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RECONSTRUCTION IN CHINA

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RECONSTRUCTION IN CHINA

A RECORD OF PROGRESS AND ACHIEVEMENT
IN FACTS AND FIGURES

WITH ILLUSTRATIONS
AND MAPS

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PREFACE

IN no other country in the world has an Administration had to face so many difficulties as have confronted the National Government of China since its establishment at Nanking in 1927 and its reorganization at the end of 1931. In presenting this survey of some of the directions in which progress has been made, it is necessary to remind those readers who may not be very familiar with conditions in China that what has been accomplished really represents much more than the bare record shows. This progress has been made in the face of a combination of difficulties and disappointments such as no other country has had to deal with. When the National Government was established in Nanking there was much unrest in different parts of the country, and subsequently matters were made much worse by the depredations of Communist-banditry, by the disastrous floods of unprecedented dimensions and by the outbreak of hostilities following Japan's invasion of Manchuria. Meanwhile China was beginning to feel more acutely the effects of the world depression, being probably the last great country—because she is relatively the poorest—to be affected by the slump in foreign trade and in prices.

This combination of unfavourable factors would have been regarded in Old China as more than sufficient excuse for the country's leaders to sit with hands tucked in their sleeves, resignedly waiting for the will of Heaven to work itself out in some way, for better or for worse. But Young China's leaders are men of other stuff, and grimly determined to battle along and do their utmost to overcome every obstacle encountered. Each new setback inspired them to more strenuous effort. They knew what they wanted, and were determined to reach that goal, and the present volume is a record of some of the directions in which progress has been made in spite of almost overwhelming difficulties. China has very limited financial resources to pay for things which every intelligent man and woman in the country knows should be done without delay.

The masses have to be educated to the stage of appreciating what their leaders are striving to do for them, for they are, for the greater part, still woefully lacking in the most elementary education; and after centuries of oppression under mandarins and militarists have to be instructed in their rights and responsibilities as citizens of the Republic. They have to be given that understanding of affairs which alone will break down age-old prejudices and substitute willing co-operation in progressive reforms for wilful obstruction, open or otherwise, due to ignorance and inherited suspicions of the good faith of the country's leaders.

In Europe and the United States during the past few years political and social experiments have been in progress which are of tremendous interest and importance. China is groping her way through similar difficulties, complicated by many other problems which do not vex European and American statesmen in efforts to better the conditions of their people. The leaders of Young China have good reason to be modestly proud of what has been done, even though the result falls far short of what they had hoped for. During the period following the truce made with Japan tremendous progress has been made, and if the achievements since 1932—when Mr. Wang Ching-Wei took up office as President of the Executive Yuan—can be taken as an indication of the trend and pace of future developments, the next few years should produce much more encouraging results. As will be seen in the chapters that follow, the National Government recognizes that wide reforms are necessary to put its own house in order. An organ has been established whose sole duty it is to ascertain in what directions action can be taken to improve the efficiency of administrative machinery. This is a most significant move—frank recognition of the fact that "national reconstruction" means something much more than recording on paper the day-dreams of a little coterie of idealists who do not deign to bother their heads with what seem to be petty practical details. Young China realizes that the reform movement has to be complete to be successful, and that before efficient administration can be expected the necessary machinery must be erected and competent men placed in charge of it. In the old days a profound knowledge of Chinese classic literature was considered the one essential qualification of candidates for official posi-

tions. More recently, men were appointed to such posts out of personal or political considerations. Neither method makes for administrative efficiency, and as will be seen elsewhere in this volume, vigorous steps are being taken to remedy this unsatisfactory state of affairs.

The National Government thus sets a good example by showing determination to practise what its leaders preach when they deal with the problem of national reconstruction in its other aspects. There is really no limit to that problem; in nearly every direction China lags behind the rest of the world, but she is moving, and moving more rapidly than many realize. Political unity has been established to a degree which some feared (and others hoped) would not be possible, China's credit abroad at the end of 1934 stood higher than it had for a long time past, and relatively higher than that of many other countries less unfavourably situated. Her efforts to meet overdue obligations in regard to railway loans were recognized by foreign observers as convincing evidence of good faith in a matter which has been the source of much critical comment. This defaulting in regard to interest and principal payments, however, was not due to any desire to evade the just claims of those who had advanced money to China; it was simply the direct consequence of a state of internal turmoil which made it impossible either to build or to operate railways as originally planned. The attempt to bring about national unity by force was eventually recognized as a wasteful and suicidal policy, and, with the *decision* to apply the principles of moral suasion rather than the sword, there came a cessation of civil war and an immediate improvement in the domestic political situation which made it possible for the National Government gradually to recover control of lines and rolling-stock which had been seized by various war-lords and operated by them for military purposes. The railways are now being utilized for the purposes originally intended—the transportation of passengers and freight—and construction plans which had been held up for years by civil war are being rapidly pushed on with, and new routes are being built and surveyed.

On the development of communications in China depends the pace of general economic, social and political progress. Without roads, railways, telegraphs, and telephones it is impossible to bring about an under-

standing even of the theory, much less the practice, of national unity. In pre-Republican China it was the absence of communication facilities which led to, and perpetuated, an unfortunate ignorance of, and indifference to, national interests. The people of one province were concerned solely with their own affairs, and had little, if any, interest in, or consideration for, those living in other parts of the country. With the building of modern highways the motor-bus brings into close contact communities which formerly would never get to know one another; commercial and social intercourse is now possible between towns and villages which in former days were almost as alien to each other as widely separated foreign countries. The radio has had a tremendous unifying influence. Every day news is broadcast from Nanking and Canton and relayed through a dozen or more local stations in various parts of the country, establishing direct contact with places which it takes days or weeks to reach by road. The aeroplane, too, has done much to develop national unification. All the important cities in China are, or can be, reached in a few hours from Nanking, Shanghai, and Canton—some of them places which can be reached otherwise only by long and weary journeys by road, rail, and river, taking more than as many days or weeks as the air-pilot requires hours for the trip. With this great speeding-up of communications throughout the Republic, the unification of the country is being promoted by making possible the swift transportation of letters and the rapidly growing number of newspapers, the immediate transmission by wireless of important news of national interest and importance, and—as will be seen in the detailed story appearing elsewhere in this volume—by facilitating the carriage of produce and manufactured goods between provinces and towns formerly separated by high mountain ranges, unnavigable rivers, or—no less obstructive—by sheer local prejudice.

Along with the development of means of communication has come the development of education, elementary and advanced, the improvement of domestic industry, and especially the rehabilitation of rural industry. China has immense potential sources of wealth; they only need development in the most effective way. This volume gives the reader an outline of the work which has been actually done and is

being planned in these and other directions—public health, irrigation work, flood and famine prevention, to mention only a few of the more outstanding examples. All this pioneer work has been carried on under most unfavourable conditions, internal and external, political and financial, and although the result to date is far short of what was originally hoped for, yet it is highly encouraging as it is highly creditable to the men who planned the work and those who are putting principles into practice. China's future progress should be much easier now that so much of the difficult spade-work has been done. The ground having been well turned-over, and many seeds having been sown, a good harvest can be confidently looked for if no "storms" sweep over the country and destroy the result of so much patient labour. As to that, China can only hope for the best. Such disturbances will not be of her making; if they should come again to vex her, she is in better condition today to face the tempest than she was when the last "storm" swept over the country. The nation is more united today than, it has been at any time since the Revolution. This political unification is being followed by an earnest attempt to establish economic reconstruction—a process which must of necessity be slow in any country, and particularly so in China, relatively backward in all the essentials to sound social and material development. But "the will to do" is there—the determination to make China a peaceful and prosperous country, able to take her rightful place along with other great nations, free and independent, and not only willing (as she already is) but capable (as she has yet to be) of exercising her power with other progressive peoples for the establishment of a better international understanding throughout the world.

June First

T'ANG LEANG-LI

Twenty-fourth Year of the Republic

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RECONSTRUCTION IN CHINA

CHAPTER I.

POLITICAL REHABILITATION.

WHEN the National Government was established at Nanking in 1927, it faced a situation for which chaos is hardly too strong a word. It was a National Government, yet there were many parts of the country and many sections of the people who refused to recognize its authority, or if they did acknowledge it, did so only until such time as it might be convenient to repudiate it. While undoubtedly representing the will of the majority of the Chinese people, it was yet a Revolutionary Government which had established itself by force of arms, and which was to depend for some time to come on the force) of arms. Dr. Sun Yat-Sen had given it a philosophy and a programme, had drawn up a Constitutional framework, and laid down the general lines of advance towards the completion of that framework; had postulated the economic and social ideals which should inspire the builders of the new State, and suggested the methods by which those ideals might be achieved. On the other hand, previous Governments, working from a capital hundreds of miles to the north and with outlooks and policies by no means consistent, had passed laws and built up an administrative system to enforce them. The battered remnants of that system, along with a mass of legislation, largely incoherent and not co-ordinated, the National Government at Nanking inherited. Those remnants and that legislation—save where they could be fitted in with its own plans—had to be cleared out of the way before the National Government could begin its work of reconstruction.

It was no light task, therefore, which faced the National-Revolutionary leaders, especially in view of the country's sorry economic plight. The economic difficulties, in fact, were as great as the political, and it was impossible to separate the one from the other. Political had to go hand in hand with economic reconstruction if a united China was to be achieved. "A nation may be united," wrote Mr.

Chen Kung-Po in *The People's Tribune*, September 1, 1933, "by military political, or economic forces. Unification by sheer strength of arms may be regarded as a matter of military tactics, while to try to unite a nation only by political means is mere theorizing. My experience tells me that the corner-stone of true unification is to be found in economics."

This is certainly an over-statement of the case, perhaps natural in a Minister of Industry. While unification by force of arms or by political methods may be, as he says, at best a temporary measure and the lavish application of force and the employment of political methods may end only in disappointment, yet without the help of the soldier and the politician the industrialist can accomplish little. Something therefore deserves to be said of their work, some account given of the political rehabilitation that has been going on during the past six or seven years.

UNIFICATION BY RECONSTRUCTION.

The first thing to be noticed is that China has by military and, more effectively, by political measures been brought much nearer unity than she was in 1927. One by one the opponents of the National Government have been eliminated. Nanking is to-day universally recognized as the capital of China, and the National-Revolutionary leaders as the only fit and proper people to speak for the country. Here and there, it is true, disintegrating forces are at work; there are still ambitious Generals, and the Communist canker has not been completely removed. Rebellion has occasionally raised its ugly head, but on each successive occasion is more easily dealt with. The area wherein the Communists hold sway is steadily being narrowed. By the beginning of 1934, Hupeh, Honan and Anhwei had been practically cleared of Communist forces; those in Szechuan had suffered heavy losses, while in November 1934 the Communist bandits were driven out of their stronghold in Kiangsi province.

While the soldiers have been busy, the political leaders have not been idle. Every year has brought China nearer the truly democratic system of government envisaged by Dr. Sun. At the same time practical men are bound to recognize that for the moment it is impossible to apply that system in its entirety. The period of political education is not yet terminated.

More important than any paper Constitution-making has been the creation of a working system of practical government modelled on the lines laid down by Dr. Sun. The machinery is being installed and put into working order, ready for the people to take over when

they have been trained to handle it. The administrative system has been recreated and rationalized. At the same time the nation's ideas have been clarified; it knows now the direction in which it is heading. Successive enactments by the Legislative Yuan have built up a code of law which indicates very definitely what the New China is to be. Finance, the Judicial System, Labour Problems, Education, Health, and Local Government have all been exhaustively dealt with. Foreign observers are apt to be critical on the ground that a great deal of this legislation goes, for the time being, no further than the paper it is written on, and from their point of view that criticism has a certain justification. But foreigners are apt to overlook the boon which codification of this kind, even though it may be still paper codification, confers on a Vountry placed in China's position. To work down slowly from precedent to precedent is no plan for a country which has rapidly to make itself over anew if it is to take its rightful place in the modern world—especially a country in which the forces of conservatism are so strong, where tradition weighs so heavily, and "old custom" is the criterion by which so much is decided. Not the least of the Government's achievements has been the drafting of laws representing a programme which it only remains for time to implement and enforce.

It is of little use creating machinery for government without proper men to operate it. One of the most marked differences between China of to-day and the China of fifteen or twenty years ago is that the majority of the leaders are modern trained and better fitted for their posts. Not so very long ago all that was required of a public official was a thorough knowledge of the Chinese Classics; the last thing expected of him was technical training.

That situation has greatly changed, especially since the founding of the National Government under the auspices and direction of the Kuo-Min Tang. For example, twelve out of the nineteen leading personalities in the Government have received specialized education abroad. In the minor offices men are being appointed in steadily increasing numbers according to their special and technical qualifications for the vacant posts. This may seem so obviously the right thing to do as to go without saying, but the fact is that in China things were not done that way until quite recently.

Preparations are being made to overhaul the Civil Service and make sure that the right men are in the right places. In the good old days

graft and inefficiency were expected in official circles, but things are different now, and while it would be absurd to say there is no corruption in official circles, or that all Civil Servants are efficient, the trend is very definitely in the direction of eliminating the one and insisting upon the other. What is known as the "spoils" system is to be stopped, and it will not be possible to secure a position in the Civil Service simply on the strength of personal or political relationship with influential persons occupying high administrative posts. The "spoils" system is not new; it is a heritage of feudal and Imperial days, and will take time to pass away, but it is passing. As the President of the Executive Yuan,* Mr. Wang Ching-Wci, pointed out in commenting on this problem, brilliant students are not always efficient workers, while men who do not shine as scholars sometimes prove to be diligent and trustworthy in posts where profound learning is not necessary. The question is how to find the right man for a vacant post, and it is to this end that plans are being drafted in regard to recruiting for the Civil Service. The suggestion has been made that the Executive Yuan and the Examination Yuan should jointly appoint a body with power to dismiss any official found incompetent of discharging the duties allotted him. Moreover, it is proposed that high officials be no longer allowed to appoint their own nominees to subordinate posts, but be restricted to choice from among those who have been examined and approved by the Ministry of Official Ranking. Such a reform would not only make for a more efficient Civil Service, but would relieve those in authority from the embarrassment which so frequently arises out of the old custom of being expected to find a job for those with a family or political claim for preferment.

The same holds good for the provinces. During 1932 the *North-China Daily News* published a series of articles from its correspondents (all foreigners) in the interior, which bore almost unanimous witness to the great progress being made. Invariably the credit was ascribed to the new type of provincial governor and the staff he gathers around him. Emphasis was laid also on the fact that the maintenance of this improvement, any acceleration in its rate, depends on the continuance of the existing provincial administration. It is not enough just to appoint a good man; he must be given reasonable assurance

*A position in the Chinese Government approximately similar to that of Prime Minister.

that his tenure of office is secure. He must be given not only authority but time in which to make that authority felt. In other words, the first essentials are stability and continuity. It is because during the last two years these factors have been operating that so encouraging a situation is to be seen. It has at last been possible to make a real start on the task of creating an administrative service; men are being trained to fill, and fill satisfactorily, the minor positions, and in this connection it is interesting to note what was reported from North Honan. There each *Hsien* (55) is divided into *Chu* (B), and each *Chu* placed under a "Chu Chang" who must be 30 years of age, have had a middle-school education, and in addition training in administrative work at the provincial capital. In these lower positions men learn to exercise power and accept responsibility, and in time become fitted for higher posts.

North Honan is not the only district by any means which has been tackling the problem of local administration along scientific lines. In 1929, the Central Government issued orders that arrangements for district autonomy in the *hsien* should be completed by 1934. Practically all the provinces have now their programmes ready, though some of the poorer and more remote areas are unable to put them into operation for lack of funds. Nineteen have set up institutes for the training of "chu chang", and at the beginning of 1933, it was estimated that 7,713 graduates of these institutes were available for employment.

REORGANIZATION OF PUBLIC UTILITIES.

Another administrative advance has been the steps taken to put national public utility concerns—such as the posts, telegraphs, shipping, and commercial aviation—on a sounder and more rational basis. The fundamental policies of the Government, to quote Mr. Wang Ching-Wei, have been three-fold. Firstly, it has attempted to readjust the organization of these systems, abolishing and amalgamating those organs which are either superfluous or inefficient, in order to increase their efficiency. This is especially true in the case of the telegraph service, in which efforts have been made to amalgamate the telegraph and telephone organs, and the telegraph and wireless organs. Plans have also been made for the amalgamation of post-offices and telegraph-offices in small districts and measures in this regard have already been officially announced, and are being gradually enforced.

In the second place, general communication enterprises being of a

commercial nature, efforts have been made to introduce a new accounting system into their operation, with the object of making them self-supporting as well as facilitating their eventual expansion. Chinese and foreign chartered accountants have been engaged with a view to publishing audited accounts of the various organs concerned. This has also been done in the China National Aviation Corporation, the Eurasia Aviation Corporation, the various post-offices, the Postal Remittances and Savings Bank, the China Merchants' Steam Navigation Company, and the Bureau of International Telegraphs, as also in the various railways.

. In the third place, efforts have been made to improve the efficiency of the personnel of the various departments. Thus, the Postal Administration has during the past year taken appropriate steps for the rationalization of postal management, while the telegraph authorities have adopted measures for the elimination and dismissal of those employees whose efficiency is not up to standard. Plans have been also devised for the reduction of communication charges in order to meet the needs of the general public.

THE JUDICIARY AND JUDICIAL SYSTEM.

The modernization of Chinese law began as far back as 1904, with the establishment of a Law Codification Commission. This continued to exist, in one form or another, until the establishment of the Legislative Yuan in 1927. In 1907, a Law of Organization of the Judiciary was passed, which for the first time put the Courts on a systematic basis. No great progress, however, was made until the establishment of the National Government at Nanking. Reference has already been made to the legislative work that has been accomplished during the last six years, which has given China for the first time a complete, rational and logical code of law. But it is little use making laws without proper machinery for their administration and enforcement, and the Government has worked consistently to give the country a judiciary and a judicial system which will compare well with that of any other country. In October, 1933, the Minister of Justice stated that there were then established 235 modern Courts and 83 modern prisons, of which 145 and 19 respectively were creations of the National Government. From January, 1932, up to the end of June, 1933, no fewer than 135 general orders have been issued by the Ministry of Justice of various descriptions. Some of them are instructional, others exhortatory, but every

one is directed towards some specific point of improvement either in the way of Court procedure or the discharge of their duties by Judges. These orders are published, with other relevant Ministerial instructions, in book form under the title *Hand-book for judges in the Performance of Judicial Duties*.

This gives some idea of the efforts of the Government towards progressive reforms. Naturally, perfection has not yet been attained. That, considering the size of China and the state of affairs when the Government came into power, could hardly be expected. Foreign criticism is still very active. The absence of any law of evidence, the practice of leaving the examination of witnesses to the Judge rather than to counsel, and the ease with which appeals can be made, enabling offenders to evade punishment for a considerable time, have been particularly attacked, but these criticisms are very largely the result not of prejudice but of a very natural bias. British and American observers are bound to be predisposed in favour of their own legal customs, while China has adopted what may be called the Continental form of procedure. Owing to certain treaty privileges of long standing, most foreigners appear in Chinese Courts exclusively in the position of plaintiffs, and when they secure a judgment naturally feel a little aggrieved when execution is delayed by a defendant's recourse to the Appeal Court. In times past one heard, too, accusations of venality and partiality on the part of Chinese judges, while they were often alleged to be lacking in legal training and experience, but such accusations are rarely heard these days. There is, in fact, a more general disposition among the well-informed to give credit where credit is indubitably due, and to admit that there is no less reason to look for probity, impartiality, and legal knowledge in a Chinese Court and a Chinese Judge than in similar surroundings in other countries.

LABOUR PROBLEMS.

One of the most difficult problems the National Government had to face in its early days was that presented by the Nationalist cause and its bringing home to the worker a realization of his oppressed position. It had been instrumental, too, in getting many improvements made in the worker's lot, and in getting legislation passed which recognized the State's duties towards him. But in 1927, the movement came under the influence of extremist Communist elements, whose leaders were advocating "direct action" and the use of force after the

Russian plan, regardless of the many miseries that such action would entail in the undeveloped state of Chinese industry. The Government was therefore compelled to take strong action. All labour unions were for the time being suspended, and a stop put to labour activities. These drastic measures succeeded in checking the dangerous elements, and in 1929, a Labour Union Law was promulgated which allowed the formation of unions along proper lines and under Government supervision. The right to strike is regulated so as to protect the workers' best interests and to encourage industrial peace.

At the same time the Government has drafted protective legislation, and called in the services of foreign experts with whose help and advice factory laws have been drafted and promulgated which, when put into full effect, will materially improve the lot of the worker/

THE WORKING OF THE NATIONAL GOVERNMENT.

This volume being intended to give a general idea of the many changes going on in China, it will be appropriate to present a brief account of the structure and working of the Government which is responsible for the planning and execution of many of these plans. Readers who may be unfamiliar with Chinese political history—a subject admittedly not easy to follow closely—and the administrative system, will then understand why the Central Political Council is such a power in the Republic, and they will understand wherein the system differs from every other political regime in other parts of the globe, whether monarchical, republican, dictatorial, or otherwise, and accordingly arrive at a fuller and better appraisal of Chinese affairs in general.

The system and working of the National Government of China, cannot adequately be explained without a rather detailed account of the governing Party in China, the Kuo-Min Tang, or National People's Party, especially with reference to its organization and its relations with the National Government. The history of China during the past two decades is indissolubly bound up with the history of the Kuo-Min Tang, and the National Government is appointed by, and responsible to, that Party, which acts during the present period of educative government (or Political Tutelage) as trustee of the political powers of the people. The Party, therefore, is the supreme repository of power, until such time as the people are capable of exercising it themselves.

The Kuo-Min Tang is the direct descendant of the revolutionary secret societies, notably the Hsing-Chung Hui (Society for the Regenera-

tion of China) and the Tung-Meng Hui (United League), formed with the object of overthrowing the Manchu dynasty, and elevating the international status of the country. The leader of the movement was the Father of the Chinese Republic, Dr. Sun Yat-Sen; and though the beginnings of the Party were small and secret, by the end of 1928 the aspirations of four hundred million people for a united China could not be denied, and all China was brought under the Kuo-Min Tang when the National flag of blue, white, and red was hoisted on December 31, 1928, as far north as the Three Eastern Provinces.

The Constitution of the Party, adopted at the First National Congress in 1924, and subsequently amended at the Second and Third National Congresses in 1926 and 1929, governs the present organization of the Kuo-Min Tang. The highest organ is the National Congress, which is required by Article 27 of the Constitution to be convened once every two years (though a postponement by the Central Executive Committee, each time not exceeding one year, is allowed under special circumstances). This body elects the Central Executive Committee and the Central Supervisory Committee to conduct the business of the Party when it is not in session; while each Committee elects from among its members a Standing Committee to attend to the routine administration when it is not in plenary session itself. In the provinces, municipalities, districts and sub-districts, the Party is organized similarly.

Unlike the situation in parliamentary democracies, and in the future China of the Constitutional Period, where a clear line of demarcation separates the Legislative from the Executive organ (even though in many countries the Executive is but a Committee of the Legislature), all authority in China is concentrated, during the interval between National Congresses of the Party, in the Central Executive Committee of the Kuo-Min Tang. However, the Central Executive Committee, being a Party organ, though politically supreme, does not *suo nomine* exercise any governmental and legislative functions, leaving these to the "National Government," which will be discussed later.

The Governmental and legislative functions of the Central Executive Committee are exercised through the medium of the Central Political Council, the highest political organ in China, and the pivot on which the whole system of Party government rests. During the period of political tutelage the Central Executive Committee of the Kuo-Min Tang is the representative of the people of China, and exercises on their behalf

the four political rights (suffrage, recall, initiative, and referendum); while the National Government, subject to the direction and control of the Central Political Council, exercises the five administrative powers (executive, legislative, judicial, examination, and control). The line of authority thus runs from the Central Executive Committee through its Central Political Council to the National Government.

It is important to note that the Central Political Council, both in theory and in fact, stands supreme over the National Government. It is the organ which is actually responsible for the formulation of all important national policies, foreign and domestic, to be executed by the National Government. The principles governing any legislative enactment must first be passed by the Central Political Council, the Legislative Yuan being concerned only with the substantive task of drafting the formal document. Further, all major political officials, such as Ministers and others of Teh Jen or "Special" rank, are appointed or dismissed by the Political Council, while members of the Control and Legislative Yuan, nominated by the heads of the Yuan, must also have their appointments sanctioned by the Political Council. The Chairman of the National Government, the Presidents of the various Yuan, and the Chairman of the Military Affairs Commission are of Hsuan Jen or "Elected" rank, and are appointed directly by the Central Executive Committee, either in plenary session assembled or on its behalf by the Standing Committee.

The exact relationship between the Kuo-Min Tang and the National Government is formally defined in the *Principles Underlying the Period of Political Tutelage*, adopted by the Standing Committee of the Central Executive Committee on October 3, 1928 (confirmed by the Third National Congress of the Kuo-Min Tang on March 19, 1929),—the unification of the country having been achieved by that date, thus inaugurating the period of Political Tutelage in the Kuo-Min Tang programme of national reconstruction. A translation of the text is instructive, and reads as follows:—

"Article 1. During the period of political tutelage, and until the People's Convention shall be called into being, the National Congress of the Kuo-Min Tang shall act for the Chinese people in the exercise of their political rights.

"Article 2. When the National Congress of the Kuo-Min Tang is not in session, the political rights shall be exercised by the Central Executive Committee of the Kuo-Min Tang.

"Article 5. The people shall be taught to exercise gradually the

rights of suffrage, recall, initiative, and referendum, as provided in Dr. Sun's *Programme of National Reconstruction* in order to prepare the way for constitutional government.

"Article 4. The exercise of executive, legislative, judicial, examination and control powers shall be delegated to the National Government, so as to lay the foundations for representative government in the constitutional period.

"Article 5. The direction and control of the National Government in the administration of important State affairs shall be entrusted to the Central Political Council of the Central Executive Committee of the Kuo-Min Tang.

"Article 6. The law governing the organization of the National Government of the Republic of China may be amended and elucidated by resolution of the Central Political Council of the Central Executive Committee of the Kuo-Min Tang."

It will be noted from these Principles—especially Article 5—that the Central Political Council is one of the most vital political organs in present-day China. It is a curious fact that the history of this Council is little known, though of surpassing interest to a student of China's political development. It was started in 1924 as the Political Affairs Committee, popularly known as the Political Bureau, founded by Dr. Sun, as the only tried and trusty body capable of assisting him in making his decisions. It was a small body of seven, with Dr. Sun himself as Chairman, and included Wang Ching-Wei (now President of the Executive Yuan), Liao Chung-Kai, Hu Han-Min, and C. C. Wu, then Foreign Minister, but who at that time was not a member of the Central Executive Committee. Members of the Committee, as such, were not members *ipso facto* of the Political Bureau, nor were members of the Political Bureau necessarily members of the Central Executive Committee. After Dr. Sun's death Mr. Wang Ching-Wei succeeded him as Chairman, and on the latter's resignation in March 20, 1926, after some disagreement with General Chiang Kai-Shih, the chairmanship was left open, Mr. Chang Ching-Chiang being appointed Acting-Chairman. A few weeks before Mr. Wang Ching-Wei's return to the Government in April, 1927, the chairmanship of the Political Bureau was put in commission and a Presidium of five was elected, with Mr. Wang as one of the members.

In 1928, the Central Kuo-Min Tang transformed the Political Bureau into the Central Political Council—into a committee of the Central Executive Committee, composed exclusively of members of the Central

Executive Committee. In June, 1931, a resolution was passed admitting into membership persons of high responsibility, of Teh Jen rank, whether members of the Central Committee or not. This resolution, however, was annulled by another of the First Plenary Session of the Fourth Central Executive Committee on December 28, 1931, which also provided for the appointment of a Presidium of three, subsequently enlarged to comprise the entire Standing Committee of the Central Executive Committee of the Kuo-Min Tang. Each presides in rotation at the meetings, there being no permanent Chairman as previously.

In contradistinction to the Standing Committee of the Central Executive Committee, which can act for the latter when it is not in plenary session, it is to be noted that the Presidium of the Central Political Council has no legal authority to act for the Council, which is normally in permanent session, meeting once a week. The Presidium is, in the absence of express statutory provisions, theoretically concerned only with matters of a purely routine character, with determining the order of the day. In actual constitutional practice, however, this power of fixing the agenda is of great political importance, necessitating a pre-agreement between members of the Presidium, or at least between the majority, before any important issue is brought up in the Central Council. This power of fixing the agenda has thus developed, as it were, into the power of deciding the issues themselves (except of course, in cases where the Council is itself strongly divided).

A meeting of the Central Political Council must legally be presided over by a member of the Presidium. In the absence of the entire Presidium there can be no chairman, and hence no meeting. There are two solutions to this *impasse*—firstly, the Central Executive Committee may appoint substitute members of the Presidium, a proposal which has been suggested; secondly, the Central Executive Committee may appoint an Acting Chairman, who is not a member of the Presidium, to preside in the absence of the entire Presidium, but who will resign as soon as a member thereof is available at Nanking. This expedient, as a matter of fact, was resorted to by General Chiang Kai-Shih when Chairman of the Political Council in 1931.

The Central Political Council, as at present constituted, is virtually the Central Executive Committee of the Kuo-Min Tang itself meeting to discuss political matters, although in theory it is but a Committee of the Central Executive Committee, just as the Committee of Ways and Means

is theoretically also only a Committee of the House of Commons. In practice no vote is taken, the decisions being always unanimous. Any objections to a proposal always result in the same being reconsidered and amended, or dropped, or the minority dissentients staying away. Opposition to vital measures is never expressed in Council meetings by means of the vote, however irreconcilable the differences of opinion or policy may be. Unanimity in Council, or at least, the absence of a formal division, is a corollary of the principle of One-Party Government.

In this system of Party government the head of the Executive Yuan (for practical purposes the Government of the day) cannot have the same political significance as the Prime Minister in the parliamentary system of Western countries. The Executive Yuan is merely a *quasi*-Cabinet, headed by a *quasi-Prime Minister*, and constitutionally unpossessed of supreme political authority in spite of the principle of collective responsibility adopted at the First Plenary Session of the Fourth Central Executive Committee, in December, 1931. For, above the Executive Yuan are the Standing Committee of the Central Executive Committee and the Central Political Council—and the Central Political Council connotes, in constitutional convention, not one member of the Presidium, however politically powerful, but a majority thereof. A President of the Executive Yuan who is not a member of the Standing Committee of the Central Executive Committee, nor of the Presidium of the Central Political Council, is constitutionally speaking, a subordinate official, however high his official rank and status. Even being at the same time a member of both, he is not the sole head of the Government, but shares political authority with the majority of his colleagues in the Presidium, although to the public he is held responsible for the actions of the Government of the day. The fact that for every important political decision the leading members of the Presidium must agree, explains why, for instance, it is constitutionally impossible for Mr. Wang Ching-Wei, as head of the Executive Yuan, to make any important decision on affairs of State without consulting, and securing the agreement of, General Chiang Kai-Shih and his more important colleagues. This is not because General Chiang is Chairman of the Military Affairs Commission, but because he is a fellow-member of the Presidium of the Central Political Council and of the Standing Committee of the C.E.C.

As already explained, the Central Political Council, being a Party organ, does not directly exercise any administrative functions, but leaves

the execution of its behests to the National Government. According to the "Law Governing the Organization of the National Government of the Republic of China," (commonly, but inaccurately, called the "*Organic Law of China!*") which the Kuo-Min Tang promulgated on October 4, 1928, and virtually amended in December, 1931, the National Government is composed of the President of the National Government, the National Government Council (popularly called State Council), the five Yuan, and various Councils and Commissions.

THE COMPOSITION OF THE NATIONAL GOVERNMENT.

The President of the National Government is Chairman of the National Government Council, a body whose functions are, in present day constitutional practice, mainly formal and ceremonial. The President is the Head of the State much in the same way as the President or the French Republic: he rules but does not govern, while the State Councillors are disqualified from holding any concurrent posts in the various Yuan, or being military officers on the active list. The National Government thus comprises only the five Yuan, and such bodies as the Military Affairs Commission, the National Economic Council, the Academia Sinica.

The President of the National Government, the State Councillors, (who number from twenty-four to thirty-six), the President and Vice-President of each Yuan and the Chairman of the Military Affairs Commission are elected by the Central Executive Committee of the Kuo-Min Tang, either in plenary session assembled, or on its behalf by its Standing Committee. Decrees, decisions, and commands of military mobilization, all laws promulgated and all mandates issued, have to be signed by the President of the National Government, and counter-signed by the President of the appropriate Yuan and the Minister responsible.

The Executive Yuan is the highest executive organ of the National Government, and comprises the Ministries to which are entrusted the various executive duties, and Commissions taking charge of specified executive matters. It may introduce in the Legislative Yuan bills on matters within its own competence. It decides at its meetings *inter alia* the following matters—bills on legislative affairs to be introduced in the Legislative Yuan, budgets, amnesties, declarations of war, negotiations for peace, conclusion of treaties, and such other important international matters as have to be submitted to the Legislative Yuan. The following are the Ministries and Commissions belonging to the Executive Yuan:

(A). *Ministries*: 1. Interior (the senior Ministry), 2. Foreign Affairs, 3. Finance, 4. Military Affairs, 5. Navy, 6. Education, 7. Industry, 8. Railways, 9. Communications.

(B). *Commissions*: 1. Overseas Affairs, 2. Opium Suppression, 3. Mongolian and Tibetan Affairs, and several other commissions.

The Executive Yuan, as already explained, thus occupies a position to that of the Cabinet in Western countries, its President being virtually the Prime Minister, and head of the Government of the day.

The Legislative Yuan as the highest law-making organ of the National Government, is the competent authority for legislative measures, and in addition approves of budgets, amnesties, declarations of war, negotiations for peace, the conclusion of treaties, and other important international matters.

In addition to these two Yuan, there is the Judicial Yuan (under which is the Ministry of Justice), the highest judicial organ of the country, taking charge of judicial trials, judicial administration, disciplinary punishment of officials, and trial of administrative cases. There is further the Examination Yuan, the highest examination organ, taking charge of examinations and determining the qualifications for public service, and the Control Yuan, the highest supervisory organ, with powers of impeachment and auditing. Under these two Yuan there is respectively the Ministry of Official Ranking (or Personnel) and the Ministry of Audit.

REFORMING THE CIVIL SERVICE.

A report on the work of the Examination Yuan during 1934 shows that five Civil Service examinations were held during the year. Out of 2,693 candidates who sat for these examinations, 348 qualified and were appointed to various Government organs. With regard to official ranking, the Examination Yuan not only examined the qualifications of various appointees, but also carried out a registration of public functionaries in active service.

Sweeping reforms in the system of Civil Service examinations, with a view to meeting current needs and putting the right man in the right place, were heralded by the National Examination and Selection Conference, held in Nanking under the auspices of the Examination Yuan. The Conference was in session five days, from November 1 to 5, 1934, and 160 experts and 38 observers were in attendance, including representatives from the various Central and local organs and national Colleges and Universities. Realizing the importance of an efficient and

adequate system of Civil Service examinations for the integrity of officialdom and national progress, the Conference considered and adopted no less than 95 resolutions, embodied in a manifesto issued on November 6, 1934. With regard to examinations, the Conference decided that in view of the inseparable relationship between school education and the Civil Service examinations, a definite number of reference-books should be prepared and designated by the Government from time to time for the benefit of candidates preparing for Civil Service examinations. To improve and render uniform the standard of University education, it was also decided that beginning from 1938 the final examinations for graduating students of Colleges and Universities throughout the country should be held under Government supervision.

Civil Service examinations held in the past have indicated that general educational standards in the frontier provinces are behind those of the rest of the country. To provide equal opportunities for all, however, and in view of its bearing on the political unity of the country, the standard of Civil Service examinations for candidates from these outlying territories are to be made lower so as to allow a definite percentage of candidates to be selected from the frontier provinces. Lest special talent should be lost to the service of the State, one of the resolutions provides that, in the Civil Service examinations for technical experts, emphasis should be placed not so much on general subjects as on the particular subjects specialized in. In other words, no candidate who is fully conversant with his special subject should be disqualified merely because of weakness in certain general subjects.

Constitutionalism, as expounded by Dr. Sun Yat-Sen, cannot be realized without the exercise of the people's powers, but how these popular rights may be properly exercised depends largely upon the intellectual knowledge of candidates for election. The obvious step to be taken before the enforcement of Constitutional Government is to determine the qualifications of candidates through a method of examination, but in view of the vast extent of national territory, this method cannot be applied. It was decided at the Conference, therefore, that selection should be based on both examination and recommendation; that is to say, besides written examinations, indirect examinations and investigation of the past record of the candidate should be held. With regard to those technical experts whose competence has a direct bearing on the life and property of the people, it was decided that special exami-

nations should be given by the Government organs directly concerned, and that those who pass the examinations successfully should be granted a special license and registered with the Government. (Under this category are examinations for shipping pilots, for instance.)

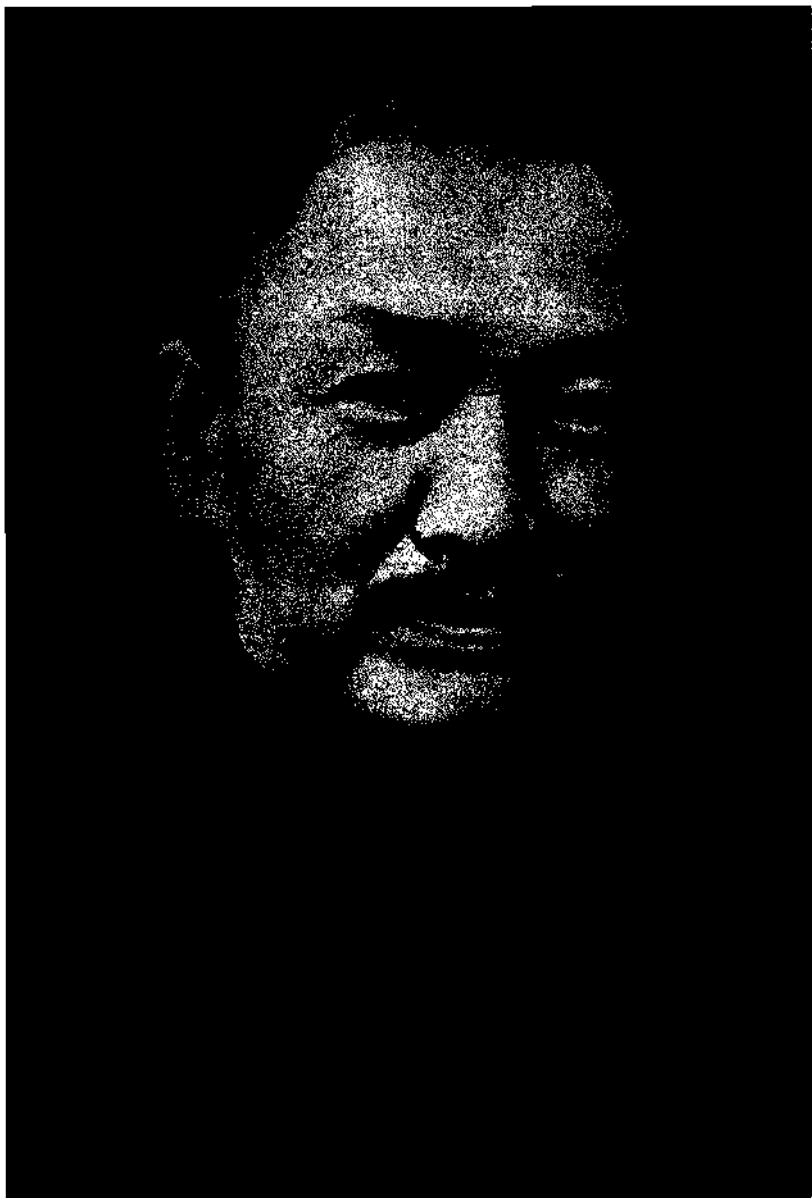
Turning to the question of selection of personnel, the Manifesto says that the majority of Civil Servants have been appointed through recommendation. In order to improve administrative efficiency, the Conference decided that annual examinations be held for all Government employees, and that a definite percentage of them be retired annually so as to make room for more competent persons. To promote closer relations between the Central Government and the local authorities, measures governing the exchange of posts between Central and local government employees was adopted. More practicable measures governing the employment of Civil Servants in the outlying territories, including Mongolia and Tibet, were also adopted. In order to facilitate the employment of Civil Servants, it was decided to establish branches of the Ministry of Official Ranking in the various provinces, while a set of measures for the establishment of supplementary schools for Government employees was adopted with a view to enhancing their knowledge and keeping them abreast of the times.

