued to hold with reference to cotton and tobacco. Meanwhile Russia, India, Australia, Canada, and Argentina became competitors of the United States for this trade.

Of fundamental significance, finally, as a factor in the agrarian revolution was the development of various agencies for the promotion of scientific knowledge relating to agriculture. While interest in scientific agricul-

ture dates back to the beginning of the national period of our history, this interest was shared by but a comparatively small number of progressive farmers, while the great mass of the rural population followed the rule of tradition, custom, and superstition which prevailed throughout the pioneer period. The reasons for this general reluctance to apply scientific principles to the practice of farming were: first, that it was easier and more economical to acquire and cultivate new land than to institute intensive methods on the older land; second, farmers possessed very meager knowledge as to the proper treatment of soils and plant life, even the most intelligent farmers, including the scientists themselves, knowing very little about such matters; and third, the great majority of farmers were averse to new ideas and methods which they regarded as "book farming" and therefore as entirely impracticable. This attitude is to be explained largely by the fact that the farmers of the pioneer period, accustomed to a life of isolation and separation from their fellowmen, were naturally very independent and extremely individualistic, relying on their own initiative and taking pride in following their own peculiar methods of farming when it would have been easier and less expensive for them to seek and follow the advice and experience of others. The establishment of agencies for the promotion of scientific knowledge relating to agriculture during the second half of the nineteenth century was destined, however, to effect a revolution in the methods of farming. The reasons for the establishment of these agencies may be briefly stated. In the first place, the rapid disposal of the public domain after 1862 soon brought the nation to the end of the free land era when it was no longer possible to acquire new agricultural lands for nothing, with the result that some degree of intensive farming became necessary. Moreover, the transformation of agriculture from the pioneer into the commercial stage brought the farmer into closer relations with the business world. The new conditions thus created broadened the farmer's outlook and awakened him to a realization of his educational needs and opportunities. Finally, this period witnessed the rise of a new generation of farmers who were ready to abandon old methods of farming and adopt new ones, once their utility had been demonstrated. Agriculture thus liberated from the fetters of custom and tradition, was prepared to enter upon a new era of scientific development. The revolution in agriculture gave rise to complex problems of production, distribution, and exchange which were of fundamental interest and importance to the farmers. As agriculture became more interwoven with the fabric of our national economy, these problems became more and more acute. Among the agencies established during the period for the purpose of dealing intelligently with these problems may be mentioned:

1. The Federal and State Departments of Agriculture. The United States Department of Agriculture became the leading governmental agency of its kind in the world for the promotion of scientific knowledge relating to all lines of agriculture; while the State departments of agriculture, most of which were established after 1860, supplemented this work in many ways.

2. Agricultural Colleges and Experiment Stations. The Land Grant College Act of 1862 was the most important specific enactment ever made for the development of agricultural education in the United States. The most important functions of the colleges established under this act were: first, the establishment and perfection of instruction in the natural sciences; and, second, the development of technical courses suited to the needs of farmers and mechanics. At the same time they gave instruction in a variety of general subjects, thus developing a broader view of what constitutes a liberal education. They also rendered a valuable service in preparing teachers and scientists who later rose to eminence in the work of technical instruction, as well as in scientific and practical investigations. The natural outgrowth of this development was the experiment station which, under the Hatch Act of 1887, became an integral part of the agricultural college; while its work formed the basis of instruction relating to the science of agriculture.

3. Farmers' Organizations. The economic revolution brought agriculture into close relations with the business world. It was only natural that the farmers should follow the example of other economic groups and organize for the promotion of their interests. This period, therefore, witnessed the formation of many farmers' organizations (local, State, and national), which, with their economic, political, social, and educational functions, performed a great service in the education of the American farmer. They aided in breaking down the barriers which had heretofore separated the farmers from their fellow men, developed in the farming population a feeling of class consciousness, taught valuable lessons in co-operation, and finally became an important agency for the dissemination of the new ideas and methods in farming which were being advanced by the agricultural colleges and experiment stations.

4. The Agricultural Press. The influence of the agricultural press on the development of scientific farming in the United States was incalculable. From the beginning it dealt with an infinite variety of subjects; it was one of the most efficient agencies for the popularization of the results of scientific experiments conducted by the agricultural colleges and experiment stations; and it accorded much space in its advertising columns to ways and methods of improving the practice of farming.

The forces thus outlined constitute some of the more significant aspects of the agrarian revolution in the United States. Farming having emerged from the pioneer, largely self-sufficing stage now definitely entered the scientific, capitalistic, commercial stage. Agriculture underwent great changes which are described in the following chapters. By 1914 the transition from primitive to modern agriculture may in a very real sense be said to have been completed. Farming had become the warp, with industry as the woof, of our whole economic system. It had, in short, become inextricably bound up with the business world. These developments and relationships gave rise to many problems which confronted agriculture as it entered the period of reorganization and readjustment.

CHAPTER XVI

THE SETTLEMENT OF THE LAST FRONTIER

1. Some Influences of the Passing of the Public Lands[1]

The United States in our time is undergoing profound and far-reaching changes. The first great chapter of the nation's history is closing with the passing of the public lands. From the earliest years of our national existence almost until the present, the main work of our people was to acquire and to occupy the public domain, continental in extent. The continent, however, is now practically occupied; there are no longer great stretches of free land rich with all manner of unowned, undeveloped resources. We have come, consequently, to new national bases of life, and are forming new national habits. Our country, in truth, has entered a period of fundamental readjustment—economic, social, and political.

So manifold and intricate are the manifestations of this process of adjustment that a thorough discussion of them would be an encyclopedic task; a task, indeed, impossible of accomplishment, since changes are occurring so swiftly as to make our writings out of date while we pen them. The purpose of the present essay is to call attention to the fundamental nature of the process through which we are passing, and to try to discern something of its underlying conditions and consequences.

I

In the period between the close of the Revolutionary War and the adoption of the Compromise of 1850, the government of the United States acquired title to 1,465,000,000 acres of land,—sufficient, were the whole adapted to agriculture, to make more than nine million farms of one hundred and sixty acres each. Not all of this great estate, it is true, invited settlement; but as a whole the public domain held out on an unrivaled scale the allurement of vast primeval forests, of stores of untouched mineral treasures, and of soils fertilized by the accumulations of the ages.

So vast were these resources that men, thinking in terms of

[1] William J. Trimble, "The Influence of the Passing of the Public Lands," *Atlantic Monthly*, Vol. CXIII, No. 6, June, 1914, pp. 755–761. Reprinted by permission of the publishers.

industry as it was equipped before the age of modern machinery, considered the forests and the soils and the mines limitless and inexhaustible. To the man of the axe and the sickle and the freight wagon, they were in fact practically inexhaustible. We can understand, accordingly, why the Secretary of the Treasury in 1827 reported that it would take five hundred years to settle the public domain which we then possessed. To the men of his time the public domain was a challenge; the problem was not that of conservation, but of appropriation and utilization.

The task of occupying the continent, to which our fathers bent their energies, was expedited past all forecast by two remarkable developments: the one in the sphere of government, the other in that of industry.

When the nation was born, the common thought in regard to the disposal of the public domain was that the "back lands" were to be used for revenue and were to be sold *en bloc* to capitalists and companies. But the vastness of our lands and the comparatively small number of our citizens, together with democratic reactions between the land and the citizens, produced a new theory and practice of land disposal. According to this, the public lands were to be expropriated for the good of society: they were to be used in such a way as to give to every citizen no matter how poor (or rather because he was poor) the opportunity to get land, and also, in such a way as to "develop the country." As part of this practice came the Pre-emption Act of 1841 and the Homestead Act of 1862, preceded and accompanied by not a few other enactments.

It is common now to complain bitterly concerning the methods of disposal of our public domain, and every one knows that there has been too much of "land-grabbing" and fraud; but, on the other hand, we do not always take into account the fact that we are looking back upon a cheap-land age from the point of view of a dear-land age. Our views of the rightfulness of railroad grants, for example, might be greatly modified if we were transported back to the outlook of investors in the sixties, when the best lands along projected lines were high-priced at one dollar an acre. Contrasted with the land policies of Rome, England, Russia, Spain,—with those of any nation uninfluenced by our example, —our land policy, marred though undoubtedly it has been by specific acts to the advantage of greed, yet as a whole has been beneficient and in the interest of individualistic democracy. In whatever light, however, we may now regard this policy, there is no doubt that it immensely stimulated settlement.

The other force which accelerated the progress of settlement was

the use of machinery. Our public domain was settled during the time when the gigantic forces of the Industrial Revolution were transforming the civilized world. The steam engine, the railroad, the reaper, and a thousand other devices, gave man undreamed mastery over nature. Utilizing these prodigious forces, and with ever-accelerating speed, the American population (reinforced by millions of immigrants) subdued the forest, opened the mines, threw out daring lines of railway, broke the prairies—and suddenly came to the end of the task which a century before had seemed so unending. By 1890 the frontier had disappeared, and since that time nearly all of our remaining public lands suited to popular use have passed into individual ownership. The annual report of the Department of the Interior for 1910 revealed that, excluding Alaska, our unappropriated and unreserved lands of all kinds then amounted to 343,486,000 acres; and these lands for the most part are inferior. There are no more great stretches of fertile land in the United States inviting occupation. The romance and rush of settlement are over. The real West has vanished. "The United States has entered a new economic era," notes a thoughtful editorial in one of our magazines, "and profound changes are coming in the qualities and character of our people."

II

A primary result of this swift settling of the public lands was that the output of products of the soil, of the forests, and of the mines was increased at a rate unmatched in history. This increase exerted a profound influence not only upon the United States, but upon foreign nations. Our cattle and hogs gave us meat in abundance and left a large surplus for export. Our wheat crop, which in 1840 amounted to eighty-four millions of bushels, thirty years later came to two hundred and thirty-five millions, and a generation later still reached seven hundred millions. Within less than an ordinary lifetime (1840–1900) our corn production rose from three hundred and seventy-seven millions of bushels to more than two billions and a half. The value of our annual production of lumber increased in the last half of the last century from about fifty million to more than five hundred million. The bullion from our gold fields enlarged the business of the world, and by gigantic strides we took the first place among the nations in the production of coal and of iron.

Now this enormously increased production insured that the necessities of life should be comparatively cheap. The cheapness

and plentifulness of necessities were among the main factors in that great growth of population which, not alone in this country but also in Europe, was one of the most marked and important features of the history of the nineteenth century; and this new plenty helped, moreover, to concentrate that population in large cities. Probably in no period of history were the common people so easily fed, clothed, and sheltered as in the United States during our public-land era.

With the passing of the public lands, however, one general and controlling condition operates powerfully in many directions: this is that the United States, as never before in its history, and with continually increasing necessity, is now confronted by the law of diminishing returns. This law, as is well known, postulates in general that, beyond a certain limit of productiveness, increasing application of labor and capital to given natural resources, whether soil, timber, or minerals, does not result in proportionate increase of yields. Soils become poorer (unless the tendency is counteracted by costly processes), timber supplies become more remote or of inferior quality, mines become deeper. Consequently, after the virginal fertility of soil is once utilized, after the native growth of large trees which are easily accessible has been cut, after the coal and iron and gold which lie near the surface have been mined, production proceeds at a more halting or more expensive pace.

It is true that the operation of this law may be temporarily postponed by new discoveries in technic (as, for example, modern processes in the production of gold), but in the long run it holds sway. Hitherto in the United States we have been availing ourselves prodigally of the lavish bounties of new soils, untouched forests, and mineral deposits advantageously placed. Now, and in the future, an increasing production at all commensurate to the needs of our growing population must be won only at the price of more painstaking and enlightened methods, by continually bringing to bear fine and well-directed ingenuity, and by re-creating, supplementing, and hoarding our natural resources with the greatest care.

An important result of our being brought more certainly under the law of diminishing returns is the rise in the cost of living—a phenomenon viewed apprehensively by all classes. . . .

* * * * * * * * * * *

III

The first point to be noted in regard to the effect of the passing of the public lands upon agriculture is that there has been in the

last decade an astounding rise in farm values. The aggregate value of all farm property in the United States doubled between 1900 and 1910; that is, in a single decade as much value accrued as in all the years of our preceding history. In some sections the percentage of increase was of course higher than the average: in South Dakota, for example, farm values in the decade rose 291.9 per cent, and in Idaho 353.9 per cent. The economic and social effects of these great accretions in land values are bound to be of the utmost importance. Interest charges (which in the past have been met by rise in values) must now be reckoned in the cost of production; landowners find themselves capitalists; laborers are further removed than ever from ownership of land.

These higher values, it is true, may be due in part to the general rise of prices which has accompanied increased gold production, and the future may possibly see a lowering of prices of farm lands, should the gold-supply wane. But the supply of good farm land in the United States is now limited, whereas the demand is unlimited; consequently, values of farm lands in proportion to other commodities have reached a permanently higher level than that of the past.

The increase is accounted for in part, moreover, by higher prices for products. Between 1899 and 1909 the total value of all cereals raised in the United States increased 79.8 per cent, while the total yield increased only 1.7 per cent. Yields and, consequently, prices, will vary from year to year, and it is gratifying to know that (according to the reports of the Department of Agriculture) the per-acre yield in the United States, notwithstanding increasing utilization of inferior lands, is becoming gradually higher. But it must not be forgotten that greater yields due to more scientific farming are won at the cost of expensive processes; "high" farming must be based on high prices. Very significant, also, is the fact that our cultivated acreage increase, in spite of still active homesteading in some of our Western states, is becoming small. Between 1879 and 1889 the area planted to cereals increased sixty-six million acres, between 1889 and 1899 forty-five million acres, but in the past decade there were added only six million acres. In that same decade population increased sixteen millions. Enhanced farm values, therefore, and higher prices of farm products seem firmly based upon a disproportionate increase of population and cultivated area. In fact, before agriculture in the United States can be placed upon a permanent footing which will reckon exhaustion of soil capital, producers of staple crops must receive still higher prices than those which they are now receiving.

It is this fact, along with prevailing high prices to consumers, which has brought about the great movement which aims at more economical methods of marketing crops.

An important consequence of greater proportionate demand for farm products in this country is the decline in our agricultural exports. Between 1900 and 1910 our exports of wheat fell off 100,000,000 bushels. Mr. G. K. Holmes, an expert statistician of the United States Department of Agriculture, summarizes conditions by saying that, "most of the cereals and their products, all of the animals and most of the meats and their products, are going down in quantity of exports." Foodstuffs now constitute only one-fifth of our total exports. One effect of this change is that the prices of our leading farm staples are becoming yearly less dependent upon European markets, and that, consequently, for the first time in our history the tariff is becoming more an object of direct concern to our grain and meat producers. A second effect, manifestly, is that we have come to a time when our imports must be paid for in other than agricultural products. In other words we are becoming pre-eminently a manufacturing rather than an agricultural nation. It would not be at all surprising, therefore, if our manufacturers should come soon to favor a low tariff.

A marked consequence of the rise in land values and of higher prices for products is the utilization of inferior lands. Irrigation and drainage are reclaiming fertile spots otherwise waste, and dry-farming methods have led to a great extension of the farming area (at the expense of the ranges) in all of our plains states; while at the same time there has been an extraordinary reverse movement toward the neglected farming regions of the East. The rehabilitation of the farming industry in the latter section, indeed, is one of the most important and pleasing features of the new era.

In fact a revolution is being effected in agriculture. However natural and often defensible, under the economic conditions of the free-land era, exploitive methods may have been, they are now not only unsuited to the present age, but are reprehensible from the standpoint of its needs and instincts. Instead, scientific methods are displacing the old as rapidly perhaps as we have a right to expect. The full effect of the movement toward a scientific, permanent system of agriculture will probably not be felt until the children and young people who are now being trained in the new agriculture take their places in life. No one who comes into contact with the boys and girls of our great corn-growing and bread-making contests and life movements, or with the earnest

students in our agricultural colleges, can fail to appreciate the great renovation of agriculture which is preparing.

As a result partly of the widening influence of our agricultural colleges and partly of numerous co-operating agencies, a new set of ideals is being created with regard to country life. The nation as a whole, in fact, is making a re-estimation of rural life. With the coming of dear lands, city people have awakened to a new interest in country affairs and a new respect for country inhabitants. There is before us in the United States the opportunity to develop perhaps the finest type of rural civilization that the world has ever known. The ownership of land in past ages has always been most honorable, but the working of it has been regarded generally as degrading. The actual farmers, equipped with their poor, pitiable instruments, and condemned to unceasing and disheartening toil, have been slaves, serfs, heathen, pagans, boors, peasants. But to-day the use of machinery and new facilities for communication make it possible for the same individual to be a tiller of the soil and a gentleman.

* * * * * * * * * * *

2. The Gold Rush and Agriculture [1]

The history of agriculture in Montana falls into three distinct periods. The first was the pioneer period, when agriculture existed only in the few protected mountain valleys near the placer mines and furnished the miners much of their food supply. The second, the pastoral period, began in the late seventies after the plains were cleared of hostile Indians, and was simultaneous with the passing of the buffalo and the building of the Northern Pacific railway. The third, the present period, of diversified and intensified agriculture, began with the introduction of dry farming, the building of reclamation projects, the establishment of forest grazing reserves, and the passing of the remaining public land into private ownership. Each period stands out distinct; the change from one period to another was abrupt and was brought about largely by external forces. In other words, this evolution of Montana agriculture from pioneer to pastoral and from pastoral to diversified was not the result of the evolution of the state and territorial population and consequent needs, but was brought

[1] M. L. Wilson, "The Evolution of Montana Agriculture in its Early Period," *Proceedings of the Mississippi Valley Historical Association for the year 1917–1918*, Vol. IX. (Cedar Rapids, Iowa: The Torch Press, 1919), pp. 429–435. Reprinted by permission of the author and the Mississippi Valley Historical Association.

about rather by the operation of national forces in the development of agriculture to meet national needs.

This paper will treat only of the pioneer period of Montana agriculture, emphasizing its outstanding points. The advent of agriculture, its development and natural monopoly in relation to the food supply of the mining camps, its period of overproduction and depression, and its relationship to the extensive stock-raising period which very suddenly succeeded and greatly overshadowed it are developments of surpassing interest in this period.

None of the Indian tribes that originally occupied the territory now included in Montana was agricultural. Agriculture was brought into the State by Jesuit missionaries, who in 1841, under the leadership of Father De Smet, established St. Mary's mission in the Bitter Root valley. Shortly after the mission site was selected, Father De Smet set out for Fort Colville, a Hudson's bay post, on the Columbia three hundred miles to the northwest, and there secured a few bushels of wheat, oats, and potatoes, together with a few cows and agricultural implements. Land was prepared and the seed planted in the spring of 1842. A bountiful yield resulted, but without a mill no flour could be made; so in 1844 small millstones were brought to the mission and a crude mill erected. Following this, the fathers greatly increased the area seeded to wheat, and succeeded in getting a few of the Flatheads interested in raising crops. This mission was abandoned in 1850, and the building was sold to Major John Owen, who used it for a fur-trading post. From then on it was known as Fort Owen. During the fifties Major Owen continued the farming which had been carried on by the priests. His diary indicates that in 1858, 258 bushels of wheat were raised and a larger amount of potatoes. This farming was very crude, the threshing being done in a corral by driving oxen over sheaves of grain. Wandering Frenchmen who had been connected with the fur trade also began to settle around the Hellgate and near the Fort Owen mill, so that by 1862 farming activity had increased considerably. The fort became a food depot and stopping place for the trappers, traders, and travelers of the region as well as for the Mullen trail builders. In 1860 the government established an agency for the Flatheads in Jocko valley, built a gristmill, and shipped in some ploughs and agricultural implements. In 1859 range cattle were driven from Oregon to the Bitter Root and Missoula valleys, and other herds were brought into the Beaverhead and Deerlodge valleys, in order to be protected from the Mormon wars to the south. They increased rapidly in these protected mountain valleys, and it is

estimated that by 1862 there were between three and four hundred head in the valleys of the Deerlodge, Bitter Root, Missoula, and Beaverhead. Prior to the mining camps there were almost no local markets, and full-grown steers were driven to California in the early sixties. The uniform price, at this time, was seventy-five dollars for cows and one hundred dollars for full-grown steers. Thus agriculture was brought to Montana by the Jesuits and existed for nearly twenty years in one limited locality for the purpose of supplying missionaries, traders, trappers, and mountaineers with flour, oats, potatoes, and beef.

In 1862 gold mining began in Montana with the discovery of placer gold on Grasshopper creek, in the present county of Beaverhead. Alder gulch was discovered the following year, and Last Chance gulch in 1864. In the resulting stampede, crazed gold seekers rushed from all quarters to the new field. It is estimated that there were over ten thousand men in Alder gulch six months after its discovery. Gold was plentiful but food supplies scanty, and these had to be freighted four hundred miles from the Mormon settlements or from Fort Benton at the head of navigation on the Missouri, since the limited farming in the Missoula and Bitter Root valleys produced but an insignificant amount.

The Montana mining camps were located relatively close together within a circle whose diameter was not greater than one hundred miles. Food supplies could come in over three routes: from Salt lake, four hundred miles distant, at a freight rate of six to eight cents per pound; from St. Louis over the Missouri river to Fort Benton, twenty-three hundred miles, and from there to the mines on wagon trains, three hundred and fifty miles, at a rate of twelve cents from St. Louis to Fort Benton and four to eight cents from Fort Benton to Virginia City; or by the Overland trail from Omaha, twelve hundred miles, at a freight rate of twelve cents and up. Most of the flour, potatoes, butter, vegetables, and beef came from Utah, as agriculture was highly developed there at this time. The following gives some general idea as to the prices of food in the mining camps: at Florence City in 1862, flour cost a dollar a pound; beef, twenty-five cents; and bacon a dollar and a quarter; at Virginia City, in 1864, flour cost twenty-eight to thirty-five dollars for a ninety-eight pound sack, and potatoes twenty cents a pound. In the spring of 1864 the flour supply in Virginia City almost gave out before the spring wagon trains arrived, and flour soared to over a dollar a pound. Riots occurred and the miners established a miniature food administration of their own. Belated supplies reached the camp just in time to prevent suffering. Many

miners had farmed prior to their rush to the gulches, and those from Utah and California had had experience in pioneer farming, especially in the use of irrigation. The majority of those from the East and Middle West had come to the camps by way of Salt Lake, and had seen the Mormon system of irrigated farming in operation. The gold excitement was at fever heat, however, and all the immigrants came for the exclusive purpose of mining placer gold.

The mines, it will be noted, were located in mountain gulches. Fortunately for agricultural development, in close proximity to them lay the valleys of the Bitter Root, Jefferson, Gallatin, and Prickly Pear, each having a rich soil, abundance of irrigation water, and a sufficiently low altitude to allow crops to mature. With the exception of the Bitter Root they were neutral Indian hunting grounds and therefore were not the fixed home of any hostile tribe, a point very favorable to their settlement.

The Bitter Root valley is narrow, low in altitude, and particularly adapted to garden crops. The Madison is the highest of the valleys, narrow and restricted in area, and better adapted to raising potatoes than wheat. It lay almost at the door of Virginia City. The Gallatin, which was destined to be the principal section of the pioneer period, is a broad, rich, well-watered valley, surrounded by high mountains with its lower end only sixty miles from Virginia City, which could be reached on a good stage road. The valley is oval in shape, about fifty miles in length, and thirty-five miles wide. Its rainfall is sufficient to grow fairly large cereal crops without irrigation, and its altitude is low enough to eliminate all danger of frosts. A more favorable setting for agriculture can hardly be imagined, with high prices, proximity to markets, an almost protective tariff in the freight rate on food supplies from Salt Lake City, and fertile well-watered mountain valleys, free from Indian depredations. It must be noted, however, that there were no farming tools, that seed was scarce, and that farming experience with reference to these valleys was limited.

Indeed we can almost anticipate the farming stampede, the counterpart of the gold stampede. The placer mines were restricted in area and soon many of the claims were exhausted, throwing men out of employment, while those who came late in the mining stampede were unable to secure claims. The natural thing therefore for both classes, in the face of such high food prices, was to turn to farming.

Since the Gallatin valley was destined to become the center of agricultural development, and since its development is typical of

the other valleys, we shall trace its growth quite closely. In the late fall of 1863, a few men from Virginia City went to the lower end of the valley and staked out agricultural claims. About this time the frontiersman and trail blazer, John Bozeman, conceived the idea that the Gallatin would soon be a great farming district and interested himself in the laying out of the town site at the three forks of the Missouri river, which he named Gallatin City. Almost no crops were raised in 1864, this year being given to the settlement and preparation for farming the following season. A few crops of barley and oats and one bushel of wheat were sowed, of which the last reproduced itself sixty fold. Land was broken and irrigation ditches were constructed. John Bozeman wrote the following, which was published in the Virginia City newspaper, the *Montana Post*, September 17, 1864: "The valley [Gallatin] is being fast settled up with farmers, many of whom came to Montana as a better class of miners and after a while quitting their original pursuits secured 160 acres of land on which they stick a stake, giving the date, the name of their claim, they then build their cabins and go to work in true farmer fashion."

In 1865 the influx of settlers continued at an enormous rate, and it is reliably estimated that over fifteen hundred acres of cereals were harvested that year in the valley. The Virginia City newspaper, in September, 1865, in commenting on the settlement of the Gallatin valley said: "Starvation is therefore played out, and beef straight is a thing of the past." It was estimated that in 1865 Gallatin valley alone produced twenty thousand bushels of wheat. Reapers sufficient to harvest the grain crop were shipped in by way of Fort Benton and cost about five hundred dollars each. A threshing machine was hauled overland from Omaha arriving in the valley in time to do the threshing, for which a charge of twenty-five cents a bushel was made. A mill having a capacity of a thousand sacks of flour per week was built, and began grinding before winter set in. Seed wheat for spring seeding sold for ten dollars a bushel, while the general crop of the year sold from four to five dollars a bushel. The season was favorable, and the irrigation ditches furnished an abundance of water, so that the yields ranged from twenty-five to fifty bushels an acre.

By 1866 the mining excitement had subsided, and the bounteous crops of the previous year continued to attract both miners and immigrants to the agricultural valleys. It is estimated that the acreage of the previous year's crops was increased four times and that six thousand acres of spring wheat were sown in the Gallatin valley alone. A second mill was built at the three forks of the

Missouri and an enthusiast, writing to the Virginia City paper, declared: "We propose astounding the Brigamites and heavy freighters of Salt Lake this year by supplying the home market."

High prices continued and agricultural development progressed rapidly. In 1867 a careful survey was made of the farms of Gallatin valley which showed that in that year 8,351 acres of wheat and 1,971 acres of oats and barley were sown. It was estimated that over 300,000 bushels of wheat were threshed that year in Gallatin valley. Thus in three years' time the wheat crop had increased from 20,000 to over 300,000 bushels. The price of wheat dropped to nearly two dollars a bushel, and unmistakable signs that the local food needs of the territory were being abundantly supplied began to appear. The other valleys developed in about the same proportion as the Gallatin, but being much smaller they probably did not produce more than 100,000 bushels of wheat. Farming machinery was being shipped by way of Fort Benton, and by 1867 there were seven flour mills in the territory. Live stock was being ranged in the foothills and in the nonagricultural mountain valleys, and nearly every rancher was accumulating a few head of cattle in the common herd. At this time, however, the businesses of farming and of stock raising were usually separated, although nearly every farmer who was married and had a family milked shorthorn cows and made some butter. It was not safe for herders to take live stock to the plains east of the mountains because of the Indians and the buffalo. The census of 1870 gives 54,863 acres of land under cultivation and the total agricultural production of the territory at $1,676,666. Wheat production is estimated at 180,000 bushels, oats at 149,000 bushels, potatoes at 91,000 bushels; and 12,432 milch cows are credited with producing 408,000 pounds of butter. The population of the territory is given at 20,505 of which 2,111 were males over twenty-one engaged in agriculture. The *per capita* production was nine bushels of wheat and five bushels of potatoes. The census, however, did not take into account Indians, soldiers, and the migratory population; but after making allowances for these, and deducting seed requirements, smutty wheat unfit for milling, and other grain losses, it is still apparent that the *per capita* production was considerably in excess of the ability of the population to consume. Attention should be called to the fact that although approximately only twenty per cent of the population of the territory was engaged in agriculture, that fraction was producing an abundant supply of meats, flour, vegetables, and potatoes.

* * * * * * * * * * *

3. The Reclamation of Agricultural Land [1]

Reclamation of Agricultural Land.—The pressure of population on the food supply is becoming evident in the United States. Our exportation of agricultural products is declining, the prices of beef, cereals, hides, wool, etc., are rising, and they are not likely to fall to former levels. It is probable that wheat at one dollar per bushel is a permanent factor in our national economy. Values are mounting from year to year, for we are fast reaching the limit of our cultivable area, while the demand for farms is enhanced by the incoming of land-hungry peasants from Europe. American farmers are beginning to migrate to the Canadian Northwest, where unexploited wheat areas await cultivation. Sixty thousand emigrants crossed the boundary line in 1907 and again in 1908, and the figure mounted to 75,000 in 1909. The increased value of farm lands is due in part to scientific tillage, resulting in larger crops, and to the capital invested in improvements,—buildings, fences, roads, etc. The average rise in capitalization between 1890 and 1900 is estimated at twenty-five per cent, between 1900 and 1905 at thirty per cent. The greatest augmentation of value has taken place in the West and Southwest, but the older sections of the Union have experienced a considerable rise,—South Central, 40.2 per cent, North Central, 35.3, South Atlantic, 36, North Atlantic, 13.5 per cent.

The agricultural portion of the public domain is practically exhausted; some 400,000,000 acres remain in possession of the government, but of this, three-fourths is fit for grazing only. The supply of arable land is being rapidly appropriated, having been sold and taken up by homesteaders for the past decade at the rate of 18,000,000 acres per year. As we approach the limit of our national inheritance, men seem to be possessed by a land mania. The opening of an Indian reservation or an irrigation project is attended by crowds of home-seekers eager to try their chance for a quarter section on the old, easy terms. Proposals for the extension of the cultivable area by the irrigation of arid lands and the drainage of swamp lands readily command attention.

Irrigation of Arid Lands.—Professor Shaler called the cordilleran area "the curse of the continent." Throughout the greater part of this mountainous region, the rainfall is inadequate for agriculture or for forest growth, except on the west slope of the ranges, where the warm winds from the Pacific precipitate mois-

[1] Katharine Coman, *The Industrial History of the United States* (New and Rev. Ed. New York: The Macmillan Company, 1914), pp. 400–407. Copyrighted by The Macmillan Company. Reprinted by permission.

ture as they rise to cooler altitudes. The total area is 758,000,000 acres. The larger portion is rock or shale or sand, and quite unfit for tillage, but there may be 60,000,000 acres of fairly level and fertile land which could be rendered cultivable by irrigation. Where soil and climate are suited, and a water supply available, these arid lands are highly productive.

Irrigation has been practiced for centuries by the Pueblo Indians along the Rio Grande and Gila rivers, each community building the ditch with which to water the common cornfields, while the irrigated orchards and vineyards of the Franciscan missions in southern California proved what might be done with larger resources. The first successes of the Mormons in Utah have been repeated in a hundred different settlements, until in 1900 the communities of this sect had more than 6,000,000 acres under irrigation. The first attempt of the Federal government to deal with the problem of the arid region was the *Desert Land Act* of 1877, by which tracts of 640 acres were offered at $1.25 per acre, on condition that irrigation be attempted. The only men to take advantage of the law were cattle and sheep ranchers who seized the opportunity to get permanent title to their headquarters, and speculative irrigation companies which put in inadequate waterworks, sold the land without water right, or charged a monopoly price for the water supplied. Land title and water right were rendered inseparable in the *Carey Act* of 1894. This wise law provides that any one of the arid States may appropriate public land to the amount of one million acres in suitable tracts and authorize the construction of irrigation works thereon by private companies. The engineering plans for each enterprise must be approved by the State land commission, as well as the charge to be made for water rights. The State sells the land to settlers at fifty cents an acre, and full title may be acquired after thirty days' residence. The water right charge varies with the cost of construction, from $30 to $40 per acre, and may be paid in ten annual installments. Ownership in the reservoirs, canals, dams, etc., is held by the company until these payments are complete, and then passes to the water users' association. Seven States, Wyoming, Idaho, Montana, Utah, Colorado, Arizona, and California, have already taken advantage of the Carey Act, and New Mexico and Texas have both applied for a land grant in order to develop their irrigation possibilities. Thus far only fertile lands and easily irrigated have been taken up, and the projects now under cultivation are highly successful. The Carey Act does not, however, provide for interstate projects, nor does it lead to

any large and comprehensive plan of conserving the water resources of the vast region concerned. Again, the responsibility of maintaining the irrigating plant after the constructing company has surrendered title, devolved upon the farmers, who, while they can readily finance ordinary repairs, would be ruined by a destructive flood.

In the *Reclamation Act of 1902* the federal government assumed the task of irrigating tracts of arid land not otherwise provided for, and the revenue from sales of public lands in the United States, amounting to about $10,000,000 per year, was devoted to this purpose. The initial expenses are met from this fund, but the cost of construction in each case is assessed on the lands to which water is furnished, and must be met ultimately by the settlers in the ten first years of cultivation. The returns are used for the prosecution of new projects within the same State. The provisions of the Homestead Act apply to the lands irrigated by the government. A citizen of the United States may acquire a title to a tract of twenty, forty, or eighty acres (the area being determined by the nature of the soil) on condition of five years' residence and the bringing of half the area under cultivation. The water right charge varies from $20 to $30 per acre, according to cost of construction. The water supply is inalienable from the land, and the government allowance of three acre-feet per year, equivalent to thirty-six inches of rainfall, is sufficient for any crop suited to the climate. The execution of irrigation projects under this law was intrusted to the Reclamation Service, a bureau organized under the Department of the Interior. During the eight years of its activity, twenty-eight projects have been completed, at a cost of $70,000,000 and 1,910,000 acres have been brought under cultivation, fully half of this area under direct irrigation.

Beneficent as the Reclamation Act has proved, certain difficulties have become apparent in its operation. The annual revenue derived from public land sales is inadequate to all the projects set on foot, the work has been delayed unduly, and some of the settlers who filed in good faith for the five-year residence term are still waiting for water, because money is lacking to complete the canals. The Reclamation Service worked out a plan for meeting this situation, *e. g.*, the engineer in charge was authorized to arrange with the homesteaders to build the canals, paying for their labor in certificates of indebtedness, and Secretary Garfield agreed to receive this "water scrip" in payment for the annual water charge as it fell due. The plan seemed justified by its economies. Labor that was running to waste was brought to bear where it

was most needed, and the farmers were enabled to forestall their obligations to the government in their one available asset. This method of canal construction was put in operation on six different projects, and some $300,000 had been issued in water scrip when the legality of the procedure was called in question, and Attorney General Wickersham ruled that the device was illegal, since not specifically authorized by the Reclamation Act. Congress has since met the financial difficulties involved by voting an issue of $20,000,000 for the completion of the work already undertaken and in immediate prospect, this issue to be in the form of certificates of indebtedness guaranteed by future revenue from land sales.

The sum total of irrigated lands in the United States to-day is 7,500,000 acres in the arid region, 275,000 in the semi-arid and 3000 in the humid section east of the one hundredth meridian.

* * * * * * * * * * *

Dry Farming

Irrigation is restricted to districts where water is available and where the topography is such that the lands lie below the river or reservoir from which the supply is drawn. Pumping to higher levels is a physical possibility, but is too expensive for any but the most productive regions. There is a vast extent of fertile country lying west of the one hundredth meridan where these conditions can rarely be found. The Great Plains—western Nebraska and Kansas, eastern Colorado and northern Texas—were long the despair of agriculturists. The rainfall is scant, varying from ten to twenty inches, the rivers are shallow and inconstant, and the land is hilly and broken, yet the soil, a deep alluvial loam, would yield heavy crops if sufficient moisture were available. This region has been brought under cultivation by a special type of agriculture,—dry farming,—a process calculated to conserve in the soil itself whatever precipitation occurs. The field is ploughed in the autumn, just before the rainy season, to a depth of twelve or fourteen inches, in order to allow the water to soak through to the subsoil. In the spring when the surface hardens, it is ploughed and harrowed into a fine mulch, forming a dust blanket which effectually prevents evaporation. The seed is drilled in deep, and a smaller amount per acre is used in order to economize water and nitrogen and leave each plant adequate nutrition. In all but the best lands, a summer fallow should be allowed every other year. The method was used first on the wheat ranches of California some

sixty years ago, and it is now successfully practiced in the Columbia River Basin and on the western slopes of the ranges that intersect the desert regions of Utah and Nevada. It is admirably adapted to cereals and to certain forage crops, such as clover and cowpeas, and fruit orchards may be successfully developed if water can be supplied in abundance for the first three years' growth. Dry farming should be properly regarded as supplementary to irrigation, a means of bringing under tillage such portions of the farm as cannot be provided with water. The introduction of drought-resisting plants and trees—durum wheat, kaffir corn, and Persian clover—will doubtless extend the area of its usefulness. The Department of Agriculture has established an office of Dry Land Agriculture which is engaged in making experiments as to the best methods of cultivation, while the States of Utah, Colorado, and Wyoming have provided for model farms as a means of demonstrating its practicability. It seems to be proven that a larger holding than the quarter section of the homestead entry is essential to the best success. The Mondell Act of 1909 increases the homesteader's claim to 320 acres, in case of filings on nontimbered nonmineral, nonirrigable land in the arid states, and requires no residence term, but evidence of successful cultivation instead.

CHAPTER XVII

THE EVOLUTION OF FARM MACHINERY

1. Progress to the Close of the Nineteenth Century [1]

The most prominent feature in the development of American agriculture is the immense improvement that has taken place in agricultural methods and machines—indeed, the word improvement is not adequate to express the change that has taken place in the methods of agriculture in this country, because the implements and machines are creations rather than improvements, and their mission has been radical and far-reaching. They have reduced the amount of human labor required to produce a given quantity of crops and to cultivate given areas of land, and they have been largely, if not chiefly, instrumental in converting local markets into world markets for the principal cereals, cotton, tobacco, and animal and dairy products.

A technical description of these implements and machines cannot be attempted here, and it will be sufficient merely to indicate generally changes in their character and in the results of their work. Dependence must be placed upon the reader's knowledge of these machines and upon his mechanical mind to understand how and why they have contributed so much to the realization of the present agricultural era.

Vehicles

At the beginning of this century carts were used on the farms and chaises on the roads. Stage-coaches were used on the main roads of travel, and a few wagons were found here and there. Carts were more convenient for use with oxen on the farms. For many years discussion was active as to the comparative economy of oxen and horses for farm use, and wagons came in with the increased use of horses and the improvement of the country roads. Buggies and trotting horses grew up together. Light one-horse wagons first appeared in Connecticut about 1830, but it was not until 1840 or later that they became common enough not to attract notice when seen on the roads.

[1] George K. Holmes, "Progress of Agriculture in the United States," *Yearbook of the United States Department of Agriculture, 1899* (Washington: Government Printing Office, 1900), pp. 314–320.

Ploughs

In 1637 there were but 37 ploughs in the colony of Massachusetts Bay. Twelve years after the landing of the Pilgrims the farmers around Boston had no ploughs, and were compelled to break up the ground and prepare for cultivation with their hands and with rude and clumsy hoes and mattocks. It was the custom in that part of the country, even to a much later period, for any one owning a plough to do the ploughing for the inhabitants over a considerable extent of territory. A town often paid a bounty to any one who would buy and keep in repair a plough for the purpose of going about in this way.

Mr. C. C. Coffin thus mentions the plough that his father used: "I think it was about twelve feet long. I know that it required eight to ten oxen to draw it, one man to ride upon the beam to keep it in the ground, and a man to follow behind with a heavy iron hoe to dig up the baulks."

A writer in the Rhode Island *American* in 1820 describes the plough generally in use in the Eastern States at that time, known as the Old Colony plough, as follows: "It had a 10-foot beam and 4-foot land side; your furrows stand up like the ribs of a lean horse in the month of March. A lazy ploughman may sit on the beam and count every bout of his day's work. Six of these ploughs cost me on an average, last year, $5 each to keep the shares and coulters fit for work, and the wear of the other parts could not be less than $1 more—$6 per year for each plow."

The first patent for a plough in this country was taken out by Charles Newbold, of New Jersey, in 1797. His was the first cast-iron plough ever made, but the farmers in those times entertained great prejudices against it. There was a general idea throughout the country that a cast-iron plough would "poison" the land. Mr. Coffin remembers the first cast-iron plough used in his neighborhood in New Hampshire in 1837 and the assemblage of farmers who objected to it for the reason mentioned. He says that it required from 1797 to 1842 for the inventive genius of this country, together with the observations of farmers and mechanics, to arrive at any just conclusion as to what would be the best form for the plough.

Without mentioning intermediate ploughs, it will be sufficient to pass on to the Oliver chilled plough, which first appeared in 1870. This was a light, durable plough with a moldboard of proper shape to economize draft and suitably turn the furrow, and this plough in a marked degree promoted the economy of ploughing. It was stated by Mr. Coffin in 1878 that this invention, if used through-

out the United States in the preceding year, would have effected a saving of $45,000,000 to the farmers of the country in the expense of ploughing.

And then invention followed invention and improvement followed improvement, until we have sulky ploughs, gang ploughs, ploughs combined with harrow cultivators and with seed drills, side-hill ploughs, vineyard ploughs, beet ploughs, subsoil ploughs, double land-side ploughs, and lastly, what has been the aim, and seems to be the end, of plough invention, we have the steam gang plough combined with a seeder and a harrow, which has reduced the time required for human labor (in ploughing, sowing, and harrowing) to produce a bushel of wheat, on an average, from 32.8 minutes in 1830 to 2.2 minutes at the present time, and which has reduced the time of animal labor per bushel from 57 to 1½ minutes; at the same time it has reduced the cost of human and animal labor in ploughing, seeding, and harrowing per bushel of wheat, from 4 cents to 1 cent.

Corn Planters

Hundreds of patents have been issued for corn planters. The earlier ones were adjustments to the hoe, which permitted the release of grains of corn when the hoe was struck into the ground; then came the hand planter, and the next step was the horse drill. Next came the idea of marking rows in both directions with a drag. A long beam with pins in it was dragged both ways across the field by horses, and then the farmer would go along with the hand planter and plant the corn at the intersection of the rows. Still, again, followed an improvement, and this was the corn planter which planted two rows at one time with the rows running in both directions. A man sat on the machine, and, at every point where the drag had crossed at right angles, he moved a lever that dropped the corn, which was covered by wheels that turned and pressed down the soil upon the seed. The check rower followed; it was a simple implement, consisting of a wire chain or knotted rope stretching across the field and anchored at both ends. This passed through the machine as it was driven across the field and dropped some grains of corn every time the knot passed through a slot in the machine. It was only necessary to drive backward and forward all day long until the acres were planted, and then the corn could be cultivated in both directions. Subsequently, numerous check-row planters for corn have been invented with and without fertilizer adjustments, so that several rows of corn may

be planted at the same time in places at regular distances apart, permitting cultivation in both directions.

Cultivators

Cultivators have been the subject of several thousand of patents. The original cultivation of corn and other crops planted in rows was by means of the hoe, but in the course of time a plough was used to loosen the earth and to suppress weeds and grass, being drawn twice between the rows and turning the soil against one or the other. Next a tooth harrow was employed, and this was drawn one way between the rows, and afterward a cultivator with small double ploughshares was used. Then followed the double-shovel cultivator, cutting deep or shallow, as desired, and turning the earth toward two opposite rows at the same time. The implement is now variously made, but it has reduced the economy of cultivation apparently to a minimum; the farmer may now ride while the cultivator is doing its work. He cultivates the rows of his crop in both directions, and the use of the hoe has been nearly, if not entirely, discontinued throughout large agricultural areas.

Harrows

Much attention also has been devoted to the invention of implements for harrowing and pulverizing the soil. The farmer no longer drives a brush harrow over his field as of yore, nor does he need to use a tooth harrow, but he has at his command disk harrows, screw pulverizers, smoothing harrows, spring-tooth harrows, and harrows combined with ploughs and seeders.

Corn Huskers

The mechanical corn husker is a machine of recent invention. Previously the husking of corn was done only by hand, and a peg strapped to the hand was often used for opening the husks; but there is now a machine that husks the corn and at the same time cuts the husks, stalks, and blades into feed, the motive power being steam.

Corn Harvester

Again, we have the recent corn-harvesting machine drawn by horses that cuts the cornstalks and binds them into bundles at the same time.

Cornshellers

The steam cornsheller caused a remarkable change in the time and expense of the shelling of corn. In the olden time corn was shelled by hand, a frying-pan handle or shovel being used, the ears of corn being scraped against it, or perhaps the cob of one ear was used to shell the corn from another. Then came the first machine for shelling corn, a cylinder turned by a crank, by which a man might shell about 40 bushels in a day. Thousands of patents have been issued for cornshellers, and the culmination of them is the steam-power or horse-power cornsheller, which will shell a bushel a minute, carry off the cobs to a pile or into a wagon, and deliver the corn into sacks or wagons.

Seeders

From the time when wheat was first sown, up to a comparatively recent period, the only method of sowing it was to throw it into the air by the hand. In this way it is impossible to sow evenly, especially if the wind blows with considerable force; and if clover seed is to be sown, the ground must be gone over a second time, while a third time is required if fertilizer is to be distributed. Then, when the harrow comes some of the grains are buried too deeply and some are not covered with earth enough. But not so many years ago inventors set to work to construct mechanical seeders, and the result is an almost complete abandonment of broadcast sowing by hand and the substitution of such seeders. They sow all kinds of grain and seeds at once, with fertilizer if required, and they harrow at the same time. They make the crop more certain. It is the general opinion that the wheat crop is increased one-eighth or more by the use of the mechanical seeders, especially in the case of winter wheat.

Mowers and Reapers

In 1794 a Scotchman invented what was described as a most marvelous and wonderful machine for cutting grain, doing as much in one day as seven men could do with the sickle. This marvelous machine was only the cradle. The reaper followed, and the first patent for one issued in this country was given to Hussey in 1833. McCormick took out his first patent in 1834, although he had constructed and tested a machine in Virginia in 1831 with some success; but the world heard little of reaping machines until 1845, when 150 of them were built at Cincinnati; by 1846 fully 300 had been built. There was a general trial of

mowers and reapers at Geneva, N. Y., in 1852. Nine machines contested, for other inventors had taken out patents. Nineteen years had passed since the first patent had been issued. Out of the nine machines exhibited, not one could start in the grain without backing to get up speed. There was a heavy side draft, the machines were clumsy, and they could not turn easily.

By 1855 about 10,000 mowers and reapers had been built by different makers, nearly all being one-wheeled machines. There was an exhibition of reapers at the French exposition in 1855, in which there was one English, one French, and one American. The French machine did its allotted work in 72 minutes, the English in 66, and the American in 22.

Two years later, in 1857, there was a trial at Syracuse, N. Y., at which nineteen machines contested. Of these, all except three started in the grain without backing to get up speed. There was a trial at Auburn, N. Y., in 1866, at which forty-four different machines were entered, and of these, forty-two did their work in a satisfactory manner.

The mower and reaper combined cut the grain and left it on the ground bunched up in proper size for a sheaf, subsequently to be bound by hand. The harvester was supposed to be an improvement upon this, because it had a place for one or two men to ride to bind the grain as fast as it was cut; but the self-binder went beyond that and by means of a mechanical attachment did the binding without the aid of human labor. It was not until 1870 that the self-binder was a mechanical success; but that was not the end of invention for constructing machines to harvest wheat.

It remained for the ingenuity of man to construct a combined reaper and thresher, with which it is necessary only to drive across the wheat field in order to obtain the grain ready for transportation to the elevator or elsewhere.

Cotton Gin

Without the cotton gin it would be practically impossible to raise and market the cotton crop of this country, which now commonly amounts to 10,000,000 bales and more annually. Before Whitney's invention it is said that the labor of one person was required for about ten hours to pick the seeds from 1½ pounds of cotton lint. At the present time one machine will gin from 1,500 to 7,500 pounds of lint in the same time, the quantity varying according to the size and power of the gin.

Influence of Patent Laws on Development of Agricultural Machines

The development and creation of agricultural implements and machines by the inventive genius of this country is one of the most remarkable features of progress of the century. Its history is one of evolution and revolution—a revolution of incalculable consequences to human labor and the production and distribution of wealth, with an immense bearing upon the trend and character of industry, social life, and civilization.

This development has been encouraged by the patent laws of the country, and perhaps nothing could be more tersely expressive of the influence of these laws in promoting mechanical agriculture than a mention of the number of patents that have been granted. Under date of November 17, 1899, the Patent Office reports that patents for agricultural machines had been granted to the number indicated in each of the following classes: Vegetable cutters and crushers, 701; fertilizers, 822; bee culture, 1,038; trees, plants, and flowers, 1,102; care of live stock, 3,749; dairy, 4,632; threshers, 5,319; harrows and diggers, 5,801; fences, 8,404; seeders and planters, 9,156; harvesters, 12,519; ploughs, 12,652.

It is no longer necessary for the farmer to cut his wheat with sickle or cradle, nor to rake it and bind it by hand; to cut his cornstalks with a knife and shock the stalks by hand; to thresh his grain with a flail, nor to drive horses over it to tread it out, nor to scrape the ears of corn against a shovel or the handle of a frying pan. It is no longer necessary for him to dig potatoes, nor to cut his grass with a scythe and to spread it with a pitchfork that it may dry, nor to pitch the hay from the wagon to the haymow in the barn, nor to pick the lint from cotton seed by hand, and so on with numerous operations throughout the whole range of agricultural work.

Mechanical contrivances have largely supplanted human labor in many respects, or have improved the application of labor and increased the product of agriculture, reduced the cost of production, augmented the farmer's gross income, and made his life an easier one than it was before the machine period.

This country has come to be without a peer in the manufacture of agricultural implements and machines, both in quality and number. . . .

2. Development of Mechanical Power for Agriculture[1]

* * * * * * * * * * *

The industrial revolution, the steam-engine, electricity, everything that goes to make up the "steel age," have in fifty years created a greater difference in the production of the world—except in agriculture—than had been since the days of the Pharaohs. The corresponding revolution in agriculture has unobtrusively begun.

Ten years ago, at the University of Oxford, our lecturer on political economy laid it down as axiomatic that science and invention, the division of labor, the law of diminishing returns, could do little to save human labor on the farm; that the conditions of its toil were nearly unalterable, its processes predestined to be slow. Yet these few years have seen immense advance, and to-day no forecast can predict the progress of the future, for man is clearly shaking off the heavier shackles of manual toil. Pipe and tabor no longer lead the procession of harvest home, but drudgery goes as well as romance, and a business air sets the thresher to factory pace.

American agriculture must develop enormously along new lines if it is to save the nation from hunger. Within ten years a million new farms have been created, and our farm products have more than doubled. But consumption is still so rapidly overtaking production that our exports of agricultural products last year fell fifty-six million dollars below those of 1899.

Better methods will do much to save us. Science is making the land more productive. It is molding plant life to serve better and more profitably our daily needs—trebling the amount of sugar in the beet, quadrupling the possible corn yield of an acre. But machinery will do more. By its quick, reliable work it has already vastly improved the quality and quantity of the harvest by confining crop operations within the period when the most favorable conditions prevail.

There are to-day more gas-engines at work on our farms than in our shops and factories—at least 600,000 of them. And it is estimated that one-eighth of all the power used on our farms is now mechanical. The eighth will soon become a quarter. Light motors are speedily growing heavier, showing that heavier and more general work is now being done by machinery. Plainly,

[1] Edward A. Rumeley, "The Passing of The Man With The Hoe," *The World's Work*, Vol. XX, No. 4, August, 1910, pp. 13246–13258. Reprinted by permission of the publishers.

we are seeing the beginning of the era of mechanical power on the farm.

Swift-coming changes make prophecy sure. The old-style farm wagon is being rapidly replaced by eight or ten different machines, and its one surviving use—that of carrying the farmer and his family—is now being widely usurped by the automobile, of which several special types for the farmer have just been designed. One, half-buggy, half-truck, can be harnessed to a wagon or to light machinery. A single manufacturer is now selling a thousand farmers' automobiles a week, 650 of these going west of the Mississippi.

In the near future, to escape ruin, every farm must have its own power-plant in an efficient motor. Even now, motors of myriad kinds are performing nearly every sort of farm labor—ploughing, seeding, harrowing, rolling, reaping, binding, threshing grain, grinding corn. They are shredding fodder, loading hay, milking cows, shearing sheep, drilling wells, running spray-pumps to protect the fruit trees—even doing chores by carrying water and sawing wood. This ready power on the farm will give country life many of the conveniences of the city. Nearly every where the farmer now has the telephone and daily mail delivery. The motor will add electric light and heat and an automatic water-system giving a pressure equal to that of the city main.

The farmer's wife will need but to turn a wheel, throw a switch, twist a stop-cock, and be saved her hardest work. Butter will again be made on the farm and not in a factory. The motor will run the cream-separator and churn, and dispense with the labor of the milk cellar and its endless array of pans and crocks to be washed. It will give new speed to her sewing machine. On Wednesday ("sweeping day") it will save her health and strength with a vacum cleaner. It will run her washing machine and mangle. Through a dynamo, in the electric fan and flat-iron, it will bring her blessed relief from the fiery heat of the range on ironing day. It will be a ready helper in the kitchen. And all this takes no account of the promise of new inventions.

Until now, mechanical progress had seemed haphazard. Farmers have studied their own needs. Some of them have been able inventors, and the chance of a market has sharpened the wits of manufacturers. But there has been no competent direction—no one to whom either farmer or manufacturer could look for advice or help in mechanical improvements or the better planning and organization of farm work. Significant of the coming age, a new profession has suddenly been created by this necessity. Eight

State colleges are now offering full courses in agricultural engineering.

As machinery multiplies rapidly for every conceivable farm need, as it cheapens in cost and grows in efficiency, we begin to understand the astonishing gist of the thing. See how enormously it increases the acre-efficiency of man, saving human labor in a day when labor is scarce. From plowing to shelling, it takes four and a half hours of work to produce a bushel of corn by hand. By the latest mechanical methods, the whole process can now be accomplished in forty-one minutes. A bushel of corn can be shelled in one minute where it formerly took a hundred. In planting corn, one man in a single day "puts in" twelve to fifteen acres better than the "man with the hoe" can plant one.

The latest harvester equals the work of forty men with sickles. Instead of eleven hours to cut and cure a ton of hay, to-day it takes one hour and thirty-nine minutes. And so the round of the whole farm. The saving of labor is so vital a thing to the farmer that it often pays to use a machine like the new corn-picker that saves men but not money.

The machine enormously saves animal labor, and a new question is being asked. It was only the other day that the Department of Agriculture told us:

> The comparative merits of animal and mechanical power will in the end probably be resolved into a question as to which source of power will require the least acreage for the production of fuel, owing to the rapidly growing area required to supply food for the human race.

In farm labor we are seeing the passing of the horse and mule. The new internal-combustion engine costs about $90 for each horse power, while a horse equally efficient costs from $175 to $200. Among many other economies there is the matter of food. The latest engine costs in fuel a half-cent per horse-power hour; a horse's food costs eight and one-quarter cents. No wonder that 75,000 gas-engines, representing the power of half a million horses, were sold to our farmers last year.

And the vital food needs of men will hasten the passing of the horse. We are now tilling nearly all of our land that can be cultivated. Every work-horse displaced by tractor or automobile or engine represents an annual saving of more than $50 in grain and forage, which may be converted into food products for the maintenance of the human race. If half of our work-animals could thus be dispensed with, we should effect an annual saving of $600,000,000, an amount equal to our entire wheat crop.

The revolution is coming quickly. The machines we need lie mostly ready at hand. Their general use is only waiting for the cheaper power that we now have in promise. There has been but one great gap, and progress at last is coming where it was needed—in ploughing, the work that consumes 60 per cent of all the energy spent in tilling the soil. It seemed an epoch-making thing when Thomas Jefferson, Jethro Wood, John Deere, and James Oliver—all Americans—fashioned the modern plough from the crooked stick that for thousands of years was used for stirring the earth. But this tool, perfect for the use of a single man, is no longer enough. The interest of inventors and manufacturers now centers in the creation of ploughs that will do the work by wholesale—meeting by quick work the urgent needs of our sudden-massing populations. And we not only need ploughs that will break up rapidly and well the great fertile plains of the new Northwest and Southwest. There are the broad areas of the less productive lands that need not only efficient management and systematic organization, but cheaper ploughing than any yet known. Foreign competition is keen and intelligent in agriculture above all, and for the future our methods must continually improve to meet it. Wholesale methods, which means mechanical methods, are the order of the day.

More power in human labor is spent for ploughing than for any other daily need. The trudging ploughman in the field, with his team, is not an impressive producer of power when compared with the Mallet locomotive or the central power station of the city street-car line. But there are 6,730,000 farmers in the United States, each annually ploughing more than thirty-nine acres. This is an amount of land that in the aggregate is equal to about one-eighth of the whole United States—an area nearly equal to that of all the States east of the Mississippi and north of the line of the Ohio River. This for our nation alone. To produce sustenance for the entire human race would require, if all lived as we live, that the surface of a tract equal in extent to the entire continent of South America be turned over once a year.

* * * * * * * * * * *

In spite of Deere and Oliver and a half-century of inventors, the drudgery of this toil remains terrific. Every other labor has been greatly lightened. In the primitive labor of man, power began with the human muscle and was used for three great human purposes. It was used for changing the shape of materials—grinding grains into foodstuffs, spinning and weaving fibers into articles of dress, shaping stone, wood, and metals into implements and

dwellings. It was used for transportation. And it was used for cultivating the soil. For all of these uses it was transmitted by back-and-forth motion. But in the first of these, the different forms of manufacture, after James Watt and his steam engine of 1765 the principle of rotation was substituted with wonderful results. Now the industry of the world centres in the steam-driven factory; for, more and more, mechanical power has been substituted for human muscle, until to-day in manufacture—which shapes the materials—the master-workman is often only the intelligent onlooker, furnishing the machine with material and guiding its work. In transportation, Fulton and Stephenson applied the rotary principle—and to-day a steam-carried commerce has linked the nations together. Now the farmer has become a progressive part of our modern industrial world, and has gradually been developing a taste for machinery. And so he has long been using the steam engine to save money, to hasten work, and to spare himself something of his age-old, heavy toil. He first tried it by drawing a gang of ploughs back and forth across the field by a cable and winding-drum, driven by an engine at one side—or by two engines, one on each side of the field. When the steam engine became self-propelling a few years ago, he applied it to ploughing, hitching two or three ordinary horse-ploughs behind. Gradually an engine with heavier gearing, broader wheels, and greater power was developed, and the present type of modern steam-plough was established. Such engines, slowly improved, have come into general use on the large level farms of the West. Some of them have as much as 120 actual horse power, draw behind them as many as forty ploughs, and turn over from seventy-five to ninety acres a day.

This power and efficiency have brought the steam-plough into rapidly widening use during the last five years. The steam engine, however, is extremely heavy. It requires from 1,500 to 5,000 pounds of coal and from 12,000 to 25,000 pounds of water for every ten hours' work. And it needs men and teams to haul this great amount of fuel and water. Most serious of all, in converting its energy into a forward pull, as well as in propelling itself, the engine loses an enormous percentage of its power. Its net thermal efficiency in actual work in the field is less than 2 per cent, as compared with about 20 per cent for the horse. In other words, ninety-eight pounds of coal is wasted to obtain the energy that is latent in two.

This is a heavy loss, but the modern ploughing-engine, while less efficient than the animal when at work, consumes no fuel

when idle; and when the total amount of work is compared with the total amount of fuel, the efficiency of the engine under usual conditions is greater than that of the animal. Here is an advantage that is especially marked in those new districts of the Northwest where the land is devoted exclusively to grain growing. Active farm work is in progress during only eight or nine weeks of the year, and so the net efficiency of the animal fluctuates between 1 and 2 per cent. When not in use the engine can be oiled and set aside. It needs no attention that could prevent the farmer's wintering in California or in Florida until the next year's work begins.

And the engine prodigiously saves human labor. With horses, every plough needs a man; but with a good engine, two men can operate eighteen ploughs and hold controlled in their hands the power of eighty horses. It can travel faster than the horse, and the engine does not tire. The horse can be used but ten hours a day, while the engine with headlights can be operated, as it often is, throughout the twenty-four hours. This, again, is of particular importance in the new wheat districts of Canada, where early frosts make it imperative that the earth be turned and the seeding done as promptly as possible after the spring thaw.

The competing rush of the work of the world develops machines as nature develops an animal—through selection. Defects are eliminated and efficiency perfected; and here progress is rapid. The ploughing-engine suddenly became a thing of great importance to the world five years ago, when an internal-combustion engine (a gasoline engine) was mounted on a traction truck and harnessed to ploughs. This building of an oil-burning ploughing-engine is by far the greatest step that has been made in the historic development of the plough from the crooked stick dragged through the earth by the first farmer. And it sharply marks an epoch, for it has opened the world's last great power-market to mechanical motors.

Stephenson once said that the locomotive was not the fruit of any one man's effort, but the work of a generation of engineers. So the modern ploughing-motor has come from thousands of ingenious inventors and farmers. We are now at work upon the solution of the last problem, which is that of economy—for, just on account of its present cost, the motor engine is not rapidly enough displacing animal labor. And that is the reason why as yet only one acre in 20,000 is ploughed by machinery.

* * * * * * * * * * *

The new, cheap method of producing alcohol from cellulose

promises undreamed-of wonders of economy; and the new chemistry—extracting by tons, and cheaply, nitrate fertilizers from the air—will guarantee an inexhaustible fertility to the earth.

* * * * * * * * * * *

The American of the generation of Cyrus McCormick taught the world how to shift the labor of binding wheat, mowing hay, husking corn, and threshing grain from the human muscle to the animal. Through the application of mechanical power, modern transportation and manufacture have changed the world. It remains for the American of our day to develop the engine as the source of power for the farm, and complete the cycle of the application of machinery to all three of the great human uses.

CHAPTER XVIII

THE WESTWARD MOVEMENT OF WHEAT [1]

The most significant result of the revolution in agriculture was the rise of the United States to first place among the nations of the world in the production of grain and live stock—a position which this country had already by 1860 long since attained and still continued to hold with respect to cotton and tobacco. Grain was the most important product and the leading item entering into the nation's domestic and foreign trade. Its production and distribution therefore constitutes a subject of fundamental interest and importance in the study of American economic development.

The rapid expansion in the grain growing industry which characterized this period is shown by Table I which gives the production of the six leading cereals by ten-year periods from 1859 to 1909. It will be seen that the volume of corn production in 1859 amounted to 838,793,000 bushels. This was decreased in 1869 to 760,945,000 bushels, owing to the disastrous effects of the Civil War on Southern Agriculture which before 1860 had contributed a fair share of the total annual product. During the succeeding decade, however, production was more than doubled, amounting in 1879 to 1,754,592,000 bushels. This was further increased in 1889 to 2,122,328,000 bushels—an amount which represented about two and one-half times the returns of 1859. By 1899 the volume of corn production had reached 2,666,324,000 bushels. This was reduced in 1909 to 2,552,190,000 bushels.

Wheat increased steadily from 173,105,000 bushels in 1859 to 287,746,000 bushels in 1869, mounted rapidly to 459,483,000 bushels in 1879, and then increased more slowly until 1889 when 468,374,000 bushels were produced. This represented an increase to more than two and one-half times the amount shown in the returns of 1859. The next decade showed a rapid increase again, the volume of production reaching 658,534,000 bushels in 1899, which was further increased in 1909 to 683, 379,000 bushels

Oats showed even a more remarkable proportionate increase

[1] Louis Bernard Schmidt, "The Internal Grain Trade of the United States, 1860–1890," *The Iowa Journal of History and Politics*, Vol. XIX, No. 2, April, 1921, pp. 196–245. (Revised). Reprinted by permission of The State Historical Society of Iowa.

TABLE I

PRODUCTION OF THE SIX LEADING CEREALS OF THE UNITED STATES BY TEN-YEAR PERIODS FROM 1859 TO 1909

Cereal	1859		1869	
	Bushels	Per Capita Bushels	Bushels	Per Capita Bushels
Corn	838,792,742	26.6	760,944,549	19.8
Wheat	173,104,924	5.5	287,745,626	7.4
Oats	172,643,185	5.4	282,107,157	7.3
Barley	15,825,898	0.50	29,761,305	0.77
Rye	21,101,380	0.67	16,918,795	0.43
Buckwheat	17,571,818	0.55	9,921,721	0.25
Total	1,239,039,947	39.22	1,387,299,153	35.95

Cereal	1879		1889	
	Bushels	Per Capita Bushels	Bushels	Per Capita Bushels
Corn	1,754,591,676	34.9	2,122,327,547	33.8
Wheat	459,483,137	9.2	468,373,968	7.4
Oats	407,858,999	8.2	809,250,666	13.0
Barley	43,997,495	0.87	78,332,976	1.1
Rye	19,831,595	0.39	28,421,398	0.4
Buckwheat	11,817,327	0.23	12,110,349	0.19
Total	2,697,580,229	53.79	3,518,816,904	55.89

Cereal	1899		1909	
	Bushels	Per Capita Bushels	Bushels	Per Capita Bushels
Corn	2,666,324,370	35.09	2,552,189,630	27.75
Wheat	658,534,252	8.66	683,379,259	7.43
Oats	943,389,373	12.41	1,007,142,980	10.95
Barley	119,634,877	1.57	173,344,212	1.89
Rye	25,568,625	0.34	29,520,457	0.32
Buckwheat	11,233,515	0.15	14,849,332	0.16
Total	4,424,685,012	58.22	4,460,425,870	48.50

than either corn or wheat, rising from 172,643,000 bushels in 1859 to 282,107,000 bushels in 1869, after which production was expanded still more rapidly, amounting in 1889 to 809,251,000 bushels—nearly five times the volume of production in 1859. Oat production continued to expand rapidly thereafter amounting in 1899 to 943,389,000 bushels and finally reaching 1,007,143,000 bushels in 1909.

Barley showed a similar proportionate increase, although this cereal was of much less importance as to total volume of production which in 1859 amounted to only 15,826,000 bushels. This was increased to 29,761,000 bushels in 1869 after which there was a continued rise to 43,997,000 bushels in 1879. This was doubled during the succeeding decade, the volume of production in 1889 amounting to 78,333,000 bushels, or nearly five times the returns of 1859. This was further increased in 1899 to 119,635,000 bushels. In 1909 the volume of barley production reached 173,344,000 bushels. This was equal to the entire wheat crop of the nation in 1859.

Rye which was of greater importance than barley in 1859, amounting in that year to 21,101,000 bushels, decreased in both absolute and relative importance to 16,919,000 bushels in 1869, then increased to 19,832,000 bushels in 1879, thereafter rising to 28,421,000 bushels in 1889. This represented an increase to an amount less than one and one-half times the returns of 1859. The volume of production remained practically stationary during the next two decades amounting in 1899 to 25,569,000 bushels and in 1909 to 29,520,000 bushels.

Buckwheat was even of less importance than rye, decreasing from 17,572,000 bushels in 1859 to 9,922,000 bushels in 1869, and then increasing only slightly to 11,817,000 bushels in 1879 and amounting to but 12,110,000 bushels in 1889. In 1899, buckwheat production decreased, amounting to 11,234,000 bushels. This was increased in 1909 to 14,849,000 bushels.

The production of corn, wheat, oats, barley, rye, and buckwheat combined amounted in 1859 to 1,239,040,000 bushels. This was increased in 1869 to 1,387,299,000 bushels, in spite of the disturbances caused by the Civil War. The next three decades show a rapid expansion in the grain-growing industry. Production in 1879 amounted to 2,697,580,000 bushels. This was further expanded to 3,518,817,000 bushels in 1889 and to 4,438,857,000 bushels in 1899. Production thereafter remained more steady, the returns of 1909 amounting to 4,512,564,000 bushels. This was equal to nearly four times the total volume of production in 1859.

The rapid expansion of the grain-growing industry during this period is further emphasized by the growth in per capita produc-

tion which was increased from 29.22 bushels in 1859 to 53.79 bushels in 1879. This was further expanded to 55.89 bushels in 1889 and to 58.22 bushels in 1899. Production thereafter remained more steady with the result that the per capita returns in 1909 were reduced to 48.5 bushels.

Wheat, though second to corn in volume of production, was first in commercial importance. With this fact in mind, attention will now be given to the westward movement of wheat; while an account of the rise of the corn kingdom will be presented in the next chapter. The importance of the study of the westward movement of the wheat-growing industry has been emphasized by Frederick J. Turner thus:

> . . . If, . . . we study the maps showing the transition of the wheat belt from the East to the West, as the virgin soils were conquered and made new bases for destructive competition with the older wheat States, we shall see how deeply they affected not only land values, railroad building, the movement of population, and the supply of cheap food, but also how the regions once devoted to single cropping of wheat were forced to turn to varied and intensive agriculture and to diversified industry, and we shall see also how these transformations affected party politics and even the ideals of the Americans of the regions thus changed. We shall find in the overproduction of wheat in the provinces thus rapidly colonized, and in the overproduction of silver in the mountain provinces which were contemporaneously exploited, important explanations of the peculiar form which American politics took in the period when Mr. Bryan mastered the Democratic party, just as we shall find in the opening of the new gold fields in the years immediately following, and in the passing of the era of almost free virgin wheat soils, explanations of the more recent period when high prices are giving new energy and aggressiveness to the demands of the new American industrial democracy.

No attempt will here be made to go into those aspects of the problem but simply to present a comparative study of wheat production by geographic divisions in order to show the rapidity of the westward shift of the wheat belt and the extent to which wheat production was concentrated in the leading wheat-growing States at the various census periods from 1860 to 1910. The divisions adopted for this study are: first, the North Atlantic division comprising the six New England States of Massachusetts, Connecticut, Rhode Island, Maine, New Hampshire, and Vermont, and the three Middle Atlantic States of New York, Pennsylvania, and New Jersey; second, the South Atlantic division, comprising

the eight States of Virginia, North Carolina, South Carolina, Georgia, Florida, West Virginia, Delaware, and Maryland, with the District of Columbia included in this division; third, the North Central division, comprising the twelve States of Ohio, Indiana, Illinois, Michigan, Wisconsin, Missouri, Iowa, Minnesota, Kansas, Nebraska, and North and South Dakota; fourth, the South Central division, comprising the eight States of Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Arkansas, Oklahoma, and Texas; and fifth, the Western division, comprising the eight mountain States and Territories of Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, and Idaho, and the three Pacific States of California, Oregon, and Washington.

A study of the geographic distribution of wheat production in the United States by ten-year periods from 1859 to 1909 (Table II) shows that the North Central division in 1859 was already producing more than half of the nation's crop, the returns for that year amounting to 95,005,000 bushels, which represented 54.9 per cent of the entire product. The high price of wheat, occasioned by the growing foreign demand during the sixties, gave a great stimulus to the wheat-growing industry, with the result that the production of this division was doubled during the decade, the returns for 1869 amounting to 194,935,000 bushels, representing 67.7 per cent of the entire crop. This was further increased in 1879 to 329,551,000 bushels, or 71.5 per cent of the whole crop; while the returns for 1889 showed a slight decrease to 321,317,000 bushels, representing 68.6 per cent of the entire product. Production was thereafter increased again, amounting in 1899 to 441,301,000 bushels, representing 67.1 per cent of the entire crop. This was further expanded in 1909 to 505,190,000 bushels, representing 73.9 per cent, or nearly three-fourths of the whole product.

The South Atlantic division in 1859 ranked second in the production of wheat with a return of 28,737,000 bushels, or 16.6 per cent of the whole crop. In 1869, this division was reduced to third place, the returns for that year amounting to but 22,327,000 bushels, or 7.8 per cent of the entire crop. In 1879, it was further reduced to fourth place, but with a slightly increased return of 28,535,000 bushels, which represented 6.2 per cent of the whole product. In 1889, it maintained the same rank with a return of 27,435,000 bushels, representing 5.9 per cent of the nation's crop. In 1899, it was reduced to fifth place with a slightly increased return of 31,903,000 bushels, which represented 4.8 per cent of the entire crop. In 1909 it maintained the same rank with 26,651,000 bushels, representing 2.2 per cent of the nation's product.

TABLE II

GEOGRAPHIC DISTRIBUTION OF WHEAT PRODUCTION IN THE UNITED STATES BY TEN-YEAR PERIODS FROM 1859 TO 1909

Division	1859			1869		
	Bushels	Per Cent Entire Crop	Bushels Per Capita	Bushels	Per Cent Entire Crop	Bushels Per Capita
North Atlantic ..	24,569,681	14.2	2.3	35,153,555	12.2	2.8
South Atlantic...	28,737,216	16.6	5.3	22,326,598	7.8	3.8
North Central ..	95,005,130	54.9	10.4	194,934,540	67.7	15.0
South Central	17,128,600	9.9	2.9	14,413,921	5.0	2.2
Western	7,664,297	4.4	12.4	20,917,012	7.3	21.1
United States	173,104,924	100.0	5.5	287,745,626	100.0	7.4

Division	1879			1889		
	Bushels	Per Cent Entire Crop	Bushels Per Capita	Bushels	Per Cent Entire Crop	Bushels Per Capita
North Atlantic .	34,178,947	7.4	2.3	32,012,544	6.8	1.8
South Atlantic ..	28,534,367	6.2	3.7	27,435,104	5.9	3.1
North Central ..	329,550,755	71.7	18.9	321,316,830	68.6	14.3
South Central . .	24,278,499	5.3	2.7	24,502,856	5.2	2.2
Western	42,940,569	9.4	24.3	63,106,634	13.5	20.7
United States . .	459,483,137	100.0	9.2	468,373,968	100.0	7.5

Division	1899			1909		
	Bushels	Per Cent Entire Crop	Bushels Per Capita	Bushels	Per Cent Entire Crop	Bushels Per Capita
North Atlantic .	33,114,070	5.1	1.6	29,832,831	4.4	1.2
South Atlantic.	31,902,857	4.8	3.1	26,650,768	3.9	2.2
North Central ..	441,300,918	67.1	16.8	505,189,796	73.9	16.9
South Central ..	61,901,477	9.4	4.4	32,470,549	4.7	1.9
Western	90,314,930	13.7	22.1	89,235,315	13.0	13.1
United States ..	658,534,252	100.0	8.7	683,379,259	100.0	7.4

The North Atlantic division in 1859 ranked third in wheat production, the returns for that year amounting to 24,570,000 bushels, or 14.2 per cent of the entire crop. In 1869, this division advanced to second place with 35,154,000 bushels, or 12.2 per cent of the whole crop, thus superseding the South Atlantic division which now dropped to third place. In 1879, the North Atlantic division again dropped to third place, with a slightly decreased return of 34,179,000 bushels, representing but 7.4 per cent of the entire crop. In 1889, this division maintained the same rank with a continued decrease to 32,013,000 bushels, representing 6.8 per cent of the nation's product. In 1899, it was reduced to fourth place with 33,114,000 bushels which represented 5 per cent of the entire crop. In 1909 it maintained the same rank with 29,833,000 bushels, representing 4.4. per cent of the nation's product.

The South Central division in 1859 ranked fourth in the production of wheat, with a return of 17,128,000 bushels, representing 9.9 per cent of the whole crop. In 1869, it was reduced to fifth place, the returns for that year being decreased to 14,414,000 bushels, or 5 per cent of the entire product. In 1879, and again in 1889, this division continued to hold the same rank, the returns for 1879 amounting to 24,278,000 bushels or 5.3 per cent of the whole crop, while the returns for 1889 maintained about the same level, amounting to 24,503,000 bushels, representing 5.2 per cent of the entire crop. In 1899, the South Central division advanced to third place with 61,901,000 bushels representing 9.4 per cent of the entire crop. In 1909, it maintained the same rank with 32,471,000 bushels representing 4.7 per cent of the entire product.

The Western division in 1859 was at the bottom of the list, the production of wheat in that year being only 7,664,000 bushels, or 4.4 per cent of the whole crop. In 1869, it advanced to fourth place with 20,917,000 bushels, representing 7.3 per cent of the whole product, thus superseding the South Central division which was now reduced to fifth place. By 1879, the Western division had forged ahead to second place, having meanwhile doubled its returns which now amounted to 42,941,000 bushels, representing 9.4 per cent of the entire crop. The same rank was easily maintained at the suceeding census periods, the returns of 1889 amounting to 63,107,000 bushels, representing 13.5 per cent of the entire product. In 1899 production was increased to 90,315,000 bushels representing 13.7 per cent of the whole crop. In 1909, production was maintained at nearly the same figure representing 13 per cent of the nation's product. Nearly all of the wheat exported for the Western division at these census periods was produced in the

Pacific Coast States, California alone furnishing about two-thirds of the entire amount.

The North Central region became the great wheat emporium of the nation, producing from two-thirds to three-fourths of all the wheat raised in the United States. This region embraces a land area of 756,368 square miles, or 484,075,520 acres: an area equal to one-fourth of the entire area of continental United States. It is an agricultural empire more than three and one-half times the area of the French Republic, more than five times the area of the United Kingdom of Great Britain and Ireland, and eleven times the area of the State of Iowa. It is in turn divided into two geographic sections by the Mississippi River: the five East North Central States of Ohio, Indiana, Illinois, Wisconsin, and Michigan, with a land area of 248,105 square miles, or 157,160,960 acres; and the seven West North Central States of Iowa, Minnesota, Missouri, Kansas, Nebraska, and the two Dakotas, with an area of 518,379 square miles, or 326,914,560 acres. Here in this great economic empire, the agricultural possibilities of which were only beginning to be realized in 1860, a great wheat kingdom was being founded upon which the East and the South and the countries of Western Europe became to an ever increasing extent dependent for the wheat and flour needed to fill the growing deficits in the home supplies. With these facts in mind the relative importance of the East and West North Central sections in the production of wheat will now be considered.

The East North Central section in 1859 produced 46.1 per cent of the entire wheat crop of the nation; while the West North Central section contributed but 8.8 per cent. In 1869, the East North Central section produced 44.3 per cent of the whole crop—a slight decrease as compared with the percentage returned by the previous census; while the West North Central section increased its contribution which now amounted to 23.4 per cent of the entire product. In 1879, the East North Central section returned 44.5 per cent of the whole product, or practically the same percentage reported for 1869; while the West North Central section showed a further increase of production to 27.1 per cent of the entire crop. In 1889, the proportion of the whole crop returned by the East North Central section was reduced to 31.4 per cent; while the returns reported for the West North Central section amounted to 37.4 per cent. In 1899 the East North Central section produced 20.5 per cent of the whole crop; while the West North Central section produced 46.6 per cent of the crop. In 1909 the proportion of the entire crop contributed by the East North Central

section was further reduced to 17.7 per cent; while the West North Central section had advanced to a position where it contributed 56.2 per cent of the nation's product. The wheat growing industry had crossed the Mississippi River into the West North Central section which now produced more than half of all the wheat raised in the United States.

The rapidity with which the wheat-growing industry moved westward during this period is further shown by the westward movement of the center of production. In 1849, the center of production was 57 miles east northeast of Columbus, Ohio. In 1859, it was 18 miles north by east of Indianapolis, Indiana. In 1869, it was located 82 miles northeast of Springfield, Illinois. In 1879, it was 69 miles northwest of Springfield, Illinois. By 1889, it had crossed the Mississippi River and was located at a point 138 miles south by east of Des Moines, Iowa (in Missouri). At the close of the century, it was located 70 miles west of Des Moines, or about 99 miles north and about 680 miles west of the center of wheat production in 1850, which was nearly one and one-half times the westward movement of corn during the same period. This shows, furthermore, that the center of wheat production was moving northward as well as westward; while the center of corn production was moving almost due westward—a fact of fundamental importance in the study of the internal grain and flour trade of this period.

More than half of the wheat produced during this period was contributed by the six leading wheat-producing States. These States in 1859, named in order of their importance, were Illinois, Indiana, Wisconsin, Ohio, Virginia, and Pennsylvania, which together produced 56.4 per cent of the entire crop. In 1869, the States of Illinois, Indiana, Wisconsin, Ohio, Virginia, and Pennsylvania, together produced 56.4 per cent of the entire crop. In 1869, the States of Illinois, Iowa, Ohio, Indiana, Wisconsin, and Pennsylvania, produced 55.7 per cent of the whole product. In 1879, the States of Illinois, Indiana, Ohio, Michigan, Minnesota, and Iowa produced 53.4 per cent of the entire crop. In 1889, the States of Minnesota, California, Illinois, Indiana, Ohio, and Kansas contributed 50.2 per cent of the nation's product. The region of greatest wheat production now included the five East North Central States of Ohio, Indiana, Illinois, Michigan, and Wisconsin and the first tier of States beyond the Mississippi River in the West North Central section: Iowa, Missouri, and Minnesota. Kansas was added; while the two States of North and South Dakota (together known as Dakota Territory until 1889) were

rapidly forging ahead to become listed among the six leading wheat-growing states by the close of the century. In 1899, the States of Minnesota, North Dakota, Ohio, South Dakota, Kansas, and California produced 49 per cent of the whole crop. In 1909, the States of North Dakota, Kansas, Minnesota, Nebraska, South Dakota, and Washington contributed 54.9 per cent of the nation's product. Five West North Central States and one Western State now composed the list of the six leading wheat-growing States; while the East North Central section was no longer represented in this group. The wheat growing industry had thus became concentrated largely in the Mississippi-Missouri River system which together with the Pacific Northwest is destined for many years to come to remain the home of the wheat-growing industry in the United States; while the Canadian Northwest has already become a worthy competitor.

The growth of the East North Central section in the production of wheat during this period may be illustrated by the State of Illinois; while Minnesota may be taken to represent the West North Central section. Illinois in 1859 produced 23,837,000 bushels of wheat which represented 13.8 per cent of the entire crop. In 1869, it produced 30,128,000 bushels, or 10.5 per cent of the whole product. In 1879, it showed the greatly increased return of 50,111,000 bushels representing 11.1 per cent of the entire crop. In 1889, it produced 37,389,000 bushels, or 8 per cent of the entire crop. In 1899, it produced 19,796,000 bushels, or 3 per cent of the entire crop. In 1909, it produced 37,831,000 bushels, or 5.5 per cent of the entire crop. An analysis of the per capita returns shows that in 1859 it produced 13.9 bushels of wheat per capita, which in 1869 was decreased to 11.9 bushels, then increased in 1879 to 16.6 bushels, and finally decreased again in 1889 to 9.8 bushels. In 1899 it was further reduced to 4.1 bushels per capita and then increased again in 1909 to 5.8 bushels.

Minnesota, on the other hand, showed the comparatively insignificant return in 1859 of 2,187,000 bushels of wheat which represented but 1.3 per cent of the whole crop. In 1869 this was increased to 18,866,000 bushels, or 6.6 per cent of the entire crop. In 1879 these returns were nearly doubled amounting to 34,601,000 bushels, or 7.5 per cent of the entire crop. In 1889, when this State superseded Illinois for first place, the returns were further increased to 52,300,000 bushels which amount represented 11.2 per cent of the nation's product. In 1899, production was increased to 95,279,000 bushels, representing 14.5 per cent of the entire crop. In 1909, production was reduced to

57,094,000 bushels representing 8.3 per cent of the entire crop; while North Dakota had meanwhile forged ahead to first place with 116,782,000 bushels, representing 17 per cent of the nation's product. A review of the per capita returns of Minnesota shows that this State in 1859 was already producing 12.7 bushels of wheat per capita, which in 1869 was more than trebled, amounting in that year to 42.9 bushels, after which it was maintained at practically the same level, the returns amounting in 1879 to 44.3 bushels and in 1889 to 40.2 bushels. In 1899, the per capita production of wheat amounted to 54.4 bushels. In 1909 this was reduced to 27.5 bushels. North Dakota which had meanwhile wrested the leadership from Minnesota showed the relatively high per capita return in 1909 of 202.4 bushels.

The westward movement of the wheat growing industry in the United States is a story in the evolution of the American frontier. "Wheat, like beef," observes Thomas Nixon Carver, "has been, in a sense a frontier crop. . . . It is a suitable crop to grow at long distances from market where land is abundant. . . . [It] stands transportation well, and more important still, it is most economically produced where there is an abundance of cheap land in proportion to the supply of labor. When labor has become relatively more abundant and land relatively more scarce, there has been a tendency throughout our history for wheat and beef growing to give way to other products requiring less land and more labor for their economical production. For this reason, wheat, like beef, has followed our frontier, and we need not be surprised or alarmed when the center of wheat production passes to the new frontiers beyond our national boundaries. This will not be a decline in agriculture but an advance.

However, it is not likely that the total amount of . . . wheat . . . will actually or seriously decline in this country, though it is unlikely that it will keep pace with our growth of population. Wheat will be found to fit into systems of crop rotation with other heavier yielding crops. . . . we may [therefore] safely predict that it will continue to be grown, to a certain extent, for a great many years in this country. . . ."

CHAPTER XIX

THE RISE OF THE CORN KINGDOM[1]

* * * * * * * * * * *

As population moved westward into the Mississippi Valley the country became differentiated into three great economic sections. The East, including New England and the Middle Atlantic States, became more and more devoted to manufacturing and commerce; the South to the raising of the staple plantation products—cotton and tobacco; and the West to production of food. This economic specialization placed the East, the South, and the West in a dependent relation to one another. The West was thus enabled to devote its attention more exclusively to the production of those commodities for which it was best adapted. Grain thus constituted the leading product which this section contributed in rapidly increasing quantities as the live stock industry was developed and transportation facilities were expanded and improved.

By 1840, the year of the first agricultural census, the corn growing industry had definitely entered the Mississippi Valley. . . . Tennessee ranked first in corn production with 44,986,000 bushels which constituted 12 per cent of the entire crop; Kentucky was second with 39,847,000 bushels, or 11 per cent of the whole product; Virginia was third with 34,577,000 bushels, or 9 per cent of the entire product; Ohio was fourth with 33,668,000 bushels, or 9 per cent of the entire crop; Indiana was fifth with 28,156,000 bushels, or 7 per cent of the whole crop; North Carolina was sixth with 23,894,000 bushels, or 6 per cent of the whole product; Alabama was eighth with 20,947,000 bushels, or 6 per cent of the whole crop; Georgia was ninth with 20,905,000 bushels, or 6 per cent of the entire crop; and Missouri ranked tenth in the list with 17,333,000 bushels, which represented 5 per cent of the nation's product.

The ten leading corn-producing States in 1839 contributed 77 per cent of the nation's entire product. Six of these States were Southern States—Tennessee, Kentucky, Virginia, North

[1] Louis Bernard Schmidt, "The Westward Movement of the Corn Growing Industry in the United States," *The Iowa Journal of History and Politics*, Vol. XXI, No. 1, January, 1923, pp. 117–141. Reprinted by permission of The State Historical Society of Iowa.

Carolina, Alabama, and Georgia—which together produced 50 per cent of the entire crop of the nation, while the four remaining States—Ohio, Indiana, Illinois, and Missouri—belonged to the North Central group and produced 27 per cent of the nation's product. Tennessee, Kentucky, and Virginia together produced 32 per cent of the entire crop, while Ohio and Indiana together produced 16 per cent of the whole crop. It will be noted that the North Atlantic division was not represented in the list of the first ten, while the South Atlantic division was represented by three States—Virginia, North Carolina, and Georgia—which together produced 21 per cent of the whole crop. The remaining seven States belonging to the Central division, produced 56 per cent of the entire crop.

The ten leading corn-producing States in 1849 were the same as those listed by the previous census, though there was a significant change in the relative rank of these States, which shows that the corn-growing industry had definitely begun to move into the North Central region. . . . In 1849, Ohio advanced from fourth to first place, while Tennessee was reduced from first to fifth place. Kentucky retained second place. Illinois rose from seventh to third place, while Virginia dropped from third to seventh place. Indiana advanced from fifth to fourth place. Missouri rose from tenth to sixth place, while North Carolina dropped from sixth to tenth place. Georgia rose from ninth to eighth place, while Alabama dropped from eighth to ninth place.

These ten States in 1849 produced 75.1 per cent of the entire corn crop of the country. That the corn growing industry was rapidly moving not only westward across the Alleghanies into the Mississippi Valley but also northwestward into the North Central division is shown by the fact that whereas in 1839 the three Atlantic Coast States of Virginia, North Carolina, and Georgia contributed 21 per cent of the nation's product, in 1849 they contributed but 15.8 per cent of the whole product; and whereas in 1839 the six Southern States of Virginia, North Carolina, Georgia, Alabama, Tennessee, and Kentucky contributed 50 per cent of the entire corn crop, in 1849 they contributed but 40.4 per cent of the entire crop. Finally, whereas the North Central States of Ohio, Indiana, Illinois, and Missouri in 1839, contributed but 27 per cent of the entire corn crop of the nation, in 1849 they contributed 34.7 per cent of the entire product. Meanwhile the center of corn production had crossed the Ohio River and was located at a point eighty-six miles east-southeast of Columbus, Ohio.

The movement of the corn-growing industry into the North Central region was further continued during the decade of the fifties. . . . Missouri advanced from sixth to third place, while Indiana retained fourth place. Kentucky dropped from second to fifth place and Tennessee from fifth to sixth place. Iowa now entered the list of the first ten as seventh. Virginia dropped from seventh to eighth place and Georgia from eighth to tenth, while Alabama retained ninth place, and North Carolina dropped out altogether.

The ten leading corn-growing States in 1859 produced 70.8 per cent of the entire corn crop of the country. Of these States, the two Atlantic Coast States of Virginia and Georgia contributed 8.3 per cent of the entire product, and the five Southern States of Virginia, Georgia, Alabama, Tennessee, and Kentucky contributed 26.1 per cent of the whole product, while the five North Central States of Ohio, Indiana, Illinois, Missouri, and Iowa contributed 44.7 per cent of the nation's product. Whereas the best three corn-producing States in 1839 were the Southern States of Tennessee, Kentucky, and Virginia which together constituted 32 per cent of the entire product, in 1859 the first three corn producing States were the North Central States of Illinois, Ohio, and Missouri, which furnished 31.2 per cent of the nation's corn crop. In further evidence of the rapid movement westward of corn production it may be noted that the center of production was by 1859 moved to a point forty-seven miles west-southwest of New Albany, Indiana.

* * * * * * * * * * *

. . . In 1869 Illinois retained first place, Ohio dropped from second to third place, while Iowa advanced from seventh to second place. Missouri dropped from third to fourth place, Indiana from fourth to fifth place, Kentucky from fifth to sixth place, and Tennessee from sixth to seventh place. Pennsylvania entered the list as eighth thus taking the place of Virginia, which now dropped out altogether. Texas entered the list as ninth, thus taking the place of Alabama which was reduced to tenth place, while Georgia which had occupied tenth place dropped out altogether.

The ten leading corn-producing States in 1869 produced 72 per cent of the entire crop of the nation. The North Atlantic division, was now represented in the list of the first ten by the single State of Pennsylvania which contributed 4.6 per cent of the entire crop. The South Atlantic division, it will be noted, was now represented by but one State—North Carolina—in the list of the

first ten. The South Central division was represented by the three States of Tennessee, Kentucky, and Texas which contributed 14.7 per cent of the whole product. The North Central division was represented by the five States of Ohio, Indiana, Illinois, Iowa, and Missouri which contributed 50.5 per cent of the nation's product. The two North Central States of Illinois and Iowa which ranked first and second respectively contributed 26.2 per cent, or a little more than one-fourth of the entire product. The center of corn production in 1869 was located at a point ninety miles southwest of Indianapolis, Indiana.

The next decade witnessed a further movement of the corn-growing industry in the North Central region due to the operation of the forces already mentioned. No less significant was the rapid expansion in the volume of production. . . . Illinois and Iowa still continued to hold first and second places respectively. Missouri advanced from fourth to third place, while Ohio was reduced from third to fifth place. Indiana advanced from fifth to fourth place. Kansas entered the list as sixth and Kentucky dropped from sixth to seventh place. Nebraska entered the list as eighth and Tennessee dropped from seventh to ninth place. Pennsylvania dropped from eighth to tenth place. North Carolina which in 1869 held tenth place was dropped out altogether, while Texas which entered the list as ninth in 1869 dropped out again.

The ten leading corn-producing States in 1879 contributed 78.9 per cent of the entire corn crop of the nation. Pennsylvania, the only North Atlantic State listed in the first ten, contributed but 2.6 per cent of the entire crop and the two South Central States of Kentucky and Tennessee contributed but 7.8 per cent of the entire product; while the seven North Central States of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska contributed 68.5 per cent or nearly three-fourths of the entire corn crop of the nation. The center of corn production was now located at a point thirty-six miles southeast of Springfield, Illinois.

The distribution of corn production in the United States according to the census of 1880 may be further defined as follows:

1. As to latitude. Approximately 20.2 per cent of the corn crop of the nation was produced between the fortieth and forty-first parallels of latitude, while 54.8 per cent was produced between the thirty-ninth and forty-second parallels of latitude. The remaining 45.2 per cent fell off on either side of this belt, more gradually, however, to the South.

2. According to topographical divisions. Forty-one per cent was produced in the "prairie region," while about 75 per cent was

produced in the prairie region together with the divisions marked as the "Mississippi river belt, north," the "southwest central" region, and the "central and the Missouri river belt."

3. According to drainage basins. The Mississippi basin produced 83.4 per cent of the crop, while the Ohio basin produced 22.5 per cent of the entire crop.

4. According to elevation. Some 54 per cent of the entire crop was produced at an elevation of between 500 and 1,000 feet above sea level; 83 per cent between 500 and 1,500 feet; while but 44 per cent was grown above 1,500 feet and about 12 per cent below 500 feet.

These facts in the westward movement of corn production in the United States show that the conditions most favorable for large corn production are a summer season of at least five months without frost, sufficient moisture during the growing period, but not too much, hot weather during this period, with cool weather following to act as a check upon the leaf and stalk growth, causing the plant to expend its strength in seed development, somewhat as the pruning of an apple tree causes the tree to produce more fruit instead of leaves. These conditions made possible the cultivation of large areas of corn with the least expenditure of hard labor in the seven North Central States of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska, which by 1880 had become the greatest corn belt in the world.

The corn-growing industry in the United States is closely related to the production of live stock. These two lines of production are so interrelated and interdependent that any consideration of the one involves also a consideration of the other. Both lines of production had by 1880 largely become centered in the North Central States which henceforth constituted the great surplus grain and live stock producing area of the country. . . .

* * * * * * * * * * *

By 1880 a great cereal and live stock kingdom had been founded in the North Central region of the United States, upon which the East and the South and the countries of Western Europe had to a large extent become dependent. These considerations help to explain the rapidity with which these two lines of production marched westward in the conquest of the great agricultural empire of the Mississippi Valley. This movement is further shown by a study of the ten leading corn producing States for the three census periods from 1880 to 1910, inclusive.

The decade of the eighties witnessed a further shifting of the

area of corn production in the North Central region, especially into the West North Central section. . . . In 1889 . . . Iowa had . . . advanced to first place, thus superseding Illinois which had dropped to second place. Kansas advanced from sixth to third place and Nebraska advanced from eighth to fourth place, while Missouri dropped from third to fifth place, Ohio from fifth to sixth place, Indiana from fourth to seventh place, and Kentucky from seventh to eighth place. Texas which had entered the list of the ten leading corn-producing States in 1869 and then dropped out in 1879 now re-entered the list as the ninth State. Tennessee dropped from ninth to tenth place, while Pennsylvania dropped out altogether.

The ten leading corn-producing States in 1889 produced 80.7 per cent of the entire corn crop of the nation. The South Central States of Kentucky, Tennessee, and Texas produced 10 per cent of the crop. The East South Central States of Kentucky and Tennessee produced 6.7 per cent of the crop, while Texas produced 3.3 per cent. The seven North Central States of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska, properly designated as "the corn belt States," contributed 70.7 per cent of the entire crop. Whereas the three East North Central States in 1879 produced 31.6 per cent of the entire crop, in 1889 the percentage contributed by these States was reduced to 24.2 per cent while the four West North Central States which in 1879 produced 36.9 per cent of the entire crop now contributed 46.5 per cent of the total product. The center of corn production had meanwhile moved to a point fifty-five miles southwest of Springfield, Illinois.

The westward movement of corn production in the United States was checked in the nineties. . . . The list of States composing this group in 1899 was the same as it was in 1889 with but one exception, Tennessee now dropping out altogether and Oklahoma being added; and there were no important changes in the relative ranking of these States. Illinois forged ahead again from second to first place, the position which this State had held in 1859, 1869, and 1879, while Iowa was reduced from first to second place, the rank held by this State in 1869 and 1879. Kansas, Nebraska, and Missouri attained third, fourth, and fifth places respectively. Indiana advanced from seventh to sixth place, thus superseding Ohio which was now reduced to seventh place. Texas advanced from ninth to eighth place, thus superseding Ohio which was now reduced to seventh place. Texas advanced from ninth to eighth place, thus superseding Kentucky which was reduced to ninth place. Oklahoma now entered the list as the tenth State, thus

superseding Tennessee which, as already stated, dropped out of the list altogether.

The ten leading corn-producing States in 1899 contributed 75.5 per cent of the entire corn crop of the nation. This was 5.2 per cent less than the proportion contributed by these States in 1889. The three South Central States of Kentucky, Oklahoma, and Texas contributed 9.5 per cent of the entire crop, while the seven North Central States of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska contributed 66 per cent of the entire crop. This was 4.7 per cent less than the proportion contributed by these States in 1889. The three East North Central States of Ohio, Indiana, and Illinois produced 27.3 per cent of the entire crop, which represented 3.1 per cent more than the proportion which they contributed in 1889, while the four West North Central States of Iowa, Missouri, Kansas, and Nebraska produced 38.7 per cent of the entire crop, which represented 7.8 per cent less than the proportion which they contributed in 1889. The decrease in the percentage of corn produced by the West North Central States in 1899 was due to the partial failure of the corn crop in the States of Iowa, Missouri, and Kansas, which in turn explains in part the fact that the center of corn production remained practically stationery, being located at a point fifty-four miles southwest of Springfield, Illinois, which was one mile east of the location of this point in 1889.

During the fifty year period from 1849 to 1899 the center of corn production had moved north from 39° 14′ 54″ to 39° 19′ 33″ north latitude—a difference of 4′ 39″ which amounted to a distance of five miles, while the center of production had moved westward 81° 43′ 38″ to 90° 27′ and 6″ west longitude—a difference of 8° 43′ 28″ which amounted to a distance of practically 480 miles. It will, therefore, be seen that the center of production had moved almost directly westward to a point near the Mississippi River not far from the geographic center of the great agricultural empire of the Mississippi Valley.

The center of corn production had become practically fixed by the close of the century. . . . Illinois and Iowa still held first and second places respectively, while Indiana advanced from sixth to third place thus superseding Kansas which dropped to seventh place. Missouri advanced from fifth to fourth place, while Nebraska dropped from fourth to fifth place. Ohio advanced from seventh to sixth place. Kansas as already noted dropped from third to seventh place. Kentucky retained ninth place. Texas dropped from eighth to tenth place.

The ten leading corn-growing States in 1909 constituted 73.3 per cent of the nation's entire product. This was 2.2 per cent less than the proportion contributed by these States in 1899. The three South Central States of Kentucky, Oklahoma, and Texas contributed 10 per cent of the entire crop, or one-half of one per cent more than the percentage which they produced in 1899. The seven North Central States of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska contributed 63.3 per cent of the entire crop, or 2.7 per cent less than the proportion which they contributed in 1899. The three East North Central States of Ohio, Indiana, and Illinois furnished 34.1 per cent of the entire crop. The three East North Central States, therefore, constituted 1.9 per cent more of the total corn crop of the nation in 1909 than in 1899, while the four West North Central States contributed 4.6 per cent less than the proportion which they furnished at the previous census period.

The westward movement of corn production in the United States during the half century from 1859 to 1909 is further explained by the fact that whereas the West North Central States in 1859 contributed but 14.9 per cent of the entire crop of the nation, in 1909 these States contributed 39 per cent of the entire product; and whereas the West South Central States in 1859 contributed but 6.1 per cent of the whole crop, in 1909 these States contributed 9.1 per cent of the entire product. The New England, Middle Atlantic, South Atlantic, and East South Central divisions, on the other hand, each showed a substantial decline in their share of the total production of corn in 1909 as compared with 1859, while the East North Central division remained practically unchanged for it contributed about one-third of the entire product at each census period.

. . . In 1909 . . . the West North Central States ranked first with 996,359,000 bushels, or 39 per cent of the entire product. The East North Central section ranked second with 845,289,000 bushels, or 33.1 per cent of the entire product. The West South Central states ranked third with 233,402,000 bushels, or 9.1 per cent of the entire crop. The East South Central States ranked fourth with 210,155,000 bushels, or 8.2 per cent of the entire product. The South Atlantic States ranked fifth with 179,512,000 bushels, or 7 per cent of the whole product. The Middle Atlantic States ranked sixth with 69,611,000 bushels, or 2.7 per cent of the entire crop. The New England States ranked seventh with 8,239,000 bushels or 0.5 per cent of the entire crop. The Mountain States ranked eighth with 7,326,000 bushels or 0.3 per cent of

the entire crop. The Pacific States ranked ninth with 2,289,000 bushels, or 0.1 per cent of the entire product.

Further analysis of the returns for 1909 shows that the two North Central sections together contributed 1,841,657,000 bushels which represented 72.1 per cent of the entire corn crop of the nation, while the South Central sections together contributed 443,557,000 bushels which represented 17.3 per cent of the entire product. The North and South Central divisions together known as the Central division contributed about 2,285,214,000 bushels, which represented 89.4 per cent of the entire corn crop of the nation. Of the remaining 10.6 per cent, the Atlantic Coast States contributed 10.2 per cent, while the Mountain and Pacific States contributed only four-tenths of one per cent. The Central division had thus become a great corn kingdom furnishing the huge volume of food required for the live stock, dairy, and poultry industries which were developed in this region, not to mention the growing surplus which found its way to the markets of the East and the countries of Europe, which since 1850 had become, to an ever-increasing extent, dependent upon the great agricultural empire of the Mississippi Valley for the cereals and animal products which were required to fill the deficits in the home supplies.

CHAPTER XX

THE EVOLUTION OF THE LIVE STOCK INDUSTRY[1]

The great American desert had been used by the Indians as a home and hunting ground for centuries before Pike, and Lewis and Clark, and Long reached the conclusion that it was relatively uninhabitable. It was consecrated to the eternal use of the Indians by James Monroe and his successors who, between 1825 and 1841, built up a solid barrier of Indian reservations extending in unbroken front from Green Bay to the southern boundary of the United States at Red River. Pious Americans thanked God, in the days of Andrew Jackson, that He in His wisdom had placed this unusable barrier along the western boundary of Missouri to prevent the United States from straggling, loose-knitted, across the continent; and many of them believed that He had by direct word promised to make the boundary permanent. In pursuance of revelation Joseph Smith started to build for his Mormon followers "the city of Zion" in "the land of promise," of which "the place which is now called Independence [Missouri], is the center place . . . wherefore it is wisdom that the land should be purchased by the saints; and also every tract lying westward, even unto the line running directly between Jew and Gentile." And for the next generation American population generally avoided residence in the desert or the Indian Country, moved around it or across it, and left it in the possession of nature, its own wild beasts, and its Indian occupants. George Catlin, whose book on the country ran through ten editions to 1866, could still write and believe in the tenth edition that "this strip of country, which extends from the province of Mexico to Lake Winnipeg on the North, is almost one entire plain of grass, which is, and ever must be, useless to cultivating man."

That the Indian Country had a value of its own, that it was more than a desert if less than a white man's home, was an idea that entered into few heads between 1825 and the completion of the Union Pacific Railroad in 1869. With population east of the Mississippi increasing in density and elaborating its social order and

[1] Frederic L. Paxson, "The Cow Country," *The American Historical Review*, Vol. XXII, No. 1, October, 1916, pp. 65–82. Copyrighted by The Macmillan Company. Reprinted by permission of the author and the publishers.

with communities on the Pacific slope springing into existence, with Chicago and St. Louis passing the quarter-million and with railroads making obsolete most of the earlier routes of travel, the Indian Country continued to impede free communication within the limits of the nation, yet offered slight incentive to occupation for its own sake. The overland caravan, the overland stage, the pony express, and the bullock train rose and fell, but population held back from absorbing the tract between Missouri and the mountains, Canada and the heart of Texas.

In the autumn of 1866 two of the bullock trains engaged in freighting goods from the Missouri to mountain points are said to have been stalled by snow on the plains of western Nebraska. The drivers, in the employ of Wells, Fargo, and Company and Alexander Majors, of the famous freighting firm of Russell, Majors, and Waddell, gave up all hope of getting their cargo through before winter. They cached their wagons as well as they could, turned the oxen loose to perish on the plains, and rode their horses back to the border. In the following spring they returned to their abandoned train to take it on, and found to their surprise not the whitened bones of their oxen but the oxen themselves, sleek, fat, and ready for the block. The experience thus gained by accident became the basis of a new industry, and before many more seasons revolved the northern plains were crowded with wintering cattle and their tenders, and the cow country had come into existence. For two decades the country flourished, and then it vanished into space.

The cow country stretched unbroken from the Texas rivers to Manitoba. Its stock, their tenders, their owners, and their yearly habits caught the American imagination as the Sante Fé trade had done a half-century earlier. It was capitalized by Colonel Cody, who opened with his Wild West Show at Omaha in May, 1883, after gathering his Indians and cowboys together on his North Platte ranch; by Colonel Roosevelt, whose ranches on the Little Missouri attracted his attention and the public's for many years; by John Lomax, who has collected the songs of the cowboys; by Owen Wister, who has preserved the spirit of the country in his *Virginian;* and by Frederic Remington, whose pencil sketched its figures. The cow country endured while the open range lasted, and gave way before the attacks of physical enclosure and legal obstruction.

Cattle have always bred freely on the Texas plains. Here the buffalo ranged and multiplied with unlimited pasture and sufficient water. The cattle originated in droves turned loose by early

Spanish ranchers and, by survivals, developed a hardy, rangy, enterprising stock that could stand exposure and meet the other wild animals on equal terms. But they had possessed slight commercial importance before the Civil War, as there had been no market for them. Every agricultural community in the Mississippi Valley provided enough fresh beef from the increase of its own herds, and there were few urban centers that could not get enough beef locally, even if there had been a cheap means for the delivery to a market of cattle from the Texas range. The few early drovers who took herds from Texas or Arkansas to St. Louis or Indianapolis only emphasized the occasional character of the trade. So the Texas cattle ran wild. Some were slaughtered for their hides as the buffalo were for their robes. But their market value was not suspected before it was discovered that they could live and fatten without shelter on even the northern plains, before the city groups had outgrown the capacity of their agricultural environs to supply fresh beef, and before the continental railroads had thrust their heads out into the range, inviting freight.

About 1866 it was learned that cattle could winter in western Nebraska, and in the same year the Union Pacific was shortening the old overland trail as it built toward Cheyenne and Laramie. At Ogallala, a "little, worn-out, old, and withered town," about twenty miles east of Julesburg and the Colorado corner, it reached the heart of the buffalo range that was now to be a cow country, and here shippers and buyers could dicker over stock for the Omaha and Chicago markets.

Born and bred on the Texas plains, the cattle entered upon the cycle of their career at the spring round-up. Early in May their owners arranged for co-operative action, region by region. They and their cowboys searched the meadows and the hills for grazing stock, and drove slowly to a fixed rendezvous the bulls and steers, the cows, and the new calves, still trotting at their mothers' sides. At the round-up the cattle were sorted out by brands and reliance was placed on mother affection as a means of proving ownership of unbranded calves. Those overlooked at the last spring or fall round-up, or born since then, and in either case too large to heel with the mother, formed a class of unidentifiable "mavericks," to be divided according to some arbitrary rule. The unmarked animals at the round-up were there marked with the brand of the owner, and no man might either legally or safely own a branding iron other than his own. The yearling steers were then cut out in herds by themselves and started up the long trail to Nebraska, Wyoming, and Dakota. The rest of the herds

were turned loose again to mingle and mate and multiply on the plains of Texas or of the Indian Territory.

As the market for this stock strengthened there was a tendency to improve its quality. Bulls were selected with care. Shorthorn and Hereford, Polled Angus and Galloway bulls were imported in large numbers while cattlemen debated the merits of the different strains to be crossed with the native stock. Blooded breed cows were added to herds. Sometimes by individual action, more often by some form of co-operation, the cattle owners raised the standard of plains cattle and protected their industry. Innumerable cattle growers' and stock owners' associations were formed to check thefts, to register and protect brands, and to procure defensive legislation. And every year throughout the seventies more steers were cut out of the Texas herds and driven north

Every year, too, brought more railroads to stake out the eastern limits of the range and to affect its traffic. Along the old Santa Fé trail the Atchison, Topeka, and Santa Fé was creeping, as was the Union Pacific along the Oregon trail; and at Dodge City, near old Fort Dodge and the still older Mexican boundary at the intersection of the Arkansas River with the hundredth meridian, there grew up a supply station that regarded itself as the cow town *par excellence*. Here, in the spring during the round-ups, the buyers of southern cattle came. The town amused them as best it could while they waited for their herds. Dance halls and saloons, horse racing and gambling, and the tuneful ministrations of Dodge City's famous cowboy band created in Kansas, even under prohibition, what resembled closely the mining camp or the railroad construction camp.

The southern owners often disposed of their droves at Dodge City rather than drive them to Nebraska. Some were bought outright for immediate slaughter and were shipped in cattle-cars to the Kansas City stock-yards. More were delivered to northern buyers, who turned the herds over to their cowboys to be conducted to the northern ranches. There are some instances of companies and individuals that owned both southern herds and northern ranches, and that integrated breeding, the long drive, and northern feeding and fattening under one control. But one way or another, after the May round-ups, the southern cattle "drifted" up the trails, grazing as they went, pasturing on the public lands and tended by a handful of cowboys, the "most interesting feature" of stock raising, who became a national type on sight.

The cowboy was created by his trade. He was more restless than the emigrant farmer and less a frontiersman than the fur-trader or the soldier. His occupation was transitional for him and his industry lasted for too few years to become standardized. He was, of course, rough and ready, living in the open and on his horse. He alternated the tedium of cattle-tending with sprees and shooting up the border towns. Sometimes he stopped a continental train to amuse himself with its passengers and crew. He loved to shock the tenderfoot, yet he was often of Eastern stock, with a background of cultivated life. The British scion, shipped to the cow country and turned cowboy, revealing himself only to maidens in distress, was a frequent figure in newspaper notices and was not entirely nonexistent. In the long watches of the night the cowboy rode around his sleeping drove and sang to it and himself ballads that were improvised on the border and that are a genuine contribution to American folk literature. From Dodge City, or some other convenient point near the Panhandle or the Cherokee Strip, the upper part of the cowboys' journey and the herds' march began.

Late in the autumn the herds, hardened by continuous exercise since spring, arrived at their northern home. Ogallala, Nebraska, was the first great centre, and for a radius of a hundred miles around this town ranches multiplied in the late seventies. About this time the Northern Pacific reached the Yellowstone River at Glendive, Montana, and passed by Fort Keogh on its way to Tacoma. Between Glendive and Fort Keogh was another centre for ranches, some four hundred miles northwest of the Ogallala group, where in the winter of 1884 General Brisbin could list forty herds comprising over 300,000 head of cattle. The Montana Stockmen's Association met here in 1883 with Theodore Roosevelt as a delegate from the little Missouri ranches. And here in 1885 was Miles City, seven years old, sprouted out of the Fort Keogh military reserve, and destined in the mind of its historian for "a brilliant future" as business capital of eastern Montana. In this region and throughout the neighboring parts of Nebraska, Colorado, Wyoming, and Dakota the normal development of the beef traffic created conditions that ultimately helped to destroy it.

The condition of the cattle on a northern ranch was different from that of those breeding in the south or en route up the trail. They had to be watched and fattened with a minimum of waste, exercise, and oversight. The ideal northern ranch had its site determined by some running stream, available at all seasons

for watering stock. Around this must lie a huge tract of grazing country, and it was some advantage if the country was rugged enough to afford bald knobs from which the snow would drift away leaving the dry grass exposed, and sheltered valleys in which cattle might find partial shelter in winter, and southern slopes upon which the tender spring grass might appear earlier than on the open plains. It was a permanent establishment on which a home ranch house with a group of outbuildings was certain to appear as soon as finances warranted its construction.

From the ranch house as headquarters the cowboys went out on their tours of duty, and at one or another of the ranches the local round-up was likely to be held, since the northern ranches soon came to breed as well as drive their stock. As the railroads improved it was found that the returning empty cattle-cars could be had at easy rates for the carriage of eastern calves, to grow up in the West, or eastern thin cattle to be fattened upon western free grass. "Emigrant" or "pilgrim" cattle, as these were called, were a menace in the range because of their tendency to import and distribute disease. But the northern rancher maintained his establishment for the purpose of fattening cattle, and took the risk of infection until his local association or the law intervened. The agents of the Wyoming Stock Growers' Association inspected over 200,000 cattle in the season of 1882.

Step by step with the development of the cattle business on the open range went the process of inclosure. American wire-drawing machinery had made long progress since Ichabod Washburn began to draw wire for cards and screws in the early thirties. Piano wire and telegraph wire and flat wires for hoop-skirts had followed from his factory, and in the early seventies he and his son-in-law, Philip L. Moen, were still at the business, owning the basic patents on barbed wire fencing. In 1874 John W. Gates began to sell barbed wire at twenty cents a pound, and thousands of miles of cheap and stock-proof fences were soon netted over the treeless plains. In 1883 and again in 1888 Congressional committees were harassed by the demands of the wire-makers that they should have free rods from which to draw their wires, with high duties on the finished products, and the counter demands of the steel men that at least six-tenths of a cent a pound on rods was necessary to their existence. The litigation, the infringement of patent rights, the manufacture of "moonshine" wire to compete with the wire output of licensed plants is a story that leads up to the consolidation of the American Steel and Wire Company in 1899. To the range man the new wire fence offered the means for

a cheap inclosure that would enable him to cut down costs of cowboy hire on his ranch.

It happened rarely that the cattleman owned all the land he used or fenced. "The great unfenced ranches, in the days of 'free grass,' necessarily represented a temporary stage in our history," says Colonel Roosevelt. The land laws made it nearly impossible for one owner to acquire legally the thousands of acres that were needed to support a large herd. In many cases even the small acreage along the indispensable water right was acquired only by trickery or collusive action with homesteaders and pre-emptioners. But without absolute control of water there could be no cattle ranch: and control of the water rendered the unwatered hinterland of the region useless so far as other cattlemen were concerned. Hence came the custom of fencing not only the land owned outright but thousands of acres lying adjacent and still a part of the public domain. And since a tight fence was the only guarantee of safe stock there grew up easily the practice of threatening and maltreating fence cutters. "The . . . who opens the fence had better look out for his scalp," was posted at intervals along the wires of a Nebraska inclosure, while the famous Brighton ranch in that State became the scene of a petty civil war.

These illegal inclosures, comprising more than three million acres that could be listed in 1885, and over six million acres that had been opened up in 1888, seem to have been more numerous in the northern cow country than in the southern; though in Texas and New Mexico and southern Colorado many are known to have existed. They raised big and difficult problems of public policy that Grover Cleveland and Land Commissioner Sparks tried to solve in 1885. But for the cattle country they created conditions that contributed to its destruction.

The long drive from Texas was made every summer in the seventies and early eighties, through a range country that was becoming each year more closely restricted. Dodge City, Ogallala, and Miles City were only leading specimens among scores of towns along all of the continental railroads. Relentlessly such towns pushed further into the range. Each spring emigrants as well as cattlemen sought them out. Homesteads came to be grouped around them and the wire fences of the homesteaders restricted travel and traffic to the public roads along the section and township lines. Free grass was gone, so far as the expanding homestead region was concerned. And in the vicinity of the great inclosed cattle ranches free grass was monopolized by the fencer and free transit was impeded by the fence. Mail carriers com-

plained that illegal fences closed the public mail roads by gates arbitrarily placed by the fencers, and often forced them to long detours from the direct course of their star routes.

This zone of free grass on the public domain was nearly free and unobstructed in 1880, but by 1885 it was broken into so badly that its future was at stake. "This Spring is the beginning of a new life for Dodge City," wrote one of its residents in May, 1885. It had ceased to be a cow town since no herd could be driven or pastured within many miles of it. The old congregations of owners, buyers, and cowboys could no longer occur for their trade had gone away. But its prosperity lasted because a farming country had sprung up around it on homesteads or railroad lands, and it was confidently believed that all of Kansas south of the Atchison, Topeka, and Santa Fé would soon be divided into farms.

Between the illegal inclosures and the farms the long drive was likely to be strangled out of existence. To these destructive forces was now added quarantine as a restrictive measure, for it was coming to be seen that free interchange of live cattle might easily spread disease.

The existence of the range cattle business was brought to the public consciousness first by conditions of health and disease. About 1875 the shippers of cattle tried the experiment of exporting both live stock and fresh meat to Liverpool and other British ports. It paid so well that the business was quickly established on a systematic basis, and cattle on the hoof, or sides slaughtered at Chicago found their way in swelling numbers to adorn the British dinner table. "The merry roast beef of England in old England itself is giving way to American beef, which is now actually ruling the roast there," rejoiced the *Chicago Times* in 1880, while the British stockman discovered that his profits were endangered. Some fought competition at its source and engaged directly in American ranching, until by 1884 it was estimated that "one-sixth of all our herds are now owned by Englishmen." One of these, Moreton Frewen, gained prominence by his attempt to divert northwestern cattle from Chicago to Canadian ports, over the Northern Pacific. Others fought for protective tariffs, and others raised the cry that American cattle were unhealthy and American beef was unwholesome. In March, 1879, there became effective an order in council regulating and restricting the importation of American cattle, and directing thereby the attention of the United States to the fact that in the past years steers worth $3,896,818 and beef worth $5,009,856 had found their way to European markets. "This business of the export of live cattle

to England has developed immense proportions in the last year," the superintendent of the Chicago Stock-Yards telegraphed to the Commissioner of Agriculture, "it is worth millions to the country and affects directly every farmer in the Northwest."