One very important reform which has already come into operation these past few years is in connection with security of office for members of the Civil Service. By order of the National Government the Executive Yuan issued an injunction to all organs under its jurisdiction prohibiting the dismissal "without cause" of regular administrative officials, and insisting on the principle, that tenure of administrative posts does not depend upon political officials, being strictly observed. In China the rule has been very widely followed that political changes result automatically in the discharge of large numbers of administrative officials. This practice is followed in various countries abroad—for example, in France the professional career and promotion of every soldier, sailor, civil servant, magistrate, judge, and police official in the country depends directly upon the Ministry which, for the time being, happens to be in office. The disadvantages of such a system are obvious, and the National Government some time ago decided that the necessary reforms be carried out in China as quickly as possible. As an example of the new order of things now prevailing, it may be mentioned that, in January 1932, a Minister who "without cause" dismissed ten officials under his jurisdiction was

himself forced to resign office, while those officials were re-appointed to their former places.

Mention must be made also of the establishment in 1934, by the Executive Yuan, of the Executive Yuan Commission of Administrative Efficiency—under President Wang Ching-Wei as Chairman and Vice-Minister Kan Nai-Kuang, of the Ministry of Interior, as Director—with the object of undertaking a systematic study of the administrative methods followed in various Government departments, and to make suggestions for the improvement of the existing system with a view to bringing about greater efficiency and more economy in the working of the Civil service. In January, 1935, was published (through the China United Press) the first issue of *The Chinese Administrator*, a quarterly journal edited by Mr. Kan Nai-Kuang, and containing articles originally written for publication in the Chinese counterpart of the English periodical, which is widely circulated among members of the Civil Service and the general public. *The Chinese Administrator* is published for the information of foreign readers who wish to acquaint themselves with the trend of modern Chinese ideas in the matter of planning administrative policy, and those who for business, academic, and other reasons may be interested in the working of the various branches of public administration in the Republic of China.

As an example of what can be done by efficient administration, the case of China's Diplomatic and Consular Services may be cited. Before Mr. Wang Ching-Wei took up, in July 1933, the post of Minister of Foreign Affairs (concurrently with his position as President of the Executive Yuan) it was a common occurrence for the salaries of Ministers, Consuls, and their staffs to be in arrear—sometimes for a period of very many months. Within seven months of taking over control of the Ministry of Foreign Affairs, Mr. Wang, with the able assistance of Mr. Li Shen-Wu, his Director of General Affairs, was able to clear off arrears extending over a period of five months, in addition to effecting many other improvements in the running of the Ministry, and this without any additional funds being received from the Ministry of Finance. In February, 1935, it was announced that Diplomatic and Consular representatives would receive 90% of their salaries instead of the 80% hitherto paid. This was made possible by the systematic elimination of wasteful practices—a striking proof of the possibilities of effecting improvement in efficiency and economy when the men in charge of affairs, from Minister



MR. TAI CHI-TAO
President of Examination Yuan

borrowing became impossible, and revenues fell off at the same time, so that a serious question arose as to the Government's ability to meet interest and amortization payments. After repeated conferences with the Bondholders' Association, the Government adopted a plan whereby all bonds were to be charged on Customs receipts (the other revenues being entirely cleared of debt charges); the interest-rate was reduced to a flat 6 per cent per annum, and current payments for amortization of principal reduced through lengthening the term of the loans. By this operation the Government saved almost \$100,000,000 annually in debt charges. In many respects the scheme was similar to conversions since effected in Great Britain and France.

"During the critical month of February, 1932, it was barely possible to do more than issue rations to the troops, except to those divisions actually resisting the Japanese advance and suppressing the Communists in Kiangsi and Hupeh. When the Shanghai situation cleared up revenues improved, but military expenditure again increased. However, at all times it has been kept within the limits of \$18,000,000 monthly fixed at the Disbandment Conference in 1929. At the present rate of military expenditure, there is a saving of another \$100,000,000 per annum as compared with expenditure for the last two years.

"These measures affecting expenditure would not have sufficed had not the Government been able to reap the benefits of its consistent efforts to develop the national revenue system. The substantial increase in Customs revenue after tariff autonomy was secured, the restoration and improvement of the Salt Revenue Administration, the development of the Consolidated Tax system, and general improvement in methods of collection all contributed to the attainment of financial equilibrium.

"China's success in carrying on without borrowing has had results of immense benefit both at home and abroad. There is greater faith in the prestige and stability of the Government now that it is self-sustaining and no longer dependent on fluctuations of the bond market. Since the conversion scheme greatly increased the public's confidence in the Government's ability to pay, prices of domestic bonds have risen in a very striking manner, and average about 40 per cent higher than before the conversion scheme went into effect.

"Abroad Government credit has been also greatly enhanced. During the last twelve months the Reorganization Loan of 1913 has risen on the London market from 62 to 77, the 1898 Loan from 82½ to 97¼,

and the 1908 Anglo-French Loan from 48 to 73. The 1898 Loan, due in 1943, which is the senior Customs-secured loan, now sells on a yield-basis of about 4¾ per cent. Railway bonds have also risen considerably, reflecting the improved general financial outlook and management of the railways themselves.

"The striking progress thus achieved offsets all hostile propaganda that China is in a chaotic state, with a tottering Government. The Ministry of Finance during the last few years has maintained, in and out of season, that if military expenditure could be kept within reasonable limits, the Budget could be balanced and a marked improvement in national standing would result. That this prediction came true despite foreign acts of aggression, Communist risings, and natural calamities was a subject for deep gratification."

READJUSTMENT OF RAILWAY AND OTHER LOANS.

In the twenty-four months that have passed since these words were written, the financial progress noted by Mr. Soong has continued. China's credit abroad is steadily advancing, while she has been able to begin paying off old bills and to meet payments on outstanding loans. Financial rehabilitation is, in fact, well on the way to accomplishment, and reference was recently made by Mr. Wang Ching-Wei to the Government's efforts to meet its foreign liabilities in connection with railway construction. The President of the Executive Yuan said:—

"The construction of railways obviously necessitates the expenditure of a substantial amount of money. Realizing the economic backwardness of the country, the late Party Leader (Dr. Sun Yat-Sen) advocated a policy of inviting foreign capital for investment in Chinese railway enterprises. That policy we adhere to, fully realizing that, in order to attract such investment, we must give adequate security, at the same time maintaining the credit of the Railway Administration in regard to existing obligations. The Government therefore is paying close attention to this matter of credit. Under specific conditions, the Government will not only welcome foreign economic co-operation but will exert all the influence within its power to safeguard the interests of its creditors. Although the Government is not in a position to repay at once the defaulted instalments of the railway loans, it is determined to make satisfactory arrangements for their adjustment, subject to proper safeguards for the protection of the mutual interests of both the railways and the creditors.

"During the past two years, it has devised practicable measures for the amortization and readjustment of some of the domestic and foreign railway loan obligations. These are divided into three categories, namely, (i) railway financing, (2) obligations for railway supplies, and (3) short-term loans. In the first category are included the obligations of the Tientsin-Pukow, Nanking-Shanghai, Shanghai-Hangchow-Ningpo, Tao-kow-Chinghua, and Kaifeng-Loyang Railways. Measures for repayment have been devised, and some have already been carried out. The obligations of the Peiping-Liaoning Railway have been fulfilled according to the terms of the agreement. During these two years the obligations for materials supplied in the past to the railways have been readjusted and definite arrangements for settlement of obligations amounting to \$100 millions have been made with the British and American creditors. The short-term loans, forming the third class, are mostly contracted from Chinese banks; measures for their amortization have been devised, and some have been already carried out.

"It is true that not all the railway obligations of the Government have been so readjusted and amortized, but if we continue to follow the policy now being pursued, the day will come when we shall have amortized all our obligations. Foreign creditors have been criticizing the Government for failure to pay off its obligations on maturity. While this failure is regretted, we wish to call the attention of our creditors to the following two points: In the first place, the failure of the Government to liquidate its obligations has sometimes been due to sudden and unexpected turns in the political situation. Such things happen not only in China, but also in America and Europe, and we cannot blame any one party or circumstance for such failures, since their causes are complicated. For instance, with the outbreak of the World War in 1914, various foreign financial groups failed to fulfil the terms of their loan agreements entered into with the Chinese Government, with the result that construction work on several railways in this country was suspended, and in consequence heavy financial loss was sustained by the Government, since interests on the instalments already advanced had to be paid. While our creditors cannot be wholly blamed for this, it is also true that the blame cannot be laid entirely at the door of the Chinese Government. Again, due to the world-wide economic depression and depreciation of silver, the financial obligations of the Government have been largely increased, while at the same time railway revenues

have considerably decreased. Since the economic depression and its various reactions are like a natural catastrophe against which no country can offer effective resistance, it is scarcely fair to put the blame on China alone.

"In the second place, it should be understood that the Government has no intention whatsoever of evading repayment of its matured loans, and is anxious to find ways and means of meeting its obligations, but the first essential is a general revival of railway business. With increased revenues available, the interests of creditors will be more fully protected, and it is hoped our foreign creditors will co-operate with the Government to this end. The best proof of the determination of the Government is nay off its foreign railway obligations is afforded by the fact that during the last two years it has discharged a number of such obligations, thereby showing not only its desire but its ability to carry out its pledged word. If our foreign creditors realize these facts, and recognize the difficulties with which the Government is faced, their sympathetic co-operation will promote the interests of both parties."

BRITISH TRIBUTE TO CHINESE GOVERNMENT.

The following comments by the City Editor of the *Morning Post* (London) in January, 1935, are indicative of the reaction of British investors to the policy of the Chinese Government in regard to finance:—

"On December 20 we were able to record the welcome news from Nanking that the Chinese Government were remitting the amount necessary to pay off those bonds of the 1912 Loan, commonly known as the 'Crisp Loan,' which had been drawn for repayment in 1928, but remained unpaid for lack of the necessary funds. Each year the drawings have been proceeding as stipulated, but the money has not been available to pay off the bonds. Now, however, it is officially announced in Nanking, according to a Reuter message, that the Chinese Government have taken definite steps to end this lapse in respect of sinking funds and will pay two instalments per annum instead of one, until the arrears of drawn but unpaid bonds have been met. The payments will be made in March and September of each year, instead of in March only, so that in six years the payments will overtake the drawings.

"At a time when so many debtors are showing but little regard either for the rights of their creditors or for the state of their creditors or for the state of their own credit as reflected in market estimation of their disregard of obligations, it is pleasant to record this effort by China. Only

yesterday we had to comment upon the unexplained default by Brazil on the January 1 Coupons of certain San Paulo Loans, a default which is the more glaring in that it follows upon the arbitrary scaling down of interest payments on the loans to a fraction of the stipulated sums.

"China, too, has had her full share of trade depression, but shows a most praiseworthy desire to maintain full faith with the creditors by setting herself a definite programme for the overtaking of these sinking fund arrears.

"The drawn and undrawn bonds of the 1912 Loan are now quoted at about 89 for either sort. The undrawn Bonds make a useful investment for the investor who does not desire to court the chance of repayment for a few years, since even if his bonds are drawn, interest will continue to be paid on them, but repayment will not catch up to this year's drawings until March, 1938. The drawn bonds, on the other hand, will be quite an attractive short-term holding, for under the promised payments the holder will now know exactly when he will be repaid. The bonds drawn in 1929 are to be paid in March next, those drawn in 1930 will be paid off in September of this year, and so on, until in March, 1941, there will only be the current drawing of that year to be met. It is hardly necessary to add that the drawn bonds due for early repayment will not be obtainable."

During the former Peking regime, the Ministry of Communications incurred very heavy debts in connection with telegraphs and telephones. The conditions and terms of many contracts were very unfavourable; the rates of interest being very high, and paid in advance, while the Government's rights and privileges were jeopardized. The sum that had been paid every year to creditors was so small that it did not amount to one-tenth of the interest on the principal. With interest compounded, the result was that debts were piling up, and as the Ministry was at best financially handicapped, no effort was made to readjust these debts and consequently its credit was adversely affected.

The present Minister of Communications, Dr. Chu Chia-Hua realized that if no means **were devised to settle these ever-growing debts it would be difficult to maintain the enterprises under the control of the Ministry, nor would it be possible to make any improvements. In pursuance of the policy of the Government to readjust old debts, it was thus decided to clear up the accounts with a view to reaching a fundamental solution. On the one hand, a policy of strict retrenchment was**

carried out; while, on the other, every effort was made to improve and expand the Ministry's field of activities so that receipts could be increased and funds allocated for the readjustment of old debts. After more than two years of unceasing endeavour and several months of negotiation, a satisfactory solution to the benefit of all parties concerned was reached early in 1935, as a result of friendly concessions on the part of creditors through their sympathetic attitude towards the Ministry. The debts listed in this scheme are old obligations which the Ministry had been unable to find means for settling during the past ten years. After the readjustment, new arrangements were made and put into execution, and the creditors renounced all the privileges provided for in the old contracts no longer cancelled. With these fetters on telegraph and telephone enterprise shaken off, the Ministry from now on can make fixed budgets from the whole tele-communication service and can make progress without further restrictions. As to the obligations, which have been contracted by the Ministry under the present National Government, although there has been occasional delay in payment, during the two years of Dr. Chu's administration payments have been always made punctually, so that the credit of the Ministry has been raised, which fact accounts largely for the satisfactory readjustment of the old debts contracted by the former Peking regime.

And now, having given an outline of the machinery and methods employed for handling and improving the administrative affairs of the nation, we can proceed to a survey of other reconstructive activities going on throughout the country, inspired and encouraged, when not always actually undertaken, by the National Government.

CHAPTER II.

AIMS AND MACHINERY OF RECONSTRUCTION.

WHEN did the making of modern China begin? Many answers could be given, each with its own justification. Leaving aside the question whether the truest answer might not be "with the Creation"—after all, there is such a thing as historical continuity—there is much to be said for the 15th and 16th centuries and the first impacts of Western adventurers upon Chinese civilization, when, after centuries of virtual isolation, the East came once again into direct contact with Europe, and a Europe just emerging from the throes of the Renaissance. Some, considering how little real, immediate effect these impacts had, might place the date much later, in the middle of the 19th century, when the West finally forced China to open her reluctant doors to Occidental ideas. Others might prefer to come down another 60 or 70 years to the Revolution and the Renaissance Movement immediately following it—to the time when China's leaders began to adopt Westernization rather than have it forced on them. A businessman might possibly vote for the same period, but for slightly different reasons—the industrial and commercial expansion following on the World War. The date, in fact, is as impossible to fix as are all such dates. Everything depends on individual points of view and prejudices, and so, while giving due weight to the various arguments for the dates already mentioned, yet another is chosen for the purpose of this chapter, i.e. 1919, the date of the publication of Dr. Sun Yat-Sen's epoch-making *International Development of China*, not so much because of the tremendous transformation that he and his successors have worked on China during the succeeding years, but because of the fact that for the first time definite direction was given to the country's efforts at Westernization. Instead of groping hesitatingly and somewhat ineffectually towards a place in the modern world, China was given a policy and a programme. National economic planning was made the official policy of the Kuo-Min Tang, and in course of time of the National Government of China.

That this was a great step forward cannot be disputed. Leaving aside the question whether China's genius is collectivist or individualistic, whether the capitalist is an indigenous or exotic product, it cannot be disputed that to leave the country's industrial development to the uncontrolled operation of the forces of individual capitalism was impossible. *Laissez-faire* as an economic policy has long been discredited. In China's undeveloped and economically backward state there had to be some central initiating and controlling body, and that body had to be the State, though possibly it may be a matter for discussion whether it should carry out its functions directly, or delegate them to subordinate bodies with a large amount of discretion, as is being done in England in regard to transport; whether the State should become itself a trading concern, as in the U.S.S.R., or content itself with stimulating, advising and regulating the activities of semi-private concerns.

POLICY OF STATE CONTROL.

In any case the Kuo-Min Tang and the National Government of China, in accordance with the views of Dr. Sun Yat-Sen, adopted the policy of State Control. "The Kuo-Min Tang," Dr. Sun wrote, "settled two methods by which the Principle of Livelihood is to be carried out. The first method is the equalization of land-ownership, the second is the regulation of capital." In another place he followed this up by advice to "develop State capital. . . We must build up means of communication . . . open up mines. . . foster manufacturing." Again, "The State should lead in business enterprises and set up all kinds of productive machinery which will be the property of the State," and yet again, "if we do not use State power to build up these enterprises, but leave them in the hands of private Chinese or foreign businessmen, the result will be simply the expansion of private capital and the emergence of a great wealthy class with consequent inequalities in society."

These were general principles. In his *International Development of China*, which he submitted to the various Governments of Europe and America, Dr. Sun attempted to lay down the lines on which it should be attempted to put them into practice. He envisaged 100,000 miles of railways, one million miles of macadam roads, canal construction and river conservancy on an extended scale, the development of commercial harbours, modern cities with all the usual public utilities,

the development of water-power and the great basic industries of coal, iron, and steel, agricultural rehabilitation and afforestation.

Undoubtedly, in the state of China and the World in 1919, such proposals were hopelessly over-ambitious, even if Dr. Sun could have obtained the international co-operation and capital he hoped for; yet they were—as they still remain—extremely important as foreshadowing the lines on which the new China is to be built up, or rather the lines on which its leaders hope it will be built. Modern China is not to be, as in the case of Western civilization, the result of an unconscious process; there is to be systematic planning, and to this principle China's rulers have adhered ever since.

EARLY PLANS REVIEWED.

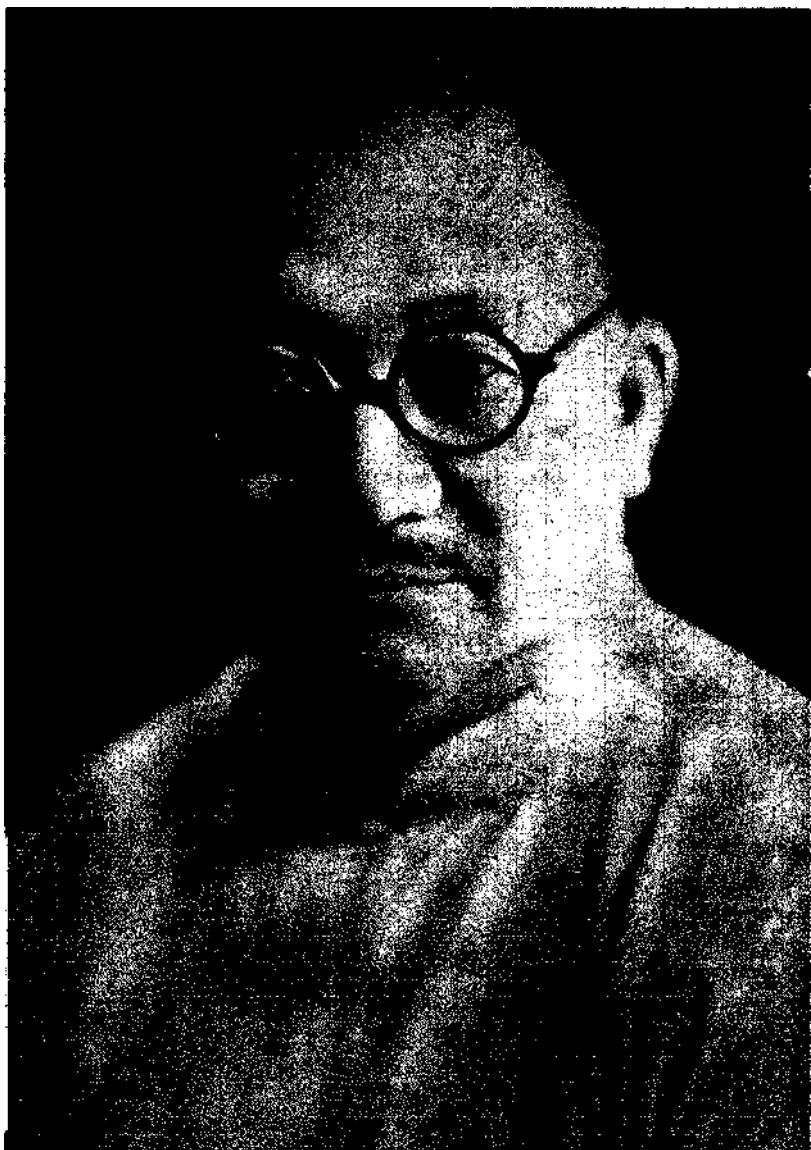
Dr. Sun presented his programme when a political refugee in Shanghai. Eight years later a National Government had been established which forthwith set about trying to put his programme into action, or rather to evolve from it their own plans of economic development. Unfortunately, enthusiasm resulted in an overplus of planning, in a multitude of schemes which often compete with and overlap one another. To detail them all would be as impossible as it is unnecessary, but a few must be recorded, if only to show the interest taken in economic planning by the authorities. The first is Mr. Sun Fo's *Outline of Reconstruction* made public in 1928, when he was Minister of Railways, and in which he attempted to set a time-limit to, and calculate the cost of, his father's gigantic plan. According to his calculations it would take 50 years to complete at a cost of 25 billion dollars, i.e. 500 million dollars a year. He then laid down a programme for the first ten years, and worked out a budget for it, and though the scheme remained, as it was bound to do, a dead letter, it was important as influencing later plans approved by the Central authorities.

In 1929, the National Congress of the Kuo-Min Tang passed a plan entitled *The Programme for Material Reconstruction during the Period of Political Tutelage*. This laid down general principles, of which the most important was that half the national income from taxation should be used for material reconstruction. This was, however, subsequently modified, but even in amended form the proviso has never been even remotely adhered to. Two years later, in 1931, the National People's Convention approved a six-year plan which envisaged railway



SUNG TZE-WEN (T. V. SOONG)

*Member of the Presidium of the National Economic Council
Chairman of the Board of Directors of the Bank of China*



KUNG HSIANG-HSI (DR. H. H. KUNG)
*Vice-President of the Executive Yuan and Minister of Finance,
Governor of the Central Bank of China*

construction (four definite projects were enumerated), river conservancy, harbour construction, building 200,000 miles of new roads, 50,000 miles of airways, national shipping lines, the establishment of basic industries, State aid to agriculture, and the settlement of the North-West provinces.

Since 1931, China has been in negotiation with the League of Nations to secure the help and advice of its associated technical organizations, and various Commissions have visited the country and presented valuable reports. In August of that year a Ten-Year Plan for China, was announced at Geneva, in which definite sums were worked out as to the cost of the various proposals contained in it—the establishment of a State-owned and operated machine-shop, for example, was estimated to cost \$3,000,000.

NATIONAL ECONOMIC COUNCIL.

In November, 1931, the National Economic Council was organized and has since been working on a Three-Year Plan, the outline of which was announced in the opening address of Chairman Chiang Kai-Shih. This plan merely indicates the lines on which reconstruction should be carried out, leaving details to be worked out by commissions of experts. It is more comprehensive than previous plans since it includes finance, public health, and education within its scope. It makes provision for the proper training of technicians and administrators. Most important, it set up a machinery by which the various proposals could be carried out, or rather to superintend their execution. That machinery was to be, and is, the National Economic Council.

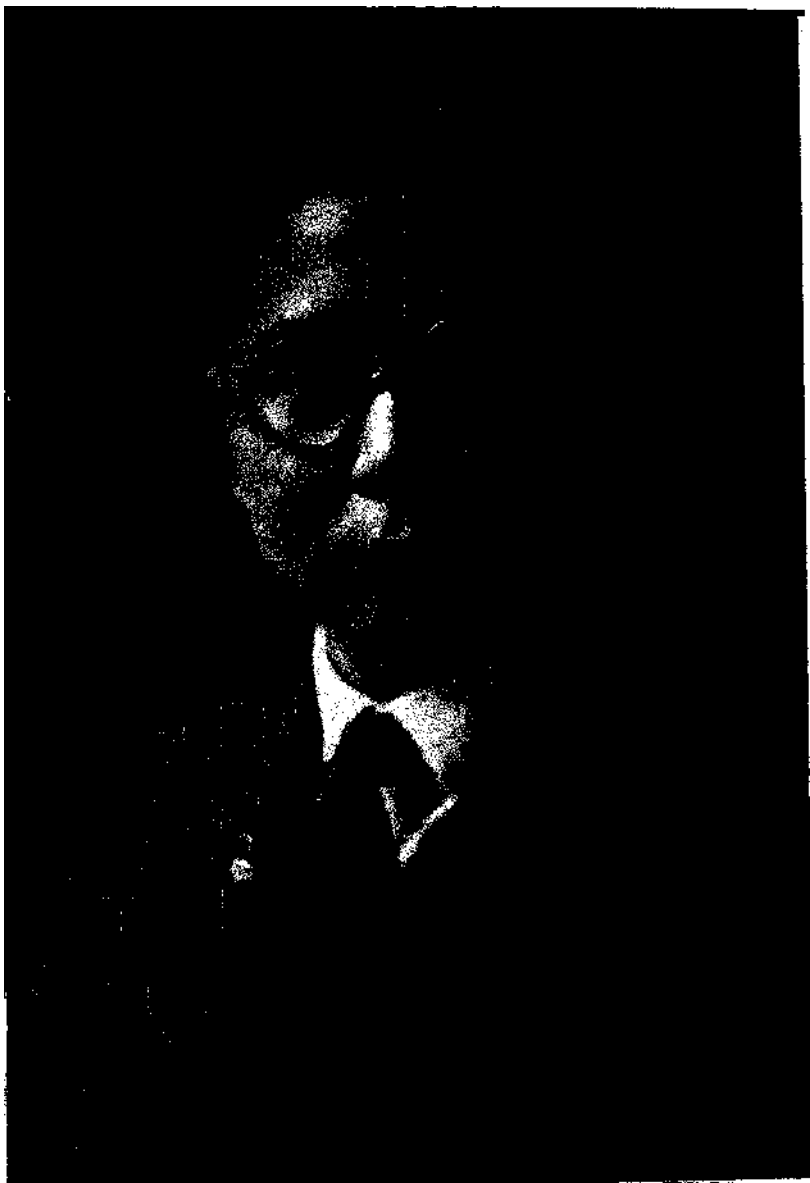
So much for general plans. Within their framework attempts have been made from time to time to plot the development of some particular industry or region. Mr. Sun Fo laid down a scheme for the railways and also one for roads. Dr. H. H. Kung in 1928, when Minister of Industry, evolved a plan for the establishment of basic industries on which the present Four-Year Plan of Minister Chen Kung-Po for the industrialization of the Yangtze Basin is largely based. At the same time most of the provincial governments have also evolved plans for the development of modern industries.

There are certain characteristics of these plans which need to be pointed out.

1. In all of them Western socialistic ideas are discernible.
2. In marked distinction to all Soviet economic planning, the simultaneous existence of private and State undertakings is envisaged

3. It is, however, only for the latter that any form of control is as yet laid down, not for the national economy as a whole.
4. International co-operation, in the form of the investment of foreign capital and foreign technical assistance, is throughout looked for.
5. There is a tendency to lay emphasis on what needs to be done, and neglect the organizational side. Little is said of how these plans, often very ambitious ones, are to be carried out. In particular, considerations of finance are overlooked. We may be told how much a certain proposal will cost, but rarely how the money is to be obtained.
6. On the other hand, there has been a gradual narrowing-down of proposals to within reasonable limits by the process of selecting certain items as of prior importance, and entrusting commissions of experts with the duty of working out detailed plans. The more recent proposals indicate a more practical approach to the problem than the earlier ones.
7. There is lack of co-ordination between the various plans and the various bodies responsible for drawing them up and putting them into execution. Let us quote Mr. T. V. Soong on this point. "Reflecting on the widening requirements of the public we have seen each Department of the Government proposing its own pet projects, all of them involving huge expenditures. Doubtless many of these projects are in themselves sound, but they must be unrealizable because of the known lack of funds, and the fact that they are not co-ordinated with the projects of other Departments." (*Finance Minister's Report for 1929*)-

This last point can bear a little expansion. In the first place, five different Ministries (Industry, Railways, Communications, Interior, and Finance) have responsibilities in economic matters, and these overlap and conflict. Again, there are, in addition to certain standing Commissions, such as the National Reconstruction Commission, a number of *ad hoc* Commissions, often composed of experts, such as the Commission on Rural Rehabilitation. There has also been a series of conferences, each of which has put forward its own nostrum or nostrums. The history of the National Reconstruction Commission shows how this lack of co-ordination can hold up progress. Owing to its conflicts with the economic activities of the various Ministries, it has several times undergone reorganization, until its functions have been practically whittled down to the control of eight Government concerns, viz.: (i) The Nanking Electricity Works, (ii) Tsishuyen Electricity Works, (iii)



SUN FO
President of the Legislative Yuan



CHEN KUNG-PO
Minister of Industry

Electrical Manufacturing Works, (iv) The Model Irrigation Administration, (v) Chang Hsing Coal Mining Administration, (vi) Hwai Nan Coal Mining Administration, (vii) Chekiang Economic Investigation Bureau, (viii) Material Purchasing Commission.

This lack of co-ordination, however, is now being remedied. There has been a great advance in this respect since Mr. T. V. Soong's comments in 1929, as also in the realization of practicalities. There is to-day a far truer sense among China's rulers of what is practicable, a disposition to get on with the job immediately at hand rather than build castles in the air. From Mr. Sun Fo's Ten-Year Plan of 1928, for instance, we have come to Mr. Chen Kung-Po's present-day proposal: for the industrialization of the Yangtze Valley, which arc, as will be seen, definitely practical; foreign capital has been interested, and a definite survey of the region and its possibilities is being made before anything definite is decided upon.

Probably the most important step forward has been the setting-up of the National Economic Council in 1931. At first placed under the control of the Executive Yuan, it is now under the direct jurisdiction of the National Government.

Five special technical committees have been created to deal with public roads, hydraulic engineering, health, education, and rural reconstruction. Like the National Economic Council itself, the technical committees are largely deliberative, policy-making bodies, and four of them have been provided with administrative organs to carry out their decisions. These are the Central Field Health Station, Bureau of Roads, Bureau of Agriculture and the Hydraulic Engineering Bureau. These committees and bureaux now constitute the main divisions of the Council, and have already accomplished a good deal of practical work.

In carrying out some of its activities, the National Economic Council has from time to time received suggestions and advice from foreign experts delegated or recommended to China by the League of Nations. A mission of educationists, composed of Professor P. Langevin, Mr. R. H. Tawney, and a few others, came to investigate the Chinese educational system and published a report describing various aspects of the system and making certain very interesting observations.

All economic plans requiring or involving an outlay from the National Treasury must first be submitted for examination and approval to the Council which not only in name, but also in fact, is now

established as the Supreme Economic Council of the country, with sufficient authority to co-ordinate the activities of other Government organs.

The importance of the National Economic Council as the central controlling organ, co-ordinating the multiple phases of reconstructive activities, is best exemplified in the role it now plays in the ex-Communist areas in Kiangsi. Between their rise in the latter part of 1927, and their complete suppression in November, 1934, the Communists, at one time or another, had occupied no less than 51 out of the 83 *hsien* of Kiangsi province. The result of Sovietization imposed on the peasantry by terrorism, and of the consequent disruption of rural life, has been widespread distress and dire poverty, making Governmental assistance an immediate and imperative necessity. The local authorities rightly diagnosed the condition of Kiangsi and prescribed treatment along four main lines, namely, improvement of agriculture, establishment of co-operative unions, diffusion of education, and provision of sanitation and health services in rural areas. Organs have been established to attend to these matters, but, in the absence of the National Economic Council, would have set about their respective tasks in watertight compartments, as it were. There would have been duplication and even triplication of personnel, frequent disharmonies and overlapping of work, and all too frequent calls upon a meagre treasury.

Instead, the National Economic Council steps in. Ten areas are selected as centres from which rural rehabilitation is to be carried out along the above-stated lines. The Council collaborates with the several provincial organs concerned in the following manner: the Kiangsi Provincial Institute of Agriculture, which takes charge of agricultural revival, improvement and extension work in the entire province, nominates one technical expert as its representative for each of these centres. Likewise do the Kiangsi Rural Co-operative Committee, the Department of Education, and the Sanitation and Health Bureau. The National Economic Council then appoints an experienced director to head this group of experts, who live among the peasants, and carry out their tasks from joint headquarters. Thus, the Council takes on the function of a central agency, effecting numerous economies in equipment, and ensuring that the four phases of reconstructive activity proceed in complete unison. The village and surrounding districts are thereby taught to look upon these centres as such in every sense of that word, looking to them for guidance in agricultural work; seeking recourse to the co-operative so-

cieties for loans, for marketing their produce to the best advantage, etc.; coming to their schools to be taught to read and write and learn simple rural vocations, as weaving etc., for supplying their own needs; and receiving instruction in safeguarding public health. The aim of these rural welfare centres is to set an example which, in the least possible time, will prove its worth by being copied all over the province. Six such centres have already been established, and proved outstanding successes within three months of their existence, for they were only started in the late autumn of 1934.

THE "NEW LIFE MOVEMENT".

China's weakness as a nation is due to many causes, but among the more important is the superficiality of her people and their inordinate desire to "save face". This frank statement was made by General Chiang Kai-Shih in the spring of 1934, soon after the launching of his "New Life Movement" for the observance of clean and tidy habits, unselfish consideration for others, and sincerity in all dealings. This movement was started in Nanchang (where General Chiang had his headquarters as Commander-in-Chief of the operations for the suppression of Communist-banditry), and spread to other parts of the country, warmly approved as it was by the National Government. In the summer of 1934 a booklet was published by the Association for the Promotion of the "New Life Movement", written by General Chiang Kai-Shih and translated into English by Madame Chiang, giving an outline of the aims and objects of the Movement, from which the following is quoted:—

The struggle of China to emerge from the devolution, which in 1911 began successfully by overthrowing the Manchu Dynasty, has been hampered by the unpreparedness of the people for the responsibilities of public life, and by the age-long influences of apparently sanctified customs.

For hundreds of years the people of China were discouraged from interesting themselves in the affairs of government, and were taught, even with the executioner's sword, that the administration of the country was the exclusive concern of the official class.

The people consequently, through the centuries, gradually ceased to have any interest in government, and lapsed, as their rulers desired, into complete disregard of national affairs, confining themselves to seeking the welfare of the family and the clan, knowing nothing and caring nothing about the responsibilities of citizenship, the requirements of patriotism, or the urge of loyalty to the country, to its Hag.

RECONSTRUCTION IN CHINA

In forced conditions such as these, the habits of the great population of China developed along lines quite contrary to those characterizing the peoples of other countries, with the result that, when the political window opened, they were, in a sense, blinded by the light that suddenly and unexpectedly poured in upon them. They found themselves without understanding of political or official life, bewildered owing to lack of universal education, and hampered by age-long aloofness and habits that are of little consequence to a small country which may be confined and self-contained within its own boundaries, but which have a tremendously suffocating effect upon a great country flung, willy-nilly, into the wide-sweeping economic and political currents of the world.

The march of events is inexorable and cannot wait for the sluggards to catch up, and therefore it becomes incumbent upon those who know the problem of China to take strong action to break down the demoralizing influence which centuries of suppression of national sentiment and feelings has had.

A new national consciousness and mass psychology have to be created and developed, and with that intention what is called the New Life Movement has been launched.

Peoples of the outer world may not at first be able to understand the necessity for such a movement, but they will do so if they realize that they have grown up with national consciousness fully developed around and about them, whereas the Chinese people have been deliberately and forcibly bereft of it, and, therefore, know nothing of those sentiments and impulses that so quickly move the Occidental peoples when matters concerning their country come forward for consideration or action. It is to correct the evil consequences arising from this serious state of affairs that action is now being taken along a psychological and educational line.

SIGNIFICANCE OF THE MOVEMENT.

To correct or to revolutionize an age-old habit is a difficult thing, but by using the simplest, and therefore, most efficient means, it is hoped that in time the outlook of the people will be entirely changed and they will be able with spirit and competency to meet the requirements of the new time and new life. The aim of the New Life Movement, therefore, is the social regeneration of China.

It is to this end that their thoughts are now being directed to the ancient high virtues of the nation for guidance, namely, etiquette, justice, integrity and conscientiousness, expressed in "li" , "i" "lien" , and "ch'ih" . These four virtues were highly respected by the Chinese people in the past, and they are vitally necessary now if the rejuvenation of the nation is to be effected.

China has had a cultural history of some five thousand years, with fine standards to guide the daily life of the people, and yet, owing to oppression and disregard, they have disappeared, and rudeness and vulgarity have supervened.

The Republic of China, with a territory of nearly 4.4 million square miles, possesses abundant natural resources, and the only reason to account for the present degeneration and lack of development is that public virtues have been neglected.

We have a population of over four hundred millions, yet because we have neglected to cultivate our virtues, social disorder reigns and most of the people lead a life far below that which they should enjoy.

Therefore, we have to learn that, to correct personal and national failings, we must fall back upon the influence of the old teachings. Rudeness and vulgar manners can be corrected by cultural and artistic training, and degeneration can be overcome by developing good personal character. It is difficult, however, to succeed merely through the ordinary processes of education and governance. If we are determined to reform we must start with the most fundamental question—we must reform our habits first. This, therefore, is why the New Life Movement is regarded as the key to the salvation of our nation.

INTERPRETATION OF THIS MOVEMENT.

What is Life?—Dr. Sun Yat-Sen said: "Life of the people comprises the livelihood of the people, the existence of society, the welfare of the nation, and the life of the masses." Although the people's life is thus divided into four phases, yet livelihood is the general manifestation of the other three. Existence depends upon protection; welfare needs development; and life demands propagation. To satisfy all these needs, we have to resort to activities. And life is nothing more than the continuation of activities.

What is New Life?—All activities to satisfy the desire for, the propagation of life, the protection of human existence, and the development of national welfare, are bound to change with changing conditions. Time does not stand still, and environment changes with time. Therefore, only those who readapt themselves to new conditions, day by day, can live properly. When the life of a people is going through this process of readaptation, it has to remedy its own defects, and get rid of those elements which become useless. Then we call it New Life.

What is the New Life Movement?—In order to satisfy the requirements of a new life for a people, we have, to a certain extent, to depend upon the Government, especially its system of education, its economic policies, and its measures to insure the protection of all. However, whether the policies of Government can be successfully carried out depends greatly upon the customs and habits of the people

at the time. When an old order collapses and a new order is about to rise, the new policies are frequently handicapped, if the new system does not base its foundation on the social customs of the time. It is, therefore, necessary to start a movement first, to teach the people to adapt themselves to new conditions, before any ardent support for the new policies can be expected from the people. "Water always flows over a wet surface, while fire goes wherever it is dry." The function of any social movement is to prepare the wet surface for water and the dry place for fire. This accounts for the fact that every nation, during its period of transition, pays more attention to the change of customs and habits than to the new policies themselves. The success of these social movements virtually means the success of the new policies of the Government. This illustrates very well the necessity of our New Life Movement. This Movement must start with those well aware of its necessity, and gradually expand to others—from nearer to the more distant, and from its simpler phase to the more complex. If a man can cultivate these new habits himself, it is possible that the members of his family will be influenced; and a family can, by turn, influence the whole community. A social movement goes hand in hand with politics and education. It does not depend upon them; instead, it always goes ahead of them.

OBJECT OF THE MOVEMENT.

Why is a "New Life" needed?—The general psychology of our people to-day can be described in one word—spiritlessness. What manifests itself in behaviour is this: no discrimination between good and evil, no difference between what is public and what is private, and no distinction between the fundamental and the expedient. Because there is no discrimination between good and evil, consequently right and wrong are confused; because there is no difference between public and private, there lacks proper guidance for taking and giving; and because there is no distinction between the fundamental and the expedient, there is misplacement of the first and the last. As a result, officials tend to be dishonest and avaricious; the masses are undisciplined and callous; adults are ignorant and corrupt; youth becomes degraded and intemperate; the rich become extravagant and luxurious; and the poor become mean and disorderly. Naturally, it results in the complete disorganization of social order and national life. Consequently, we are not in a position either to prevent or to remedy natural calamities or disasters caused from within or invasions from without. The individual, society, and the whole country are now suffering. It would be impossible even to continue living under such miserable conditions. It is, therefore, absolutely necessary to get rid of these backward conditions and to start to lead a new and rational life.

Why is a New Life Movement needed?—In order to raise the standard of the people's livelihood and to create a new society, it is indispensable to rely both on the Government and on education. Unfortunately, both the Government and education were inefficient in the past, because those who conducted them were not sufficiently sincere. As a result, the law lost its function; technical knowledge had little practical use; and even machinery did not work efficiently. Why is it that men in the same position worked differently, and that the same technique and same machinery did not bring about same results? Obviously, in order to make the law or the machine work, it does not depend so much upon the law or the machinery themselves as it does upon the personnel. The key lies in the human element. Social movement is the one way which will influence personal character to a large extent in a short time. No other method, political or educational, can be compared with it. Of course, politics and education have their roles to play. It is not our object to explain them here. In such a national crisis, if we are not willing to bind our hands waiting for death, we ought to reconstruct our society by extraordinary means instead of merely sitting down and waiting for the process of natural evolution. In other words, it is a gigantic task for the New Life Movement to wipe out the backward conditions of society by a wild storm and to supply the community with vitality and the right spirit by a gentle breeze.

PRINCIPLES OF THE MOVEMENT.

The New Life Movement aims at the promotion of a regular life guided by the four virtues, ("li," "i," "lien," and "ch'ih"). These virtues must be applied to ordinary matters, such as food, clothing, shelter, and action. The four virtues are the essential principles for the promotion of morality. From these rules, one learns how to deal with men and matters, how to cultivate oneself, and how to adjust oneself to surroundings. Whoever violates these rules is bound to fail; and a nation which neglects them will not survive.

There are two kinds of sceptics: First, some hold the view that the four virtues are simply rules of good conduct. No matter how good they may be, no benefit to the nation can be derived from them if the knowledge and technique used by that nation are inferior to others'. Those who hold this view do not seem to understand the difference between matters of primary and secondary importance. From the social and national point of view, only those who are virtuous can best use their knowledge and technique for the salvation of the country. Otherwise, ability may be abused for dishonourable purposes. "Li," "i," "lien," and "ch'ih" are the principal rules alike for a community, a group, or the entire nation. Those who do not observe these rules will probably utilize their knowledge and ability to the disadvant-

age of society. Therefore, these virtues may be considered as matters of primary importance upon which the foundation of a nation can be solidly built.

Secondly, there is another group of people who argue that these virtues are merely refined formalities, which have nothing to do with the actual necessities of daily life. For instance, if one is hungry, can these formalities feed him? This is probably due to some misunderstanding of the famous teachings of Kuan-Tzu who said: "When one does not have to worry about his food and clothing, then he cares for personal honour; when the granary is full, then people learn good manners." The sceptic fails to realize that the four virtues teach one how to be a man. If one does not know these, what is the use of having abundance of food and clothing? Moreover, Kuan-Tzu did not intend to make a general statement, merely referring to a particular subject at a particular time. When he was making a broad statement, he said: "'li,' 'i,' 'lien,' and 'ch'ih' are the four pillars of the nation." When these virtues prevail, even if food and clothing are temporarily insufficient, they can be produced by man-power: or, if the granary is empty, it can be filled through human effort. On the other hand, when these virtues are not observed, there will be robbery and beggary in time of need: and from a social point of view robbery and beggary can never achieve anything. Social order is based on these virtues. When there is order, then everything can be done properly: but when everything is in confusion, very little can be achieved. To-day robbers are usually most numerous in the wealthiest cities of the world. This is an obvious illustration of confusion caused by non-observance of virtues. The fact that our country has traitors and Communists, as well as corrupt officials, shows that we, too, have neglected the cultivation of virtues, and if we are to recover, these virtues must be adopted as the principles of a new life.

MEANING OF "LI" , "I" , "LIEN" , & "CH'IH" .

Although "li," "i," "lien," and "ch'ih" have always been regarded as the foundations of the nation, yet the changing times and circumstances may require that these principles be given a new interpretation. From the pragmatic point of view to-day we may interpret the four virtues as follows:—

"Li" means regulated attitude (mind as well as heart).

"I" means right conduct (in all things).

"Lien" means clear discrimination (honesty, in personal, public, and official life).

"Ch'ih" means real self-consciousness (integrity and honour).

The word "li" means reason. It becomes natural law, when applied to nature; it becomes a rule, when applied to social affairs; and

signifies discipline, when used in reference to national affairs. These three phases of one's life are all regulated by reason. Therefore, "li" can be interpreted as regulated attitude of mind and heart.

The word "i" means proper. Any conduct which is in accordance with natural law, social rule, or national discipline must be considered as proper. When an act is not proper, or when one thinks it proper but does not act accordingly, the act is naturally not right and therefore cannot be called "i."

The word "lien" means clear. It denotes distinction between right and wrong. What agrees with "li" and "i" is right, and what does not so agree is wrong. To take what we recognize as right and to forego what we recognize as wrong constitute clear discrimination. This is "lien."

The word "ch'ih" means consciousness. When one is conscious of the fact that his own actions are not in accordance with "li," "i," and "lien," he feels ashamed. When he is conscious of the fact that others are wrong, he feels disgusted. But the consciousness must be real and thorough, so that he will strive to improve the good and endeavour to get rid of the evil. Then we call it "ch'ih."

From the explanations given above, it is clear that "ch'ih" governs the motive of action, that "lien" gives the guidance for it, that "i" relates to an action actually being carried out, and that "li" regulates the outward form of that particular action. The four are interrelated. They are interdependent upon one another in order to make a virtue perfect. Otherwise, "li" without "i" becomes dishonest; "li" without "lien" becomes extravagant; and "li" without "ch'ih" becomes flattering. All these may appear like "li" but really they are not. Similarly, "i" without "li" turns to be offensive; "i" without "lien," lavish; and "i" without "ch'ih," fantastic. All these are really not "i." Again, "lien" without "li" is false; "lien" without "i" is niggard; and "lien" without "ch'ih" is corrupt. They are not "lien." In like manner, "Ch'ih" without "li" will be chaotic; "ch'ih" without "i," violent; and "ch'ih" without "lien," ugly. They are no longer "ch'ih."

It would be a golden opportunity for traitors and sinners if the four virtues are perverted.

FOOD, CLOTHING, SHELTER, AND ACTION.

There are two necessary elements in our daily life. One refers to the material stuff for our food, clothing, shelter, and communications, and the other, the manner in which the material is used to serve our daily purposes. The first belongs to the material side; and the second may be called the manifestation of the spiritual side of human life.

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The Chinese word "hsing" , may be interpreted broadly or narrowly. Narrowly, it simply means walk; but broadly it means action. All kinds of human behaviour in connection with daily **life** may be included in this word "rising." While Dr. Sun Yat-Sen referred to food, clothing, shelter, and communication in "The Three Principles of the People," he used the same word "hsing" to denote communications only (the extended sense of walk). In his "Principles of National Reconstruction," he said: "The Government should co-operate with the people in developing agriculture in order to provide the people with sufficient food, in developing the textile industry in order to provide them with sufficient clothes, in building all kinds of houses in order to improve their shelter, and in constructing roads and canals in order to provide means of communication for them." He used the same word "hsing" for communications, apparently, in the narrower sense.

But in this monograph, I intend to use the same word "hsing" both in its broad and in its narrow sense. My own "philosophy of 'hsing' " also includes both. This is also true of the previous chapters.

What I want to develop now is how to apply the four virtues to food, clothing, shelter and action.

The means of maintaining our livelihood may be divided into three phases: first, the obtaining of materials; second, the selection of quality; and third, the manner in which these materials are used. Let me put them separately.

i. The obtaining of materials should be governed by the principle of "lien." Clear discrimination should be exercised between what is ours and what is not. If they do not belong to us, we should not take them. In other words, the materials for our daily life should be acquired through our own labour or through other proper means. Strife should not be encouraged. A parasite is not a good example. Even giving and taking improperly should be avoided. "What really matters is the degradation of personality, but not dying in hunger." This famous saying of a Confucianist can be quoted to illustrate this point.

2. The selection of quality should **be governed by the principle of "i" .** Do the proper thing in a particular situation. For instance, it is proper for an old man to use silk and to take meat and to have lots of leisure; **but** a young man should be trained to endure hardship. What is proper in winter is **not** necessarily proper in summer. **What is proper in the north is not necessarily proper in the south. Similarly,** different circumstances may influence a situation differently. **A ruler, or an army commander, must have some authority; while those of a lower rank should not enjoy the same thing, but should respect dis-**

cipline. Thus, what is proper is influenced by age, season, location, and rank; the selection of quality varies in different situations.

3. The manner in which materials are used should be governed by the principle of "li," which includes natural law, social rules, and national discipline, as explained in the former chapter.

The inter-relationship of the four virtues has already been fully discussed. When applied to daily life this is even more true. All virtues should be carefully observed. If one of them is neglected, there is a black spot in our life.

RATIONALIZATION OF LIFE.

In short, the main object of the New Life Movement is to substitute a rational life for the irrational, and to achieve this we must observe "li", "i' 'lien", and "ch'ih" in our daily activities.

By observing these virtues, it is hoped that rudeness and vulgarity will be got rid of, and that the life, of our people will be more refined in accordance with cultural and artistic standards. By art, we are not referring to the special enjoyment of the gentry. We mean the cultural standard of all the people. It is the boundary line between civilization and barbarism. In ancient times the Chinese knew the six arts (etiquette, music, shooting, driving, writing, and mathematics). It is a pity that most of us have neglected our own arts, for, as a result, we are somewhat behind the western nations in these fields of artistic achievement. A lack of artistic training is specially revealed in the prevailing social conditions to-day. Suspicion, jealousy, hatred, and strife are symptoms of barbarism. To remedy these we have to emphasize art.

By observing these virtues it is hoped that beggary and robbery will be removed, and that officials will be honest and patriotic, that corruption will cease, and that people will pursue more productive enterprises. The poverty of our nation is primarily caused by the fact that there are too many consumers and too few producers. Consequently, many people have to live like parasites. To remedy this we have to emphasize the four virtues, and we have to make people work harder and spend less, and the officials be honest. This was the secret of success of the two ancient kingdoms Ch'i and Ch'u. It is also the primary cause of the strength of present-day Italy and Germany.

By observing these virtues, it is hoped that social and official disorder will be remedied, and that people will become more military-minded. If a country cannot defend itself, it has every chance to lose its existence. The larger its territory, the more attractive it looks to the invaders. There is only one way for national salvation—that is, to promote the economic stability of the country and develop the patriotic and fighting spirit of the people. Now, the

Communists are not yet completely suppressed, and our territory shrinks every day in the face of foreign invasion. In order to pass through this crisis successfully, we have to pacify the interior and resist external aggression. To do this we have to rely upon force. Therefore our people must have military training. As a preliminary, we have to acquire the habits of orderliness, cleanliness, simplicity, frugality, promptness, and exactness. We have to preserve order, emphasize organization, responsibility, and discipline, and be ready to die for the country at any moment.

In conclusion, the life of our people will be more refined when we have more artistic training; we will be richer when we are more productive; and we will be much safer when we are more patriotic and better trained and equipped to defend ourselves. This rational life is founded on "li", "i", "lien", and "ch'ih". The four virtues, in turn, can be applied to food, clothing, shelter, and action. If we achieve this, we have revolutionized the daily life of our people, and we have laid the solid foundation for our nation.

MR. WANG CHING-WEI'S SUPPORT.

Shortly after the inauguration of the "New Life Movement", President Wang Ching-Wei gave an address at a meeting in Nanking of the Officers' Moral Endeavour Society in which he gave his whole-hearted approval to General Chiang Kai-Shih's project in the following terms:—

In compliance with the request of the Military Officers' Moral Endeavour Society I have come here to-day to offer my humble opinion regarding the "New Life" movement. Immediately after its inauguration the movement met with a remarkably spontaneous response from all parts of the country, largely due to the fact that it was promoted by General Chiang Kai-Shih with such earnestness and sincerity. The response to his appeal is neither in the nature of a discharge of an ordinary social duty nor the performance of something merely to please the powers-that-be. Everyone who gives a moment's thought to the matter realizes that the "New Life" movement is of vital importance to the Chinese nation as well as the future of our country, and it is this which explains the warm response to its appeal which has come from all directions simultaneously.

During the 12th year of the Republic (1923) when the Whangpoo Military Officers' Academy was inaugurated, our late Leader urged that love and sincerity should be our guiding principles. He wished us to shoulder the responsibility of National Revolution in accordance with those principles. If it were possible for a few persons to

assimilate such principles and practise them so earnestly that the whole nation followed their example, we should be able to combine the mentality and vitality of our 400,000,000 people into one organism. It would be possible for the objects of the National Revolution to be fully accomplished when the efforts of this organism were devoted to such a purpose. The important point is that without love and sincerity it is impossible to unite the people into one organism.

Ever since the September 18th incident (the Japanese occupation of Mukden in 1931) it has been obvious that only by sincerity and unity can we cope with national calamities and save our country from destruction. How is this solidarity to be brought about? Some of us have to demonstrate the significance of it first, and show the people how their collective wisdom and strength can be utilized most effectively. In thought as well as in deed we must act in unison, and forget the fact that we are individuals. Such a display of unanimity will certainly help the nation, and be of service not only in relieving the national crisis but in the salvation of our country.

SOLIDARITY MEANS SALVATION.

How can love and sincerity, and sincere solidarity, be realized? Unless we shoulder our responsibilities as one man we cannot work effectively for the relief of the national crisis. The salvation of our country can only be brought about when we are able to face our difficulties and plan to surmount them by unanimous effort. It is essential for us to be united in thought and in action.

General Chiang Kai-Shih advocated the "New Life" movement probably because he considered that the present mode of living by the people does not represent the real aim of human existence. This constitutes a great danger to the future of the nation, and should be corrected without delay. Some think that "New Life" is nothing more than a change in the ordinary ways of living which should be followed by everybody, and do not recognize any deeper significance in the movement. Others are of the opinion that it is simply the revival of moral principles advocated by ancient philosophers. We can admit that in theory this is the case, but so far as practice is concerned, we cannot say with any certainty what stage has been attained by the Chinese people in amending their ways of life, or **how** many of the old scholars' ideals have been actually carried out by our compatriots. The "New Life" movement is worthy of support and practice, and General Chiang Kai-Shih is confident that by observing its principles the whole nation can be trained to shoulder the responsibilities of the National Revolution. *In* a recent telegram

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General Chiang stated that the "New Life" should be begun by giving attention to "manners" and "cleanliness", in order to avoid attempting anything too complex to be practical at this juncture. Both elements are essential to "New Life", and their observance will form a simple but strong foundation for other things to follow.

MANNERS AND CONVENIENCE.

The Chinese people in their social customs and conventions are guided by the principle of "convenience". For instance, when a visitor is offered a cup of tea, and is asked whether he prefers "Loh-an" or "Lungtsing" he usually replies politely:—"As is convenient". Such a reply is of no consequence, for any kind of tea will have the effect of quenching one's thirst. When going out for a walk a man, if asked by his friend whether he wishes to go to the right or left, may also say:—"As is convenient." This reply again is of no consequence, for in taking a stroll for the sake of exercise, right or left makes no difference. In other words, "convenience" in these matters has no serious meaning to anyone, and the word is used merely as a matter of custom. But one should never apply this unreal "convenience" principle to other matters. It often happens that a man while in a theatre scatters banana-skins, orange-peels, melon-seed husks, and tea-leaves all over the floor at his "convenience." Worse still, he may sit there, talking loudly and making various kinds of unpleasant noises, to the great annoyance of others in the audience, but at his own "convenience". Should you remonstrate with him, he will say that you must be a reader of foreign books, and have acquired foreign habits! Steamers and trains are dirty and untidy, and places where numbers of people gather together are never free from refuse and dirt. This is undoubtedly the result of the much-abused "convenience" principle, and its observance being so widespread, our communities have become negligent, disorderly, indolent, indulgent, and dirty.

Many people who have become accustomed to such "convenience" would say that their personal freedom was being restricted if their movements were interfered with in any way, but such freedom should mean doing a thing which is right and reasonable, without regard for fame or reward, for doing it. The freedom of the Press, of religious belief, etc., should be protected, but freedom to observe the principle of "convenience" referred to is pure selfishness, caring for one's own comfort without regard to the discomfort of other people. A man must have higher principles in order to be able to co-operate with others for the common good. Although observance of good manners is a

small matter, yet it is a quality essential in the making of a man, and especially of a good citizen.

Cleanliness is so simple a habit to acquire that it could quite easily be as common as the present state of dirt and disorder. Some say that cleanliness can only be observed with ease by the rich, and is beyond the power of the poor, a theory which may appear to be true, but is actually far from being the fact. For instance, a man who works as a labourer has to toil so hard all day and earns so little that it may be unreasonable to expect him to keep very clean. But he can at least make an effort to be less dirty, and everybody can learn to refrain from spitting and making objectionable noises. It cannot be said that the poor are unable to do so because of their poverty. With regard to cleanliness, it might be well for officials and the educated classes to set a good example in this matter for poorer people to follow. This calls to mind some of the queer characters of former times. There were eccentric celebrities who, with dishevelled hair and dirty faces, paid no attention to their manners whatsoever. Some who believed themselves pure and lofty-minded would discuss abstruse problems of philosophy when engaged in ridding themselves of vermin. Our country was half lost through the abstractions of such men. Then there were the false moralists who, born with a pair of eyes that could see the faults of others only, measured those failings with great exactness and overlooked their own shortcomings. They made all sorts of pretensions in their criticisms of others, and led the nation into admiration of wholly false values. The fall of the Sung and Ming dynasties in succession was probably due to the degenerate influence of these moralists.

It is well to remember, in distinguishing good from evil, to exercise control in one's treatment of others. To inconvenience others for one's own advantage is evil. It is to be hoped that the people of this country will learn to be considerate of each other, and control themselves in the interests of the whole community. By enlarging on such good conduct the nation will, as a matter of course, be able to co-operate in other and larger things, thus bringing about that sincere solidarity which will put us in a position to cope with the national crisis. This is a problem of primary importance in connection with the "New Life" movement that should be given earnest attention.

POWER OF MORAL INFLUENCE.

Good manners and cleanliness are considered by some as trifling matters which concern the individual, and of no great general consequence, but it is the trifles concerning the individual which, when

combined with those of the nation, become of very great importance, and cannot be overlooked. General Chiang Kai-Shih has told us that the best method for encouraging the "New Life" movement is to set a good example ourselves, so that it may be followed by others. This is no doubt the best way, for to resort to force in compelling others to change their mode of life would not be so effective. According to custom, there are two kinds of social restrictions—morals, which form the highest standard of human life, and the law, which is the lowest limitation. To relieve the poor is in accordance with morals, and to injure others is against the law. Therefore, in making a comparison between morals and law, the former commands higher respect. Some are of opinion that the power of politics or of law would be the best means to employ in spreading the "New Life" movement—by enforcing restrictions, but we should remember that restrictions, whether based on politics or law, are the lowest limitations, whilst restraint imposed by moral influence is the highest standard. We should therefore strive to increase the power of moral restraint; and once the idea has been firmly grasped this method will prove most effective. For instance, any person in a European or American theatre who made himself objectionable to other members of the audience would be promptly reprimanded by those sitting near him. This is a form of social restraint which has a better effect than that enforced by law. How can the strength of such restraint be increased? The growth of such a movement lies with the educated classes; when a good example is set by them, then will the foundations of the "New Life" movement be firmly established.

Every individual is able to control himself for the good of the community, and all his thoughts and actions should be towards this aim. Its accomplishment will increase the influence of social restraint, and when this has been done everyone will observe good manners and rules of cleanliness, and so become better citizens. The difficulties confronting our country are exceedingly serious, and success or failure in dealing with them is beyond conjecture, but if the people act along the lines suggested, unity will be achieved and all will become cheerfully law-abiding, thus bringing about that "love," "sincerity," and "solidarity" with which we shall be able to face and overcome our difficulties.

CHAPTER III. INDUSTRIALIZATION.

THOUGH it is 60 odd years since the process of industrialization began in China, progress has been very slow compared to other countries. Some of the reasons for this will be mentioned presently. The first steamship was built in 1862; in 1865 the Kiangnan Dock and Engineering Works (then the Kiangnan Construction Bureau) was established. In 1872 the China Merchants' Steam Navigation Company was organized, and four years later the first railroad, the Woosung line, was built. The first rice-cleaning mill dates from 1863, the first silk filature from 1873, cotton-mills from 1890, and from the same year the first iron and steel works. But no rapid development of industry was seen until the Great War cut off supplies from overseas, and gave native producers a monopoly of the home market. Consequently, between 1913 and 1920 cotton spindles increased by 270% and silk exports by 68%. In the same period coal output went up 59%, while that of iron-ore was nearly doubled, and the production of iron was increased by 66%. Between 1920 and 1930 the number of cotton spindles was nearly doubled again, the number rising from 2,843,000 to 4,904,000. In other industries there was also expansion, but not to the same extent. Indeed, in most directions, with the advent of general world depression it has been slight, and in the silk industry there has actually been a decline. Altogether, it is still true to say that China has been industrialized only to an insignificant extent.

The two chief factors in the industrialization of any country are environment and resources. In respect of neither can it be said that China is particularly well favoured. In the first place the family system is a definite obstacle, sapping as it does the spirit of adventure and the will to independence, both of which are vital to any form of industrial progress. Undoubtedly the last few years has seen the younger generation, especially in the cities, acting far more on its own initiative than formerly, but authority still remains in most cases in the hands of the family, and in particular its elders, the latter naturally a con-

servatrvt body who generally oppose any tendency on the part of the younger members to depart from convention. Early marriage, too, is the rule, which, with its consequent responsibilities and burdens, helps to tie down adventurous youth. Thus despite the migration movement to Manchuria from the North during recent years—until the Japanese invasion of that area—few of those who went there remained. Of the five million (approximately) who left China between 1923 and 1929, less than half settled down to establish new homes, the majority returning at the end of a year or so when they had earned what they considered enough money.

DRAWBACKS OF FAMILY SYSTEM.

The mutual help obligations involved in the Chinese family system, excellent though they may be in many ways, have also their definite drawbacks. From them spring the nepotism which hampers the efficiency of Government departments and business concerns alike. The less fortunate, and even the less thrifty members of the family, can always fall back on the rest; the older look to the younger for support, the poorer to the richer. No man is forced by sheer economic necessity to stand on his own feet so long as there is some relative to appeal to, and the consequence is a definite weakening of individual independence, initiative, and self-reliance.

Then the political state of the country has been such that for the last twenty years or more industry has not had a fair chance. The recurrence of chronic civil war, and the increasing burden of taxation that it entails, hinders considerably the economic development of the nation, despite the impetus given to native industries by the stoppage of foreign imports and the absence of foreign competition during the World War.

Nor must the Communist menace be forgotten. Moreover, the Government itself has, until very recently, on account of military pressure, only been able to do very little to assist industry. In the 1931 Budget, for example, the total appropriation for industrial administration, communications and reconstruction amounted to 13% million out of 893 million dollars, *i.e.* 1.5%. Meanwhile military expenditure had increased from 153 million dollars in 1916 to 800 million in 1928—an expenditure which meant the levying of heavy and crippling taxation on agriculture, industry, and trade.

CAPITAL AND CREDIT.

An ample supply of capital is essential to any form of industrial development. As it is, Chinese-owned concerns often suffer in competition with foreign-owned enterprises through shortage of capital, a deficiency that is particularly felt in the cotton, silk, milling, and other industries. Along with under-capitalization goes credit contraction. The role the banks have to play is one of extreme importance, and some form of control would appear necessary; the regulation of capital was one of Dr. Sun's principles. At the same time it does not seem likely that all the money needed can be obtained from within the country. China will have to go to foreign money markets—another, fact which Dr. Sun recognized. "China has never had any great capitalists; if the State can control and develop capital and give the benefits to all the people, it will be easy to avoid conflicts with the capitalists. The United States has developed capital in three ways*, through railroads, through manufacturing, and through mining. We shall not be able to promote one of these industries by our own knowledge and experience with our own capital, we cannot but depend upon the already created capital of other countries. . So we shall certainly have to borrow foreign capital to develop our communication and transport facilities."

"And," he adds, "foreign brains and experience to manage them." The sphere of organization and management is another in which China at present lags behind the rest of the world. It cannot be denied that her industrial enterprises, exclusively Chinese-owned, are largely still a long way from being properly organized or efficiently managed, only some of the more important ones having reached this stage. If leading British industrialists must admit that systematic education for management is one of the chief steps to secure Britain's industrial future, how much more can the same thing be said with regard to China. Training in the field of management is an urgent need, and in addition, the provision of a well-disciplined technical force. Not academic but technical training is what should be given the nation's youth. In this respect the question of the great mass of general labour also arises. China has an ample supply of labour, the people are industrious, quick and intelligent, making under normally favourable conditions quite efficient workers, but at the moment her workers have not attained a high standard of industrial efficiency. Wages are low; latest investiga-

tions in Shanghai by the Bureau of Social Affairs reveal that, on the average, the total yearly income of a labourer's family of five is only \$416.51 and the total yearly expense, \$454.38, showing a deficit of \$37.87, which is met by loans or pawning clothing. Working conditions are bad, popular education is still in its infancy—the figures for illiteracy are appalling. Ignorance, prejudice, and inefficiency are the inevitable results of such conditions. An important part of the work of national reconstruction is the provision of adequate educational facilities for all.

SOURCES OF RAW MATERIAL.

Of major importance to any country in its industrial growth is the supply of raw material. China's resources in this respect are not over-abundant; indeed, according to some authorities they are rather limited. For example, in spite of the fact that she is essentially an agricultural country, the world's largest producer of kaoliang, sweet potatoes, tea, cabbage, bamboo, and soya beans, that she ranks second in the production of rice, wheat, and tobacco, and third in cotton, there is the constant problem caused by shortage and maldistribution of food and agricultural products generally. In the last four years the average import of rice was 17 million piculs; in 1931 and 1932 over 2½ million tons of wheat were imported in addition to over 31 million 49-lb. bags of flour. The annual (mill) consumption of raw cotton is 2.3 million bales of 300 lbs. each, of which amount over 50% is imported, chiefly from the United States and India. Tobacco is another home-grown product of which the import is considerable. Chemicals are imported in large quantities, especially soda ash, the three essential acids (nitric, hydrochloric and sulphuric), and dye-stuffs (in particular aniline and artificial indigo), yet of the raw materials needed for the manufacture of these things the country has a plentiful supply. Finally, paper to the value of 14¾ million gold dollars was imported in 1932, though paper-making is a thousand-year-old Chinese industry.

But not only is there the question of quantity, **there is also that of quality to be considered.** Chinese cotton, for **example, is largely of the short staple variety, and the modern demand is for long staple,** which allows finer counts of yarn to be made. **Hence, unless the standard of Chinese cotton is greatly improved, it is liable to be pushed out of the market by the Egyptian, Indian, and American staple.** **There is the same story of inferior quality in the case of wheat. Millers prefer foreign wheat even at a higher price, not only because of its superior**

milling qualities, but because it is free from sand and dirt. While one picul of native wheat only gives 87 lbs. of flour, a picul of foreign may give 100 lbs.

An important factor in China's future prosperity, therefore, is both a qualitative and quantitative improvement in the home supply of raw materials. As only 26% of the area of arable land is being cultivated, and farming methods are undoubtedly backward, this should not be difficult, but it will not be brought about by waiting on private enterprise. There must be Government effort both to bring undeveloped land under cultivation and to replace antiquated by scientific and up-to-date agricultural methods. The colonization of the North-West is perhaps too ambitious a project to be immediately attempted on a large scale, but in the meanwhile much is being done in regard to irrigation, afforestation, the provision of better seeds, improved transportation facilities, credits, improved marketing arrangements, and the use of fertilizers so as to enable the land to produce sufficient not only for feeding the people but for the growing industries as well.

IRON AND STEEL.

Agricultural products are not, of course, the only raw materials that have to be considered, and are not, perhaps, the most important. The modern industrial era is founded on coal and iron, without which there would be no machinery and no power, and power-driven machinery is the prerequisite of the modern factory system. At present almost every important industry in the country has to import its machinery from abroad, chiefly from England and the United States. From 4½ million Haikuan Taels in 1913, the value increased to nearly 45 millions in 1931. In one way this increase is encouraging, as showing the development of industry during this period, but as against this it shows a dangerous dependence on other countries. One of the first problems, therefore, that has to be solved is that of making China independent in this respect, if possible.

At the moment the iron and steel industry is in its infancy, while the smelting of iron-ore is practically non-existent. China produces only 0.5% of the world's iron ore, 1.6% of its coal, and 0.00008% of its petroleum. In more concrete figures this represents about two million tons annually of iron-ore and 25.7 million tons of coal. Her iron-ore reserves are estimated at 950 million tons, and her coal reserves at over 200,000 million tons, so there is ample room for development.

Of the iron-ore produced the greater part is exported to Japan, the mines being largely under Japanese control. This feature of foreign control of China's mineral resources appears in the case of coal also, 40% of the mines being under foreign management (chiefly British and Japanese). North China is rich in coking coal, and this is being exported in increasing quantities, yet owing to the demand for coal in the industrial centres and lack of adequate transport facilities, coal to the value of 11 million Customs gold units was imported in 1932.

PRODUCTION OF COAL.

The annual output of coal in China, considered in terms of dollars, amounts to 60 per cent, of the total value of China's annual mineral production, which is given at \$32,000,000 according to statistics released by the Ministry of Industry in November, 1934. It is further revealed that there are 43 large coal-fields in the country, of which one each is found in Kiangsu, Chekiang, Jehol, Hupeh, and Szechwan; two each in Kiangsi, Shansi, Kirin, and Hcilungkiang, three in Anhwei, four in Honan, six each in Shantung and Liaoning, and 11 in Shensi. More than \$320,000,000 is invested in the coal industry, of which \$114,000,000 represents purely Chinese capital. The purely foreign investments are roughly as follows:— Japan, Yen 107,700,000; Great Britain, £1,240,000; joint investment of Chinese and foreign capital include the following:— Sino-Japanesc, \$37,000,000; Sino-British, £2,000,000; Sino-French, £4,500,000; Sino-Russian, Roubles 12,000,000 and \$7,000,000.

In spite of the general depression affecting the coal industry the Huainan mines in Anhwei Province are being run on a profitable basis. Under the efficient management of the National Reconstruction Commission the mines have a daily output of about 5,000 tons which, if sold at the average price of \$10 per ton, would make a monthly profit of about \$75,000. Situated at Hsunchinshan, Loho and Kiulungkang, on the south bank of the Huai River in Anhwei, the mines are exceptionally rich. According to mining experts, the total amount of coal underground is over 100,000,000 tons, to raise which would take at least 200 years. Owing to its fine quality the coal has a good sale, especially at various places along the Huai River, the Yangtsze River, the Lung-Hai Railway, the south section of the Tientsin-Pukow Railway, and at the basin of the Poyang Lake in Kiangsi.

Operations in the mines are supervised mining experts appointed by the National Reconstruction Commission. Modern scientific methods

have been introduced both in mining and management. There are at present 30 pits all equipped with modern mining facilities, including light railways, water supply, electric light, elevators, dredging machines, water-pumps and other mechanical devices. The total number of workers is over 10,000. To facilitate better communication between the mines and Wuhu, the Huainan railway is being constructed by the National Reconstruction Commission. Already the section between Loho and Hofei has been completed and opened to traffic, while construction of the remaining part of the railway is proceeding apace. As both terminals are in the vicinity of the estuaries of rivers, the railway upon completion will be a valuable outlet for coal shipments, and with the improvement of communications and the introduction of better methods of production now contemplated by the National Reconstruction Commission, a greater output is anticipated.

Although China has adequate supplies within her borders of iron-ore and coking coal, she imports practically all the iron and steel she uses. The total value of such imports in 1931 amounted to Haikuan Taels 84,850,295 as against an annual average of Haikuan Taels 48,457,979 during the previous 20 years. It is obviously imperative that steps be taken to develop the iron and steel industry, in order to enable China to manufacture her own machinery and power-plant. Such a plan is possible, for her coal supplies, though limited, are enough to smelt all the iron-ore reserve, and this latter again is considered sufficient for the present demand. The coal supply also helps to compensate for the lack of petroleum. Electricity, again, seems likely to become more and more popular for motive power, and in this respect China is amply endowed with "white coal". Of the 20 million horsepower which could be obtained from hydro-electric plants on the upper waters of the Yangtze and elsewhere, only about 1,000 horsepower has been actually developed, *i.e.* 0.005%.

TRANSPORTATION DEFICIENCIES.

The question of transportation has been referred to more than once. Economic development in every sphere hinges upon cheap and adequate transport facilities. Comparative figures here are startling.

Railways.

		track mile	per	300 square miles
China.....	1	"	"	"
U. S. A	1	"	"	8½ "
Great Britain	1	"	"	4¾ " "

Roads.

United Kingdom	2 miles	per 1 square mile
U. S. A.	1 mile	„ 1 „ „
The World	15	
China	0.006 „	„ 1 „ „

China is handicapped at the very start. Her railways form an infinitesimal fraction of the country's real needs, and such lines as existed were, until but recently, mostly disorganized, largely thanks to the militarist plague. At the same time transport costs are comparatively too high, ten times as high as in America. Waterways in certain places help to make up for lack of railways, but this transport is comparatively slow, best suited to bulky, heavy, and non-perishable goods. There are also other very depressing features. In native hands methods are still often primitive, while on the bigger rivers and between the treaty and inland ports shipping is largely under foreign control. As for ocean-going shipping, China to all intents and purposes possesses none. Roads are the only bright spot, and even here there is much to be done before even the very minimum of required mileage is approached. If roads—modern, macadamized as well as primitive dirt-tracks—were built at the present rate of 15,000 miles a year, China would possess after 560 years only the same mileage as exists in the United Kingdom today. But conditions today compared with those of ten years ago show a wonderful improvement, indicating that in the next decade—if all goes well—progress will be on a geometrical scale.

THE PROBLEM STATED.

In the light of the foregoing review we can set out the following as the prime factors of national reconstruction:—

1. The perpetuation of internal peace and national solidarity.

(To some extent, of course, economic development will itself help to achieve this, the two processes going hand in hand. The industrialization of the Yangtze Valley, for instance, cannot but favourably react on the neighbouring districts and bandit-infested areas.)

2. The development of heavy industries (steel, coal), the manufacture of chemicals, and construction of power-stations.
3. Improved transport facilities.
4. Measures of agricultural reform to improve native agricultural products, notably cotton, tea, wheat, and rice.

5. Education in management and industrial technique.
6. The provision of capital and credit facilities for Chinese-owned industrial and commercial concerns.
7. Measures to raise the status of the worker.

MANUFACTURING ESTABLISHMENTS IN SHANGHAI, 1932.

INDUSTRY	ESTAB.	CAPITAL	WORKERS	OUTPUT
Cotton Spinning	28	\$51,363,000	65,146	600,440 bales
„ Weaving	124	3,500,000	10,000	5,060,000 pieces
Silk Weaving	472		48,245	450,000 „
Knitting	136	1,146,736	8,755	13,028,324 dozen
Cigarettes, etc.	60	17,371,000	16,000	•
Machinery	217	3,122,850	7,099	
Flour	14	7,438,000	2,351	39,936,000 bags
Printing	75	12,631,570		
Bleaching & Dyeing	84	7,035,490	9,790	
Wooden Furniture	24	60,499	12,000	
Electrical Supplies	48	2,186,850	2,209	\$6,071,393 value
Soap & Candles	30	996,158	644	
Canned Food	38	875,800	1,473	\$2,245,800 value
Number of Industries.	62	Number of Establishments. . . .	2710	

The problem having been stated, the next step is to see what has been done by way of solution, for something has been done, and although much of the foregoing must seem depressing, there is a brighter picture elsewhere, and to this we now turn. Details of the work accomplished in regard to transport facilities, social services, finance, rural rehabilitation and the securing of an increased supply of raw materials will be found in the chapters dealing with those subjects; here we are more concerned with actual industrial development. In spite of all the obstacles to be overcome, in spite of all the difficulties, China's industries have in the last few years made rapid strides. The manufacture has been undertaken of numbers of articles which formerly had to be imported, and these home-made articles are in many cases ousting the imported foreign article from the market, being not only cheaper but comparable in quality. The *Statistics of Shanghai*, compiled by the Shanghai Civic Association and published in 1933, gives a list of 62 different industries located in that city with 2710 establishments owned and operated entirely by Chinese. Foreign enterprises, such as the Ewo Cotton Mills, the Nagai Wata Kaisha, and the British-American Tobacco Company are not included in these figures, since, despite the

large part they have played and are playing in China's industrial life, they cannot be regarded as the result of Chinese enterprise. The table on page 55 gives us the details available relating to some of the more important industrial undertakings actually in operation in Shanghai under Chinese management.