For twelve years after 1879 the United States was engaged in a trade war to get its meat products received by European countries, and was fighting quarantines so severe that even Buffalo Bill's Wild West Show was excluded from Germany because its buffalo might convey disease. Pork caused the most trouble, and in Germany where it was customary for many to eat it uncooked it was easy to lay the blame for trichinosis to American importation. "Everybody knows that 65,000,000 Americans eat American pork, and that there has not been a case of illness or death reported as occurring from its use," urged the American minister to Freiherr Marschall von Bieberstein. "Everybody knows that 35,000,000 Englishmen eat it, and that it is the staple and chief nourishment of the British laborer, whose health and strength are models for emulation." Yet it was absolutely excluded from much of Europe for the period. Live cattle were impeded more than dressed or tinned beef, though sometimes the last was classified as imported manufactured metal in order to bring it under a prohibitive rate. The restrictions were so numerous and so plausibly based upon sanitary grounds that the United States was impelled thereby to enlarge its Department of Agriculture and to begin the scrutiny and inspection of foods as well for the health of its own citizens as for that of foreign buyers. The first result of this policy was "the order made by the German Government on September 3, 1891, removing the prohibition which it had maintained since 1881 against the importation of American pork products." Another of the new agencies of the new nation was being brought into action.

But the foreign trade that produced restriction because of alleged disease called attention to real disease and the danger that migration might spread it. Huge epidemics were thought to be traceable to the importation of infected stock for breeding or to the exchange of emigrant cattle. Pleuro-pneumonia, hoof and mouth disease, and Texas fever became every-day terms in the vocabulary of the western newspapers, and stock associations turned propagandist in self-defense.

A bureau of animal industry was erected in the Department of Agriculture in May, 1884, after long agitation for it by the range men and the Commissioner of Agriculture. Its powers were inadequate and its machinery was rudimentary, yet it forbade

the driving of infected herds, gave certain powers of stock quarantine, and is the first striking step in the breaking up of the cow country by law. In the summer of 1884 there was much talk of Texas fever and related ailments in Kansas and Colorado, and drovers demanded quarantine against the dreaded Texas cattle. How far the demand was genuinely therapeutic and how far it only screened a lust for protection against Texas competition cannot be proved: certainly both elements were there and the results were visible in the spring of 1885 when Kansas and Colorado passed cattle quarantine laws under which their governors found it practicable to exclude the driving of Texas stock across either State.

A growing consciousness that the range was almost gone protrudes through the sources for 1884 and 1885. There had been a "fat stock show" at Chicago in November, 1883, at which the need for quarantine and federal law had been urged, and at which it had been determined to convene a national stock growers' convention in 1884. During 1884 the stockmen of the "rowdy West" discussed alternately the election of their hero, Blaine, and the prospective convention. The plans for both miscarried, and in November two conventions instead of one met, one at St. Louis and the other at Chicago. The latter represented chiefly the dairy and stock interests of Winsconsin, Iowa, and Illinois, while the gathering at St. Louis brought the range men and the shippers into earnest conclave. Both bodies demanded federal control and inspection, and both debated free grass, inclosures, and methods of leasing public lands. The St. Louis gathering expressed in the form of a memorial to Congress a demand for a national public quarantined cattle trail, running from the Texas Panhandle to the Canada line. Varying in width from a few feet to six miles this trail was to guarantee to stockmen forever the privilege that was being so narrowly restricted by homesteads and illegal inclosures and quarantines.

The long drive of 1885 was broken up almost beyond recognition by these obstructions. At various times the stockmen of Texas and Indian Territory tried to force their way across the Kansas line, only to be beaten back by law or by threat. The Cherokee Strip afforded a first-rate barrier even before the Kansas line was reached. Here a great cattle company had rented the grazing rights from the Cherokee nation and had sublet areas to nearly a hundred separate owners. They denied the right of cattle from points further south to follow the trail through the lands of their lease. The Texas men in reply raised the cry that

trails were public property and that monopolies were oppressing small owners. The roots of populism lie not far from the scene of this controversy, but for the present the Texas men carried their fight to court where federal writ as well as executive order from the Interior Department forbade interference. And in the end the cattle leases had to go from Indian Territory as well as inclosures from the other plains.

Congress had been prodded to action against illegal inclosures on the public domain during President Arthur's administration, and passed on February 25, 1885, an act authorizing the summary cutting of illegal fences. It had formerly been hard to defend the cutting of a fence by a third party, without a direct interest, in the absence of the action by the United States government as owner; and in some states illegally held inclosures were sufficient to bar entries for homestead or pre-emption purposes and were taxed for State purposes while their holders were protected in their possession against all but the federal authority. Under the law of 1885 President Cleveland, "determined," as the Republican editor of the *Idaho Avalanche* declared, "that the rich shall obey the laws as well as the poor," issued a proclamation on August 7 ordering illegal inclosers to obey the law. He had already, by cancelling the grazing leases in Indian Territory, taken a step toward the assertion of a public interest in Oklahoma. As rapidly as the fences came down the homesteaders came in wherever the country permitted it.

It was the fence of the lessor of Indian grazing rights that blocked the trails south of the Kansas line, just as it was the fence of the homesteader to the north. The emigrant boom of the eighties was on. Western Kansas and eastern Colorado were filling up, and the American desert that had once lain just beyond Independence was now reported as retreating to the Wyoming line. Indian Territory escaped this boom because of Indian occupancy, but the internal tract of the territory known as Oklahoma, the title to which had been partly quieted, aroused the desires of farmers and speculators. Repeatedly Payne and Couch organized their Oklahoma settlement companies at Caldwell or Arkansas City and pushed across the line, and as often the regular army followed them in and threw them out. Gen. Phil Sheridan had much of this petty police duty to perform. When arrested, the ambitious squatters maintained that they had violated no law and must be treated with kindness, and the federal courts regularly released them because the laws respecting the Indian Country were so loosely knit that offenders could easily slip through

the meshes, especially in a district where juries were sympathetic with the culprits. The boomers attacked the lessors of grazing rights from another side. Why, they asked, can great corporations reside freely in the Indian Territory and establish homes under cover of herding when honest citizens are barred out? Why should the strained interpretation of the law oppress the poor? On March 13, 1885, Cleveland ordered the boomers to keep out of the territory, as both Arthur and Hayes had done before him, and his later exclusion of the grazers, too, was an act of compensatory justice. The negotiations that culminated in the Dawes Bill of 1887 made it possible to break up the tribal lands, to allot farms to the Indians in severalty, and to open the remainders of unallotted lands to settlers. Oklahoma became an organized territory in 1880, earlier than would have been the case had not the business of the cow country forced the issue.

The conventions of 1884 and 1885 developed the fact that three sets of great interests had become involved in the struggle for the profits of the cow country. First came the cattlemen themselves, organized in their local, state, and national associations; then came the railroads that hauled the output, living or dead; and lastly were the packers, whose new industry was based upon concentration and invention. "The modern tendency to combination and the use of the corporation for the management of vast affairs are more evident in the production of meat than in any other interest directly connected with the soil," declared the *Chicago Tribune*, pointing out that these conventions

> are evidences of this. The rapid transfer of the ranches of the West to the hands of great companies is another proof of this movement. The formation of cattle-breeders' and cattle-growers' associations in every Western State and Territory is another. The producers of meat are uniting themselves for the exchange of views and protection against thieves and plagues not only, but for bringing the railroads to terms and securing the attention of the Government to their demands.

Chicago had just organized its stock industry on a supposedly permanent basis when the range business began. On December 25, 1865, the old scattered stock-yards became "a thing of the past." They were simultaneously abandoned and the interests involved moved to the new Union Stock-Yards on Halsted Street where an *imperium in imperio* speedily developed, and there in the next fifty years 541,032,929 head of stock were received and accounted for. To these yards all of the railroads delivered inbound

stock, collected generally in the farming regions of Indiana, Illinois, and Wisconsin, and destined for the local table. The slaughterhouses gathered around the Union Stock-Yards in convenient locations, but "packingtown" was not yet a well-known term. Some beef was corned or dried, as pork had been in great amounts for many years, but the stock-yards were a local distributive agency and in no sense a centre of independent manufacture.

Cheap cattle from the range began to come in soon after the opening of the Union Stock-Yards. They filled the local market and overflowed to the East and Europe. With them came the invention of a practical ice machine and a cheap process for making and soldering tin cans, upon which inventions turned a revolution in the meat trade. Certain of the shippers and butchers tried experiments with tinned fresh beef (of which Libby, McNeal, and Libby shipped thirty-one million tins by 1884), and with the shipment of beef in refrigerator cars. The European shipments of October, 1875, and later, showed how practicable it was to handle beef in sides instead of on the hoof, and the discovery of profitable by-products provided reasons for the growth of a packing industry not only in Chicago, but in Omaha, Kansas City, and St. Louis. Other cities struggled for many years to share in the profits of slaughter and packing. Their newspapers discussed the reasons why, ultimately, the slaughtering was to be done at the place of original shipment. But the logical convenience, labor supply, and by-products worked to make the traffic quasi-monopolistic and to develop out of the competitors of the seventies the "big four" of the eighties—Armour, Hammond, Morris, and Swift.

The cattlemen and the packers were soon in keen competition for the profits of beef; with the latter having the same advantage in ownership of plant and conveyance that the Standard Oil Company had over the producers of crude petroleum during the same years. It was in vain that the cowmen tried to combine. Great cattle companies succeeded individual owners, with gigantic inclosed herds replacing the small droves on the open range, yet the packers retained their strategic position in the trade. They drove the stock owners to seek allies where they could, and to find them in the railroads that consumed much of the profits of the industry in the form of freight.

Early in the history of the trade, as soon as the Union Stock-Yards began to ship large numbers of live stock to New York and other eastern points, the railways began to scramble for the freights. The five trunk lines, New York Central, Erie, Pennsyl-

vania, Baltimore and Ohio, and Grand Trunk, competed for the business with cut-throat and disastrous rate wars, and worked out a more peaceful *modus vivendi* only after the panic of 1873. They then agreed to divide the traffic on a given percentage, and induced a few of the greater shippers to adjust their shipments, over one road or another, so as to even up the totals with the agreed ratio. These firms were known locally and enviously as "eveners," and found the reward for their co-operation in a rebate from the published rate per car that allowed them to fatten at the expense of their unfavored smaller rivals. "This railroad competition has helped to concentrate the live-stock and dressed-beef business into the hands of a few men," testified the best-informed spectator, Albert Fink, in 1883.

For several years the "evener" group of firms enjoyed the advantages gained by their agreement, but by 1877 the scheme had broken down because conspirators to stifle trade lacked the firmness, when bought, to stay bought, and the trunk lines tried a new experiment for the division of freight receipts according to a fixed pool. Albert Fink, who had harmonized the rivalries of various southern roads, was put in charge of this new regulative association, and until the interstate commerce law was passed in 1887 he was almost the sole force in America working to maintain uniformity and equality of rates against the bargaining tendencies of shippers and the competitive lust of carriers.

As the trade developed and cattle shipments east of Chicago assumed the form of fresh beef, with thirty animals to the refrigerator car instead of eighteen to the stock car, competition was again aroused. The surviving shippers of live stock demanded that the rate on beef be raised far above the rate on cattle on the hoof, so as to maintain equality between the two forms of meat on the New York market. They found allies in the railroads, who wanted to keep their stock cars in use and to get the higher cattle car rates; in the stock-yards owners along the lines who could see that their plants would become obsolete and unproductive if no more live cattle came to use them; and in the butchers of the eastern cities who resented the changes that were converting them from butchers and manufacturers into mere agents and dealers in meat. By 1888 a New York wholesale butcher could say, under oath, that with a few exceptions "the slaughtering of cattle by butchers is a thing of the past." The eastern butchers, fearful of extinction, raised the cry in the middle eighties that Chicago and Kansas City meats were unwholesome and were preserved with poisons—the charge ten years later in the Spanish

War that they were "embalmed" was perhaps reminiscent of the butchers' complaint. In 1884 there was a New York Wholesale Butchers' Protective Union, and in 1886 a butchers' National Protective Association of the United States, both formed to boycott Chicago beef.

The stock shippers got the relief they wanted in the form of an increase in beef rates from once-and-a-half the cattle rate, which the packers admitted to be fair, to once-and-three-quarters, and through secret rebates from the cattle rate. The rate wars that prepared the way for public regulation of railways and the division of great corporations among themselves so that some stood on the public's side for fair and nondiscriminating rates, were founded in the beef and cattle trade. Henry Demarest Lloyd had raised the shout against the trusts in his memorable *Atlantic Monthly* article, "The Story of a Great Monopoly," as early as March, 1881. Edward Bellamy's hero in *Looking Backward* started upon his communistic dream on Decoration Day, 1887. And before Cleveland gave way to Harrison in 1889 there had been exhaustive investigations of meat and oil and transportation. The interstate commerce act of 1887 was itself one of the direct outgrowths of conditions starting in the cow country.

Between 1885 and 1887 all these forces came to a focus, and the cow country that had bred them ceased to be. The open range was blocked by occupation so that the long drive was no longer possible. Cattle quarantines completed the obstructions begun by the farmers. The greed of stockmen that had led to their illegal inclosures had forced effective intervention by the government to break them up and to end the period of unregulated free grass, while the beef industry, with its impetus derived from the cow country, had started new forces that continue to touch American life on many sides. The packing and dressed beef consolidations had come to stay; barbed wire was on the road to monopolistic consolidation in a huge trust; railroad regulation had become more acceptable because of the abuses that had been revealed; government activity, always strengthened by exercise, had been stimulated by the work of the Land Office, the inauguration of railroad control, and the inception of food inspection; and the Wild West had received clear recognition as one of the most valuable assets of American life and literature.

CHAPTER XXI

THE GROWTH OF THE DAIRY INDUSTRY AND DIVERSIFIED FARMING

1. General Survey of Dairy Development [1]

The Present Field of the Dairy Industry

No branch of agriculture in the United States has made greater progress than dairying during the nineteenth century. No other has received more direct benefit from the art of invention, the teachings of modern science, and the intelligent practice of skilled operators. Co-operative and commercial organizations have been formed to conduct the business locally and to guard its general interests. State laws and appropriations of money have been made to foster and promote this industry. Dairying has become the specialty of districts of wide area in different parts of the country. It is now regarded as among the most progressive and highly developed forms of farming in the United States.

The greater part of this country has been found so well adapted to dairying that its extension has more than kept pace with the opening and settlement of new territory. A belief was long entertained that successful dairying in America must be restricted to narrow geographical limits, constituting a "dairy belt" lying between the fortieth and forty-fifth parallels of latitude and extending from the Atlantic Ocean to the Missouri River; the true dairying districts were thought to be in separated sections, occupying not more than one-third of the area of this belt. These ideas have been exploded. It has been proved that good butter and cheese can be made, by proper management, in almost all parts of North America. Generally speaking, good butter can be made wherever good beef can be produced. Advantages unquestionably exist in the climate, soil, water, and herbage of certain sections, but these factors are largely under control, and what is lacking in natural conditions can be supplied by tact and skill. So that, while dairying is intensified, and constitutes the leading

[1] Henry E. Alvord, "Dairy Development in the United States," *Yearbook of the United States Department of Agriculture, 1899* (Washington: Government Printing Office, 1900), pp. 381–398.

agricultural interest over large areas where the natural advantages are greatest, the industry is found well established in spots in almost all parts of the country and developing in unexpected places and under what might be considered as very unfavorable conditions.

Dairying During the Colonial Period and at the Present Time

Dairying was practiced in this country in colonial times, and butter and cheese are mentioned among the early exports from the settlements along the Atlantic coast; but this production was only a feature of general and pioneer farming. Dairying as a specialty did not appear in the United States to any extent until well along in the nineteenth century. The dairy history of the country is therefore identical with its progress in the present century. This progress has been truly remarkable. The wide territorial extension; the immense investment in lands, buildings, animals, and equipment; the great improvement in dairy cattle; the acquisition and diffusion of knowledge as to economy of production; the revolution in methods and systems of manufacture; the general advance in quality of products; the wonderful increase in quantity; the industrial and commercial importance of dairying, all constitute a prominent feature in the material progress of the nation.

Dairying During the Early Part of the Century.

During the early part of the century the keeping of cows on American farms was incident to the general work. The care of milk and the making of butter and cheese were in the hands of the women of the household, and the methods and utensils were crude. The average quality of the products was inferior. The supply of domestic markets was unorganized and irregular. The milch cows in use belonged to the mixed and indescribable race of "native" cattle, with occasionally a really good dairy animal appearing singly, almost by accident, or, at the best, as one of a family developed by some uncommonly discriminating yet unscientific breeder. The cows calved almost universally in the spring, and were generally allowed to go dry in the autumn or early winter. Winter dairying was practically unknown. As a rule, excepting the pasture season, cattle were insufficiently and unprofitably fed and poorly housed, if at all. It was a common thing for cows to die of starvation and exposure, and it was considered no disgrace to owners to have their cattle "on the lift"

in the spring. In the Eastern and Middle States the milk was usually set in small shallow earthern vessels or tin pans for the cream to rise. Little attention was paid to cooling the air in which it stood in summer or to moderating it in winter so long as freezing was prevented. The few who scalded fresh milk had no idea of the true reason for so doing or why beneficial effects resulted. The pans of milk oftener stood in pantries and cellars or on kitchen shelves than in rooms specially constructed or adapted to the purpose. In southern Pennsylvania and the States farther south spring houses were in vogue; milk received care, and setting it in earthen crocks or pots, standing in cool, flowing water, was a usual and excellent practice. Churning the entire milk was very common. This is still done to some extent in the Southern States, where butter is made every morning and where all the milk is buttermilk. In seasons of scarcity of milk there was no butter. In the Northern States there were some instances where families were supplied with butter weekly during most of the year, and with an occasional cheese, directly from the producers. But the general farm practice was to "pack" the butter in firkins, half firkins, tubs, and jars, and let the cheese accumulate on the farm, taking these products to market only once or twice a year. Not only were there as many different lots and kinds of butter and cheese as there were producing farms, but the product of a single farm varied in character and quality according to season and other circumstances. Every package had to be examined, graded, and sold upon its merits. It was usual for half the butter in market to be strong, if not actually rancid, and for cheese to be sharp. With the products largely low in grade, prices were also very low.

Dairying During the Middle of the Century.

The above conditions continued without material change up to the middle of the century. Some improvement was noticeable in cattle and appliances, and in some sections dairy farming became a specialty, although not in a marked degree. . . .

* * * * * * * * * * *

All the operations of the dairy continued rude and undeveloped even in these "dairying districts." The cows were milked in the open yard, and the curds were worked in homemade tubs and pressed in log presses. Everything was done by guess; there was no order, no system, no science in dairy operations. The cheese-making section gradually embraced the central and western por

tions of New York and the adjacent parts of Pennsylvania and Ohio, and the total production became large. Toward the middle of the century the gross supply of cheese was in excess of domestic demand, and cheese exports from the United States, mainly to Great Britain, ranged from 3,000,000 to 17,000,000 pounds a year. With the growth of cities and towns the business of milk supply increased and better methods prevailed. Yet, prior to the year 1850 no city had received any part of its milk supply by railroad transportation; near-by producers met all existing demands by hauling in their own vehicles. Butter making for home use and in a small way for local trade was common wherever cows were kept, and in some places there was a surplus sufficient to be sent to the large markets. Vermont and New York became particularly noted for butter production. "Franklin County butter," from counties of this name in those two States and in Massachusetts, was the favorite in New England markets, and the fame of "Orange County" and "Goshen" butter, from southern New York, was still more extensive.

Dairying During the Third Quarter of the Century

The twenty-five years following 1850 was a period of remarkable activity and progress in the dairy interests of the country. At first the agricultural exhibitions or "cattle shows," which were comparatively new and popular, and the enterprise of importers turned attention toward the improvement of farm animals; breeds of cattle noted particularly for dairy qualities were introduced and began to win the favor of dairy farmers. Then the early efforts at co-operation in dairying were recognized as successful, and were copied until the cheese factory became an established institution. Once fairly started in the heart of the cheese-making district of New York, the factory system spread with much rapidity. The "war period" lent additional impetus to the forward movement. The price of cheese, which was 10 cents per pound and less in 1860, rose to 15 cents in 1863 and to 20 cents and over in 1865. The foreign demand increased also, and the yearly cheese exports rose from 10,000,000 pounds in 1850 to 15,000,000 in 1860 and to almost 50,000,000 in 1865. Ten years later over 100,000,000 pounds were exported.

Establishment of Cheese and Butter Factories

Although several earlier instances of associated dairying have been authenticated, which were locally successful, it is generally

conceded that the credit of establishing the first real cheese factory, which served as a model and incentive to others . . . belongs to Jesse Williams, of Oneida County, N. Y. Mr. Williams lived upon his farm, near Rome. He was an experienced and skillful cheese maker, and his dairy had such a good reputation and its product was so eagerly sought at prices above the average that he increased his output of cheese by adding to his own supply of milk that from the herd of a son located upon a farm near by, and then from other neighbors. This idea of bringing together daily the milk from several neighboring farms, to be made into cheese at one place by a skilled operator, was the germ from which sprang the cheese factory system of the United States. Mr. Williams began working on this plan in 1851. He was so successful that a special building was erected the next year and fitted up with the best apparatus obtainable. . . .

Cheese factories were soon started in Pennsylvania and Ohio, and then in other States, East and West. In 1869 the number in the whole country exceeded 1,000, and from that time the co-operative, or factory, system practically superseded the making of cheese on farms.

Making butter in quantity from milk or cream collected from numerous farms soon followed as the next advance in American dairying. Such establishments are properly butter factories, but the name of "creamery" has been generally adopted, and is not likely to be changed. The first creamery was built by Alanson Slaughter, near Wallkill, Orange County, N. Y., in the year 1861. The milk from 375 cows was received here daily. In Illinois the first cheese factory was started in 1863 and the first creamery in 1867. In Iowa these respective dates were 1866 and 1871. During the earlier years of their operation it was quite common for both butter and cheese to be made at the creameries at different times, or butter and skim cheese at the same time.

Some Features of the Factory System of Dairying

The effect of the establishment of cheese and butter factories, comparatively new in kind, is to transfer the making of butter and cheese from the farm to the factory. Originating in this country, although now extensively adopted in others, the general plan may be rightly called "The American system of associated dairying." It constitutes one of the notable and important landmarks in the progress of dairying during the present century. The early cheese factories and creameries were purely co-operative concerns, and

it is in this form that the system has usually extended into new territory, whether for the production of butter or cheese. . . .

* * * * * * * * * * *

The Condensed-Milk Industry

The condensed-milk industry had its beginning coincident with the inauguration of the factory system for making butter and cheese. Some method of preserving milk had long been sought and numerous preparations of the article had been offered, but these failed to meet the requirements and win public favor. In 1846 experiments were begun in New York by Mr. Gail Borden with a view of securing a preserved milk that was pure, wholesome, and palatable, capable of being transported long distances and kept for long periods in trying climates, and then serving as a satisfactory substitute for crude, fresh milk; but it was not until 1856 that he obtained results which have since popularized the product in every quarter of the globe. The previously prevailing ideas of a dry form of milk (desiccated, solidified, or powdered) were abandoned, and it was decided that a semiliquid state was the best form for preservation. The correctness of this decision is attested by the fact that, extensive as the industry now is and numerous as are the commercial brands, all condensed milk is still prepared under substantially the system then originated. This applies to the unsweetened as well as to the sweetened article, for "plain condensed milk" was first introduced and put upon the market about the year 1861. It was then mainly in open vessels and intended for early use. At that time condensed milk in both forms had become well known, and four or five factories were in operation, each producing about 5,000 one-pound cans per day. For the year 1879 the production of condensed milk in the United States was reported as 13,000,000 pounds and for 1889 as 38,000,000 pounds.

Application of Mechanics to the Dairy

The third quarter of the century was also a period of unprecedented progress in the application of mechanics to the dairy. The factories and creameries required new equipment, adapted to manufacture upon an enlarged scale, and equal attention was paid to the improvement of appliances for farm dairies. Shallow pans were changed in shape and greatly enlarged; some were made to hold 20 or 30 gallons, and had bottom and sides double for cooling or warming by the water jacket. . . . Then these big pans, and

most others, disappeared in favor of deep setting. This system, in which deep cans were used, set in cold water, preferably iced water, was introduced from Sweden, although the same principles had been in practice for generations in the spring houses of the South. Numerous creaming appliances, or creamers, were invented, based upon this system. Butter workers of various models, most of them employing the lever, or a crank and roller, took the place of the bowl and ladle and the use of the bare hand. Churns appeared of all shapes, sizes, and kinds, the general plan being to abolish dashers and substitute the agitation of cream for violent beating. About this time the writer made a search of the United States Patent Office records, which revealed the fact that forty or fifty new or improved churns were claimed annually, and, after about one-fourth were rejected, the patents actually issued provided a new churn every ten or twelve days for more than seventy years! This illustrates the activity of invention in the dairy line. It was admitted by all that at this period the United States was far in advance of any other country in the variety and excellence of its mechanical aids to dairying. . . .

ORGANIZATION OF DAIRYMEN'S ASSOCIATIONS

The same period witnessed the organization of dairymen in voluntary associations for mutual benefit, the formation of clubs and societies of breeders of pure-bred cattle, and the appearance of the first American dairy literature of consequence in book form. The American Dairymen's Association was organized in 1863. Its field of activity was east of Indiana, and accordingly the Northwestern Dairymen's Association was formed in 1867. Both of these associations continued in existence, holding periodical conventions and publishing their proceedings for twelve or fifteen years. Then followed the formation of State dairy associations in Vermont (1870), Pennsylvania (1871), Wisconsin (1872), Illinois (1874), Iowa (1876), New York (1877), and other States, superseding the few pioneer societies, which, for the time, covered broader fields.

Introduction of Dairy Cattle and Efforts at Herd Improvement

The Shorthorn breed led in the introduction of improved cattle to the United States, and for a long time the representatives of this race, imported from England, embraced fine dairy animals. Shorthorn grades formed the foundation, and an excellent one, upon which many dairy herds were built during the second and

third quarters of the century, and much of this blood is still found in prosperous dairy districts. The period named was that of greatest activity in importing improved cattle from abroad; but Shorthorns have been so generally bred for beef qualities that the demand for them is almost exclusively on that line, and very few of the breed are now classed as dairy cattle. Ayrshires from Scotland, Holstein-Friesians from North Holland, and Jerseys and Guernseys from the Channel Islands, are the breeds recognized as of dairy excellence, and upon animals graded and improved from these the industry mainly depends. The first two breeds named are noted for giving large quantities of milk of medium quality; the other two, both often miscalled "Alderney," give milk of exceeding richness, and theirs is the favorite blood with butter makers. There are also the Brown Swiss and Simmenthal cattle from Switzerland, the Normandy breed from France, and Red-Polled cattle from the south of England which have dairy merit, but belong rather to what is called the "general-purpose" class. Associations of persons interested in maintaining the purity of the respective breeds have been formed since 1850, and they all record pedigrees and publish registers or herdbooks. Pure-bred herds of some of these different breeds are owned in nearly every State, and these animals aggregate 200,000 or 300,000. Their blood is so generally diffused that half-breeds or higher grades are very numerous wherever cows are kept for dairy purposes. Therefore, although pure-bred animals form less than 2 per cent of the working dairy herds, their influence is so great that it is probable the average dairy cow of the United States at the close of the century will carry nearly 50 per cent of improved blood. The breeding and quality of this average cow, and consequently her productiveness and profit, have thus been steadily advanced.

The progress made in this respect in fifty years has been remarkable. When improvement upon the native stock began, a cow that would make a pound of butter a day for two or three months was a local celebrity. . . . The first good record of definite herd improvement was made by Zadock Pratt, of Greene County, N. Y. By careful selection and culling he increased the average butter product of his 50 cows from 130 pounds for the year 1852 to 225 pounds in 1863; for seven years the average milk yield was 4,710 pounds per cow. About 1865, when good cows sold for $40 or less, an enterprising dairyman in New England advertised widely that he would pay $100 for any cow which would yield 50 pounds of milk a day on his farm for two or three consecutive

days. Not an animal was offered under these conditions. The good dairy cow has now been so long bred to a special purpose that instead of the former short milking period, almost limited to the pasture season, it yields a comparatively even flow of milk during ten or eleven months in every twelve, and if desired the herd produces as much in winter as in summer. A cow that does not average 6 to 7 quarts of milk per day for three hundred days, being 4,000 to 4,500 pounds a year, is not considered profitable. There are many herds having an average yearly product of 5,000 pounds per cow, and single animals are numerous which give ten or twelve times their own weight in milk during a year. Quality had also been so improved that the milk of many a cow will make as much butter in a week as did that of three or four average cows of the mid-century. Whole herds average 300 to 350 pounds of butter a year, occasionally more, and authenticated records of cows giving 2 pounds a day are very numerous. . . .

Dairying During the Closing Decades of the Century

The development of dairying in the United States during the closing decades of the nineteenth century has been uninterrupted and marked by events of the greatest consequence in its entire history. The importance of two inventions during this period cannot be overestimated.

Mechanical Separation of Cream from Milk

The first is the application of centrifugal force to the separation of cream from milk. . . .

* * * * * * * * * * *

The world is indebted to Europe for this invention, at least as a dairy appliance. It is the only instance in which dairy invention abroad has been notably in advance of the United States. Yet, investigations were in progress contemporaneously in this country along the same line, and many of the material improvements in the cream separator and several novel patterns have since been invented here. The machine has been vastly improved during its twenty years of existence. At first the bowl was filled with a "charge" of milk, the separation effected, the machine stopped, its compartments emptied of milk and cream, then refilled and started again. The continuously acting machine was soon invented, however, and is now universal. . . . The first centrifugal separators were put into practical use in this country and

Great Britain in the year 1879. On the continent of Europe they were used a little earlier. The century closes with more than 40,000 of these machines in operation in the United States.

Fat Test for Milk

The second great dairy invention of the period is the popular fat test for milk, being a quick and easy susbstitute for chemical analysis. This is one of the public benefactions of the agricultural experiment stations. In several States these stations have done much creditable work in dairy investigation, and from them have come several clever methods for testing the fat content of milk. The one which has been generally approved and adopted in this and other lands is named for its originator, Dr. S. M. Babcock, chemist and dairy investigator, first of the New York experiment station at Geneva and since of the Wisconsin experiment station. . . .

This fat test of milk has wide application, and it may fairly be questioned whether it is second to the cream separator in advancing the economics of dairying. The percentage of fat being accepted as the measure of value for milk for nearly all purposes, the Babcock test may be the basis for municipal milk inspection, for fixing the price of milk delivered to city dealers, to cheese factories, creameries, and condenseries, and for commercial settlements between patrons in co-operative dairying of any kind. By this test also the dairy farmer may prove the quality of milk from his different cows and (with quantity of milk yield recorded) may fix their respective value as dairy animals. . . . It should be noted that although clearly patentable, thus offering to the patentee an independent income through a very small royalty, this priceless invention and boon to dairying was freely given to the public by Dr. Babcock. Recognition of this public service has taken the form of a medal voted by the legislature of Wisconsin, and a handsome testimonial has been sent by the spontaneous action of appreciative creamerymen in distant New Zealand.

Dairying at the Present Time

The advent of the twentieth century will find the dairy industry of the United States established upon a plane far above the crude and variable domestic art of three or four generations ago. The milch cow itself, upon which the whole business rests, is almost as much a machine as a natural product, and, as already shown, a very different creature from the average animal of the olden

time. Instead of a few homely and inconvenient implements for use in the laborious duties of the dairy, perfected appliances, skillfully devised to accomplish their object and lighten labor, are provided all along the way. Long rows of shining tin pans no longer adorn rural dooryards. The factory system of co-operative or concentrated manufacture has so far taken the place of home dairying that in entire States the cheese vat or press is as rare as the handloom, and in many counties it is as hard to find a farm churn as a spinning wheel.

* * * * * * * * * * *

2. Movement of the Dairy Industry to the Old Northwest [1]

Another interest, however, was now [in the '60's] attracting the attention of many farmers in southern and eastern Wisconsin. This was dairying, and in particular the manufacture of cheese. Until near the close of the war this industry had been carried on, by those who engaged in it at all, merely as a diversion from the serious business of wheat raising. Each farmer maintained his own primitive kitchen dairying establishment in which the wife and children churned the butter and manufactured the cheese for the family table or the irregular local trade. Cheese was still largely imported from New York; butter was exported only in limited quantities.

However, the unprofitableness of wheat raising in the exhausted fields of eastern and southern Wisconsin and the high prices paid for cheese during the closing years of the Civil War were factors influential enough to bring about a desired change. Enterprising farmers throughout this region now heeded the oft-repeated advice of their agricultural journals to "substitute the cow for the plough." At the same time there was introduced into the State the highly important American factory system of associated dairying. To the dairy industry of Wisconsin this meant what the cotton gin had meant to the plantations of the South and the reaper to the wheat fields of the West. Inaugurated in New York in 1851, by 1860 it had revolutionized the processes of dairying in that greatest of dairy States. In 1864 it invaded Wisconsin, when Chester Hazen, an enterprising immigrant from the Empire State, established at Ladoga, in Fond du Lac County, the first cheese factory built in Wisconsin. So far superior were the factory methods, whereby the

[1] Frederick Merk, *Economic History of Wisconsin During the Civil War Decade*, Publications of the State Historical Society of Wisconsin, *Studies*, Vol I. (Madison: Published by the Society, 1916), pp. 22–30. Reprinted by permission of the author and the publishers.

milkings of an entire neighborhood were thrown together and the whole manufactured into cheese or butter by an expert, to the old private dairying methods that by the end of the Civil War thirty cheese factories were already in successful operation in Wisconsin, chiefly in Kenosha and other southeastern counties. By the end of the decade more than a hundred were in business in the State. The amount of cheese which they and the private dairies in Wisconsin produced increased from 1,104,300 pounds in 1860 to approximately 6,000,000 pounds in 1871, and to almost 10,000,000 pounds in 1873.

The production of butter by the factory or creamery plan secured a less rapid hold in Wisconsin. In Illinois, where in 1870 the first creamery in the Northwest was established at Elgin, this branch of the dairy industry attained large proportions. Wisconsin dairymen from the beginning, however, specialized in cheese, leaving butter chiefly to the province of the private dairy. The output of dairy butter in the State increased from 13,611,328 pounds in 1860 to 22,473,036 pounds in 1870.

Wisconsin was well adapted to the dairy industry by reason of her favorable climate, her excellent grasses, and pure water. She was favored also by a social factor, the character of the immigrants who early settled within her borders. From New York came the descendants of pioneer English dairymen, who introduced into the Lake counties, the Fox River Valley, and the southern counties, the art of making the English cheddar cheese. From the mountain cantons of Switzerland came the hardy Swiss, traditional experts in cheese manufacture, who introduced into the northern hills of Green and the surrounding counties, the making of Swiss and Limburg "kase." When to the natural aptitude of these immigrant dairymen were added the efficient methods of factory production, success was already half won.

Several obstacles, however, stood in the way of progress. Chief among these was the evil repute of western dairy products in the eastern markets. Wisconsin dairymen were obliged in the beginning to submit to the humiliation of concealing the indentity of their cheeses, while their butter was contemptuously quoted on Eastern exchanges as "Western grease." In order to win a market it was necessary to lift the quality of the Wisconsin product conspicuously above that of surrounding States, a difficult task of education and co-operation. Fortunately for the State, a number of earnest and public-spirited leaders were ready to devote their energies to it. . . .

Concerted action, which was essential to the improvement of

the cheese and butter product of Wisconsin, could be secured only by the organization of dairymen's associations. The initial step toward this end was taken on Mar. 6, 1867, when a convention of Illinois and Wisconsin dairymen was called together at Rockford, Illinois, where the Illinois and Wisconsin Dairymen's Association was formed, the first such organization to be established west of Lake Michigan. In 1869 it developed into the present Northwestern Dairymen's Association, in whose deliberations Wisconsin cheese-makers took prominent part. Within the State the first dairymen's association to be organized was that of Fond du Lac County, established at Brandon on Jan. 15, 1870. Two years later, on Feb. 15, 1872, the present Wisconsin Dairymen's Association was organized at Watertown, an event full of significance in the dairy history of the State.

These and similar associations subsequently organized were able, by discussion, investigation, and co-operation, to bring about a rapid improvement in the quality of the dairy products of the State. Careless and ignorant methods gave way to the scientific procedure and expert skill of the factory. Before the end of the seventies Wisconsin was carrying away at eastern dairy exhibitions coveted prizes, which had hitherto uniformly gone to New York and Ohio. Wisconsin dairymen no longer found it necessary to parade their cheese as "New Hamburg" or "New York Factory"; they now rested securely upon the reputation of their own brands.

The concerted efforts of dairymen's associations likewise made possible a close study of marketing methods and conditions. This was a matter of especial importance to Wisconsin dairymen in the early seventies. Until 1872 Wisconsin cheese exports had been manufactured almost exclusively for the consumption of the West and the Southwest. So rapid had been the development of the dairy industry in the Northwest, however, that these markets no longer sufficed. Each summer in the markets of Chicago and St. Louis the supply was greater than the demand and as a consequence prices declined to a point that precluded profit. "We must make our cheese, like our flour, for the markets of the world," was the lesson which this condition enforced upon Wisconsin dairymen.

The cheese that was suitable for the western trade, however, was unsuited to the requirements of the East and Europe. The West demanded a large, soft, and slightly colored variety; the Eastern and English markets wished a brand of smaller size, of finer and firmer texture, and more color. The soft cheese was open to other objections besides its limited market. Dairymen had not

yet learned the secret of manufacturing a product that would keep without deterioration during the hot summer months, and the soft variety in particular was likely to become strong and spoil. It was the practice of Wisconsin and other dairymen to rush to market without delay all the cheese made during June, July, and part of August, with the obvious result that prices were regularly depressed during the summer season.

During the summer of 1871 conditions were particularly bad, and it was chiefly as a means of escape from them that the Wisconsin Dairymen's Association was organized early in 1872. The advantages of co-operative effort were quickly demonstrated. From addresses and exchanges of opinion at the regular conventions the dairymen of the State acquired information about such important trade matters as the variety of shapes, sizes, texture, coloring and packing of cheese demanded by the home and foreign markets. It was no mere coincidence that Wisconsin cheese-makers first successfully invaded the East within a few years after the Association was organized.

One of the first steps of the Association was to organize at Watertown in February, 1872, a dairy board of trade patterned after that of Little Falls, New York. Its purpose was to maintain regular dairy market days, at which cheese producers and wholesale dealers could meet for the purpose of buying and selling. Its success was immediate, and it was speedily followed by others at Kenosha and Sheboygan Falls. Wisconsin dairymen were enabled thus to establish direct relations with Eastern and English markets, and gradually to shake off the Chicago middlemen who had hitherto dominated the industry.

Successful shipment for long distances of a perishable commodity like cheese depended upon swift transportation and a minimum of handling. Fortunately for the dairymen of Wisconsin these were secured during the later sixties by the organization of through-freight lines, which carried consignments from Western producers to Eastern consumers in guaranteed time and without change of cars. Quite as important were the perfection and successful employment of refrigerator cars for the first time in 1871 or 1872, just when the Badger dairy farmers were in a postion to make extensive use of them. A few months after the Wisconsin Dairymen's Association was organized, its representative was able to procure from a prominent transportation company the new and highly important refrigerator service, as well as rates of freight so favorable that Wisconsin cheese could be shipped to London or Liverpool for but little more than the New York product.

Wisconsin dairymen, who enjoyed an important advantage over their New York rivals by reason of the relative cheapness of their lands, were now in a position to compete with them on at least equal terms. To-day, after the lapse of scarcely half a century, Wisconsin ranks as the greatest dairy state of the Union.

3. Extension of Dairying to the Last Frontier[1]

Dairying in North Dakota, judged by official statistics, extension of organized activities, and the general public interest has decidedly "arrived." While still not fully established as a major interest, it is evident that the pioneer period of experimentation, education, and agitation has been passed and that the basic problems of the industry have been solved. Soon the agricultural maps must be reshaded to indicate the dairy herd's peaceful penetration of the valley of the "American Nile," hitherto dedicated to hard spring wheat, and the emergence upon the western slope of a new sort of "cow country." For the student of agricultural history a consideration of this occupational evolution naturally suggests a comparison with the developments in the older sections, to determine whether their experiences have been repeated on the newer frontier and whether profit has been taken from their failures and achievements.

In the movement of the farmers' frontier across the continent, in spite of all of the profound differences in physiographical areas, the general course of development has been strikingly similar: staple production has been held to until inexorable physical and social conditions have forced a reluctant diversification determined, within the bounds of productivity, by marketing conditions. Such is the well known story of the "westward march of wheat" from the Virginia and Pennsylvania valleys to the Northwest, and of the shifting of bulk food production from the Atlantic States to the Middle West. Rural New England, by one of those ironies of economic determinism that have dogged her slow footsteps, lost her food market to Western competitors almost as soon as one emerged in the industrial centers, and dairying was turned to as a dependable and enduring activity. The Middle Atlantic States, especially in regions not well adapted to fruit growing and market gardening, eventually turned to the same source of income. Abandoning the field of the great staples,

[1] E. D. Ross, "How Dairying Came to North Dakota," *College and State*, North Dakota Agricultural College, Vol. VI, No. 1, October, 1922, pp. 10–12. (Revised.)

the East came to take a self-conscious pride in its peculiar line of production: the fiction of the superior quality of Eastern grasses and climate arose and the fame of Vermont and Orange County butter was heralded throughout the land.

In a later period the region of the upper Mississippi awoke to the realization that not even the prairie plains could withstand the pressure of soil exhaustion combined with the competition of the new wheat lands which the extension of railroads precipitated. The transition to stock raising and dairying, while postponed to some extent by the high wheat prices of the Civil War, was inevitable. Eastern industrial expansion was now multiplying urban districts to such an extent that the market milk business was beginning to supersede factory production; and the opportunity was thus offered for the North Central States to take the lead in the manufacture of butter and cheese. Organization and standardization gradually overcame the prejudice against "wild-flavored western butter" and cheeses not bearing the New York brand, and a great transformation of one of the most important agricultural sections was successfully made.

In North Dakota, until after the first decade of the new century, both economic and psychological influences were opposed to the general extension of dairying. With the banner small grain system of the eastern section, the great meat raising activities of the western and the combination of the two in between, the greatest return seemed to be in these staples. Then too, for a land of big things, of bonanza wheat farms and great cattle ranches, the laborious, meticulous cares of the dairy seemed trifling and puttering.

Here and there, to be sure, were to be found men of vision who, judging by the experience of older regions and their knowledge of crop conditions, foresaw the desirability of a partial diversification through the medium of the dairy cow. In February, 1891, a State dairymen's association was formed at Fargo, with twenty-two charter members, and the first convention was held at Grand Forks the following June. As early as 1892 the station chemist of the Agricultural College sounded a warning as to the need of dairying in a proper system of crop rotation for the State. Soon after the founding of the college the citizens and corporation of Fargo raised funds for the erection of a manufacturing creamery on the campus. In 1896 in a study of dairy instruction throughout the country by an investigator of the federal department of animal husbandry a picture of this plant was reproduced as a model for that type of instruction, and the same year another federal agent

reported that the facilities for dairy instruction in the Dakotas were superior to those of Nebraska. It was suggested, however, that, owing to the isolation of many farmers in the State, a system of itinerant schools operating a month in a place, after a plan followed in England, Ireland, and Belgium, would furnish most desirable supplemental instruction.

These pioneer efforts, however, were slow in securing definite results. The State association after the initial convention failed to meet again until 1896 and following that gathering it became inactive until 1910. The reasons given for the suspension were the general indifference of the average farmer and the lack of sufficient funds, with the refusal of the legislature to grant the small subsidy sought. Apparently too, some of the elect themselves had not the full courage of their convictions, as the discussions in the early meetings were devoted nearly as much to the problems of fattening and marketing stock as to those of milk and its products. The college's investigations and teaching seem to have borne little fruit with the existing generation. The report by the federal agent in 1896 indicated that the industry was in its infancy—and the infant was not thriving. The milk production was low, the manufacture of butter and cheese was still largely a household industry, and the quality of the product was often inferior. A distressingly large part of the butter output was of the "ladle" variety, and found its way, through the medium of the country storekeeper, to the "renovation" factories in Minnesota, Iowa, and Illinois. The establishment of an extensive creamery system was recommended as the surest and quickest means of preventing this waste. Knowledge of dairy methods was generally lacking: dairy papers had few readers, discussions of the subject in the general agricultural journals and in local newspapers was not thorough, and in farmers' institutes, while "fair consideration in the selection of topics for discussion" was given to dairying, the presentation was not very systematic. The short-term tenancy system in some sections added to the general inefficiency.

Two years later the commissioner of agriculture reported a general feeling of indifference on the part of farmers and legislators toward an activity which had been the "savior of many communities that would have otherwise been depopulated and given over to the original inhabitants." Of 54 creameries circularized but 23 had responded and of these all but 10 had suspended operations. "It goes to show," the report concluded, "that the industry is rather on the decline than otherwise, and that unless it is given some encouragement in its infancy by legislation in the enactment

of more stringent laws governing the adulteration of dairy products, and by such appropriations as will aid in the holding of dairy conventions whereat subjects bearing directly upon the dairy industry can be discussed, this industry of the greatest moment to the State must lapse into a condition of nonentity." So late as 1907 a leading authority in describing the agriculture of the State for Bailey's *Cyclopedia* indicated but two counties in the State, Sargent and Ransom, devoted primarily to dairy farming.

During the first decade of the century there was a gradual extension of dairying, though the growth was somewhat intermittent. Crop failures created at least a temporary enthusiasm for milking, just as every prospect of good returns from wheat tended to check movements for diversification. At times it was necessary for the assistant dairy commissioner to issue warnings against the creamery promoter, only in the succeeding year to report the closing down of many of the new ventures. But in these years the possibilities and limitations of the industry for the State were coming to be more clearly understood.

Repeated failures demonstrated before the end of the decade that the conditions in the State were not favorable to cheese making. A local market for the product might have been built up gradually if there had not been insuperable difficulties in production. Sparse population made the long daily hauls impracticable, the skim milk was needed for the raising of calves, and, at best, the seasonal demand of the industry necessitated butter making, in home or factory.

But with butter making the case was far different; the natural advantages and marketing opportunities far outweighed the difficulties. Soil and climate were highly favorable, cheap land made the cost of milk production much lower than in Illinois and Iowa, and a good market, often better than New York and Chicago, was available in the mining States to the west. The one great drawback, as the dairy professor at the college pointed out in 1904, was the higher cost per pound of manufacturing, owing to the sparseness of population. This social factor worked against the success of the co-operative and other locally-organized creameries which had had such a remarkable development in the more closely settled states of the Northwest and it made the centralizer system of cream collection, with all of its limitations and abuses, the most satisfactory for the time being. Fortunately too for the State's product, much of the cream so collected was shipped beyond its borders.

The crop failures of 1910-11 seem really to have marked the

turning point in the permanent establishment of dairying in North Dakota. "A wave of dairy popularity has been swelling rapidly since the unfavorable crop conditions of 1910 and 1911," reported the dairy commissioner in 1914. Unlike previous "hard time" reactions, this enthusiasm manifested itself in definite, permanent achievements. In 1909 a new dairy law had been passed creating a full commissioner, in place of an assistant provided for in 1899, with more adequate means and powers. The moribund dairymen's association was permanently revived in 1910. State bankers now began their policy of making more favorable loans for the purchase of dairy cows. A "better farming association" formed by business men gave special attention to the encouragement of dairying.

The college in its work of resident instruction, research and extension, supported and led the movement at every point. In 1913 appropriation was made for a new dairy building and barns. Production was increased by the formation of cow testing and breeding associations. The inauguration of the New Salem breeding circuit in 1909, in a community that had for years been a leading center of butter production, marked an epoch in the economic history of the State. Quality of the product was improved by butter contests and by the interest aroused in State exhibits at the national shows. Extension workers, and in some cases special demonstration trains brought the facts directly to the farmers.

The material progress attending all of these efforts may be measured in many ways. In 1908 there were very few pure-bred dairy herds in the State; four years later every important dairy breed was represented. The "dual purpose" fallacy, long encouraged here as elsewhere by the meat interests at the expense of milk production, was being overcome by educational propaganda. Though a silo had been constructed in the State as early as 1896, there were but 20 in the fall of 1909; the next three years saw a fivefold increase and by the summer of 1914 there were no less than 700. This development had been aided materially by the detailing to the State of federal silo construction experts. During the decade the State went from twenty-seventh to nineteenth in dairy rank and in 1919 it stood third in the percentage of gain in dairy cows.

While the war wheat prices caused a temporary wane in dairy enthusiasm, the general outcome of the high price period showed that the industry could live in prosperous as well as in depressed times. Of the place that dairying has had in the deflated reconstruction period, of the increasing private activity and the extension of public aid, federal and State (including loans from the

War Finance Corporation and the State "cow bill"), a historical survey cannot treat, as these are matters of the most vital and pressing present-day concern.

While North Dakota has followed the course of the older States in turning to the dairy cow when confronted with the risks of the one crop system, she has not, thus far, aimed to substitute dairying or stock raising for small grain growing but has rather sought to utilize these activities for a supplemental income and as a part of a rotation system. Economists have told us that natural grain-growing regions remote from urban centers should not resort to dairying but rather rely upon systems of crop rotation to maintain fertility. While, given a perfect system of rotation, such might be the ideal, under existing conditions of production and marketing, the keeping of the dairy herd would seem to be the surer, more practicable method.

As a compartively new State, North Dakota has been able to profit by the experience of the older regions and by the general progress made at large in the industry. In various widely separated communities the impetus to dairying can be traced directly to settlers from such leading dairy States as New York, Wisconsin, Illinois, and Iowa; and, in the words of Dr. Wiest, the historian and economist of the butter industry, with the Scandinavian peoples "the art of making butter and cheese is a heritage that has been handed down to them by their ancestors." State dairymen's associations had been in existence since 1869 and had solved many of the basic problems of production and marketing; cow testing and breeding associations had been introduced into this country from Denmark in 1905; and the revolutionary mechanical inventions in the industry had been made available. As in all aspects of agricultural progress since the Civil War, a foremost influence in the diversification movement, in this as in the other States, has been the land grant college. Finally the course of the industry in the State well illustrates the changed attitude of government, State and national, toward economic enterprises: the change from the *laissez faire* policy of leaving all such concerns strictly to individual initiative to one of rendering aid and encouragement, as well as regulation and control, wherever, in the unmistakable judgment of public opinion, whether economically sound or not, it seems essential for the general welfare.

CHAPTER XXII

THE EXTENSION OF THE COTTON BELT AND THE NEW SOUTH[1]

I

Cotton growing, like nearly all economic pursuits in the South, suffered greatly during the War of Secession. While it is of course impossible to state accurately the extent of these losses, those due to the inability of cotton growers to raise and sell their usual crops have been estimated at about nine hundred millions of dollars. Severe as were these losses of the war period, they can scarcely be said to have equaled those which cotton growers sustained during the years following the war, as a result of the complete overturning of the old industrial system. The labor system of the South had been utterly demoralized by the emancipation of the slaves and the unwillingness of the freedmen to continue steadily at work under the wage system. Cotton fields were frequently planted and then neglected in their cultivation, or the crops left ungathered for want of laborers to perform the work. The cotton crop actually harvested in 1866 was probably less than a million of bales, and not until thirteen years later did the South produce a cotton crop as large as that harvested in 1860.

There was a lack of capital to make plantation improvements or even to replace the buildings and tools which had been destroyed or had fallen into decay during the war period. Land values, always low at the South, had utterly collapsed and most of the land could not be sold at any price. Credit could with great difficulty be secured by men who no longer possessed lands or slaves which could be offered as security for loans, and efforts to re-establish the old system of crop-liens frequently ruined both the planter and the cotton factor because of the uncertainties of production under the new conditions. The high price of cotton in the North and in Europe which had prevailed during the war period had raised up new competitors for these markets as well as stimulated increased efforts on the part of

[1] Matthew Brown Hammond, "Cotton Production in the South," *The South in the Building of the Nation* (Richmond, Virginia: The Southern Historical Publication Society, 1909), Vol. VI, pp. 87–103. Reprinted by permission of the author.

former rivals. Naturally the cotton growers in these lands were unwilling to surrender, without a struggle, the advantages which they had gained over the Americans during the war.

In spite of these difficulties every effort possible was put forth at the South to revive the culture of cotton as quickly as possible. The high prices of this staple continued for some time after the close of the war and offered the prospect of rich returns to such men as were fortunate enough to have still on hand a portion of the cotton raised during the war, or to those planters who could successfully produce and harvest a new crop. In some respects these high prices proved in the end disadvantageous, for they not only stimulated overproduction of cotton, but they also encouraged a return to the ante-bellum method of cultivating this crop almost exclusively, instead of continuing the system of producing along with cotton the necessary food supplies, such as had been the practice during the war.

The first and most difficult question which confronted the planting classes was how to secure the labor for the cultivation of their fields. The efforts to employ the former slaves as wage earners seldom proved successful, and there was no class of white laborers who could take their places. Immigrants from Europe began to come to the United States in large numbers at the close of the war, but few of them found their way into the Southern States. The poor whites in the South were unwilling to work in the fields as wage-earners along side of the negroes, and they were not sufficiently numerous in the neighborhood of the large cotton plantations to have supplied alone the labor needed. For these reasons the wage system was usually abandoned after one year's trial.

Unable to secure labor for the cultivation of the plantations, the owners saw themselves compelled to adopt new methods for carrying on cotton production. Many of them abandoned altogether the attempt to conduct farming operations. Pressed by their creditors and forced by their own necessities, many of the old planters threw their land on the market for whatever it would bring. "Plantations that had brought from $100,000 to $150,000 before the war and even since, were sold at $6,000 or $10,000, or hung on the hands of the planter and his factor at any price."

The purchasers of these lands came in part from the North, being chiefly men whom political or military affairs had brought to the South and who were induced by the high prices of cotton and the low prices of the land to attempt the cultivation of this staple. In the main, however, the purchasers were found within the South

itself. The poor whites whose inability to own slaves had kept them largely out of cotton growing before the war, were now eager to undertake the cultivation of this staple on the better lands offered for sale on such favorable terms. A great increase in the number of small farms took place during the years following the war. In the ten States which constitute the cotton belt the number of farms containing less than 100 acres increased from 333,058 in 1860 to 517,178 in 1870, while the average size of farms in these States decreased during the same period from 402 acres to 230 acres.

The freedmen participated to but a slight extent in this movement toward peasant proprietorship. Although frequently encouraged to buy land by their former masters who divided the plantations into small strips and offered these strips for sale on the installment plan, only a few of the more thrifty and industrious negroes succeeded in meeting the annual payments and becoming the owners of the lands they cultivated. As late as 1876 the Bureau of Agriculture at Washington reported as a result of its investigations that only about five per cent of the freedmen in the cotton belt had become owners of land.

After the failure of the wage-system the planters who had not sold their lands but continued to grow cotton with negro labor, adopted what soon became known throughout the cotton belt as the "cropping system." Under this system the plantations were divided into allotments of from fifteen to forty acres each, the smaller ones being known as "one-horse," the larger ones "two-horse" farms. Each allotment was cultivated by a black or occasionally a white tenant "on shares." The landowner furnished the house, usually the implements and work animals, and sometimes the seed. The tenant or "cropper" performed the work and the crop was divided between him and the landowner, each usually receiving one-half, although the apportionment varied according to the locality and also according to the amount of capital furnished by the landlord.

Although the cropping system outwardly resembled the *metayer* system of land tenure, as the share system is usually known among economists, it had this peculiarity. The "cropper" did not have possession of the land he cultivated to the exclusion of the owner, but on the contrary he was usually more or less subject to the landlord as to the choice of crops to be grown and their mode of cultivation. The cropper's position was thus intermediate between that of a wage-earner and that of a tenant.

The system had the advantage of continuing the farming

operations under the direction of the landowner, while at the same time it made the tenant share the loss due to his own neglect or carelessness. In its later development the cropping system has shown many weaknesses, but when regarded as a transitional method for enabling the Southern planter to revive the culture of cotton, there is much to be said in its favor.

The problem of securing labor having been solved, the revival and extension of cotton culture made rapid progress. Its growth extended not only farther westward in Texas, but also northward in the Carolinas, Georgia, Arkansas and Tennessee, and later in Oklahoma. For this northward extension the use of commercial fertilizers was largely responsible. Prior to the war little use had been made of manures of any sort in cotton growing, but following the war the introduction of chemical manures into the South began on a large scale. By their use not only was the yield of cotton per acre largely increased, but the maturity of the crop was hastened, so that it could be safely grown in regions where it was formerly considered dangerous to plant it, because of early frosts. The use of manures also enabled old and abandoned lands to be reclaimed for cotton culture and a great increase took place not only in the geographical area of the cotton belt but in the acreage given over to cotton growing.

This increase in acreage and yield in some of the older cotton States was sufficient to raise their percentage of total production, in spite of the fact that the center of cotton production continued to move westward. North Carolina which had produced only 2.7 per cent of the total cotton crop in 1859, in 1876 produced 4.7 per cent. South Carolina's proportion grew in the same time from 6.4 per cent to 7 per cent.

Aside from the use of fertilizers, there were few improvements made in the way of a better cultivation of the cotton lands during the first decade following the war. No scientific system of crop rotation was attempted, but there was an increase in the percentage of the tillable land given over to the cultivation of other crops than cotton, especially to that of Indian corn. This tendency was far from general and was probably more noticeable on the small farms cultivated by their owners than on the large plantations. After 1870 there came a rapid fall in the price of cotton and this was perhaps partially responsible for the cultivation of other crops. Unfortunately, there were few of the cotton growers who were in a position to change from cotton to other crops.

The change from large to small scale farming, and especially the change from cotton growing by independent proprietors

to that by tenant farmers had brought with it a great extension of the system of agricultural credit and had greatly increased the number of borrowers. The only security which the tenant farmer could give to the country merchant who advanced him his food, clothing, and other necessities, was a mortgage on his crops and as cotton, because of its ready sale, was much to be preferred to other crops, the merchant was obliged to demand it as security for his advances. This preference shown to cotton by the advancing merchant led to its overproduction and consequent fall in price. The fall in its price usually made it impossible for the tenant farmers to pay off their debts to the advancing merchant at the close of the year and they were obliged to renew their obligations the following year with a promise to plant still more cotton. Escape from this vicious circle proved impossible for most of the negro croppers and some of the white ones, and "the cropping system" and the system of "crop-liens" thus worked conjointly in causing overproduction of cotton and agricultural depression in the South.