Other industries include glass, paper, toilet preparations, cement, matches, buttons, hats, tooth-brushes, spectacles, rope, gramophones and records, cooking utensils, etc. In July, 1934, a Chinese company was formed to manufacture paint in Shanghai; the capital is about \$1,500,000 (subscribed by Chinese and British interests), but all the shares and administrative control of the enterprise will be held in China. Some well-known British paint manufacturers are supporting the scheme, but it may be regarded as a Chinese industrial undertaking. A loan of \$100,000 was made in January, 1935, from the British Boxer Indemnity Refund to finance preliminary investigations for the establishment of a paper-mill at Wenchow, Chekiang, by the Ministry of Industry.

The import and export trade returns issued by the Customs provide another indication of China's industrial progress. In many manufactured goods there is a notable decline in the volume of imports, while in certain raw materials there is a significant increase. At the same time there is a slight but steady increase in the export of some manufactured articles, including soap, enamel-ware, canned fruit and vegetables, hosiery, and certain lines of cotton piecegoods. Their total value in 1932 amounted to Hk Tls. 75½ million.

COTTON INDUSTRY DEVELOPMENT.

Of all these the cotton industry shows the greatest development. In 1920 cotton goods represented 31% of China's total imports, and in 1930 only 11%. On the other hand, raw cotton imported in 1920 represented a bare 2½% of the total imports, but in 1930 amounted to 10% (3,481,224 piculs as against 688,496). In other words, there had been an increase in the importation of raw cotton to meet the increasing demands of home industry, while there was a corresponding decrease in the import of manufactured cotton goods. Out of 16 categories of cotton goods only three show an increased import between 1920 and 1930, and in each case the increase is comparatively slight. The other 13, on the other hand, show decreases amounting in some cases to 60, 70 and even 80%. Here is a comparison of import figures:—

DEVELOPMENT OF COTTON MILLS IN CHINA (1916-32).

	1916	19-23	193-2
Mills (<i>Chinese</i>)	30	7-2	84
Spindles (<i>Chinese</i>)	721,000	2,124,000	2,910,000
Looms (<i>Chinese</i>)		7740	21,599
Mills (<i>all nationalities</i>)		116	128
Spindles (<i>all nationalities</i>)		3,232,000	4,427,000
Capital (<i>Chinese</i>)			\$150 million
Capital (<i>all nationalities</i>)			\$450 million

COTTON-MILLS, CONSUMPTION AND PRODUCTION IN 1934.

	CHINESE	JAPANESE	BRITISH	TOTAL
Mills	87	40	5	132
Capital	Tls. 18,500,000 \$125,577,300	Tls. 30,000,000 \$12,000,000 Y. 283,280,000	Tls. 500,000 \$8,251,748	Tls. 50,000,000 \$145,829,048 Y. 283,280,000
Spindles	2,642,974	1,803,484	261,908	4,708,366
Doublers	137,502	294,692	5,720	437,914
Looms	19,605	18,717	3,720	42,313
Power—K. W.	77,533	60,907	3,000	141,460
„ - H. P.	29,347	4,000	5,300	38,647
Cotton Consumption (bales)	1,410,169	730,107	98,666	2,238,942
Yarn Produced (bales)	1,586,809	575,802	110,223	2,272,834
Cloth (40 yd. rolls)	9,039,987	12,584,968	1,840,482	23,465,437

COTTON PRODUCTION IN CHINA
(*in bales of 500 lbs.*)

YEAR	Production	Consumption
1919	2,257,097	
1920	1,687,601	
1921	1,357,305	
1922	2,077,589	1,172,750
1923	1,786,160	1,508,250
1924	1,952,220	1,472,750
1925	1,883,588	1,509,250
1926	1,560,896	1,645,250
1927	1,680,527	1,800,000
1928	2,209,819	1,890,000
1929	1,896,755	1,834,500
1930	2,202,392	2,234,750
1931	1,599,945	2,217,250
1932	2,026,409	2,241,500
1933	2,443,552	2,274,000

GROWTH OF SPINDLES IN CHINA.
(*in thousands.*)

YEAR	Chinese	Japanese	Whole China
1919	889	333	1,468
1920	1,775	812	2,843
1921	2,124	849	3,232
1922	2,221	1,071	3,550
1924	2,176	1,218	3,581
1925	2,049	1,332	3,570
1927	2,099	1,383	3,685
1928	2,182	1,515	3,850
1929	2,386	1,652	4,201
1930	2,499	1,821	4,498
1931	2,730	2,003	4,904
1932	2,910	2,096	5,189
1933	2,886	2,098	3,172

	1920	1930
Shirtings and sheetings (grey and plain)	5,728,165 pieces	1,673,259 pieces
Drills and jeans	2,920,686 „	856,674 „
Poplins	834,000 „	120,016 „
Woollen & Cotton (coatings & suitings)	2,639,602 yards	997,030 yards

During approximately the same period exports of shirtings and sheetings went up from 63,582 pieces in 1921 to an annual average of 2,318,868 pieces for 1927, 1928, and 1929.

With regard to the cotton industry as a whole, statistics relating to the operation of mills, spindles, looms, were given on page 57.

TOBACCO INDUSTRY.

The tobacco industry is another which has shown great development during the last few years, as the following figures show:—

Imports	1920	1923	1930	1931
Cigarettes (thousands)	8,187,863	10,116,893	6,223,602	2,942,393
Tobacco Leaf (piculs)	232,418	315,312	925,938	1,242,070

The marked fall in the import of cigarettes cannot be put down to any slackening of demand, or decrease in consumption. As the figures for the import of leaf clearly show, the reason is the vastly increased production in China, due in a considerable degree to the increased Customs duties. The major portion of this increased production is admittedly in the hands of the British-American Tobacco Company, nevertheless Chinese-owned factories have also extended their activities. In Shanghai alone there are now 60 such concerns with a total capital of approximately \$70,000,000 and a maximum output of 160 million cigarettes a day.

NEW DOMESTIC INDUSTRIES.

The China Alcohol Distillery, the largest of its kind in China, and located on a 150-mow area in Pootung (Shanghai), is in full working order since January, 1935. The plant has a production capacity from 4,000 to 6,000 gallons per day, and this output can be doubled whenever necessary. The distillery is capitalized at \$1,500,000 with shareholders drawn from overseas Chinese and Shanghai merchants, and has the partial support of the Central Government as partners. It is under the general management of the Kian Gwan Company, Limited, the leading Chinese industrial and commercial concern in the Netherlands Indies

and largest single undertaking in that Colony, with branches all over the world. The alcohol is manufactured from molasses, sweet potatoes and all kinds of grains, under expert supervision and by scientific process. Although alcohol forms the chief product, other allied products will also be included. The plant is equipped with highly mechanized appliances, at the same time maintaining the quality of the output, which will satisfy even the most exacting requirements.

At present the raw materials are being imported from Java, but the management will take steps to raise them from provinces in China, if conditions warrant. Hitherto, China's needs for alcohol have been supplied from Japan, the Philippines, and Java. It is estimated that Chiina imports annually 5,000,000 gallons of alcohol, costing the nation about \$10,000,000. Alcohol can be used in connection with scientific research, medicine, paint, cosmetics, artificial ivory, and artificial silk, explosives and other purposes. The Hunan Provincial Government has also decided to appropriate \$300,000 for the establishment of an alcohol factory near Changsha. According to the plans, which have received official approval, the factory will be built outside the south gate of Changsha. Of the \$300,000 appropriated by the Provincial Government, \$40,000 will be spent for construction work, \$130,000 for the purchase of machinery, and about \$120,000 for miscellaneous expenses. It is estimated that the factory will produce daily 1,000 gallons of 95 to 97 cent pure alcohol. Its annual output, calculated at \$1 per gallon, will net, therefore, \$350,000. The total expenses will be about \$250,000 a year. On this basis then the factory will have an annual net profit of about \$100,000.

Mention may be made, as an example of the way in which new enterprises are developing in China, of the growth of the cinema-film industry. This is among the latest experiments in providing the domestic market with what the public wants, and the output is steadily expanding. During 1934 over 265,000 metres of silent film was made in China, which is not a large figure compared with the import of foreign films, amounting to about three times that figure. Of the Chinese output about 22 per cent came from the studios of one company, with about 14 per cent from another and 12 per cent from a third. In addition to the silent pictures, a fair amount of "talkie" film was produced in China during 1934. One studio turned out five pictures, representing 12,000 metres, another six, representing 14,000 metres, a third made three "talkies" totalling 8,000 metres, and a fourth studio turned out three with a total length of 7,000

metres. In addition to the feature films, 14 "talkie shorts" were made in China during the year, with a total length of 5,000 metres. As a matter of interest it may be mentioned that 355 American feature films were imported during 1934, and 644 "shorts," each representing about 81 per cent of the total import. British, French, German and Russian films imported during the year numbered 431 feature films and 755 "shorts." There are in China about 55 Chinese firms in the film business, most of whom are in Shanghai, and there are about 250 picture-houses in the country, mostly in the large cities. Eight Chinese firms are engaged in making cinema-apparatuses, and there are about half a dozen concerns engaged in the film exchange business.

Among the industries in which domestic production has brought about a decline in imports may be mentioned glassware, bicycles, furniture, leather boots and shoes, needles, soap, and window-glass. Others which have established themselves on the market without so far affecting import figures owing to the increased local demand are paint, enamel-ware, varnish, cement, matches, woollen goods, and electrical materials and fittings. The following figures for 1931 show the advance made by various industrial enterprises between 1920 and 1931, taking the turnover for 1930 as providing the index-figure of 100:—

Brick-making	143	Cigarettes	115	Condiments	112
Cosmetics	120	Cotton Weaving ..	128	Dyeing	125
Enamel-ware	158	Flour	125	Ink	350
Machinery	125	Matches	120	Oil Milling	109
Paint	128	Paper	125	Rubber	200
Silk Weaving	160				

But though figures such as these are encouraging, it has to be remembered that none of the industries mentioned can be considered really vital, and most of them are still very much in their infancy. No real advance can be made until the great basic industries of coal, iron, steel, and machinery have been established, and it is the realization of this important fact that is responsible for the Four-Year Plan for the industrialization of the Yangtze Valley.

THE FOUR-YEAR PLAN.

This plan falls into two sections, the first referring to industry and mining, and second to agriculture and afforestation. **Here we are only concerned with the first. This is again divided into 11 sub-sections dealing with coal, iron, steel, copper, petroleum, acids, shale oil (Shensi), machinery, automobiles, sugar, paper, and porcelain. In regard to**

nearly all these China at present is dependent upon imports, although she has, in the case of many, ample supplies of raw material within her borders. She has, for example, plentiful deposits of coal and iron, and there is no reason why she should not in time come to have her own steel industry, and manufacture her own machinery. These industries are indeed of vital importance; upon them all others rest, and it is to their development that the Four-Year Plan, which aims at making the Yangtze Valley a centre of industrial reconstruction, is at present chiefly directed. Three main projects have been put forward:—

1. *State Iron and Steel Works.* In 1932 certain German steel and iron interests expressed a willingness to furnish in the form of a loan all the machinery and plant necessary, and to complete the work within three years. A draft agreement was drawn up, fixing the amount of the loan at \$80,000,000, with interest at 7%, to be repaid with 7 years of the opening of the works. It was expected to get coal from Anhwei and iron-ore from Anhwei and Tlupeh. However, before the agreement was finally signed reports were received that Anhwei coal was not good coking fuel, so the scheme is temporarily held up while the possibilities of Kiangsu coal are investigated. At the same time the capital outlay has been reduced to \$40,000,000.
2. *Central Machine-Works.* The cornerstone of the Central Machine-Works, which covers more than 100-mow at Chenju, near Shanghai, was laid in January, 1935, by Mr. Chen Kung-Po, Minister of Industry. The \$3,000,000 needed for carrying out the project has already been secured from the Sino-British Boxer Fund. Two-thirds of the money will be used for buying the necessary machinery from England. The factory will first manufacture mains and small water tubes which China at present imports.
3. *Ammonium Sulphate Plant.* This was to have been a joint enterprise of the Chinese Government, Imperial Chemical Industries (British) and the Deutsche Stickstoff A. G. (German). The capital was fixed at \$15,000,000, of which the Chinese Government was to find \$8,000,000, but later these sums were reduced to 11 and 5 millions respectively. A draft agreement was drawn up, and the foreign representatives were to have submitted working proposals by June, 1933, while the Chinese Government investigated the question of the home supply of raw materials. The foreign firms, however, failed to submit their proposals, and the draft agreement lapsed, so this scheme is also in abeyance.

For the moment the Plan may seem to have no very definite results to show, but it has advanced very far from the vaguely idealistic stage in which so many of China's former plans remained. Very concrete and practical proposals have been brought forward, foreign capital has been interested, and the ground and possibilities thoroughly investigated. It can only be a question of time before they are implemented. Meanwhile, the Ministry of Industry is planning a thorough investigation of industrial conditions in different Provinces for the purpose of compiling reliable data and statistics concerning Chinese industries. To facilitate the investigation, the Ministry has divided the country into nine districts, namely: (1) Hopei-Charhar-Suiyuan-Shansi District; (2) Shantung-Honan-Shensi District; (3) Fukien-Chekiang District; (4) Kiangsu District; (5) Anhwei-Kiangsi District; (6) Hunan-Hupeh District; (7) Szechwan-Sikong District; (8) Yunnan-Kweichow-Kwangsi District; and (9) Kwangtung District.

NANKING AS A BUSINESS CENTRE.

Evidence of the development which is going on in various parts of the country is found in a report made by the Economic Research Institute of the National Reconstruction Commission. This report shows that the total volume of business transacted during 1934 in industrial and commercial circles in Nanking amounted to approximately \$90,000,000. The total value of industrial transactions alone was approximately \$14,800,000 of which \$5,000,000 was in flour business, \$4,800,000 in manufactures and \$1,100,000 in the weaving industry. The total number of industrial units in Nanking was 847. Contractors top the list with 480, most of which firms were established after the removal of the national capital to Nanking, a fact indicating the fast progress of reconstruction. Weaving factories and shops number 61, iron and steel manufacturers number over 20, including manufacturers of flour mill machinery, steel beds, pots, kettles etc., and printing shops number over 30. There are two big flour mills, the Ta Tung Flour Mill and the Yangtsze Flour Mill. The total value of commercial transactions in Nanking during 1934 was to \$72,340,000 of which \$7,217,000 was in foodstuffs and money exchanges and remittances, \$6,725,000 in groceries and miscellaneous goods, \$5,000,000 in cotton and silk. The economic progress of Nanking during recent years has been evidenced by the increase of banks. There are at present over 20 banks as against 4 in 1927 before Nanking was made the capital of the country.

INDUSTRIAL DEVELOPMENT IN SOUTH CHINA.

Although Shanghai and nearby cities form the most important industrial centre in China, the process of modern industrialization is going on all over the country. In Wuchow, for instance, the Kwangsi Provincial Government has a factory for manufacturing drugs for use in its hospitals, the sum of \$60,000 being voted in June, 1934, for this enterprise. A former cigarette-factory has been adapted for the purpose, most of the machinery being taken over by the Liuchow arsenal to make room for more suitable plant. Weaving is another important industry in the Wuchow district, especially at Nanning, where electric power is used for motive purposes, and in June, 1934, extra time was being worked, increasing the daily output from 50 to 70 bolts. At Liuchow a modern distillery is producing spirit, and finding a steadily increasing demand for its output.

Kwangsi Province has spent \$8,000,000 during the last three years for reconstruction work. Some of the major projects which have been carried out include the surveying and opening of mines in Nanning and Kweiyang territory, the completion of rural highways, and the application of scientific methods in opening an irrigation system. Considerable progress has also been made in developing the natural resources of the province, including the opening of zinc and tin mines at Nantan, lead and antimony mines at Fuhsien and Hochi, and the erection of a paint and varnish factory at Wuchow, using the oil of the tung oil tree as base. The authorities are also seeking to popularize the growing of two trees for medicinal purposes, the *eucalyptus* for production of eucalyptol, and the *cinchona*, for its quinine content, as raw material supply for the Wuchow Pharmaceutical Factory.

Plans are proceeding apace for the industrialization of Nanchang, the capital of Kiangsi, including a large cotton-mill in addition to the project for the construction of a hydro-electric power-plant and waterworks. The estimates, which have been approved by the Kiangsi Provincial Government, call for an outlay of \$3,185,000, of which \$1,785,000 will be expended on the power-plant and \$1,400,000 on the waterworks including the installation of pipes and other equipment. The power-plant is expected to be completed in two years and the waterworks in one year. The total capital for the two utilities is fixed at \$3,200,000. The Kiangsi Provincial Government will subscribe \$500,000, and the balance will be provided by the China Development Finance Corporation.

KWANGTUNG'S THREE-YEAR PLAN.

Of all the provinces of China, Kwangtung claims to have the longest history of foreign trade and the largest excess of imports over exports. The events of September, 1931, in Manchuria demonstrated the importance of national preparedness, in which industrial development plays the most important role. With this in view the Threc-Year-Plan was promulgated in January, 1933, which included a schedule for industrial development. The schedule provided for the establishment of twenty-four industrial plants mostly devoted to the manufacture of what have been the chief articles of import to Kwangtung.

During the eighteen months' execution of the Three-Year Plan ending **July**, 1934, the following industrial plants are either already in operation, completed and ready for operation, or under construction, with the exception of the cement factory, which was already working when the Three-Year Plan came into being. The list of plants and their capitalization appears below:

	Capital <i>Planned</i>	Capital <i>Paid Up</i>		Capital <i>Planned</i>	Capital <i>Paid Up</i>
1. Silk weaving	\$465,028	\$437,402	15. Sugar (Shihto Plant)	4,035,320	703,323
2. Linen	646,288	475,582	16. Sugar (Swatow Plant)	2,019,750	159,375
3. Cotton-yarn	2,916,000	801,343	17. Alcohol (Part of Hsinchao Sugar Plant)	404,785	353,310
4. Woollens	948,000	230,879	18. Klectric Power (Hsitsun Plant)	—————	607,857
5. Silk*	170,800	41,558	19. Hydro-electric Power (Weng-chiang Plant)	—————	8,680
6. Sulphuric Acid	899,030	949,337	The Plan provided for Canton dollars for as operating expenses.		
7. Soda	1,400,000	1,019,012	20. Iron and Steel	—————	67,309
8. Phosphorus-Fertilizer	107,000	22,055	The Plan called for a capital of \$30,000,000		
9. Nitrogen Fertilizer	3,423,080	358,180	21. Charcoal Water-gas Engine*	26,800	10,229
10. Beer*	1,021,000	73,380	Total	\$35,298,784	\$15,394,586
11. Paper	8,225,440	1,535,095	*Not included in the Plan.		
12. Cement* (Hsitsun Plant No. 1)	3,999,755	4,012,150			
13. Cement* (Hsitsun Plant No. 2)	2,327,158	1,584,893			
14. Sugar (Hsinchao Plant)	2,201,385	1,802,947			

NOTK.—The figures for actual investments are calculated up to July 18, 1934, except those in the sugar-plants, which are computed up to July 3, 1934 and those in the cement-works up to 1931.

Those plants in the table above, which are not provided for in the Three-Year Plan, have been established to meet urgent local demand, while those stipulated in the Plan, if not yet established, are in course of completion. The total investment on the plants already in operation or under construction amounts to more than fifteen million dollars, which were variously derived from (1) profits on cement, (2) profits on tungsten ore, (3) revenue from imported rice, (4) profits on sugar sales, and (5) the Provincial Bank by way of subsidies and loans.

It will be seen from the foregoing that, although the nature of the industrial plants so far established or under construction is not exactly the same as called for by the Three-Year Plan, yet their number is only three short of that provided for. However, it will be some time before the Wengchiang hydro-electric power-plant and the iron and steel works will be in operation, the one requiring preparatory tests on the water supply and the other co-ordination with iron and coal mining. Therefore the number of plants immediately available is nineteen.

The actual investment outlay amounts to fifteen million dollars, which is about 16 per cent of the ninety-three millions called for by the original plan; the percentage will be higher than 50 on the basis of the total planned outlay for industrial plants besides the hydro-electric power-plant and the iron and steel works. Considering the financial difficulties of the Provincial Treasury and the population generally, such an accomplishment in so short a time is indeed encouraging.

As soon as formal approval of the \$30,000,000 loan for the establishment of the iron and steel works in Canton has been received from the National Government, the Provincial Department of Reconstruction in Canton will send an agent to the United States to secure the necessary machinery. The plant will include a blast furnace of 500 tons, a steel-making plant and rolling mills. The site is at Tung Long, on the right bank of the Pearl River, about four miles from Canton city.

The amount of high-grade ore in the Yun Fu deposit is ample to justify the construction of a 250-ton or 500-ton blast furnace. Sufficient reserves, for enlargement of the plant beyond this capacity, or for building other plants, are practically assured from other prospected deposits, notably in Pao Shan and Pao On. From the Yun Fu and Pao Shan ores in East and North Kwangtung, pig iron can be produced that will be satisfactory for making steel by the basic open hearth process, and possibly, by the acid Bessemer process. Limestone, manganese ore and other miscel-

laneous raw materials needed in making iron and steel can be readily secured at reasonable cost from quarries or mines in the Kwangtung districts, some of which are now being worked.

ELECTRICAL DEVELOPMENT.

Although there is as yet no great hydro-electric enterprise in China, there are many projects of the kind under consideration, and meanwhile the use of electricity is rapidly extending. Foreign experts have noted the great improvement in Chinese engineering specifications, and recognize that "some of the recent electrical ones can bear comparison with those of any other country." A total of 194 power companies have been registered with the Government, according to statistics compiled by the National Reconstruction Commission. Details by provinces are as follows:—

Kiangsu.....	65	Kwangtung.....	4
Chekiang.....	66	Yunnan.....	1
Anhui.....	11	Ilopi.....	10
Kiangsi.....	5	Shantung.....	7
Hupei.....	6	Shanxi.....	2
Hunan.....	5	Shansi.....	3
Szechwan.....	3	Charhar.....	1
Fitkien.....	3	Suiyuan.....	2

Certificates of commendation have been issued by the National Reconstruction Commission to ten electric works in recognition of the excellent results achieved during the Republic's 22nd year (1933). The awards were made by the Commission after reviewing the work of 179 electrical works in the provinces, in accordance with the provisional regulations governing encouragement of private-owned public utility enterprises. Of the 179 works which submitted reports for 1933 to the Commission for examination, 7 were rated as first-class electrical works; 22, second-class; 56, third-class; and 94, fourth-class. The recipients of certificates of honour are:—

1st Class: The Hangchow Power Company, and the Chapei (Shanghai) Electricity and Water Works.

2nd Class: The Pootung Electric Supply Company and the Soochow Electric Works.

3rd Class: The Suiyuan Power Company, the Waiyu Electric Works (Shansi), the Minghua Electric Works at Pinghu (Chekiang), the Taichi Power Company at Quinsan (Kiangsu), the Huaming Electric Works at Kiangyin (Kiangsu), and the Changshu Electric Works.

Official statistics compiled early in 1934 showed that China has about 500 electric utility companies and 150 industrial power plants, with a total generating capacity of 800,000 kilowatts and an annual output of $2\frac{1}{2}$ billion kilowatt-hours. Almost 95 per cent, of the prime movers are steam-driven, 4.8 per cent, are internal combustion engines, and the rest, 0.2 per cent, rely on water power. Nearly all the electric utility companies are primarily organized for the supply of current for lighting. Only a few supply cheap and abundant power for industrial and agricultural developments. The block rate per kilowatt-hour for lighting ranges from 17 cents (minimum) to 40 cents (maximum). For power, the rate ranges from 5 cents to 20 cents. The higher rates occur only in towns in the remote interior. Of the 158 companies reporting to the Commission in 1933, 108 were running at a profit, 30 at a loss, and 20 showed neither profit nor loss on their working.

Public improvements continue to be pushed in Kwangsi, where electric-light plants have been purchased for Fuchwan, Hohsien and Chungshan, and by the end of 1935 all three plants will be in operation.

THE FINAL OBJECTIVE.

There remains the question of the final objective. A nation of peasant-farmers, handicraftsmen, and small traders, still labouring under the old idea of Government irresponsibility in economic matters, still largely under the domination of feudalism, has to be changed into a modern civilization with engineers, mechanics, scientists, large-scale enterprises and international associations. How is it to be done, and what is to be the final form? National economic planning is the only really effective mode of operation, but planning to what end? Dr. Sun envisaged a Socialist State, but it is far from certain that all his followers do. It has yet to be decided what exactly is to be the relation between State and private enterprise, what are to be their respective spheres.

CHAPTER IV.

EDUCATIONAL REFORMS.

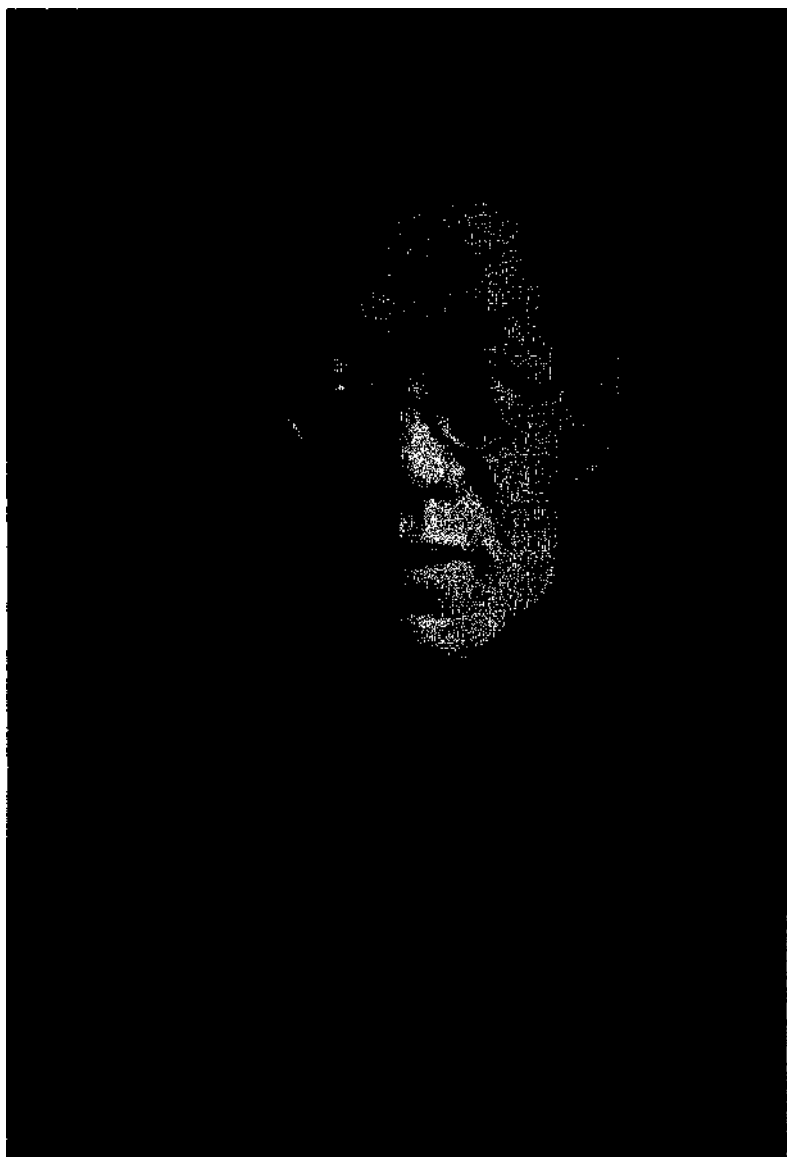
NOT until 1902 was any attempt made to organize educational activities on a nation-wide basis, and even then no provision was made for girls' schools. These early efforts did not amount to very much, and another nine years went by before the foundations were actually laid of a national system of primary education. From 1911 to 1922 the number of schools multiplied, and in the latter year a law relating to school age was promulgated, ordaining compulsory education from six to ten. This reform, however, has remained an ideal; political unrest, administrative difficulties, lack of money and of qualified teachers preventing it from being put into practice. In the same year (1922) a school organization with a primary, middle, and higher educational gradation was adopted, and this, with a few modifications made by the National Educational Conferences of 1928, 1929 and 1930, is the standing rule to-day.

The first few years after 1922 did not see much accomplished owing to constant civil wars and the depredations of militarists, who, besides appropriating funds which should have been used for educational purposes, did much damage to schools and equipment. Instead of more schools being established, many were obliged to close. With the advent of the National Government in 1927 there was a definite change for the better. The new Administration made education one of its chief concerns; a Ministry of Education* was set up, and several conferences held at which an educational policy and programme was drafted, so that the last five or six years have seen a great advance in educational work, as the Commission of educationists from the League of Nations pointed out in its report. In 1933, a Government decree covering the whole educational field—curricula, organization, text-books, etc.—was issued, so that the educational system can now be said to have been definitely fixed along national lines. What is to be done

* First under the name of National University Council.



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having been clearly defined, it remains to build on the foundations thus laid.

An idea of the progress being made in this most essential "building" work may be obtained from some citations from the review given by Dr. Wang Shih-Chieh, Minister of Education, in the autumn of 1934 of the progress of the important work under his care. The law today is that six years is required for primary and six years for secondary education, of which three years are for junior and three years for senior high school. The figures which follow show what is being done by the National and local Governments and other educational authorities to bring the standard of literacy to a level more in keeping with the progress of the country in other directions.

In 1907-08 there were 40,000 schools with 1,000,000 students in primary education, 400 schools with 30,000 students in secondary education. In 1912, the year after the revolution, the figures were 86,000 primary schools, with 2,793,000 students, costing \$19,000,000, and 370 secondary schools, with 52,000 students, 650 being girls, costing Tls. 3,000,000. In 1930 the aggregate figures were 240,000 schools with 10,540,000 students at an expenditure of \$48,000,000. This has been done during perhaps the most strenuous year of China's national life. At this time, too, students were being sent to study abroad and became the principal source from which the university teaching staff is drawn.

ELEMENTARY SCHOOLS.

The elementary educational institutions are divided into two grades, junior and senior primary schools, and the course of each school is four years. In addition to these primary schools, provisions have been made in certain localities for the establishment of a certain type of supplementary primary school, but owing to the conditions varying in different places the period required for pupils to complete their courses in such supplementary schools has not been specified. Supplementary schools are opened for children of the age of 10 to 16 who did not attend school in their younger years.

The numerical development of primary schools throughout the country since the opening year of the Republic, 1912, is clearly shown by the following data:—

a. *Number of schools.*

First Year of Republic: (1912), 86,318.

Twentieth Year of the Republic (1931): 261,264. The increase is

about three times.

b. *Number of Students.*

First Year of Republic: 2,793,633.

Twentieth Year of the Republic: 11,667,888. The increase is about four times.

c. *Expenditure:*

First Year of the Republic: \$19,334,480.

Twentieth Year of Republic: \$93,713,611. The increase is about five times.

From the foregoing figures it is clear that the advance made by primary schools is comparatively slow. Nevertheless, the number of primary schools has increased. The greatest number is in Shantung, Hopei, Hunan and Shansi, while Shantung and Kwangtung boast the greatest number of primary school pupils. Kwangtung, in addition, spends the most money on primary schools. The standard of primary schools has also risen following the promulgation in 1933 of certain rules governing curricula.

In connection with primary institutions, the difficulty lies in the question of how funds are to be raised for the opening of additional supplementary schools for the education of the poor, particularly in rural districts. Though the number of schools for the education of the masses is utterly insufficient to meet the present situation, the fact that the last few years have witnessed a considerable increase in the number of such institutions, cannot be denied. In 1928 there were about 6,000 such schools, but in 1933 the number rose to some 40,000, and the expenses totalled approximately \$15,000,000. Provincial and municipal authorities are further required to assign a minimum percentage of their educational expenditure to the creation of scholarships for gifted children of poor parentage. Yet in the face of the vast majority of illiterate people in the country, it is feared that the increased number of such schools and the increased facilities for a complete education are still insufficient to contribute materially toward the diffusion of knowledge. The National Government and local educational administrative organizations are now considering the question of how to raise funds for the promotion of general education, how to get more competent teachers, and what should be the contents of the text-books used in such schools.

Measures for the enforcement of free education are being drawn up by the Ministry of Education in compliance with a resolution adopted

by the 5th Plenary Session of the Central Executive Committee of the Kuo-Min Tang, and will be put into effect during 1935. At the joint annual meeting on December 25, 1934, of representatives of the organs in charge of the various Boxer Indemnity Refunds, the Minister of Education moved a resolution for utilization of the major portion of the proceeds from the American, British, Belgian, and French Boxer Indemnity Refunds for the promotion of free education, and a smaller portion for the promotion of vocational education and establishment of post-graduate schools in the national universities. The resolution was adopted in principle, but a final decision would have to be made later owing to "certain diplomatic complications."

SECONDARY SCHOOLS.

a. *Number of Schools.*

First Year of the Republic (1912): 373.

Twentieth Year of Republic (1931): 1,892.

The increase is five times, and the total number, including normal and vocational schools, is 3,021.

b. *Number of Students.*

First Year of the Republic: 52,100.

Twentieth Year of the Republic: 403,134.

The increase is eight times, and the total number, including students in normal and vocational schools, is 537,757.

c. *Expenditure.*

First Year of the Republic: \$39,171,385.

The increase is thirteen times and the total amount, including normal and vocational schools, is \$54,055,361.

It is true that there are many badly-managed schools in the country, but with the promulgation of rigid rules and regulations and the introduction of the joint examination system, it is expected that these inefficient schools and undiligent students will disappear.

The most undesirable feature of the present educational situation seems to be the lack of vocational schools. According to statistics compiled in 1931, over 1,800 in 3,000 middle schools are ordinary middle schools, the number of normal schools being about 900 and vocational schools 300. The total number of middle school students is over 500,000, among whom only about 40,000 are vocational school students, less than one-tenth of the total number.

From the foregoing, the conclusion may be drawn that there is no necessity for increasing the number of middle schools but to improve existing institutions. On the other hand, normal schools, primary schools and vocational schools must be greatly increased as well as improved, and with this object in view the Ministry of Education has recently instructed provincial and municipal governments to allocate funds to educational institutions in such a proportion as to redress the balance between vocational and non-vocational middle schools.

PROGRESS IN HIGHER EDUCATION.

In his survey of higher education, a term denoting universities, colleges and technical institutions, the Minister of Education pointed out that since the establishment of the Chinese Republic in 1912 progress in this grade of national education has been most rapid and satisfactory, as borne out by the following figures:—

a. *Number of higher educational institutions.*

First Year of the Republic (1912): 4 universities.

Twenty-third Year of the Republic (1934): 82 universities and independent colleges, 29 technical institutions, totalling in.

This has increased to over 20 times the original number from the First Year of the Chinese Republic up to the present time.

b. *Number of students in public and private higher institutions.*

First Year of the Republic: 481 university students.

Twenty-third Year of the Republic: 43,519 students in universities, colleges and technical institutions.

This has increased to nearly 100 times its original figure from the beginning of the Republic up to the present time.

c. *Expenditure.*

First Year of the Republic: Expenditure on universities—\$755,730.

Twenty-third Year of the Republic: Appropriations for universities, colleges and technical institutions amount to \$34,650,000.

This has increased over 40 times during the same period.

Out of this total of \$34,650,000 spent on higher education in the 23rd Year of the Republic (1934) \$14,890,000 was expended on private institutions, \$4,410,000 on institutions established by Provincial Governments, while the balance amounting to only \$15,350,000 was paid out of the coffers of the National Government. The sum spent by private institutions was thus nearly equal to the Government's outlay.

The facts given above, it must be pointed out, represent only the numerical growth of education in China. With regard to the efficiency of the educational system, it is true that, during the period between 1923 and September, 1931, when the Japanese started their aggressive campaign in Manchuria, the administration of higher education was in a chaotic condition. This chaos may be attributed to several factors. One of the reasons is that with the enactment of a law in 1922 allowing universities to be established privately without effective control, numerous universities sprung up like mushrooms, most of them specializing in only one subject of study. The result was, of course, a multitude of so-called universities without the sterling qualities of academic institutions. It may also be mentioned that the whole period witnessed a disproportionate development of education. There was an increasing number of students pursuing such courses as literature and abstract sciences. According to statistics compiled in 1930, the students of higher educational institutions numbered over 40,000; but those studying literature, law, commerce, education, and fine arts outnumber students of engineering, agriculture, medicine and physics by the overwhelming majority of 3 to 1.

THE RESTORATION OF ACADEMIC MORALE.

In the past three or four years, however, these evils have gradually been removed by the reorganization of inefficient universities and strict control of new institutions. Furthermore, the drift towards the pursuit of abstract knowledge has been to a great extent arrested by the promulgation of certain rules and regulations governing the distribution of students among various departments of study. According to the classification by the Ministry of Education, the higher educational institutions are divided into two groups, according to the nature of the subjects which they are teaching:—Group A, or liberal arts group, consists of the colleges of literature, law, commerce and education; and Group B, the science group, consists of colleges of natural science, agriculture, engineering and medicine. In the year 1931, of the sum total of about 44,000 students, 74½ per cent belonged to the Group A colleges, and only 25½ per cent belonged to the Group B colleges; during the last two years, however, the tendency is rather the reverse. The complete statistics of later years are not yet available, but according to Mr. Lo Chia-Lun, Chancellor of the National Central University, Nanking, out of the sum total of the successful candidates admitted to the University in 1934

about 70 per cent chose Group B, and only about 30 per cent belonged to the Group A colleges, which is sufficient indication of the changing tide.

As to the academic atmosphere and university discipline, one remembers that up to 1932 there was great turmoil and unrest among the students, which affected almost all institutions of higher learning and manifested itself in countless students' strikes, political demonstrations, forcible ejections, sometimes of students and sometimes of professors. The academic prospect at that time was very dark. But that darkness disappeared with the storm, after which serenity has prevailed. Both professors and students are enjoying academic tranquillity. They have been working harder and accomplishing better results than ever. No more sabotage, parades, demonstrations. This was brought about not so much by the strict enforcement of discipline as by the awakening of the students themselves to the realization that national problems cannot be solved by such childish methods, and that the best way of helping to cope with the unprecedented national crisis is to secure for themselves better education and better preparation.

As to scientific research itself, the results are also very encouraging. The natural sciences were transplanted on Chinese intellectual soil only very recently, yet several departments, such as geology, physics, psychology, can now be favourably compared with those of leading universities in the West. Important scientific and other learned journals in Europe and America contain frequent contributions from the pens of Chinese scholars. The index of authoritative scientific reference books as "Handbuch der Chemie" or "Handbuch der Physik," include many names of Chinese scientists, while the progress recently made in China in philology, history, archaeology, and other kinds of sinological research, is really phenomenal. The laudable work of the Academia Sinica which will be described elsewhere in this book, is also a great stimulus to the professors in universities and colleges.

But while paying due tribute to the new spirit both among the students and the professors, the main factor which made possible the emergence of this new spirit should not be forgotten, namely, the fact that from 1932 onwards, coincident with Mr. Wang Ching-Wei's tenure of office as President of the Executive Yuan, the National Government has, in spite of all financial and other difficulties, always paid out the funds due to the educational institutions and not diverted educational funds to other objects. The moneys needed to pay salaries and to main-

tain up to standard and improve the equipment of the various institutions are remitted regularly and in full, with the result that for the first time in China's educational history the higher institutions in the country are now progressing along the right path.

REFORMS IN UNIVERSITY EDUCATION.

An interesting report on the recent reforms in university education was issued in November, 1934, by the Department of Higher Education of the Ministry of Education, stating that there are m universities and colleges (schools above the grade of technical schools) throughout the country. This figure is eight more than in 1931 and 7 more than in 1932. Of these institutions, 28 are National, 32 Provincial and 51 private universities. East China takes first place with 30 universities (Shanghai and Nanking being in this area); North China, second place with 20. Central China has 15 such institutions and South China 8. No universities have yet been established in Jchol, Heilungkiang, Suiyuan, Ninghsia, Chinghai (Kokonor), Kweichow, Hsikang, Tibet and Mongolia. In order to avoid the establishment of too many institutions of higher education in one area or province, the Ministry of Education is now planning the establishment of technical schools in the outlying territories. Thus, a Northwestern Agricultural and Afforestation College has already been established in Shensi.

Turning more specifically to the reforms that have been recently instituted by the National Government in the system of higher education, the report states that these reforms have been carried out mainly in five directions: namely, readjustment of the university system, improvement of equipment, restriction of professors teaching in more than one school, determination of the university curriculum, and promotion of practical studies (such as science, agriculture, engineering and medicine).

With regard to the readjustment of the university system, this has been effected chiefly through the amalgamation or abolition of superfluous departments or colleges. Thus, whereas there are at present only 12 universities in Peiping, these were until lately composed of no less than 130 departments or 50 "colleges." The same situation obtained also in Shanghai and other parts of the country. The undesirability of an excessive number of departments or colleges in one university is often intensified by corresponding neglect of teaching staff and equipment requirements. The Ministry of Education therefore made an investiga-

tion of those universities where a large number of departments or colleges existed and ordered their amalgamation or abolition. The universities thus affected are located in nearly every part of the country.

With reference to the improvement of school equipment, the report states that according to statistics, the total expenditure of the various universities throughout the country (for the purchase of books for the library and apparatus for the laboratory) was \$6,400,000 in 1931; \$6,200,000 in 1932; and \$6,500,000 in 1933. The latest figures of expenditure for school libraries show two per cent more than in 1931 and 0.2 per cent more than in 1932; for the laboratories 5.6 per cent more than in 1931 and 0.2 per cent more than in 1932. These figures indicate a gradual improvement in the equipment of the various universities. Of the subsidies given this year to private universities by the Government, 81.5 per cent are to be devoted to improvement of their equipment.

The Ministry has also instructed that, whereas the administrative expenditure of each university must not exceed 10 per cent, the expenditure for improvement of school equipment must not be less than 15 per cent of its total expenditure. It is further taking effective steps to restrict the practice of university professors teaching in more than one school or department. In 1931, there were altogether 7,053 university teachers throughout the country. Of these 4,244 were full-time professors, while the rest were part-time teachers. In order to increase the efficiency of the university faculties, the Ministry of Education has issued an order urging a reduction of the part-time teaching staff and prohibiting teachers from teaching in more than one school or department. In special circumstances, however, it is provided that extra work may be done, on condition that it does not require more than 6 hours' time per week. It is also enjoined that the president and other important administrative officials of a university must not devote their time to extra work, except in special circumstances when such extra work does not carry extra remuneration. Moreover, the number of part-time professors of any university must not exceed one-third of the entire faculty. More stringent measures in this direction are being devised by the authorities.

A word is now perhaps needed with regard to the Government's policy of sending students abroad, which has at times been severely criticized. Thus, during the past two years, the Government has adopted a very strict policy in selecting maturer and better prepared students to study in foreign countries, and submitting the candidates to

a strictly competitive examination. Between 1932 and 1934, 1197 students went abroad, and they could only get their permit from the Ministry of Education by showing their college graduate's diploma. Those taking the examination conducted by the Sino-British Boxer Indemnity Foundation, are further required to have two years of practical experience after their graduation from college.

CHANGE IN RELATIVE ENROLMENTS: MISCELLANEOUS STATISTICS.

In view of the varying standards adopted by different universities, different curricula have often been adopted. In 1931, for instance, no less than 600 different courses were offered in the various universities. The number of credit hours also varies greatly, resulting in serious differences in the results achieved. In order to unify the university system, measures are being devised by experts of the Ministry of Education to arrive at a uniform curriculum standard for all universities throughout the country. Such a standard for medical colleges has already been adopted. In the past, further, there has been a wide discrepancy in the relative enrolments for the colleges of arts and science, many more students enrolling in the colleges of arts than in the colleges of science, but this disparity today, in consequence of the remedial measures ordered by the Government, is no longer so unsatisfactory.

The present aim of the Government is to promote the study of utilitarian subjects, such as science, agriculture, engineering and medicine. For this purpose, orders have been issued regulating the size of enrolment for the different colleges. The results achieved in this direction are best revealed in the following tables:—

TABLE I. RELATIVE ENROLMENTS.

SUBJECTS	1931	1932	Comparison between 1931 and 1932
(1). Arts.	22.8%	22.1 %	0.7% less
(2). Law.	37.2	34.6	2.6 less
(3). Education.	9.6	8.0	1.6 less
(4). Commerce.	4.9	6.8	1.9 more
Total.	74.5	71.5	3.0 less
(5). Science.	8.9	9.9	1.0 more
(6). Agriculture.	3.2	3.7	0.5 more
(7). Engineering.	9.3	10.5	1.2 more
(8). Medicine.	4.1	4.4	0.3 more
Total	25.5	28.5	3.0 more

TABLE II.—RELATIVE NUMBER OF UNIVERSITY GRADUATES.

	1931	1932	Comparison between 1931 and 1932	
(1). Arts	21.4%	24.1%	2.7%	more
(2). Law	37.2	34.3	2.9	less
(3). Education	8.9	6.5	2.4	less
(4). Commerce	5.7	7.5	1.8	more
Total	73.2	72.4	0.8	less
(5). Science	6.1	7.0	0.9	more
(G). Agriculture	5.5	4.5	1.0	less
(7). Engineering	12.0	11.9	0.1	less
OS). Medicine	3.2	4.2	1.0	more
Total	26.8	27.6	0.8	more

TABLE III.—RELATIVE ENROLMENT OF NEW STUDENTS.

SUBJECTS	1932	1933	Comparison between 1932 and 1933	
(1). Arts	25.2%	26.2%	1.0%	more
(2). Law	23.2	21.0	2.2	less
(3). Education	9.9	7.7	2.2	less
(4). Commerce	5.1	5.3	0.2	more
Total	63.4	60.2	3½	less"
(5). Science	12.9	17.3	4.4	more
(6). Agriculture	4.4	5.2	0.8	more
(7). Engineering	13.3	12.0	1.3	less
(8). Medicine	6.0	5.3	0.7	less
Total	36.6	39.8	3.2	more

These figures show that the present trend towards higher education in the applied sciences will increase from year to year, and it is hoped that more graduates will become available for the great work of national reconstruction.

The following statistics (compiled in 1932) give an approximate idea of conditions in regard to other aspects of higher education:—

Number of credit hours per year: Literature and philosophy 180; engineering 184; law and political science 149; agriculture and afforestation 138; natural science 157; commerce 98; education 70; medicine 123; public administration 70—total 1,169.

Number of students for each subject: Law and political science 16,487; literature and philosophy 10,066; education 4,231; commerce 2,156; engineering 4,084; natural science 3,930; medicine 1,800; agriculture and afforestation 1,413—total 44,167.

Graduates in each subject: Natural science 413; agriculture 384;

engineering 842; medicine 226; arts 1,502; law 2,619, education 626, commerce 404—total 7,016.

Occupations of Parents of Students:

(1). Universities: Merchants 3,333; teachers 3,017; farmers 2,968; politicians 1,661; labourers 473; lawyers 394; physicians 256, soldiers 321; police 76; miscellaneous 939—total 13,438.

(2). Independent Colleges: Farmers 2,315; merchants 1,522; teachers 1,476; politicians 691; physicians 178; labourers 150, lawyers 124; soldiers 106; police 28; miscellaneous 431—total 7,021.

(3) Technical Colleges: Farmers 597; merchants 556; teachers 546; politicians 247; soldiers 46; labourers 45, physicians 37, lawyers 33; police 9; miscellaneous 14—total 2,130.

The last 12 years have been perhaps the most formative period in the history of Chinese education since China began the process of Westernization. The following steps may be singled out as deserving of special mention:—

1. *Adoption of a simplified form of writing*, more in accordance with the spoken word, which has greatly facilitated the task of giving the people at least that minimum of education which will enable them to read newspapers.

2. *Stress on vocational education and provision of normal schools*,

3. *Spread of rural and adult education*. The high percentage of illiteracy in China makes this work of inestimable importance, and the League of Nations Commission draws particular attention to it as one of the most satisfactory features of recent educational development.

The Chinese Government, in promoting vocational education, has laid particular stress on agricultural, commercial and industrial subjects. China is 80% rural, and rural reconstruction is one of her chief problems. Various movements for mass education have been disseminating information for the benefit of farmers by means of radio broadcasts. More important, many university graduates have gone into the fields to work side by side with peasants, so as to give them the benefit of direct contact with men of superior knowledge and education. At the same time the normal schools are making considerable progress, turning out teachers at the rate of over 10,000 a year, though it has to be admitted that this is far from approaching the number really needed. At least 1,400,000 primary school teachers will be required during the next twenty years if the plans of the

Ministry of Education are to be fully carried out.

4. *Increased provisions for teaching science.*

5. *Increased facilities for the education of girls, especially in secondary and higher education.*

As to the education of women, in the First Year of the Republic, special emphasis was laid, in elementary education, on cooking, needlework; home economics for girls' normal schools were established. Women enrolled in schools amounted to an enormous number. In 1917, the Peking Girls' Normal School opened special courses in Chinese and Education with a standing equivalent to that of professional schools. This was the beginning of a higher education for women in China. Special courses of Practical and Fine Arts were provided in the same school in 1918. The Higher Normal School for Women was finally established in 1920. Up to 1928, there were in China for the education of women alone, 25 middle schools, 67 normal schools, 115 vocational schools, and 2 higher educational institutions, including missionary schools which were recognized by the government. Formerly, co-education was only permitted in elementary schools. In the fall of 1919, nine women students entered the National University of Peking as special students. This was the beginning of co-education in China.

Under the joint auspices of the Nanking Municipal Health Education Committee and the Health Education Experimental Institute, a special class for the training of cooks for schools has been opened in Nanking to encourage scientific cooking for large institutions. Altogether ten schools, including the National Central University and the Nanking Middle School for Girls, are included in the arrangements. The first class (for training cooks in the Nanking Girls Middle School) was started in December, 1934, the cooks of other schools will receive training in rotation until all ten schools are provided for.

It has been the definite policy of the Government to separate education from religion. To avoid religious controversy in schools on the one hand, and to prevent any religious organization from forming a system of education parallel to the Government school system which might in time become an irreconcilable group within the latter, on the other, the Government decided not to allow compulsory religious training in any grade of schools. Above the junior middle school, all religious courses are made elective, only to be voluntarily chosen by the students. Below the junior middle school, no religious instruction is

allowed, because the Ministry of Education ruled that young pupils under 15 years of age are not mature enough to make an intelligent choice for themselves so far as religion is concerned.

The following statistics give some idea of the progress made since 1907 in the extension of educational facilities:—

	1907-8.	1912.	1915.	1932.
Schools.	40,000	86,370	86,799	240,00 (approx.)
Students.	1,030,000	2,845,000	2,905,152	12 million (approx.)
Universities and Colleges.	33			73
Students.				40,000 (approx.) (4,600 girls.)
Technical Institutions.	10			30
Students.				4,500 (approx.)

The number of students at the National Central University, Nanking, in June 1934, was 1,128, composed of 981 men and 147 women. There are six Colleges in the University, for Arts, Science, Law, Education, Agriculture, and Engineering. Of these, the College of Education is the most popular, with an enrolment of 280; the College of Engineering is a close second with 247 students. The College of Science has the smallest enrolment with 111 students. The Colleges of Arts, Law, and Agriculture have 157, 196 and 128 students respectively. Men students are more interested in engineering than any other subject. Nine girl students are also taking courses in engineering. The majority of "co-eds" are however, devoting themselves to education.

TYPICAL EXAMPLES OF EDUCATIONAL PROGRESS.

Reporting in January, 1935, on social education in Kiangsu province, the Provincial Commissioner of Education stated that expenses for social education in the province were budgetted at \$1,963,586. There are at present 916 organs of social education and 1,651 schools, with a total enrolment of 70,128 students. Present plans include the division of the province into supervisory areas, advancement of educational standards in various districts, introduction of educational films, correlation of political and educational administration, and readjustment of organs of social education. The establishment of two post-graduate schools—one for science and another for agriculture—by the National Central University, Nanking, has been authorized by the Ministry of Education. The petition of Nankai University, Tientsin, for the establishment of a post-graduate school for economics and the amalgamation of its schools of

economics and commerce has also been granted by the Ministry. To encourage higher learning, the Shantung Provincial Government, has decided to grant five scholarships to Shantung students, two to proceed to the United States and one each to Great Britain, France and Germany.

In Kiangsu province, near the city of Wusih, is a centre where about 270 students are being trained to take their place as leaders in a mass education movement for that province. A grant of \$175,000 a year is made from the provincial treasury for the upkeep of what is known as the Mass Education College, where young men and women are being trained to go out into the rural districts and teach the peasants how to help themselves. It is estimated that 72 per cent of the agricultural community in Kiangsu are illiterate, and it is the work of graduates of the Mass Education College (of whom there are some 300 already actively engaged in this important work) to teach the peasants not only to read and write, but how to improve their methods of growing crops and raising livestock, how to organize co-operative societies and loan-clubs, how to manufacture and market the goods they make in their cottages as side-line occupations when work in the fields is unnecessary or impossible. The graduates of the Mass Education College also give the peasants training in the principles of citizenship, encourage the establishment of schools, promote reading and discussion of community affairs. In short, the young men and women who graduate from this College go out as emissaries among their untutored countrymen and strive to make them happier by improving their material and moral standards and encouraging active and intelligent participation in the work of political, economic and cultural development.

Now let us take a glance at what is being done at the other extreme of the Chinese Republic, making a leap from Kiangsu to Kwangtung, in which latter province remarkable progress in educational development during the last few years. With regard to higher education, **for instance, the Sun Yat-Sen University authorities have been pushing forward their six-year scheme of construction of new premises at Shekpai. The works which have been completed include the statue of Dr. Sun Yat-Sen, the experimental grounds for cereal and mulberry tree plantation and silkworm rearing. As most of the new college buildings are ready for occupation, the agriculture, engineering, and law faculties were moved to Shekpai in August, 1934. Maintenance expenditure amounts to \$200,000 per month and the university is facing financial difficulty,**

but equal distribution among all departments is being made with satisfactory results.

Starting with a handful of students in 1924, the university has now more than 2,000 on its roll, this figure not including the lower schools which provide an additional 3,500. The university was first organized in September, 1924, under the name of the National Kwangtung University. Subsequently its name was changed to Sun Yat-Sen University in order to preserve the memory of the Father of the Chinese Republic. It was the late Leader's dying wish that the university should be made an instrument of democracy, to train men and women to become intelligent and useful citizens, making them industrially, socially and politically efficient for the betterment and progress of the State.

The outstanding features of the development of the university are undoubtedly the Department of Agriculture, with its experimental farms, the Department of Sericulture, with its scientific researches into mulberry leaves and various types of silk worms from all over China and other parts of the world. The Forestry Department, too, has done splendid work in having constructed twenty miles of highways and in planting over a million trees around the campus, which will probably bring the university a substantial revenue five years hence. The Agricultural College has over 100,000 mow of land set aside for agricultural experiment and over 200,000 mow for afforestation. Besides experiments the land has been used for productive enterprises. Trees, including pine, fir, bamboo, eucalyptus, and fruits such as lichee, pineapple, wongpei, banana, and others have been planted. Dairy farming will be conducted on a self-sustaining basis, according to the scheme mapped out. It is expected that in due course a very handsome income will result from all this, to contribute to the maintenance of the university.

VOCATIONAL TRAINING.

According to the present Minister of Education, Dr. Wang Shih-Chieh, the greatest drawback in the present system of secondary education lies in the over-expansion of the ordinary middle schools to the neglect of **the** vocational schools and schools for the training of primary teachers. Suitable measures are being taken by the National Government to rectify **that** defect, **and** in Canton there are several schools of the higher middle **school** type which have **a** definitely vocational basis, and aim at diffusing **through the community higher standards of work.**

In the island of Honan there is a very active school for teaching all

there is to be known about the rearing of silk-worms. **The whole theory** is given in the class **room** where dissections **are made** and things **explained with the aid of models in wax as, for example, the method by which the silk thread is exuded through the mouth of the worm from two sources in the body.** **Then there is the** spinning **of** the thread and **the** machines for measuring the length of the thread from each cocoon, and another for revealing the defects, **records of** which are carefully kept. Graduates of this school find posts as teachers or else return to their native districts where sericulture is carried on.

In Canton there is a trade school where 300 students are engaged in the study of building construction, engineering (civil and mechanical), agriculture, chemistry and printing. Admission to this school is by competitive examination from the lower middle school. As it is a Government institution there are no fees for the course which lasts three years. The standard of work in any trade school depends on the previous education—the wider and more solid that foundation, the higher the standard of work in these vocational centres. These students learn theory and practice in the vocational school but in addition continue Chinese studies in literature and history. A certain amount of English is taught to cover technical words, but this does not occupy a great deal of time.

There is another school in Canton which devotes itself entirely to civil engineering of an elementary character, and provides the higher grade **of workmen** for the city and the ordinary workmen for the Government **arsenal, the latter** students **being** given an intensive course, lasting one year, in mechanical engineering. **Here** again there are no fees, **admission being limited to those who pass an examination.** **There is also in Canton a private trade school for training girls, where tailoring, embroidery, basket-work and domestic science are the courses offered, together with a general education in Chinese literature and history.** Students who pass from this school go to other places as teachers or earn their living in the ordinary course of trade.

PROFESSOR'S VIEWS ABOUT CHINESE STUDENTS.

Comparisons strongly favouring the present generation of young Chinese students were drawn by Dr. V. K. Ting, General Secretary of the Academia Sinica in an address given on October 23, 1934 to a group of British-returned students in Shanghai. His subject was *My Experience of the Younger Generation*, and his conclusion was that the

present-day young Chinese is a far better specimen both mentally and physically, than were the selected scholars of his own day. Extracts from the address of Dr. Ting follow:—

Some six months ago a prominent English friend asked me the following question: "Tell me frankly what you think of the younger generation. Is it getting better or worse. I hope you are not an optimist and will not allow sentiment to influence your judgment." This came to me as a surprise, for I had thought that such a question was no longer necessary. Since then, my attention has been constantly drawn to all sorts of criticism directed against the younger generation in the Press and by prominent political leaders. The educational system is said to have broken down, and the graduates from our national institutions are held unfit to carry out the work of social and political reconstruction. The younger generation is said to be undisciplined, lazy, pleasure-loving, self-seeking and incompetent, and so on. It would be indeed disheartening if what has been said is anything like the truth. As I told my English friend, I am no optimist in the sense he meant it, but I entertain great hopes for our younger generation. Of course when in any country the elders are perpetually scolding the young, something must be wrong. The question is whether the fault lies with the scolding or the scolded. As far as the present case is concerned I have quite decided views. . . .

When I hear people of my age talk about the degeneration of our youth to-day, I cannot help reminding them that not a few of their generation were beyond redemption. Let me now give you a brief account of the generation that came after us. My first contact with the young was in the Nanyang Middle School in Shanghai where I taught in 1911-1912. Those with whom I had most to do were only 5-8 years younger than I was, but physically and mentally they were already far superior to the generation with which I had been associated. Out of a large class of 60, about 30 succeeded in getting through the universities, and 20 of them became well-known members of society. In 1913 I went to Peking (Peiping) to take charge of the Geological School which was to be the training ground for the staff of the Geological Survey. We had about 30 students of whom 20 graduated. The best 15 formed the nucleus of the Geological Survey which later on, under the direction of Dr. Weng Wen-Hao, became the first scientific institution in China which gained international recognition. Of these 15 chartered members, so to speak, 9 had opportunities to go abroad for further study and became well-known professional geologists.

I am trying to supply you with such figures as I remember because I want you to compare them with the ones I first gave for

students in Japan and in England. You will notice that the younger generation had a much larger percentage of success in utilizing their educational opportunities than their elders. This is a significant fact, especially when you remember that the latter was a selected group whilst the former was not.

But the effect of the old literary education remained still fairly strong. It was always somewhat difficult to persuade the students to leave their books in favour of mineral and rock specimens. The printed page still exercised more attraction than real objects. It was more difficult still to get them to use their hands to hammer specimens or their feet to climb mountains. The fact, however, that we did eventually turn so many of them into respectable scientific workers shows that they were a great improvement upon their elders.

A few years later J had similar experience with mining students. In order to give the graduates of Peiyang and Peking Universities opportunities for practical training, I arranged with the help of two foreign advisers of the Kailan Mining Administration to accept a certain number of them every year as apprentices. I insisted that these students must be made to work underground with their hands as is always done in other countries. Although my proposal was accepted, the then general manager characteristically wrote to his engineer-in-chief that he did not think that one could ever make a Chinese student soil his hands, and nothing was done to enforce the agreed conditions. After considerable difficulty I persuaded the then engineer-in-chief to give our young men a chance, promising him that those failing to take advantage of their opportunity would be dismissed immediately. Well, two out of the first three were so dismissed. But very soon I found that the students became eager to go underground and rather proud of their ability to use their hands and feet. A few days ago one of the first students was appointed engineer-in-charge at one of the important mines at the K. M. A. itself.

After that for some years I was out of touch with the young, but on returning to Peiping in 1928, and getting acquainted with the new members of the Geological Survey I was surprised to find that several of the Peking University graduates showed brilliant promise. One of them especially attracted my attention. He had graduated some three years before, but had already written two thick volumes and several shorter ones on palaeontology. At one of the meetings of the Geological Society of China, he astonished everybody by delivering a remarkably good lecture in English without notes. In 1929 he explored the Tsingling Mountains and the Red Basin of Szechwan. He was attacked by brigands, but escaped without serious consequence. Quite undaunted, he waited at Suifu to join me in my expedition to Yunnan and Kweichow. Just before his departure from Suifu, I

heard that the route he was to take was not very safe and telegraphed him to abandon it for another. But he insisted upon going according to the original plan, saying that if we changed our route every time we heard of danger, we could not go very far. Less than a month later he was shot dead by bandits in North Yunnan in the act of saving his notes and instruments from wreckage.

In 1930, I had another example of wonderful devotion to duty. One young man was working in the region of Manchuli. He wandered into the belt of disputed territory and was taken prisoner by the Soviet frontier guards. He had a camera, surveying instruments, and Russian General-Staff maps, so not unnaturally he was taken as a spy and very nearly shot. With the help of Soviet geologists and the Chinese Delegation at Moscow, he was set free after having been 18 days in a Siberian prison in the depth of winter without heat and given black bread. When he finally reached Manchuli, he sent me a telegram saying that he would finish his field work in about three weeks' time! I must confess that I was never so proud of the Geological Survey as that day when I received that telegram.

In 1931, I became Professor of Geology at the Peking University. It was 15 years ago since I did any formal teaching, but I found the task very congenial. The students have now improved beyond recognition. In foreign languages and elementary science they compare favourably with the average British university students. For example, the second year students had to attend lectures given by an American professor in English, and more than 90 percent of them passed their term examination. Physically, they were definitely better than the first batch of students I had to deal with. Fifteen years ago I had to force field excursions upon the students. Now it was the students who complained that they did not have enough of field work. In climbing, I used always to lead my students. Now I had to exert myself not to be left behind. These improvements are not confined to men. I had in one year a girl student, who was said to be a communist. She took part in all excursions and shared all the hardships with the men. She refused to have any privileges, saying that it was an insult to womanhood. In April, 1933, when the Japanese were at the gates of Jehol, the University authorities wanted to abandon the spring excursions to Kalgan. But the students petitioned unanimously that they wished to see the Great Wall and the Mongolian Plateau in case they could not see them next year. Getting off the station of Chinglungchiao, it started to rain. As we had some 15 miles to walk and most of the students had no water-proofs or leather shoes, I proposed to abandon the excursion. But they preferred to get wet rather than do so, and every one went through the ordeal without a murmur.

Such then has been my experience of the younger generation during the last quarter of a century. Have I been particularly lucky, or are the students of geology specially selected? I cannot think so. Of course, I do not suggest that some of the heroic personages are common among the students. They are rare in any country at any time. But the fact that they are found among one set of young men is a reasonable indication that they are to be found also in other sets. I said in the beginning that I am not an optimist. I do not believe that, however good the younger generation may be, they can save China by themselves, for to do that we require organization and leadership which cannot be supplied by the younger generation alone. But as I have said before, when in any country the elders are perpetually scolding the young, something must be wrong somewhere. My contention is that there is nothing wrong with the younger generation as I know it. The responsibility will have to be sought elsewhere.

And now, having given an outline of what China is doing to educate her sons and daughters, and shown what manner of stuff these pupils are made of, we quote some independent evidence regarding the progress that has been made, in the form of an extract from the League of Nations* report already referred to -

It is with the greatest satisfaction that we take this opportunity of recording at this point our strong sense of the educational progress made since the Revolution, and our admiration for the energy shown in coping with the difficulties by which progress has been impeded. China has been the victim, for more than one generation, of a combination of misfortunes on which it is needless for us to insist. To have maintained, in the midst of civil disorder, international complications, sharp financial strains, and the recurrent calamities of flood and drought, the conviction that the education of the rising generation is among the principal concerns of a civilized society, and to have laboured, as circumstances have allowed, to promote its development, is an achievement of which not all Western Governments have shown themselves capable.

This is striking testimony indeed, especially coming from independent and expert foreign observers, and to show that this progressive movement is not confined to Chinese in the Republic, we quote a few figures relating to oversea educational activities. Although the Chinese communities abroad have been badly hit by the worldwide depression, more than 400 new Chinese schools have been established at various places abroad during 1934. At the end that year there were altogether 2,325 Chinese schools in foreign countries as against 1,914 at the close of 1933,

showing an increase of 411. The geographical distribution of these 2,325 schools is as follows:

British Malaya	673	Canada	17
Hongkong	557	Korea	14
Netherlands East Indies.	427	Japan	11
Burma	219	India	5
Siam	121	Peru	3
French Indo-China ***	89	Australia	2
Philippine Islands	66	South Africa	2
British North Borneo.	49	Portuguese India (Daman) ***	1
Honolulu	38	England	1
United States	31	Panama	1

SPECIAL EDUCATION FOR EX-COMMUNIST AREAS.

Before leaving the subject of educational reforms and progress, there remains for mention another pedagogic innovation which has, in the few months of its existence, already justified the hopes of its authors, and passed beyond the stage of mere experimentation. This is the system of Chung Shan People's Schools in the ex-Communist areas—a system built up under "The Plans for Special-Type Education in Kiangsi, Fukien, Anhwei, Hupeh and Honan", promulgated early in 1934. The Government has learnt from experience that the insidious influence of Red propaganda among a semi-bankrupt rural population is one form of Communist activity against which military force is by no means an effective weapon. Communism in China, as in other countries, thrives best in poverty and ignorance, which is the best soil for sowing the seeds of discontent and revolt. The best means, therefore, of preventing any possibility of the resurgence of Communism is the physical, intellectual and moral uplift of the peasantry through the medium of education disseminated by the right type of men specially trained for the purpose.

In Kiangsi, for instance, an Institute of Teacher-Training was established in February 1934, undergoing two subsequent reorganizations in the course of the year. Its object is to found as many Chung Shan Schools as funds and circumstances permit in the areas recovered from the Communists, and to train teachers to staff such schools. In the selection and training of these workers in special-type education, certain definite principles are observed. They have to be physically fit, in order to lead the masses in the building-up of strong, healthy bodies, capable of enduring hardship. Mentally, they must be men able to guide the masses towards right-thinking, and towards independent power of dis-

crimination, able to instruct, to encourage production to the fullest capacity, and to lead in organization for local self-defence. These workers are inspired by the "Three Principles of the People" as the only doctrine of national salvation, and trained in the conviction that whole-heartedly to enter into the life of the rural communities, and, by participation and precept uplift the masses, is the surest way of bringing peace to the nation. In short, with the cultivation of a Spartan simplicity, methodism and discipline, emphasis is laid on the "back-to-the-land" movement, on enthusiasm to get among the masses, and on the spirit of service and sacrifice. For the remuneration is low, and the work hard. Nothing succeeds like success, and the presence of a body of stout workers, capable and reliable, and not reluctant to take on more onerous duties, has already led to plans being drafted whereby they will co-operate in the various phases of reconstructive endeavour coming within the spheres of the Provincial Committee on Rural Co-operatives, the Institute of Agriculture, and the Institute of Public Health. The slogan now current in Kiangsi is also their slogan—"to instruct, elevate, and protect"

Thus, the Chung Shan People's Schools are made the nuclei of important reconstructive work in ex-Communist areas. Students of the Institute are recruited from the recovered areas, so that after training they can return and work in the districts where they belong, and among their own folks. Such students, being necessarily very poor, coming from the ravaged districts, are financially assisted through their studies till graduation, and repayment is made by small instalments only after they have started earning their modest salaries as principals or teachers of the Chung Shan People's Schools. Latest figures show that there are 243 these schools, and a number of subsidized schools run on similar lines, making a total of 300 scattered over 71 *hsien* in Kiangsi. There are 750 classes, composed of from 30,000 to 35,000 students, run on an annual budget of \$160,000. A minimum of 852 such schools is planned in Kiangsi, and their success in this once important Communist stronghold indicates that the system will also be instituted in other regions where circumstances call for its introduction.

SOCIAL EDUCATION.

According to statistics released by the Ministry of Education on the condition of social education in China during the period from July, 1933, to June 1934, the number of institutes and schools of social education had been increased from 10,000 to 78,000, showing an increase of

seven times as compared with the figure of four years earlier.

The expenses for social education during the previous three years had been increased from \$3,000,000 to \$14,000,000, but in 1933-4 were reduced to \$13,400,000 because of financial difficulties. The number of persons engaged in social education increased from 14,000 to 130,000, showing an increase of nine times in the course of the same four years. The number of students and visitors to the institutes and schools of social education increased from 219,000 to 1,200,000 during the same period, showing an increase of five times.

During the year, 3,000 more "words-learning-quarters," reading-rooms, and mass education institutes were established, and the expenses for mass education institutes were increased by \$300,000. For education schools, orphanages, and poor children's homes, the expenses for each were increased by \$200,000. Additional personnel were also employed for these institutes. There was an increase of 11,700 in enrolment in mass education schools in the year, and an increase of 23,000 in enrolment in schools for illiterates. The total enrolment in Chinese phonetic sign schools was 18,000. Additional schools were established to train teachers for popular education. On the average, the money spent for each graduate of mass education schools was \$5.76 and each teacher taught 29 students. 3,462 additional schools and organs for social education were established in Hopei province in 1934. The social educational expenses for the province were increased by \$300,000 while those for Shantung, Honan, Fukien, and Peiping, were increased by \$200,000 each.

CHAPTER V.

ATHLETIC PROGRESS.

THE really tremendous progress made in athletics and physical training—a practical (as distinct from theoretical) recognition of the value of physical training as a vital part of preparation for life—is one of the greatest and most important changes in China's educational outlook.

In July, 1934, the Ministry of Education was requested to order the various Provincial Departments and Municipal Bureaux of Education to introduce physical culture courses in normal schools. Peiping, Tsinan, Tsingtao, Hankow, Changsha, Nanking, Hangchow, Shanghai, Canton, Nanning, and Kweilin were designated as experimental centres for the enforcement of courses in Chinese boxing, the Provincial and Municipal education authorities to direct the schools to carry out the experiment. Provisional regulations governing the establishment of public recreation-grounds were also adopted and will be submitted to the Ministry of Education for enforcement. The establishment of recreation-grounds for children and the promotion of physical education among the masses with the assistance of the police and military were also discussed, and action along these lines is expected soon to be taken.

"The first sports meeting," records the old-boy historian of a well known Shanghai school for Chinese, "was held with much success in 1905. It would be very interesting for those who were present at that time to recall how they were, in some cases against their inclination, made to take part in the sports. Other readers may imagine what great efforts had to be made in order to persuade the pupils to run and jump. For thousands of years the scholars of this country had been leading a sedentary life in confined school rooms, where they were only allowed to slouch about, and sport was considered a waste of time and a drawback to studies. It would not be too much to say that many a parent thought that mathematics would hurt the brain and calisthenics would injure the body."

This quotation, which could be duplicated if one wished many times over, sums up fairly concisely the attitude of the average Chinese to

athletics only thirty years ago. On this point there will hardly be any dispute. It is true beyond all possibility of doubt that at the beginning of the twentieth century the idea of physical exertion as a means of recreation or as a necessary part of a man or a woman's education had been for 2,000 years at least one completely foreign to Chinese minds. The farmer, the craftsman and their like had of necessity to work with their hands and bodies, to sacrifice the dignity of existence in rude physical effort, but where necessity did not call the ideal life was one quietly contemplative. The scholar, not the man of action, was enthroned as the best man; perfection was a sedentary, not an active, achievement.

SPORTS IN OLDEN TIMES.

This, however, had not always been so, nor was China without a heritage, even though it might be a very sadly depleted heritage, of athletic pastimes. Moreover, though overlaid with a 2,000-year deposit of misguided sloth, deep down in the Chinese spirit the will for active, manly sports still remained, and, though rusted by long centuries of disuse, the ability to excel in them was there as well. The change that has taken place in the last thirty or forty years has not been sheer innovation, the grafting of something completely new on to Chinese social life and civilization; what has happened is that a wind from the West has swept away the deposit, giving natural ability the opportunity to refurbish itself by practice, not, however, in the old sports, but in new ones more suited to modern times and modern conditions.

Until about 200 B.C. many sports were indulged in—hawking, hunting, wrestling, archery, swordsmanship, dancing (as a form of physical training for men), and even football, known as *Tsu Chiu* and played with a leather ball stuffed with feathers, were all common pastimes. Then a reaction set in occasioned by scholarly antipathy to militarism, an antipathy which had been deepened almost into hatred by the action of Shih Huang Ti in ordering and securing the burning of all classical books. Under Shih Huang Ti's successors, notable Han Wu Ti (140-87 B.C.), the scholars became the most influential section of the population, administrators of every rank and description were increasingly chosen according to their proficiency in memorizing the classics, the soldier's profession fell more and more into disrepute, and anything savouring of physical exercise was deprecated as tarred with a militaristic brush. Every Chinese philosopher and teacher from Lao Tze on had, it must be remembered, preached the paradoxical doctrine of accomplishment

by inaction. "He who in arms is strong will not conquer" is a Taoistic maxim; or again, "Do nothing and all things will be done". The "quiet man" is the Confucian ideal also, and the introduction of Buddhism, with the emphasis that religion lays on the importance of meditation as a means of attaining perfection, may be said to have completed the process begun by these two. It is no wonder, therefore, that with men holding such views occupying the principal offices, any athletic tradition was steadily broken down. Education became a purely literary matter, and more and more the life of the pacific sedentary scholar was imposed on the nation as the ideal at which to aim. .

SOME STURDY SURVIVALS.

Physical exercises were not, of course, done away with altogether and all at once. Wrestling survived, though more and more as a spectacle, until it became ultimately the profession of a few circus entertainers rather than the sport of the many. Out of it, however, developed Chinese boxing, a sport which, with many vicissitudes, has persisted to the present day, and is now being revived—it is laid down as one of the events for national athletic meetings. Archery and swordsmanship also persisted, but became increasingly ritualized and formalized; emphasis was laid on the correct performance of certain prescribed actions rather than on hitting the mark or touching one's man; the idea of healthy, muscular competition disappeared. Dancing ceased to be a manly exercise and became a feminine artifice with which to amuse and attract the opposite sex. Tsu Chiu in the time of the Tang dynasty was modified into a definite game. An inflated bladder had now replaced the feathers, there were definite positions for players on the field, and numerous rules and regulations. "The winners," we learn from one writer, "were rewarded with flowers, fruit and wine, and even with silver bowls and brocades, while the captain of the losing team was flogged and suffered other indignities." About 900 A.D. TSU Chiu died out, but a kind of polo had now come into fashion, one of the Emperors becoming so excessively addicted to it that he was memorialized on the subject by one of his Ministers. By the twelfth or thirteenth century polo also had disappeared.

Children's games have of course always existed. There are about thirty of them, the most well known and interesting of which are "kicking the shuttlecock," kite-flying, "tipcat" and a kind of "tag." These, however, hardly come under the heading of athletics, except perhaps "kicking

the shuttlecock", a game requiring considerable skill and energy, which the authorities are now endeavouring to revive. The point about these games is that they show that the games instinct was there, and that the Chinese boy had no inherent aversion to physical exercise and athletic competition. It needed a biased and wrongheaded educational philosophy and system to give him the belief that it was undignified to run about and to contest for physical superiority with others, to implant in his mind the idea that no gentleman could possibly engage in play. Once the repressing influence of that education was lifted and his natural instinct allowed free rein, rapid development might be expected, and it is that development and the simultaneous introduction of Western sports that has now to be dealt with.

EFFECT OF WESTERN INFLUENCE.

Although the English and Americans seem to have played their national games among themselves almost as soon as they took up permanent residence in the country in any numbers, there is no evidence that their example had any effect on adult Chinese, except so far as it confirmed the latter in their conviction of the Westerner's inherent madness. If a liking for and an appreciation of athletics was to be inculcated in the Chinese national character, it would have to be done through the younger generation. Thus it was not until missions and other schools began to be founded about the end of the nineteenth century, and to introduce their young charges to Western games for the sake of their health and constitution generally, that the Chinese antagonism to sport began to be broken down. At first it was merely the exercise aspect that got much attention, football for example was not a game with certain fixed rules to be played in a competitive spirit, it resolved itself into kicking a ball about rather aimlessly not without a certain trepidation if it came too swiftly towards one. However, this stage was fairly quickly got over, and inter-school contests began to be arranged. But progress was inevitably slow, schools were few and scattered, and there were as yet, of course, no adult clubs. In 1908, however, the Y.M.C.A. began to take a hand. The encouragement of athletics was deliberately made one of its major activities, instructors were sent over from the United States, a school of physical training was opened in Shanghai, and from now on Chinese interest and participation in athletics grew rapidly, so that as early as 1910 it was possible to organize a National Athletic Meeting at Nanking. There was a field and track contest, a national

tennis tournament, a national football (Association) tournament, a national basket-ball tournament and a middle school field and track meet. The country was divided into five sections, North, South, East, Central and West, and teams from each of the first four competed. Western China was not then on China's athletic map, nor has she as yet managed to put herself there. In all, 150 athletes competed.