II.

By the year 1876 industrial reconstruction, so far as the cotton belt was concerned, may be said to have been completed. Both the "cropping system" and the "crop-lien system" were established in much the same form as they have since continued and their effects on cotton production and the general agricultural economy of the South were beginning to be realized. In other respects also, conditions in the cotton belt had reached something like their normal state. The cotton crop of 1876 was nearly equal in amount to that of 1860, and the price of cotton on the New York market was about the same as it had been at the outbreak of the war. In Europe, American cotton had regained the ground lost during the war and the succeeding decade, and cotton imports from other countries had suffered a rapid decline.

For a decade and a half following 1876 cotton growers in the South were, generally speaking, in a fairly prosperous condition. A great increase in the demand for cotton took place in Europe, especially on the continent, and the demand was met in the main by American cotton. An even more rapid growth in the manufacture took place in our own country, especially in the South where cotton mills multiplied rapidly after 1870. As late as 1880 the total Southern consumption of cotton, including that of the household industries, was little more than thirteen per cent of that of the Northern States. In spite of the fact that the con-

sumption of cotton in Northern mills more than doubled between 1870 and 1890, that of the Southern mills increased sixfold during the same period, and by 1905 over 40 per cent of the American consumption took place in Southern mills. The development of cotton manufacturing in this country and on the European mainland has relieved the South of its erstwhile dependence on a single source of demand and has made market conditions far more steady than formerly.

Other steadying influences on the price of cotton have been the changes which have taken place in the methods of marketing the crop. Most important of these changes have been the development of interior buying, the establishment of cotton exchanges and the rise and growth of the system of purchasing cotton for future delivery. To many persons in the South the future delivery system in the cotton market has seemed to furnish only a means of speculation in cotton. That such has been the effect of certain practices on the New York Cotton Exchange seems certain as a result of recent official investigations, but when the system of future delivery purchasing is properly conducted it is a means of diminishing rather than increasing the speculative influences surrounding the growing and marketing of this staple. It has generally proved of advantage to cotton growers as well as to manufacturers.

As a result of the favorable conditions which have just been sketched, as well as of others which can only be mentioned, such as the resumption of specie payments in 1879, the development of improved means of transportation in the South, the introduction of a better class of agricultural implements and the growing use of commercial fertilizers, cotton production, except for seasonal fluctuations, showed a tolerably steady increase from 4,500,000 bales in 1877 to 9,000,000 bales in 1892. In spite of this rapid gain in production, prices did not rapidly fall until the end of the period and it was seldom during these years that "middling uplands" sank below ten cents on the New York market or five and a half pence in Liverpool.

The prosperity which had attended the Southern cotton growers during the eighties received a sharp check in the early nineties, and during the closing decade of the Nineteenth century a severe agricultural depression existed throughout the cotton belt. The explanations given for this depression have varied greatly. In 1892 the Committee on Agriculture and Forestry of the United States Senate was commissioned to inquire into the causes of the agriculture crisis, and in 1893 this committee made an elaborate report concerning the depression in so far as it related to the grow-

ers of cotton. It concluded that the principal causes of the depression were the future delivery system in the cotton market and the demonitization of silver. The committee recognized, however, that legislation for the remedying of these supposed evils was not likely to be obtained from Congress in the near future, and its report therefore emphasized the need of self-help on the part of the cotton growers. While the agricultural depression in the South was doubtless in part due to the same general causes which during a large part of this decade produced business depression in general, the testimony taken by the senate committee and evidence supplied from other sources all tended to show that overproduction of cotton and failure to raise the necessary food supplies on the plantation were the main causes for the depression, so far as it affected the Southern cotton growers. The tendency of the crop-lien system to bring about overproduction of cotton and to discourage the growing of other crops has already been described and this tendency was revealed in the most striking degree during the closing years of the century. To it and to the prevailing system of land tenure, more than to any other causes, are to be ascribed the failure to diversify crops and the overproduction of cotton and consequent low prices.

Closely connected with these causes and in part itself the cause of their existence, has been the unreliable labor with which the cotton planters have had to deal. Cotton has always been the crop favored by the negro cropper, and throughout the South it is generally felt that the negro as a cropper is a much less efficient laborer than he was as a slave. While it would be unfair to throw the entire blame for overproduction on the freedmen and their descendants and thus to relieve the large planters of responsibility in the matter, it must be admitted that the problem of how to diversify crops in the South has been made much more difficult because of the negro's unwillingness or inability to grow other crops than cotton. In spite of some tendency on the part of the negroes to leave the South, because of race antagonism and to settle in the larger cities of the North, this movement is slight in comparison with the tendency on the part of the blacks to concentrate on the rich cotton lands of southwestern Georgia, central Alabama, and the alluvial regions of the States of Mississippi, Louisiana, and Arkansas. The increase in the cotton grown by white labor since the war has been very great. Dr. Willcox estimates that in 1860 four-fifths of the cotton raised in the United States was grown by negro labor and that "at the present time (1899) probably not one-half is thus grown." Yet this does not

indicate that the negro is being driven from the cotton belt or that he is surrendering the cultivation of this staple. The increase in the cotton crop in recent years has come largely from Texas, Arkansas, Oklahoma, and other parts of the South where white labor is to be found. On the other hand negroes form a larger proportion of the population in the chief cotton counties east of the Mississippi than they did in 1860, and in these counties they constitute almost the entire labor supply of the plantation. The negroes prefer to cultivate cotton rather than the food crops, because they are more familiar with its cultivation, because it will bear neglect better, because it can be readily sold for cash as soon as harvested, and because it is given the preference by the merchants in making advances.

The decade which has passed since the opening of the twentieth century has shown some signs of improvement in the conditions of the cotton growers of the South, but it has also revealed some new dangers connected with the cultivation of this staple. While the total crop has increased from 9,459,955 bales of 500 pounds each in 1899 to 13,587,306 bales in 1908, the rate of increase has been slower and more steady than for the preceding decade and has not tended to outrun consumption. Prices have therefore remained at a higher level and have generally yielded profits to cotton growers. One fortunate result of this situation has been that the more thrifty of the farmers have found themselves with a cash surplus at the close of the year, and those who have really desired to relieve themselves of their dependence on the advancing merchants have been enabled by the high prices of cotton to pay off their debts and to diversify their crops. The increase in the number of country banks has also assisted the farmer in freeing himself from the exorbitant interest charges which are a feature of the crop-lien system.

In some portions of the cotton belt diversification of crops has also been favored by the development of market gardening and fruit growing either for the Northern market or for the local markets which have sprung up in those parts of the South wherever manufactures have been established and where consequently there exists a considerable urban population.

Another and perhaps a more potent cause for the increased prosperity of the majority of cotton growers, as well as a contributing factor in the improved agriculture of the cotton belt, has been the rise of the cotton-seed oil industry and the new uses which have been found for cotton seed. Prior to the war and for some years thereafter cotton seed was regarded in most parts of the cot-

ton belt as a nuisance and was gotten rid of with as little trouble as possible. In 1872, out of a total of 1,317,637 tons of cotton seed produced in the South only 52,705 tons were used in the oil mills. In the year ending June 30, 1909, out of 5,903,838 tons produced, 3,669,747 tons were so used. Four important products result from the use of cotton-seed in manufacture: the oil, the meal, the hulls, and the linters. The importance of cotton seed as a by-product can be realized from the statement that in 1908 the value of the cotton seed manufactured was $86,092,583, as compared to $538,814,828, the total value of the lint cotton.

Although the majority of the cotton growers sell their cotton seed outright to the mills, there is a growing tendency among the more progressive planters to exchange their cotton seed at the oil mills for the cotton-seed meal and to use this meal as a fertilizer either directly or as feed for animals. . . .

The most important event in the history of cotton growing in recent years has been the destruction of cotton by the boll weevil, which has proved to be the most dangerous of the many insects which have appeared from time to time to threaten the cotton crop. The weevil first made its appearance in Mexico about 1862 and put an end to cotton growing around Monclava in that Republic. About the year 1892–93 it crossed the Rio Grande River at Brownsville, Texas, and has since spread eastward and northward at the rate of forty or fifty miles a year. It was not until the close of the decade that the insect was found in large numbers in the area of largest production in Texas and that its danger to the cotton crop was fully realized. In the year 1900 Texas produced a cotton crop of 3,438,386 bales which was 34 per cent of the total production of the United States. In 1902, owing largely, if not entirely, to the ravages of the boll weevil during these years, Texas had sustained a loss of 940,373 bales, although the total production for the country had increased. The percentage of the total crop grown in Texas had fallen to 23.5 per cent in 1902, and this State has seldom grown more than one-quarter of the total crop since that time. Although Texas has suffered more than any other State from the ravages of the boll weevil, the insect has found its way into other States. By 1903 it had appeared in Louisiana, and five years later it had crossed the Mississippi and was causing alarm among the cotton growers of Mississippi. All efforts to check the progress of the weevil by means of parasites and natural enemies among insects proved futile for a time, and entomologists have until recently held out little hope of relief from this source. It is quite probable that the

weevil will spread throughout the entire cotton belt and there is no concealing the fact that the future of cotton production in the Southern States is threatened, unless means are discovered of reducing the losses caused by this pest.

The most effective methods discovered thus far for escaping the damage caused by the boll weevil are: (1) "the growing of early and rapid fruiting cotton," and (2) cleaner and more careful cultivation of cotton, and the diversification of crops. . . . In addition to this remedy, the cutting down and burning of the affected plants tends to reduce damage during the following season. . . . These methods are now being generally followed in Texas, Arkansas and Oklahoma, with the result that the percentage of the crop grown west of the Mississippi is again increasing.

In this connection it is important to note the fact that the war which is being so energetically waged against the boll weevil is being carried on by white labor. Many careful observers have expressed their grave doubts as to what will be the result, now that the pest has found its way into the part of the South where cotton is cultivated almost entirely by negro labor. Can the negro with his proverbially shiftless methods adapt himself to the conditions made necessary by the advent of the boll weevil? . . . The decline in the amount of cotton grown in Louisiana from 1,107,000 bales in 1904 to 482,000 bales in 1908, the years when the weevil was most active in this State, where negro labor is largely employed in cotton culture, does not indicate a quick adaptability of the negro to meet the new conditions. Already the planters in this region are seeking the labor of Italian immigrants who have come into this part of the country in considerable numbers of late and have, wherever tried, shown their superiority to the negroes as cultivators of cotton.

Whether the boll weevil will compel the negro to improve his methods of farming or to surrender cotton growing altogether, there seems little doubt but that its appearance and spread throughout the cotton belt means a great change in Southern agricultural methods. Cotton will not cease to be king, but the "king" will exercise less tyranny over his subjects than he has in the past. Other crops than cotton will be cultivated, and in this way there will be secured not only a desirable rotation of crops but likewise freedom from dependence on advancing merchants for the supplies which can be and will be produced at home. Other forces than the boll weevil are at work to bring about this desirable state of affairs. The growth of the banking system in the

Southern States, the development of local markets, and improved systems of transportation are all working in the same direction. At the same time the results of renewed efforts on the part of European countries to develop cotton culture in their colonies have shown that, in spite of many difficulties due mainly to the scarcity of labor, success may slowly be attained. Altogether, it is likely that while cotton will not soon cease to be the chief Southern staple, it will in the future occupy a relatively less important place in Southern economy than it has for the past century, and that the South will likewise cease to possess the monopoly in cotton growing for the world's spinners that it has so long held to the detriment of both producers and consumers.

CHAPTER XXIII

EXPANSION OF MARKETS[1]

* * * * * * * * * * *

The great exportations of wheat to England during the Civil war, . . . marked the beginning of the competition of American agricultural products, which, extending to meat as well as wheat, finally greatly affected the prosperity not only of English farmers, but of the farmers of western Europe in general. "Since 1862," observes Prothero in his English Farming, Past and Present, "the tide of agricultural prosperity had ceased to flow; after 1874 it turned and rapidly ebbed." . . .

The remarkable increase is . . . clearly indicated by looking closely at exports of wheat and wheat flour on specific years. In 1873 the exportation was 91,000,000 bushels, the highest theretofore attained. The following years were lower, but in 1877 a new mark was made at 92,000,000. The next year, however, came a jump to 150,000,000 bushels, the next (1879) to 180,000,000, and in 1880 there were exported 186,000,000 bushels.

Now, while there were in certain years recessions after 1880, on the whole the surplus augumented for about 30 years, during which the United States poured forth a veritable flood of agricultural products. Some indication of the astounding character of the movement may be gained from an observation in 1883 made by Mr. J. R. Dodge, a reliable statistician. He estimated that the total exportation of wheat from the United States in 58 years preceding 1883 had been 2,064,000,000 bushels, and that of this over half had been exported in the nine years since 1874. The United States, therefore, had exported more wheat in a decade than in the previous half century.

The crest of the surplus in wheat and where products seemed to have been reached in 1901 or 1902 with an exportation of 234,000,000 bushels; of beef and its products in 1906, at 732,000,000 pounds. Pork and its products averaged annually over 1,000,000,000 pounds until 1910, in which year it fell to 700,000,000; years of

[1] William Trimble, "Historical Aspects of the Surplus Food Production of the United States, 1862–1902," *Annual Report of the American Historical Association for the year 1918* (Washington: Government Printing Office, 1921), Vol. I, pp. 224–239.

greatest exportation were 1897–1901, when the average was well over a billion and a half pounds. The highest figures in cattle were in 1904–1906, at over 500,000. That is, high tide in exports, except as influenced by the great war, came between 1900 and 1910.

In the aggregate what a marvelous production do these figures suggest. The mind staggers in trying to visualize it. Year after year came from widening acreages one might almost say torrents of wheat, of pork, of cattle, of corn, swelling all the channels of trade and spreading over the whole civilized world. Year after year more and more freight cars creaked wearily with heavier and heavier loads to cities whose prosperity waxed higher and higher under the mighty stimulus. New devices were employed, new businesses sprang up, the ocean covered with growing argosies. Industrial populations in our own East and in Europe had cheap support. Wheat-bread and beef, those princely perquisites, became the food of the masses: democracy could, thenceforth, fight its battles on something like a full stomach. We, who have become accustomed to a world production and shipment of food that never ceases thoughout the year, can scarcely comprehend the tremendous effects of this then new phenomenon—to competitors, indeed, an appalling phenomenon. Dr. Alexander Peez, a member of the Austrian Reichsrath in the early eighties compared the possible effects of the American surplus in agriculture to the far-reaching transformations wrought in Europe by the precious metals imported from America in the sixteenth century, and hazarded the opinion that the rise of this surplus was the "greatest economic event of modern times."

By 1910, however, a change was apparent. Cattle dwindled in export to 139,000 in that year and to 18,376 in 1914, and we were even beginning to import beef. Pork in only one year reached the old billion-pound mark. Wheat exports amounted in 1910 to only 87,000,000 bushels. The most reliable idea of the changed conditions which have come about is apparent from certain percentages. The percentage of wheat exported (as compared with the total crop) was, in 1878, 35.8 per cent; in 1879, 40.2 per cent, figures much higher than the average of preceding years. Highest marks were made in 1893 at 41.5 per cent and in 1900 at 41.4 per cent. Since the latter date there has been a marked falling off. In 1904 we exported only 8 per cent of the crop, and the average 1904–1913 was only 15 per cent. More significant still are the changes in percentages of agricultural products (not including forest products) as compared with the total of exports

of all sorts. A study by five-year periods shows that in 1857–1861 our agricultural products comprised more than four-fifths of the total, or 81.1 per cent. These figures, it should be explained, include cotton. There was a slight sag the next 15 years, but the average rose again to slightly over four-fifths, 1877–1881 (80.4 per cent). After that every five years witnessed a steady decline until in 1907–1911 the percentage stood at only 53.9. The years 1912–1914 saw agricultural exports shrink to less than half. That is, the period of the supremacy of our agricultural export has passed. Manufacturing now leads, and under normal conditions our scepter of supremacy in exportations of grain and beef has passed to Russia, Argentina, and Australia.

* * * * * * * * * * *

Let us return now to the consideration of the economic and social effects which attended the rise of the great surplus between 1862 and 1902. The effects of the surplus upon the United States were very important; but these will be alluded to later. Suffice here to say that food exportation in the seventies was of advantage in helping to accumulate a stock of gold for the resumption of specie payments in 1879; and that the great production all through the period greatly depressed agriculture in the Eastern States, though at the same time affording remarkably cheap food for the laboring classes of that section.

In Europe the consequences were of the most fundamental and far-reaching character. Historians of the agriculture of western Europe call the last quarter of the nineteenth century the crisis period, or a period of distress or even of ruination.

* * * * * * * * * * *

. . . Suddenly European farmers found themselves confronted by a new and bewildering set of conditions. A succession of poor crops, after 1874, most marked in England, culminated in the "black year" of 1879, when low yields extended all over Europe—the worst year for crops in the century. But farmers were no longer helped out by high prices. America, plethoric with great crops, utilized the developing system of transportation to pour what seemed an avalanche of grain upon Europe. It appeared to penetrate everywhere; for example, American wheat began to be used in Bohemia, and Austrians and Hungarians stood aghast to see it sold even in the markets of Trieste and Fiume, the long-time places of exportation. Much study was given to this new phenomenon, and numerous pamphlets on the subject

were put forth in Austria, Germany, France, and England. In the latter country a royal commission was appointed in 1879 and another in 1893 which made exhaustive investigations through several years.

The pith of the discussion was that no relief could be expected in conditions across the seas within a generation. It was pointed out that the United States had vast areas of new lands on which there were practically no rental charges; that the farmers could get horses at lower cost than in Europe and feed them more cheaply; that machinery was employed of a perfection and on a scale unequaled in Europe; that political freedom and the lack of caste generated initiative, intelligence, and resourcefulness; that the organization and development of transportation agencies of all sorts, particularly with regard to through traffic, made continuance of competition inevitable; and that, while the United States was most to be feared, Russia, India, Argentina, and Australia were looming up.

Among the measures advocated for meeting this competition was that of placing high tariff duties on grain. Three reasons, however, were opposed. It was felt that such duties would be unavailing. "By such means as grain tariffs," said a writer from Leipsic, "so mighty and revolutionary a movement as is called forth by transmarine competition can not be banished. There are those, and their number is increasing, that think nothing further can be done but to leave the supplying of Europe with cereals to America." In the second place such protection would be a handicap in industrial progress, unless made international, and England would never enter into such an agreement. England, in fact, as an Austrian essayist somewhat bitterly pointed out, had become "superindustrial" and was forging "out of the great production of America a new weapon against the continental industries." Low prices of food sustained her "policy of dominating the manufacture of the world and controlling its commercial distribution." Finally, after all, these importations were recognized by some as an immense blessing to the laboring and industrial classes. A Berlin pamphleteer, after recalling how frequently actual famine had come upon the countries of Europe, said, "We must remember these things in order to appreciate the boundless blessings conferred upon the population of Europe by the shipments from transmarine sources."

The real remedies which were urged were to forsake the attitude of contempt which was customarily held with regard to things American and to face conditions. "The German farmer," wrote

an economist from Jena, "must let go his hold on the traditions of the past; he must arouse his energies and adapt himself to the demands and circumstances of the time. Agriculture is not what it was twenty years ago, yes, ten years ago. German farming must be revolutionized and that promptly. The cost of production must be reduced, and this can be done by labor, time, and money-saving machinery." Special emphasis was laid upon the bettering of European systems of transportation.

Another plan set forth in several countries was that of turning to stock-raising. This was especially followed in England, in which country the area devoted to wheat decreased between 1878 and 1907 from about 3,000,000 acres to 1,500,000, most of this land reverting to pasture. But while the full effects of foreign competition in meat were not to be revealed until about 1885, yet conditions in the later seventies were already ominous. The English farmer up to that time had always been able to rely upon the old adage of "Down corn, up horn," and in Scotland especially the main reliance of farmers had been their beef. But in 1875 a new application of American ingenuity was made to beef transportation, and within a year or two panic seized upon British producers of beef. There had been some attempts at transportation of live beef across the Atlantic previously, one of these having been that of Mr. Nelson Morris in 1868; but these shipments had not been very successful. The next year refrigeration was begun in railroad transportation, and on October 1, 1875, Mr. T. C. Eastman shipped from New York the first cargo of dressed beef to be preserved by the process of fanning air off of ice upon the beef. The shipment was successful, and other parties entered the business. The trade jumped rapidly month by month from the 36,000 pounds of the first shipment, so that within a year more than 2,000,000 pounds per month were being exported, and by April, 1877, more than 8,000,000 pounds. In all, the two years following October, 1875, saw 60,000,000 pounds shipped to Great Britain, and the business thereafter grew rapidly.

Farmers in Great Britain and Scotland were in dismay as they considered these shipments. They had heard vague stories of the vast herds of Texas pasturing on free land, of the great droves which were beginning to appear at the stations on new lines of railway in the West, of the almost unbelievable increases in numbers of animals brought annually to Chicago. And now this new process was to bring these great herds, one might say, almost to one's door. So great was the interest that the *Scotsman*, a leading paper of Scotland, sent an expert animal husbandry

man, Mr. Joseph MacDonald, to the United States to study the conditions. MacDonald, after visiting New York, traveled through all parts of the United States where cattle production was important, and his letters to his home paper were gathered together in a book entitled "Food From the Far West." He saw plainly that the beef of Texas of the type then existent there would not compete directly with the English and Scotch product. As a matter of fact, Texas beef mostly went into cans in Chicago, and some of it helped to fill the stomachs of soldiers of England who were extending the frontiers of the empire in Africa and other regions. The beef which might compete and which actually was the source of exportations came mostly from the corn regions of the Central States, where considerable improvement in breeding was manifest. The careful Scotchman summarized his views by stating that while disaster was not at hand, yet a "new opponent, not death-bearing but formidable, and gradually becoming more so, has come into the field." Careful and skilled farmers would be able to meet competition, but they should remember that the improvement in the quality of the American beef would be great in the next ten years, that there was no probability that the cost of producing such beef would rise within a generation and that after about two years "we may expect that American beef of really good quality will be poured in upon us in large and steady supplies."

The prediction of Mr. MacDonald proved true, and might have been equally applied to other food products. There was a lull, to be sure, in exportations in the early eighties owing in part to very poor crops in the United States in 1881; but after 1885 came a deluge of products which did not slacken until after the end of the century.

* * * * * * * * * * *

But the entrance upon a world market, in conjunction with fluctuations in currency values and overstimulation of production reacted not altogether happily upon the farmers of the prairies. It is significant that the rise of organized discontent on a large scale among farmers in the United States synchronizes with the development of quantity production for a world market. . . . There was a crisis in agriculture in America as well as in Europe. It is during this period, we may notice, that one of the chief motives of the foreign policy of our Government was to find markets for food products.

* * * * * * * * * * *

CHAPTER XXIV

THE RISE OF FARMERS' MOVEMENTS

1. Background of the Granger Movement[1]

. . . It would be untrue to say that the condition of the American farmers was retrograding in the decade following the Civil War. Nevertheless, the farmers believed that they were not advancing so rapidly as the other classes of American society, and it was useless to point out to them that they lived much better and enjoyed far more comforts than their grandfathers had, or to tell them that their financial embarrassments were due to extravagant desires. The fact was, their standard of living was advancing nearly, if not quite, as rapidly as that of other ranks of society, while their incomes were not increasing in the same proportion. The causes of this situation, and of the Granger movement, are to be sought primarily in economic conditions, and to a less extent in political, social, and intellectual conditions, as they affected the American farmer.

The Agricultural Situation

Although the Granger movement was national in its scope and some of the conditions which it sought to remedy were prevalent throughout the country, still the characteristics of the movement differed in the various sections and were conditioned in part on differences in the agricultural situation.

The northeastern part of the United States, including New England and the Atlantic coastal plain stretching as far south as Chesapeake Bay, was primarily a region of diversified farming. The presence of numerous large centers of population made dairying and market gardening profitable employments; while in New England large crops of hay and potatoes were produced and further south the raising of fruit for canning was becoming an extensive industry. The production of cereals in this region was small in proportion to the population and a large part of the food supply had to be shipped in from the West. The pressure of competition

[1] Solon Justus Buck, *The Granger Movement, Harvard Historical Studies*, Vol. XIX. (Cambridge: Harvard University Press, 1913), Ch. I. Reprinted by permission of the author and the publishers.

due to the great increase in agricultural production in the more undeveloped parts of the country and the cheapening of through transportation was beginning to manifest itself in a decline in value of eastern farm lands, which was to become far more serious in a later period. . . .

A somewhat similar situation prevailed in western New York and Pennsylvania and eastern Ohio. This region had been the granary of the continent shortly before the war and it was still largely engaged in the production of cereals in 1870; but the stress of Western competition and the ravages of insect pests were leading farmers to turn their energies more and more to diversified agriculture and particularly to dairy farming. . . . Although the farm property in this region also was already beginning to depreciate in value, there seems to have been little discontent. . . .

The Southern States of the Union remained, agriculturally, as they had been before the war, producers of staples. Cotton, rice, sugar, and tobacco were the principal crops in different sections, but corn and some other grains were also produced largely, though not in sufficient quantities to supply the demand for home consumption. The South was left by the war in a state of complete exhaustion in which agriculture shared to the fullest extent: . . . Nor did the political conditions of the South in the reconstruction period conduce to the welfare of agriculture. The overwhelming extravagance and corruption, ignorance and bad management of the negro, "carpet-bag," and "scalawag" governments greatly increased the rate of taxation, and the inefficiency of local government resulted in perpetual disorder and disregard for the rights of property.

Two undesirable features of the agricultural situation in the South were inherited from ante-bellum times: the credit system based upon crop mortgages; and the excessive attention devoted to the production of great staples, especially cotton. . . .

The overproduction of cotton, also, was partially a result of the credit system, although the roots went back to the beginning of agriculture in the South. . . . From all these causes Southern agriculture was far from flourishing in the reconstruction period.

The great prairie states of the upper Mississippi Valley, stretching from Ohio to the edge of settlement in Kansas and Nebraska, were also producers of staples, but here the staples were the cereal crops of wheat and corn. This section was the center of agricultural discontent during the period with which we are dealing, and it was here that the protective movement among the farmers manifested itself most vigorously. The farmers in this area were

from the first handicapped by the notion that they were to make their fortunes by raising wheat, and for a long time were unable to grasp the fact that conditions of soil, climate, and market facilities demanded a change from the shiftless and ruinous one-crop method to a mere intensive and diversified agriculture. The states of the upper Mississippi Valley were experiencing the same conditions which had been faced in western New York a generation or so earlier; but here the farmers seemed determined to resist the westward tendency of the wheat industry, and for a long time refused to turn their attention to the now more profitable stock raising and dairy farming.

Even as early as the fifties the farmers of Illinois and Wisconsin were feeling the depression in the wheat industry and some of the more progressive were thinking of turning their attention to other lines, but the transition was delayed by the remarkable rise in the price of wheat in 1854–55, usually attributed to the Crimean War, and again by the prevailing high prices of the Civil War period. During the latter part of the sixties, and the early seventies, depressed conditions returned and the competition from the virgin wheat fields of the farther West finally forced the long delayed transition to a more diversified and soil-saving agriculture. Meanwhile the farmers of Illinois, Wisconsin, and parts of Iowa and Minnesota, burdened with debt and almost despairing, but unable to see that their own inertia and lack of progressiveness were partly at fault, began to look about them for the causes of their misfortune. They fastened the blame upon the bankers, the railways, the legislatures, the tariff, and monopolies, and their grievances along these lines were legion and some of them well founded. These are matters, however, of a national rather than sectional character, and will be treated later on.

Agriculture on a large scale was a new industry in California, for it was not until the gold fever began to die down that people realized that the soil of the State was laden with other than mineral wealth. Oregon, on the other hand, had been from the first an agricultural State and had helped to furnish California with her supply of cereals, a large part of which also came from the prairie States and Chile. In 1862 California first produced enough wheat for her own consumption and from that time on the increase in cereal production was rapid, until by 1880 the total crop in the State had reached forty-five million bushels. The rise of a great staple wheat crop in California involved the farmers in a peculiar problem of distribution. Because of the geographical position of the State, seven-eights of the surplus was shipped directly to

Liverpool and the price was supposed to be regulated by the Liverpool quotation and the cost of shipment. The business of shipping this grain was not in the hands of the farmers but of commission merchants who bought up the crop, stored it in their warehouses, and shipped it to Liverpool. It was not long before the farmers reached the conclusion that a monopoly had developed among these commission men or middlemen, as they were called, and that the price which they received for their grain was no longer controlled by the Liverpool market but by a grain ring which went so far as to juggle the Liverpool quotations in order to deceive them. This situation was the immediate cause of the farmers' movement in that state.

Farmers and Railroads

The farmer's prosperity depended as much on his ability to send the crop to the consumer cheaply and get back in return the variety of articles which he required for his consumption, as it did on his ability to produce those crops. To help in the solution of this problem of distribution, two things were desired by the farmers: a cheapening of transportation and a reduction of the cost of handling commodities by the middlemen who stood between producer and consumer. It was in connection with these two aspects of the problem of distribution that the work of the Granger movement was most significant.

* * * * * * * * * * *

The mania for railroad construction which developed out of the real need for transportation facilities very soon outran the limits of ordinary conservative capital and a new class of promoters was developed—men who were able to build roads without capital of their own and at the expense of the people. The desire for greater transportation facilities led towns, counties, states, and the federal government to funish a large part of the means of construction in the shape of loans or donations of bonds, purchases of stock, and grants of land. Not satisfied with public charity, the promoters appealed to private individuals along the right of way, and more particularly to farmers who would be benefited by the new road. A great many shares were thus disposed of to the unsuspecting farmers, who frequently paid for them by giving mortgages on their farms, and who expected to get good returns on the stock and at the same time to assist in the creation of a highway which would enable them to market their products more readily.

The farmer was doomed to disappointment in both of his expectations. The dividends on stock did not materialize, and the new transportation was not cheap enough to offset the increased competition. As a result of the operations of construction rings and unscrupulous directors many of these roads went through receiverships and reorganizations in the course of which the stock purchased by the farmers and municipalities was not seldom wiped out. The farmer who had invested with a view to the development of the country thus found himself with a mortgage on his land, his railway stock worthless, and the expected advantages from the road a chimera. His taxes, moreover, were increased by the investment or donation which his town or county had made for the same purpose. This was one of the principal causes which operated to produce a somewhat blind antagonism among the agricultural population towards railroads and everything connected with them. The farmers felt that, having furnished, either in their private or public capacity, a large share of the funds for the construction of the roads, they were entitled to more advantages therefrom. . . .

Previous to about 1870 there was little thought of public control of railways; they were looked upon as blessings to the country, the extension of which should be encouraged, rather than checked by subjecting them to any interference. It was generally supposed that competition would prove an efficient regulator, and so the demand was for more railroads and hence more competition rather than for governmental regulation. During the period of railway expansion that followed the war, however, it began to be evident that competition was not going to curb the power of the railroad corporations because of the ease with which consolidations were effected. . . .

* * * * * * * * * * *

It was in the shape of rates or tariffs, however, that the railroad problem was most closely brought home to the farmer. The charges preferred were that railroad rates in general were too high and that gross discrimination was practiced in fixing them. When the Iowa farmer was burning corn for fuel, because at fifteen cents a bushel it was cheaper than coal, while at the same time it was selling for a dollar in the East, he felt that there was something wrong and quite naturally accused the railroads of extortion. Furthermore he looked upon the various discriminations in rates, justifiable or otherwise, as evidence of extortion; for if the railroad could afford to make one rate in one instance why could

it not in all? The railroads and their apologists, in answer to this charge of extortionate rates, pointed to the small average dividends which were paid and maintained that the rates were not high enough to give a reasonable return on the investment, but the extensive overcapitalization of railway values weakened the force of this argument. It is probably true, as the railroad men claimed, that the maximum rates were fixed, not by the profit desired but by what the traffic would bear, but it is also true that the existence of a large capitalization and the desire to pay dividends thereon sometimes prevented reductions which would otherwise have been forced by public opinion.

There were many forms of discrimination in railroad rates but those complained of at this time were principally of two sorts: discrimination between places, or charging higher rates at intermediate points than at points where competition in the shape of other roads or water routes prevailed; and discrimination between persons, or giving better terms to certain favored individuals or firms than were enjoyed by the general public. The claims of the farmers that rates were raised at intermediate points to make up for losses at competitive points are probably not true, but there was, nevertheless, a distinct injury to the unfavored places in the advantages given to their better situated rivals. Of discrimination between persons, there can be no justification. . . .

It is quite evident then that the farmers had a number of real grievances against the railroads, although they did not always clearly understand the situation or realize just where the trouble lay. . . .

Farmers, Merchants, and Manufacturers

. . . Like the physiocrats, the farmers were wont to look upon agriculture and land as the source of all wealth and to divide society into the two classes of producers and nonproducers, including in the latter all those engaged in the distribution of the products of the former. Although the indispensableness of the nonproductive class to society was often admitted, that class was nevertheless looked upon distinctly as a necessary evil, which ought to be restricted to the smallest possible dimensions; and it was always stated that the proportion of the returns received by the distributing factors was altogether too large, and conversely, that received by the producers was too small. Next in importance to transportation among these factors were the middlemen who served as agents for the distribution of commodities between producer and consumer; and it was against the exactions of these

middlemen that much of the wrath of the farmers was directed. From the standpoint of the farmer the middlemen were of two principal classes: the commission merchants and produce buyers through whom he disposed of his products, and the numerous agents and retail dealers through whom he purchased his supplies.

When the farmer carried the product of his summer's work to market and found himself practically obliged to dispose of it to commission men at quite unremunerative prices, it was but natural for him to look upon these dealers as his enemies and to feel that they controlled the situation and fixed such prices as they chose, and indeed it seems to be true that the returns to the farmer were often smaller and the share retained by the commission man larger than would have been the case had there been more competition among the merchants and more organization among the farmers. In a small place there was frequently but one produce buyer and where there were more the number was so small that combination was easy for the purpose of eliminating competition and maintaining prices. The produce buyers were in a position to watch the markets and their facilities for storage were such that they could take advantage of fluctuations; while the farmers, usually ignorant of the state of the market and with no facilities for holding their crops, often brought about a glut and reduced prices by throwing large quantities of produce on the market at once. The charges of the farmers were that the commission men exacted too high rates for their services in getting the crops to market and that the products of agriculture were obliged to pass through too many toll-taking hands before they reached the consumer. This latter evil they proposed to remedy, as will appear later, by eliminating the commission merchant or buyer at the local center and shipping directly to the merchant at the large central market.

Just as the price which the farmer received for the commodities he sold seemed to him to be fixed by those to whom he sold, so also, he felt that the price of his supplies was fixed by those from whom he bought. The retail dealers, like the commission men, were comparatively few in number and usually able to prevent serious competition among themselves. Then in many parts of the country and especially in the newly settled areas of the Western States there prevailed a credit system somewhat similar to that already described in connection with the Southern States. The feature of crop mortgages was usually absent in the West but otherwise the system was very much the same; the farmer lacked ready money and was forced to buy on credit; and an account having been begun, he was practically placed at the mercy of the

dealer until he could square himself on the books. A large part of the farmers' supplies were purchased, however, not from retail dealers, but from agents who handled the articles on a commission for the manufacturer; this was particularly true of all sorts of farm machinery, of sewing machines, and other patented devices. The complaints against these agents were that their large commissions unduly increased prices, that they frequently persuaded farmers to purchase machinery which they did not need or could not afford, and that they sold on credit and in addition charged exorbitant rates of interest.

The principal complaints in regard to these supplies were directed, however, not against the middlemen, but against the manufacturers themselves. In the general attack upon monopolists—a term which was applied to practically everyone except farmers and day-laborers—the manufacturing establishments operating under the protection of patents for inventions came in for their full share of denunciation. That there were many abuses of the privileges of patent rights is indubitable: in case of meritorious inventions, the profits obtained by the inventor or his assigns were often enormous; patents which were about to expire were renewed and extended by means of so-called improvements or through the help of political influence; but worst of all, the patent office failed to make sufficiently thorough investigations to prevent the occasional issuance of patents on articles or principles which were in no sense inventions but had long been in common use. . . .

Farmers and Finance

The prevalence of a system of buying on credit among the agriculture population has already been noted. Another result of the general poverty, or at least of the lack of ready money, among the farmers, was a widespread indebtedness as represented by the growing burden of mortgages upon rural property. That some of these mortgages represented enterprise and the improvement or extension of a farmer's operations is probably true, but it is also true that many of them indicated straitened financial circumstances. The worst part of the situation was the excessive rate of interest, running as high as fifteen or twenty per cent, which was often exacted for these loans. The West was infested with loan agents to whom the farmer who had met with reverses or who wished to make improvements or purchase additional land was obliged to apply for loans. The agent did not furnish the money himself but procured it from eastern capitalists and loaned

it to the farmer on a mortgage at usurious rates of interest, after charging a commission at both ends of the deal.

That the disturbed state of the currency, due to inflation during the war, was a cause of financial depression among the agricultural classes and especially of the high rates of interest, seems probable; however that may have been, it is evident that the currency situation was detrimental to the welfare of the farmer in various ways. The agricultural products of the country, always in excess of home consumption, were obliged to seek markets abroad, and this sale of the surplus in the world market also fixed prices at home; but these sales abroad had to be made in the standard gold and silver currency of the world, while all purchases of supplies were made in a depreciated paper currency, and there was sure to be more or less leakage in the process of changing from one to the other. The farmer also suffered from the fluctuations resulting from the unstable condition of the currency and the accompanying speculation, but the most serious injury came from the rise in value of the currency, as measured in gold, during the period from 1865 to the resumption of specie payments in 1879. As has already been noted, a large part of the agricultural population was in debt from one cause or another and most of these debts, contracted in greatly depreciated currency, had to be paid with money worth from fifteen to twenty per cent more than the actual value of that which had been borrowed. These financial burdens were little noticed during the six or seven years of prosperity immediately following the war, but the panic of 1873 had a disastrous effect on agriculture and aggravated the evils. The farming class, which had begun to feel the pinch some time before the crash came, suffered in common with others during the protracted depression which followed. Business was stagnant, money scarce, and prices low, and the farmers frequently found it difficult to dispose of their crops at anywhere near remunerative prices.

Another result of the Civil War which worked to the disadvantage of the agricultural class was the high customs tariff, adopted during the war primarily for the purpose of raising revenue but continued as a measure of protection to American manufacturers. . . . This tariff, as all high protective tariffs in a country whose production exceeds the demand for home consumption, bore with especial severity on the farmers, particularly in the staple-producing regions of the South and West. The price which the farmer received for his cotton and his grain was fixed by the sale of the surplus in the unprotected markets of the world, while the cost of nearly everything he consumed, whether imported or

of domestic production, was vastly enhanced for the benefit of the manufacturers. Even the home market idea proved a delusion when the agricultural production was continually in excess of the needs of that market.

Upon the subject of taxation the farmers made many complaints, and some of these were well founded. . . . Not only was the aggregate *per capita* taxation, national, State, and local, unusually high, but its incidence was far from being arranged in proportion to the ability to pay. In regard to the national taxation, which was almost wholly indirect, this was particularly true because so much of the revenue was derived from articles of common consumption by the mass of the people. For example, practically one-half of the customs revenue was levied on the importation of sugar, molasses, and woolen and cotton goods, which are consumed by everyone in very similar proportions. In like manner the internal revenue duties on tobacco and liquors bore with greatest severity on the cheaper grades of the product. Thus an undue share of the taxes for the support of the national government and the payment of its enormous war debt was borne by the people of small means, among whom we must certainly class the agricultural population.

In the raising of state and local revenue, the farmer fared somewhat better, for here practically the whole reliance was placed on direct taxation, mainly in the form of a tax on the valuation of real and personal property. The complaints of the farmers in regard to state and local taxation were that their property, being principally in real estate and other readily discoverable forms, was sure to be assessed and usually at its full value; while other property, particularly that of dwellers in urban communities and of corporations, being largely personal and difficult to get at, often escaped taxation altogether. The farmers also maintained that their real property was assessed higher in proportion than that of the other classes, and particularly was there complaint about the assessment of uncultivated land or land held for speculative purposes at a lower rate than that of equal quality which was under cultivation. In some parts of the country there was also considerable outcry against the assessment of growing crops, which the farmers preferred to look upon as prospective property only.

* * * * * * * * * * *

Agricultural Products and Prices

In considering the various causes which made agriculture largely unremunerative in the seventies, it is difficult to assign to each

its relative importance, but if any one thing can be said to be the primary cause of that situation, it is the great extension or even inflation of agricultural operations in the decade following the war; an inflation which was shared by many other industries and which presents many of the features of a speculative boom. The prevailing high prices just at the close of the war, the inflated condition of the currency, and the spirit of restlessness and enterprise developed by the war, all contributed to produce a feverish industrial condition and turned men's minds to the development of the great unsettled areas of the West, as a new field for exploitation. The railroads, aided by subsidies, pushed rapidly out, population followed, and the two reacting on each other quickly advanced the frontier another step across the continent.

* * * * * * * * * * *

A comparison of the population statistics of 1860, 1870, and 1880 shows a remarkable growth in the whole western area. The population of the prairie states—the North Central division according to the census—increased from nine million in 1860 to thirteen million in 1870 and seventeen million in 1880, an increase during the twenty years of ninety-one per cent. The four frontier states and territories of this section, Minnesota, Dakota, Kansas, and Nebraska, increased from three hundred thousand in 1860 to nearly a million in 1870 and to nearly two and a half million in 1880. The Southwest had not recovered sufficiently from the war to expand much by 1870 but the population of Texas and Arkansas leaped from a million three hundred thousand in 1870 to nearly two and a half million in 1880. In the states of the Pacific slope, the first rush of settlement was over, but a gradual increase was kept up and many of the settlers were drawn from mining to agricultural pursuits.

That the greater part of this new population of the West devoted itself to agriculture can be seen by examining the statistics of improved farm lands. . . .

Two factors made possible this great agricultural expansion: the land was more accessible and more easily obtained than ever before; and there was a surplus of industrial population ready to take possession. In 1862, Congress adopted a new principle in the disposition of the public lands by enacting the homestead law, which made it possible for each head of a family to obtain a free homestead on the public domain. In the very next year a million acres of government land were thus occupied and by 1880 over fifty-five million had been filed on under this law. Under the

somewhat similar provisions of the timber-culture act of 1873, nine million more acres were occupied, and the grant by Congress in 1862 of nearly ten million acres of land to the states for agricultural colleges operated in the same direction, for much of this land passed into private possession at merely nominal prices. The enormous grants to railway companies during this period also helped to make land available to settlers. The corporations were eager to dispose of their land at low prices in order to attract settlers; and they were enabled to build railroads which made accessible, not only their own lands, but the reserved alternate sections of the government as well. They served as an intermediary between the people and the desired land, bringing the one to the other and making profitable the cultivation of the land by furnishing a comparatively cheap means of transportation to the distant markets.

The causes which led to the existence of a surplus industrial population were various. Probably the most effective was the disbanding of the armies at the close of the war. . . .

Immigration, too, which had been checked at first by the war, contributed its share to the peopling of the new regions in the West. . . .

Another factor which helped along the great agricultural expansion in this period was the technical advance, particularly in the line of invention and extended use of agricultural machinery. This development had taken place to a certain extent, in the older settled parts of the country, during the war, partly as a result of the scarcity of labor and the need of something to take the place of the men who were in the army. The machines enabled one man to do the work which had formerly been done by many and thus helped to increase the surplus population after the war closed. They made possible the cultivation of the staple crops on a large scale in the new Western lands, the result being a thin settlement spread over an extensive area but producing large crops *per capita*. . . . There was also technical advance in agricultural science in other ways, as is illustrated by the increasing application of commercial fertilizers to the cotton fields of the South, which made possible a considerable expansion of the area of the cotton belt in the older states at the same time that new cotton lands were being developed in Texas.

The effect of all these combined causes [led to] a great increase in agricultural operations in the staple crops, together with a corresponding decrease in prices, . . .

* * * * * * * * * * *

The effect of this situation upon the agricultural population was undoubtedly severe, and particularly so on those who, lured by the high prices just after the war and the inducements held out by the advancing railroads, had sought a field for more extended operations in the new West, but had been barely able to get under way when the depression began. Many others, also, who had assumed a burden of debt in order to purchase additional land and machinery, found themselves with an increased investment, on part of which they were paying exorbitant interest, while the returns remained stationary or declined. Adding to this the other factors which have been considered—the treatment the farmers received at the hands of the railway corporations, the large proportion of profits consumed by the middlemen, an unjust protective tariff and a depreciated currency, and finally an overgrown burden of debt and taxation—it is readily seen that the Granger movement was not without economic foundation.

Farmers and Politics

The relative political power and position of those engaged in agricultural pursuits was a much discussed subject during the Granger period. In the early days of the republic, farming was looked upon as the most suitable occupation for gentlemen, and a large proportion of the positions of high political preferment were filled by men from the ranks of the agriculturists; . . . The commercial and manufacturing classes, however, were rapidly forging to the front, particularly in the North and East, and the Civil War marks their definite triumph in national affairs over the agricultural interests of the country as represented by the Southern planters. From that time on, the needs and interests of the more or less organized mercantile and manufacturing classes received primary consideration and the positions of political power were occupied more and more by representatives from these classes or by lawyers who took substantially the same point of view.

* * * * * * * * * * *

Not only did the farmers feel that as a class they failed to receive adequate direct representation in the government of the country, but there was also a belief that their interests were not given due consideration by those who were supposed to represent them. Ignorant often of what their true interests were, scattered broadcast over the country, without either time or opportunity to make their wants known, and often following blindly in the wake of the political party to which they had been attached by issues now dead

and gone, the farmers were looked upon by the political leaders as a stable element whose vote could be depended upon for the party. Hence their interests received little consideration in the drawing up of party platforms or the framing of legislation.

Many of the farmers were wont to look upon this loss of political power as the fundamental cause of the relative decline of agriculture, laying at its door all or nearly all of the economic evils which have been considered. The transportation problem was looked upon as a result of governmental favors to the railway companies, while its cure was prevented by the grip of the railway interests upon Congress and the legislatures. In the same way it was believed that patent rights, the currency problem, banking legislation, and the tariff were manipulated by the opposing interests to the detriment of the agricultural population.

* * * * * * * * * * *

Social and Intellectual Conditions

A somewhat similar condition of affairs prevailed with reference to the social and intellectual position of the farmers. Just as they had lost political power, so their relative social position had been lowered until the tilling of the soil, formerly considered one of the highest of occupations, had come to be looked upon as a pursuit suitable only to those who were not equipped for anything else. This was due not so much to a positive decline in status on the part of the farmers as to the rapid increase in the social and educational advantages of those who were engaged in occupations which permitted their lives to be spent in the cities. . . .

* * * * * * * * * * *

Such, then, was the situation as it presented itself to the farmers of the country in the decade of the seventies; and in casting about for a remedy it was but natural that they should look for examples to those other classes of society which had been forging so rapidly ahead. The one thing which presented itself again and again in almost every other industry, but which appeared to be lamentably lacking in agriculture, was organization—the organization and co-operation, for the mutual advantage, of those whose interests coincided. The manufacturers were united into stock companies and more or less vague associations; the merchants had their commercial organizations; the bankers and brokers, their stock exchanges and clearing houses; and even the laboring men were beginning to find and assert their common interests in trades unions; but for the farmer there was nothing of the sort. Each

individual went his own way unmindful of his neighbor or of the interests of his class as a whole, which in the long run meant his own interests.

The idea of some form of association among the farmers for co-operation in the improvement of their condition, materially, socially, and intellectually, appealed to them in many ways. If they lacked opportunities for social intercourse and enjoyment, how better could these be furnished than in the weekly or bi-weekly meetings of a local association of farmers? If they lacked a knowledge of public problems and of their own interest, or the ability to reason logically about them and to present their ideas to others, how better could they gain these things than by discussions in these same meetings? If their political power and prestige were waning, how could these better be rehabilitated than by a grand national union of branch associations of farmers, which would display their overwhelming strength as a united class? If they were being worsted in the struggle with the organized mercantile and manufacturing classes with whom they had to deal, how better could they equip themselves than by extensive counter-organization? An agricultural organization including a great part of the farmers of the nation would be able to demand fairer treatment from the railway corporations and to enforce it with the help of the state; it could use its immense influence to secure more favorable legislation on such matters as the tariff, currency, and taxation; by means of a widespread local organization it could gather and disseminate useful information concerning the crops and the markets; and in general it could foster a beneficent spirit of co-operation and mutual assistance among its members. In this way alone can a satisfactory explanation be found for the widespread and phenomenal movement for organization which appeared among the farmers in the decade of the seventies.

2. Developments in the Eighties and the Nineties [1]

The widespread movement among the farmers to-day is their effort to adapt themselves and their occupation to the ever-changing environment, so that they shall be once more masters of the situation, receiving their due share of the product of American industry and exerting their due influence in the formation and development of national character. As a result of his industry the farmer has made food and the raw material of our factories

[1] C. S. Walker, "The Farmers' Movement," *Annals of the American Academy of Political and Social Science*, Vol. IV, March, 1894, pp. 790–798. Reprinted by permission of the publishers.

produced from the soil more and more plenty, of better quality, and cheaper. Here we find an efficient cause of his pecuniary embarrassment; the supply of agricultural products has been increased beyond the demand, with the consequent fall of price. If the surplus of agricultural products was matched by a corresponding surplus of gold, of personal services, of means of transportation, and of the comforts, conveniences and luxuries of life, such universal plenty would enrich all, beggaring none. But with overproduction in agriculture, and monopolies of coal, of telephones, of electric railroads and of other essentials of modern civilization, the farmer finds himself at a great disadvantage.

Farmers have been content in the past to confine their labors to the production of wealth, leaving to others the control of those conditions which determine the distribution of this wealth. At last, however, they have awakened to the fact that the problems of distribution have not been successfully solved. They believe that they get too little for the product of their labor and others too much, that they must bear heavy burdens of society while they are at the same time practically debarred from the enjoyment of the advantages of the progressive culture of modern life. . . . An investigation, carried on for a number of years, upon different lines, based upon statistics official and unofficial, as well as upon other reliable sources of information, shows that the average farmer, east and west, north and south, receives a lower remuneration for manual labor and for labor of superintendence than the average man in any other of the great classes of bread-winners, much less than those who have not carefully considered the matter will think possible.

Because of this comparative decadence the farmer has for years demanded equal taxation, in order that the farmer's thousand dollars invested in his farm shall bear no more burdens than the thousand dollars of other men. But the statesman has confessed that he has not been able to remedy the evils of unjust taxation. He even acknowledges that they are growing worse.

The farmer has been content to refer questions of finance to the banker. Every autumn the farmers of America have hundreds of millions of dollars worth of crops, which makes a demand for millions of currency. The supply of money at that season is inadequate to meet the demand. Hence, the price of crops falls relatively and the price of money advances. Year after year the farmer has been forced to sell in a glutted market and buy in times of scarcity. He demands a system of finance that shall make the supply of money at all times equal to the demand. He

wants an elastic currency that shall do the money work of the nation with justice to both buyer and seller, to both creditor and debtor. But the bankers appear to confess that they cannot produce a medium of exchange and a standard of deferred payment that is capable of meeting the exigencies.

The farmer demands cheap transportation *between the farm and the market;* and he is met with the reply that the rates from the elevator of the middleman to the ship of the foreigner were never before so low as now, but this proves of little benefit to the farmer. When the farmer insists that modern masters of transportation might devise a system of cheap transportation from the country station to the city, he is told that the intricacies of the modern railroad system are too great and it cannot be done; to attempt it would bankrupt the roads. Moreover, when the farmers themselves, or their friends, organize an electric railroad to carry themselves and their freight at reasonable prices from the farmhouse to the city, the great railroad corporations oppose them at every point, going even to the extent of waging open war against the selectmen of the country town who lawfully attempt to lay the rails of the electric road across the track of the steam railroad.

The farmer turns to the politician and asks of him that his party shall champion the cause of the farmer and see to it that the government guarantee to the agricultural classes their rights and promote their interests equally with those of other citizens. But the farmer finds the politician more abundant in promises than prolific in efficient action.

Finally, the farmer has, in his emergency, turned to the scholar and asked of him a fair statement of the problem and a clear solution, based upon historic and economic grounds. But the scholar has been too preoccupied and prejudiced to give the question that painstaking investigation and careful and impartial decision which alone can make his answer of much practical value to the hard-pressed agriculturist.

Thus has experience taught the farmer that the solution of the problem of the future of American agriculture and of the American agriculturist depends upon himself. The farmer's movement is simply the awakening of these sturdy citizens from engrossment in manual labor and the struggle after material wealth, to a sense of their duty first to themselves and then to society. Such a movement may have obstacles, it may be slow, it may do much apparent damage, but it is irresistible, and in the end its results will prove to be of value. It has reached the stage where guidance, rather than ridicule and denunciation, is needed.

The innumerable details of the movement may be classified under organization, education, co-operation, political action.

I. Organizations of farmers are now many and strong, constantly increasing in numbers, usefulness, and power. The Massachusetts Board of Agriculture devotes fifteen pages of its report for 1892 to a directory of the agricultural organizations of the State. In other States organization is carried to as great, or to a greater extent. Besides these there are many national bodies. At the St. Louis Conference, year before last, twelve or more distinct national organizations of farmers were represented, whose aggregate membership numbered hundreds of thousands.

Of the many national bodies several are worthy of especial mention. The twelfth annual session of the National Farmers' Congress, composed of delegates from each State, appointed by the Governor thereof, was held November, 1892, at Lincoln, Neb. This body is nonpartisan, deliberative and advisory in its action, and exerts its influence upon the formation and direction of public opinion. It has created a National Board of Agriculture with headquarters at Washington, whose duty shall be to study the general agricultural interests of the whole country and see to it that no conflicting legislation shall injure the industries of any State. Two hundred members, from the majority of the States, attend the annual sessions, paying their own expenses. They represent the more wealthy and better educated agriculturists.

The National Grange, the oldest and most conservative of the distinctively agrarian organizations, held its twenty-seventh annual session last year. Its membership numbers many thousands, its finances are sound, its organization is stable, its work is becoming more and more extended and valuable. Having experienced the flood and ebb of the tide which accompanies reform movements it is content to advance with the even stream of national development, intent upon exerting its power at the opportune moment and place to secure the best effect.

Beginning in the South, but extending through the North, under the leadership of the late President L. L. Polk, the National Farmers' Alliance has been an aggressive power. This union of the farmers of the South with the farmers of the North, ignoring sectional lines and old causes of division, is one marked characteristic of this new phase of the agrarian movement. It illustrates and proves that the farmers of America have at last learned the value and the method of permanent organization. They have moreover shown a disposition to join forces with organiza-

tions of artisans and other citizens, whenever such union proves itself desirable.

Another organization of great value to the farmers' movement is the Association of American Agricultural Colleges and Experiment Stations. It has a full corps of officers and an executive committee. It is composed of delegates from each of the fifty-seven agricultural schools and colleges and of the fifty-three experiment stations of the United States. The association, therefore, represents the fifteen hundred members of the faculty and corps of workers connected with these institutions and also the many thousands of students and alumni of these colleges, a large number of whom are farmers or intimately connected with and dependent upon the agricultural classes. While this association is a scientific body, it is at the same time interested in the success of the farmer, and exerts a powerful influence upon legislatures and Congress, so far as the educational or economic relations of agriculture and agriculturists are involved.

The farmers' movement is not then to be measured by the action of any one organization, but can only be properly understood when the resultant of many separate and varying forces is accurately determined.

II. In their endeavor to secure organization the farmers soon discovered the necessity of broadening their education, especially in the field of economics and politics. Hence, every farmers' organization has this object pre-eminently in view. These associations are themselves efficient schools, giving to their faithful members training in public speaking, in writing, in reading, in thinking, and in administration. As a result of twenty-six years of this work the Grange has become a national university, employing hundreds of teachers, college educated as well as self-taught, who stimulate thought and lend inspiration to their fellows. Recently it was "resolved that the Worthy Lecturer of the National Grange be instructed to continue the distribution of subjects for discussion to Subordinate Granges, and that questions of political economy be given prominence, such as those relating to gold, silver, greenbacks, national banks, corporations, interstate and transcontinental transportation, and the tariff, as it relates to agriculture." A similar work is carried on in the Alliance, which has prepared for its local branches a system of weekly lessons in political science. Ballads and songs have been multiplied, as a method of propagating and fixing new ideas in the minds of the people. In all agricultural colleges the science of economics and of politics is receiving more and more attention.

A National Reform Press has been organized, including about a thousand newspapers, pledged to support the demands of the farmers' movement. There are a few dailies, but the most are weeklies. The circulation of many of these newspapers is 10,000, some reach 50,000, one perhaps 100,000. These are scattered over the whole country, and their influence cannot but be great. Besides these reform papers there is the agricultural press, an instrument of educational force not only in matters relating to agriculture, but also in subjects of political and economic science.

The town meeting, the district school, the public library, the Chautauqua movement, the country church, each and all, do much for the education of the farmer, far more than is commonly imagined. Upon one point the farmers of to-day are fully agreed. They are one in demanding for themselves and for their children the best education the times can afford. They have successfully insisted that the town, the State, and the nation shall unite in providing every facility for educating the farmer in everything pertaining to the science and art of agriculture and to the knowledge and practice of manhood. As a consequence we find in America a system of agricultural education approaching the best the world affords. The great drawback is that only a few comparatively as yet are pecuniarily able to take advantage of the facilities thus offered by the State.

III. The farmers' movement has thrown a great deal of light upon co-operation, both distributive and productive. The educational results of the past twenty-five years of experiment have been of great value. The nature of the problem, the conditions of success, the dangers and difficulties in the way, have been made clear and the preparatory work accomplished which will make co-operation in the future more common and profitable.

So far as distributive co-operation is concerned the farmers have learned that the essential element of success lies in large orders for cash. As a result middlemen have not been driven out of business, but the farmers of the North have succeeded in escaping that thralldom to the storekeeper which has been so disastrous in the South.

There are throughout the country many successful co-operative stores, which benefit not only their patrons, but also indirectly all consumers. But the more common form of co-operative buying is through a business agent, who receives the orders of many farmers in the district or State, and so furnishes them goods at the lowest wholesale prices. In the business of insurance, co-operation among farmers has had good results; they report

that hundreds of thousands of dollars have been saved in premiums on fire and life policies. Co-operation among milk producers, fruit growers and cattle men, for the purpose of marketing their products, has proved very remunerative.

In productive co-operation many experiments have been made which have been only partially successful. Manufacturers who have charged exorbitant prices have been brought to terms, but the farmers have learned that they can rarely carry on the farm and the factory successfully at the same time. Nevertheless, in the production of butter and cheese, co-operation has proved eminently successful. . . .