Another national meeting did not take place until 1914, by which time the first Far Eastern Olympic meeting had been held under the auspices of the Far Eastern Athletic Association. This developed out of international contests held in connection with the annual carnival at Manila, at which Japanese baseball teams had been in the habit of competing, while groups of athletes had also been sent over from time to time from Hongkong, and more occasionally, from the Straits Settlements. The proposal to put these informal meetings on a more definite basis met with a ready welcome, and in 1913 the First Far Eastern Olympic Games were held at Manila. To these China sent 40 representatives, who succeeded in gaining second place.

ATHLETIC MEETINGS.

But before going on to record the subsequent history of these games and of national meetings in China, it will perhaps be best to survey the developments which were taking place in the sections into which China had, as we have seen, been divided for the purpose of the 1910 meeting at Nanking. Pride of place must be given to South China. Chinese participation in athletics goes back in Hongkong to about 1900. The first Chinese football club was formed in the same city in 1904 by the old boys of various schools. After three or four somewhat chequered years, it became in 1908 a definitely established organization, under the name of the South China Football Club. In 1910 it sent a team to the Nanking meeting, where it won the national championship. Financial difficulties then caused a break-up, but the club's ex-members continued to play in other teams which had sprung up, and at the Second Far Eastern Games held in Shanghai in 1915, a team of Hongkong players entered as the national representatives and won the Far Eastern title. Out of the enthusiasm engendered by this success was born the South China Athletic Association which is now the leading athletic organization in South China. In 10 years, 1916 to 1926, its original fifty members increased to 2,000, and the numbers have gone on rising. Its football XI won the Hongkong Junior League in 1917-8, and since 1919 has

participated in the senior division. It has several times represented China at the Far Eastern Games, and in 1923 successfully toured Australia. Today it runs several teams and caters also for practically every branch of sport—basket-ball, baseball, volley-ball, tennis, etc., etc. The Hongkong Chinese Recreation Club is another club of which mention may be made. One of its members several times won the open tennis title of Hongkong. It has the distinction also of having taken up cricket, a game which otherwise has for some reason or other been very sadly neglected.

South China is fortunate in having in Canton a second sporting centre. Here tennis and football were being played in 1905. Interest was fostered by the Kwangtung Athletic Federation, which in 1909 held its first formal meeting. In 1915 this body took a leading part in promoting a provincial meeting in order to select representatives for the Far Eastern Games. The following year a number of other organizations were formed, among which may be mentioned the Canton Athletic League, which, under the auspices of the Y.M.C.A., set itself to organize competitions between schools.

Away from Hongkong and Canton, South Fukien was slowly becoming athletic conscious. A South Fukien Athletic Association was formed in 1912, and held its first athletic meeting in 1916. In 1920 the First Fukien Provincial Championship Meeting took place at Amoy.

INTER-COLLEGIATE CONTESTS.

Interest in sport developed in the North almost as early and as rapidly as it did in the South. Here again there were two centres, Peking (Peiping) and Tientsin. The first contests took place between the North China Union College, Peking University, and the Anglo-Chinese College of Tientsin sometime about 1905. Later, under the auspices of the Y.M.C.A., an annual inter-school meeting was organized in Tientsin, to which in 1909 schools outside Tientsin were invited. In 1910 the Peking Athletic Association was formed by the Peking University, North China Union College, the American Indemnity College (later the Tsinghua University) and various Chinese Clubs which had sprung up. In 1914 the first North China Games Meeting took place.

Before 1915 athletics in Central China were confined to a few mission schools, some of whom occasionally organized contests against each other. In 1917 a provincial meet was held in Hunan, and a provincial organization formed, which, however, did not prove very

successful. In 1923 another provincial meeting was held, this time at Wuchang, and later the First Central China Athletic Meet took place at Hupeh in order to select sectional candidates for places in the team for the Far Eastern Games. The following year the second of the series was held at Changsha, after which the Central China Athletic Association was formed. A third meeting was held in 1925 at Changsha, and others have been held at intervals since.

One would have expected athletics to have developed in East China with the same rapidity as in the South and North. Shanghai has always been a strong centre for foreign athletics. There are many schools in which every endeavour has been made to foster an interest in sport—the Y.M.C.A., as already mentioned, established classes here as far back as 1908, and foreign clubs have not been slow with advice and assistance. Yet, outside St. John's College and kindred educational institutions, no great interest in sport seems to have been engendered. An East China Athletic Federation, formed in 1914, rapidly died a natural death through lack of co-operation, its place being taken by an East China Inter-Collegiate Athletic Federation, which included, besides St. John's, the University of Nanking, Soochow University, Shanghai Baptist College, the Marine College at Woosung, the Government Institute of Technology, and Hangchow Presbyterian College. This body was mainly responsible for keeping interest in athletics alive during the next few years. It held regular annual championship meetings, and in 1921 offered those responsible for selecting the Far Eastern Games representatives the privilege of holding open events to aid them in their task. After the May 30 Incident of 1925, this body was dissolved owing to its missionary associations, and was succeeded by the Kiangnan Inter-Collegiate Athletic Federation. In the last few years athletics in East China have made exceptionally rapid strides, so that to-day this section need fear no comparison with either North or South.

FAR EASTERN OLYMPIC GAMES.

So much for sectional organizations, the basis on which a national central organization is gradually being built up. After the first national meeting in 1910 there was no further national effort until 1914, possibly because of the Revolution and the political distractions of the students who formed a good nine-tenths of the athletic world. In that year the North China Association, with the active help and encouragement of the Y.M.C.A., arranged a second national meeting at Peking, which took

place before 15,000 spectators. After that ten years were to elapse before another national meeting, but in the meantime the Far Eastern Games continued to be held at two-yearly intervals, and the necessity of picking national representatives kept the idea of national as distinct from local effort alive. At Shanghai in 1915 China gained first place, at Tokyo in 1917 she was third, at Manila in 1919 second. That year she for the first time sent a complete entry (with the exception of a baseball team). At Shanghai in 1921 she was again second. This meeting was held in Hongkew Park in the presence of 150,000 spectators, a figure which gives ample evidence of the increasing hold athletics were gaining on Chinese imagination. There was however a gloomy side to the picture. Despite the formation of a Chinese Amateur Athletic Union after the 1919 games to select and train China's representatives, her team on this occasion was poorly organized, not too well chosen, short of training, badly coached and lacking in team spirit. However, it has to be remembered that the meeting took place in the middle of serious student troubles which hampered very considerably the efforts of those responsible for getting the team together. To try and bring about an improvement before the next meeting at Osaka, a China Contest Committee was set up, but the experiment did not prove a great success, and in 1924 the China Amateur Athletic Union was replaced by the Chinese National Amateur Athletic Federation, the present controlling body, as a result of the meeting of representatives from the different sections after the third national meeting held at Wuchang in 1924, at which more than 500 athletes competed. For the forthcoming Far Eastern Games at Manila in 1925 a systematic process of elimination of candidates from the various sections was undertaken, and China's representatives gained universal praise, not only for their athletic skill, but also for the spirit of true sportsmanship which they displayed.

Despite political troubles and civil war China was able to entertain Japan and the Philippines at the 8th Olympic Meet at Shanghai in 1928 and to send a team to Tokyo in 1930. She was unable, however, to organize another national meeting until 1931, when the fourth was held at Hangchow. In the meantime, in 1930, the C.N.A.A.F. had been granted official recognition by the Government. Ultimately, the purpose of this body is to act as the controlling body for every form of amateur sport, but at the moment its chief functions are to represent China in the International Athletic World, and the selection and management of Chinese

teams sent to the Far Eastern Games. It also exercises some direct control over certain branches of sport round Shanghai. It has branch federations in North, South, East and Central China, and one is now being formed for the West. Representatives of these branches meet every three years to elect a board of directors.

STATE ASSISTANCE.

Since the National Government came into power it has shown a very active interest in the development of athletics, as witness a grant of \$45,000 to the C.N.A.A.F. to meet expenses incurred in connection with the 1934 Olympic Games at Manila. China has decided to participate in the forthcoming World Olympics which will be held at Berlin in 1936. Concerning the choice of China's representatives to the world meet, no definite decision will be made until after the next National Athletic Meet scheduled to be held on China's Independence Day next October. The number of the Chinese participants, however, will be limited to 50. A sum of more than \$100,000 will be required for financing China's contingent to the world games, but this will not constitute a problem to China's participation, as a greater part of the funds is to be borne by the Government. The encouragement of athletics is one of the functions of the Ministry of Education, which not only insists on physical instruction as an essential part of the school curriculum, but has taken over the task of organizing National Athletic Meetings. It was under Government auspices and with the Government defraying all expenses that the First National Athletic Meet took place at Nanking in 1933. In future these meetings are to be held every two years, the next of which will take place on October 10, 1935, in the new Stadium in the Civic Centre of Shanghai.

A long road indeed has been travelled since Chinese boys had to be made "against their inclination to take part in sports". Especially great has been the progress in the last decade. Mention has been made of the successes of Chinese athletes in competition with foreigners in Hong-kong. In Shanghai these successes have been at least equally as pronounced. In 1927 a Chinese Club, Loh Hwa, for the first time joined the Shanghai Football Association and signalized its entry by winning both the League Championship and the Senior Cup. Since then other clubs have joined the Association, and proved themselves formidable opponents to their foreign rivals. In 1932/3 Tung Hwa won the Senior League, in 1929/30 and 1930/31 China won the International Cup, and

has gone very near to winning it again in both the last two seasons. There are records of success equally as satisfactory in other sports. Chinese have held both the singles and doubles tennis title of Shanghai. China has won both the Roper and the Rotary cups. In the annual walking race she has come in first on several occasions. In field and track events Chinese athletes have also held their own. There is indeed a very different story to be told to-day from that of a bare ten years ago, when foreigners were inclined to laugh at Chinese challengers. Local foreign standards are not of course exceptionally high, though neither are they so very low. Chinese athletes, except for one or two outstanding individuals, are still some way from international class; nevertheless to have reached the standard they have in so short a time is no small achievement. They have learnt, however, all that local foreigners have to teach them. Now more advanced models are needed, for only by competing against those superior in skill to oneself does one progress. In some branches of sport the problem is not so difficult of solution; in tennis, in swimming, in field and track events it is not difficult to secure the visits of first-class performers, and to engage coaches. Rigorous training and constant practice will do the rest after that, but in football, to give one example, something more is necessary. The rapid strides football has made in recent years in Continental Europe is attributed very largely to the regular visits of good English sides, and, if Chinese football is to improve with the same rapidity as it has been doing, something of the same sort needs to be arranged.

There is no doubt that the New China is fast becoming athletically minded, but in spite of the encouraging picture presented by the successes recorded above, there is still a good deal to be done. In spite of the vast increase in the last few years in the number of those participating in one kind of sport or another, the great majority of the population still take no part in athletics, not so much, however, through neglect as through lack of the opportunity to do so. The great bulk of China's athletes are drawn from the student or ex-student class. Sport is the pastime of the comparatively well-to-do. Outside the middle schools and colleges few boys find any opportunity to play games. In England any youngster, no matter how poor his home, can get, for example, his game of football, even if it be only in a back street or on some deserted nearby plot. When he grows up, there is always his local village team for him to join, or in the big towns, one of the hundreds of small clubs

which play every week-end on the open spaces provided for that purpose. Football, in fact, is a game of the people, which it is as yet far from being in China. The same remark applies with even more force to other games, and the main efforts of the authorities of the athletic world should be for the moment directed to remedying this, to extending the benefits of healthy sport and recreation to as wide a class as possible. There are serious obstacles by reason of poverty, lack of playing space, and the absence of a weekly holiday, but these should not be insuperable provided the will to overcome them is there.

ATHLETIC ETIQUETTE.

There are matters of organization and conduct that also need to be attended to. Reference has been made to the high praise Chinese sportsmanship gained for itself at Manila in 1925, but the tale is not always so satisfactory. The will to win is not always subordinated to a will to play fairly, not always are defeat and victory accepted with an equal grace. There were one or two unpleasant instances at Nanking. Sometimes it is the players who offend, but more often it is their supporters. Partly this is due to ignorance of the rules, but there is also lacking that sporting spirit which can take delight in being a good loser, and can appreciate generously a worthy opponent and a worthy conqueror. It is a fault not peculiar to Chinese crowds and Chinese athletes, other nationalities can and do offend, but that is no excuse. China has always sought to follow the best example. She has already made rapid progress, and there is no reason why, for want of a little plain speaking, a small section should be allowed to bring discredit on the whole.

Indiscipline in the form of defiance of the ruling body by clubs or even by individual players is another fault. Control is hard to exercise, possibly because there are so many bodies trying to exercise it. In no branch of sport is there one supreme authority for the whole country. Different sections, different provinces, even uifferent towns conduct their athletic activities as it pleases themselves, without reference to their neighbours. There is little or no co-ordination, except for the purpose of running the national meets or selecting representatives for the Far Eastern Games, when the C.N.A.A.F. does exercise some sort of controlling authority. This body, theoretically supreme, in practice confines itself to these two functions and acting as China's representative in the international athletic world. Its headquarters are in Shanghai, and here, if anywhere, one might expect its rulings to be deferred to, but save

in football it has very little to say. Swimming, tennis, basket-ball, are all managed by perfectly independent bodies. Moreover, for some of these there is again a subdivision of independence—there are two basket-ball leagues, for example, each monarch in its own separate little world. To come back to the country as a whole, an example from football will illustrate how sadly lacking is any form of unity of administration. There is nothing to prevent a player in senior football in one area helping a junior side in another, if he so wishes, and times and distances permit. Punishments, again, are purely local in their operation. An individual in Canton suspended, say, for a couple of months, can come to Shanghai and turn out immediately for a team there.

The problem of professionalism has not as yet arisen. At present all Chinese sport is, in theory at least, amateur—there are no professional football teams, no professional field and track performers, no professional tennis players. On the other hand, the disease known as "shamateurism" is not unknown. Sooner or later the avowed professional is bound to make his appearance, and in a way the sooner the better. The professional has his place equally with the amateur in the sporting world, he has as much to contribute to its well-being. But a watch needs be kept, so that matters can be put on a proper basis, for greater than ever with the professional's advent will be the necessity for a central controlling body for each sport. Parochialism and inter provincial and inter-sectional jealousies, aggravated by immense distances and poor means of communication, are admittedly serious obstacles, but there is no reason why, with goodwill they should not be overcome. In fact, now that the Government has definitely made itself the patron of athletics, one can confidently look forward to this being speedily done.

THE SIGNIFICANCE OF ATHLETICS.

It would be ungracious to omit from this account due recognition of the work of those foreign bodies who, in early days particularly, did much to make that progress possible. But foreigners, too, have profited by these contacts in the realm of sport, not perhaps through an increase in skill, but certainly in their ability to understand those in whose country they are living. Sport is a great social emollient, it oils the wheels of international intercourse, and, if the cult of athletics had done nothing more than to provide a common meeting-ground for Chinese and foreigners, it would still have been worth while.

President Wang Ching-Wei thus aptly summed up the significance

of sport and athletics in his address at the opening of the First National Athletic Meet at Nanking on October 10, 1933:—

In the present-day world the struggle for survival depends not only on human energy but also on the utilization of material forces. That China at the present moment needs more adequate material resources there can be no doubt whatsoever, but this utilization of material forces depends essentially on the vigour of the human spirit. We can utilize these forces only when we are in healthful spirits, otherwise we shall be simply utilized by them instead. A healthy mind always dwells in a healthy body. With a sound body, one can carry on any struggle to the finish, and not give up midway, but an unswerving spirit in an unhealthy body cannot lead us to ultimate victory. In this fact lies the significance of athletics.

Though in past athletic meets the training and health as well as the skill of our students have been amply demonstrated, yet, according to reports of the Ministry of Education, the number of Senior Middle School graduates who are able to fulfil the requirements of the military physical examination is still not very large. The reasons for this state of affairs are manifold, but neglect of sports is one of the chief causes. My hope for the present National Athletic Meet is that the occasion may reveal both our strong and weak points in the matter of physical health, in order that we may promote the former and rectify the latter. The aim of the athletes present to-day should be not merely to win personal honours, but more especially to contribute towards the strengthening of the country and the race. To impart this new spirit, this desire to fortify the country and the race, to the masses of the people, is therefore the primary aim of the National Athletic Meet. Over 100,000 people are present at this Meet to-day, and I hope that every one of them will become strong and healthy, so that they may with greater advantage share the responsibility of overcoming the national crisis.

CHAPTER VI.

PUBLIC HEALTH AND SOCIAL RELIEF.

PUBLIC Health has become an important part of any programme of social and economic reconstruction since the Great War. Without the provision of adequate machinery and facilities for the prevention and treatment of disease, easily accessible to the public, no Government can be considered modern or complete.

In its initial stage of development, the National Government of the Republic of China demonstrated its interest in public health work by creating the Ministry of Health in December 1928. The activities of the Ministry since its establishment have been manifold, comprising the promulgation of health regulations, registration of medical institutions and practitioners (including nurses and midwives), supervision of the sale of Chinese drugs and preparation of a national pharmacopoeia, training of health workers, examination of articles of food and drink at the Central Hygienic Laboratory, measures in regard to maternal and infant welfare and the health of school children, education of the people in simple hygiene, investigation of epidemics, maritime quarantine service, compilation of vital statistics, holding of national health conferences, and the founding and supervision of the Central Hospital at Nanking, which is one of the most up-to-date in the Far East, rivalling in importance the Rockefeller Hospital (P.U.M.C.) in Peiping. It was opened in June, 1933, and has a capacity of 340 beds, a large out-patient department and a centralized operating section. During 1933, 31,527 out-patients and 5,347 in-patients received attention, and 3,220 surgical operations were performed. The Central School of Nursing and Central Midwifery School are attached to the hospital. Through a system of internalship, over 100 young doctors are at present being trained for service in public hospitals and clinics. The total cost of the hospital, including equipment, was \$1,200,000, largely contributed by overseas Chinese, among whom Mr. Hu Wen-Hu from Singapore is the most prominent.

It was apparent, however, from the very beginning that in a country like China, where the demand for public health work is great and

existing facilities very few and inadequate, a Ministry of Health is of no avail unless supplemented by a technical health service. Accordingly, after advice had been obtained through the Health Organization of the League of Nations, a plan was worked out for the establishment of the Central Field Health Station. The plan was approved by the Executive Yuan in December 1929.

The objectives of the Central Field Health Station, as stated in the plan of organization, are as follows:—(a) the establishment of experimental and investigating institutions; (b) the demonstration of practical field work, and (c) the training of the technical staff.

These activities are entrusted to the following nine departments, which constitute the Central Field Health Station:—(1) Department of Bacteriology and Epidemic Disease Control; (2) Department of Chemistry and Pharmacology; (3) Department of Parasitology; (4) Department of Sanitary Engineering; (5) Department of Medical Relief and Social Medicine; (6) Department of Maternity and Child Health; (7) Department of Industrial Health; (8) Department of Epidemiology and Vital Statistics; (9) Department of Health Education.

Although for financial reasons the Ministry of Health was amalgamated with Ministry of Interior as the "Wei Sheng Shu" or National Health Administration, in April 1931, preparations for the establishment of the Station in Nanking went on uninterruptedly, and in May of the same year, the following four departments were organized and set in operation:—(1) Department of Health Education, (2) Department of Sanitary Engineering, (3) Department of Bacteriology and Epidemic Disease Control, and (4) Department of Chemistry and Pharmacology.

In the autumn of 1931, when an unprecedented flood devastated an area of some 34,000 square miles along the Yangtze Valley, the Huai River and the Grand Canal, the whole staff of the Station was mobilized and sent to the flooded regions to assist the Department of Hygiene and Sanitation of the National Flood Relief Commission in various activities. Besides providing emergency curative facilities, such as clinics and hospitals, a considerable amount of preventive and sanitary work was done.

Then a severe epidemic of cholera broke out in May 1932, and eventually spread over 300 cities in 20 provinces. This made it imperative to cancel the original plan of closing the work in the flooded area at that time. The travelling clinics were at once instructed to undertake sanitary

work and preventive measures against cholera. Free anti-cholera inoculations were given by the staff on an unprecedented scale. In places where the epidemic was especially serious emergency cholera hospitals were established for the isolation of cases, while sanitary teams were organized for the systematic disinfection of the water supply in a number of cities.

In the autumn of 1932, when the emergency work was over, the work of the Station itself was actively resumed. Two more departments, namely, the Department of Medical Relief and Social Medicine and the Department of Epidemiology and Vital Statistics, were organized, and simultaneously with the establishment of the Central Midwifery School in Nanking in the autumn of 1933, the Department of Maternity and Child Health came into existence. A start in Industrial Health was made through participation in the activities of the newly-established Central Factory Inspection Bureau under the Ministry of Industry. A staff member was charged with the Division of Industrial Hygiene.

In October 1931, by a decision of the Executive Yuan, the Station was officially transferred to the National Economic Council. As an advisory and supervisory body of the Station, a Health Committee, consisting of eight persons, was organized in November 1931. The regulations governing the constitution of the Station were promulgated in September, 1933, and Dr. J. Heng Liu formally appointed its Director. In addition to the nine departments constituting the Central Station, the establishment of sub-stations, and demonstration centres in appropriate places is also provided for, as well as the establishment of an experimental medical school and of special courses for the training of technical personnel in the various branches of public health.

As noted above, the Central Field Health Station has been closely allied with the Ministry of Health since its early stages of organization. All the technical services and personnel of the Ministry of Health (later the National Health Administration under the Ministry of Interior) were gradually transferred to the Central Field Health Station. The facilities and personnel of the Central Field Health Station and those of the subsidiary organizations of the National Health Administration, *i.e.*, the Central Hygienic Laboratory, the National Epidemic Prevention Bureau, the National Quarantine Service, the Central Hospital, the Central School of Nursing, the Central Midwifery School and the First National Midwifery School, constitute the National Health Service of China.

Despite the fact that the headquarters and field work of the Central Field Health Station are being maintained on a modest annual appropriation of \$500,000, much has been accomplished by this organ. Most outstanding of all, it has carried its service to the rural districts, where the need of its manifold activities is felt more acutely than in most countries. Where constructive rural rehabilitation encounters grave political, administrative and financial difficulties for its realization, the health and maternity centres, the centre of contagious diseases and medical relief can be, and are, brought into play rapidly, efficiently and economically, by a devoted and competent staff. Field laboratories are working on preventive measures against all kinds of disease. Field units are frequently sent to the provinces to investigate and help combat outbreaks of plague, meningitis, diphtheria, dysentery, malaria, etc. Divisions of the Central Station also render considerable service in sanitary engineering and in the manufacture of medical supplies from locally available materials.

The following is a brief survey of some of the more important activities of the Central Field Health Station down to December, 1933, summarized from its official report:—

CONTROL OF EPIDEMICS.

Preparatory work of the Department of Bacteriology and Epidemic Disease Control started in 1931. On the outbreak of bubonic plague in October 1931, in Shansi and Shensi, the Department despatched a unit to the affected areas. At that time plague was threatening three large cities in Shansi and eight in Shensi, and over 500 villages in the two provinces. With the co-operation of the local authorities, the unit undertook disinfection, isolation of cases and contacts, anti-plague inoculations and other measures, and within a short period the epidemic was brought under control. In 1931, when cholera appeared in Shanghai, the Department despatched a member of its staff to make an epidemiological study of the disease and to investigate cholera bacteriophage obtained from stools of cholera patients as well as from water in the rivers and creeks around Shanghai. When cholera reappeared in 1932, members of the Department were despatched to Shanghai to continue these studies. In Nanking the Department examined 8,257 stool specimens of cholera patients, 1,664 specimens of stools from contacts, and 1,024 samples of water. For experimental purposes large quantities of cholera bacteriophage were prepared for oral administration and **for**

intravenous injection in the special cholera hospitals in Nanking and Shanghai. In 1933 the laboratory continued to co-operate with the Nanking municipal authorities in cholera prevention work, and 89,520 doses of vaccine, containing three thousand million organisms per cubic centimetre were turned over for inoculation during the summer of 1933.

During the winter of 1931, when an epidemic of cerebrospinal meningitis broke out in the Tangshan area, members of the laboratory staff were despatched to assist in control measures. A total of 143 patients received treatment, and those who received serum treatment showed a death-rate of 24%, while among the cases without treatment the death-rate was as high as 60% or more. Over 3,000 preventive inoculations were given in different villages. Free diagnostic service was inaugurated by the Department in December 1933, for the purpose of helping physicians and hospitals situated along the railways and other easily accessible places in laboratory examinations, specimens and reports being handled by mail. Both the Central Hospital and the Army Hospital of the Central Military Academy are being served, and the average daily examinations are 60. Up to the end of 1933 the laboratory had examined 9,117 stool specimens for cholera, 140 for dysentery, 1,033 for typhoid, 616 for para-typhoid, 31 for pneumonia, 1,589 cultures and smears from diphtheria patients and contacts, and 1,589 blood specimens. It also prepared 1,310,248 ampoules of culture media and 3,389 c. c. of diagnostic sera.

FLY-BORNE BACTERIA.

Since 1933, the Department has been investigating the bacteria flora of flies, collected by the Department of Parasitology and sent daily to the bacteriological laboratory. The varieties of bacteria carried by the flies were determined, and the number of bacteria carried both internally and externally were counted. From June to October, 1933, 1,979 flies were examined, and no pathogenic organisms were found besides *Bacillus Paratyphosus* "B." The number of bacteria adhering to the surface of a single fly varied between 6,000 to 16,116,000, and the number found inside a fly varied from 3,000 to 12,085,000. Bacteriological examinations of samples of pickled vegetables, sauce, vinegar and linseed oil, etc. are being made, and the germicidal action of different disinfectants tested by determining their phenol coefficient. The Department has also experimented with culture media made of soya-bean curd and native beef-extract as a substitute for imported peptone and beef-extract. The

present method is a modification by using soya-bean curd instead of the bean and adding native beef-extract to it. It was found that in contrast with the one dollar required for making 1,000 c. c. culture media from imported materials, it costs only 4½ cents to prepare the same quantity with soya-bean curd and native beef-extract.

PURITY OF DRUGS AND FOODS.

According to existing regulations no patent medicine should contain narcotics, and the amount of poisonous drugs present is limited, the object being to check the drug market being flooded with quack nostrums. Analysis of patent medicines forms an important part of laboratory routine which calls for very high chemical technique to detect minute quantities of narcotics mixed with all kinds of oily or resinous substances. Drug merchants are reluctant to supply the public with medicines up to pharmacopoeial standard, because this means considerably less profit. In order to stop improper practices, samples of drugs are purchased in the open market and their purity tested. This important routine is done primarily for the purpose of assisting hospitals, military and civil, to purchase drugs of standard quality. During the period under review 122 samples out of a total of 354 tested were found below strength. According to regulations, food and drinks must be free from artificial colouring, harmful metallic contamination, preservatives, etc. Judging from the results of analysis, conditions in this respect seem to be better than in the drug market. A study was made of different cereals with the object of producing an enriched "soya-bean milk-powder" for infant feeding, this being a continuation of researches which failed to produce an ideal substitute for mother's milk. The laboratory substituted for part of the vegetable protein that of animal origin, and increased the percentage of fats to enrich the carbohydrates and make the milk-powder appetizing. Malt extract was incorporated with the addition of essential mineral salts. It is hoped to produce this tasty and nutritious food at 30 cents a pound, a price within reach of every nursing mother.

The laboratory of Materia Medica and Chemotherapeutics was organized in 1933, its main function being research work on Chinese drugs and synthetic products to find out their pharmacodynamic action and clinical application. The Laboratory is divided into four sections, namely, Materia Medica, Organic Chemistry, Physical Chemistry, and Pharmacology and Chemotherapeutics. The Laboratory of Pharmaceutical Products was organized in 1931 to encourage the manufacture of

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various drugs based upon scientific research work. Since it is the aim to demonstrate the manufacture of reliable drugs from crude native products in the most economical way, careful research work has been carried out before products were manufactured on a large scale. The following processes were, or are being, investigated:

1. Simpler and cheaper methods of preparing ephedrine and its derivatives.
2. Further modification of the method of preparing- Vitamin B extract. Vitamin B₁ concentrate, carotene, etc., and testing the therapeutic value of Vitamin B extract on pigeons and other birds suffering from polyneuritis.
3. Modification of method for preparing mercurochrome, copper citrate, and albargin; research on bismuth and silver compounds; and collection of crude gypsum, antimony, bismuth, and iodine-containing seaweed for investigation and manufacture.
4. Adequate methods for preparing liver extract, hypophysis extract, thyroid gland extract, tissue fibrinogen, surgical catgut, and other biological products.

PROBLEM OF PURE WATER SUPPLY.

In view of the high incidence of malaria in many parts of China, a preliminary survey on endemicity along the Yangtze Valley was conducted in November, 1931. In 1932, the Department of Parasitology was organized, with the study and control of malaria as its primary functions, but gradually other activities in the field of parasitology were added. Preliminary steps for the organization of the Department of Sanitary Engineering were undertaken in April, 1931, the whole scheme being completed in June of the same year.

An auxiliary water supply was designed and constructed at the Central Field Health Station and the Central Hospital. This plant, which also serves as a training-station for water-plant operators, takes water from a canal which has been subject to constant pollution for hundreds of years; the intake is 1,200 ft. from the outfall of the sewage plant. This source of water-supply is typical of China, and practice in controlling the various factors of this water in order to produce a potable water, will enable any operator to handle the water ordinarily found in China. This plant is now supplying 50,000 gallons per day of potable water to the hospital. In certain provinces, such as Sinkiang, the water table lies far below the surface, and before developing such areas, water must be provided, which means drilling wells of from 350 ft. to 500 ft.

To carry out this work a modern, portable well-drilling equipment was ordered from the United States, and three drilling-crews trained in its use. During the 1933 National Athletic Meet at Nanking the Department was requested to solve the problem of supplying water for the 3,000 athletes in the Stadium dormitories and 30,000 spectators, and at the same time operate the swimming-pool—all this with a very limited amount of money. The well-water at Chungshan Park was just enough to supply the residential districts. A working force was formed from staff members of the Department, with a senior engineer in charge, so that a new water-source could be found and all additional work could be done in time. All the equipment in the circulation system of the pool was overhauled, cleaned, repaired, and reassembled, an organization formed to operate the pool and water-supply, and a total of 3,134,000 gallons of water was used during the Meet.

RURAL HEALTH WORK.

The Department of Medical Relief and Social Medicine has rendered liberal assistance to different health organizations in the way of a subsidy, personnel, or technical consultations. On account of the special importance of such work in China, a Rural Health Service was organized in 1932, and in 1933, at the request of several Provincial Governments as well as the Bureau of Roads of the National Economic Council, a Highway Health Service was established. The main functions of the Rural Health Service are: (1) to attain a feasible health programme through practical research in restricted areas, and (2) to promote its application elsewhere through enlightenment and demonstration. For the first object the health work at Tangshan was launched, and for the latter a plan of establishing a hospital in each *hsien*, with programmes of both curative and preventive activities, was passed at the Second Conference of Civil Officers in 1932.

Tangshan is a small market town about 20 miles east of Nanking, which, on account of its position and other rural reconstructive work going on there, was considered a good strategic point to launch a health programme for demonstration and teaching purposes. There are about 20,000 people in Tangshan and 50 neighbouring villages. To start with, 10 villages with a population of 3,036 were chosen as the intensive demonstration area, the remainder being considered as the extensive area, where only primary health activities were to be applied; but since July 1933, the intensive area has been enlarged to include 20 villages with 6,199 people. Work was started in January 1931, with the opening of a

clinic, which also serves as the Health Station and costs, including equipment, about \$11,000.

Not only was there a complete absence of modern-trained midwives, but even old-style nurses of this kind were very few in Tangshan, such work being left in the hands of the female population, with the result that maternal and infant death-rates were high. The Tangshan Health Station engaged a trained midwife to give free service, and during a period of 26 months she supervised 62 deliveries, made 716 visits to mothers and 357 to infants. The progress of the work is slow, but is steadily growing, the percentage of deliveries by the Station midwife being now about 30% of the total births. While making home visits the nurses and midwife instructed the mothers on various questions concerning domestic sanitation, care of the sick and of children. Several mothers' meetings and baby-contests were organized and the community has begun to take considerable interest in this work.

DISTRICT HEALTH CENTRES.

The experiments at Tangshan and other places are of great value in finding out a practical technique for the application of modern medicine in rural China. Extension of the scheme to other villages, however, is difficult, as it is not easy to find a group of ten or twenty villages which will be able to bear even what is considered to be a nominal cost. However, the scheme of "*hsien* hospitals" has proved quite encouraging, as the *hsien* or district is the economic as well as the political unit of China. The health activities of the *hsien* are: (1) medical relief, including the establishment of a base hospital in the *hsien* city, clinics in sub-districts, and first-aid stations in villages, and (2) health work, including control of communicable diseases, improvement of sanitation, maternal and infant health, school health, health propaganda, and compilation of vital statistics. Curative and preventive activities go hand in hand and are administered from the same office, so that the "*hsien* hospital," as it is called, is in reality a country health-centre. The Tai *hsien* and Yencheng *hsien* hospitals were organized in 1932 by the Central Field Health Station, in co-operation with the local governments for demonstration purposes. The Tai *hsien* hospital has 30 beds, a small lying-in home, and a clinic with a total attendance of 26,673. It gave 15,851 smallpox vaccinations and 8,864 anti-cholera vaccinations. The Yencheng *hsien* hospital has 20 beds and a clinic with a total attendance of 16,082, and gave 7,303 smallpox vaccinations and 6,538 anti-cholera vaccinations.

School health, midwifery work, and sanitary improvement are also making progress. The most encouraging feature about these hospitals is not the number of patients treated or children vaccinated, but the public interest they have created. Soon after their inauguration a number of *hsien* magistrates came to visit these hospitals, with the result that similar work has been started in other places. It is interesting to mention that Kiangsi province has followed the advice of the National Health Administration and is collecting taxes for rural health work. Six such health centres have been established towards the close of 1934, and their instant popularity has shown that they are meeting a long-felt need. The Hunan Provincial Government has recently passed a budget of \$300,000 as capital expenditure and \$200,000 as working expenses for health work and the establishment of *hsien* hospitals and health centres.

Highway construction is making rapid progress in China, and among the hundreds of thousands of men employed in this work, deaths and serious epidemics have frequently been reported on account of lack of proper sanitation and medical care. Even when a road is completed the hygienic condition of the buses and bus-stations, the health of employees, and safety of passengers need care, and for this reason a Highway Health Service was organized in May, 1933, with the co-operation of the Provincial Governments. A Highway Health Team was sent to Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, and Honan.

INFANT AND CHILD WELFARE.

Plans for a National Maternity and Child Health Service were initiated in 1929 with the creation of the National Midwifery Board and the opening of the First National Midwifery School in Peiping, which in 1931 was brought under the jurisdiction of the Central Field Health Station. In 1932 co-operation was effected between the Nanking Municipal Health Station and the Central Hospital, by which one doctor and four midwives were assigned to start maternity and child health work in the municipality as well as in the hospital. In January 1933, **one** instructor was assigned to the Nanking Municipal Health Station to conduct a supplementary course for graduate midwives from unregistered schools, **and in July the Central Midwifery School was opened in Nanking.** The **same month the Department of Maternity and Child Health was established in the Central Field Health Station, with the following institutions and services under its supervision: the First National Midwifery School, Peiping; Peiping City Maternity and Child Health**

Service; Central Midwifery School, Nanking; Nanking Municipal Maternity and Child Health Service. The Department co-operates with the National Midwifery Board, National Health Administration, and local health authorities: (1) by giving technical suggestions and periodical supervision to local maternity and child health institutions; (2) by giving supplementary training to field-workers; (3) by drawing up plans for maternity and child health work for other institutions and places (both Government and private); and (4) by giving assistance in the form of personnel to enable the initiation of maternity and child health work in new locations. The Service provides delivery services without charge, takes care of the mothers and infants, and investigates the status of maternal and infant mortality in the locality. Two weeks' training is given for "aseptic technique," and two months' training in applied midwifery is offered to a limited number of primary school graduates to serve as aids in certain villages. Popular maternity and child health talks are given at Mothers' and Children's Clubs whenever feasible.

PUBLICITY WORK.

The machinery of health education and propaganda work of the Central Field Health Station was set up in April 1931, when the Department of Health Education was organized with three sub-divisions (models laboratory, publications and posters, and lantern slides). A photographic laboratory was established in January 1933. The models manufactured are of various types: physiological models, models of harmful insects, models on maternal and infant health, and models on communicable diseases. The laboratory is planning to extend its work to include models for popular education, for sanitary engineering, and for nutrition. The materials used for manufacturing models are chiefly plaster of Paris, wax, and paper plaster, and up to the end of December 1933, the laboratory has produced and distributed 1,306 models, most of which went into hospitals, medical colleges, and popular educational museums for teaching purposes. For the purpose of popular education and health propaganda, paintings and drawings on various subjects and of different sizes are prepared; as a rule, posters on the same subject are produced in series. Among these are the Health Habit series, First Aid series, Parasites series, and Traffic Safety posters. In addition there are charts on vision tests and the correction of physical defects among school-children, etc. Up to the end of 1933, 1,667 pictures and charts had been prepared and 568,968 copies distributed. Most of the designs which appeared in poster form are reproduced on lantern-slides, and during the

period under review 3,580 slides were prepared, and 1,853 distributed. When absolute accuracy is desired, photography comes into service instead of hand-drawn posters. Should actual models for moulding be wanting, photographs take their place. Pictures of health activities and good and bad sanitary conditions are taken for propaganda purposes, while pictures of medical and pathological specimens are copied for scientific study-

In order to give a systematic and adequate supply of information to the public the Department is publishing a weekly journal, *"Health News"* and various series of booklets on health knowledge, in addition to giving a weekly radio broadcast on health subjects. It has recently distributed 5,000 copies of each talk to various organizations, journals, and magazines in different parts of the country. In addition, 34 health exhibitions were held during the period under review, 14 of which were held in Nanking. The first health exhibition was held in April, 1931, at Nanking during the People's Convention. Popular lectures were given, and health films shown on practically every occasion, these exhibits and talks being greatly appreciated by the public.

SCHOOL HEALTH SERVICE

School health work has developed rapidly during the last few years, particularly in Nanking, Shanghai and Peiping. In order to co-ordinate work throughout the country and stimulate uniform development, a Central School Health Service was created in April 1931, under this Department. Besides co-operating with the Ministry of Education in setting up curriculum standards for hygiene and other technical assistance, the service also started some field work in schools at Nanking. In 1932 a member of the Department was stationed in Peiping to conduct a city-wide programme of school health; 58 primary schools, with a total of 15,960 students, and nine middle schools, with 1,956 students, were included in the programme.

A Commission on School Health was created at Nanking in 1932 under the joint auspices of the National Health Administration, Nanking Municipal Health Station, and the Bureau of Social Welfare of the Nanking Municipality, and a member of the Department devoted his full time to the Commission on School Health to take charge of the city school health programme. In January, 1933, the scope of the work was extended to 95 schools, with a total of 24,000 students, and up to the time of this report, 102 schools with a total of 27,550 students were included

in the programme of the Commission of School Health. In addition, six schools with 3,557 students, were under the sole care of the School Health Service of the Department for demonstration and field study of various health problems. The first summer course for teachers on school health was given in Shanghai in 1929 (before the creation of the Central Field Health Station) under the auspices of the Ministries of Education and of Health. A similar one was held in 1932 in Nanking, teachers being sent from Honan, Shansi, Kiangsu, and Chekiang by their respective provincial Educational Boards. For the purpose of revising the standard curriculum in primary and middle schools, a Commission was organized under the auspices of the Ministry of Education. At the invitation of the latter, the Department participated in the drafting and revision of the curriculum on hygiene. According to the new standard, throughout the six primary school years one hour every week is to be devoted to classroom health teaching. This is to include the cultivation of health habits, propagation of health knowledge, training of the proper attitude towards health, personal hygiene, and public health. In the junior middle schools throughout the three years, one hour every week is devoted to classroom health instruction. In the senior middle schools a fuller course on community health, with social medicine and sex hygiene, is given during the second semester of the first year.

SOCIAL RELIEF WORK IN NANKING.

As an example of the work which is being done in different parts for the improvement of living conditions among the poor, the case of Nanking may be cited. Official estimates put the number of poor families in the capital at 30,000—which means that a quarter of the population live in huts and hovels under conditions and in surroundings which are bad, physically and morally. The Nanking municipal authorities have drawn up extensive plans providing for the better housing of the poor, free-educational facilities, credit loans to persons in humble circumstances who are engaged in small industries and shopkeepers. Even the rickshapullers have opportunities for buying their vehicles on a hire-purchase system operated by the Municipality. The most important part of the poor relief scheme is the housing plan, and a model village established by the authorities is an interesting experiment which is being closely watched not only in the capital but in other parts of the country. Madame Wang Ching-Wei, member of the Central Supervisory Committee of the Kuo-Miu Tang, has collected \$60,000 towards the cost of this village

at Hsiakwan, just outside the Chinchuan Gate, and covering 160 mow of land set aside by the Nanking Municipality. Any of the hut-dwellers may apply for the privilege of erecting their houses in the village, and each qualified applicant will be given a grant of \$10 by the Municipal Government. The houses will be built in rows of five. Each house is about 15 feet by 12 feet, has two rooms, and costs about \$35. Actually the municipal authorities spend \$50 for each house, because in addition to the \$10 subsidy, it has to pay for the land, build roads, and make other general improvements.

More than 200 families had moved into the village by November, 1934, and 300 more families also applied to join the group at the beginning of 1935. Besides a park and recreation-ground for the children, a special school will be established in the village, while a free clinic will be opened to look after the sick.

With a view to assisting the ricksha-pullers, the Nanking municipal authorities have decided to regulate the fares charged on motor-omnibuses, which vehicles had been in keen competition with the rickshas. A minimum bus-fare of 21 coppers has been fixed instead of 14, thus giving the ricksha-pullers a better opportunity of getting patronage. A co-operative society has been organized by the municipal authorities and local social workers to protect the pullers from exploitation by the ricksha hong. Loans at low interest are procured from the Shanghai Commercial and Savings Bank by the co-operative society for the purchase of vehicles, which are rented to members of the society at a low rate. Members, beside paying their dues and other charges, deposit a certain sum of money with the society, and it is hoped the pullers will thereby be able to own their rickshas by the time their term of hiring has expired. A scheme of life-insurance for ricksha-pullers and a hospital providing free medical care are also under consideration.

Numerous loan facilities have been provided by the Municipal Government to meet the urgent needs of small shopkeepers and operators of industrial enterprises of a minor character. More than 70 small factories engaged in making tapestry have applied for financial assistance since January 1934, and approximately \$9,000 has been advanced in the form of loans to meet urgent needs. More than 2,800 families have also benefited by this fund, and out of a total of \$15,000 advanced since April 1933, \$12,000 has been repaid by due date. Another \$150,000 loan fund has been raised to finance the hard-hit middle-class section of the com-

munity, and this sum will be lent to shopkeepers and small employers who need immediate financial aid. In addition, \$10,000 has been set aside for unemployment relief in the capital.

In April 1934, the construction was commenced of a \$110,000 relief centre at Teng Fu Hill, outside the Chung Hwa Gate. This institution will house an infants' home, a "Door of Hope", a hostel for the aged, a cripples' home, and a craft-shop. It is designed on the most modern plan, with dormitories, baths, dining-rooms, laboratories, playgrounds, rest-rooms, infirmaries, class-rooms, libraries, and a pharmacy.

Another line of activity undertaken by the Nanking Municipal Government is public health work. The provision of more free clinics, isolation-wards, hospitals for the cure of opium addicts, the prevention of plague and cholera, free vaccination, etc., are but some of the varied branches of work done under the auspices of the City Government for the protection of public health, and it has been decided to spend \$60,000 on building another municipal hospital at Chiang Kou Peng.

The Nanking University Hospital has opened a birth control clinic, where information on contraceptive methods is given to married women when the hospital is satisfied that it is sought on one or more of the following grounds:—1. Physical weakness that would make child-bearing a danger to the life of the mother; 2. Hereditary deficiencies; 3. A desire for the spacing of children after a number have been born; and 4. Financial inability to support further additions to the family.

FIGHTING THE DRUG MENACE.

Nothing which happened in China during 1934 is more full of promise for the future of the country than the publication of the regulations for the drastic prohibition of high-powered narcotic drugs and for the suppression of opium within a definite time-limit of six years. In declaring a "military period of campaign against drugs" and in providing for the suppression of the cultivation and smoking of opium in China within six years, the National Government thus laid the foundations for a strong, healthy and united China.

When the situation was discussed at Geneva in May 1934, by the Advisory Committee on the Traffic in Opium and other Dangerous Drugs, several questions were raised—by the United States representative in particular—to which the Chinese Government and other Powers concerned were asked to reply. A few days before this discus-

sion the Chinese Government had adopted a number of new measures to deal with the narcotic problem in China. The opium problem has been complicated for some years by a new problem—that of drugs which threaten to do far more damage to China than could be caused by opium-smoking. The drug problem has become considerably worse during recent years, the principal reason for this being the tendency of traffickers, hampered by European regulations, which have become more strict there, to move their centre of activity to the Far East, while events in the Far East, more especially the abnormal situation in North China and the North-Eastern provinces, have prevented the Chinese Government from devoting greater attention to suppressing the source of raw material for the manufacture of drugs. It is not enough now to combat the use of prepared opium; one must also, and above all, combat the use of drugs. The drug problem has supplanted the opium problem in gravity. Experience has shown that the use of drugs tended to develop in the very provinces in which the suppression of the use of opium had been most strict. One reason why the use of drugs is widespread in China is that a good many opium addicts, from an honest desire to rid themselves of the habit, have taken so-called anti-opium drugs containing manufactured narcotic drugs, so that instead of curing themselves, they have contracted an even more dangerous vice than that which they were anxious to drop.

On the other hand, if the use of opium were to be prohibited as strictly as the use of drugs—for example, by enacting the death-penalty in both cases—there would be a danger of encouraging opium-addicts to become drug-addicts. It is obvious that those who are unable to do without narcotics would then prefer to make use of drugs. As a matter of fact, opium-smokers have to have a pipe, a lamp, and other more or less bulky paraphernalia, which is easy to detect. It is also easy to detect smokers by the smell of opium-smoke, and to detect opium on account of its bulk, which is greater than that of drugs. If, therefore, equally strict measures were taken against the use of opium and drugs, opium-addicts would be encouraged to use drugs which are more difficult to discover and cost less. That must obviously be avoided, for of the two evils it is, of course, the abuse of drugs, which is more dangerous and should be dealt with first. As by enforcing drastic measures against the use of opium the Chinese Government would **run**

the risk of increasing the number of drug addicts, it was obvious that another method of solving the problem has to be found.

Since the cultivation of the opium poppy, still carried on in defiance of the law in some provinces, cannot for complex reasons be completely suppressed from one day to the next, the National Government thus decided to introduce two new measures:—(a) drastic measures against the non-medical use, the manufacture, transport of, and traffic in manufactured narcotic drugs, and (b) the substitution of a method for generally restricting the use of opium and poppy cultivation for that of the absolute prohibition formerly tried by the Chinese Government, but which only remained on paper.

As compared with foreign legislation, Chinese laws, as it stood, punished narcotic drug offences very severely. The penalties might amount to five years' imprisonment and a fine of \$5,000. These penalties have now been made even heavier, and include the death penalty in the case of manufactured drugs. For this purpose the Central Political Council laid down, on May 16, 1934, the following principles amending the previous legislative provisions on this matter: (1) the penalty for the manufacture, transportation or sale of drugs may be death; and (2) drug addicts will be sent to hospitals or special institutions for compulsory treatment, and those who again contract the habit after being cured will be severely punished.

With regard to the application of these principles, under Regulations 8 and 10, the former lays down the penalties for drug offences, which are now punished as crimes. The second contains rules concerning the institutions to be set up for the treatment of drug addicts. No. 8 contains sixteen articles, more than half of which lay down the death penalty. The law applied to drugs is military law, and the Military Courts will be entrusted with its enforcement. During the second half of 1934, over 200 persons were thus executed for dealing in drugs, in addition to an unrecorded number of addicts who relapsed into the habit from which they were supposed to have been cured. A state of siege has, as it were, been proclaimed in the matter of drugs. Those Regulations are provisional in character, to be amended or withdrawn when the situation improves.

With regard to the establishment of institutions for the treatment of addicts, Regulation No. 10 stipulates as follows:—

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Article 4. Applicants for treatment, either voluntary or who have been handed over by their relatives, or ordered by government authorities to receive compulsory treatment, shall strictly observe the regulations and directions of the corrective institutions concerned. After being cured within a specified period, they shall at any time be liable to examination by the corrective institutions in question which will ascertain whether they have really been cured or whether they have re-acquired their habit. Addicts not observing the prescriptions and directions and therefore not cured within the specified period, or repeatedly re-acquiring the habit after being cured, shall be handed over to the courts and punished in accordance with the provisions of the Opium Suppression Act.

HOSPITALS FOR DRUG-ADDICTS.

The official opening of the Provisional Institution for Curing Drug Addicts at Shanghai took place on September 30, 1934, but it had already started to receive patients in July the same year. It has six wards with 108 beds in all. Clothing, food and treatment are free.

From July 11 to September 15, treatment was given to 732 drug addicts, of whom 618 were men and 114 women. Of this number more than 300 came of their own accord for treatment. 3 were under 20 years of age; 178, from 20 to 30; 295, from 30 to 40; 191, from 40 to 50; 65, over 50. Of the total receiving treatment, 150 were addicted to opium; 186 to "red pills"; 26 took morphia in the form of injections; 149 were addicted to more than one drug; 213 were without any preference as to the manner of taking the drug. The occupations of these several addicts were classified as follows:—agricultural, 31; labourers, 268; traders, 204; students, 12; soldiers, 14; miscellaneous, 103. The length of time taken for treatment was as follows:—under 10 days, 664; from 10 to 12 days, 40; from 12 to 14 days, 18; from 14 to 16 days, 7. **The number of cases in which the treatment was stopped by reason of other maladies was three.**

The treatments most commonly in use were either a gradual decreasing of drug substitute, or the swallowing or injection of sleeping dose or draughts to help the addicts pass over the time when the craving for the drug is most intense. The former method requires a long period of treatment, as the effect is slow, while the latter method often causes some other sickness, so that neither is very satisfactory. A method which has been in use since July 1934, and has shown good results, is one invented by Dr. Modino, and consists of the application of a com-

pound which includes ammonia fortis and a 10 per cent solution of spirit of camphor. This is injected in the chest or abdomen to induce irritation which causes a swelling under the skin. The pus from this swelling is extracted and then injected as an anti-toxin.

Beyond the temporary irritation, there are no ill-effects from this method, and except in a few cases the treatment is complete within ten days. The figures given above show that more than ninety per cent of the cases were cured in ten days, and less than one per cent required between 14 and 16 days. Slight cases require only one treatment, and are cured within two or three days, but more serious ones may have to be treated again after the third day, and sometimes even a third treatment has been found necessary. The method is very effective, especially where "red pills" and morphine are concerned, and the satisfactory results shown have induced many physicians in different parts of the country to make inquiries through the Institute with a view to applying this treatment to their patients. What makes the cure thorough and effective is that after treatment, former addicts react strongly to the smell of opium.

The Peiping Institution for the treatment of addicts began operation on September 4, 1934. In the period of September 4-19, i.e., in 16 days, the number of addicts who left the establishment cured was 283 men and 67 women. Clothing is supplied by the institution and is marked on the outside "Under treatment for drug addiction", so as to prevent the patients escaping. The institution has eight wards for men and one for women. There are two kitchens, in one of which the food is prepared for all patients, while the other is for paying patients who desire to have special dishes, since it is forbidden to visit the drug addicts or to bring them food for fear of drugs being introduced secretly with the food. The youngest of the addicts was 13 years of age and the oldest 73. The number of addicts from 25 to 45 represented 80% of the total number. The institution costs \$160,000 per annum to maintain, and the cost of the cure of an addict averages from \$12 to \$15. The hospital income is derived from subsidies of the Central and Provincial Governments, from private contributions, and from a deduction made from the wages of municipal officials in Peiping.

Institutions of the same character as those of Shanghai and Peiping have been opened also in Nanking, Tientsin and other cities. In the

province of Kiangsu alone, there are already 20 such institutions, and this example is being followed in other provinces.

In Nanking, there are a large number of opium-smokers and, in view of this fact, the Government is at present adopting milder measures. Addicts caught for the first time are sent to the Municipal clinics to be cured of the habit, which usually takes two weeks, after which they are set at liberty with a warning that, if caught again for a second offence, "stern action" will be taken. Six clinics have been already opened by the Nanking authorities and two more are contemplated, providing altogether accommodation for about 3,000 people. At the Central Hospital a special ward has been opened for the reception of opium-addicts who wish voluntarily to give up the habit. Accommodation is provided for 80 persons who are given the *Leithin* treatment, an effective and painless cure, discovered by Dr. Ma Wen-Chao, member of the National Opium Suppression Commission, after exhaustive study and research at the Central Hospital, Nanking. The cure consists of a chemical mixture of beans and egg yolks, and by administering daily doses of from 20 to 30 grammes, certain cells in the body of the addict, which have been affected by narcotics, react in such a way that the craving for drugs gradually diminishes, and according to those who have taken the cure, it is not only effective in suppressing the craving for opium, but also restores the vitality of the patient.

SUPPRESSING OPIUM WITHIN SIX YEARS.

Only persons holding a permit may smoke opium. According to Regulation No. 10:—

Article 5. Those who by reason of age or sickness have become addicts and are unable to be cured within a short time, and are certified as such by physicians or corrective institutions, shall on application be registered and granted temporary smokers' permits. They shall be temporarily permitted to use opium and shall be gradually cured within a maximum period of six years. Smoking shall be completely terminated at the end of this period, and no extension of the permit shall be granted after the expiration of this time limit."

Only persons having a special licence may sell opium (Regulation No. 4:)-

Article 7. The Opium Suppression Supervisory Bureau (O.S.S.B.) shall decide on the number of opium hongs; and the local government offices concerned shall, taking into account the local needs, decide on the

number of retailers and report to the O.S.S.R. for approval. The number of hongts and retailers, when decided upon, shall be gradually reduced from year to year and no increase whatever shall be allowed. After a period of six years, the operation of these hongts and retailers shall be terminated altogether; and only pharmacies shall be permitted to sell opium under the same restrictions as morphine, cocaine and heroin. . . .

These hongts and opium-shops may only procure their opium from warehouses established by the Government. Opium for licensed smokers must come from the provinces in which the cultivation of the poppy is at present temporarily authorized. Transport of the opium is in the hands of the Government; but the latter may delegate the work of transport to particular individuals. In regard to the cultivation of the poppy, Regulation No. 9. provides as follows:—

Article 2. The prohibition of poppy cultivation shall begin from the "interior" provinces. To the provinces of Chekiang, Kiangsu, Fukien, Anhwei, Hupeh, Hunan, Kiangsi, Honan, Ilopei, Shantung and Shansi, orders have already been issued for immediate prohibition of poppy cultivation. As regards the "frontier" and distant provinces, poppy cultivation shall be unconditionally prohibited in the regions where such cultivation is hitherto unknown. In those regions where poppy has been cultivated, the amount produced in the future shall be reduced year after year and no increase whatever shall be permitted.

Article 3. Officers shall be appointed, during sowing and harvesting seasons, by the Headquarters of the Chairman of the Military Affairs Commission of the National Government, or through the Central organizations concerned, to inspect, in collaboration with the local military and civil authorities, the various provinces for which orders have been issued for the prohibition of poppy cultivation, and to uproot poppy plants and to destroy opium gum. Farmers cultivating the opium poppy and officials or village chiefs guilty of conniving at, or giving protection to, such cultivation shall be severely punished in conformity with the provisions of the Opium Suppression Act and the Regulations for its provisions, according to the nature of the offence. Troops giving protection to cultivation, or guilty of connivance, shall be severely punished according to military law. Poppy-cultivated land shall be confiscated, except in cases where the informant is the landowner himself.

Regulations No. 2 and No. 3 refer to the appointment and duties of the officials who are to visit the provinces in order to see whether the cultivation of the poppy has effectively been suppressed. It is laid

down that these officials may be accompanied by troops, or may call upon the military authorities for assistance if necessary. A special authority has been set up to co-ordinate and supervise the measures referred to above, Regulation No. 5 providing as follows:—

Article 1. The Opium Suppression Supervisory Bureau shall have as its functions the supervision of opium suppression in the various provinces, municipalities and districts and the adoption of effective measures for the eradication of opium smoking within a definite time limit, and for the seizure of narcotic drugs, all subject to the orders of the Chairman of the Military Affairs Commission of the National Government.

Regulation No. 5 also provides for drug police. The O.S.S.B. is directly under the Chairman of the Military Affairs Commission of the National Government, and has the advantage therefore of having means of action at its disposal which the existing National Opium Suppression Commission could not command. The application of the Regulations with regard to drugs has now been entrusted to the O.S.S.B. in the provinces of Hupeh, Hunan, Honan, Anhwei, Kiangsi, Kiangsu, Fukien, Chekiang, Shensi and Kansu. The National Opium Suppression Commission has not yet been abolished but will in future only deal with questions not specifically reserved to the O.S.S.B. and will again become the supreme authority on narcotic subjects when the work of the O.S.S.B. in abolishing the use of opium and the culture of the poppy within the specified period is at an end.

The Chinese Government is thus in a position to supervise all phases of operations in connection with opium, from the cultivation of the poppy to the purchase of the opium by the smoker. The Regulations referred to above are sufficient evidence of the National Government's desire to do everything in its power to stamp out the drug scourge, but the fight against drugs in China cannot be completely successful by the unilateral action by the Chinese Government alone. China requires the collaboration of other Powers more than any country, and in particular the collaboration of those who, under the system of extraterritoriality and concessions or leased territories, have nationals in China and administer Chinese territories over which China has no jurisdiction, so that the Chinese Government cannot take any action in regard to these nationals or territories without the collaboration of the foreign Powers concerned. The new regulations, **for example,**

punish traffickers in drugs with death, are not applicable to Chinese nationals living in leased territory. It is to be feared, under these circumstances, that the Chinese traffickers will take refuge in such areas. Again, certain extraterritorial foreign traffickers in China are punished so extraordinarily lightly that it is feared that their number, already considerable, will further increase, in proportion as the number of Chinese traffickers diminishes—contingencies which are assuredly not what the National Government had in mind when it drew up the above-mentioned Regulations, but which will render all its efforts nugatory should they arise.

INCREASING NUMBER AND EFFICIENCY OF HOSPITALS.

The Chinese Medical Association some time ago sent out an exhaustive questionnaire covering all the activities of an average hospital, and the replies received give an idea of the efficiency of hospitals operating in China. The questionnaire was mailed out in December, 1933, and by March 1, 1934 returns from 214 hospitals were received. Out of the 430 hospitals listed in the medical directory 321 replied, showing that the survey includes most of the leading hospitals, and only those in remote places and the smaller institutions failed to reply. The hospitals in question are divided into three groups: (a) Mission hospitals 150, or 70% of the total; (b) Private Hospitals 50, or 23% of the total; (c) Government Hospitals 13, or 7% of the total.

The information given in answer to the questions put may be summarized as follows:—

Organization.—45% of the hospitals have been built since 1921, and others have been partly rebuilt or reorganized. The 14 Government hospitals are controlled by a superintendent, while one of them is controlled jointly by a superintendent and a board. Private hospitals are mostly controlled by the proprietor as superintendent, but a few are controlled by a board (made up of staff members and outsiders) or a committee with a superintendent. There are 11 mission hospitals under the direct control of a committee, 52% are controlled by a board or committee with a superintendent, and 40% have a superintendent. Formerly separate hospitals were provided for women and men, but in order to bring about more efficiency and economy a definite step has been taken in combining these hospitals. At present, 79% of the hospitals exist as general hospitals, 10% are for women and children, 7% are for men, and 4% are for special cases.

Accommodation.—The total value of the 214 hospitals listed is \$43,467,121; the average value is \$214,465, including land, buildings, and equipment. 112 hospitals reported 145 out-patient buildings, and many conduct out-patient work in the main building. One of the new developments of hospital work in China is the provision of nurses' homes. Twenty years ago there was probably not one in the country; now 82 hospitals report having one each, and 34 two or more. Most hospitals are well-screened against insects. There are a total of 16,930 beds. Some of the private hospitals report a very small number of beds. There are 8 with less than 10, and one with 346. The smallest mission hospital has 25 beds, and the largest 452, while there are 10 with over 200. Three Government hospitals report over 200 beds. Hospitals are solving the water supply problem chiefly by deep wells and modern plumbing; 43% of the hospitals have flush toilets. Modern equipped bathrooms are reported by 66% of the hospitals. There are 141 hospitals having 629 bathrooms, an average of 4.4 each, only 20 report but one bathroom, and 27 report between 6 and 10.

75% of the hospitals are adequately heated in winter, and 77.5% are using electricity for lighting. Most hospitals have proper facilities for laundering. In most institutions the food supply is fairly well controlled; however only 28% have a trained dietician, and 23% make a contract for food with the cook, but in some cases they reserve a certain degree of control and supervision. The average cost of food a day is 35 cents; food in private hospitals is the most expensive, then Government institutions, with the mission group the cheapest. 50% of the hospitals have an isolation unit, the majority of the others having theirs in a private room. Those in Shanghai send them to the Isolation Hospital, and some hospitals do not admit cases requiring isolation.

Equipment.—80% of the total beds reported are standard hospital beds, and 86% of the hospitals have mostly standard beds; whereas, in 1919 the figure was 45%. 90% of the hospitals claim to possess an adequate supply of bedding, and 67% have sufficient clothing; but many hospitals still allow patients to bring their own bedding and clothing. 85% of the hospitals have a standard operating table, and only 25% of the private hospitals do not have such a table. 53% have an adequate supply of instruments for special work, and 89% for general work. A pressure sterilizer is the most important instrument in the operating-room, and 91% of the hospitals report having one, whereas in 1919 only

59% had such a sterilizer. 188 hospitals performed 128,472 operations during 1933. A clinical laboratory is very essential for accurate diagnosis, and only 9 hospitals are without one. Routine examinations are being made on every patient by most hospitals. The number of tests done varies with different hospitals, 16 are doing all seven of these tests on every patient and 35 perform six. 30% of the hospitals are now prepared to do blood chemistry, and 25% have facilities for the Wassermann test, and 50% have facilities for serological work. 22% of the hospitals carry section work in the laboratories, and 56% have bacteriological incubators. In regard to microscopes, 68 hospitals report having two each and 59 have over three. Only 6 hospitals are without a microscope. It was reported that during 1933 no less than 1,700,000 examinations were performed in the laboratories, an average of 8 for each in-patient. 50% of the hospitals possess X-ray plants, and 47,000 patients are X-rayed annually. Ultra-violet equipment is a very recent addition to hospital paraphernalia in China, and 40% of the hospitals possess them. The same number have some other kinds of electrical apparatus, such as diathermy, cystoscope, bronchoscope, cautery, diagnostic apparatus, centrifuge, etc. The total value of hospital equipment is \$6,502,443.

Staff.—There are 1,084 full-time doctors and 194 part-time doctors engaged in approximately 200 hospitals, an average of more than 5 each. Among these there are 1,069 Chinese and 209 foreign doctors. Only 17% has but one doctor. At present 57% of the hospitals are able to divide their work into special departments. The training of pharmacists in China has not been over-emphasized, and there are only 165 qualified pharmacists distributed among in hospitals, and 208 partially qualified men among 132 other institutions. In 1933 there were 1,675 graduate nurses employed, which makes one for every 10 beds, and among these 1090 had passed the examinations given by the Nurses' Association of China, an average of 7 each; 54% of the hospitals have foreign trained nurses. 70% of the hospitals use ward orderlies. Their duties vary with different hospitals, but they are usually supposed to do the rough and unpleasant work about the ward. 50% use a trained dresser other than a doctor or nurse assistant. 70% of the hospitals have a special religious or social service department, and 67% hold staff meetings regularly.

General.—The annual budget of the 214 hospitals listed is approximately \$15,000,000. 80% of the hospitals keep a complete record of everything done for a patient, and 4% do so in a less thorough degree. 86%

of the hospitals file their charts, and 50% of these cross-index them. An approximate total of 247,000 patients were treated, an average of 1,154 for each hospital. There are 16,930 beds in the 214 hospitals, this making 14.5 patients per bed, which means each patient would remain in hospital 25 days if the beds are fully occupied. 81% of the hospitals keep histories of their out-patients and another 5% keep partial histories. 80% publish an annual report, and 62 of them include a list of diagnoses. 27% of the hospitals are engaged in some form of research work and 43 are planning to start research work. 51 hospitals have performed autopsies, of which the total number during 1933 was 247.

This brief survey of hospital work in China indicates that the outlook for further advancement in medical work is most encouraging. The last previous survey was made in 1919 and published in 1920, and the results recorded above already prove that during the period from 1921 to 1933, there has been phenomenal growth in the efficiency of the hospitals. It may be assumed that the coming decade will bring even better results, for a large number of hospitals have recently elaborated plans for entirely new plants, buildings, and equipment.

NATIONAL QUARANTINE SERVICE.

The history of modern quarantine practice in China may be said to date back to the year 1873, when measures were taken at Shanghai and Amoy against the threatening invasion of cholera from Siam and Malaya, but previous to the establishment of the National Quarantine Service in July, 1930, (now under the National Health Administration) and the appointment of Dr. Wu Lien-Teh—who gained international fame in suppressing the terrible epidemic of pneumonic plague in Manchuria and North China in 1910-11 and had since served as Director of the Manchurian Plague Prevention Service—as its Director, progress had been slow on account of the absence of a specialist to direct the organization, and lack of proper funds.

With the establishment of the now defunct Ministry of Health in 1928, the matter was taken up earnestly. The commercial metropolis of Shanghai was the first which claimed attention. Until June 30, 1930, the Shanghai Sanitary Service, as the major quarantine organization of the country was called, had been administered by the Shanghai Commissioner of Customs on behalf of the Chinese Government and the Consular Body at Shanghai, and the unanimous approval of the latter on any matter pertaining to quarantine restrictions was required before

these could be put into practice. The Senior Port Health Officer, residing at Woosung, considered himself an employee of the Customs and of the Consular Body, and received orders direct from the Harbour Master, who in turn was a subordinate of the Commissioner. Hence, in any emergency requiring quick decision, the expert guiding hand was not available. Reorganization of the Service on modern scientific lines was, therefore, welcomed.

Thus, on July 1, 1930 the new quarantine station of Shanghai was established. One of its first duties was to inspect vessels from such "declared" ports as Saigon, Calcutta and Bangkok, where cholera was prevalent. In addition to the fumigating barge *Mu Lan* and the steam launch *Wu Yuan* taken over from a private company, the Service has added to its fleet four new vessels, while another fast, new launch has recently been put in commission.

From the very beginning it was realized that the old quarantine hospital, situated on the Pootung side of the river, was unsuitable for the purpose of an up-to-date quarantine station. The old idea that a quarantine station should be built as far away from inhabited quarters as possible, has been exploded as a result of the increased knowledge of infectious diseases. Thus, after several years of preparation, a suitable piece of land has been purchased at Woosung on the Shanghai side of the river, an area of 8 *mow*, on which has been erected a fine series of buildings based upon up-to-date plans, including a disinfecting chamber and temporary isolation quarters in case of emergency.

The history of quarantine work in Amoy makes impressive reading. Amoy owes its significance to the fact that it is the most important emigration depot in China for the Philippines, Netherlands East Indies and Straits Settlements. A large tract of land measuring over six acres was donated in 1931 by Admiral Lin Kuo-Ken, Governor of the district, on which a modern quarantine hospital was erected. In addition to staff quarters, third-class wards for the reception of patients suffering from quarantinable diseases were contained in this building. In September 1933, a new block was built behind the old hospital, consisting of first and third-class wards for sixty persons, an emigrants' ward for those who are rejected on account of some disease that would preclude their admission into the immigration ports, and quarters for medical and nursing staffs. This station has done excellent work during the epidemics of the past few years, especially the bubonic plague outbreak of 1931,

and the smallpox and cholera epidemics of 1931 and 1932.

Hankow was taken over in November, 1931, following the disastrous Central China flood of the previous summer. This station has developed rapidly and is at present doing fumigation work in addition to acting as an important quarantine unit for the middle Yangtze.

The northern ports of Tientsin, Taku-Tangku and Chinwangtao, were transferred from the Customs to the control of the Quarantine Service in April, 1932, and have been undergoing a reorganization to make the work uniform with that of the other stations.

FAMINE RELIEF WORK.

Scarcely a year passes without serious loss of life, wide distress and destruction of property by floods in China. Sometimes severe drought is equally disastrous, as in the summer of 1934, when the damage done to crops was estimated at \$1,450,000,000—which total does not include the North-Western and several other provinces.

Prolonged drought in the spring and summer of 1920 brought starvation to nearly 20,000,000 people in five Northern provinces, and caused the Grand Canal to go so dry that it stretched across Shantung like a great scar. In response to an appeal, the American Red Cross gave \$1,000,000 (Gold), and it was decided that the gift should be spent on constructive work, chiefly road-building. Relief was to be given through wages. There were many volunteer workers, but very few trained engineers; yet, 500 miles of standard earth motor-roads were built in Shantung during the spring and early summer of 1921. The Shantung provincial authorities co-operated whole-heartedly; the staff worked long hours, including Sundays; difficulties of a dozen kinds were met and overcome. At one time there were 35,000 men on this job. The experiment was a success, and labour relief proved practical. While other organizations expended millions of dollars during the North China famine leaving scarcely any trace of permanent work behind, the Red Cross staff did a piece of lasting work. After the great famine of 1920-21, the China International Famine Relief Commission was formed, and definitely decided to discard, wherever possible, the old soup-kitchen idea in its famine relief and prevention work. Relief through labour was to be the watchword from then on.

During the first year of its existence, the China International Famine Relief Commission made grants to several provinces for carrying out constructive projects. With funds thus obtained, roads and dykes were

built in many counties of Shantung and Honan during 1922. About this time, the Yellow River broke its dykes and changed its course in eastern Shantung. To get it back into its old channel, extensive work, costing \$1,500,000 was required. A huge rock-filled dam, comprising 40,000 cubic yards of stone from 100 miles upriver, and a ship-load of log piling from Oregon, were used in reverting the Yellow River into its old bed. At the peak of this work, nearly 25,000 workmen were employed. To this project the C.I.F.R.C. gave \$360,000. This work was completed in 1923; it reclaimed 200 square miles of flooded farm-land and enabled 250,000 people to return to their homes. But up to this time, it had merely subsidized projects, the work upon which was confided to an engineering firm. As the Yellow River reversion project drew to a close, the Commission decided to organize its own engineering department. The training which its engineering staff received during the Yellow River project in 1923 prepared it for even greater tasks in North and Central China in the 1924 flood emergency.

The heavy rainfall in Hunan, Hupeh and Kiangsi brought the Kan River up to such heights that dykes gave way where they had stood for years, and the delta region north of Nanchang became a great lake. While these floods were on, the Yangtsze River broke through the dykes on its southern bank at Shihchow, Hupeh, and a large tract of fine bottom land was made useless for agriculture. Other sections north of Hankow were also flooded. Peking was visited by the heaviest rainfall for July known in the previous three decades. Water rushed from the mountains of Shansi through every stream that ran eastward to the sea, and Tientsin barely escaped a repetition of the 1917 flood disaster. The result of this unprecedented rainfall was the breaking of the dyke system on practically all the important rivers of Chihli (Hopei), and the inundation of about 10,000 square miles of farm land.

In the winter of 1924-25, the Commission undertook dyke construction work in Hupeh, Kiangsi and Hopei. A special surtax for this purpose was levied by the Chinese Government. By the summer of 1925, the Shihchow dyke, 300 miles above Hankow, had been so carefully rebuilt that it made possible a harvest amounting to \$2,000,000 in the region where floods had destroyed all crops the year before. The cost of this dyke work was approximately \$100,000, to which a small local fund was added to supplement the expenses of earthwork. This dyke, with its stone-faced slope, stands today as a monument to the effective and

timely efforts of the Famine Relief engineers. Up to 1927, the Commission had worked on about 20 flood prevention projects in Hupeh at a cost of over \$1,600,000, half of which was borne by the Commission and the remainder by the provincial authorities. In the spring of 1927, another urgent piece of work was done on the Chang Kung dyke near Hankow at a cost of about \$100,000. In Kiangsi, the Commission's engineers restored many miles of dykes on the Kan and the Fu rivers during 1924 and 1925. This work cost \$200,000, but saved crops worth over ten times that amount and reclaimed land valued at \$20,000,000. In Hopei, dyke reconstruction and improvement ran through 1925 and 1926, costing \$400,000. The Commission's engineers did work which no other organization in the province was prepared to undertake. Long dykes in the West Lake region, 30 miles east of Paoting, and the "Thousand Li Dyke" farther east were repaired and improved. As a result, the crops reaped in the following year in the West Lake region alone were valued at \$5,000,000. Without this new dyke protection, the crops would have been nothing but fish. Within the last twelve years, the Commission has completed a total of no less than 904 miles of dykes.

The road-building programme carried out in North China during 1921 and 1922, and the construction of the Siangtan-Paoking highway, in Hunan, in 1923 gave a great impetus to road building in China. For example, Kweichow had no modern roads at all in the fall of 1926. By the following spring, however, the Commission was able to put a party of competent surveying engineers on the job. Before the end of 1927, 200,000 workmen were employed on constructing 600 miles of standard motor roads through the mountainous region which connects Kweiyang with several other important Kweichow cities.

From September, 1931, to early 1934, the Commission undertook, in co-operation with the National Economic Council and the local authorities, the task of converting the historic Sian-Lanchow cart road into a motor road. It spent \$550,000 in cutting down the worst seven hills on the 480-mile stretch between these two important North-Western cities, and built many culverts and bridges. The Commission also built a 7% graded road over Liu Pan pass (Kansu), which is about 9,000 feet above sea-level. Thus what formerly required 18 days to travel can now be made in three or four days by motor-car. Since its formation, the China International Famine Relief Commission has built 1,993 miles of new roads and repaired 1,296 miles of old roads in fourteen provinces.

CHAPTER VII.

CULTURAL RECONSTRUCTION.

THERE is to Reconstruction a cultural as well as an economic and political side, a scientific as well as an industrial and technical. Indeed, in each case the first may be said to be antecedent to the second; the statesman largely derives his inspiration from the writings of the philosopher; in the machine-shop and the factory the industrialist is only applying what the scientist has already discovered in his laboratory. Thus, in modern China, Cultural Reconstruction has gone hand in hand with economic development. In this, as in other respects, the country has been bringing itself into line with the rest of the world, taking from other countries what seemed best in their civilization, and incorporating these things into, or adapting them to, its own institutions. It is true that the "New Life" movement (which has been already referred to at some length in Chapter II) is very largely based upon old Chinese ideas, but at the same time modern cultural progress in this country has taken inspiration from abroad, and absorbed those ideas which have seemed good and put them to practical use so far as prevailing circumstances have permitted.

This has not been, as is so often alleged, mere Westernization, though to the superficial observer it may seem so. While a great part of the process has been, it is true, the study and reception of Western ideas, this after all was but to be expected, since China has in many spheres—science in particular—so much leeway to make up. At the same time she has been making her own contributions; there has been a literary and artistic renaissance which is peculiarly her own. Western ideas may, of course, have had some influence here too, just as Chinese ideas influenced the artistic world of Europe in the early 18th century, but that does not mean that China's literature and art have not remained essentially Chinese. Again, Western methods of scientific research have influenced Chinese historians and archaeologists, but that has not detracted in the least from the purely native character of their achievements.

It would, however, be wrong to deny the influence that Western ideas have had on the builders of modern China. One cannot over-estimate, for example, the importance of the translation into Chinese at the beginning of the 20th century of such works as J. S. Mill's *On Liberty*, Adam Smith's *Wealth of Nations*, Herbert Spencer's *Study of Sociology*, and Huxley's *Essay on Evolution*. They provided mental stimulus and food for those who ultimately were to destroy the old order of things in favour of the new, preparing the way for the Literary Renaissance of 1916-17, a movement initiated by the professors of the National Peking University, among whom Dr. Hu Shih stood out most prominently. This infiltration of Western ideas may be said to have been the detonating force exploding into activity Chinese energies and abilities, so that they could play their proper part in the international world of science and culture.

Science, in its widest meaning of any form of systematized knowledge, can never be confined within narrow national limits, and in recent years China has been contributing more and more to the international stream. To-day she has many research societies of varying size and importance, both local and national. Of these numerous societies and institutes, the Academia Sinica is by far the most important, but the Science Society of China is the pioneer of China's modern research societies and will be dealt with first.

THE SCIENCE SOCIETY OF CHINA.