IV. Organization, education, co-operation, have led the farmers' movement towards political action. For generations the farmer confined himself closely to agriculture and to participation in the affairs of the town meeting. In the meanwhile, the cities grew in number, in population, in wealth and in influence, until he found that the twenty to thirty per cent of the people who live in cities, largely recent importations from foreign countries, actually governed not only the municipalities, but also the States and the nation, leaving the votes of the other citizens scattering and devoid of power. In order to protect their interests the farmers made use of the right of petition. They elected lawyers and other professional men to represent them and their interests in legislature and Congress. They appealed to their party leaders. They sought to interest the press in their behalf. They brought their case before the courts. They presented themselves before the bar of public opinion. But they were disappointed. It made little difference whether they sent a farmer or a politician to the legislature. If the farmer went to the capital fresh from the plough, among a crowd of lobbyists, he was as clay in the hands of the potter. If his constituents kept him there year after year, until he learned the ways of legislation, then he ceased to be a farmer and became a member of some other class, perhaps a stockholder in a great railroad, or manufacturing corporation, with interests in common with the opponents of agricultural classes.

But from repeated failures and many disappointments the farmers are at length learning how to take care of themselves. They have become convinced that political action on their part is essential to their well being, that they must sustain their own interests, for others will not consider them. In their various subordinate organizations they discuss the situation. Their best representatives then bring the matter before their district, state and national bodies, where the whole subject is again debated. In this

way they come to a decision as to what is practicable. They then formulate their demands, which they lay before the proper authorities in the town, the State or the nation, or in the caucus, or convention. They press and enforce their demands patiently and persistently, meeting all attacks bravely. They fight for their rights from their own point of view, believing that the free and fair contest of opposing interests will be the best for the whole people. If their interests are not presented as forcibly as those of other classes the result will be not only disastrous to them, but will also seriously endanger the public good. In the furtherance of these ends they have learned to trust no man implicitly, but to hold every man whom they choose to represent them responsible to them for his action.

The farmers have learned something of the methods of legislation. Hence when a hearing is given by a legislative committee, the farmers are on hand with their best speakers. When a bill is pending in which they are interested, letters, telegrams and petitions from all parts of the State come pouring in, urging legislators to do their duty. At State capitals, as well as at Washington, the farmers have their standing committees always on hand to watch legislation and see that their interests do not suffer. There are, however, so many ways of influencing legislation and the power of capital is so well-nigh irresistible, that the farmers have been beaten time and again and seen their cherished and just demands ignored. But their persistence has taught them and they are coming better to understand the science and practice of politics. Their organizations have been nominally, and to a large extent, really nonpartisan, but from experience they have learned that votes in caucus and convention, as well as at the polls, are the real sources of power. Of these votes they still possess in many States a majority, and throughout the nation a large minority. United with other laboring men, their votes would constitute a clear majority over all others. They now realize that their votes are their own, to be used for the realization of their demands. During the last few years they have been experimenting with the ballot and some surprising results have followed. The movement within the old party lines has been strong, leading to notable results, but it has not been confined to these. The farmers have found that both of the leading parties have for so long a time been dependent upon other elements than the farmer's vote for success, that it is difficult to transform them at once into humble servants of the agriculturist.

During the year of the presidential election many of the farmers

seemed inclined to support a distinctive People's party, not really expecting to elect a president, but hoping to learn something, attract national attention to their demands and cast a vote sufficiently large to give them a basis for future action, either as the people's party destined to supplant the old parties, or else as a body of producers allied with the artisans, whose real interests shall be made a serious object by one or the other of existing parties. The results show the measure of their success. Out of a total vote of 12,154,542, the People's party cast 1,122,045 ballots. Their candidates received votes in every State of the Union. They carried Colorado, Idaho, Kansas and Nevada by majorities, and North Dakota and Oregon by pluralities, which gave twenty-two votes in the electoral college, being the first time since 1856 that a third party has secured an electoral vote. Investigation shows that this vote was almost entirely from the rural districts of the South and West. The People's party succeeded in increasing their representatives in the House from three to twelve. In the Senate they have several senators. In four States they elected their candidate for governor. Considering the difficulties against which this new party was obliged to contend, the success gained was indeed remarkable.

The radical demands of the farmers, as set forth in the platform of the People's party, are socialistic and are not likely soon to be formally ratified by the public opinion of the nation. But the People's party and its platform are only an incident in the greater movement of the farmers of America. It is an experiment being tried by the radicals among the agrarian leaders, but which has not yet received the indorsement of the great mass of the farmers. A great political party is not the growth of a day. Whenever the farmers of the United States shall as a unit demand of either of the old parties a certain line of policy and prove it to be practicable and just, one or the other of these parties will surely submit to their will. Class legislation in behalf of the farmers may in some cases be secured, but the probabilities are that the final results will nevertheless be good. By pushing the system of class legislation to its logical outcome, the *reductio ad absurdum* will be apparent and a reaction must set in.

Farmers have suffered in the past because of their neglect to compete earnestly for their own interests, but now the signs of the times indicate that in all parts of our country they have at last aroused themselves and have begun a movement, the outcome of which will be to secure for them their full share of the products of the national industry and of the advantages of modern civilization.

CHAPTER XXV

THE RELATION OF THE STATE TO AGRICULTURE

1. Evolution of State Agricultural Departments [1]

Early State Agricultural Organization

The earliest agricultural organization in the United States was influenced by our political traditions inherited from England. In England voluntary or private organization was common. Washington corresponded with distinguished Englishmen associated with agricultural societies and as a result became much interested in the movement to establish such societies in America. In September, 1796, Sir John Sinclair of England wrote to George Washington the following:

> The people of this country, as well as of America, learn with infinite regret that you propose resigning your situation as President of the United States. I shall not enter into the discussion of a question of which I am incompetent to judge; but if it be so, I hope that you will recommend some agricultural establishment on a great scale before you quit the reins of government. By that I mean a board of agriculture, or some similar institution, at Philadelphia, with societies of agriculture in the capital of each state to correspond with it. Such an establishment would soon enable the farmers of America to acquire agricultural knowledge, and, what is of equal importance, afford them the means of communicating what they have learned to their countrymen.

In reply to a previous letter from Sir John Sinclair, George Washington on July 20, 1794, wrote the following:

> It will be some time, I fear, before an agricultural society, with congressional aid, will be established in this country. We must walk as other countries have, before we can run. Smaller societies must prepare the way for greater; but with the lights before us, I hope we shall not be so slow in maturation as older nations have been. An attempt, as you will perceive by the enclosed outlines of

[1] Edward Wiest, *Agricultural Organization in the United States*, *University of Kentucky Studies in Economics and Sociology*, Vol. II. (Lexington, Kentucky: University of Kentucky, April, 1923), pp. 291–300. Reprinted by permission of the author and the publishers.

> a plan, is making to establish a state society in Pennsylvania for agricultural improvements. If it succeeds it will be a step in the ladder; at present it is too much in embryo to decide upon a result.

Already in the last quarter of the eighteenth century agricultural societies in America began to organize. The earliest societies were established in urban centers of Pennsylvania, South Carolina, Maine, New York, and in other States. The older portions of the country including the Atlantic coast States, and those of Ohio, Indiana, Illinois, Michigan, and Wisconsin, made considerable progress toward agricultural organization during the first half of the nineteenth century. The organization, however, was virtually everywhere voluntary or private, and not public. In some cases the first step toward public agricultural organization was taken by States during this period by appropriating funds for the support of private agricultural societies. Thus the extraordinary development of present-day public agricultural organization of the country has its roots running back into voluntary association beginning to take form in the last quarter of the eighteenth century.

The aims and purposes of these early agricultural societies correspond somewhat closely with the functions now performed by the agricultural departments of the States and the Federal Government. The general purpose of the societies may be said to have been to improve agriculture. The holding of fairs at which the best stock and farm products were exhibited together with the reading of papers and discussion were the principal methods of stimulating interest in agriculture. The introduction of new plants and live stock was undertaken by some societies as well as agricultural experimentation. Both of these projects were conducted by the South Carolina State Agricultural Society. This Society was organized in 1785 and early purchased a tract of land on which experiments were conducted. The collection of statistics was attempted by some societies. While a great deal of credit for initiating a great movement must be given to these societies the work performed by them can in no way be compared with the work carried on by the public organizations of to-day. Even leaving out of the discussion scientific discoveries made since the middle of the nineteenth century, public organization to-day is more effective for the reason that it reaches more completely the whole agricultural population than did private organization in those days, or than it has since then, or probably does now. This fact, however, cannot detract from the importance of the service of these societies. Historically, they fulfilled a great pur-

pose. They came at a time when our political attitude was unfavorable to the centralization of government. Our traditions favored local government and voluntary or private organization. Only after the forties did our State governments begin to increase their expenditures rapidly. At this time they took over new functions that had been formerly carried on, if at all, under private initiative. During the first half of the nineteenth century the agricultural societies were therefore of necessity compelled to perform as best they could such functions as are now carried on by the State and Federal departments of agriculture and the co-operative extension service.

The Transition from Private to Public Organization

The transition from private to public organization roughly speaking came considerably before the middle of the nineteeth century when the States began to subsidize agricultural societies and to construct boards of agriculture made up usually of delegates of county agricultural societies. Precedents of this type of organization can be found as early as 1820. In that year the State of New Hampshire "passed an act providing for the organization of a State board of agriculture, to consist of the presidents of the several county societies and a delegate from each." These county societies received appropriations from the State. The board was organized in 1821 with 12 members. "After a brief period" the societies became disorganized and the board ceased to exist. The law, however, remained unrepealed until 1870, when an act of the legislature established the board on a different basis.

Massachusetts was one of the early States to organize agricultural societies. Its earliest society was the Massachusetts Horticultural Society, organized in 1829. In 1851 the Norfolk Agricultural Society took steps to establish a State board of agriculture. At a meeting of this society that year it was determined that the presidents and secretaries of the various agricultural societies of the State meet in convention "the object of which shall be to concert measures for their mutual advantage, and for the promotion of the cause of agricultural education." The State was already paying bounties to agricultural societies. The plan worked out at this convention was that the societies receiving the State bounty organize a central board of agriculture. The board was to be made up of three delegates from each society. The board was organized in 1851. Two years later the legislature provided for a State board constituted, however, very much like the private

board. Under the State board the Governor, Lieutenant Governor, Secretary of State, the President of the Massachusetts Agricultural College, and one delegate from each society receiving the State bounty including three other delegates appointed by the Governor constituted its members. Formerly the Secretary of State performed all agricultural duties. This work under the new plan of organization was all centralized in a separate board whose secretary compiled reports of the agricultural societies and prepared the annual volume for publication. In 1908 and even up to 1918 the board was still based on agricultural societies to the extent that they elected members of the board (thirty-two in 1908). The secretary of the board was elected by its members and was the administrative officer with headquarters at the State Capitol. He and his assistants were officials whose salaries were paid out of State appropriations. In the reorganization that took place in 1918 a somewhat more centralized department of agriculture was established. The name of the secretary was changed to commissioner, but this official was to be elected by a board made up of 14 members, one from each county and appointed by the Governor. Still further centralization was effected in 1919.

There are other examples of bounties paid by States to agricultural societies as well as of the organization of boards of agriculture made up for the most part of delegates from local societies. New York State under an act of 1819 organized a board made up wholly of delegates of agricultural societies. Although the law remained in effect the board ceased to exist in any effectual way from 1826 to 1832 and from the latter year to 1841 not at all. In 1841 the law of 1819 was virtually re-enacted stipulating, however, the State Agricultural Society instead of the State board of agriculture as the administrative agency. The society performed the functions of a State board of agriculture and with the exception of a small appropriation from the State "for the promotion of agriculture" it financed all its operations. The State of New York is thus an historical example of a high degree of private organization. Not until 1884 when it became necessary to create a machinery with regulatory functions in order to enforce the dairy laws was any State agricultural office created. The first office was that of Dairy Commissioner, and not until 1893 was a department of agriculture established.

The method of subsidizing the agricultural movement through the payment of bounties to private societies was quite general. Other States that encouraged agriculture in this way are Georgia, Michigan, Wisconsin, Indiana, Illinois, and others. The practice

of creating a State board of agriculture either wholly made up of delegates of societies or of such delegates and State officials combined also was quite common by the middle of the nineteenth century and continued to be so for a half century longer. Even to this day there are still State boards of agriculture varying, however, greatly in the functions they perform as well as in the way they are constituted; and in the more progressive States the practice of appropriating funds to societies for the purpose of promoting agriculture has actually increased.

The Establishment of State Departments of Agriculture

In the two previous sections agricultural organization was shown to have been at first entirely private and later to have developed into a semi-public form known as the State board of agriculture. The more centralized form of State agricultural organization began to make its appearance during the last quarter of the nineteenth century, and it was in the South where this type of organization first spread rapidly. Georgia was the first State to have a State department of agriculture. Its department was organized in 1874 and includes such branches as the State Chemist, State Entomologist, State Geologist, and the Pure Food Department. The Department of Agriculture is a part of the State cabinet. This shows a high degree of centralization. The Commissioner, however, is elected by the people. Tennessee followed in 1875 with an even more centralized Department of Agriculture. The Commissioner was to be appointed by the Governor and the deputies and other officials and assistants of the Department were to be appointed by the Commissioner. North Carolina organized a department of agriculture in 1877, Virginia and Alabama in 1888, Florida and North Dakota in 1889, Kentucky in 1892, Pennsylvania in 1895, Maine in 1901, and Mississippi in 1907. New York created its Dairy and Food Commissioner in 1884 and its Department of Agriculture in 1893. It will be noticed that all of the States mentioned are Southern except Maine, New York, Pennsylvania and North Dakota, and that all of these Northern States except New York came late in the movement. By 1908 of the Eastern States only Vermont had joined the ranks of the movement toward centralization. At this time virtually all of the States west of New York and Pennsylvania had the State board of agriculture. In 1908 then, the South had centralized public organization; in New England and the Middle Atlantic States, Maine, Vermont, New York and Pennsylvania had it; while the whole West except

North Dakota, Washington, and Montana were organized on a semi-public basis.

The reason for the dissimilarity between the Northern and Southern organization is quite clear. The Southern States have never been accustomed to the degree of local government that the Northern States have. They have no town or township, their smallest governmental unit being the county. Neither has private agricultural organization ever been as intensively and persistently developed as it has in the Northern States. For these reasons it is not surprising that, the South first turned to the State government to solve its problems in agriculture.

The similarity between the western and the early eastern organization can also be very readily explained. The student of political organization in America finds that many of the political and social customs of the East have been bodily carried westward by the tide of eastern emigration. It is true of constitutional peculiarities, of tax organization, and it is true of agricultural organization. Thus the West largely inherited its institutions from the East.

During the decade following 1908 many States changed the State board for the department of agriculture. According to a list published in the Yearbook of the United States Department of Agriculture only Connecticut, Delaware, Rhode Island and Maryland in the East and five other States in the Union retained the board organization in 1919. In this list of departments there are, however, some in which the State board is still a co-ordinate part among the usual regulatory divisions. The department in these cases is merely nominal and submits reports of the State board and other divisions to the Governor. The year 1918 saw changes made by Minnesota, Massachusetts, Idaho, and California. Illinois and some other States just recently adopted a highly centralized plan.

Reasons for the Change of Organization

The reason for the change in the East from the board to the department organization followed freely by western States is largely due to the assumption of agricultural functions by the States that could not be readily performed by a semi-public organization. It should be noted that the aims and purposes of organized agriculture, whether public or private, are to carry on the functions of investigation, education and demonstration, experimentation and regulation. Experimentation and research have been left

largely to the experiment stations. The problem of investigation is so large as to extend beyond the confines of the State or even to foreign lands, and its prosecution is more efficiently and thoroughly carried out by a centralized government. Much of the investigational work is therefore more satisfactorily performed by the Federal Government. There are of course a large number of local problems which can best be investigated by centralized State departments. In the collection of data not only is expense an important phase, but force such as possessed by centralized public organization is often necessary to secure the desired information. The educational and demonstrational function is fairly well administered by even private organization. Compared, however, with the systematic, persistent, and regular efforts applied by public organization behind which there is frequently a large appropriation for the purpose, even the function of demonstration is more satisfactorily performed by public organization. The new extension service centered in the agricultural colleges performs this function admirably, and it should be placed under the college rather than under the State department. The work of farmers' institutes should logically be associated with the extension service.

The function, however, that has been more directly responsible for the growth of centralized State departments of agriculture is the regulatory function. The regulation of agricultural activities is only a phase of the regulation of industry and commerce beginning to take form in the early 70's in the United States. This principle of regulation was the result of a flare-back of the industrial *laissez-faire* policy adopted largely because of the changes occasioned by the industrial Revolution. The policy of noninterference in industry and commerce soon began to threaten our very existence. It became necessary to regulate not only the railroads, manufacturing, and commerce, but agricultural activities as well. Thus, following the rapid growth of urban centers in the United States after the 30's, the adulteration of milk for fresh consumption assumed the proportions of a social problem in New York City in 1840 and elsewhere in the country. Butter and cheese as well as other food products were freely adulterated. The first oleomargarine factory in the United States was established in New York City in 1873, and the product disguised as butter and sold for butter soon appeared upon the market in large quantities. This has been a great error in the history of the oleomargarine industry, and is a policy that has been very generally abandoned because it is recognized that the principle of fraud in the manufacture and sale of oleomargarine leads to the destruc-

tion of the industry. New York, Pennsylvania and other States began to legislate against this form of adulteration in the late 70's. It is to be remembered that the adulteration of the dairy products is only one phase of the adulteration of foods which resulted in the passage of pure food laws in the States and in 1906 by the Federal Government.

The Development in New York

In the State of New York as well as in a number of other States the movement toward centralization in State agricultural organization can be traced directly to the adulteration of foods, especially the dairy products, and the need of regulation. The first laws dealing with the manufacture and sale of oleomargarine passed in New York in 1877, and subsequent laws in 1880 and in 1882 treated the subject in only a general way leaving the enforcement of the law to the regular prosecuting attorney. It was soon discovered that this officer is concerned with the enforcement of the law in general, and has no time to inspect dairy products and collect the necessary evidence to prosecute the offender of the oleomargarine law. To prevent the sale of oleomargarine as butter, very generally done at this time, an administrative machinery had to be created. Almost the entire menace of food adulteration is an administrative problem. State and Federal officers such as dairy and food commissioners had to be appointed whose special duty it was to administer the laws against adulteration. This officer had to be given a large corps of specially or scientifically trained inspectors whose duty it was to collect the evidence necessary to prosecute offenders of the law. New York made no progress in the prevention of the adulteration of foods until the legislature in an act passed in 1884 created the office of Dairy Commissioner. Wisconsin, Michigan, and other States soon followed with this type of organization, recognizing the principle of regulation as the only means of dealing successfully with the problem of adulteration. In 1893 New York established its State Department of Agriculture. The work formerly carried on by the office of Dairy Commissioner is now performed in a bureau of the Department of Agriculture. In this Department other regulatory functions such as the prevention of adulteration of feedstuffs, fertilizers, the quarantining of districts against diseases of animals such as the rabies, and the administration of the bovine-tuberculosis law, are located. In addition to these regulatory functions it carries on a number of demonstrational functions. History then seems

to indicate that the assumption of the State of the investigational, demonstrational, educational, and regulatory functions, but more the latter than any other, has been responsible for the general adoption of greater centralization in public agricultural organization. It is true that some States still adhere to a board form of organization centered in the agricultural college, while some States still have the board organization that is made up of representatives from agricultural societies or from local districts. These boards can quite admirably perform the function of investigation. It is also true, however, that the former Michigan Board, for instance, had charge of only such minor phases of regulation as the inspection of apiaries, and the most of the regulatory work was committed to more highly centralized departments. Furthermore the days of the administrative board seem to be numbered as indicated by the drift during the last decade toward the State department of agriculture. The movement of the short ballot and the demands for greater simplification in departmental organization, and greater efficiency in public accounting and in political machinery all probably played a part in bringing greater centralization into State agricultural organization.

2. Origin and Expansion of Federal Activities [1]

Early Agricultural Legislation

In the eighteenth century, the ideal colony was the one whose products did not in any way compete with those of the mother country. In their economic pursuits, mother country and colony were to be mutually complementary. "The aim was to create a self-sufficient commercial empire, which, while independent of competing European powers, would be able to make them dependent on it."

While the continental colonies of Britain were a good market for British manufacturers, they also produced agricultural products which duplicated those of England. So long, then, as England remained primarily an agricultural country, and the older idea of empire persisted, it could hardly be expected that Parliament would do very much for the encouragement of that industry in America. Despite this condition, however, both the home government and several of the colonial legislatures granted small sums

[1] William L. Wanlass, *The United States Department of Agriculture, Johns Hopkins University Studies in Historical and Political Science*, Series XXXVIII, No. 1 (Baltimore: The Johns Hopkins Press, 1920), pp. 12–31. Reprinted by permission of the author and the publishers.

of money from time to time for the promotion of various agricultural projects. For the most part, these were not likely to compete with home products. As early as 1622, the Government of James I tried to encourage the growing of mulberry trees and the breeding of silkworms in Virginia; in 1642, the general court of Massachusetts authorized the payment of premiums for the best types of sheep produced in the colony. From 1633 to 1643 Parliament granted six hundred thousand dollars to promote the growing of indigo and other crops in Georgia. By the time of the Revolution, England had become primarily a manufacturing country and the more modern view that the colonies were to furnish a market for home manufacture had become the dominant one. Had not this political change occurred, it is more than probable that agriculture would have received much greater governmental aid, not only to supplement the mother country's declining agricultural production, but to keep the colonists diverted from manufacturing.

During the ten years immediately following the establishment of the Government under the Constitution, Washington was undoubtedly the most ardent and influential advocate of governmental aid for the promotion of agriculture. Even when the affairs of state seemed to be most pressing, he found time to speak and write about it, both in an official and a private capacity. In the course of his first annual message to Congress, he referred to agriculture as a pursuit which should be encouraged along with commerce and manufactures. At this time, Washington seems to have had no very clear notion as to what form such encouragement might take.

In 1793, the British government, through the earnest efforts of Sir John Sinclair, at that time a member of Parliament, rather reluctantly consented to the establishment of a central board of agriculture. Sir John was made president of this board, and under his guidance, it seems to have been successful until 1817 when, through failure of appropriations, it went out of existence.

It was due to the example of this board and the subsequent correspondence between himself and Sinclair that Washington, in his last annual message to Congress in 1796, was able to make a much more urgent and definite appeal in behalf of agriculture. In this message he said:

> It will not be doubted that with reference either to individual or national welfare agriculture is of primary importance. In proportion as nations advance in population and other circumstances of maturity this truth becomes more apparent, and renders the cultivation of the soil more and more an object of public patronage. Institutions for

> promoting it grow up, supported by the public purse; and to what object can it be dedicated with greater propriety? Among the means which have been employed to this end none have been attended with greater success than the establishment of boards (composed of proper characters) charged with collecting and diffusing information, enabled by premiums and small pecuniary aids to encourage and assist a spirit of discovery and improvement by stimulating to enterprise and experiment, and by drawing to a common center the results everywhere of individual skill and observation and spreading them thence over the whole nation. Experience accordingly has shown that they are very cheap instruments of immense national benefits.

This part of Washington's message was favorably received in both branches of Congress. In the House of Representatives, it was referred to a committee which reported, recommending a plan, the principal parts of which were, that an agricultural society consisting of congressmen, federal judges, heads of departments, and such other persons as might be eligible be established at the seat of government. Annual meetings were to be held at which a president and secretary and a board of not more than thirty persons—to be called a "Board of Agriculture"—were to be chosen. Only the secretary's salary and expenses were to be paid out of the public treasury, and if the state of the treasury was such as to make this seem inadvisable, not even these were to be paid by the government.

The report of the committee was referred to a committee of the whole to be brought up the next Monday, but it became confused with a discussion of direct taxes and was never brought up.

During the next twenty years, there seem to have been no more definite proposals in Congress for extending the aid of the government to agriculture; but in 1817, Representative Hulbert presented a petition of the Berkshire Association for the promotion of agriculture and manufacturing in Massachusetts, praying "that the aid of the National Government may be extended to the promotion of the interests of agriculture and manufacturing either by the establishment of a national board or by such other means as in the wisdom of Congress may seem meet and proper." This petition was referred to a select committee and was never again revived. For the next twenty years, the activity of Congress with respect to agriculture was practically limited to the appointment of a committee on agriculture in the House in 1820, and the appointment of a similar committee in the Senate in 1825. Both of these still exist and are now very important committees; but at the time they were created they seem to have been little more than

convenient repositories for such petitions, memorials or other documents relating to agriculture as might come before Congress.

There was enacted, however, during this period, such legislation as was necessary in the development of our public lands policy. While this legislation affected the development of agriculture, as indeed it did the entire history of the nation; it cannot be said that the public lands policy of Congress had as its aim the promotion of the interests of that part of the population which was engaged in farming. The public land laws formed then, as they do now, a body of legislation quite distinct from that which has later been enacted directly in the interest of the agricultural class.

The almost complete apathy of Congress, during the first sixty years of our history, toward lending the aid of the government to the promotion of agriculture stands out in marked contrast to the attitude of that body to-day. Such an attitude is explainable only by the absence of any widespread or organized demand for such legislation; for no doubt the congressman then, as now, had "an ear to the ground." With a liberal public land policy, with an abundance of virgin soil and with the raw products of agriculture comparatively unimportant in domestic commerce, the life of the man who desired to till the soil was a relatively free and independent one during the first half of the nineteenth century. The period of "scientific agriculture" had not yet begun.

However, if Congress was content during these early years to let the business of the farmer follow its natural course, or receive such aid as it might from the various States and localities, there was another branch of the federal government whose activities in this field were destined to have a marked influence on the future course of events. Following the example set by Franklin while he was representative of Pennsylvania in England, American consuls, after the Revolution, adopted the practice of sending home specimens of foreign seeds, plants and domestic animals which might be used to enrich and diversify the agricultural production of the United States. At first this practice was largely extra-official, but later it was made a part of the duty of these officers. For several years, there does not appear to have been any regular agency designated to receive and dispense these contributions.

In 1836, Henry L. Ellsworth, then Commissioner of Patents (at this time the Patent Office was in the Department of State), assumed the responsibility, independent of his office, of receiving and distributing to farmers throughout the country such seeds, plants and animals as were received from consular officers or other sources. In his report the following year, he strongly urged upon

Congress the desirability of creating a suitable depository to care for this increasing business. Two years later, and largely as a result of Mr. Ellsworth's efforts, Congress appropriated one thousand dollars for "the collection of agricultural statistics, and for other agricultural purposes." This appropriation, small as it was, marks the real beginning of what has since become a great national enterprise.

Fifty Years of Development, 1839–1889

This meager appropriation made in 1839 was repeated in 1842, the amount was doubled in 1844, and, since the latter year, the item, "Collecting Agricultural Statistics," has formed a part of the annual appropriations of Congress. While the collection and distribution of seeds and plants was not specifically provided for in the appropriation, that function and the collection and publication of agricultural statistics constituted the chief activities carried on in the interest of agriculture by the federal government for the succeeding twenty years. From 1852, the purchase and distribution of seeds was specifically provided for.

During the latter part of this period, small additional appropriations were made from time to time for the investigation of special subjects. Such were the appropriations of one thousand dollars in 1850 for chemical analyses of vegetable substances, and three thousand five hundred dollars in 1858 for the collection and publication of information relating to the consumption of cotton in the various countries of the world. The expenditure of these various funds as well as that of the regular annual appropriations continued under the direction of the Commissioner of Patents until 1862.

Even after Congress had definitely committed itself, in this small way, to a policy of utilizing public funds for the aid and encouragement of agriculture, there was no immediate and popular demand for an extension of this activity. However, there were not lacking progressive farmers and business men who looked to the future and saw the need of a better and more scientific system of farming than that generally practiced in this country. Several years prior to the period about which we are now speaking, such men, many of whom were what might be called, "gentlemen farmers," whose leisure gave them opportunity for thought and reflection, and whose social positions gave their efforts added weight, were instrumental in promoting and organizing local and state agricultural societies and associations. Such were the

Philadelphia Society for Promoting Agriculture; organized in 1785 and incorporated in 1809; the Charleston (S. C.) Society for the Promotion of Agriculture; a Pennsylvania Society of Agriculture, organized in 1808; and the Berkshire Agricultural Society in western Massachusetts, organized in 1810, chiefly through the efforts of Elkanah Watson. It was the last of these, as we have seen, which succeeded in focusing the attention of Congress in 1817, at least momentarily, upon the need of some kind of national agricultural institution.

These societies grew rapidly both in number and membership. In 1852, it was estimated that there were approximately three hundred such organizations scattered over all the settled portion of the country. By 1861 the number had reached almost a thousand. The first of these to reach more than state-wide importance was the Columbian Agricultural Society with headquarters at Washington. While its existence was very brief (1809–1815), it enlisted the patronage of many influential men and was successful in making available a great deal of valuable information.

For forty years, after the War of 1812 had terminated the brief existence of the Columbian Society, there does not appear to have been any central organization which was really representative of any very considerable part of the interests of the agricultural class of the country. During this period, agriculture, no less than other American industries, had been profoundly affected by the great changes that had taken place. The unprecedented westward expansion called by some the most significant fact in American history; the wonderful development of transportation facilities; the enormous influx of immigration; the invention and use of machinery; the extensive entry of farm products into commerce both domestic and foreign;—these and other factors were destined to bring about a new era for agriculture in the United States and to bring the rural element in our society directly into contact with the political life and thought of the nation.

It is not surprising, then, that when a call was sent out in 1852 for a national convention of agriculturists to meet in Washington, for the purpose of forming a national agricultural society, it should have met with a general and ready response. One hundred and fifty delegates representing numerous societies met in June of the same year and formed the proposed national organization. The Hon. Marshall P. Wilder of Boston was elected as the first president.

A somewhat similar attempt had been made in 1841 to form a national society. The principal immediate objective in view

was the securing of all, or part, of the Smithson bequest, recently received from England; but when this failed the organization which had been formed quietly went out of existence, after holding only one annual meeting.

From the first, the United States Agricultural Society, organized in 1852, numbered among its membership many men of national prominence. Many others of equal prominence, including the President and Ex-Presidents of the United States, were interested enough in its work to read and contribute to its publications, and to address its meetings. During the ten years of its existence (1852–1862), this society was without doubt by far the most potent factor in directing attention, both official and private, to the agricultural needs of the time. The society recorded itself, time after time, as favoring the establishment of a national department of agriculture to be equal in every respect to the other great executive departments. Presidents, in their messages to Congress, had frequently renewed the request of Washington, that some governmental machinery should be established to care for and promote the interests of agriculture, but it is to the work and influence of the United States Agricultural Society, more than anything else, that we are indebted for the passage on May 15, 1862, of an Act establishing an independent organization called the Department of Agriculture.

This measure, like so many others passed by Congress, was a compromise between two contending forces. While the new establishment was called a department and was independent of any of the existing administrative units, it was to be under the direction of a Commissioner, appointed by the President. It did not rank with the so-called executive departments, and its principal officer was not entitled to a place in the President's Cabinet Council. To this extent it fell considerably short of the expectations of the most enthusiastic proponents of the scheme. Nevertheless, all were agreed that the action taken was a long step toward the proper recognition of the great agricultural interests of the country, and marked the beginning of a new era for this industry.

It is remarkable that such legislation could have been exacted from Congress during what was, perhaps, the most critical period of the Civil War. That the new Republican party, which had just come into full power, was in close alliance with the farming interests of the North is further attested by the passage, in this same year, of two other far-reaching acts in the interests of agriculture; that of June, 1862, called the "Morrill Act," after its

principal sponsor. . . granting large tracts of public lands for the establishment of an agricultural college in each of the States; and the homestead law, which provided for giving public land to the individual who had occupied and improved it, instead of paying a purchase price.

The act of May 15, 1862, generally known as the "organic act," states, after the usual introduction and provision for the establishment of a Department of Agriculture, as already indicated, that the general designs and duties of such department "shall be to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate, and distribute among the people new and valuable seeds and plants." The act further provides for the appointment of a Commissioner of Agriculture at a salary of three thousand dollars and a chief clerk at two thousand dollars, and briefly outlines the duties and procedure of these officers.

The new department was established and began its operations at once. The agricultural appropriation act for the fiscal year 1863 carried eighty thousand dollars, and the entire amount was expended.

That the work of the department found favor with the people and Congress from the beginning is shown by the fact that its appropriations were increased from year to year even while the war continued. When peace was established, the department's activities soon began to expand to cover new fields and to include new subjects, some of which were probably never contemplated by those who had sanctioned the organic act, broad and general as were some of the terms of that measure. Chief among these new activities were the study of diseases and insects injurious to plants and domestic animals, and the best means of eradicting or suppressing such diseases and insect pests, investigating the culture and manufacture of tea, silk, cotton, tobacco, and sugar; introducing new forage plants and grasses to improve grazing conditions in arid sections; studying the effects of the adulteration of various foods; collecting statistics relating to the manufacture and food value of margarine, butterine, and other butter substitutes, and experimenting in the field of agricultural chemistry.

By 1884, the work of the Department relating to the protection and improvement of the live stock industry of the country had become so extensive that Congress deemed it advisable to create a new bureau, called the Bureau of Animal Industry, to have special charge of this work. This bureau was to be placed under

the immediate direction of a veterinary surgeon, appointed by the Commissioner of Agriculture. It is noteworthy that this law was the first to confer upon the Department power to regulate the conduct of citizens, a power which is very important in the performance of its present functions.

The first appropriation for the investigation of subjects relating to forestry was made in 1876. Ten years later, a division was established in the Department to further these investigations.

One writer has said that the year 1887 marks the beginning of a new stage in the development of American agriculture, primarily because it was in this year that the so-called Hatch Act, providing for the establishment of agricultural experiment stations, was passed by Congress. This was the beginning of a much more comprehensive application of experimental science in the field of agriculture than had been heretofore attempted.

Although the work of the Department thus continued to grow and expand, and correspondingly increased amounts of public funds were appropriated from year to year, the more ardent and enthusiastic leaders and representatives of agricultural associations and interests were not satisfied. At least as early as 1881, agitation was renewed in Congress for the placing of the Department of Agriculture on a plane of equality with the other executive departments, with a secretary entitled to a place in the President's Cabinet.

Numerous petitions and memorials poured into Congress. The agitation was greatly accentuated by the granger and populist movements of this period. Much hope seemed to center in having a representative of the farming class in the immediate council of the President.

Attention has already been directed to the apprehension on the part of some members of Congress of the danger of establishing the precedent of giving to any special interest a place in the President's Cabinet. "Class legislation" the proposal was called by some. This argument was repeatedly brought forward during the years 1881 to 1889. Despite this and other objections, Congress finally yielded, and a bill raising the Department of Agriculture to the grade of an executive department with a Secretary of cabinet rank was passed, and approved by the President, February 9, 1889. All existing laws pertaining to the Department remained substantially as before. Two days later President Cleveland nominated Norman J. Colman, the Commissioner of Agriculture, as the first Secretary of Agriculture. The nomination was confirmed by the Senate on February 13. Thus another victory had

been won by the persistent and, for the most part, intelligent expression of public opinion.

Period of Expansion, 1889 to 1917

Agriculture has been defined as "the art or science of cultivating the ground, especially in fields or in large quantities, including the preservation of the soil, the planting of seeds, the raising and harvesting of crops, and the rearing, feeding, and management of live stock." The organic act of 1862, which is still in effect, authorizes the Department "to acquire and diffuse . . . useful information on subjects connected with agriculture in the most general and comprehensive sense of the word. . . ."

Even with this broad scope of activity, it is difficult to see how some of the many laws which are now administered by the Department of Agriculture can logically be classed as agricultural legislation. On the other hand, it is asserted by an eminent authority, that extensive and far-reaching as the operations of the Department now are, they do not yet in all respects cover the field marked out for it in its charter.

The period which we are now considering, more than any previous one in American history, is characterized by the wide-spread assertion, on the part of the federal government, of what has been called its police power; that is, its power to regulate and supervise the conduct of individuals in the interest of the general welfare of society. Much of this type of legislation fills the modern statute books of the lesser units of government as well. Why there should have been such a great demand for legislation of this character we shall not stop to consider in detail. The great number of health and safety laws in recent years, according to Professor Freund, "represents less a change of legislative policy than a change of conditions that had to be met by an extension of state control"; or, as Professor Turner says, it was the voice of the insurgent West "demanding increase of federal authority to curb the special interests, the powerful industrial organizations, and the monopolies, for the sake of the conservation of our natural resources and the preservation of American democracy."

It is not surprising, then, to find that of the very considerable number of recent laws, with whose administration the Department of Agriculture has been charged, a very large proportion of them should be of the regulatory type, or at least concerned with general social welfare. While the work of the Department has been, and still is, primarily educational and investigational, there

can be no doubt that the more recent expansion of its activities has been on the side of the regulation of the conduct of citizens. May we not say, then, that instead of this Department being an anomaly among the so-called political departments, as was feared by many at the time of its establishment, it is itself rapidly becoming one of them?

As already indicated, the regulatory work of the Department was inaugurated with the establishment of the Bureau of Animal Industry by special act of Congress in 1884. The primary intent of this act was to prevent the foreign exportation or interstate shipments of live stock affected with contagious, infectious, or communicable diseases. For a number of years this law was administered jointly by the Secretary of the Treasury and the Secretary of Agriculture. By act of February 2, 1903, this authority was conferred exclusively on the latter of these officers, and his powers to prevent the spread of contagious diseases of animals were considerably extended. Authority was granted the Secretary of Agriculture in 1890 to inspect live stock imported into this country and prohibit the landing of any found to be infected with dangerous diseases or of any which had recently been exposed to such diseases. The so-called cattle quarantine act, which authorizes the Secretary of Agriculture to establish a quarantine in any state or district found to be infected with contagious diseases of animals, has the same general object, that is, the protection of the live stock industry.

One very potent force in bringing about this legislation was the prohibitions that had been established by foreign countries against American live stock and animal products and the consequent injury to the live stock business.

That the measures taken were effective is attested by President Harrison who said in his message to Congress in December, 1891:

> If the establishment of the Department of Agriculture was regarded by any one as mere concession to the unenlightened demand of a worthy class of people, that impression has been most effectually removed by the great results already obtained. . . . The inspection by this Department of cattle and pork products intended for shipment abroad has been the basis of the success which has attended our efforts to secure the removal of the restrictions maintained by European governments.

Two other measures which relate directly to the live stock industry are the so-called twenty-eight hour law, and the virus act. The former of these is not so much intended to foster the live stock

industry as to protect the animals themselves. Its enactment was brought about largely as a result of the work of humane societies. Briefly, it prohibits the confinement in railroad cars and boats of all animals in course of interstate transit for a period longer than twenty-eight hours without being unloaded for feed, water, and rest for at least five hours, except that, upon written request in advance, the period may be extended to thirty-six hours. Carriers may relieve themselves from the operation of this law by supplying the required facilities for feeding and watering on board. The virus act regulates the importation and interstate shipment of viruses and similar remedies for the treatment of animal diseases. While most of these laws were enacted primarily to promote raising of live stock, to the extent that they are effective in increasing the consumable products from this source and improving the quality, they are of general benefit.

By no means all of the recent regulatory measures relate directly to the animal industry. The insecticide act, the plant quarantine act, and the seed importation act, have for their purpose the encouraging and protection of the business of growing plants and crops. The insecticide act is intended to prohibit the misbranding or adulteration of insecticides and fungicides manufactured in territory immediately subject to the United States or which moves in interstate commerce. The plant quarantine act is designed to prevent the spread of plant diseases by authorizing the regulation of importations of plants and the establishment of quarantines in infected districts. The seed importation act is intended, as the title suggests, to prohibit the importation of seeds which are adulterated or which are for any other reason unfit for use.

The so-called Lacey Act, and the migratory bird act are primarily intended to assist the States in conserving the game supply, to protect insectivorous and other birds which are beneficial to agriculture, and to prevent the introduction of foreign animals or birds that would be injurious to plant life.

Two other regulatory laws, which have been committed to the Department of Agriculture for administrative purposes, are the meat inspection act and the well-known food and drugs act of June 30, 1906. It need hardly be said that both of these are primarily designed as health measures and as such relate no more to the agricultural class than to any other. These measures form an important part of that body of restrictive legislation which marks the second administration of President Roosevelt as a period of moral awakening. They are administered by the

Department of Agriculture simply because that department, by reason of its facilities, was better prepared for the task than any other. . . .

The cotton futures act, which was enacted in 1914 and re-enacted with amendments in 1917, is a regulatory measure of a somewhat different character from those which have previously been mentioned. Its object is to regulate and supervise trading in cotton, particularly future trading; but instead of fixing penalties, it levies a tax which must be paid under certain conditions. Thus it is incidentally a revenue measure, and, as such, finds its constitutional basis in the taxing power of Congress. . . .

Not all of the laws which have been committed for administrative purposes to the Department of Agriculture, during the period now under consideration, have been of the regulatory or police type. Several very important educational and constructive measures have been enacted by Congress and added to the work of the Department of Agriculture. Some of these, particularly those that have been enacted in very recent years, involve varying degrees of co-operation on the part of the respective States.

* * * * * * * * * * *

The Hatch Act of 1887, which did so much to place agriculture on a higher basis by providing for the establishment of experiment stations throughout the States, was supplemented in 1906 by what is known as the Adams Act, after its chief sponsor, Henry C. Adams. Under this act the amount of money to be granted to each State was doubled so that it now aggregates $30,000 per annum for each State.

As early as 1876, the Department had begun the study of problems relating to forestry. Under an act of Congress, approved February 1, 1905, the administration of the vast forest reserves in the United States was transferred from the Department of the Interior to the Department of Agriculture. This work has continued to grow, both in scope and importance, as the area of forest reserves has been increased and the need for conserving and enlarging our timber resources has been more clearly discerned.

Perhaps the most significant and far-reaching piece of agricultural legislation in recent years is that of May 8, 1914, commonly known as the Smith-Lever Act. By the year 1923, there will be appropriated under this law an annual sum exceeding five million dollars, to be expended in co-operation with State institutions, for practical instruction and demonstration in agriculture and home economics. Under the terms of the act, this large sum

must be supplemented by at least an equal amount appropriated by or on behalf of the States. Wisely expended, such a sum of money should make this measure "the greatest piece of agricultural legislation ever enacted by any country."

Another co-operative law of first-rate importance is that known as the Federal Aid Road Act, approved July 11, 1916. . . .

The United States Grain Standards Act, authorizing and directing the Secretary of Agriculture to determine and establish official standards to be used in interstate and foreign commerce in grains, and the United States Warehouse Act, authorizing the Secretary of Agriculture to issue licenses to, and require bonds from, owners or managers of warehouses used for the storage of agricultural products, who desire to conduct their business under federal control, furnish striking evidence of the ever-increasing scope of the central government in general, and of the Department of Agriculture in particular.

When Congress, as a part of the legislative policy it has adopted, specifically authorizes and instructs an executive department or officer to perform certain functions, it is, of course, incumbent upon that body to appropriate the necessary funds as the need therefor arises. Such is the case with most of the statutes which have been enumerated above. Very much, in fact the major part, of the work of the Department of Agriculture derives its legal authority, not from the enactment of permanent laws, but from the appropriations that are made by Congress from year to year. This is particularly true of the experimental, investigational and educational activities. Many divisions, and, indeed, entire bureaus owe their existence to the annual appropriation acts; and would cease to exist by the mere failure of Congress to appropriate the necessary funds, without the repeal of any existing law.

. . . From its beginning in 1839 up to April, 1917, the Department of Agriculture cost the people of the United States approximately two hundred and eighty-five million dollars. Various attempts have been made to show that this sum is a mere bagatelle when compared with the huge increase in agricultural production directly attributable to better and more scientific methods of farming. That farming is now generally conducted on a better basis no one will deny. To what extent this improvement may be credited directly to the work of the Department of Agriculture is more problematical. There seems to be no question, however, but what it has been the chief and most valuable single agency. That this is the belief of those whom we elect to represent us in

Congress is abundantly evidenced by the ever-increasing number of activities with which it is charged, and the ever-mounting sums of public funds placed at its disposal. Small as these sums may be when compared with those necessary for the conduct of some of the other departments of the government, the rate of increase is most significant.

Beginning with a single clerkship in the patent office in 1843, it now numbers its officers and employees by the thousands. In 1917 not less than eighteen thousand seven hundred and fifty men and women, most of them specially trained for their respective tasks, were devoting their time to the multitudinous duties of the Department of Agriculture. As previously indicated, not all of the work of this department is directly in the interest of agriculture and the agricultural class. However, the welfare of the farming industry and of those who carry it on is still, and probably will continue to be, the goal and *raison d'être* of this important agency of government.

3. Agricultural Education [1]

. . . The colleges and universities founded upon the township grants of land came into direct competition with existing colleges which were dependent to a large extent upon tuition from students and upon endowments the income from which had to be devoted to specific ends. Moreover, these new state colleges recruited most of their teachers from the older institutions. In consequence, the traditions and points of view of these older colleges determined very largely the policies of the State institutions. Beyond all this was the compelling force of a public opinion formed very largely by people who were familiar with the purposes and standards of the older colleges. Small wonder then that weak, struggling, pioneer colleges and "universities" had as their ideal from 1840 to 1860 the reproduction in the new lands of a Harvard, a Yale, or a Princeton. The presence, too, of many denominational colleges in the Middle West made the success of the public-land colleges uncertain.

Gradually, however, an ever-increasing opposition to the exclusively classical type of collegiate work grew up. This new point of view came to be called the "Industrial Movement," and may be looked upon as the initial educational expression of the great social and economic transformation that is now known as the Industrial Revolution. Although European in its origin, the Industrial

[1] John A. H. Keith and William C. Bagley, *The Nation and the Schools* (New York: The Macmillan Company, 1920), pp. 64-72, 74-81. Copyrighted by The Macmillan Company. Reprinted by permission of the authors and the publishers.

Movement in education found a ready soil in America, both along the Atlantic seaboard and in the more remote parts of the country. In Michigan, the State Normal School at Ypsilanti was the immediate result of this movement; so, too, in Illinois, the State Normal University at Normal. These schools "were to give instruction in husbandry, agricultural chemistry, and animal and vegetable physiology," as well as to prepare teachers for the public schools. In 1857, Michigan opened her State Agricultural College, the first fruit of the Industrial Movement in higher education, although Pennsylvania, in 1855, had established a "Farmers' High School" which in 1863 became the State's College of Agriculture.

Before considering the comprehensive answer made by Congress to this demand for a more practical type of higher education, one other element should be noticed. The original States were never entirely satisfied with the disposal that had been made of the public lands. Even before the Land Ordinance of 1785, setting aside Lot No. 16, Maryland had memorialized the Continental Congress to make an equitable distribution of the land revenues among the original States whose sacrifices and endeavors had won the National domain. In fact, the Maryland legislature went so far as to make this concession a condition precedent to her acceptance of the Articles of Confederation. While the distribution of the surplus revenue somewhat mollified the original States, the facts regarding this distribution gradually faded from the public mind, and by 1855 the States that had not shared in the benefits of Lot No. 16 were inclined to feel that Congress should do something in an educational way for them.

Such was the general situation when, in December, 1855, Justin S. Morrill appeared in Congress as representative from Vermont. He had been elected by a majority of only fifty-nine votes. Shortly before his election, at the age of about forty, he had given up his business and retired on a modest competence that had been accumulated within fifteen years. December, 1855, however, marks the beginning of his real career. Although he was forty-five years old at the time of his first election, he served twelve years in the House of Representatives and thirty-two years in the Senate. "He was equally the philosopher and the man of action. . . . Mere majorities had no meaning for him, except as they accorded with his own convictions of truth and duty. . . . He always gave the impression of one who walked by an inner light and drew the inspiration of his life from unseen and immortal springs." Such was the man who during his remarkable service

of forty-four years in Congress was the foremost exponent of the Industrial Movement in higher education. His substantial achievements have given him an enduring place in educational history. More than half a hundred flourishing colleges of agriculture and mechanic arts will keep his memory alive as long as the nation lives.

The first Morrill Bill, providing for a land grant to each State for the establishment, endowment, and maintenance of an agricultural and mechanical college, was introduced in the House of Representatives in December, 1857. It was unfavorably reported in April, 1858, but with a minority report attached. Mr. Morrill made a clear and convincing speech. He contended that the money derived from the sale of the national domain should be equitably distributed to all sections of the country, that the policy of grants of land in aid of education was too well established to be opposed on constitutional grounds, and that to distribute this common fund as his bill proposed would greatly benefit the masses by putting the new discoveries of science at the disposal of agriculture and other industries. In spite of the adverse committee report, the vote in the House was 105 for, and 100 against, the Morrill Bill.

The bill, because of the violence of the opposition to it, was not brought up in the Senate until February 1859. It was championed by Senator Wade of Ohio. The debate was stormy and a few amendments were made. Senator Clay, of Alabama, said:

> The Federal Government is the creature of the States and is dependent upon them for its organization and operation. All its powers are subordinate to the States from whom they are derived. The States are in no wise dependent upon the Federal Government for their operation, organization, support, or maintenance. I stand as an ambassador from a sovereign State, no more subject to the control of the Federal Government, except in a few instances provided in the Constitution, than any foreign and independent State. This bill treats the States as agents instead of principals, as creatures instead of creators, and proposes to give them their own property and direct them how to use it.

Notwithstanding this argument and many others, the echoes of which are still heard occasionally in Congress, the bill passed the Senate by a vote of twenty-five to twenty-two. The House concurred in the amendments and—President Buchanan vetoed the measure on the ground that the government was too poor to give up its sources of income for this purpose, and on the further ground that the bill was unconstitutional.

There was no thought of passing the measure over the Pres-

ident's veto, and so the bill disappeared until December, 1861, when Mr. Morrill reintroduced it in the House. Finding it impossible to get the bill considered by the House Committee because of the important war legislation that was pending, he had the bill introduced in the Senate by Senator Wade in May, 1862. On June 10, the Senate passed the bill by a vote of thirty-two to seven. The Senate bill then went over to the House and was passed by a vote of ninety to twenty-five on June 17. It was signed by President Lincoln on July 2, 1862.

This act, undoubtedly the most momentous law ever enacted in the interest of higher education, included the following provisions:

1. Each existing State and each new State admitted into the Union "shall be entitled to as many times 30,000 acres of public land (not mineral bearing) as it had in 1860 or has, at the time of its admission, representatives in both houses of Congress. When there is not enough (or no) public land within a State, scrip shall be issued; but no State shall locate lands in another State save through assignees, nor shall any portion of land be located smaller than a quarter section."

This provision gave the older and more populous States the advantage and evened up the score. For example, New York received 900,000 acres and Iowa 240,000 acres. Practically every State that has entered the Union since 1862 has received only 90,000 acres under the provisions of this act,—30,000 acres for each of its two senators and an equal amount for its representative.

2. Ten per cent or less of the entire gross proceeds of the grant could be used, if authorized by the legislature, in the purchase of land for sites or experimental farms.

3. The interest of the entire remaining gross proceeds of the grant were to be used "for the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

This provision obligated every State accepting the provisions and bounty of the act to maintain a college as a part of its public educational system. The college thus maintained was not to be a trade school, but a technical college with liberal features. The compulsory military-training work in these schools was included

because of the existing war situation, and served the country in good stead in 1917, for it provided a large group of well-educated young men who understood the elements of military drill and who could begin, after a brief period of more intensive preparation, the preliminary training of troops.

4. "An annual report shall be made regarding the progress of each college, recording improvements and experiments made, with their cost and result, and such other matters, including State, industrial, and economic statistics, as may be useful, one copy of which shall be transmitted by mail free by each to all the other colleges of the same class, and one copy to the Secretary of the Interior."

This provision bound the colleges together, informing each of what the others were doing, and insuring that each would render a service to all.

5. The State legislature must formally accept the grant within three years, must establish at least one school of the character set forth above within five years, must replace all losses to the fund, must invest the entire gross proceeds, after making the permitted expenditures, in safe stocks yielding not less than five per cent on their par value, and must use the interest wholly—excluding the purchase, erection, preservation, or repair of any building or buildings—in support of the school or schools established by the act.

This made the fund a "perpetual fund," to remain "forever undiminished," and to be "inviolably appropriated" to the purposes prescribed in the act. Such safeguards around the federal land grants from the beginning would have saved many millions of dollars to the cause of education.

This first Morrill Act gave to the States a grand total of 10,400,000 acres of land, the equivalent of 12,250 square miles, an area one and a half times as great as that of Massachusetts, or New Jersey, and just about equal to the area of Maryland. . . .

One thing Congress failed to do,—it did not fix, in 1862, a minimum price for which the lands might be sold by the States. The college lands, therefore, came into competition with the unsold national lands. This competition tended to force the price down to the government price of $1.25 per acre. Some of the States that had no national lands within their borders even sold their scrip to an assignee, at as low a price as fifty to sixty cents an acre. The assignee then either sold his scrip to some one else or located his lands and sold them in the open market. Like Lot No. 16, the Morrill endowment fell far short of its possibilities.

Ezra Cornell, of New York, offered to take all of that State's scrip at sixty cents an acre, and to pay the State as he sold the land, with the understanding that all receipts above sixty cents an acre should become an endowment for a university. This offer was accepted. Mr. Cornell located the scrip in the white-pine district of Wisconsin, and eventually sold most of the land at an average price of $6.73 an acre. This gave Cornell University an endowment in excess of five and one half million dollars.

Pennsylvania sold most of her scrip for fifty-five cents an acre, and Ohio for fifty-four cents. While this low-priced selling now seems almost criminal, we must remember that each State was anxious to realize immediately on its scrip. The situation was uncertain. The Civil War was at its height, prices were soaring, the currency was inflated,—and the college had to be established within five years. In 1889, Congress corrected this defect in the law, and States coming into the Union since that time are given large blocks of land that cannot be sold until they will bring at least $10 an acre; the lands consequently are leased, under certain restrictions, until they can be sold for the price that has been fixed. The establishment of colleges, however, is not delayed; the lands thus conditioned are made security for bonds issued by the State, the State paying the interest annually and using the proceeds of the bonds for educational purposes. These large blocks of land, as well as meeting the conditions of the first Morrill Act, are in lieu of former separate grants such as "internal-improvement grants," "salt lands," and "swamp and overflowed lands."

The colleges of agriculture and mechanic arts established in the several States under the provisions of this act were beset with difficulties during and following the Civil War. Their particular field was new; few teachers were qualified to do the specialized technical work demanded by their purpose; pertinent subject-matter was not abundant, for farming was still very largely an empirical art rather than an applied science; and the established colleges and universities were not friendly. All of these facts should be borne in mind by one who is disposed to criticize the early work of the agricultural colleges. By 1872, these new institutions were in need of additional federal assistance. The proceeds from the sale of public lands kept pouring into the National Treasury. Senator Morrill wished to create from these receipts an endowment or permanent fund, the proceeds of which could be used only for the support of the State colleges of agriculture and mechanic arts. Representative Hoar, of Massachusetts, was equally anxious to use the proceeds of such a permanent fund

for public schools of the several States, apportioning these funds to the States partly on a population basis and partly on an illiteracy basis. The two finally agreed to divide the proceeds of the fund equally at the outset, but the college fund was to be limited to $50,000 a year to each State while the common-school fund was to have no limit. Two bills drawn to meet this compromise passed the House in 1872, but were defeated in the Senate.

In 1873, Senator Morrill introduced a measure combining the two bills and Representative Hoar reintroduced his own bill in the House. Charges had been made that the land-grant institutions were not fulfilling the purpose for which they had been established, and Mr. James Monroe, of Ohio, moved to "investigate the colleges established under the grants of the Act of July 2, 1862." This investigation was completed in 1875 and Mr. Monroe himself made the report,—one entirely favorable to the colleges,—yet Senator Morrill's plan for a permanent cash endowment had to wait fifteen years after this report before it was written into law.

In 1887, March 2, the "Hatch Act" establishing an "Experiment Station" at each college of agriculture and mechanic arts was passed. This act provided an annual subsidy of $15,000 for each such college in order that original researches might be carried on and verifications of experiments made. The general field of such experimentation is specified in the act. Each State is required to accept the act formally and agree to carry out its purposes. Without giving the Federal Government any real control, the act specified that:

> "The Secretary of Agriculture shall furnish forms, . . . for the tabulation of results of investigation, shall indicate from time to time such lines of inquiry as shall seem to him important, and in general shall furnish such advice and assistance as will best promote the purpose of the law." Each Experiment Station must publish a bulletin at least once in three months "which shall be sent by Government frank to each newspaper in the State and to such persons who are actually engaged in agriculture who shall request the same, as far as the means of the Station shall permit."

The Hatch Act was a needed supplement to the earlier legislation. From the outset, the colleges had been handicapped by the relative paucity of well-established scientific principles in the field of practical agriculture. As a result the instruction tended to be either remotely theoretical or entirely empirical and "rule-of-thumb" in character. The experimental stations, by accumulating an ever-increasing number of tested facts and principles, have

given to the colleges the materials which they needed most to meet the clear intent of the first Morrill Act.

The law of August 30, 1890, the second Morrill Act, was designed "to more completely endow the colleges established under the law of July 2, 1862." It provided, out of the money arising from the sale of public lands, an annual subsidy of $15,000 "for the more complete endowment and maintenance" of each college of agriculture and mechanic arts. This subsidy was to increase by $1000 a year until it should reach $25,000 as the yearly grant. The amounts thus received "shall be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their application in the industries of life and to the facilities for instruction." Reports were to be made and exchanged. The funds available could be divided in any state on the color line, but were to be used exclusively for operating expenses. The Secretary of the Interior was charged with the proper administration of the law, thus revealing a slight growth in the principle of federal supervision over the institutions established by federal bounty. How this matter was considered by Mr. Morrill is best told by stating that in the title of his bill of 1873 he specifically designates the schools formed under the act of 1862 as "National colleges for the advancement of general scientific and industrial education."

The Hatch Act and the second Morrill Act provided money arising from the sale of public lands. This fund would of necessity decrease as the public lands decreased, and the institutions might, in consequence, find themselves with a decreasing annual subsidy. Senator Morrill, with his usual foresight, did not overlook this danger. In March, 1898, he introduced a bill which provided that, whenever the proceeds of the sales of public lands should be less than is required by the act of 1890, the deficiency should be paid from any funds in the National Treasury which are not otherwise appropriated. The enactment of this bill into law established a clear and incontestable precedent for money grants in aid of education, the source of which would be current federal taxes.

In March, 1906, Congress passed the "Adams Act," an amendment of the Hatch Act. This was for the "more complete endowment and maintenance of agricultural experiment stations," and increased the appropriations by easy stages to $30,000 a year for each of the "land-grant" colleges that maintained an experiment station.

In March, 1907, the "Nelson Amendment" to the second

Morrill Act of 1890 was passed. This amendment increased the cash appropriation for "endowment and support" from $25,000 annually, by increments of $5,000 a year, to $50,000 annually.

Attention should also be called to the Smith-Lever Act of May, 1914, which made in 1915–16 an annual appropriation of $1,113,-490 to the States for agricultural extension work, including the support of "Farmers' Institutes." The States added $1,364,356 for the same purposes. These latest appropriations would seem to complete in a fair way the federal subventions for the work of the colleges of agriculture and mechanic arts. The Smith-Hughes Act of February, 1917, provides for industrial and agricultural work, but with this later legislation, the federal stimulus passed from the colleges to schools "of less than college grade."

The colleges of agriculture and mechanic arts, starting at the zero point on January 1, 1863, have had a most remarkable growth, notwithstanding the fact that they have been pioneers in a new type of education opposed in many ways to the ideals of existing institutions. The benefits of the act of 1862, or later benefits as a substitute, have been accepted by every state, and fifty-three institutions are to-day thus aided. . . .

. . . Perhaps the greatest lesson of the Morrill Acts lies in the steadily increasing appropriations that the States themselves have made to these nationally-aided colleges. *To-day, by far the greater part of the maintenance expenses of the "land-grant" colleges is met by taxation within the States themselves.* Federal aid, far from "pauperizing" the States, or tending toward a reduction of State initiative and effort, has served to stimulate the States to a measure of self-activity quite unparalleled in the development of nationally unaided state enterprises.

PART IV

REORGANIZATION AND READJUSTMENT 1914–1924

EDITORS' INTRODUCTION

We have noted how the Civil War marked the beginning of one of the most remarkable epochs in the agrarian history of the United States. Similarly, the World War may be taken as another significant turning point in our agricultural development. The era ushered in by that event is only in its beginnings and only the preliminary movements can be set down as history. The terms, "reorganization" and "readjustment," have been selected for the reason that the outstanding characteristic of the new era we have entered is the necessity of readjusting and reorganizing our national agriculture to meet changed conditions. When the future shall have become history, it is likely that an entirely different name for this period will be appropriate. It is here proposed: first, to trace the course of events which have led to the beginning of a period of readjustment; and, second, to indicate in a general way the probable nature of the new era of our agriculture when once the adjustments have been made and something like stable conditions shall have been realized.

It is important, first of all, to note the condition of our agriculture at the outbreak of the World War. In Chapter XXIV, attention has been called to the depression which our agriculture suffered during the nineties and to the gradual recovery from that depression during the later years of the period already referred to as the agrarian revolution. Agricultural overproduction so manifest as the basic cause of this depression gradually passed away as the result of the development of a broader demand for agricultural products. There was a steady and consistent rise in agricultural prices from 1896 to 1914. With this recovery in prices there came a stabilization of production and a balancing or equilibrium of agricultural supply with the demand for agricultural products which meant a very substantial degree of prosperity for farmers of practically every agricultural area of the country.

It is worth while to note briefly some of the details of this adjustment. It is during this period that the areas described by the familiar terms, corn belt, wheat belt, dairy belt, and cotton belt, became most definitely determined, and the production in these belts came into firm equilibrium with the market demands. In an area lying northeast of a line drawn approximately from the mouth of Chesapeake Bay to the northwest corner of Iowa, the agricultural population had rather definitely devoted

its energies to the production of dairy products, truck, potatoes, and fruit on the basis of domestic market demands. To the southwest of this line, the area including most of the States of Ohio, Indiana, Illinois, Iowa, Missouri, and portions of a number of bordering States was devoted to the raising of corn and the production of meat animals depending for the most part on a domestic market, but disposing of some 15 per cent of its pork products on the foreign market. To the west and north of the corn belt was the wheat belt, one-fifth of whose product was dependent upon a foreign market, while the remaining four-fifths were used to supply domestic demands. In the South, where cotton farming had occupied an important position almost from Colonial times, about one-half of the production was shipped abroad to the industrial centers of Europe, while the other half was consumed in domestic markets. The significant thing about this whole agricultural situation, particularly in its geographical aspects, is that production was adjusted to market outlet in a ratio which meant remunerative prices for the producers.

With the opening of the European war in 1914, the first reaction was unfavorable to American agriculture. The blockade of Germany by the allied powers shut off this very important outlet for our meat and cotton. This disturbance of international credit and trade relations, and the increase in transoceanic freight rates disturbed the usual course of international trade and had an adverse effect upon farm prices. It was not long, however, before the unusual demands of the belligerents began to have the opposite effect. Production was necessarily curtailed in Europe, and consumption was, if anything, augmented. As noted, the trend of prices since 1896 had been upward. By the time the crops of 1915 were being marketed, the accelerated increase in the price of American farm products began to be apparent. This rapid rise in prices became more marked until with our entrance into the struggle in 1917 the farmers were enjoying a measurable increased prosperity.

Our own military activities served still further to raise the price of farm products. The slogan, "food will win the war," reflected the general anxiety with reference to our food supply, particularly in the matter of breadstuffs, and the urgent demand for supplementing the waning stocks of the Allies with shipments from America in greatly increased volume. The feverish industrial activities in the Eastern States, brought about through the manufacture of munitions and of other war supplies, served still further to raise the price of farm products. It is true, of course, that costs were rising at the same time; but, as is usual under these circumstances, prices outran costs and the American farmer was able to reap a larger margin of profit than ever before.

It seems to have been generally expected that the cessation of hostilities would bring a fall in prices and a slowing up of business and industrial activities generally. When the war did end rather unexpectedly in 1918, it was feared that the unusual preparations for another year of military activities would mean at once a period of unemployment and depression. However, the demand for food and other supplies on the

part of the war-worn belligerents initiated a period of abnormally large exports of food products and other agricultural commodities, financed by both public and private loans, which acted to defer the depression for some eighteen months after the armistice.

One very significant result of the war-time prosperity was the general increase of technical efficiency on the part of the farming class. Mobilization of the national army combined with the insistent demand for workers in munition and other war supported industries greatly curtailed the labor supply on the farm. The farmer found that by better planning and greater use of machinery he could produce a larger volume of products with a smaller amount of human labor. This heightened efficiency is the more significant because of its temporarily adverse effect upon the farmer and his prosperity when the demand for his products began to wane.

It was perhaps inevitable that the period of high prices which brought with it a period of agricultural prosperity—probably on the whole more apparent than real—should be followed by a reaction economically disastrous to the farming business. High prices inevitably cause an unwarranted stimulation of profit-seeking effort. If this profit-seeking effort is made in a full understanding of the temporary nature of the price situation, it is likely to result in real gain to the producers. If, however, as usually is the case, there is a general misunderstanding of economic laws and forces, serious mistakes are likely to be made. This condition was conspicuously characteristic of the war period of high prices. The farmer, as well as many of the men with whom he dealt, and many of his advisers, felt that a permanent era of higher prices had been reached. To quote one Iowa banker, it seems to have been the general impression that "it took a war to make Iowa land sell for what it is really worth." One of the most common effects of this misunderstanding was the general prevalence of the greatly increased prices in land. This so-called land boom centered in northwestern Iowa and spread to various parts of the country. The effect, of course, was to fix upon a large number of land purchasing farmers permanent charges which they were unable to carry when the reaction in prices had taken place.

Another result of the high price period was more or less permanently to expand agricultural production. The farmer having found, through the lessons taught by the war period, that he could produce in larger volume, proceeded to equip himself for this larger production. Once having done this he found it very hard to contract his production to suit a contracted market.

The adverse effect of these various results of a period of abnormally high prices and unusual prosperity became painfully evident in the year 1920, when the general commercial crisis came. Evidences were not lacking for almost a year prior to this crisis that agricultural prices were going to fall. The real significance of the depression was not realized, however, until late in 1920; and the full force of the depression did not strike the farmers, particularly in the corn and wheat belts, until 1921. The outstanding characteristics of this crisis, so far as they touch agricul-

ture, are of such recent occurrence that they hardly need to be enumerated here. The outstanding phenomenon was, of course, the drop in prices. The particularly unfortunate phase of this decline, however, so far as agriculture was concerned, was the greater rapidity of the decline in agricultural commodities than in nonagricultural industries. It might be shown by a study of price indices that up to 1922, for example, the farmer was not more unfortunate than other producers in this respect. His prices rose somewhat more rapidly during the boom period and he reaped a relatively greater benefit during the earlier part of the cycle which was no more than counterbalanced by the relatively greater drop in agricultural prices in the period of decline. But this is not the whole story. The prices of agricultural products seem definitely to have struck a lower level with reference to the price of other commodities. Moreover, it seems evident that a considerable period must elapse before a readjustment can take place and the pre-war ratio between agricultural and nonagricultural prices be restored. It is not so much a matter of relative changes in prices during the crisis as it is a matter of relative rapidity of recovery from the period of depression. The agricultural depression is outlasting the depression in general industry and bids fair to last for a considerable number of years.

One very conspicuous result of this unfortunate turn in the farmers' economic affairs is the revival of the so-called farmers' movement. The history of previous periods shows that farmers become class conscious to a much greater degree in periods of depression than in periods of prosperity, in evidence of which may be mentioned the Grange and the Farmers' Alliance which were formed in the earlier period of declining agricultural prices. In the present period we have had a rejuvenation of such organizations as the Farmers' Union and the American Society of Equity and the inception and development of the American Federation of Farm Bureaus which was the most conspicuous organization of all.

The Farm Bureau in its beginnings was fostered very largely by the United States Department of Agriculture as a means of making effective in farming communities the extension work of the Federal Department and the State experiment stations. Local Farm Bureaus were organized in the various counties to do the work of the county agent, and to serve as an articulating agency between the individual farmer and his professional advisers. With the coming of the crisis in 1920 a movement was begun: first, to federate the county Farm Bureau organizations; and, second, to create a national federation. It was perhaps inevitable that such federations should engage in political activities. That is to say, they adopted legislative programs and became active in the support of legislation designed to aid the farmer in his economic difficulties. In this respect the activities of the Farm Bureau and other farmers' organizations, such as the Equity and the Union, have not been widely different from those of the Grange and the Alliance during the early period; though they do not give any indication of eventuating in a political party as did some of the organizations of an earlier period.

Growing out of this renewed activity on the part of farm organizations came the demand for legislation designed to aid the farmer. This proposed legislation has taken many forms, ranging from schemes for governmental fixing of prices of agricultural products to the providing of cheaper and more adequate credit. The latest development in this direction is the proposed government export corporation designed to raise the level of agricultural prices to that of nonagricultural commodities. To date the net results of this agitation for agrarian legislation consists in a body of permissive enactments designed to facilitate the organization of co-operative companies and the State and Federal Rural Credits Acts. It is perhaps too early to determine the results of these new laws.

Another conspicuous result has been a renewed interest in co-operation. Since the impetus to co-operative organization in the earlier period of agricultural depression, there has been a steady and substantial growth of co-operative effort in the way of grain marketing, dairy manufacture and marketing, cotton marketing, fruit marketing, and the like. With the economic distress accompanying the recent fall in prices, many leaders turned to co-operation as the all sufficient means of relief. Expectation as to the efficacy of co-operation inevitably outran all reasonable bounds. It has been assumed in many quarters that co-operative organization might be pushed to a point which would enable the farmer to exert a monopolistic control over the prices of his products, and thus restore agricultural prosperity. Controversies as to the limits of co-operative effectiveness have on more than one occasion nearly wrecked farmers' national organizations. Doubtless the net results of the movement will be to encourage a sound and constructive co-operative policy; but along with such desirable results there will doubtless be a reaction against organized co-operation because of the disappointment of too extravagant hopes.

As a final result of the agricultural depression, we may mark the spreading interest in economic research and extension work in the field of agriculture. The present situation has emphasized as nothing else could the need of a better understanding of economic forces as they affect agriculture. State legislatures and the national Congress have been willing to appropriate greatly increased amounts of money for the carrying on of this type of research, and for taking back to the farmers the results of such research through the efforts of extension workers. It is to be hoped that the encouragement to this sort of work may result in permanently enlarged research activities in the field of agricultural economics as well as in the technical phases of the agricultural industry. No adequate understanding of the present crisis or the need of adjustment which it has brought, can be had without an adequate consideration of the causes of the depression. If the present unprofitable condition of agriculture were merely an incident in the course of the so-called business cycle with its recurring rise and fall in prices and in prosperity, there would be no such serious problem as that which now confronts our agriculture. It is of the utmost importance that we understand to what extent the war and the

aggravated phases of the business cycle which accompanied the war have wrought permanent changes in the economic forces with which the farmer must reckon. It is very evident on examination that permanent changes have been brought about. In the first place, as has already been pointed out, the war effected a more or less permanent expansion in the volume of our production; and because of the peculiarities of the farming business it is very difficult to contract quickly this volume of production in response to changes in price levels. In other words, we have as a result of the war an expanded production which has extended itself into a period when economic conditions generally demand a contracted production. In the second place, the war has reduced the purchasing power of certain nations which formerly were the most liberal buyers of our agricultural commodities. While these nations have been taking our enlarged surplus they have taken it at a greatly reduced price; and, further, the fact that the war has made us a creditor nation, whereas before we were a debtor nation, will probably operate to keep down permanently the foreign demand for our agricultural produce. In other words, it seems evident that the foreign market which had up to the war absorbed our surplus at prices generally profitable to the farmer can no longer be counted upon to function in this way. Again, the change in the tariff policy of our government will probably have the net effect of supporting the prices of nonagricultural industrial products in this country to the detriment of the farming class; whereas in the case of most of the agricultural products in which we have a surplus over domestic demands, the tariff can offer no substantial aid. A further development, largely a result of the war situation, is the greatly strengthened position of organized labor in this country. A study of wage levels will show that wages are practically at the level reached during the most prosperous part of the boom period. The fact that labor could maintain these wages in the face of a falling price level is primarily due to their effective organization. These high wages, of course, raise the cost of producing nonagricultural commodities and thus raise the necessary price of such products indirectly increasing the cost of the farmer's production and directly increasing his cost of living by keeping up the prices of things which he must buy for consumption. Finally, the new immigration policy by restricting the supply of labor and retarding the growth of the nonagricultural population, operates in favor of high income for the industrial labor classes, and for lower farm prices and low remuneration for the farmers' effort.

A careful consideration of the conditions thus described will convince one that they are of a fairly permanent nature. That is to say, they are conditions which cannot be modified with successive changes in the price level, as they appear to be ordinary business cycle phenomena. It ought also to convince one that the outstanding agricultural problem of the present is a fundamental and thoroughgoing readjustment to the farmers' changed economic environment. It would seem in view of the change in the European market that the prosperity of American farmers very largely depends upon the growth of our domestic nonagricultural popula-

tion for the creation of a market which will absorb at profitable prices practically the whole production of our domestic agriculture. If this is true our farmers must from now on think not of the demands abroad but of the demands of the home market and must plan their agricultural production to meet cash home market demands. In other words, the time has come to place less dependence upon the production of great world staples such as wheat, cotton, and pork, and to study the problem of an agricultural production program balanced with the domestic demands for agricultural products. This will mean a larger output of such things as dairy products, vegetables, fruit, and other perishable and semi-perishable commodities, and less attention to the production of the staples upon which, up to this time, our major agricultural effort has been based.

It would seem then that we are entering upon a period of transition and readjustment which is the opening phase of a new era in our agriculture. This new era, when something like stabilization shall have been reached, will be characterized by greater intensity in the use of our most favorably situated and most highly productive land, higher technical efficiency through the use of improved methods and improved equipment, and a high class of agricultural population in which agricultural education must figure to a much larger degree than at present. What it need not mean is what many people have been prone to fear, namely, a peasant condition of our agricultural population. Such a condition need only come through a deterioration of our nonagricultural industries. If we are to have a highly developed agriculture to go with a high standard of living for the farming class, we must have a sufficient amount of social control to keep open alternative economic opportunities in other industries so that there can be a free movement to and from agriculture as changing conditions demand.

CHAPTER XXVI

AGRICULTURAL CHANGES DURING THE WORLD WAR[1]

Production

Since the United States has substantially always been a country of surplus food production, the government has not felt the necessity of using extreme measures in its stimulation. Nevertheless, so far as production is concerned, the government has in an educational way done very much to put agriculture on a solid basis and at the same time stimulate its progress. The value of this work is clearly brought out in the recent events in connection with the efforts to encourage agricultural production during the years of the war. It has been comparatively easy to turn the machinery of the Department of Agriculture to the work of stimulating the amount of farm produce. This is being done even to the extent of encouraging production through exhortation and demonstration, without much regard to soil conservation. War is a time of destruction; of using lavishly the goods at hand with little thought as to whether or not there will be ample supply in the future. The questions requiring immediate attention are of greater consequence than those more remote.

The problems of production and conservation are perhaps equally important in the realization of results, for a given year. At least they are both of primary importance. War was declared on April 6, and it became evident to the President and his advisers that food was destined to be needed in much more than ordinary quantities within the year following. Although agricultural operations were well along, so far as plans and planting for 1917 were concerned, it was not altogether too late to make at least some important modifications of them. The Secretary of Agriculture called a meeting in St. Louis for April 9 and 10, only three days after war was declared. Thirty-two States were represented by sixty-five officials. It was decided to divide the work of stimu-

[1] Benjamin H. Hibbard, *Effects of the Great War Upon Agriculture in the United States and Great Britain*, Carnegie Endowment for International Peace, *Preliminary Economic Studies of the War*, No. 11 (New York: Oxford University Press, 1919), Part I, Ch. IV. Reprinted by permission of the author and the publishers.

lating production and promoting economy into four main divisions as follows:

1. Production and labor.
2. Distribution and prices.
3. Economy and utilization.
4. Effective organization.

It was pointed out that the world shortage of food was so clearly a fact as to make it desirable, and at the same time undoubtedly profitable, to the American farmers to bring the production of all foodstuffs up to a maximum. Especially should bread grains be increased. The cultivated area should be extended wherever practicable. Likewise meat production should be expanded, and milk production increased if possible one-fourth.

To carry out the program of production would clearly call for an unusual amount of farm labor. It was urged that the government take steps to enlist "in a national service" of food production, men above military age, men unable to enter the army on account of physical defects, and boys of 15 to 19 years of age.

In order to make known the resources of the country with respect to food supplies, a survey was recommended. It was recognized that a disturbance of prices was likely to take place and with a view to holding such movement within bounds, price publicity was recommended. Moreover, it was suggested that while price fixing was not likely to be necessary for a time, the government should be prepared to fix maximum or minimum prices, even to buy and store food commodities should occasion rise. The occasion would probably be the manipulation of prices by speculators or restraints of trade by dealers.

Concerning possible economy on the part of the people, it was stated that 18,000,000 barrels of flour might be saved by putting 81 per cent instead of 73 per cent of the kernel of wheat into flour. Furthermore, that less meat and more vegetables might well be included in the diet. That milk might be used to a greater extent. That simple grain products, instead of the more refined commercial products might advantageously be used. A widespread propaganda for getting these views before the people was urged.

Since it was clearly necessary for the Department of Agriculture to do more than its usual duties in bringing about unusual results in the nature of increased product, it was necessary that added authority and also added funds be granted the Department.

Organization for the Increase of Agricultural Products

Department of Agriculture.—Following the declaration of war, the food production question was at once brought to the attention of Congress, and an act passed directed almost exclusively to the Department of Agriculture with a view to increasing the supplies. This was the logical way to get at the questions since it had long been the business of the Department of Agriculture to increase production. The Department has a force of many thousand employees, giving their time to experimentation, demonstrations, and education connected with problems of production. In recent years attention has been given to the marketing of farm produce. Thus the Department was well equipped for the work of furthering the production to meet the war emergency in that an expansion of work already in hand was about all that was called for, not something foreign to previous efforts. The legislation providing for the stimulation of production followed primarily the suggestion made by the Secretary of Agriculture and his advisers at the St. Louis conference. The act as passed was entitled: "An act to provide further for the national security and defense by stimulating agriculture and facilitating the distribution of agricultural products." It was approved on August 10, 1917. The main import of the act is summarized by the Department of Agriculture as follows:

Eleven million three hundred and forty-six thousand four hundred dollars to be used in stimulating production, for protecting and conserving foods, and for a survey of the country's food resources.

Staff of county agents to be increased until at least one agent will be stationed in practically every agricultural county in the United States, that will co-operate with the Department and the State agricultural college.

Women county agents for demonstration work in home economics to be increased in rural counties, and similar agents to be placed in towns and cities for the first time.

Farm-help service to be extended in co-operation with United States Department of Labor to assist in bringing farmers and farm laborers together.

Country-wide survey to be made of food on farms, in storage, in shops, and in homes. Estimate consumption of food to be made.

Extension of crop estimating to crops not hitherto reported and to include special inquiries to gather information on extraordinary farm conditions.

Hog and poultry production to be stimulated as far as practicable.

Increased production and conservation of dairy foods to be encouraged.

Animal diseases to be combated on larger scale.

Increased efforts to be made to combat insect pests of plants and animals.

Further steps to be taken to destroy animal pests and predatory animals which injure crops and kill live stock.

Work for the control of plant diseases to be extended.

Survey of seed supplies and needs to be made and results published so that farmers will be assisted in obtaining a sufficient supply of good seed. Seed to be purchased and sold to farmers by the Department if necessary in restricted areas.

Demonstrations to be carried out in the proper handling, packing, shipping, and marketing of perishable fruits and vegetables to decrease spoilage.

News service for various farm products to be extended so that producers and consumers can be better informed as to the supply and demand and can sell and buy with less expense, less spoilage, and less lost motion.

The Department of Agriculture had by no means waited the summer through to make a start in the encouragement of added food production. Already committees had been appointed to draft resolutions on the various important lines of procedure. This was done at the St. Louis conference, and while for the most part the resolutions were directed to the President and Congress, the Department of Agriculture was able to do a great deal without further authority or funds. It urged farmers to extend the acreage of cereals, especially wheat. That there was a considerable response to the appeal cannot be doubted. Work was begun on the question of farm labor, and by no means least, the campaign for greater economy in the use of foods was launched.

The work of the Department of Agriculture is highly centralized. The authority for all projects, and for the most part, the direction of them, is in Washington. This fact blends very well with the program of emergency food production. For instance, there is not likely to develop a great deal of friction between the people concerned and those directing the program. As a matter of fact, there is not much authority involved in the program; it is rather one of exhortation, encouragement, and assistance. This is in contrast with the Food Administration created to carry out the mandates of the Food Administration Act, which bears the same date as the Food Production Act. In general the Food Administration is, as will be shown later, a decentralized organization.

The Department of Agriculture is always in close touch with the agricultural colleges. The colleges were represented liberally in the conferences held at St. Louis and Berkeley. So close was the co-operation of the Department with the colleges that it is

impossible to separate the influences of the two. The colleges in many cases took the suggestions of the Department of Agriculture and spread them broadcast over the respective States. Again there was close harmony between the Boards of Agriculture of the different States and the United States Department of Agriculture. All of these agencies united in urging the farmers to produce to the utmost, while farmers and city people alike were urged to conserve and save to the last degree consistent with efficiency and health.

Councils of Defense. Antedating the passage of the Food Production Act, was the creation of the National Council of Defense. This was done in August, 1916. It was the primary purpose of the act to get some degree of mobility into the army, but it was also designed to aid in the production of whatever essentials might be needed during the interruption of foreign commerce. The Council was to consist of the Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor, together with seven advisers. Not much was heard from this Council so far as production of food was concerned.

No sooner was war declared than the State legislatures took action with respect to the duties of the States and created State Councils of Defense, or similar bodies, in all States. These State Councils have worked with the Department of Agriculture in promoting food production, acting in many particulars as a clearing house for both State and national effort. Plans have been made by the Department of Agriculture and carried out by the State Councils of Defense. On the other hand, many problems have been largely local and have been handled altogether by the State organizations. The Council of Defense system has been extended to include in the great majority of the counties of the United States, county councils, and below these in increasing numbers of States and counties, township Councils of Defense. In several States, particularly where agriculture is not the dominant business, municipal Councils of Defense are organized. This plan is followed in Massachusetts and New Jersey.

The main lines of agricultural work undertaken by the Councils of Defense have been the stimulation of the production of such things as are needed in greater quantities than normal production will supply. The stimulation has been of three general kinds. First, an appeal to farmers to do their best in increasing production, and particularly in increasing the production of commodities most needed. Second, assistance offered in the nature of information concerning farm help, seed, or other things required. In cases of

extreme need not only is information furnished but the Council acts as a go-between in securing such commodities as seeds, buying in distant markets and selling to the farmers at cost; machinery has been furnished and financial aid given. Third, closely allied to these aids in production they undertake to facilitate the sale of goods produced.

The Stimulation of Production

In the first place, the increased prices were a great stimulus to production at the time the United States entered the war. Hence whatever has taken place by way of increased production in 1917 and 1918, is the resultant of two forces, price stimulus, and patriotism plus State effort. How much is to be attributed to the one and how much to the other is, in most instances, past finding out. Both have been strongly influential.

The work of increasing agricultural production has centered very largely in the Councils of Defense, on account of the authority given these bodies, although as stated above, a large number of agencies have had a part, and often the superior part in carrying out the plans. The extent to which acreages have been increased has already been discussed. The most tangible results have come from the wheat, potato, and "war garden" portions of the program. Likewise it is a clear case that hog production has been directly stimulated. Other products have been more or less influenced without a doubt, but it is also true that the greater part of the land now in use would have continued to produce some useful crop had no effort been made to stimulate or influence the farmers. The efforts of the Councils of Defense, Department of Agriculture, and allied organizations have been directed mainly in the line of encouragement through appeals to patriotism and self-interest; gathering of information as a basis of the organization of clubs, mainly among boys and girls; assistance in procuring seed, assistance with respect to labor, and in some instances control of labor prices. In a smaller number of cases help of a financial nature has been given in the form of loans; machinery, such as tractors, has been made available; and assistance in finding, reaching, and even creating markets has been afforded. These subjects will be discussed in order.

Patriotism and Self-interest.—This campaign was begun at once, and is still in progress. Farmers are urged through almost numberless posters, newspapers, five minute speeches and bulletins, to produce every possible amount of food. It is shown that the Allies are dependent upon America for food, and that without sufficient

food the war must of necessity be lost. The effect may be in doubt as to the total addition made by this means, but at all events there has been a great change in the particular products most needed, such as wheat and meat, and in a smaller way, in condensed milk and cheese, and potatoes. In the first two products the increase was induced to a great extent by a guaranteed price, while in the other cases no guarantees were made.

Gathering Information.—It was evident in the spring of 1917 that the information available on the subject of food supplies, and agricultural operations, in the production of food were altogether inadequate. It was inadequate because it left the question of the amounts on hand unanswered. Therefore, the quantities to be spared for the Allies were unknown. The amounts needed for home use were likewise not accurately known. We had so long been a nation of surplus material that to calculate the needs on a narrow margin was an altogether new task.

Several States, notably New York, took a very complete agricultural census in the spring of 1917. This particular census was of great use in the settlement of such controversies as that of milk prices which was an acute question almost throughout the year. A food survey was taken as of August 1, 1917, for the country by the Department of Agriculture; a second survey was made during the winter.

By the spring of 1918, the taking of agricultural censuses was the regular order of the day. The Bureau of Crop Estimates strengthened its work greatly by getting a very large number—several thousand per State—of exact reports from farmers as a check on the usual estimates sent in by the reporters. Special censuses of seed stock were taken on a large scale, and an order was issued requiring all dealers who handle five thousand or more pounds of farm seeds annually to report to the Bureau of Markets the quantities on hand. Another special census taken through federal authority was of the labor supply. This was by no means an agricultural measure exclusively, but agriculture came in for its share of consideration with respect to the use to be made of labor. Some of the best lessons in the matter of information gathering are gained from the experience of such States as South Dakota and Oklahoma. In South Dakota all threshermen are required to report the amounts of grain threshed by December first. This will be, if properly administered, the most accurate accounting ever made of the amount of grain grown in a State.

In Oklahoma the assessors as a patriotic service, without additional pay, gathered information on the acreage of the 1918 crops;

the amount of seed which each farmer would need to buy; the amount each would have for sale; the breeding stock on hand; the amount of labor which was likely to be needed in addition to the neighborhood supply.

These censuses have made it possible to proceed with a degree of intelligence in the distribution of essential needs beyond anything ever before known. It did away with speculation, and obviated real shortages at critical times in most instances, and allowed opportunity for substitution where there was no other alternative.

The Organization of Clubs.—The plan of using the club idea in the encouragement of better methods of production has been in use for years; but the exigencies of the war have given it a new impetus. Before the war the number of members reported in boys' and girls' clubs of all sorts—corn, pig, calf, canning clubs, and the like—was less than 900,000. During 1917 the number reached was 2,400,000. The increase in club work in Wisconsin is indicated by the enrollment of 6,000 boys and girls in 1916, and 32,000 in 1917.

Reports are obtained, so far as possible, from the various clubs. Of the total number, 2,400,000, for the country, 350,000 made reports showing that they had produced and conserved $10,000,000 worth of food. This is an average of $28.57 worth of food for each member. Probably those reporting did not produce so much on an average, but even though those not reporting produced but $10.00 worth each, it would amount in the aggregate to over $20,000,000, making $30,000,000 for the entire membership. The significance of this work lies largely in the fact that most of it represents labor which would otherwise not have been utilized at all fully, much of it being, therefore, almost clear gain.

County Agents and Extension Workers.—The numbers of county agricultural agents had been on the increase for some years. In January, 1917, just prior to the entrance of the United States into the war, there were 1,216 county agents employed. By July, 1918, this number had grown to 2,129, an increase of approximately 75 per cent. There are not quite 3,000 counties in the United States, hence there are nearly three-fourths of them provided with agents, and since many counties have almost no agriculture it means that nearly all agricultural counties have such agents.

In addition to the county agricultural agents, are other extension workers such as home demonstration agents, and club organizers. The great majority of these people are doing some sort of war emergency work. All counted, the number of extension workers on July 1, 1918, was 6,166, an increase of over 4,000 doing such work on the same date in 1917.

Not only have the numbers of county agents increased greatly, but at the same time their duties have increased very much. They have been of great use in a wide variety of ways, prominent among which are the help given in finding suitable farm seed; treating the seed grain for the prevention of disease; the purchase and sale of live stock; co-operative buying of feeds—in short they have helped to do anything that could be done through group effort or State aid. Above all they have been effective in creating a spirit of patriotism among the farmers, helping them to realize that the responsibility of feeding the Allies is not a matter of empty words, but a duty.

Government Aid in Procuring Seed.—In years past the seed question has in very few instances been acute, and has, therefore, not required State aid or attention. During the spring of 1917, owing to some important changes in crop plans made after operations were well under way, it was not in all cases easy to get the required seed promptly. This was the case with respect to wheat, and potatoes particularly. The difficulties in 1917 were hardly more than enough to attract attention, and by that means prepare for the situation which developed in 1918. During the spring of 1917, seed potatoes were unusually scarce and dear, and State and county Councils of Defense and allied organizations aided greatly in effecting an equitable distribution of them, at the same time holding the price down. For instance in Wisconsin the State Board of Agriculture bought potatoes, shipped them to places where they were wanted, and sold them at $3.00 per bushel, whereas the trade price at the same time was frequently $4.00.

The great question in 1918 was seed corn, and to a much less serious extent seed wheat, and seeds for some of the minor crops. The corn crop of 1917 was the poorest on record so far as maturity is concerned, with the result that seed corn was extremely scarce. In all the Northern States aid of some kind in procuring seed corn was the usual thing. Several States, for example, Kansas and Massachusetts, took surveys of all seed stock. Other States took more or less complete censuses, largely through the county agents. In Iowa a seed corn census was taken by school district census takers specially appointed. Seed was bought by many States and resold at cost for cash. This was done for example in Michigan, Nebraska, and Wisconsin. In Michigan seed corn was bought to the extent of $346,000 worth. In Utah the State went still further, selling its seed, for the most part seed wheat, however, on time, taking crop mortgages as security. South Dakota, while not reporting the production of seed stands out as one of the leading

States in controlling the situation. It was provided by action of the Council of Defense that no seed corn should be sold with a germination test below 65 per cent, and furthermore prices were prescribed, averaging from $4.00 to $10.00 per bushel, with heavy penalties provided for higher charges. In Indiana the county agents did most of the work in finding seed corn for those in need of it, and through their influence, and the general sentiment developed in regard to the matter, the price was held down to about $5.00 per bushel. In most States prices ranged from $5.00 to $10.00 per bushel with occasional instances of $20.00. Without the machinery provided by the war emergency bodies, the price of seed corn would have been left to private initiative for the most part with the result that it would have been by no means so intelligently distributed over the country while the price left to speculation would, without doubt, have been higher on an average. As it is, the full acreage of corn was planted and the seed used was well up to the usual standard in quality. This gratifying result was due in no small measure to the unusual care with which seed was tested. In Indiana, for instance, the county agents report that tested seed has given about fifteen per cent better germination results than that untested, or carelessly tested.

In the Food Production Act passed by Congress, in August, 1917, provision was made for the use of $2,500,000 as an emergency seed fund. The occasion for aid from the government for the year 1917 was mainly past by the time the bill became a law. In March, 1918, in a deficiency act, the appropriation for seed was increased to $6,500,000. This was passed March 29, about the time corn planting in the southern States begins, and when the farmers of the corn belt are anxious to know where their seed is to come from. The result was that not a great deal of federal aid was available in providing the bulk of the corn for planting. One thing the Department of Agriculture was able to do, however, was to assemble seed corn at several strategic points for distribution for late planting and replanting. These plans were completed at a meeting in Chicago on May 13, 1918. Nothing could better illustrate the wisdom of this safeguard than the situation following the severe frost in Indiana on June 22. The corn in many fields was killed. Although it was late it was not considered altogether too late to plant 90-day corn. The supply of such seed corn at Purdue University was immediately put to use.

War Gardens.—The campaign for more gardens was put on early, that is to say, almost immediately after war was declared. In every city and village of any size people were urged to plant

more gardens and bigger gardens. A National Emergency Food Garden Commission was appointed which undertook to systematize the work and make the appeal general and pointed. The president of this commission estimated that the value of the garden produce raised on land where nothing of the kind grew before was $350,000,000. This would mean about $3.50 per capita. The gardens were trebled in area, and the vegetables and fruit preserved for winter use estimated at three times the usual amount. Over a million acres of city lot land was in gardens,—the largest part of which was not previously tilled. As to the increase in the number of gardens in 1917, it has been estimated at 2,000,000. Reports from State Councils of Defense indicate that the 1918 gardens are more extensive and more productive than those of 1917.

Unused Land

The use of a million acres of land, largely unused previously, for war gardens shows that there has been, and no doubt still is, a considerable amount of land either unused or used for a relatively unimportant purpose. Many vacant lots reported as unused have furnished something in the way of produce before. For example, many of them have produced hay. The need of a greater food supply has brought the old question of land held out of use to the fore. In Minnesota the Commission of Public Safety was asked to invoke the right of eminent domain, which it has the power to do, in order to bring vacant city and farm land into use. The Commission does not see the necessity of doing so, since it has not found it difficult to get sufficient city land for gardens, and has not found farm land held out of use. Should occasion arise, the Commission stands ready to act.

The question of unused lands has received more attention in California than anywhere else so far as can be judged by the available information. The estimate had been made in Washington that there were two and a half million acres of unused tillable land in California. The secretary of the Committee on Food Production of the Commonwealth Club of California reported that there was 700,000 acres which should be cultivated but could not be under the circumstances. An investigation into the same subject by Professor Shaw of the University of California was made, and through newspaper publicity, some 72,000 acres of land were located. About one-third of this land was found to be available for use and was rented later. About 300,000 acres of other land were reported by county agents, horticultural commissioners, and the like. On

inquiry it was found that this land was being used in many cases for pasture or hay, and that the most of it was deficient in rainfall, alkaline, or in some cases too far from transportation facilities to be economically available.

Thus the bugaboo of land held out of use by speculators appears less formidable than many have been led to believe.

Farm Labor

On the question of farm labor there is a great dearth of information. There are according to the estimates of the Department of Agriculture about 14,000,000 men engaged in agriculture. Of these 20,500, or about 1.48 per cent, had been drafted before March 6, 1918.

* * * * * * * * * * *

The number of men taken for the army by the draft alone would not cause any serious shortage in the labor supply, until many more were taken than were included in the first draft, but coming as it does after the ranks of farm labor have been seriously depleted by other drains, it makes a final demand that carries the supply below the barest needs. The country is imploring the farmer to increase his acreage and his yields. To increase the food supply is made to seem equal to service in the army, but how to comply with the demand is another question. The withdrawal of a given number of men is one thing viewed quantitatively. The withdrawal of the given number of men viewed qualitatively may be an altogether different matter. It is hard to replace the skilled farm laborer with such as may become available in response to increased wages. The work is not as well done, it costs much more, especially when viewed per unit of accomplishment instead of per unit of time put in by the worker.

Government Aid.—With the entrance of the United States into the war, the Department of Agriculture undertook to assist in solving the labor question which was sure to arise. The Department of Labor has offices in all States and a plan was devised whereby these offices should co-operate with special farm labor agents furnished by the Department of Agriculture. This plan has been put into practice in nearly all States. The work of the special agent is to obtain information concerning the needs of farmers and the available supply of labor in all rural communities and cities up to 10,000 inhabitants. The Department of Labor undertook to make surveys in all the more populous centers. Both organizations work with and through county agents, Councils of Defense,

agricultural colleges, Boards of Agriculture, farmers' organizations, and the like.

The plan of organization was quite similar in the different States. In Ohio, for example, the State was divided into twenty-one districts, with an employment office in each district. These offices co-operated with the county agricultural agents. An inquiry sheet was circulated among the farmers asking for a statement of the labor needs. About a third of the farmers asked for help for at least some part of the year. By August 9, 1917, not less than 2,400 farm hands had been placed on farms.

Local and State Aid.—The farm Labor Bureau of Baltimore has a plan whereby men go out to the country in groups of five or six and board themselves, working for the farmers of the neighborhood. Over a hundred families from the city were placed on Maryland farms during the summer of 1917.

In several States, e. g., in Maryland, Florida, West Virginia and Wisconsin, an effort to solve the labor question has been made in laws requiring all able-bodied men between the ages of twenty and fifty to work. If they do not find employment unaided the State will find jobs for them, and a heavy penalty is provided for violation of the law.

Help from the Department of Labor in furnishing farm hands is not altogether a new thing.

For several years, since 1914, it had undertaken to direct men to the parts of the country in which the demand for seasonal help, as for harvesting, is acute. At headquarters in Kansas City, 3,922 men were assigned to places during six weeks in the summer of 1916. The applicants "came from all parts of the United States and included teachers, students, miners, machinists, laborers, farmers, and professional men." They were sent into the harvest fields of Oklahoma, Kansas, and Nebraska. The work was continued through 1917 in a similar manner, but the number of men reported was somewhat smaller.

The Result.—The season of 1917 came and went, yet with all the talk of labor shortage the bulk of the crops were tended and gathered with little apparent loss beyond the usual. Wages indeed were higher than formerly, reaching in special cases eight and even ten dollars a day. This was induced by the unusual prices offered for the produce fully as much as by any absolute shortage of labor. For example, tobacco was selling for the unprecedented price of twenty and twenty-five cents a pound. Apples were scarce and dear. Both of these crops in some sections were threatened by frost. It was a matter of good business to pay ten dollars for help

the day a severe frost was predicted if by so doing several times ten dollars' worth of produce could be saved.

The best information at hand suggested that there was a shortage of labor in Pennsylvania, ranging from none at all up to twenty-five per cent in some localities and for certain seasons. In the State of New York according to a special census taken in April, 1917, there was then a shortage of regular farm help of sixteen per cent as compared with the April census of 1916. This shortage was due to the high wages offered in other industries, higher wages than farmers felt able to pay. Yet there was a feeling that more than the usual number of men was needed. A study made in California showed the State to be short of farm labor in 1917, but how short was not determined. The advance in wages for that State was estimated at forty per cent over the rate of 1916. At the same time there was a serious decline, perhaps twenty-five per cent, in efficiency.

The outlook for getting the farm work done in 1918 seemed anything but bright, yet as the months have passed no calamities have overtaken the country on account of a dearth of laborers. In March Congress passed an act permitting the War Department to grant furloughs to soldiers needed for civil employment. On April 2, the War Department issued an order permitting soldiers, not including commissioned officers, to be given furloughs for the purpose of working on farms especially during seeding and harvest times. Farmers were required to make explicit statements with respect to their needs. Local registration boards have exercised a good deal of discretion in the matter of classification of men for the army and have undertaken to see that some responsible person was left in charge of each farm. They have also been able, under the rules, to defer the calling of many men until after the rush of work for the season was past, and while this may mean only temporary relief, it has been of great service.

The men from cities who have had farm experience have been an important factor in the emergency help question. In the surveys made during the winter of 1917–18, over 50,000 city men of previous farm experience signified their willingness to work on farms during harvest. This, of course, is not a large number, but neither was it a large proportion of the city men who eventually offered to render service of this kind. The Department of Agriculture made a rough estimate that over 100,000 boys not ordinarily employed on farms worked at some kind of farm work for a longer or shorter period in 1917, and a much larger number are available for 1918.

It is not possible at this time to make an estimate at all accurate as to the sources of labor supply of 1918. As an example it may be mentioned that the labor agents of the government sent 18,000 men to help harvest wheat in Kansas, while many thousands more went without the aid or knowledge of the bureau. The organization of city men into clubs for farm work; the closing of business doors on certain days in harvest; the offers of labor unions to suspend ordinary work and help the farmers; these are reported the country over. Not always have the farmers taken kindly to the offers of the city men who volunteer to help. A good example of this is furnished in the case of a group of city men in Missouri who offered to work but found the farmers skeptical. The men went out and shocked a field of grain at night without the owner's knowledge. This aroused the interest of the neighborhood and allayed the doubt. Almost at once telephone calls began to come in, and the volunteers had all the work they could do.

While it is not possible to report on the number of laborers found in unusual ways to take the place of the men called into the army, it is possible to assert that up to the close of grain harvest, in all except the very latest of the spring wheat districts, that crops are, so far as matured, safely gathered. The Councils of Defense in Iowa, Nebraska and Michigan, report that no real labor shortage is developing. These must be typical of the general situation.

No shortage does not always mean that there is the usual amount of labor available. It means that in some way the work is being done. In some cases it is done by a greater reliance on machinery. In many cases women and children are employed more than usual. No doubt in many instances plans have been made whereby not so much labor is needed, or at least not imperatively demanded. With such methods of meeting the emergency, along with the better utilization of the available help made possible by organization, and the help of city men and boys, the work can be done and is being done. The outlook for the future, in regard to farm help, is not by any means flattering. Nevertheless, the Department of Labor, assisted by the Department of Agriculture, through the State Labor bureaus and county agents, with the systematic surveys from time to time will be able to anticipate all real needs. This is the first step. The second should be fuller co-operation among farmers in the use of labor. Third, better facilities for transferring labor to places where it is needed most. Fourth, using labor not ordinarily fully utilized, such as high school

boys. Fifth, releasing men from work which can be done by women and employing the men on farms. Sixth, taking steps to see that able-bodied men work. Seventh, the fullest use of labor-saving machinery.

Labor of some sort is still available and, even though high, the price is probably not relatively higher than the prices of the farm produce which it helps to bring to the market. With the aid now at hand, the difficulty of obtaining labor should be reduced to a minimum.

During the past six years the average monthly wage for farm help has been as follows:

	Without Board	With Board
1912	$29 58	$20 81
1913	30 31	21.38
1914	29.88	21.05
1915	30.15	21 26
1916	32.83	23.25
1917	40 43	28 87
1918	47 07	34 92

It will be noticed that wages increased about 25 per cent from 1916 to 1917. The increase from 1917 to 1918 was about 20 per cent.

Financial Aid

Credit.—The United States, and each separate State, has until now, almost without exception, refused to extend direct financial aid to the farmers. It has been asked many times. In the present emergency, several States have made small appropriations of money to be lent to farmers who for the time seem unable to finance themselves. Maine, in the spring of 1918, appropriated $250,000 for this purpose. Mention has been made of the sale on time, by the State, of seed grain, to Utah farmers. In Utah, also, State money was advanced to help an irrigation project out of a difficulty and enable it to go ahead with farming operations.

The federal government has made two moves in the interest of farm finance. In the spring of 1918 Congress granted to the federal Farm Loan Board a sum of $200,000,000 in order that the federal farm banks might not run short of funds. It had seemed that the sale of farm mortgage bonds might not be easy in the face of such attractive offerings as were being made of United States bonds. At the same time, the interest rate on the farm mortgage bonds was increased and it is reported that they are in demand

by the wealthy investors. The second move on the part of the federal government to aid the farmer financially was an order of the President authorizing the Treasury Department, acting with the Department of Agriculture, to advance $5,000,000 to farmers who have suffered losses for two successive seasons from drought. The loans will be handled through the federal land banks. No farmer may borrow more than $3.00 per acre on grain which he proposes to sow for the 1919 crop, nor over $300 as a maximum. It is not intended to make these loans to farmers who are able to borrow locally on their own credit. A grave danger in State loans of this kind is that farmers may be unduly encouraged to continue operations on land which should not be cultivated at all. Further financial help will be accorded a larger number of farmers through the action of the War Finance Corporation which proposes to advance money to banks and trust companies which have made loans to farmers and cattle men. Another indirect means of helping the farmer out of financial difficulties is through more liberal terms with respect to the rediscounting of paper by the federal reserve banks.

The Ohio State Council of Defense discovered that the State Industrial Commission was about to invest $1,000,000 of State funds in bonds. The Governor of the State ordered that the money be deposited in country banks, and the State superintendent of banks directed the country bankers to offer full financial aid to farmers. The bankers were asked to charge not to exceed 6 per cent interest.

Governmental Aid in Farm Equipment.—This is closely related to financial aid, but may differ from it in that the farmer may not wish to own the equipment in question. This is the case with respect to small farmers who may desire the use of a farm tractor but may not care to own one. Again it may not be so much financial aid that is wanted as a chance to buy the required article, such as fertilizer.

One of the most apparent needs of the farmer who has been left short of help by the war, or who, on the other hand, wishes to expand his farming operations, is for more adequate machinery. Horses are expensive to keep, and in some respects seem slow. As a result, the tractor is coming into favor in many sections of the country. However, the tractor is not altogether a true and tried friend, and at best costs a big sum of money. Several States undertook to help the farmers either to buy or rent these machines. The Council of Defense of the State of New York purchased 40 tractors to be hired out to the farmers at given rates per hour.

Competent operators were in charge. The Michigan Council of Defense made a contract with Henry Ford and Son for 1,000 tractors to be sold to the farmers at factory cost, $750 each. While but 550 of these were disposed of by the Council, a great many more were sold on the same basis by Ford agents. Not only was this true in Michigan, but they were on sale in other States at the same prices. In Ohio, the State Council of Defense co-operated with tractor manufacturers in the encouragement of sales. It was planned to sell 1,500 tractors to farmers during the year 1918. It was reported that the goal was likely to be reached. A tractor school was conducted, which 2,000 farmers attended. Smaller schools were held in various counties. The main object in introducing so many tractors is to replace man power.

In a less direct way, several States are instrumental in adding to the farm equipment by stimulating the farmer's interest and perhaps finding credit for him. This is conspicuously true in the encouragement given to silo building. In Iowa the State Council of Defense has solicited funds with which to conduct a silo campaign, urging farmers to build. In Indiana county meetings are held and definite numbers of silos suggested for the county. The plan is to induce the building of 10,000 silos in time for the 1918 crop of corn.

The Fertilizer Situation.—There are three primary fertilizer materials used in "commercial fertilizers." These are nitrates, phosphates, and potassium. The cotton, tobacco, truck and citrus fruit growing districts of the United States have for years been greatly dependent on fertilizers of this kind. The main sources of supply have been Chile for nitrates, Germany for potassium, while phosphates have been found in abundance in the United States.

Before the war, we were importing a million tons of potassium from Germany, which country had a virtual monopoly of the world's available supply. In 1913, muriate of potash from Germany sold here for $39 a ton. In 1915 so desperate had the situation become that it was quoted at $500 a ton. Importations had virtually ceased.

At present, we are getting along on a very short supply of potassium. The natural deposits in this country thus far discovered are very small, and in some instances hard to work. There is strong hope of being able to recover potassium largely from the wastes of wool and wood and from cement manufacture and blast furnaces as a by-product. The most hopeful of all, however, is the use of sea kelp which contains a large percentage of potassium salts. The government is experimenting with all of

these possible sources of supply with a view to furnishing the needed potassium from our own national resources as rapidly as possible. In the meantime, how great will be the loss in agricultural production due to a lack of potassium fertilizer is a matter of conjecture.

The nitrogen situation while perhaps no more acute than that with respect to potash, seemed a little more possible of solution and for this reason an attempt was made by the government to aid in the matter. Since the nitrates were to be obtained in Chile, it was a question of shipping and price, both of which could be managed more advantageously by the government than by private enterprise.

The Food Control Act, August 10, 1917, authorized the President to use $10,000,000 in the purchase of nitrates for fertilizer to aid in the production of crops during 1917 and 1918. It was too late to do anything for the 1917 crops, but measures were at once taken for the use of the fund with which to make the purchases for the 1918 crop. The appropriation was sufficient for the purchase of about 100,000 to 130,000 tons of Chilean nitrate. The Department of Agriculture has charge of the distribution of it. The high prices at which it must be sold, about $75.00 per ton, in order to cover the expenses, preclude the use of it for general purposes and restrict it mainly to that of fertilizing truck and market garden land. The amount which can be handled with the money available is little more than a third of the normal quantity used.

The excessively high prices at which the nitrate is being held are said to be due to the high price of fuel needed in its production in Chile. Could the Chileans get cheaper fuel we would get cheaper nitrate.

The Department negotiated for 120,000 tons, but was able to deliver but 75,000 tons. The remainder of the 120,000 tons purchased will be shipped, but of course will be much too late for use in 1918. The demand for nitrates for munition purposes is so great, that it is doubtful whether there will be any considerable quantity available for fertilizer next year.

Marketing

Much attention has been given to the subject of marketing, mainly from the standpoint of possible economies. The agencies doing this work are primarily the Bureau of Markets, various agricultural colleges, and Councils of Defense. The Bureau of Markets has merely enlarged its scope; the colleges, likewise,

have gone ahead with work very similar to that which was already in progress, although some of them have practically begun at the beginning; the Councils of Defense have taken hold of the marketing work where emergencies have virtually demanded it. In addition to these agencies many city boards of commerce have undertaken to aid in marketing by installing or encouraging the installation of municipal markets. Also various civic bodies such as women's clubs have assisted locally in many phases of marketing.

The Bureau of Markets

It would be altogether impossible to separate the work of the Bureau of Markets as it was developing before we entered the war from its special undertaking brought about by the war conditions. Many projects were already under way which have been found extremely useful and which have on that account been hastened to greater development in order to meet the needs. Marketing problems had for several years been recognized as of paramount importance, but with the unprecedented problems brought about in 1917, it was evident that marketing was in some cases not merely as important as production, but was the whole question of the supply of necessary goods, since goods not marketed are nonexistent so far as use is concerned. The Bureau of Markets can not solve all marketing questions, but it has been found extremely helpful in the solution of many of them.

The work of the Bureau of Markets has been closely associated with the Food Administration and the various State emergency organizations. Much marketing information has been imperatively needed by the Food Administration in order to carry its plans into effect, and to a great extent the Bureau of Markets has been able to furnish it.

The work of the Bureau of Markets may be discussed under three heads: investigational and demonstrational service and regulation.

The early studies of the bureau were mainly in the line of investigations of marketing conditions and facts. The war emergency has not stopped work of this kind but has put emphasis on the service and regulation features. Investigations are demanded in such fields as the cost of production of many products. This is because of the faith of many people in cost of production as the determining factor in prices, and which must therefore be known if prices are to be fixed by governmental authority. For these purposes it has been necessary to rely mainly on studies already made.

Investigations.—Investigations have been made, during the past year, especially with respect to immediate results. Prominent among these are studies of the processes of handling and shipping perishable commodities, the questions of packages, of refrigeration, of expedition in movement, of goods. A study of prices and quality of creamery butter is a good example of work of an investigational nature carried on by the Bureau of Markets, and which has a greater significance on account of the war and the interest in high prices, but which would no doubt have been made in substantially the same form had there been no war.

Service.—The work of the bureau which has conformed closely to emergency demands is in furnishing a market report service, and in enforcing regulation measures. The market report service was started some months before we entered the war, and had proved its worth in the marketing of perishables. During 1917, its scope was very greatly widened. While of great interest, the market report system in connection with perishables does not bear very directly on the war. Briefly it consists in gathering from the railway division superintendents each evening a report of freight shipments on their respective lines. These reports are prepared for mailing during the night and sent out from several different centers the next morning. At the end of each week a review of the week's shipments and prices is published.

The news service is applied in a very similar manner to the marketing of dairy and poultry products. A system of reporting seed stocks and prices promises to be of assistance in the future. Certainly it would have been worth millions of dollars to the country had it been well organized at the time the war began.

Something closely akin to the news service in connection with perishables has been developed for live stock and meat. The need of increasing the supply of meat was recognized as soon as we entered the war. The Bureau of Markets very promptly organized a system of reporting the amounts of meat and eggs, in all the important cold storage houses of the country. Also the state of the trade and current prices are reported daily from about six great cities. Since the terms in use by the trade do not have the same meaning in all markets the bureau is undertaking a standardization of terms.

For live stock the bureau has undertaken the important task of reporting the leading facts concerning feeding stock and finished stock whereby it is possible for interested parties to learn what is being done at a given time, and what is likely to develop in the near future. A beginning has been made in getting information on the stock which is marketable at a given time.

With respect to live stock shipping an important arrangement has been effected concerning the time of arrival of the stock. For many years the custom of shipping so as to get to market Monday or Wednesday has been prevalent. In December, 1917, the special committee on national defense of the American Railway Association requested the Bureau of Markets to advise the live stock interests that shipments would be accepted according to zones whereby the arrival of the stock would be so timed as to spread it over the week more evenly. Local railway agents were advised to accept shipments from points within 300 miles of Chicago for arrival there on Tuesdays, Thursdays, Fridays and Saturdays only. Stock more distant, but requiring not over 36 hours for transit were shipped for arrival on Sundays. This was a change the farmers had been asking for, and while the packers did not object, the difficulty was to bring it to pass. The authority of the government together with the co-operation of the railroads was able to accomplish the reform with no delay. There were many disadvantages and few, if any, advantages in the congestion of stock at the yards during the first half of the week. During February, 1918, under the new arrangement, instead of heavy arrivals on Monday, the percentage of the week's receipts for that day were reduced almost half, while the Tuesday and Thursday receipts were almost equal to that of Monday, Tuesday's percentage being double that of 1917.

The bureau furnishes information concerning hay and grain in a manner similar to that noted above for other commodities. The reports show the stocks in dealers hands, receipts and shipments, and prevailing market prices. This information has assisted in the saving of much "back haul" by finding the nearest available stock for a given market instead of dealing mainly through a central market from which much reshipping is always necessary. The information regarding hay and grain has been of great value to the War Department.

Standardization.—Much commendable work is being done in establishing standards. This was provided for in the Food Production Act. During 1917, an act was passed at the instance of the Bureau of Markets providing for the standardization of a great number of containers for fruits and vegetables. Now for the first time, all interstate shipments of fruits and vegetables must be in standard containers. This provision will probably result in the use of standard containers for shipments within States also. Manufactures are already discontinuing the making of short measure containers. A system of grading potatoes to standard

size was put into vogue in several States during the spring of 1918. And perhaps as important as any of these, the Grain Standard Act, passed several months before we entered the war, was put into effect. By these acts and departmental orders, standardization is being brought about with a rapidity not previously imagined.

The Warehouse Act, in 1917, puts the cold storage and common storage houses of the country clearly in the public utilities class. They are required to store for any one without discrimination; must not issue certificates without actual holding of the product; must make reports to the Secretary of Agriculture. Under the operation of this act the Bureau of Markets is enabled to publish from time to time an authentic report on the amount of foodstuff in storage.

The regulation duties of the bureau consist in responsibilities in connection with the enforcement of the above mentioned acts.

The Grain Standard Act, passed in 1916, is being put into practice and furnishes information such as could not otherwise be had. The importance of such information in time of war is invaluable.

Motor Trucks.—The congestion of freight traffic on the railroads had led to the development of many motor truck freight lines. Good roads are of course essential for satisfactory motor truck service, but where the roads are usable in all, or nearly all, weather conditions, the development of motor truck freight service seems assured. The Bureau of Markets has made investigations as to the possibilities of motor truck freight service, and in some instances has supervised shipments. A motor truck route from Vineland, N. J., to New York City has been established over which trucks travel regularly, picking up eggs from producers and delivering them, direct to wholesale dealers in New York City. The first load went through without a single egg being broken and made better time than express shipments.

The Bureau of Markets has opened offices in several cities as clearing houses for information of both producers and motor truck operators in order to facilitate the work of moving produce.

Railway Service.—The bureau has done much work in connection with railway transportation. One question which it has helped the railway management to solve is that of freight embargoes and the exceptions that should be made in favor of agricultural products. The bureau has put before the Commission on Car Service of the Railroad Voluntary War Board, and later the Director General of Railroads, prompt and accurate information with respect to the

need for cars in many particular sections; not only the shipment of products has been facilitated but also the shipment of supplies needed by farmers. The efficient use of cars has been the end sought in all instances. This work is in the formative stages, it being planned to develop it much further.

Efforts to Bring About a More Direct System of Marketing

This work is being done by the Bureau of Markets, State Councils of Defense, and various civic organizations, the latter usually of a local character. The work of the Bureau of Markets in this regard consists mainly in making reports which appear in the city papers. By this means those interested in the market know the leading facts as to supplies and prices. Many Councils of Defense have marketing committees which undertake to aid in solving marketing problems. One of the most thoroughly organized committees of this kind is in Pennsylvania. Over thirty farmer curb markets were established in this State during 1917, and for the most part were a success. County food surveys were in progress with a view to marketing all food possible within the county. Efforts are being made to furnish growers information which will enable them to market profitably food which would otherwise be a drug on the market. Assistance is given in the matter of relieving congestions of foodstuff in city markets, the plan being to get it into the hands of people who are able to take care of it without waste. Much has been done in developing the cash and carry plan. Also model stores have been organized, all unnecessary costs being eliminated.

A very effective kind of help has been rendered on several occasions by putting on a "drive" for the consumption of some article likely to go to waste. This was done for potatoes, in several States, particularly in those having the surpluses, as Michigan, Wisconsin, Pennsylvania, and Idaho.

One of the most elaborate efforts in the direction of economy in marketing is reported from Maine.

* * * * * * * * * * *

The co-operation between State colleges of agriculture and the Bureau of Markets whereby a marketing agent is stationed in the State has experienced a rapid growth. About half of the States are now on this basis. As examples of the work it may be noted that in Kansas and Iowa, State clearing houses have recently been established furnishing information on farm produce for sale by farmers. This plan if it can be made to work should eliminate a

considerable part of the middleman charge in connection with the goods in question.

A great many local organizations, such as women's clubs, have inspired the opening of municipal markets. The information concerning the operation is not available. Many of them have succeeded so far as continuing to run is concerned. On the other hand, the problem of the municipal market is not a simple one, and whether these newly founded organizations will hold together after the impetus given them by the war is gone is a question. At present the unpaid service of a large number of public-spirited women is a factor, probably a deciding factor in their success.

The interest in cutting down prices has stimulated the attention given to direct shipments of foods by parcel post, though without any prospect of making such marketing practicable for any considerable number of farmers On the other hand, the savings resulting from the cutting down of delivery costs in the cities, through "cash and carry," charge for delivery, and co-operative delivery, promise much in the way of ultimate savings which eventually must benefit both producer and consumer.

CHAPTER XXVII

AGRICULTURE IN RECONSTRUCTION

1. The Present Crisis and the Probable Future of Our Agriculture [1]

In considering the great volume of discussion of the recent crisis in our agriculture one is struck by the fact that almost all of it has been from the point of view of the immediate situation and but little has been said of the long-time aspects of the problem. It is rather surprising also that so much reliance, apparently, has been placed, both by the popular mind and by the supposedly more thoughtful leaders, in such immediately applicable palliatives as more and cheaper credit, lower freight rates, reforms in marketing, co-operative action, and tariff protection. It is true that the situation demanded immediate action and some of the measures may have been justified by the degree of temporary relief they are affording; but it is very evident that the ills of agriculture are the result of more far-reaching and more permanent causes than those to which they have usually been attributed and that genuine relief from them must be sought through means quite different from those so urgently demanded by the farmer's numerous voluntary spokesmen.

An analysis of the present agricultural situation, and causes which have operated and are still operating to bring it about, seems to justify the conclusions: first, that the present depressed condition of our agriculture is due primarily to certain more or less permanent results of the World War, first, in the direction of expanding our agricultural output and second, of impairing our foreign market for agricultural products and of redirecting the currents and changing the content of our international trade; second, that the recovery of our agricultural industry depends upon the adjustment of our agricultural production, both qualitatively and quantitatively to the domestic market; and third, that the result of these necessary adjustments will be the beginning of a new era in American farming, representing as profound a

[1] C. L. Holmes, "The Economic Future of Our Agriculture," *The Journal of Political Economy*, Vol. XXXII, No. 5, October, 1924, pp. 505–525. Reprinted by permission of the author and the publishers.

change as that which came with the shift from self-sufficing to commercial agriculture which took place during the second half of the nineteenth century. It is to a consideration of these longer time aspects of our agrarian problems that the following discussion is directed.

The Agricultural Depression

The immediate causes of the farmer's distress are to be found primarily in the unfavorable alignment of prices as between agricultural products and those of the other industries; and secondarily in the heavy burden of fixed charges, a large portion of which were assumed during his recent prosperous years, of which for the most part, he is unable to rid himself. The maladjustment of agricultural prices to those other commodities may be judged from current index numbers. There is available no adequate quantitative measure of changes in fixed charges.

The most obvious effect of the war on American agriculture was to stimulate production and to expand the industry. A comparison of the census figures of 1910 with those of 1920 shows that there was an increase of 45 million acres, or almost 15 per cent, in the cropped area of the country. The data of the United States Department of Agriculture indicate that the major portion of this expansion came during the war years as a direct result of the stimulus coming from war demand. While there was a vast area of new land added to the farming area of the country during the ten years, most of this was along the margins of our well developed agricultural areas and remained raw prairie or stump land. In very large measure this expansion in the cropped area took place in the older agricultural sections and represented the shifting of land already in farms from a less intensive use in pasture to a more intensive use in crop production. The effect of this increase in acreage was to increase the volume of production and in this the result was augmented by a succession of seasons unusually favorable to high yields which still further raised the output above the normal volume. At the same time there was a very substantial though less conspicuous increase in the production of live stock, particularly of swine and beef cattle.

It is significant at this point to contrast the nature and effects of the war stimulus on manufacturing and agriculture. During the first two years of the conflict the attention of our industrialists was being more and more turned to the profitable business of supplying munitions of war to the belligerents. With our entrance in 1917 our own government became the most active

buyer of these goods, contracting for vast quantities on liberal terms, thus diverting in the largest measure possible the activities of our manufactures from normal lines into special and temporary fields of production. This situation worked to the economic advantage of the industrialists in two respects; first, it enabled them to make the necessary expansion in full knowledge of the temporary character of the production and to bargain with the government in the drafting of contracts on the basis of short time utilization of their fixed capital. Moreover, the contracts secured from the government enabled them to gauge output exactly and to be sure of disposing of their product at a predetermined price. In the second place, this diverting of production from normal lines served to reduce the stock of goods ordinarily demanded to an extremely small volume so that with the close of the war and the relaxation of enforced economies, the consuming public was most insistently demanding goods of which the shelves and storehouses were practically empty.

In contrast to the condition in manufacturing we find that patriotism and the war demand called for substantially the same products from the farmer that he was accustomed to produce; but they were wanted in much larger volume. It was inevitable that there should be a piling up of stocks of his products when the abnormal demand should have passed. Moreover, with the exception of the guaranteed wheat price of 1919, there was nothing analogous to the government contract to take this surplus off his hands at a renumerative figure and there were no alternative lines of production to which he could turn and find for his products a crowd of eager buyers.

There is little doubt, also, that in the demoralization of the European market American agriculture is relatively a heavier loser than American industry. Historically our agriculture has been built up on the basis of the disposal of the surplus of its production over domestic needs to the industrial population of Western Europe. It is true, also, that nonagricultural products made up fully half the value of our exports at that time; but our chief market for these things was not found in the belligerent countries. Further, the war and the new tariff have combined more nearly to monopolize the home market for manufactured goods in the hands of domestic producers, than to work any similar benefit for agriculture.

The question may well be asked why, in the face of falling demand and such decidedly unfavorable exchange ratios between the products of agriculture and those of other industries, does the vol-

ume of agricultural production remain so large? For it must be admitted that in the three years following the crisis of 1920 the total crop acreage showed a reduction of a bare two per cent over that of 1919 and the production of live stock actually increased. The reason is to be found in the inelastic nature of the agricultural industry. This inelasticity prevents such rapid and great expansion in times of rising price as is typical of other industries, but its more conspicuous effect is to prevent a prompt and substantial contraction of output when changing economic conditions would seem to make such contraction imperative.

There are three outstanding reasons for this inelasticity. First, a very high percentage, comparatively, of the total investment in the farm business is in land and fixed capital, making for a high proportion of fixed to variable expenses. In businesses such as merchandising and manufacture where the major portion of the yearly outlay is for labor and raw material, a curtailment in production works something like a proportional curtailment in costs; but in farming where probably not less than 60 per cent of the annual production costs represent interest and depreciation on fixed assets, 25 per cent the imputed wages of the farmer and the members of his family, and only 15 per cent the wages of hired labor and other direct cash outlay, curtailment of production brings so little savings on variable expenses and sacrifices the use of so large an amount of undisposable resources that contraction of production is in most cases economically impossible.

The second cause of the inelasticity of agriculture is to be found in the inertia of the agricultural population. It will be said that reduction in output under adverse price conditions will be brought about by a shift of a portion of the working population from farming into more profitable fields of effort sufficient to re-establish the equilibrium. There is undoubtedly a certain amount of this movement in any period of agricultural depression and in the long run it is of vital importance in economic adjustment. The trouble with its serving as a means of adjustment in an emergency such as the present is that it acts so very slowly. Farming is both an occupation and a mode of living. There is such an intimate connection between the business and the personal and family life of the farm population, the home is so integral a part of the productive plant, and the productive operations so large a part of the home environment, that a decision to abandon farming for an industrial job involves far more than purely economic considerations.

A third reason why the agricultural output is not reduced in response to a price reduction is the large measure of self-suffi-

ciency which still characterizes farming in spite of the commercialization which our agriculture has undergone. On the great majority of American farms from one-third to two-thirds of the food supply is raised on the farm. Shelter, and frequently fuel, is a contribution of the farm plant. In periods of depression when unemployment appears in all fields of production, farmers are loth to leave a situation which offers the certainty of even a meager satisfaction of their wants for the uncertainty of an industrial position where the loss of a job means entire cessation of income. Thus in the fall of 1922, when Iowa agriculture had just experienced its two most disastrous seasons of a generation, there was a brisk demand for farms to rent.

But little further need be said about the present state of our agriculture. Investigations show quite consistently that not only have our farmers been forced to lower standards of consumption but that there is a noticeable, and in some regions an alarming, dissipation of their business capital quite aside from whatever shrinkage there may have been in the value of farm land. This wasting of capital is manifested in failure to replace equipment and make normal repairs and replacement of buildings, fences, and other farm improvements.

Foreign Trade and American Agriculture

As stated above, American agriculture grew to its present proportions under conditions of dependence on the foreign market for the disposal of a large proportion of its production. This exportable surplus of agricultural commodities has been made up for the most part of pork products, wheat, and cotton. Just before the World War, we were exporting, according to the average figures for 1907 to 1913 inclusive, about 12 per cent of our pork and lard, 20 per cent of our wheat, and 66 per cent of our cotton. During the war years, 1914 to 1918, these surpluses amounted to 14.5 per cent of our pork and lard, 29 per cent of our wheat and 48 per cent of our cotton. From 1919 to 1921, representing post war conditions, these percentages were 18, 34, and 55 respectively. As compared with this very considerable exportable surplus of wheat, corn, and pork, we find that our production of beef, dairy products, fruit, and feed crops was very little larger than enough to supply our domestic demand. Prior to the war we were exporting about 2 per cent of our beef. During the war this rose to 4 per cent, and has since dropped back to 3 per cent. Our dairy exportation during the last twenty years would hardly

counterbalance our imports. We find in general that the agricultural commodities whose production is practically limited to the home demand have suffered the least in price declines while the prices of those of which we normally have such a large exportable surplus, and whose production was expanded by the war, have for the most part declined sharply. Wheat and pork are outstanding examples of this latter class.

A considerable amount of misapprehension seems to have arisen over the fact that the physical volume of our exports have been maintained at such a high level since the war closed. It is argued that the foreign situation can have nothing to do with the present low purchasing power of farm products, inasmuch as we have been sending to Europe shipments of pork, lard, and wheat far in excess of our normal shipments before the war, and even during the conflict. The fallacy in this argument, of course, arises from neglecting to consider the effect of this increased supply and the decreased purchasing power of the European people upon prices. It is clear that with our enormous production and the hopelessness of storing the surplus for higher prices, we were willing to dump it upon the European market for what it would bring. The fact that Europe has been taking our products at bargain prices in no way negatives the fact that she is a less eager bidder for our commodities than before the war. Europe has been able to absorb a larger amount of these things than usual, first, because their production of the same commodities was curtailed by the devastation wrought by the war and, second, because they were cheap. It is also to be remembered that the demand for our products which has existed in Europe almost to the present time was supported by the large volume of loans extended from this country both by our government and on private account. The period of European borrowing to finance food importation has passed. There seems also to have been a considerable degree of rehabilitation of European agriculture. It is significant that the huge trade balances of the years just following the war have disappeared, and that for 1923 it reached the low figure of $79,370,000.

The probably permanent nature of the new foreign market situation is perhaps not sufficiently appreciated. We are accustomed to think of Europe's low purchasing power as being due entirely to economic exhaustion and political chaos. Too little attention has been directed to the long-time effects of the developments brought by the war. The most significant and permanent of these is the reversal of the debt balance between the United States and Europe.

It is a well-known fact that prior to the war we had a very large so-called favorable balance of trade. Including merchandise and silver, this excess of exports over imports as given by Vanderlip and Williams, amounted to an annual average for the period 1896–1914, of $552,800,000. This sum was offset, of course, by the so-called invisible items of our foreign trade, estimated as follows: net interest payment on borrowed capital, $160,000,000; expenditures of American tourists abroad, $170,000,000; remittances of immigrants in this country to friends and relations abroad, $150,000,000; net charges on ocean freight, $33,700,000; insurance and other minor items, $30,000,000; importation of gold, $9,200,000. For the five years ending June 30, 1914, the average balance of trade was $572,000,000, with a corresponding increase in the invisible items.

A nation may have an excess of imports over exports either because it is borrowing heavily and receiving the proceeds of its loans—as is normal—in goods, or because other nations have borrowed from it in the past to so large a volume that the interest payments—also normally in goods—exceed its current lendings. Or conversely, an excess of exports over imports might be due either to the loaning of capital abroad or to the paying of interest on capital previously borrowed from foreign countries.

This large pre-war trade balance of ours was the logical concomitant of the conditions of our capital balance. We were deeply in debt and had to pay an appreciable proportion of our annual income to foreign capitalists. However, in spite of our position as debtor, our trade and industry were in a very favorable condition considering the stage of our industrial development. The borrowings of the past had been used productively in the development of our resources and were bringing large returns over the necessary interest payments. American agriculture was in a particularly advantageous position. Much of the proceeds of these loans had been used in providing transportation facilities which made European markets accessible to the American farmer on favorable terms. The receipt of large sums as interest by western Europe enhanced its purchasing power. Europe's demand for outside goods was primarily for farm products rather than manufactures. The American farmer's prosperity may be said to have been based very largely on this position of our nation in the matter of international trade and capital balances.

What happened to the international capital balance as a result of the war is a familiar story. As early as 1914 American securities began to move out of the hands of European capitalists to finance

the unusual war purchases made in America. As the European struggle advanced, loans, both public and private, were resorted to as means of payment for the rapidly rising excess of our exports over imports in the European trade. After our entry into the war in 1917 the large volume of credit extended by our government to the allied governments made possible a continuation of this excess on an even greater scale. For the four years following the armistice a very large, though declining, excess of exports over imports was made possible not only by public borrowing during the first year but through the extension of credit by private American capitalists and exporters to private interests in Europe. This movement went so far as to convert our pre-war net debt of $4,000,000,000 to a credit of almost unbelievable size. According to the best available figures the net amount of American capital, public and private, now invested in foreign countries is approximately $15,000,000,000. Some small portion of this is invested in Canada and other non-European countries, but the great bulk of it represents credits we have in Europe itself.

We are here interested in this great change in the capital balance with Europe primarily from the point of view of its effect on future trade balances, particularly as they concern our agriculture. It is obvious that if interest on this vast debt to America were being fully paid it would more than counterbalance the invisible items still remaining against us and thus—barring a substantial expansion in capital loans from this country—reverse our balance of trade. Vanderlip and Williams, writing in 1920, estimated that total American interest receipts from abroad would in 1923 be $740,000,000. This was made at a time when the estimated total debt due America was $12,000,000,000 and was based on the expectation of full interest payment on all interallied debts at the contracted rate. Since then the total debt has increased but the expected interest payments are not being made. The English debt has been adjusted to a lower rate, and France and Italy have not yet begun interest payment. It is likely that with the interest on the private portion of the debt and the $188,000,000 of interest and principal the British have contracted to pay, that our total receipts of this sort for 1923 were approximately $460,000,000, or almost enough to counterbalance the invisible items against us, which were estimated by the writers quoted above to reach $480,000,000 in 1923. If Italy and France make settlements similar to that made by England the receipts of the United States on interest and capital account will be increased by approximately $187,000,000, bringing the total to almost $650,000,000. This

great sum would cover the invisible debit items against us, including tourists' expenditures, immigrants' remittances, etc., and leave an excess of probably $160,000,000. This must of necessity mean a reversal of our balance of trade in merchandise unless we should greatly increase our current loans to Europe, a development hardly to be expected. It seems likely that even before interest payments on the part of France and Italy are begun our trade balance may be reversed. The greatly reduced amount of this balance for 1923 is indicative of such a change.

Change in debtor and creditor relations between nations obviously acts as a cause of change in the balance of trade. The necessity of contributing taxes for the payment of interest on the public debt, or remitting directly the interest on private international loans, reduces the purchasing power of the debtor country, thus lowering prices there; while the receipts of interest, either by reducing the amount of taxation when the government receives the payments, or by directly increasing the income of private capitalists, increases purchasing power and raises prices in the creditor country. Thus through the medium of price levels the flow of goods between debtor and creditor countries is automatically adjusted to meet the capital and interest obligations.

But here we need to distinguish between the technical and actual aspects of the situation. Technically the United States has been greatly benefited by this change from a debtor to a creditor status. In the long run this technical advantage will become a very real one. Immediately, however, it is quite otherwise. Coming so swiftly it has thrown our production and the demand for our products violently out of equilibrium. The lowered purchasing power of Europe has been felt most severely by the American industry which was most dependent on Europe for a market. That industry is agriculture. It seems clear that Europe, from this time on, will seek either a greater and greater degree of self-sufficiency in the way of food products or she will attempt to pay for her current importations in products of her own industry. In view of her interest obligations as well as the payments of principal which already England has obligated herself to make, it is clear that her payments to us are likely to equal or even exceed the invisible items of our foreign trade which up to this time have accounted in large measure for our excess of exports, and that we are likely to receive from Western Europe a larger volume of goods than we export.

A great deal of emphasis has been placed by certain people upon the importance to agriculture of our participating in European affairs in order to hasten rehabilitation there. It is doubtless

true that the purchasing power of Europe would be in part restored by the settlement of its political and international difficulties. However, if by some magic Europe could arrive at political stability over night, the pre-war opportunity for the disposal of the surplus of our agricultural products would not be restored. The changed debtor-creditor relations already cited would prevent a resumption of the old relations. It is probably true that such conditions would encourage a moderate borrowing policy on the part of Europe for purposes of economic rehabilitation which would mean a minor expansion of trade; but the type of goods needed for rehabilitation would not be primarily agricultural, but would consist very largely of products of our nonagricultural industries. Such a development would lighten somewhat the shock of changed conditions upon our agriculture, but it would not restore it to its pre-war prosperity. However, it seems that we are going to have to wait a considerable period for any such stabilization. Meantime the industrial and commercial adjustments both in England and America will have followed new lines. It is altogether likely that England will pay her obligations to America by means of such manufactured goods as may flow into the country in spite of the tariff, and that she will continue to take very considerably less than formerly of wheat, meat, and even of our cotton, getting a larger and larger supply of these staples from her own dependencies and from South America and the Orient, countries with which her capital account remains more favorable than with the United States. The same is likely to be true to a lesser extent of France, Germany, and Italy. It is true that one cannot measure the total effect of these changes in terms of the direct trade between any two given countries. Triangular trade relations will be set up, but in view of the situation in the countries which will participate in such trade, it seems clear that the major demand for our products will be in the way of manufactured goods, rather than in the products of our agriculture.

Domestic Industry and Our Agriculture

Thirty years ago American agriculture was suffering from a depression fully as severe as the present one. The relief from that adverse condition came fully as much through the growth of foreign outlets for agricultural products as through the expansion of the home market. If the foregoing analysis is sound, the farmer in his present emergency can depend but little on the restoration and growth of his foreign market. His only alternative source

of relief is the growth of the domestic market and an adjustment of his production to its requirements. It is well, therefore, to examine, so far as possible, the conditions affecting the extent and direction of our probable future industrial development. No thoroughgoing examination of these conditions is possible here, but certain broad aspects of the situation and its potentialities may be pointed out. The question has two general aspects: first, have we the financial and technical requirements for a marked expansion in our nonagricultural industrial output; and, second, will adequate market outlets be available to absorb the products of a very greatly expanded American industrial society?

Taking up the first of these aspects, we may note that the first prerequisite of production is financial capital. In order that a people may control the destinies of their economic development they must possess adequate purchasing power by means of which they get and wield control of the technical or physical factors of production. It is important not only to have abundant resources, but to hold the equities in them. The changes cited in the previous section have put the American industrialist in a very favorable position in this regard. Not only does he hold full property rights in his own means of production, but as a result of the war he has accumulated substantial claims on the productive capital of foreign countries. Capital, in the sense of an entrepreneural control fund, was never before so ample in any country.

The next prerequisite is an ample supply of actual capital goods. It seems to be the experience of all new countries that development at first and for a very considerable period must be painfully slow. This is very largely for the reason that the collective industrial plant is in the process of construction and expansion. Economic production in this period is very largely exploitive. It consists for the most part in appropriating the gifts of nature. However, during this period a productive plant is gradually built up and at length a point is reached where there are sufficient capital goods in existence not only to produce ample consumption goods for current needs but also rapidly to expand the supply of production goods where need arises. The tremendous plant expansion in the war industries in 1917 and 1918 would seem to indicate that American industry has matured to the point where, so far as equipment is concerned, it is capable of almost any rate of expansion which a growing demand for its products may justify.

The third prerequisite of industrial expansion is an adequate supply of raw materials. If these materials can be drawn almost altogether from the domestic natural resources the condition

is so much the more favorable. No cataloging of our own natural resources is necessary or desirable here. In proportion to the probable industrial demands upon them, even under a very substantial expansion, our resources probably far exceed those of any other nation. We are abundantly supplied with water power, fuel, and ores.

Looked at from the standpoint of the immediate present, the supply of labor would seem to be the limiting factor on the production side. We have adopted a rather stringent immigration policy, and probably but few of us not financially interested in industrial enterprises would like to see this control relaxed. Moreover, population is slow to move from unprofitable agriculture to seemingly more remunerative industrial jobs. Increase in the birth rate is likewise a rather slow means of increasing our labor force. However, when looked at from a long-time point of view the labor supply will probably increase amply, even under present restrictions. The present favorable economic position of American laborers will in the long run both increase the birth rate and draw men in large numbers from agriculture into industry. Already tens of thousands of families have abandoned unprofitable agricultural enterprises to join the ranks of the industrial workers. Probably in the future the movement of negroes from Southern farms to Northern factories will be looked upon as one of the most significant events in economic history. Even under the present immigration restrictions appreciable additions from abroad can be made to our labor population. Under pressure of competition of these new increments of labor supply, if not by means of government control, organized labor may be brought to relax its quasi-monopolistic control of wages, employment, and productive output.

In view of all these conditions it seems self-evident that our nonagricultural industry is capable of indefinite and very rapid expansion should economic conditions furnish a sufficient stimulus. Quite another matter, however, is the problem of a growing market commensurate with an expanding industrial output. The European situation constitutes quite as effective a barrier to trade in the products of industry as in farm products.

Economists long ago pointed out that in reality the demand for goods comes from the production of other goods. In an industrial society in which production is well adjusted, the products of each industrial group constitute that group's purchasing power, to be directed to the absorption of the products of all the other groups. In the present world situation the question of whether

an expanding American industry can find an adequate outlet for its products very largely hinges on the adequacy of the market it can create for itself; for the home market must, for a considerable time at least, be the main dependence. In other words, can we achieve a fairly high degree of national self-sufficiency? Can we, within our own country, maintain a reasonably broad range of consumption and a rational standard of living and at the same time realize an economic utilization of our resources? Whether we can do these things depends on the fundamental prerequisites just discussed, namely, the volume of our accumulated capital, the degree of our technical efficiency, and the volume and range of our natural resources. As already pointed out, our capital supply is ample and our technic is probably as high as that of any other people. In the abundance and variety of our natural resources, we have a distinct advantage over other industrial nations, such as England, for example, whose limited area and lack of raw materials make impossible any considerable industrial expansion without dependence on foreign markets. We should, therefore, be able to achieve a very high degree of national self-sufficiency and sacrifice but little of all that constitutes a highly developed economic life.

However, we cannot expect, nor do we desire, to be wholly self-sufficing. Trade with Europe will continue though at a slackened pace. However, a more important foreign market for our industrial products is likely to develop in another quarter. The newer countries of the world, in both the eastern and the western hemisphere, together with the ancient countries just awakening to new economic and social life, are now in various stages of development of their natural resources corresponding to that of our own country of twenty-five, fifty, or even a hundred years ago. They are borrowing countries. They, like America, in the recent past, have been drawing on western Europe for their supplies of capital. Largely as a result of the war the United States finds itself in a position to become a lending nation. The loans it will be called upon to make will be used for the industrial upbuilding of these foreign countries and, like all such loans, will take the form of concrete capital goods. Thus American industry, by supplying South America, Africa, China, and Russia with rails, locomotives, structural steel, and farm implements, will, by its own growth, increase the domestic demand for our own agricultural products. It seems probable that not until such growth is realized will our agriculture again experience the prosperous condition that it enjoyed before the Great War. And though this

new foreign trade is likely to bring into competition with the American farmer the agriculturists of these countries still in the agricultural stage, it is likely to be in the production of world staples rather than in the products of such specialized agriculture as tends to be induced by a large industrial population.

Our Changing Agriculture

We have seen how the war has thrown out of adjustment the demand for and the supply of our agricultural products, partly by a substantial expansion in our production, and partly through an apparently permanent curtailment of foreign demand for our agricultural commodities. It has also been pointed out that the restoration of prosperity to our agricultural classes depends primarily upon an expansion of our industrial population and the growth of the home market to a degree which will re-establish an economic equilibrium between agricultural prices and those of other commodities. We have still to examine the problem of how our agriculture should be adjusted to meet this changed situation.

This problem has not only its present, but also its long-time phase. Too many of the recently proposed measures of relief have been conceived, apparently, on the assumption that we must save our agriculture as it is to-day or as it was at the end of 1918. The idea that a new market situation such as we have to face, will necessitate a very greatly modified agriculture has not been given any very careful consideration. It would seem that our problem at the present is not to determine how we can again make our farmers prosperous while following a production program adjusted to a particular type of world economy which no longer exists. It is rather to extend what relief is made necessary on account of the hardships inseparable from an economic change so sudden and extreme as that which we are experiencing, and to facilitate in every way possible the adjustment to the new situation. Such a problem is the more difficult because the new situation is still a changing one.

The first step in the needed adjustment to meet the present phase of the situation is obviously a substantial reduction in those lines of farm production in which the greatest surplus over home demand now exists. As already mentioned, cotton, wheat, and pork are the three commodities in which we have a large exportable surplus. Our production of cotton has fallen so far below prewar volume, and there is such a limited output of it from other

parts of the world, that it is, for the present, in a very strong position. The products in which there is unmistakable overproduction are wheat and pork. On the basis of the present rate of domestic consumption it would require an increase in our population of fifteen millions to absorb our present pork surplus and of some thirty-six millions to use all of our exportable wheat.

It has been argued in some quarters that since a substantial growth in our industrial population seems inevitable, we will, in the course of a decade or two, be needing all of this surplus. Why, then, should we suffer the great economic loss incident to a temporary curtailment in these lines and the additional expense involved in a subsequent re-expansion? It is true that in the agricultural industry the breaking up of business units does impose grievous losses on the owners of these businesses and that in the aggregate these losses amount to a heavy social loss. But an unbalanced production program also involves serious losses for many individual producers unless society subsidizes them; and in any case there is a heavy social loss. Society cannot long afford to subsidize maladjusted production, particularly since subsidy tends always to aggravate rather than diminish the maladjustment. Provided we are sure we are going to want the same production program after our population growth has been realized, it becomes a matter of choice and judgment as to whether temporary subsidy, or intelligently guided adjustment and readjustment, involves the smaller loss.

However, we cannot be at all sure that when we reach a sufficiently broad home demand to absorb a volume of the great exportable staples equal to what we are now producing, that the production of this volume will then be the best use to which we may put our agricultural resources. Inevitably, with a growing population, the demand for perishables and semi-perishables—to the importation of which transportation costs, time, and distance impose an appreciably effective barrier—will increase sufficiently to make them successful competitors for a great deal of the land and labor now devoted to the production of staples. Doubtless a great deal of additional land fairly well suited to such production may be brought into use; but such additions must overcome the resistence of reclamation costs, and there is always the important factor of the localization of production of such commodities relative to the consuming centers. It is altogether to be expected that with further growth of industrialism, great industrial centers will develop in and near our leading agricultural areas. This will come from an effort to utilize most economically stores of raw

material and power resources. It is inconceivable that this will happen without profound changes in the agriculture of these areas. The type of farming in the Corn Belt, the Wheat Belt, and even in the Cotton Belt, must undergo radical changes as a result of industrial development. Departure from the one crop system is even now appearing in our spring wheat region; there is a significant invasion of the Corn Belt by dairying; farmers of the South are learning that they can profitably substitute other crops for some of the accustomed cotton acreage. Assuredly our plans for remedying the present ills of the farmer cannot be built upon the assumption of an unchanged agriculture and the permanence of the present production program.

To those of us who subscribe to the necessity of a reduction in the volume of some of our more important staples, the immediate question is the method by which this reduction may best be realized. There has developed recently a considerable sentiment toward a policy of restriction in production on the part of all of the producers of a given commodity, such as hogs, for example, sufficient to raise the price to a point which will give them maximum total value for the whole produced supply. The example of certain highly centralized industries such as steel is cited to show the folly of unrestricted or maximum production and the wisdom of controlled production. It seems to the writer that such a suggestion fails to take account of fundamental differences in the two fields of production. So far as he can see there are only two situations under which restriction of output can work successfully for the producer. The one is where the proportion of variable to fixed costs of production is so high that the savings from cessation of production outweigh, under certain cost and price conditions, the savings in fixed costs realized by continued operation. This exists in some freely competitive industries where the chief costs are labor and raw material. The other is where monopoly exists. In the case of most agricultural commodities neither of these conditions obtains. As already pointed out, a very high proportion of the farmer's costs are fixed rather than variable. He must, therefore, adhere strictly to the principle of maximum utilization of his resources and any effort to induce him to produce less of a given commodity whose price is sagging is futile unless there is presented to him at the same time an alternative line of production which promises a higher utilization of his cost elements.

As for monopoly, the futility of any effort to get unity of action and control with reference to a commodity so widely produced and in whose production so many individual entrepreneurs are engaged

as is true of our important staples, ought to be apparent. Except in limited fields and for very short periods, the farmer has never been and cannot hope to be a monopolist.

In the light of these limitations characteristic of agriculture, it seems fairly certain that curtailment of production in the present crisis must come primarily through a process of substituting in the farmer's production program those products whose prices are higher for those whose prices are disastrously low. This is the normal process of economic adjustment and the one which in the long run, involves the least cost to the individual and to society.

There is always the danger in this process that reactions will go too far and that the prices of one commodity after another may be depressed to a point of unprofitable production. The individual producer needs ever to be alert to avoid penalties of unwarranted and extreme changes. It is undoubtedly impossible by this or any other method in a brief period to restore to a full measure of prosperity those now engaged in farming. There must be for some time to come, a general drawing in of the margins of production in many lines and particularly in those in which depression is now most marked. This will mean the abandonment to less intensive uses of a considerable portion of the poorest land now in use. Such abandonment is already in process. It is taking place most conspicuously in the poorer areas of the country, but even in our better farming areas an occasional farm poorly improved and of poor quality has dropped out of use. The labor thus released from agriculture is finding its way into more favorable economic opportunities in the industries.

It is by this same process of seeking the best opportunity for the utilization of resources that our agriculture will expand once more when the market broadens to require a larger and larger agricultural output. A normal growth, stimulated by the demands of a growing industrial population, will, it is reasonable to suppose, give us a healthier and more efficient agriculture of the future than could possibly result from an attempt to carry over intact into the new era the present system. Adjustment to a changed order of things must come sooner or later. It is probably wise not to try to impede the adjustment.

To those who would say that the present crisis is so grave as to demand something more than a passive attitude toward the normal economic processes of adjustment, it may be replied that the foregoing analysis does not point toward a policy of inactivity and indifference. The emergency truly is great enough to demand the best thought and effort of our agricultural leadership. Probably no

previous period has presented so great a need as the present for the best effort of educators, legislators, and the leaders of the farmers' movement toward making general an intelligent view of the real nature of the situation, toward making as easy as possible the adjustment to the new alignment of forces, and toward developing unity of purpose and concerted action on the part of the agricultural class. There was never so great a need, and probably never so great an opportunity, for the development of a comprehensive and far-reaching agricultural policy.

2. Adjusting Production to the Home Market [1]

It no longer interests people greatly to be told that the farmer is dissatisfied. That fact has been beat in upon the public mind during the last eighteen months through both the spoken and the written word, until we feel a little like an audience that has been listening to a snare-drum solo. The farmer has had abundant cause for dissatisfaction. His prices have fallen more than the average. He finds it difficult, therefore, to maintain his customary standard of living, to say nothing of meeting the debts he may have incurred in the optimistic days when Europe was ruining its monetary system and its financial standing to pay him, as well as other producers, fabulous prices for the things it wanted.

What the country wants to know now is how the farmer is to be got out of his present situation and restored to prosperity. Not the prosperity of war time, for that comes only several times in a century, but a stable and dependable state of well-being such as he enjoyed from 1898 to the outbreak of the war in 1914. American agriculture suffered more seriously during the depression of 1894 to 1896 than during these last two years. Yet in the spring of 1900 Ray Stannard Baker, who knew the agricultural situation well, opened his book Our New Prosperity with these paragraphs:

> A witty Western writer, summing up the marvels of growth, expansion, and prosperity of the year 1899 in the United States, made this telling climax: "And every barn in Kansas and Nebraska has had a new coat of paint."
>
> To any one who knew the great unpainted West of 1896 and 1897, with its bare, weather-stained houses, its dilapidated barns, its farm machinery standing out in the rain, its ruinous boom-towns, its

[1] David Friday, "An Agricultural Program for An Industrial State," *The Saturday Evening Post*, January 27, 1923, pp. 8, 108–110. Copyrighted 1923, by the Curtis Publishing Company, Philadelphia, Pa. Reprinted by permission of the author and the publishers.

> discontented inhabitants crying out for legislation to relieve their distress, this bit of observation raises a picture of improvement and smiling comfort such as no array of figures, however convincing, could produce.

Nor did agricultural prosperity cease with 1900. During the next fifteen years the gross value of farm products more than doubled. In 1899 they amounted to $4,700,000,000; by 1914 they stood at $9,800,000,000. The number of people engaged in producing this product had increased by only 10 per cent while the volume of farm products had increased more than 30 per cent. Prices of farm products had risen more than 50 per cent, while the wholesale prices of other commodities had increased less than 30 per cent. If the farmer was prosperous in 1900 he must have been well off indeed by the outbreak of the European War. The problem that interests the public is how this march of agricultural prosperity can be restored.

The Farmer as Exporter

There are those who believe that agricultural improvement will come through political action. But the fact that the increase in well-being during the fifteen years which preceded the war came about without any political action whatever casts doubt upon the efficacy of the legislative measures that politicians have been willing to enact for the farmer's benefit. It is dawning upon the rural community that political relief can aid him but slightly. In the long run some benefits will undoubtedly accrue from the legislative measures that have been passed, but immediately they will avail the farmer little. Neither badgering speculators, nor regulating packers, nor providing credit facilities that enable the farmer to borrow money to be repaid in the far-distant future, will help him materially.

The root of the farmer's immediate difficulty is not to be found in the nature of our credit structure; nor in the speculative markets that have developed out of the experience of the past for the marketing of his produce; nor in the nature of the institutions that manufacture and distribute our meat products. His present trouble arises rather out of the disheveled industrial situation in those foreign countries that have bought his product heretofore. It was the foreign situation which brought about the fall in prices in 1920 and 1921. Almost simultaneously industrial depression struck our home industry. The consequent fall of productive activity and of purchasing power among our industrial

groups accentuated the downward movement of agricultural prices.

Nor does production for the foreign market promise the farmer much for some years to come. In the disheveled state of European industry agricultural production is more nearly normal than are manufacturing and mining. Agriculture differs from other industries in one important respect: business depression always reduces the output of manufactures, mines, industrial construction and building operations, but it has practically no effect upon the acreage of crops planted or upon the average yield. We have seen again during the last few years that the farmer does not lower either his acreage or his activity when prices are falling and times are hard. At such time he tries to make up through increased production for the fall in prices. Those of us who lived through the depression of the '90's as farmers flouted the idea so commonly put forth during the winter of 1920–21 that agricultural acreage and output would be reduced because of the price decline. Nothing of the sort happened; it never does.

European agriculture is not different from ours in this respect. The farmers there returned after the war and proceeded, with their families, and with their sons who had returned from the armies and from the disturbed industrial centers, to till their fields. These were not so fertile as they had been in 1913 and 1914; the work animals were poorer; the quality of the seed had deteriorated; but the farmer proceeded to utilize his labor and resources to the full. The result is a more nearly normal state of production in agriculture than in other lines of industry. Europe is not so well supplied with agricultural products as she was before the war or as she would like to be. But she is better supplied with these products than with the manufactures she must send us in payment if she is to buy farm produce in America. Europe is in no position to buy large quantities of American agricultural products at high prices. We produce a surplus for export which must be sold on the European market, and that portion of the product sold at home will not bring a higher price than that which goes abroad.

In view of this situation, one of the means for getting the farmer out of trouble is to take him as far as possible off the international market. For though the home market suffered from the business depression that extended from the latter part of 1920 to the spring of 1922, the purchasing power of the people has now been restored with the revival of industry. Never before has the nation had such activity in the building trades as during the past year. This

bids fair to continue for another twelve months. The production of automobiles defeats all previous records, and industry generally is enjoying a revival of prosperity. Though this may slacken somewhat after the building boom has spent itself, there can be no question of its existence at present. Large production, complete employment of labor, rising profits, wages and prices are the order of the day. The best evidence available indicates that the total wages and salaries paid by Government and by industries other than agriculture amounted to $38,000,000,000 for the year 1920. They fell in 1921 to $30,000,000,000. They cannot be less than $33,000,000,000 for the year 1922, and will probably be larger in 1923. It is doubtful whether these payments were ever as large as $18,000,000,000 in any pre-war year. The purchasing power of the inhabitants of our cities and towns is, therefore, adequate to absorb a large volume of agricultural products at prices materially higher than those of the pre-war period.

Purchasing Power of Home Markets

Nor do wages and salaries constitute the entire income of the people living in cities and towns who buy and consume the products of our farms. They are less than three-quarters of that income. Rents, interest, and profits make up another $12,000,000,000 of income for the urban dwellers. When this is added to the wages and salaries we have a total spending power in our cities and towns of $45,000,000,000 for 1922. If prosperity continues for 1923 it will amount to even more. As a consequence of this revival of purchasing power among our people the gross value of the farmers' product will be almost fifteen billion dollars for 1922, as against twelve and one-third billions in 1921, and less than ten billions in 1914.

Our town dwellers have, therefore, $7,000 of spending power for each of the six and a half million farms in the United States. No other agricultural population in the world has within its own nation any market remotely comparable with this in purchasing power. In States like Michigan, which have become predominantly industrial during the last decade, the urban purchasing power is even larger. Though the United States as a whole has two and one-third persons living in town for every one on the farm, Michigan has three and one-third. The townspeople of that State have a net income which amounts to more than $11,000 for every one of its 196,000 farms. Besides this they have access to an urban population of 3,000,000 people in Illinois and Wisconsin through

the cheap transportation by water. The total income which the farmer of Michigan may tap by venturing less than 100 miles outside the boundaries of his State is adequate to consume his entire product at prices that would make him prosperous.

The problem of getting the Michigan farmer out of difficulty and establishing him once more in a state of prosperity has for its setting this disparity between urban and rural population in the State and this growth of purchasing power among our industrial population. Neither the foreign situation nor the high freight rates that now prevail on our American railroads need concern him greatly. If he will adjust his production to the needs of this consuming population the high transportation cost may serve him as a protective tariff wall. For Michigan, like our Eastern industrial commonwealths, has now a net import of farm products. No one can come into this market to compete with its farmers unless he pays the prevailing freight rates. The great mass of our producers for the home market can reach the consumer over good roads with motor trucks. The automobile is one of the few things that can be bought more cheaply now than in the pre-war period. In this manner the farmer avoids paying a wage for railway labor and a price for coal consumed which are twice as high as in the pre-war period. The farmer who grows wheat finds the international market impoverished and has been forced to sell for a dollar a bushel or less. The grower of potatoes finds the national market overcrowded this year. But the growers of early tomatoes for the local market were receiving $2.50 a bushel when the grower of even early potatoes was receiving only thirty-five cents.

The product of Michigan's vineyards was five or six tons of grapes an acre. The price was sixty dollars a ton.

The hope for our Michigan farmer must lie, then, in the development of production for his home markets. Thus will he escape at once both the ruinous competition of an impoverished foreign market and the high freight rates that are necessary to cover the labor and fuel costs that have been saddled upon the railroads and to provide the investors who own these transportation systems with a paltry 5 per cent return.

The same situation prevails in many of our other States that have a mixed industrial and agricultural population. In the New England and Middle Atlantic States we find almost eleven persons in cities and towns for every one on the farms. Ohio has four; Illinois five; and Delaware and Maryland, including the District of Columbia, have three and one-third and five and three-quarters respectively. The Pacific States have four and a half. In the

remaining States there are, on the average, only one and one-fifth townsfolk for each person on farms. Thirteen States have more people on farms than in cities and towns.

Adjustments Difficult

This situation is of such recent development—in the Great Lakes basin at least—that agriculture has only partly adjusted itself to the new conditions. Twenty years ago the population on farms and in urban communities in Michigan was almost evenly balanced. The towns had one and a quarter persons for every one on the farm. In 1910 the ratio had risen to one and three-quarters; and now it is three and a third. We have had an industrial revolution in the Middle West since 1900, and Michigan has enjoyed more than its share of it. The wages and salaries paid by manufacturers in the State have multiplied by ten during the last two decades. Twenty years ago the income of the total population of the cities and towns of the State amounted to less than $2000 for each farm; in 1910 it had become almost $4000; and to-day it is $11,000. Yet during these twenty years the acreage of a crop like strawberries has fallen by 20 per cent, when it should have doubled.

The manner in which the farming industry is organized always makes adjustment to a rapidly changing market situation a slow process. The number of people engaged in Michigan agriculture approximates 350,000. There are 196,000 farms. We have, therefore, less than two persons working to the farm. What shall be produced and what methods of production shall be employed depend upon the decision of almost 200,000 men, each one of whom is not only the manager of the farm but is ordinarily its principal laborer as well. It is inevitable that a man charged with the arduous work of the field should rarely possess either the knowledge of the market or the managerial sense of necessity for adjustment and change which characterizes industries like manufacture.

This difference in the organization of agriculture and other industries is one of the chief facts that underlie what is commonly known as the agricultural problem. It is the principal reason for the failure of agriculture to reduce its output in times of depression and falling prices. When curtailment of demand has reduced the price of manufactured products to the point where they no longer cover the cost of labor and materials and leave a profit, the manager ceases hiring labor and purchasing materials until the curtailment in the output of commodities has raised their price once more above cost, or until wages and material have fallen far enough to make

production at a profit possible once more. But the farmer is at once capitalist, manager and laborer. He cannot dismiss himself without a net loss. He purchases few materials produced by others than himself. His farm is quite as much a tool which he utilizes to sell his labor as it is a capital investment which might yield its owner a living without working.

Diversity of Output

It is clear that the individual farmer cannot undertake any adequate analysis of the market situation which will keep him informed of the varying opportunities it affords. Our State contains cities that have grown from 13,000 people to more than 90,000 during the last twenty years. It is small wonder that production has not adjusted itself to the changed demand that this growth has brought. The co-operative marketing organizations in the agricultural field have grown largely out of this necessity for adequate market analysis. They perform their most useful function in keeping that analysis up to date and in combining the producers into a compact organization such that the volume of output may be adjusted to needs. The Department of Agriculture and the extension division of agricultural colleges must assist in this task in all our industrial States.

The inflexibility of agricultural production which grows out of the nature of its organization has been supplemented by another set of forces which impeded the adjustment of production to markets. From 1915 on, the European demand for American food products carried the prices of cereals, meats and other animal products, such as condensed milk, to unheard-of heights. Even at these high prices Europe stood ready to take all we could supply. In an industry where the manager owned his plant and equipment and furnished more than half the labor, there was no necessity for adjusting production to the changed situation. War and war prices were a sedative which made him content to remain in old paths. Transportation costs, controlled as they were by public authorities, long lagged behind the general price level, as did the level of wages. To-day agriculture in the Middle West faces a situation that gives little promise of increased prices for the commodities that enter the international market. Transportation rates are high, and relief must be attained by removing the farmer as far as possible from the international market.

The extent to which this can be done in any State depends upon one further factor—that of diversity of output. Fortunately

Michigan is in an enviable position in this matter. It grows all the important cereals except rice, and all the forage crops. It is among the first few States in its output of small fruits. It produces in commercial quantities all the tree fruits except citrus fruits. It is one of the principal producers of both beans and sugar beets. It has a large production of dairy products, and is not unsuited to the production of meats. In such a State there is no need to despair because the foreign market is poor or because the cost of transporting agricultural products to market is burdensome. What is needed is a thorough analysis of the market possibilities and an adaptation of production to the local demand. To this end the Agricultural College and all the organized forces of agriculture within the State are directing their efforts. When the program has been carried out the industrial cities and towns of the State should be more abundantly supplied with food products of a higher quality than they have ever enjoyed before. These should be furnished to them at prices that are reasonable and that will yet pay the farmer a profit far greater than he could make by producing for the foreign market. This is Michigan's program for taking her farmers off the international market.

The other source of relief for the farmer is to be found in his costs of production. These are, upon the whole, far larger than they need be in view of the advance which scientific agriculture has made and of the methods which our best farmers are practicing. An industry may prosper, even when prices are falling, provided it can reduce its costs. The automobile industry is a good example; it is selling its product at less than pre-war prices, yet it is one of the most prosperous lines of business to-day.

Though it is impossible to prove absolutely that the prices of agricultural products will fall during the remainder of this decade, it would be the sheerest folly to base any agricultural program upon an assumption of rising prices. Even now prices of agricultural products are twice as high as they were during the '90's and 60 per cent above the decade 1900–09. They are 38 per cent higher than they were in the five-year period 1910–14. The gross value of agricultural output in 1922 is 65 per cent higher than in the half-decade 1910–14. Though the prices of farm products may attain a level slightly higher than at present, there is no reason to expect any pronounced or constant rise during the remainder of this decade. Profits must be increased, if at all through the reduction of costs.

Fortunately this is quite within the bounds of possibility. To any one unacquainted with the technic of scientific agriculture

and with the practices of our best farmers, it is startling to learn the wide range of difference that prevails among the productive units with which the farmer carries on his business. . . .

* * * * * * * * * * *

No doubt the reader has questioned before this why it is necessary to formulate programs and legislate public money to put into effect practices [improvements in poultry, dairy cattle, and seeds] that are so obviously to the benefit of the individual farmer. If the question is one of defending the use of public money for the promotion of more economical production of agricultural products the answer must be that an abundant food supply at a cheap price is a matter of public interest for which it is quite legitimate to spend the public revenue. It must always be in the public interest, too, that the production of the necessities that go to make up the standard of living, whether food, clothing or shelter, shall be effected with the minimum of toil and labor.

If the problem is not that of defense, but of explaining why the farmer has neglected to do of his own initiative what is so obviously to his own self-interest the answer will be found in the nature of the organization that prevails in the agricultural industry. The average manufacturing establishment in Michigan employs more than sixty men. Its output is sufficient to enable it to pay for all the materials it uses, and to leave $150,000 for the payment of salaries, wages, taxes and interest, and to provide for depreciation. What remains constitutes profits. The organization of the farming industry is very different. There are only 350,000 people engaged on our 196,000 farms; and this number includes the farmers themselves. Their average annual sale of products does not, at this time, exceed $2,500 a farm.

Expert Guidance Needed

It is clear that most of the manufacturing establishments have enough at stake and command an income that enables them to employ managers and professional men who shall keep the processes of the establishment abreast of the discoveries made by science pertaining to the line of manufacture in which the concerns are engaged. As long as we have research laboratories and technical schools we shall have a continually advancing body of knowledge and a supply of professional men who stand ready to sell their services to those who desire the latest advances of science incorporated in the art of manufacture. Ordinary commercial motives

move the individuals concerned to avail themselves of the services of these men.

But in agriculture, where the farmer is not only the manager of the establishment but constitutes its chief laborer as well, and where the gross money income is less than $2,500, it is apparent that the individual farmer will not hire the services of scientists and other professional experts. Something can be done in this direction by co-operation, but for the most part ordinary commercial processes, under the urge of self-interest, will not insure that the advances made by scientific agriculture are incorporated in the every-day processes of farming. If they are to be so incorporated this must be accomplished in pursuance of public policy and at public expense. Our agricultural colleges and experiment stations are not only institutions of research and learning; they, through their extension departments and the county agents, must render to the agricultural industry a professional service comparable with that which the manufacturer hires upon the market. No industry organized on the small scale that prevails in agriculture will keep pace with the rapid progress of our modern world unless this public service is rendered it.

In the past the knowledge of the scientist and the practice of the best farmers have been incorporated into the industry all too slowly. The reason has been that the various institutions charged with this duty have used almost exclusively the methods of education. They have printed bulletins and sent them to those who wrote in concerning their problems. If no bulletin answering the inquiry was available the technical expert in whose field the problem lay wrote to the farmer. If the problem was new and of sufficient interest, field men were sent out to conduct research on the spot. In this manner only a very small number of the managers and operators of our farms have been reached. The average farm still lags far behind the best practice, and has availed itself to a disappointing degree of the best that is known about agricultural production.

Co-operative Effort

Of late the Department of Agriculture and the colleges have supplemented these methods of education by the methods of publicity and propaganda. Michigan expects to rely upon these methods to a large extent in carrying through its program for taking the farmers off the international market, and for reducing their costs of production. They must have skilled assistance in analyzing their local markets, which have grown so rapidly

and become so complex that the average farmer can afford neither the time nor the money for their analysis. They must have continuous and effective agricultural research, and they must have a profession of adequately trained agricultural specialists. But beyond this they must be made conscious of the possibilities that await the man who will readjust his production to the new demand that has grown up at his door. He must be made to realize the wastefulness of his productive methods and the possibility of reducing his costs and increasing his product by the practice of better ones. To accomplish this the farmers must be organized into groups along the lines of their common interest. Each of these groups must set up for itself definite ends for realization.

It is just at this point that the co-operative spirit which has been so greatly in evidence during the past few years will find its chief field of activity and usefulness. People must be made conscious of this program, of its value, and of the importance of the methods through which it will be realized. They will be brought to this state of self-consciousness by co-operative endeavor and discussion. Such a program of publicity and propaganda will be expensive, measured by the standards of the past; but it should return twentyfold every dollar spent. In our endeavor to help the farmer we have poured water into the sand in driblets, as it were. We can never create a river in that way.

Political action plays small part in this program. It may just as well be frankly stated that those who have envolved it have but slight confidence in most of the political action that is being proposed for the benefit of the farmer. The spirit of co-operation and of interest in agriculture which led people to political action, and which culminated in the formation of the farm bloc, is significant. It has brought about social cohesion among the group and has stimulated an interest in agriculture that will lead to fruitful activity. Every great intellectual movement must have as its motive power a reservoir of emotional heat. Considered from this point of view our political activity has been of great benefit. Considered from the point of view of any practical legislative suggestions now before the public the results are bound to be disappointing. We in Michigan shall pin our faith primarily to a program that proposes to take our agriculture off the international market, and that looks to the reduction of costs as one of the chief roads to the maintenance of profits.

CHAPTER XXVIII

RECENT TENDENCIES IN FARMERS' ORGANIZATIONS

1. Rise of the Farm Bureau Movement [1]

Origin of the Farm Bureau

The first farm bureau in the United States was organized in Broome County, New York, through the initiative of the Binghamton Chamber of Commerce which was interested in developing and maintaining a wholesome agricultural status in the territory contiguous to its own city. It was recognized that the trade of the city was largely dependent upon the farming population surrounding the city and that the economic welfare of the nearby country districts meant also in a measure prosperity to the urban population. The man who realized this relationship between city and country sufficiently to bring about definite action on the part of the Binghamton Chamber of Commerce was Byers H. Gitchell, then secretary of that organization. The Chamber of Commerce appointed a committee on agriculture which made a tour of Broome and other counties. The Committee was accompanied by representatives from the New York State College of Agriculture, the New York State Department of Agriculture, and the United States Department of Agriculture. Later when the development of agriculture was discussed at a meeting of the Chamber of Commerce, George A. Cullen, who was traffic manager of the Lackawanna Railroad, showed great interest in the plan and pledged the aid of his road to the undertaking. The railroads have for years taken a keen interest in "keeping people in business," for the amount of freight hauled and therefore the amount of the revenue is directly dependent upon production and trade. It was therefore natural that the Lackawanna Railroad should be willing to become an active partner in the rejuvenation of the declining agriculture.

When the discussion proceeded to the point where definite plans had to be devised expert aid was sought. The committee of the Chamber of Commerce favored the demonstration farm and this

[1] Edward Wiest, *Agricultural Organiation in the United States, University of Kentucky Studies in Economics and Sociology*, Vol II. (Lexington, Kentucky: University of Kentucky, 1923), pp. 503–509. Reprinted by permission of the author and the publishers.

idea was proposed to Doctor Spillman, then of the United States Department of Agriculture. But Doctor Spillman explained to them that a demonstration farm serving as an object lesson in a community did not take hold of the people, and instead recommended the county demonstration plan which Dr. Knapp had introduced and which was working out very satisfactorily in the Southern States. The Committee believed that Doctor Spillman's suggestion was the one to adopt and proceeded to raise funds for the employment of a county agent and to start the work. The Binghamton Chamber of Commerce, the Lackawanna Railroad and the Department of Agriculture jointly contributed to the enterprise. "John H. Barron, a graduate of the State Agricultural College, was engaged as county agent, [and] began his work on March 20, 1911." A few days previously, he had received his appointment from the United States Department of Agriculture and was, therefore, acting in the capacity of its representative.

Mr. Barron soon made close contact with the people in the various communities. He selected community chairmen as the first step in the development of local organization. He also enlisted the aid of existing organizations such as the Grange. While this first farm bureau was different from the character of the organization of the present-day farm bureau, it must be regarded as the first organization of its kind in as much as it had a regularly appointed county agent and a "local governing, consulting, and co-operating body."

At this stage of the development the farm-bureau movement was still potential or unborn. That is to say, the aims and purposes of those interested in helping agriculture were all educational. The objective of these early efforts was to organize in every community a group of farmers who would with great precision "demonstrate" on their own farms principles which had for years been known to those familiar with the literature of scientific agriculture. In other words the farm bureau movement as it is known to-day had to wait until the agricultural co-operative extension service, discussed in a previous chapter, had become widely established. The organizing of the extension service was done by public officials representing the United States Department of Agriculture and the State College of Agriculture. As explained Doctor Knapp, representing the Department of Agriculture, may be regarded as the promoter of the new form of extension service. Before the passage of the Smith-Lever Act in 1914 the United States Department of Agriculture laid the foundations of the work, and after the passage of the act all the colleges began active campaigns to propagate the

extension service throughout the States. What was done in Broome County, New York, therefore was merely the planting of a seed that bore fruit later in a way wholly unexpected by the officials of the Department or by any of the other parties who took part in preparing the soil for its growth.

Among the first States to seek the support of the farmers locally, says Mr. Kile, was West Virginia. The farmers were asked to take a membership in a farm bureau and pay a fee of one dollar. Officers were elected, and the bureau after it was launched was to extend itself by soliciting more members. In this way funds were provided for the employment of the county agent. New York State organized about the same time in a similar manner. Some States passed laws allowing county courts or county boards to appropriate sums of money for the use of farm-bureau work. New York passed such a law in 1912 and the Broome County Board made an appropriation of $1,000 for this purpose. The plan of having the farm bureau made up of a large and widely scattered membership proved so successful in New York and elsewhere that the Broome County bureau changed its form of organization to the membership basis in 1914.

Rapid Development Under Public Initiative

Most of the States in the East and Middle West as well as a few of the far western States rapidly adopted the farm-bureau form of organization for the purpose of co-operating with the extension forces. In this development of farm bureaus the colleges and the Federal Department took an active part. Document 65 explaining the organization of a model farm bureau was published by the States Relations Service. The European War added great fury to the efforts of the extension forces. Referring to the part these two institutions played, C. E. Gunnels in a speech delivered in 1920, at which time he was still connected with the Department, made the following statement:

> Why did the Federal and State Governments develop such an organization? Why didn't they co-operate in extension work directly with the Grange in counties where the Grange is strong, or with the Farmers' Union in counties where the Union is strong, or with the Equity, where the Equity is strong? The reason is simple enough. Practically all of these are secret organizations, or class organizations, or commercial organizations. In a considerable degree they are exclusive organizations, and since the work of the Federal and State Governments is financed by all the people, these institutions felt the necessity of developing a nonclass, nonsecret, noncommercial,

and permanent institution open to all the farmers in the county and through which all could find expression, and could deal directly and in an organized way with the State colleges and the Federal Department of Agriculture.

Besides, none of the farmers' organizations with which the Department was acquainted had been developed with the idea of extension work in mind, and the agents of the Government hesitated to take up work with them, or propose work to them which would necessarily involve a redirection of their organization, to say nothing of their jealousies which might have been created by apparent favoritism in the selection of one organization in preference to another.

Types of Farm Bureaus

. . . The farm bureau varied considerably in the character of its organization in the various States. . . . There were four principal types. (1) One of the most successful forms of organization has a widely scattered and representative membership paying a fee of from one to ten dollars, an executive committee, and an advisory council elected or appointed, meeting usually monthly to consult with the county agent. One frequently finds these forms incorporated. (2) Another form of organization has a central body made up of delegates from local groups of farmers. (3) Another form has its central body made up of delegates elected by more or less well established farmers' organizations, such as Granges, Farmers' Unions, Gleaners, the Equity, and Farmers' Clubs. This amounted to forming a federation committee which serves more in the capacity of an advisory council than as a body having plenary power. The real power lies with the local associations. (4) Still another form brings together clubs having no affiliation with State or national farmers' organizations. In the South the county council was for some time the common form of organization. It was made up of a select group of men from communities of the county and divided into subcommittees, "each one charged with a clearly defined share of the agricultural work of the county, and each one representative in that it includes a leading citizen from every district or beat." "In a few cases the county board of commissioners or supervisors constituted the central organization, and in a few others an agricultural committee of a local chamber of commerce has been a co-operating body."

The Seat of Control of the Farm Bureau

The Smith-Lever funds are provided jointly by the federal government and the State, county or local group of people. The county

agent's salary and other extension expenses are paid, at least partially, out of these funds. The agent is a public employee, representing both the Department of Agriculture and the State agricultural colleges. Control, according to Doctor Bailey, depends very largely upon the source of the funds. "Administration follows funds," he says; and he has in mind only extension and not commercial activities. "If the Farm Bureaus establish themselves and become more effective, the appropriation of local funds will gradually and prominently increase. This will more and more place the control of the Farm Bureau in the hands of the people, for they will manage it from among themselves." On the other hand Doctor True insists that the system is a tri-party co-operative scheme and the question of control should never arise in extension work. So far as extension operations alone are concerned there is probably little trouble over the question of control. However, it has been found that the most successful local organizations are the ones with a representative membership enjoying the right to determine in a measure the activities that are to be followed.

Objects of Organization

It has been made plain both in the discussion of this chapter and in the one dealing with the agricultural co-operative extension work that the first object for which the farm bureau was organized was providing ways and means of co-operating with the colleges and the United States Department of Agriculture in making demonstrations directly on the farms throughout the country. The first object then was entirely educational. The Department officials, however, started a movement that was not to be confined to educational activities alone. Farmers are not satisfied with the kind of education that merely looks toward increasing the yield of the product, or that acquaints them with certain conveniences, or beautifies the home and brings to them a measure of culture. These things are appreciated in the main, but they want more than this. One speaker, prominent in the circles of a well-established farmer's organization, in referring to the efforts of our public agricultural institutions to improve conditions made the statement that they everlastingly want to give us "doses of education." There are some things to which the farmers as a class have a legitimate right to aspire that education will not bring about. It takes organization for commercial purposes. In other words co-operative organization along commodity lines is necessary to help give the farmer his share of the distribution

of wealth. But even commodity organization is not enough to give him his just due. The world's economic and social organization is complex and is very greatly affected by legislation relating to the tariff, railroads, monopolies, roads, schools, etc. To give the farming population a voice in the state and federal councils commensurate with its size it must be organized on a wide scale. This has been the vision of leading farmers in the United States since before the Civil War. Efforts were made that resulted in "ground-swells" which soon subdivided. In other cases results were more enduring. In the light of the history of the American farmer it is only natural that he should use the farm bureau for purposes other than as an agency to co-operate with the extension forces.

After the farm bureau was organized and busily engaged in demonstration projects, the most natural thing for them to do was to talk over the question as to how they could order fertilizers in carload lots so as to reduce freight rates and save the major portion of the middleman's profits. From fertilizers it was but a step to feed, salt, coal, and other supplies that could be bought co-operatively. Likewise the selling of their grain, live stock, dairy, and poultry products, etc., co-operatively was in due course given attention in a number of places. It followed therefore that the farmers soon "tacked on" to the farm bureau as an object of organization the policy of buying and selling co-operatively.

2. A General Survey of Present-day Farmers' Organizations [1]

In February, 1919, fifty bankers, delegated by thirty-seven State Bankers' Associations in thirty-seven States, were in session in Washington, D. C., with the heads of the United States Department of Agriculture, the Farm Loan Board, and the Bureau of Education, mapping out a program for agricultural development, better rural education and the general improvement of rural social conditions. There was no farmer present delegated to voice the farmers' views or state their wishes. This case is typical. Many efforts have been made to "uplift" the farmer without consulting the farmer. This distinguished gathering in Washington represented a very large share of the wealth and the brains of the United States, and very able leadership. A very comprehensive program for improving rural life was adopted. This program was next offered,

[1] James E. Boyle, *Agricultural Economics* (Philadelphia, London, Chicago: J. B. Lippincott Company, 1921), pp. 285–291, 299–302, 307–309. Reprinted by permission of the author and the publishers.

ready-made, to the farmers. Whose fault was it that farmers were not directly represented at this conference and at many other similar conferences devoted to the serious and worthy cause of improving rural conditions? The farmers themselves are to blame. Lack of organization among the farmers explains it. Bankers' organizations in thirty-seven States were directly represented. There was no one organization of farmers covering thirty-seven States. There are many different organizations of farmers in all the States, but thus far they have not federated or co-ordinated their efforts or mobilized their forces.

Means of Securing Benefits.—Farmers' organizations have two general means of securing benefits for themselves, through self-help and through State aid.

President Wilson, in addressing the fiftieth annual session of the National Grange, commended the Grange for following the principle of "self-help." It is a significant fact that the Grange has followed the principle of self-help, and that it is the sole survivor of fifty years' standing of the many national farmers' organizations in the United States. Those organizations which have worked on the principle of State aid—except State aid as a temporary means toward self-help—have succumbed.

Class Organization.—The comment is frequently made that our various economic classes are all well organized, except the farmer. Thus, it is said, the manufactures have their organizations; the wholesalers theirs; the jobbers theirs; the commission merchants theirs; the credit men theirs; the bankers theirs; and so on, and that these various interests in any one city are united into a local Chamber of Commerce, and these local chambers are federated into one grand central organization at Washington known as the Chamber of Commerce of the United States. Similarly, the comment is heard that various trades or crafts of laboring man are organized into unions, and that these large unions are federated into one grand central organization, the American Federation of Labor, also with headquarters at Washington. The farmer is commonly spoken of as individualistic, as inarticulate as a class, without voice and without protection. In a superficial sense of the word these comments are all true. The farmers are slow in forming any one great national federation of farmers' organizations comparable with those of labor or capital. But neither does the American Federation of Labor comprise all the great labor unions of the country. Neither do all so-called "capitalist" enterprises come within the purview of the Chamber of Commerce of the United States. At the present stage of economic

development, organized capital and organized labor are able to mobilize their forces quickly and effectively, while the farmers can mobilize themselves but slowly and with indifferent success.

Difficulty of Classifying Farmers' Organizations.—A logical classification of farmers' organizations is desirable, but difficult to make. This is true, whether the discussion be of the living organizations or the dead ones of the past. Among living organizations which ones, for instance, are doing most for their communities? Two representative farm papers, one in the Pacific Northwest, one in the Mississippi Valley, made extensive inquiries in this field, and drew from their readers many interesting replies. Readers in the Pacific Northwest named various organizations, including among others the following: the Grange; Farmers' Educational and Co-operative Union; village and city Commercial Clubs; Fruit Growers' Associations; local church; organizations within local churches. The paper in the Mississippi Valley conducted a "Country Life Betterment" contest, offering substantial prizes for the best articles written on the subject. The five winning contestants named the following organizations: A Farmers' Club in Montana; A Community Club in Wisconsin; A Ladies' Auxiliary Society of a Farmers' Club in Michigan; A County Improvement Association in Iowa; A Farmers' Co-operative Creamery in Minnesota. Honorable mention was also given to a church congregation in Minnesota, and a Town and Country Community Club in New York. The above lists include two national farmers' organizations—the Grange and the Farmers' Union—and a great many purely local farmers' organizations. For the purposes of this chapter living farmers' organizations are first classified as local, national, and federation.

1. *Federation of Farm Organizations.*—Many efforts have been made to federate the farmers. The most popular plan has been to establish at Washington a central headquarters located in a Temple of Agriculture. And now that the American Federation of Labor is occupying its own Labor Temple the idea has gained more potency. As evidence of the growing popularity of a national federation of agriculture, ten recent efforts may be named, although only three may be discussed in any detail: (1) National Agricultural Society; (2) National Chamber of Agriculture Commission; (3) National Chamber of Agriculture; (4) American Agricultural Association; (5) National Agricultural Association; (6) National Agricultural Organization Society. This last is a frank attempt to transplant Sir Horace Plunkett's Irish Agricultural Organization Society bodily in Ameri-

can soil. Hence its slowness in taking root; (7) National Milk Producers' Federation; (8) Farmers' National Headquarters; (9) National Board of Farm Organizations; (10) American Federation of Farm Bureaus. The last three will be considered in turn.

(a) *The Farmers' National Headquarters.*—In the year 1910 a group of farmers, coming from a number of State farmers' organizations of somewhat progressive or radical tendencies, met in Conference in Washington, and decided upon a plan of national federation. Their widely circulated prospectus announced:

"The end kept steadily in view is a Temple of Agriculture as the National home of the associated farm organizations, thus providing for the fitting representation of the great foundation industry of agriculture at the nation's capital."

The Conference decided in favor of establishing a Farmers' National Headquarters in Washington. One plank in the platform adopted there read as follows:

> To establish National Headquarters at Washington, to include everything needed to enable farmers to keep a close watch on how their business is attended to by Congress and the Departments. Such headquarters are needed not only to attend to the farmers' interests and to insure their securing a square deal, but they are needed to give the right support to the Representatives in Congress who actively support the farmers' program, and as a clearing house for all who desire to co-operate with the organized progressive farmers in public welfare work. We appeal to all farmers and all other public-spirited citizens, to assist in making this effort to establish a people's legislative clearing house a success.

The purpose and scope of this federation's work are clearly foreshadowed in the plank and prospectus quoted above. Officers are maintained at the capital, in charge of a permanent manager. An official organ is issued. The chief activity is in the legislative field—to promote desired legislation, to oppose undesired legislation. Among measures supported in the past are these: Parcels Post; Direct election of United States Senators; Federal Farm Loan Act. Among pending measures for which this federation is now working are these: Government owned and operated merchant marine; Government ownership and operation of the railroads; Government ownership and operation of natural resources now in private hands. The method of work by this federation consists largely in two things—in conferences and in farmers' national committees. Conferences bring together representatives

from organizations specifically concerned in pending governmental policies. Farmers' National Committees likewise represent these same organized farm interests, and thus form a temporary subfederation. In this sense the Farmers' National Headquarters becomes the joint Washington office of various active farm organizations. In some cases the affiliation is temporary—while the emergency lasts; in other cases a definite relationship is established. The published list of farm organizations having their Washington offices in the Farmers National Headquarters includes the following: Farmers' National Legislative Council; American Society of Equity; The Gleaners; The National Dairy Union; National Creamery Butter Makers' Association; American Association of Creamery Butter Manufacturers; Rural Credit League of America; the Postal Express Federation.

(b) *The National Board of Farm Organizations.*—This Federation was formed in Washington in 1917. It is laboring to secure a Temple of Agriculture in Washington, as the home of the organization. Conferences are held from time to time; policies are formulated and adopted; propaganda for or against legislative measures is carried on. Advice is given to the President of the United States on matters concerning the farmers' welfare. Protection is given to the farmers' interests. The published list of affiliated societies includes the following: (1) Farmers' Educational and Co-operative Union of America (generally known as the Farmers' Union); (2) National Council of Farmers' Co-operative Associations; (3) National Dairy Union; (4) Pennsylvania Rural Progress Association; (5) National Agricultural Organization Society; (6) National Conference on Marketing and Farm Credit (which met in Chicago in 1914, 1915, and 1916); (7) Farmers' National Congress; (8) National Milk Producers' Federation; (9) Federation of Jewish Farmers of America; (10) Farmers' Society of Equity. Of the above ten organizations not all are active. And the American Society of Equity, as a national body, is not affiliated with the above federation. These two federations of farmers—Farmers' National Headquarters and the National Board of Farm Organizations—are both located in Washington, but they do not work together. Both represent very earnest attempts to organize a federation from the top down. It is a very dificult matter to organize a federation of farmers from the ground up—from the individual farmer, through his local unit, up through the State body into a national federation or council, following the example of the political organization of our government. The County Agent movement, with its sup-

porting Farm Bureau, prepared the way for such a democratic organization.

(c) *American Federation of Farm Bureaus.* . . . The farm Bureau. . . may be briefly described here. . . as a voluntary organization of individual farmers, supported by the annual membership dues of these farmers. These membership fees vary in different States, from one dollar a year to ten dollars a year per member. The organization is clearly one of farmers, by farmers, and for farmers, free from undue domination by any outside interests, governmental, commercial, or otherwise. As these local county units became strong, it was a logical step to federate the county units within a State into a State Federation of Farm Bureaus. By the beginning of the year 1919 the following eighteen States had such State Federations: California, Colorado, Delaware, Idaho, Illinois, Iowa, Massachusetts, Michigan, Missouri, Montana, Nebraska, New Hampshire, New York, Ohio, Pennsylvania, South Dakota, Vermont, West Virginia. Clearly the next logical step was to unite the State federations into a National Federation of Farm Bureaus. This was done in the year 1919 under the presidency of J. R. Howard of Iowa. Then for the first time, agriculture as a single great industry, became organized, mobilized, provided with a voice in national affairs. In this organization the farmers have a means of formulating and announcing policies; they have the machinery for formulating demands for legislation; they have an institution which will encourage them to organize for the study of educational, economic, social, and political problems; they have constituted a medium through which the membership may act collectively. They are on a par with so-called "organized labor" and "organized capital."

2. *National Farmers' Organizations.*—It is not the purpose of this chapter to give an encyclopedic list of all farmers' national organizations, for their number is too great for that. Only a few are named here, and only one is discussed in detail, the oldest one being selected for that purpose. Among the national organizations which have survived a period of ten years and over may be listed these larger ones: Farmers' Union, Equity Union, American Society of Equity, The Gleaners, and the Grange.

The Grange.—The Grange is to-day a powerful organization of farmers, active in thirty-three States, with its own press, its own body of organizers, its own lecturers, its own literature, poems, music and traditions. The story of its rise to power, its decline, its new growth, and its achievements forms an interesting chapter in the annals of rural life. Perhaps no other organization ever

showed such rapid changes from prosperity to depression and back to prosperity, such rapid shifts in the geographical territory it occupied. . . .

* * * * * * * * * * *

Achievements of the Grange.—The Grange has always taken part in working for agrarian legislation which it wanted and fighting legislation which it did not want. It has unquestionably opposed with success much pending legislation potentially harmful to farmers. The creation of the present Department of Agriculture is probably due more to the Grange than to any other influence. The rural free delivery of mail is largely also a Grange achievement. The Grange also has to its credit a long list of constructive and important acts concerning education, parcel post, the correct labeling of foods and drugs, etc.

Aaron Jones, Worthy Master of the National Grange, speaking before the National Grange meeting in Portland, Oregon, in 1904, summed up Grange achievements in these words:

> A generation has passed, crowded with greater advancement than any similar period in the world's history, since our organization was founded to meet conditions essential to public welfare. It was consecrated to develop the best type of social conditions, to foster and promote good citizenship, to develop agriculture, to secure equity in the business relations of the agricultural classes with the industrial and commercial interests of our country. . . . The Grange removed the isolation of the farm homes, inculcated and promoted education, fostered and secured better schools for our children, raised the standard of intelligence among the farming population, developed the latent talent of its members, making them logical thinkers and writers and fluent speakers, understanding the relation of agriculture to the varied and complex social, industrial and commercial interests of our country and the world. These glorious results were attained by steadfast adherence to the principles of our Order and methods suggested by the founders of our Fraternity.

The greatest significance of the Grange, as well as its most lasting achievements, have been in the social and educational influences which it has mobilized. Farmers and their wives and daughters have here met together, and together have enjoyed their music, their literature, their recreations, their beautiful and dignified ritual, and their serious deliberations. This wider neighborhood contact has been wholesome and pure and good. It has made for a certain culture and refinement not so easily attainable by the rural dweller as by the urbanite. It has tended to socialize the

community and to foster community leadership by the farmer, for the farmer, and of the farmer.

3. *Local Farmers' Organizations.*—For many decades farmers have maintained with conspicuous success local and state-wide organizations along economic and educational lines, with the emphasis on the educational side. Thus we have the various State Agricultural Societies, the State Horticultural Societies, the Pomological Societies, and so on. Most of these societies meet annually and publish a volume of proceedings. The discussions have dealt almost entirely with the production side of the problem, rather than with the marketing side. Live-stock associations form another large group of a similar nature. A mere list of the names of these would fill many pages.

In more recent years these local farmers' organizations have more and more gone into marketing questions. Thus we have an increasing number of farmers' organizations that are purely co-operative marketing associations. . . . Others lay stress on the general protection coming from being banded together. As an example of this may be cited the Farmers' Grain Elevator movement. As the movement stands at the present writing (the year 1919), it may be graphically represented as follows:

Farmers' Grain Elevators in the United States

400,000 farmers own stock in grain elevators
4,000 country elevators owned by farmers
12 State Associations of Farmer Grain Dealers
1 National Council representing these 12 Associations
1 Journal as the official organ of this Council

Among the accomplishments claimed by the above organization of farmers are the following: sulphured oats permitted in interstate commerce; federal grain grades; federal supervision of grain inspection; patronage dividends exempt from income tax. On the program of things to do are the following: handle freight and traffic matters, particularly increase in freight rates on grain, or regulations pertaining to loss and damage claims, or bill of lading matters; car shortage problems; in short, protect the interest of farmers in production, transportation, and marketing of grain.

4. *Political Organizations of Farmers.*—In agriculture as in labor the idea has often gained temporary sway in local areas that a class party was needed. This has occurred in spite of the fact that the trend of our political evolution has been against either class or sectional divisions of our voters. A class party was started

in 1915 among the wheat farmers of North Dakota, under the name of "Nonpartisan League."

The Farmers' Nonpartisan Political League, as this party came to be called, came into full control of the North Dakota State government in 1919, in all three branches—legislative, executive, and judicial. It had chosen a governor in 1916, and secured complete control of the executive and judicial branches of the State government. The League vote for governor in 1916 was 87,665; in 1918, 54,917. This movement began both as a union (on the labor union principle), charging a membership of six dollars a year, and as a political party, nominating candidates and adopting a platform. The background of the movement is both economic and political.

* * * * * * * * * * *

The League spread into fifteen States during its first four years. In 1919 it had three members of Congress from North Dakota. It also maintained a complete propaganda machinery, consisting of three daily papers, some forty or fifty weeklies, and an able corps of paid speakers. With its income of several millions of dollars it was able to carry on an organized campaign such as few other political parties were ever able to do. Its wealth and its success drew to it the usual army of camp followers seeking only the loaves and fishes. Its decline began in 1920.

* * * * * * * * * * *

Problems to Face.—Farmers' organizations have done enough experimenting thus far to bring out in sharp outline some very definite problems. Assuming that we are to have more rather than fewer farmers' organizations in the future, an early consideration of the problems and a policy toward them are necessary for the farmers and for all others interested in a broad way in a permanent and prosperous agriculture. This chapter is therefore concluded with a brief statement of a few of these problems.

(1) *How Secure Political Reforms?*—Shall the farmers imitate the Knights of Labor, and enter directly into political action as a class? Or shall farmers imitate the American Federation of Labor, leaving the nomination and election of candidates to existing parties, but standing for a definite program of legislation? In American political evolution class parties have been considered inimical to the general welfare, and have, thus far, accomplished but little.

(2) *How Secure Economic Reforms?*—In the labor world, the farmer may study various efforts at economic reform, such as "direct action," the strike, syndicalism, socialism, limitation of output, and the collective bargain.

Already in several cases farmers' organizations have used the strike with success. Syndicalism is roughly paralleled in those cases where the farmers have secured the collective ownership and operation of certain enterprises. Collective action (co-operation) is now very common in the marketing of farm products; it is not common in the field of production of farm products.

Limitation of Output.—There is no close parallel here between farmers' unions and labor unions. Limitation of output has been practiced in a few cases by a few unions; limitation of output by farmers really means a shifting of output. Thus the Southern planters in the season of 1919 made a gigantic campaign to limit the cotton acreage. This limitation of output of cotton was misunderstood and even condemned by many. However, while it meant less cotton, it meant more corn, more hogs, more hay—all of which products the South consumed in great quantities. "Limitation of output" in this sense of the word is not only wise, but necessary, if the farmers are ever, collectively, to remove some of the "anarchy" now existing in the co-ordination of supply to demand.

Collective Bargaining.—Collective bargaining is now a common method of adjusting wages, hours, and conditions in several of the larger labor unions of the country. The United Mine Workers of America have repeatedly demonstrated the wisdom and value of this orderly and democratic way of industrial functioning. The farmer is just now beginning to use this method. But since he is not selling his labor for "wages" but his crop for a "price," he has already come into collision with the law against "price fixing." Hence collective bargaining by farmers is not making much head against the present legal status of this method of adjusting price. However, if there is one place above all others where the farmer feels he is the silent victim of a system of tyranny, it is exactly here in the field of price making. It is inevitable, therefore, that the courts and the legislators will adjust the law to fit economic evolution. Collective bargaining is now in successful use by farmers in many different places. A conspicuous example is that of the Dairymen's League and the large milk distributors of New York City. A few steps have been taken toward this goal by the big meat packers and the farmers in the various live-stock associations. However, the federal and State anti-trust laws are such as to cause hindrance and delay in actually carrying on collective bargaining by farmers.

(3) *How Secure Leadership?*—In one sense the farmers seem to be victims of the vicious circle—unable to produce real farmer

leadership without organizations and unable to produce farmers' organizations without leadership. While the farmer is blest with a large amount of able, unselfish leadership from the ranks of those not farmers, yet it is doubtless true that he would be better off if he had more leadership from the rank and file of the farmers. An ideal "Council of Agriculture of the United States" would produce exactly this kind of leadership.

CHAPTER XXIX

AGRICULTURE AND MODERN INDUSTRY[1]

In the face of . . . foreign experience and experimentation the United States has pursued a course [of economic development] too haphazard to be dignified with the name "policy," unless perhaps we shall concede that the unconscious acquiescence of the public at large has followed the dictates of a conscious and astute neo-mercantilism on the part of commercial and manufacturing interests.

The mercantilist was kept well in check prior to the Civil War, though largely by the force of inward circumstance. We must not forget that it was nationalistic sentiment, forced into prominence by the unwillingness of European countries to enter into the free-trade relation which the young republic desired and by the disturbing influences of European wars and our own second conflict with England, which brought about our entrance upon a program of protective tariff-making. In working out this ideal of national self-sufficiency both high costs and great difficulties of transportation and the lack of open markets in Europe caused the directing of special measures toward the fostering of our own industries, agricultural as well as manufacturing. The European countries had not yet abandoned the effort to maintain home supplies of agricultural produce, and, while such products of the Southern States as could not be produced in the climate of Europe had a ready export demand, the farmers of the middle and northern states were constantly brought face to face with "restrictive regulations which in foreign makets abridge the vent of the increasing surplus of our agricultural produce."

While unquestionably industrial interests got the bit in their teeth during the decade preceding the Compromise Bill of 1833, even these most radical protection measures were supported by the farmers of the North and West, who found their interests served by the growth of manufacturing populations in the central and northeastern sections of the country. In exchange for any disadvantage they may have suffered in the way of higher prices

[1] E. G. Nourse, "The Place of Agriculture in Modern Industrial Society," *The Journal of Political Economy*, Vol. XXVII, No. 7, July, 1919, pp. 561–577. Reprinted by permission of the author and the publishers.

of manufactured wares, they were able to extract from those industrial interests a much-needed support for the policies of cheap western lands and internal improvements which they regarded as the prime requirements for their prosperity. As soon, however, as developments in these directions, together with a better access to European markets, caused their interests to become indentified with an untrammeled export trade, their junction with the southern planters, whose interests had always pointed in that direction, effected a great curtailment in protection to industries (whose infancy had by then been quite sufficiently prolonged).

In general it may be said that from the time of the loosening of British control until the time of our Civil War the position of agriculture in our economic society was determined largely by natural forces too strong to be in any considerable degree abrogated by political interference. A few special lines of effort such as wool-growing on the one hand or iron-making on the other had been manipulated to a certain extent. But our situation and resources were such as to make us inevitably a dominantly agricultural people with, however, an increasing home supply of simple and bulky manufactures in those lines for which raw materials were readily accessible, and a not inconsiderable commerce. It is doubtless true that, in the main at least, the growth of these industries represented not a subtraction of men and capital from a more profitable agricultural employment but an additional inducement to the migration of population and capital from Europe to the benefit of American agriculture and the development of an economic society whose relative proportions were fairly well balanced in view of surrounding circumstances.

From the Civil War forward this situation has been greatly altered. The fighting disciples of mercantilism and industrial imperialism have consolidated the easy gains of the war period and the hardly less easy victories which grew out of the subsequent demoralization of agriculture. The Homestead Act and free immigration, to be sure, inflated the *volume* of agriculture enormously but, after the subsidence of war prices, left it with constantly diminishing prosperity. The railroads, both in their control of rates and in their intermediary services in the disposal of public lands (to say nothing of stock subscriptions and contributions of right of way on the part of farmers), waxed great at the expense of the rural class. The manufacturer, protected by a most outrageous series of tariffs, sold high in a market of poor country buyers the goods produced cheaply from low-priced raw materials and labor fed on cheap domestic produce. In the money markets

the farmers were given scant service at the highest rate, until their industry showed marked signs of financial anemia.

At the opening of the twentieth century American agriculture stood in just the same subservient position to American industrialism that the colonies had occupied toward England a century and a quarter before. The inevitable revolution to which that situation must lead was in full progress when the European war broke upon us. The slow realignment of prices brought about by the cessation of geographical expansion and by the progress of cityward migration had brought results in the way of more adequate returns to farm enterprise. Nearly twenty-five years of agitation had brought reforms in the credit structure which put farming more nearly on an equality with other industries. A tortoise-paced development of rural education had paved the way for a tolerable labor efficiency in the technical phases of agriculture, and another generation may see equal progress in the direction of needful training for the economic organization of the industry.

The Present Posture of the Problem

After the disturbed and disturbing interlude of a four years' world-war we may well ask what is probable or desirable as the next step. To-day we stand at the dawn of a new epoch—one whose fateful possibilities and fruitful opportunities challenge us to draw up a policy of economic adjustment which shall be based upon a frank and clear recognition of the issues involved and upon a sensible discernment of the results, which will flow from one or another course of action.

Let us recognize at the outset that the decade or so immediately preceding the war had greatly strengthened the position of agriculture, and that war prices have brought further prosperity. Yet I doubt that it could be shown that the horn of agriculture is to-day unduly exalted in the United States, and furthermore its prospects in the near future are to my mind by no means dazzling. The advantages incident to this country's peculiar situation—diplomatic, geographical, military, and financial—with reference to the war are now swept away and our agriculture is soon to feel clearly the competition of other countries which, with the release of shipping and the return of their man power, will be in a position to work energetically and effectively for the supplying of both the European and other foreign markets in which we have sold. Unless the epidemic of bolshevism passes into a chronic stage over wide areas, we may expect that Europe, now that ancient habits of thrift are reinforced by the exigent appeal for meeting national deficits, may

be counted upon to stimulate home sources of agricultural supply to their maximum contribution to the national subsistence. The expressed intentions of England, France, and Italy point toward the rehabilitation of agriculture, and in many cases even its expansion, as a most profitable line for the immediate direction of post-war activities. Presumably Holland, Denmark, and the other neutrals will strive (and this in a strategic location at the door of the greatest of markets) to maintain every possible bit of the advantages gained during the war period. As long as disorder reigns in Central and Eastern Europe its market for American goods is practically nil, and agriculture must be the industry which is least demoralized in the transition period, and whose output will be quickly expanded upon the return of settled government. Likewise our commercial invasion, present or prospective, of new foreign markets in countries industrially backward is bound to put in competition with us another source of supplies of farm products, whose extent is, to be sure, problematic but presumably quite large.

At the same time industry (to which, rather than to agriculture, went the nimble dollar of the war speculator and the mobile and newly recruited labor forces of the war period) under the ægis of government protection and private aid, fares forth well armed and provisioned against the industrially devastated or politically hampered rivals which had formerly hemmed it in. Our manufactures have expanded enormously under the stimulus of war. Our merchant marine has grown to astonishing proportions. (And shall we not say to immoderate pretentions?) Our financial institutions have in four years' time achieved as many decades of advancement. The partial desertion of South American and oriental markets by European nations rouses the dream of a commercial and manufacturing future such as we had hardly dared imagine. Mercantilist forces are quite evidently looking forward to scoring heavily in the period which we are about to enter. Possessed of a definite program and effective organization for achieving it, they bid fair to claim the economic future of the United States for their own, little disturbed by the belated protests of less forehanded interests, which may find themselves thereby excluded from their proper place in our economic organization.

Financial and commercial interests are already looking forward to the after-war period as one of great industrial expansion in the "frontiers of the world." . . .

[The author here quotes somewhat at length a circular issued by the Guaranty Trust Company of New York, November 18, 1918, which may

be briefly summarized thus: The rapid industrialization of leading nations, of which the United States, Germany, and Japan are conspicuous examples, developed a need in the closing years of the nineteenth century for additional supplies of raw materials and new markets for finished goods; while vast sums of surplus capital which would not be absorbed at home would seek investment in new and undeveloped regions.]

. . . The United States is exhorted to throw itself into the same program of imperialistic mercantilism which has shaped the destinies of Europe. An economic system which has become lopsided through overdevelopment . . . on its industrial side is not to be allowed to regain its equilibrium by the restoration of its natural center of gravity, but is to be kept from falling by heightening the speed of its motion—like a motorcyclist on a saucer-track. We are urged to set deliberately upon that course whose eventual dangers have appalled even England, to whose situation such a policy is infinitely more suited than it is to ours. A course which, even mitigated as it was by considerations of military self-sufficiency, has been the largest single factor in plunging Germany down to ruin.

If America . . . should follow the lure of ships and foreign markets and industrial greatness without stint or limit, the future adjustment of industries one to another in America must conform to that ideal, and all those interests which in any way run athwart that line of development must impose a self-denying ordinance upon themselves or be put by a strong hand back into their humble place of servitude. If our manufacturers and traders are to meet the competition of the world they must strip themselves of all hampering influences. As we have been adjured during the war to make every domestic sacrifice to the end that our expeditionary forces should feel no lightest drag upon their rush to victory, so now those who would fare forth to win American supremacy in the markets of the world demand that they shall not be checked either by the hesitancy of government or by the counterclaims of other interests. To further their great mission we should be glad to squander millions, even hundreds of millions, in the construction and maintenance of a merchant marine, we should abate our foolish zeal to regulate business organizations, lest we impair their ability to levy capital or to adopt whatever commercial practice may conduce to their success in the face of foreign competition. Neither the maintenance of economic standards at home nor a living wage and decent treatment for sailors afloat must be allowed to handicap these knights of trade so unselfishly eager to set our flag over every commercial rampart of the world.

Least of all can they be hampered by aught that would keep the prices of food products and raw materials above the lowest point to which they can be any means be hammered.

Those interests which have in the past prospered upon cheap food and raw materials from a depressed agriculture at home now hope to engineer an even greater boom upon the basis of new cheap sources of these goods in more primitive foreign lands, grandly oblivious to the effect which this lowering of prices would have upon American agriculture and upon the domestic-consumption market. Perhaps a Seamen's Act, an American Federation of Labor, and the presence of labor delegates at the Peace Conference will safeguard a moderate working day and a living wage for mechanics and mill hands and even put working standards under the protection of international guaranties. But there are no farmer delegates at the peace table to represent the interests of the American farmer and to urge the adjustment of international economic relations in a manner which will take account of his proper claims when brought into competition with the European peasant and the Asiatic coolie. The foreign missionary of trade preaches still from the text of tariff protection sufficient in amount to equalize home costs with those abroad, but when the farmer suggests the applications of that engaging doctrine to this business, he is told to "go home and slop the hogs."

The fact that farmers have voted the burdens of manufacturers' protective tariffs upon themselves year after year because pseudo-protection to farm products was set down in the act as a means of throwing "dust in the farmer's eyes" does not prove that they will continue to wear a ring in the nose now that it becomes so glaringly evident that their products, unprotected or but slightly protected, are actually being hit by imports from abroad. The January thaw in the corn pit, when values melted away under the influence of a (largely potential) movement of Argentine corn, started a flood of discussion in the Middle West which is very likely to sweep away some old political landmarks.

The writer has no desire to present an argument in favor of agricultural tariffs as such. He fears indeed that what has already been said in connection with European experience might too easily be construed as praise of such an economic policy. But we are confronted not by the pure theory of free trade but by the sordid practice of protection to a wide variety of particular interests. The best goal attainable at present would be reached if we should pass from tariff as a "local issue" and government aid as a personal privilege, to a condition where a truly national

economy is established by a consistent policy. It is utopian to dream now of what List was fond of calling the "cosmopolite" economy. If manufacturing, commercial, shipping, and financial interests are to maintain their own advantages and secure yet new ones in the way of tariffs, bounties, public subventions, and private privileges, some patent, more of them disguised, then agriculture must secure countervailing aid and support or find itself in an artificially unfavorable position and steadily losing ground in the unequal struggle. Since we have already embarked upon such a policy of industrial protection; since, in view of the trend of foreign action, we are probably committed to such a course; since the outlook seems even to be for a strengthening of these politico-economic advantages for certain alert and unbashful interests, it behooves us to ponder carefully whether any impairment of the present position of agriculture in the commonwealth (or shall we say hegemony?) of callings in the United States would not be a serious misfortune.

Even though a League of Nations were to hold out such certain promise of peace as to remove forever the last vestige of a motive of military self-sufficiency, is there not still a sort of economic balance, faintly discernible but distinctly desirable, which might be denominated "industrial self-sufficiency"? Is it not in the end better to maintain agriculture in a state of prosperity than to allow it to decay, even force it into a decline, in the face of the certain need for its rehabilitation at no very distant time? The writer is frank to admit that as soon as internal peace can be secured in Eastern Europe and the great prairies of Russia and Siberia be thrown open to exploitation, as soon as South Africa and South America shall be awakened by this new order of world-industrialism, we of the United States shall in all probability be able to secure the chief of our staple foods and several of our textiles more cheaply abroad than at home. But it should be obvious that at this stage of the world's development such a reprieve from the hard facts of diminishing returns is bound to be brief. The advantages of building our economic structure upon that melting foundation are quite evidently less to-day than they were when England adopted her extreme policy of "ships and colonies and commerce." And to-day England is setting seriously about the restoration of her agriculture, which might quite possibly have been maintained throughout with more economical results in the long run.

. . . It is too late now to speculate upon what would have happened and what would have been the ultimate balance of gains

and losses if mankind could have resisted the intoxication of power which, since the Industrial Revolution got full swing, has been causing us to lash industry to the maddest race of speculative and ill-balanced development, putting the car of progress in the ditch about once every twenty years—with several hair-raising skids between the grand smashes. But assuredly it is not too late to urge the lords of trade to avoid a rash determination to turn now to the virgin allurements of other countries for agricultural conquest, and away from our own broad-bosomed land, even though her youthful charms have become in some measure faded by use and the passage of time. We are fast coming to the day when such captious inconstancy will be no longer possible, and indeed the long-run wisdom of such a procedure is already under question.

Before we commit ourselves to action on the hypothesis that a highly specialized industrial career for the United States, with a greater incoming trade in farm products and a declining domestic agriculture, represents the most economic organization of human effort upon the totality of the world's resources, we must scrutinize the real issue with some care. Even should prices at the moment be cheaper abroad than at home, we should profit little if we organize our economic system so as to get supplies where costs, though now low, are increasing, whereas we might get them permanently provided from a source at which their prices, a modicum higher to-day, are nevertheless on a curve of diminishing costs. The products of extractive industry which are brought from new lands are bound to have their supply-and-demand ratio somewhat rapidly readjusted toward higher prices as these centers are brought upon the economic plane of the older lands. Contrariwise, a country like the United States, its *raub-bau* checked before its natural resources had been too seriously depleted, and its agricultural producers being in the main of a remarkably high type, if given any decent chance, can keep costs well in hand and even declining through a system of adequately capitalized scientific farming. But this incipient triumph of efficiency for our agriculture as a modern industry is not to be inaugurated amidst slaughtered prices, deprivation of the capital indispensable to an advancing science and machine technic, or a generally weak institutional position for agriculture. Who shall say that if the hundreds of millions, the billions even, which would have to be spent to build and operate ships to go to the "frontiers of the world" and build railways to its uttermost bound were used to relieve the capital deficiency of our domestic agriculture, and likewise if this organ-

izing skill were turned to the captaining of our rural enterprise, they would not produce as great results to-day and equip us better for to-morrow's needs?

The present moment proclaims its fitness as a time for stabilizing American agriculture under a broad and far-seeing policy upon a basis of permanent efficiency, scaled in accordance with the varied economic resources of our country. We should see to it that the tragic experiences of the abandoned farms of New England and other Eastern States and those others of the eighties and nineties in the subhumid region beyond the Mississippi, shall not be repeated, nor the mournful company be increased by yet others near the margin of what has now become profitable use. Our national agricultural industry was just becoming re-established in a position fairly harmonious with other lines of economic endeavor when the clamor of a high cost of living threatened to loose upon it a flood of only half-reasoned efforts toward drastic price reduction. The public at large needs to learn that it has only recently emerged from a period of extraordinarily cheap farm products rather than to suppose that it is only temporarily and more or less improperly plunged into a readily remediable situation of high-priced food and textiles. However high one may set the possibilities of scientific efficiency in agriculture (and the writer is one to set the mark very high indeed) we must not forget that the principle of diminishing returns from land is from now on pulling heavily against us. Sighs for the "good old days" are wasted breath. We need education, capital, and organization, and to get them we must have a wise public policy, not penny-a-line misinformation.

Agriculture can rightly claim no vested interest in any special position in our economic system, but it should have full, timely, and competent presentation for its side of these public issues to which it is a party. It should be accorded as good treatment as the "most favored" industry. The public interest demands that our future efforts shall not be turned in a particular direction simply because that course is the one by which to perpetuate the adventitious industrial profits of war time, or to make profitable carrying charges to the shipowner, or to enhance the returns of money changers; it demands that our judgment shall not be misled by the evanescent superprofits of exploitation, nor that, falling into the rut of a particular sort of extensive organization, we shall fail to see the economies possible from better-equipped and organized system, a more compact integration of economic life in its established centers. If, with an honest desire to put our efforts where they will effect the maximum of economic well-being for the

whole people, we act only upon the basis of a searching and far-seeing examination of the facts, we shall be able to set forth a policy which will enable manufacturers to occupy the territory which they can hold permanently by the strength of true economic advantage, and maintain our agriculture on a basis of size and efficiency capable of adequately supporting this economic structure and of permitting its safe expansion as our technic of living improves.

Conclusion

In conclusion, it seems that the United States cannot avoid an open clash of interests such as every modern nation must meet when the process of its economic evolution carries it into the maturer stages of diversified industrial life. On the one hand stands an overweening mercantilism, on the other a churlish agrarianism; and between these extremes all shades of moderation, with a narrow zone of safety within which rival claims are reasonably harmonized. Only by honest admission of this inevitable conflict of interest can we develop the sound statesmanship by which such a wholesome adjustment can be brought about. Ostrich tactics of evasion are neither worthy nor safe. It is high time we faced the question as other countries have had to face it. We need to examine their experience with care and to study our own circumstances with penetrating and unprejudiced eyes.

Perhaps the greatest difficulty in the whole matter resides in an age-old tendency to view rural life merely as a means to industrial greatness rather than as itself a co-ordinate concern of social polity. . . .

AUTHOR INDEX

Alvord, Henry E., 405
Andrews, Charles M., 73, 93

Bagley, William C., 487
Bassett, John Spencer, 98
Bidwell, Percy Wells, 173, 235
Bond, Beverley W , Jr , 55
Boyle, James E , 562
Bruce, Philip Alexander, 40
Buck, Solon Justus, 412

Callender, Guy S , 1
Clark, Dan E , 147
Cole, Arthur Charles, 252
Coman, Katharine, 351

Friday, David, 546

Hammond, Matthew Brown, 425
Hanchett, D C , 230
Hibbard, Benjamin Horace, 163, 262, 504
Holmes, C L , 529
Holmes, George K , 356
Huebner, G. G., 230

Jacobstein, Meyer, 82
Johnson, Emory R., 230

Keith, John A. H , 487

Lippincott, Isaac, 193

Merk, Frederick, 415

Nourse, E. G., 573

Paxson, Frederic L., 390
Pease, Theodore Calvin, 252
Phillips, Ulrich B., 131, 271
Purcell, Richard J., 137

Ross, E. D , 419
Ruggles, Clyde O., 324
Rumeley, Edward A , 363

Schmidt, Louis Bernard, 16, 197, 304, 331, 370, 381
Schwab, John Christopher, 321
Sterns, Worthy Putnam, 216
Stone, Alfred Holt, 209, 274
Strunsky, Rose, 293

Treat, Payson Jackson, 53, 153
Trimble, William J , 339, 436
Turner, Frederick Jackson, 107, 143

Van Hise, Charles Richard, 28
Van Metre, T. W., 230

Walker, C S , 456
Wanlass, William L , 473
Wiest, Edward, 465, 557
Wilson, M L., 345
Wissler, Clark, 49
Wright, Agnes, 252

SUBJECT INDEX

Adams Act, 485, 494.
Agrarian Revolution, meaning, 331; factors in, 331–338; result of passing of public lands, 344; compared with industrial revolution, 363.
Agricultural college, history of, 21; result of the "Industrial Movement," 487; early experiments, 488; Morrill Act, 488–491; early problems, 492; supplementary acts, 494; state support of, 495; and agrarian revolution, 338; aid in diversification movements, 424, 553, 555; association of, 460; in World War, 507–508, 511, 513, 522, 527.
Agricultural extension. See Extension.
Agricultural organization. See Farmers' organizations; Agricultural societies.
Agricultural societies, local, 187, 238, 252, 256–257, 466–467, 477–478; state, 256–257, 259, 411, 418, 420, 423, 466–467, 477–478; national, 478–479.
American agricultural history. See Economic history of American agriculture.
American economic history, attitude of historians and economists toward, 1–8, field and method, 9–14, 26–27; research in, 14–15, 22.
American Federation of Farm Bureaus, 500, 567.
American Revolution, and agricultural interests, 39; effect upon southern agriculture, 135.
Association of American Agricultural Colleges and Experiment Stations, 460.

Babcock, S. M., and cream test, 414.
Barbed wire, and closing of the range, 395.
Baronies, in South Carolina, 80.
Barron, J. H., first county agent, 558.
Beef cattle, herding of in colonial Piedmont, 116–117, 124; in pioneer New England, 183–184; increase in 40s and 50s, 231; specialized production in New England, 240; effect of western competition upon New England, 241, 243; improvements in Illinois, 253, 260; in the corn belt, 389; on the range, 392–395; exportation, 397–398, 436–437, 440–441.
Belts, agricultural, 497, 544.
Boards of agriculture. See State boards of agriculture.
Borden, Gail, and condensed milk industry, 410.
"Bread Colonies," 94.
Bureau of Animal Industry, establishment of, 398, 480.

Carey Act, 352.
Carnegie Institution, work in economic history, 15–16, 22.
Cattle. See Beef cattle; Dairy cattle; Live stock.
Civil War, agricultural cause of, 129, 293, 294, 303; southern agriculture during, 130, 321–324; northwestern agriculture during, 130, 324–329; influence of agricultural exports upon foreign relations during, 304–321; agricultural legislation during, 479–480; effect upon southern agriculture, 425, 443.
Claim associations, 166–168.
Clubs, boys' and girls', during World War, 511.
Colman, N. J., first Secretary of Agriculture, 481.
Colonial agriculture, general characteristics, 37; relative importance, 73; New England, 73–75; Middle, 75–77; Southern, 77–82, 88–91,

133–134; frontier, 116–117, 124; British regulation of, 38–39, 473–474.
Columbian Agricultural Society, 478.
Congress, and agriculture, indifference during first sixty years, 476; first appropriations, 476–477.
Co-operation, farmers', 461–462; extension of after 1920, 501, 552.
Corn (maize, Indian corn), Indian cultivation of, 42–46, 49–52; in pioneer New England, 174; in pioneer west, 195; relative production of, 197; trade in, 198; production to 1860, 199; exportation, 1820–1840, 230, in 1860, 233; in Illinois, 254; expansion of production, 341; production, 1859–1909, 371; movement of area of production, 1839–1909, 381–389; the "corn belt," 384–389, 497; use of machinery in, 359–360, 369.
Corn Belt, 386, 497, 544.
Corn Laws, repeal of, 232, 314.
Cornell, Ezra, and the New York land grant, 492.
Cost of production in agriculture, reduction of, 553–554.
Cotton, introduction as staple, 135; factorage system, 209–216; production and sale, 1820–1840, 221–227; in 1860, 231, 233; and slavery, 272–273; influence on Anglo-American relations during Civil War, 305–313; production during Civil War, 322–324; effect of war upon production, 425; reorganization after war, 426–429; fluctuating market, 1876–1910, 430–432; boll weevil and reduced output, 433–435; cotton future's act, 485; cotton belt, 497; exports during World War, 533; reduction of acreage, 544.
Cotton Future's Act, 485.
Cotton gin, 21, 361.
Councils of Defense, and increased production in World War, 508–509.
County agent, origin of, 557–558.
Cows. See Beef cattle; Dairy cattle; Live stock.
Cow Country, 391.
Currency, and agricultural prices in the 70s, 450.

Dairy cattle, improvement of, 411–413, 423.
Dairying, progress in 19th century, 405–415; factory system of production, 408–410; inventions, 410–411, 413–414; organization, 411; improvement of breeds, 411–413; in New England and New York, 242, 408, 420; extension to the Northwest, 416, 420; development in Wisconsin, 415–419; in North Dakota, 420–424.
Dairymen's associations, 411, 418, 420, 423.
Deere, John, and plow improvement, 366.
Department of Agriculture (federal), relation to agrarian revolution, 337; early suggestions of, 474–476; work of Patent Office, 476–477; agitation of agricultural societies for, 477–479; establishment with commissioner (1862), 479; raised to an executive department (1889), 481; development since 1889, 482–487; in World War, 504–508. See also State departments of agriculture.
Desert Land Act, 352.
Diminishing returns, law of, operation in U. S., 191, 342, 363.
Dry farming, 354–355.

Economic history of American agriculture, as a field of study, 17–22; research in, 22; importance, 23–27.
Education, agricultural, history of, 21; and agrarian revolution, 336–338; influence of agricultural societies, 256, 466; farmers' organizations and, 460–461; the "Industrial Movement," 487; first institutions for, 488; development of agricultural colleges, 488–495; experiment stations, 485, 493; extension, 485, 495; secondary instruction, 495.
Ellsworth, H. L., and beginning of federal activities for agriculture, 476–477.

Equity (American Society of), 500, 567.
Equity Union, 567.
Experiment stations, 485, 493.
Exports, agricultural, colonial, 91, 93–94; British regulation of, 38, 95; 1820–1840, 221–230; 1840–1860, 233–234; 1862–1910, 436–437; decline after 1900, 344, 363, 437; effect upon European agriculture, 438–441; during World War, 533; after World War, 534.
Extension, agricultural, 485, 495, 501; during World War, 511; in reconstruction, 554–555.

Fairs, agricultural, 255, 257, 326, 328.
Farm, defined, 132; increase in northwest, 261, 325; changing sizes, 333; rise in value of, 343.
Farm Bureau, origin, 500, 557–559; growth, 559; types, 560; objects and activities, 561–562.
Farmers' Alliance, 459.
Farmers' elevators, 569.
Farmers' National Headquarters, 565.
Farmers' organizations, history of, 20; and agrarian revolution, 338; in 70s, 455–456; in 80s and 90s, 456–464; revival after World War, 500; inadequacy of existing, 562–563; federations, 564–567; national, 567–568; local, 569; political, 569–570; problems and outlook, 570–572.
Farmers' Union, 500, 567.
Federal aid road act, 486.
Fencing, problem in Illinois, 258; of the range, 395–396, 400.
Flour, history of milling, 18; exportation, 1820–1840, 228–229; 1860, 233; internal trade, 203–209, 255; exports, 228–229
Foreign trade, in agricultural products, colonial dependence upon, 37; British regulation of, 38–39; obstacles to growth in early 19th century, 217–221; chief exports to 1840, 221–230; expansion in 40s and 50s, 230–234; during Civil War, 304–321; 1862–1910, 436–437; changed character after 1900, 344, 437–438; during World War, 533; changes following World War, 534–538, 547–548. See also Exports.
Frontier, colonial, 107, 123–125; as type of agriculture, 133, 193; effect upon older regions, 142, 190; last, 339–355, 390; and range, 391–399; dairying extended to, 419; and Populism, 464. See also Westward movement.
Fruit, in New England, 182; in Illinois, 259; in Michigan, 553; standardized containers, 525.

Gas-engines, use on farm, 363, 365; compared with horse, 365; fuel problem, 368.
Gitchell, B. H., and farm bureau movement, 557.
Gleaners, 567.
Grain, per capita production by sections to 1860, 200; to 1909, 370–373; increase of acreage, 343; grain standards, 486, 526; production during World War, 507–513, 530; since the war, 531, 547–548.
Grain Standards Act, 486.
Grain trade (internal), rise, 202; development, 203–209, 231, 255.
Grange, development to the 90s, 459, 460; present strength, 567; achievements, 481, 568.
Granger movement, economic and social background of, 442–456.

Hatch Act, 485, 493.
Home market, adjusting production to, 502–503, 538–544, 547–553.
Homestead Act, 162, 332, 340; and reclamation problem, 353.
Horses, versus oxen in pioneer New England, 184, 239; in Wisconsin, 269; versus tractors, 257, 365, 368.
Hussey, Obed, inventor of reaper, 257, 360.

Illinois, settlement, 144–145; pioneer, 194; agricultural development, 1830–1860, 252–262.
Indian agriculture, land holdings, 40; crops, 41–42; methods of

cultivation, 41–43; influences of, 41, 43, 49–52; irrigation, 352.
Indigo, in southern colonies, 81.
Industrial revolution, and agriculture, 128, 225, 331, 340, 341, 363, 551.
Industry and agriculture, relations to Civil War, 573–574; from Civil War to World War, 574–575; present problem, 538–542, 575–582.
Iowa, settlement in 50s, 148–151; prosperity during the Civil War, 325–328.
Irrigation. See Reclamation.

Jefferson, Thomas, and plow improvement, 366.

Kelley, O. H., career as subject of study, 21.
Knapp, Seaman, career as subject of study, 21; and county demonstration work, 558.

Land Grant Act. See Morrill acts.
Land Grant College. See Agricultural college.
Land settlement, systems of, colonial, 53–54, 125; state, 125; national, 155–163.
Land speculation, in colonies, 78, 82; under public land policies, 163, 169–170, 340.
Land tenure, colonial, 38; New England colonies, 74; middle, 75, 113–114; southern, 77.
Lands, agricultural, basis of classification, 28; divisions, 29–34; proportion of arable, 35; utilization of inferior, 344; unused in World War, 514.
Leaders, agricultural, as subjects of study, 21; lack of in New England, 249; need of in farmers' organization, 571–572.
Live stock, exported by colonies, 94; in New England, 183–186, 239–241; in Illinois, 253, 260–261; surplus production, 341. See also Beef cattle; Dairy cattle; Horses; Oxen; Sheep; Swine.

McCormick, Cyrus, career as subject of study, 21; and reaper, 253, 257, 360, 369.
Machinery, agricultural, experiments with new in Northwest, 253, 257–258, 264; in Civil War, 130, 326; and the agrarian revolution, 333–334; general evolution to end of 19th century, 356–362; influence of patent laws upon, 362; in dairy industry, 410–411, 413–414; application of mechanical power, 363–369; possibilities for the future, 363.
Maize. See Corn.
Manors, on the Hudson, 75; Maryland and Virginia, 77–78.
Marketing, of agricultural products, history of, 19; colonial tobacco, 39; cotton, 209–216, 305–313, 430–432; co-operative, 461–462, 501, 552; in World War, 522–528; in reconstruction, 501.
Markets, agricultural, colonial, 83, 90, 94–98; growth, 1830–1860, 128; growth of and agrarian revolution, 335–336; for meat, 397–398, 403; cotton, 430; wheat, 444–445; expansion of foreign, 436; during World War, 498; adjustment of production for home market, 502–503, 542–553. See also Home market.
Meat, colonial export, 93; exportation, 1820–1860, 229, 234; western invades New England, 241; in Illinois, 261; surplus production, 341, 389, 393; exportation since Civil War, 397–398, 436–437, 440–441, 533.
Meat packing, history of, 18; development, 261, 401–402.
Mercantilism, policies of in colonies, 38.
Merino sheep, introduction of, 185.
Middlemen, and farmers of 70s, 447–449.
Montana agriculture, periods of, 345; beginnings, 346; gold rush and, 347–348; developments in 60s, 349–350.
Morrill acts, first, 488–491; second, 494.

Morrill, J. S., career as subject of study, 21; public service and character, 488; work for agricultural education, 488–494.
Mower, development of, 360–361, 365.

National Board of Farm Organizations, 566.
National Farmers' Congress, 459.
Negro, as free agricultural laborer, 426; as tenant and proprietor, 427, 431; northern movement of, 540.
Nelson Act, 494–495.
Newbold, Charles, cast-iron plow of, 357.
New England agriculture, colonial, 73–74; pioneer conditions, 173–193; growth of home market for, 236–240; effect of western competition, 241–243; readjustment of, 244–251; dairying, 408, 419; diversified system, 442.
Nonpartisan League, 569–570.

Old Northwest, winning of, 39; settlement, 139–152; slavery in, 144; pioneer agriculture in, 194–196; agricultural development to 1860, 252–270; discontent of in 70s, 443–444.
Old Southwest, settlement, 39, 134, 136, 144, 153; pioneer agriculture in, 134, 194–196; types of agriculture by 1860, 272–273.
Oliver, James, chilled plow of, 357.
Oxen, in New England, 184, 239; in Northwest, 194, 269.

Patent Office, and agricultural machinery, 362; and first federal activities for agriculture, 476.
Patent rights, abuses in 70s, 449.
Patrons of Husbandry. See Grange.
People's Party, 464, 481.
Pioneer agriculture, 193–196, 217–219.
Plantation, defined, 132; types of southern, 273; sales after Civil War, 426; division of, 427.
Plow, experiments in Northwest, 253; evolution of, 357–358, 366; steam, 257, 367; gasoline, 367–368.
Plowing, importance in agriculture, 366–367.
Police power, exercise of by Department of Agriculture, 482–485.
Politics, and farmers' movement, 454–455, 458, 462–464, 569–570; and agricultural readjustment, 547, 556.
Pre-emption acts, 159–161, 165, 340.
Press, agricultural, and the agrarian revolution, 338.
Prices, agricultural, of colonial tobacco, 90; in 60s, 326–327; period of falling, 451–453, 457; period of rising, 343, 497, 547; effect of World War upon, 498; relative decline following World War, 500, 530, 546
Public lands, history of, 17; extent of, 332, 339; colonial precedents of policies, 125; first settlement, 153; development of settlement policies, 155–162, 340; influence upon agricultural settlement of policies before and after 1820, 162, 476; claim associations, 166–168; speculation, 169–170; swamp lands, 171; rapid occupation, 340; results of passing of, 332–333, 341–345; and reclamation, 352–355; illegal enclosures of, 396; grants for agricultural colleges, 490.

Quit rent, nature and origin, 38, 55–56; in New England, 56–58; in the provinces, 58; amount, 59–60; collection, 60–68; appropriation, 68–70; results of, 70–72.

Railroads, and the grain trade, 206–209; and New England agriculture, 241; and the agrarian revolution, 334–335; and the cattle industry, 393, 402–403; and agricultural discontent, 445–447, 458; in World War, 526. See also Transportation.
Range, colonial, 116; western, beginnings, 391; extent and conditions, 391–392; developments, 393–395; passing of, 395–400; results, 400.
Reaper, evolution of, 253, 257, 264, 360–361, 365.

Reclamation, due to land shortage, 344, 351; available area, 34–35, 352; beginnings, 352; federal acts, 352–353; developments, 353–354; dry farming, 354–355.
Reclamation Act, 353.
Reclamation service, 353.
Research, in economic history, 14–15, 22; in agricultural economics, 501.
Rice, a colonial staple, 81; exportation, 1820–1840, 229.
Rural civilization, opportunity for in United States, 345.
Rural credit, 501.

Sheep, in New England, 185–186; in Illinois, 261.
Slavery, introduction, 294–296; and tobacco cultivation, 86–87; distribution in southern colonies, 134–135; in Old Northwest, 144; end of foreign slave trade, 271; internal trade, 271–272; in plantation districts, 272–273; fallacies in traditional interpretation of, 275–277; and racial factor, 285–287; struggle over the extension to the territories, 299–303; effects of emancipation upon southern agriculture, 425.
Smith-Hughes Act, 495.
Smith-Lever Act, 485, 495.
Social conditions of farmers, in New England, 188–189; in the 70s, 455.
Southern economic history, unsolved problems in, 274–276.
Spillman, W. J., and farm bureau movement, 558.
State boards of agriculture, transition from voluntary societies, 467–468.
State departments of agriculture, 337, 469–473.
Sugar cane, experiments in Illinois, 259; plantation cultivation of, 273.
"Sugar Colonies," 94.
Swine, in pioneer New England, 185; in pioneer West, 195; in Illinois, 260–261; surplus production, 341–533.

Tariff, and agriculture, before Civil War, 219–221, 573; after the Civil War, 450–451; of increasing interest to agriculture, 344, 578.
Taxation, of farm property, 451, 457.
Tenancy, in South, 427, 443.
Thresher, early experiments, 253, 258, 264; and reaper combined, 361; patents for, 362.
Tobacco, Indian cultivation, 46–49; quit rents paid in, 66; beginning of European trade in, 83; English influences favoring production, 83–85; colonial influences favoring, 85–87; use of slave labor in, 86–87; northern soils unfavorable for, 88; development in colonies, 88–91; as colonial export, 91–92; marketing system, 98–106; at close of colonial period, 133–134; exportation, 1820–1840, 227; production in 1860, 272.
Transportation, and agriculture, history of, 19; and agriculture before 1860, 128, 230–231; and grain trade, 203–209, 217; and cotton, 225; and New England agriculture, 242; and agrarian revolution, 334–335; and live stock industry, 392–393, 403; in World War, 526. See also Railroads.
Turner, J. B., career as subject of study, 21; and Osage hedge, 258.

United States Agricultural Society, 479.

Wagon, farm, crude in pioneer West, 194; development of, 356; replaced by automobile, 364.
Wallace, "Uncle Henry," career as subject of study, 21.
Washington, George, agricultural work of as subject for study, 21; interest in board of agriculture, 465, 474–475.
Watson, Elkanah, and beginning of agricultural societies, 478.
Weaver, J. B., career as subject of study, 21.
West. See Frontier; Pioneer agriculture; Westward movement.

Westward movement, colonial, 107; New England, 108–112; middle colonies, 112–114; southern colonies, 115–120; movement along Great Valley, 121–123; after the Revolution, 153; and agriculture before 1860, 127; extent in South by the Revolution, 133–134; from the New England states, 137–142; in the 20s, 143–146; in the 50s, 147–152; and public land policies, 153–162; to last frontier, 339–355; of wheat, 374–380; of corn, 381–389; of dairying, 416, 419; of cotton, 432.

Wheat, failure in New England, 175; as article of commerce, 198; production to 1860, 198, 231, 254; export in 1860, 233; the "one crop" period in Wisconsin, 262–270; influence upon Anglo-American relations during Civil War, 313–321; expansion of production, 341; exportation since Civil War, 344, 437; relative production, 1859–1909, 371; by sections, 375; westward movement, 374–380; future of, 380; decline in Old Northwest, 444; on the Pacific coast, 444; the wheat belt, 497, 498, 544; surplus following World War, 550.

Whitney, Eli, career as subject of study, 21.

Wilder, M P, and national agricultural societies, 478.

Wilson, James, career as subject of study, 21.

Wisconsin, public land policies in, 163–172; the "one crop" period, 262–270; during the Civil War, 328–329; dairying in, 415–419.

Wood, Jethro, and plow improvement, 366.

World War, turning point in American agriculture, 497; expansion of production during, 498–499, 504–522; marketing developments, 522–528; depression following, 500, 529, 533.