The Science Society of China was founded at Ithaca, New York, U.S.A., in June, 1914 by a group of Chinese students for the purpose of promoting general scientific knowledge and increasing interest in technical industry in China. In January, 1915, the first number of its journal *Science* was published in China. The same year the group was reorganized into a society for the general promotion of science, thus considerably enlarging the scope of its activities. In 1918 the headquarters were removed from the United States to China, and offices were established at Nanking and Shanghai, the National Government granting the free use of property in the former city for this purpose. In 1920 a library was founded, while the Kwangtung Provincial Government provided free accommodation for a branch office and library at Canton. In 1922 a biological laboratory was established at Nanking, and in 1923 a monthly grant of \$2,000 was obtained from the Kiangsu Provincial Government. In 1926 the China Foundation allotted the Society a

yearly grant of \$15,000, with a further \$5,000 for the biological laboratory. In 1927 \$400,000 was received from the National Government, and the next year the present headquarters in Avenue du Roi Albert, Shanghai, were constructed. Here the editorial, general offices and library are housed, the laboratory remaining in Nanking. In support of this the China Foundation increased its yearly grant to \$40,000 in 1929, and at the same time made a special donation of \$20,000 to the building fund, thus rendering possible the erection of a new building.

The Society has now over 1,500 members, and engages in a number of different activities, among which are the following:—

1. *Publications*.—These include the monthly journal *Science* (in Chinese); *Transactions* of the Society, papers mainly in English read at the annual meetings; monographs and popular treatises in Chinese for the purpose of spreading general scientific knowledge, and text-books.

2. *Library*.—This now contains some 40,000 volumes, and between thirty to forty people use it daily.

3. *Biological Laboratory*.—This at Nanking is made up of the Departments of Zoology and Botany. Both send out field-workers and are steadily engaged in collecting and classifying Chinese fauna and flora. At the same time indoor research students are engaged in microscopic, dissecting and physiological examinations, recording the results of their observations in papers published by the Society.

4. *Education*.—The promotion of science education has been one of the aims most constantly before the Society. A committee has been set up to investigate the conditions of science teaching in the schools and to devise means of improving them. The series of text-books already mentioned is one fruit of this committee's work.

5. *Public Lectures*.—Regular series of lectures have been given under the Society's auspices for many years at Nanking and Peiping and have been well supported. Lectures by Western scientists who happen to be visiting the country are also arranged as opportunity occurs.

The Society is also engaged on a standardization of Chinese scientific terminology, maintains a Bureau of Scientific Information which answers questions addressed to it, and arranges for the participation of Chinese scientists in international science congresses. Thus from small beginnings it has grown into an important body which has contributed greatly to the progress of scientific studies in China.

ACADEMIA SINICA.

But the Science Society, after all, is only devoted to one particular branch of culture. The idea of a national, centrally directed, all-embracing body to foster and promote every form of cultural activity was one of Dr. Sun Yat-Sen's ambitions. In this, as in every other department of national life, reconstruction may be said to have been inspired by him. In 1924 he advocated the formation of a Central Research Academy as the highest scientific organization in the country, with a view to effecting national reconstruction through scientific studies. A committee of three, one of whom was Mr. Wang Ching-Wei, was appointed to draft a plan, but before this committee could report Dr. Sun's untimely death put a stop to anything being done for the time being. However, his idea was not forgotten, and one of the first actions of the National Government in 1927 was to set up a committee to carry it into effect. In May that year Dr. Tsai Yuan-Pei and Messrs. Li Shih-Tseng and Chang Ching-Chiang were formally instructed to draw up plans for the establishment of a National Central Academy. These three accordingly drew up a constitution for such a body, and as a commencement four institutes were organized. The following year the Academy was separated from the Ministry of Education and placed directly under the Government, its title being changed to Academia Sinica, Dr. Tsai becoming its first President. The number of institutes was increased to fourteen, of which, however, only nine have so far been opened, being as follows:—

(1) Research Institute of Physics; (2) Research Institute of Chemistry; (3) Research Institute of Engineering; (4) Research Institute of Geology; (5) Research Institute of Astronomy; (6) Research Institute of Meteorology; (7) Research Institute of Psychology; (8) Research Institute of History and Philology; (9) Research Institute of Social Sciences.

In addition to these institutes there is the Metropolitan Museum of Natural History and the Bureau of International Exchange.

Each institute operates independently under a Director, and is divided into sections. There are monthly conferences of the whole personnel to discuss and decide general affairs. To co-ordinate the work of the institutes there is a National Research Council, composed of **thirty** scientific experts appointed by the President of the Academy who *ex officio* presides over its deliberations. The Directors of the various institutes are also *ex officio* members of this Council.

For its finance the Academia Sinica depends mainly on grants **from**

the National Treasury. An initial grant of \$500,000 was made in 1928, which was raised the following year to \$1,800,000. Grants have also been received from the China Foundation, as, for example, \$500,000 for the erection of the present home of the Institutes of Physics, Chemistry and Engineering in Brenan Road, Shanghai.

The Academia Sinica does not exist merely to recognize scientific achievement, though from time to time it does confer honours on scholars of distinction. Nor does it act as a teaching body, except in so far as the various institutes train their necessary research assistants. As laid down in its charter, its functions are (1) to carry on original research; (2) to act as an organ for guiding, promoting, and co-ordinating scientific research in China.

Research, indeed, is regarded as its main function, and here the emphasis is on matters practical. While occasional papers dealing with such subjects as "Special Forms of Integrals of Linear Parrial Differential Equations" may be published, its personnel as a general rule is far more occupied with questions such as the qualities of Chinese plant drugs. But an idea of its work will be best obtained from a short account of the activities of individual institutes.

(1) *Institute of Physics (Shanghai)*, This institute devotes itself chiefly to the study of extra-short radio waves.

(2) *Institute of Chemistry (Shanghai)*. This institute has been conducting investigations into the use and value of Chinese plant drugs, into bamboo and other fibrous plants as a source of paper-pulp, into oils, into ceramic raw materials, and into possible sources of raw material in China for the manufacture of glass.

(3) *The Institute of Engineering (Shanghai)*.—With this is associated the National Ceramic Laboratory and the Iron and Steel Laboratory. At the former, problems relating to the general improvement of the ceramic industry are investigated. China clay deposits are examined and methods of glazing etc., experimented with. The latter is giving its main attention to the production of high-grade ferro-stcel alloys.

In connection with these first three institutes a research laboratory for textiles is also to be established at Brenan Road, sponsored by the Cotton Industrial Commission of the National Economic Council.

(4) *Institute of Geology (Shanghai)*.—This institute works in close co-operation with the National Geological Survey, details of which body will be found below. In 1928-29 it sent out three expeditions to survey the

mineral resources of Hupeh, while recently the field staff have been investigating fossil remains and mineral deposits in the lower Yangtze provinces.

(5) *Institute of Astronomy (Nanking)*.—Among other things this institute has been working on the standardization of Chinese astronomical terms, a table for converting Chinese dates into days in the Julian calendar, an official almanac, and an astronomical year-book for the use of Chinese navigators, surveyors, etc. Its Observatory on Purple Mountain is equipped with the largest reflector telescope in the Far East. Mention may also be made of the Peiping Astronomical Museum, where are preserved a number of ancient Chinese astronomical instruments, some dating back over 700 years.

(6) *Institute of Meteorology*.—Weather observations and forecasts form one part of the work of this institute, a daily weather-chart being prepared from reports received from some sixty stations scattered over China, Japan, Korea, Formosa, and the Philippines. It also conducts studies into solar radiation and upper air conditions. In conjunction with the Maritime Customs Service and radio stations, a chain of meteorological stations is being set up all over the country, and students are being trained to serve in them.

(7) *Institute of Psychology*.—A revision of the Chinese edition of the Binet-Simon intelligence tests is chiefly occupying this institute, it having been found that conclusions drawn from tests on children in Kiangsu and Chekiang do not hold good in the case of children in Hupch and neighbouring provinces.

(8) *Institute of History and Philology*.—This institute is divided into three sections:—

(a) *Section of Historical Studies*.—The main business at present of this section is the classification of the Manchu Cabinet Archives, which have been handed over to it. Weighing some seven tons, these papers are in a very disordered and bad condition. A certain amount of individual research is also going on.

(b) *Section of Linguistics*.—This section is engaged in studies of the Indo-Chinese languages, of Chinese dialects, and the development of Chinese symbols and sounds.

(c) *Section of Archaeology*.—Some of the greatest contributions to Chinese culture of recent years have been made by this section. Loyang and Anyang in Honan have long been known for their archaeological

treasures, but no systematic and properly controlled attempt was made to examine the deposits until the expeditions sent out by this Institute. The importance of the finds made here can hardly be over-estimated; they can be compared with those made in Tutankhamen's tomb, and in many respects these tombs are even more important than the famous Egyptian one mentioned, for our knowledge of life in ancient China is relatively meagre compared to what we know of Egypt, and the present finds afford archaeological substantiation of various incidents in China's history. Another expedition has been at work excavating in Shantung. At Lungshan two different cultural strata were unearthed, the lower being distinctly pre-metal. Here again much valuable information as to early Chinese history and culture is being obtained.

(9) *Institute of Social Sciences*.—Four sections dealing respectively with Law, Economics, Sociology and Ethnology make up this Institute. The first is making a study of the jury system, of the legal and juridicial problems of Shanghai and its foreign Settlements, and is conducting a study of individual prisoners with a view to getting clues as to the causes of crime and a basis of facts on which to rest prison reform. The Economic section has been chiefly occupied with a statistical survey of China's international trade, and with the accumulation of population and housing statistics. The third section has been conducting field surveys into conditions at Wusih and Paoting in order to judge the progress of the social and economic revolution which is going on. The fourth section is making surveys of the aborigines of the South, of the tribes of Hainan, and of the "She" people.

The Metropolitan Museum of Natural History was established at Nanking in 1930. It sends out expeditions to collect specimens of Chinese flora and fauna. Up to now these have been sent chiefly to West and South China—Kwangsi, Kweichow, Yunnan and Hainan Island.

The Bureau of International Exchange acts as a depository for foreign Government and science publications received from abroad. It also acts as a distributing agency for books and periodicals to and from China.

THE NATIONAL GEOLOGICAL SURVEY.

This body was organized in 1916 under the auspices of the Ministry of Industry. Its chief work was to be the investigation of the country's mineral resources and the making of geological maps. Of these latter, **three** have so far been issued covering the northern provinces between Nanking and Peiping, on a scale of 1:1,000,000. In addition, a number

of regional maps on scales varying from 130,000 to 11500,000 have also been published in the Society's Bulletin or Memoirs, as, for example, a series covering the Tsinling mountains.

Attention, however, has been chiefly concentrated on the iron, coal, and oil resources of China. The coalfields of most provinces have been surveyed in some detail and their estimated reserves tabulated. Shensi and Szcchuan have been surveyed for oil. Every three years a summary of the progress of mineral survey is published.

A Fuel Research Laboratory was instituted in 1930 in a building donated by the King family, the equipment being purchased with a grant from the China Foundation. Here hundreds of samples of Chinese coal have been examined and classified according to their character, composition, and best method of utilization. At the same time experiments are being carried on in regard to the low temperature carbonization or distillation of coal which yields a good percentage of oil.

Another activity begun in 1931, also with financial help from the China Foundation, is a soil survey, with a view to aiding the agricultural population. A seismic station is also maintained near Peiping.

In conjunction with the Institute of Geology of the Academia Sinica a systematic study of fossil organisms is being carried on. Continuing the work of Dr. Grabau and the early compilers of the *Palaeontologica Sinica*, the workers of the Survey have been able to formulate certain conclusions as to the systematic divisions of the palaeozoic systems which have been a real contribution to science.

To the man in the street, possibly the most interesting of the Survey's achievements has been the discovery of the *Sinanthropus Peinensis*. From 1927 a systematic excavation of a limestone cave at Choukoutien was carried on. First anthropoid teeth and then an incomplete lower jaw were found. Finally complete skulls were dug up. In addition a number of other fossil , ertebrates were collected, which helped to fix the great age of this Peking Man. Quartz and stone implements were also found, along with evidence that the use of fire was known. "I regard the *Sinanthropus* fossils," says Professor Elliot Smith, of University College, London, "as the most valuable and illustrating evidence of man's early history and association that has yet been revealed. . . . The conditions under which the specimens were found, the fact that the remains of several individuals were recovered, and that they provided fuller data than either of their contemporaries in Java and England,

and the thoroughness of the investigations all lent particular value to the work in Peking (Peiping)".

No account of recent cultural activities in China would be complete without reference to the China Foundation or, to give its full title, the China Foundation for Promotion of Education and Culture. This body was established in 1925 to administer the funds of the remitted American share of the Boxer Indemnity. These are to be applied to the promotion of education and other cultural enterprises. The Foundation now maintains some thirty science professorships in various Government universities. It has also established Research Professorships, Fellowships, and Scholarships. One of its major enterprises is the Metropolitan Library in Peiping. Finally, it makes grants for approved purposes to many bodies, to the Academia Sinica, the National Geological Survey, the Science Society of China, the Fan Memorial Institute of Biology at Peiping, and some 20 others.

NATIONAL CENTRAL UNIVERSITY LIBRARY.

Mention has been just made of the Metropolitan Library in Peiping, and a little space must be given to a similar institution in Nanking, where about 150,000 volumes are available for the use of students. The National Central University, the highest institution of learning in China, bears a heavy responsibility toward the educational reconstruction of the oldest nation in the world. There are six colleges—Science, Arts, Law, Education, Engineering and Agriculture. The whole faculty exceeds 250, excluding the administrative staff of approximately 300 members. The total number of students averages about 1,200, and the expenditure of the whole university is met by taxes designated by the National Government as a special education fund, amounting to nearly \$1,500,000 annually.

The University Library has its nucleus in the Government Teachers' College established in 1914 by Han Kuo~Chun, Civil Governor of Kiangsu. In those days the conception of an educational institution was quite different from that of the present time. Almost all the students considered their teachers as "walking encyclopaedias." They carefully took down all their sayings and studied the textbooks word by word without looking further into other authorities. In such an atmosphere the early collection of the library was naturally small, the library being regarded more or less as a museum of valuable or rare volumes, chiefly for preservation purposes. Books were either arranged by size, or by chronological order, or by different kinds of binding, or

by geographical distribution, or by language, or by alphabet, or by subject matter. Generally speaking, the library was in the primeval or first stage of development. It was largely a collection of books which were carefully guarded from casual readers and which could be obtained from the shelves only after careful search.

The reorganization of the Teachers' College into the South-Eastern Government University in September, 1921, brought about such changes in university teaching as to lay a new emphasis on the use of the library. Its importance began to be conceived, not as a luxury, but as a daily necessity, and the books of the library are now as much part of the school machinery as are the various pieces of apparatus in the physical or chemical laboratory. Chi Hsieh-Yuan, Governor of Kiangsu, contributed \$150,000 to cover the cost of a new library building to perpetuate the memory of his father, Chi Meng-Fang. In April 1923, the building was completed, taking the shape of the letter T. It is of concrete and steel construction, faced with brick and trimmed with limestone. It includes a basement and two stories, well equipped with modern heating and ventilation, and with four main reading-rooms, accommodating 350 readers simultaneously.

After ten years the building became too small to serve its purpose, and in March 1933, it became necessary to provide for a new extension. The total cost, including steel shelves, was approximately \$220,000, and the work was completed in November 1933. There is reading room for 1,000 persons in the library at the same time, and more than 300,000 volumes can be deposited in the stack room. At the end of June, 1934, the library possessed 87,331 Chinese volumes and 51,272 foreign books. In addition there are more than 340 current Chinese periodicals and 480 current foreign magazines.

T6E ORIENTAL LIBRARY.

One of the most valuable collections of books and periodicals in China was the Oriental Library of the Commercial Press of Shanghai, which originally intended for the use of the Commercial Press editorial staff, was opened to the public in 1924. At the end of 1931, the Oriental Library contained 286,000 general books in Chinese, 50,000 in European languages, and 30,000 in Japanese, more than 5,000 sets of maps, charts and pictures, Chinese and foreign, and many paintings by ancient and modern Chinese artists. Books of great rarity contributed in no small measure to the prestige of the Oriental Library, and included hand-

copied books, volumes with critical notes made by famous scholars, and many ancient manuscripts. One of the latest acquisitions before the destruction of the building and its contents was the Ho Library of Yangchow, Kiangsu, a collection of 40,000 rare volumes, while a number of volumes of the *Incunabula* of the 15th century were also acquired. Chinese *Gazetteers*, including duplicates dating from the Yuan Dynasty, comprised 25,682 volumes, which were published at different periods by the district and prefectural authorities of 22 provinces. It has been estimated that, up to 1931, altogether 2,081 sets of gazetteers had been issued in China, and of these the Oriental Library had 1,753 sets, leaving only 328 to make the collection complete.

Practically all these valuable collections, many of them irreplaceable, were consumed by fire started by incendiary bombs dropped from Japanese military aeroplanes during the attack on Shanghai in February 1932. Fortunately, a few of the rare editions and the collection of gazetteers, had been taken from the Library to the International Settlement for reference purposes just prior to the Japanese bombardment, but the total number of books, magazines and bound volumes of newspapers amounting to 463,083 volumes, exclusive of 5000 sets of maps, charts and pictures, and the \$100,000 building, were totally destroyed.

In August, 1932, the Commercial Press set about the task of restoring the Oriental Library, and a sum was set aside from the profits of the Company for this purpose, which during the first two years amounted to over \$110,000. The "Oriental Library Restoration Committee" was formed, and on its recommendation, a new policy was adopted. Formerly, though the Library was open to the public, it was controlled by the Commercial Press and mainly catered for the needs of its editorial staff. Under the new policy, the control passes out of the hands of the Company into those of a special committee; and contributions to the Library, either in books or cash, become the property of the Library, and not of the Commercial Press. In recognition of the desire expressed by foreign cultural circles to assist in the restoration, English, American, French and German members have been elected to the Restoration Committee, which now includes only two representatives of the Commercial Press. As an example of friendly foreign co-operation in the cultural sphere, the donation made in September, 1934, by German cultural and educational bodies of a carefully selected collection of German books, consisting of over 9,000 volumes, deserves commendatory

mention. A French donation equally comprehensive is understood to be in course of collection and is expected to be handed over to the Oriental Library at an early date.

THE SUN YAT-SEN INSTITUTE OF CULTURE AND EDUCATION.

This institution was founded as a lasting memorial to Dr. Sun Yat-Sen. Its work includes scientific research, (research and promotion of Dr. Sun's principles and theories, encouraging expert investigation into problems relating to China, and assistance to graduates of Chinese and foreign universities who have shown aptitude in, and are keen on, research-work relating to present-day problems), the organization of first-hand investigations into rural economics and social education, prizes for the encouragement of scientific invention and literary achievements, loans to needy students in Chinese universities, establishment of university chairs to which scholars are appointed to lecture in various universities on Dr. Sun's principles, translation of selected foreign works of a cultural nature, and compilation of social-educational books and periodicals.

The Institute was officially inaugurated on March 12, 1933 (the anniversary of Dr. Sun's death), and active operations were started on April 1 at the provisional office in Avenue Foch, Shanghai. At the end of the first year the staff comprised 54 persons, and the expenditure amounted to over \$110,000. The permanent site of the Institute will be in the Mausoleum Park, Nanking, where 35 mow (about 6 acres) have been allotted as its site. Work on the building has been started, and is expected to be completed in the spring of 1935, but a branch office **will** be maintained in Shanghai after the Nanking headquarters are occupied.

Among the research work which has been put in hand are investigations into the rural economy in Hunan, Kiangsi, Hupeh, Anhwei, and Kwangtung provinces, and local customs relating to the hiring of agricultural labourers. Excluding the Three Eastern Provinces and Jehol (which are under Japanese military occupation) and Sinkiang and Sikang, where there is a lack of competent investigators, **all** other provinces have been covered by local investigators **appointed** through the University of Nanking. Out of 890 hsien to which questionnaires have been sent, 630 have been returned, and **the work of** analyzing this information has been begun. In regard to the investigation of cultivated land, **complete material has been collected from Kiangsu and Chekiang. From other provinces, only data relating to population**

and agricultural areas have been completed, those relating to crops being incomplete.

The compilation of educational books is proceeding apace, while a survey of practical experimental education and social education has been started. In the field of psychological research, a "Philosophy of Life", consisting of about 13,000 words has been drafted, and research made into the division of humanity into races; blood-relationship of different races, migration, political institutions in various ages; comparisons between Chinese and Westerners etc. This work was begun in September 1933. Land and social problems in large cities are under investigation, and inquiries have been made covering 900 factories.

Publications issued by the Institute include a semi-monthly "Current Events", mainly consisting of translations from foreign periodicals, to which statistics on matters of current interest are added. The translation of 20 standard books on natural and social sciences has been decided upon for the first period of three years. Forty Kuo-Min Tang booklets of about 20,000 words, and a dictionary of the "Three People's Principles" is to be completed within the next two years, the latter to consist of about 1,000,000 words, while a biography of Dr. Sun Yat-Sen is in preparation. A series of 39 Reconstruction Books is to be completed within the same period. These volumes will deal with Communications (railways, harbours, highways, waterways, telegraphs), expansion of national wealth (development of motive power, mining, improvements in agriculture), industrial establishments (key industries, transportation services, and people's livelihood). Another series of 30 books, well illustrated and written in simple language, will assist the masses to realize the tendencies of the present age and acquire elementary scientific knowledge.

The organization of survey parties is another branch of activity engaged in by the Institute. An expedition to Chinghai has been subsidized and deputed to collect materials relating to culture and education in the frontier territories. An investigator was despatched to Sinkiang in August 1933, to investigate frontier conditions relating to race, culture, religion, nomadism, and foreign relations; this work is still going on. About \$4,000 have been given by the Institute as prizes for essays dealing with rural reconstruction and natural science. The Library specializes in the collection of maps and books relating to water conservancy, frontier territory, and local gazetteers.

CHAPTER VIII.

THE LAW AND ITS ENFORCEMENT.

T UNTIL the close of the nineteenth century Chinese conceptions of law and government were, in the main, those laid down by Lao Tze and Confucius in the fifth century B.C. Briefly, the theory of Lao Tze was that the more restrictions and prohibitions there were, the poorer the nation would become. The more mandates and laws there were, the more thieves and robbers there would be. The mere fact that it was necessary to establish a law and enforce it, was evidence that the proper principles of good government had failed to achieve their object. To secure justice and establish rights by punishing the unjust and wrong-doers was regarded as being like taking poison to recover one's health (which of course is precisely what is done nowadays). The ancient Chinese philosophers were of opinion that the people should be allowed to work out their own salvation; thus, the less interference by officials the better. "The more laws, the more law-breakers" expresses the old Chinese outlook on social affairs, and the theory was that the ideal government could be established more effectively by good example rather than by the rules and regulations known as "law", which were regarded as oppressive, and therefore dangerous, measures. Here is an interesting opinion by Shu Hsiang, a statesman of the ancient school in China:—

When the people know what the exact laws are, they do not stand in awe of their superiors. They also come to have a contentious spirit, and make their appeal to the express words, hoping peradventure to be successful in their argument. They can no longer be managed. When the government of Hsia had fallen into disorder, the penal code of Yu was made; under the same circumstances, the penal code of Tang; and in Chou, the code of nine punishments. Those three codes all originated in ages of decay. And now in your administration of Ching, you have made [your new arrangements for] dykes and ditches, and you have established [your new system of] governmental [requisition], which has been so much spoken against, and you have framed this imitation of those codes, casting your descriptions of

[crime and their] punishments:—Will it not be difficult to keep the people quiet, as you wish to?

What need is there for any code? When once the people know the grounds for contention, they will cast propriety away, and make their appeal to your descriptions. They will be contending about a matter as small as the point of an awl or a knife. Disorderly litigations will multiply, and bribes will walk abroad. . . . I have heard the saying that when a State is about to perish, there will be many new enactments in it. Is your proceeding not an illustration of it?

The first written code of law was that of Tze Chan, the great statesman of Cheng, who, in 536 B. C., published a penal code by engraving it on a sacrificial caldron. This was severely criticized by the conservatives of the time as tending to encourage law-suits and to cause the ruin of the nation. Other States took up codification, but it was not until the latter part of the fourth century B. C. that there was a conscious recognition of the advantages of government by law, and not until the third century that a definite legalistic school grew up under Han Fei and Li Sze, the latter of whom became the first Prime Minister of the First Emperor of Tsin.

Han Fei emphatically denounced the Confucian doctrine of modeling after the ancient sage-rulers, holding that conditions changed with time, and action to be taken differed with the change of conditions. He criticized the Confucian theory of government by *Li* on the ground that it was no longer adequate to meet the needs of the times. There were no means of enforcing the rules of propriety which, in consequence, were applicable only to the few who, however, would always be good even in the absence of law. He advocated the use of law both as an effective check on arbitrary personal rule and as a progressive instrument for effecting timely reforms. He was the first theorist of constitutional government based on law, realizing as he did the universality and objectivity of law as opposed to the vagueness of personal virtue and institutional control. The Confucian Doctrine of Names was seriously hindered by its traditional disregard for results, whereas the Legalists were pragmatic in their method. They realized that government by non-assertion could not be brought about by starting with non-assertion. It was only through the instrumentality of law that a stage would be reached when "laws stand unused, and penalties are never actually imposed on the people" (*Kuan Tze*, Bk. LIII.).

But unlike his colleagues, Han Fei's conception of law was **not** a static one. He was impressed by the notion of progress which, since the second half of the fourth century, had been influencing the thought of the time. He considered that each stage of cultural development accomplished the work most necessary to the life of the period, **and** for a later age to repeat the crudities of an earlier period was ludicrous. "A wise man never expects to follow the ways of the ancients, nor **does** he set up any principle for all times. He studies the conditions of his time and then devises his measures" (*Han Fei Tze*, Bk. XLIX.). **And** the test of the efficacy of law lies in its ability to meet the practical needs of the time.

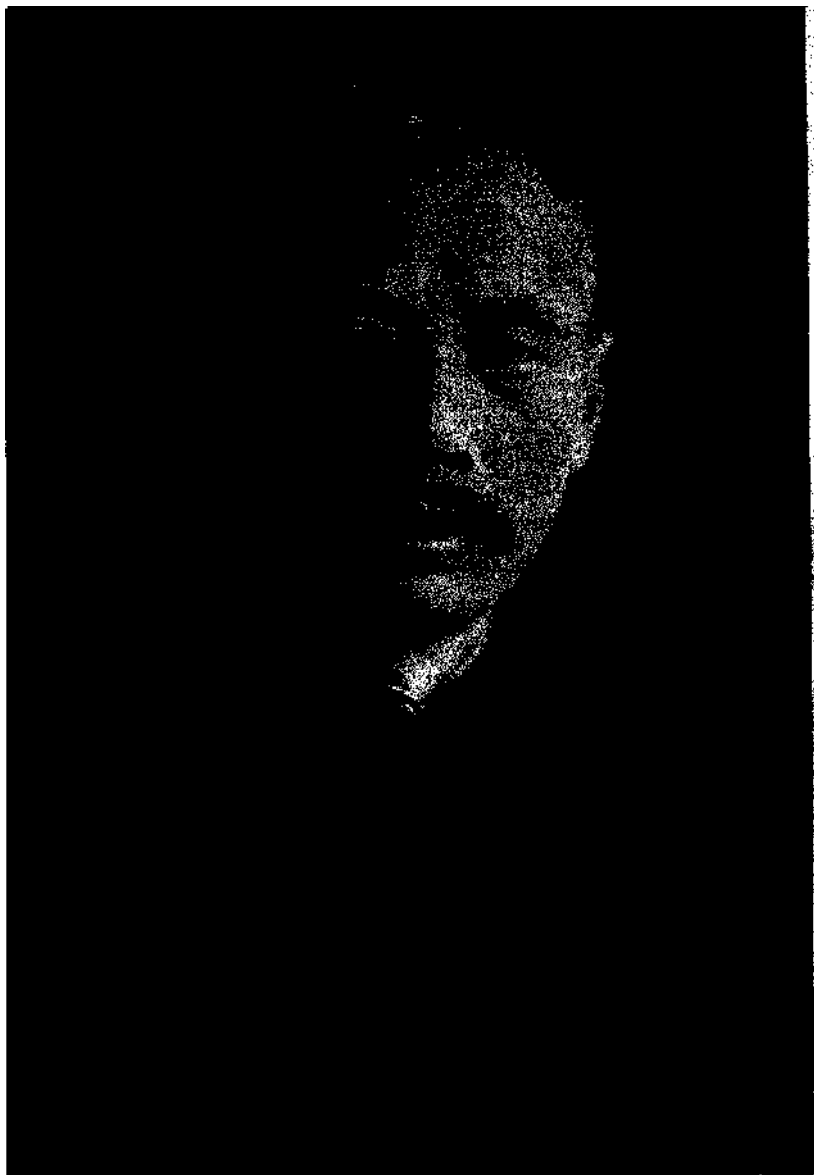
Space will not permit any further historical review of the development of law in China, and it must suffice to say that until about fifty years ago popular opinion was still very largely influenced by Confucian ideas, but has been since tending towards the theory of Han Fei that the law must be impersonal and progressive.

THE JUDICIAL YUAN.

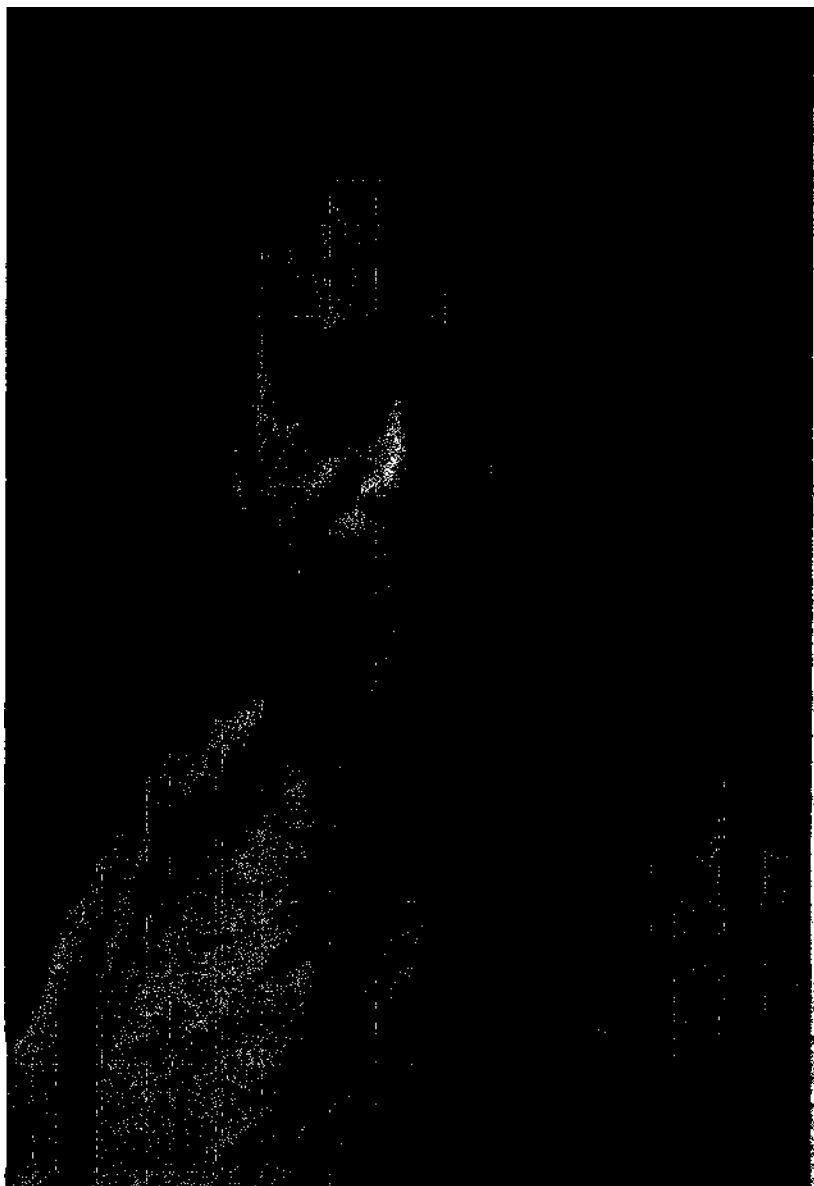
The Judicial Yuan is the highest judicial organ of the National Government, and its duties are threefold: Final civil suits are handled by the Supreme Court; administrative suits are vested in the hands of the Administrative Court; while impeachment suits are taken care of by the Commission for Disciplinary Punishment of Administrative Officials.* Though exercising their own duties, these three organs are under the direct supervision of the Judicial Yuan.

Supreme Court—This is the busiest judicial organ in the country as it has to deal with appeals from the lower Courts on points of law as well as appeals from the provincial High Courts. In the winter of 1932, the Judicial Yuan summoned 16 Presidents of provincial High Courts and Presiding Judges to Nanking to help liquidate pending cases. After nine months' efforts, more than 4,000 appeals were reviewed. Meanwhile, the new building of the Supreme Court was completed in July 1933, which added much impetus to the work of the Court. **The** budget was subsequently increased, and one Civil Division as well as three Criminal Divisions were added to the Court, which made a total of five Civil Divisions and seven Criminal Divisions. Since the addition of these new Divisions, more than 12,000 civil appeals have been **heard**.

•Impeachment of political officials, such as Ministers, is by the **National** Government itself.



CHU CHENG
President of the Judicial Yuan



Yu YU-IEN
President of the Control Yuan

Compared with the figures of the last three years, the number would be a monthly average of 600 cases upwards in 1931, a monthly average of 800 upwards in 1932; and an average of 1,200 cases upwards in 1933. The 1934 average is 1,300 or more a month, which doubles that of 1931.

Administrative Court:—This Court was established in June, 1933, Simultaneously with the inauguration of the Administrative Court was the promulgation of the regulations governing administrative procedure and regulations governing fees for administrative suits. Citizens who do not agree with the punishment inflicted upon them by Government offices may appeal to the Administrative Court, the latter charging no fees for the hearing. Since its inauguration, this Court has received about 210 appeals and held more than 160 trials. About 80 verdicts were granted in favour of the plaintiffs, while the rest, about 130, were rejected.

Commission for Disciplinary Punishment of {Administrative} Officials:—Following the inauguration of this Commission in June, 1933, similar local Commissions have been established in 18 provinces and three special municipalities. The object of the commissions is to try offences of officials not provided for by regular laws. The Central Commission consists of a Chairman of "Special" (*Teh Jen*) rank, and 11 to 17 members, 6 to 9 of whom are specially appointed, the rest made up by Judges of the Supreme Court. The local Commissions consist, in the case of the province, of the Chief-Justice of the Provincial High Court as Chairman, and from 4 to 6 Judges as members, and in the case of a special municipality both chairman and members are drawn **from** the District Court. Disciplinary action against central and local Government officials of the "recommended" and "selected" (*Chien Jen* and *Tsien Jen*) ranks is decided upon by the Central Commission, while the local Commissions have charge of local government employees of "delegated" (*Wei Jen*) rank. Over 250 cases have **been** handled by the Central Commission since its existence. Among these, judgment for 90 cases upwards were passed in 1934. About 80 **per** cent of the impeachments were referred from the Control Yuan, the rest from other Government organs.

In addition to these judicial duties, another important activity of **the** Judicial Yuan is the interpretation of Laws and Ordinances. This **power** is to be exercised in accordance with conclusions reached in **plenary** sessions presided over by the President of the Judicial Yuan and attended by the Presiding Judges of its various divisions. Over 140 of

such interpretations of laws were made during 1934, the total since the establishment of the Yuan being well over 1000.

THE CONTROL YUAN: A UNIQUE BODY.

The division of administrative authority in the Republic into five independent Powers, as is done by the present Kuo-Min Tang regime, is a novel system of political administration, and the Supervisory or Control Yuan—one of the five Powers—has no parallel in foreign countries. The Control Yuan represents the highest supervisory authority in the country. Its functions are to impeach malfeasant officials and to audit official accounts according to law. The Control Yuan is headed by a President and a Vice-President in addition to from 29 to 49 members who may not hold any concurrent posts in other Government organs. The function of impeachment is performed by the President of the Yuan after obtaining the consent of the President of the National Government.

Auditing and impeachment are the principal functions of the Control Yuan. It may make enquiries at any Government organs and public bodies, and investigate the files and records of such organizations. When an examination is held by the Examination Yuan, Control Yuan officials supervise the examination. The Control Yuan often receives written reports from private citizens, complaining of the conduct of Government officials. Acting on such reports, it delegates provincial governments and other public organizations to make investigations. Whenever necessary, special representatives may be despatched to investigate. Investigations may be extended to cover judicial and reconstructive as well as administrative activities in various provinces and municipalities. From October 1933, to October 1934, the Control Yuan investigated over 1,140 cases of alleged official malfeasance. These include accusations brought by private citizens, suspicions by officials of the Control Yuan, and matters affecting life and property, such, for instance, as the overflowing of the Yellow River. Investigations are conducted through various channels, sometimes through the Central Government, or through provincial governments, at other times by special agents of the Control Yuan. In some instances, the President of the Control Yuan appointed certain members of the Yuan personally to make investigations. Most of the investigations conducted during the past year were made through provincial governments on charges brought by private citizens. Where investigations proved the innocence of the accused officials, no punish-

ment, of course, was imposed, but in case of serious violation of law or neglect of duty the result was naturally impeachment. In minor cases, the delinquent officials were merely reprimanded by the superior officials concerned without further action by the Control Yuan.

THE LEGISLATIVE YUAN.

The Legislative Yuan, consisting of from 49 to 99 members who are debarred from holding any concurrent posts, was formally established on December 5, 1928, and began its great task of law-drafting for the Republic. The work was undertaken in earnest, and in two years (1928-1930) a number of important laws were enacted which the Peking regime had failed to do in 16 years. Among the laws promulgated by the National Government were the following: The Civil Code, the Nationality Law, the Negotiable Instruments Law, the Company Law, the Maritime Trade Law, the Insurance Law, the Labour Union Law, the Factory Law, and laws relating to the self-government of districts, villages and towns. The most important work now in hand is the drafting of the Permanent Constitution of the Republic.

The two-year session, ending in 1934, in addition to handling the routine business of receiving reports from Committees and of disposing of Bills referred to it by the various Departments of the Government, has enacted a number of laws, three of which are of general interest. The Military Service Law, promulgated on June 9, 1933, provides that every male citizen of the Chinese Republic between 18 and 45 years of age is liable for military service. An elaborate set of laws concerning co-operative societies was promulgated on March 1, 1934. The Encouragement of Industries Law was promulgated on April 20, 1934, which may be an effective means of promoting domestic industries. A number of important laws are still in the committee stage. They have been prepared by committees in charge of the drafting and are now ready for presentation to the plenary meetings of the Yuan for final reading and adoption. Among these are the new Penal Code, which will be a radical revision of the Penal Code of 1925 to bring it into harmony with the Civil Code, the Penal Procedure Law, the Civil Procedure Law, the Bankruptcy Law, and the regulations governing the application of the Land Law.

ADMINISTRATIVE JURISPRUDENCE.

Administrative jurisprudence, in the modern sense of the term, had its beginnings some twenty years ago. The first regulations providing

for adjudication of administrative cases were promulgated in the 3rd year of the Republic (1914), under which a High Administrative Court, functioned as the Court of Final Appeal, and remained so until the seat of the National Government was transferred from Peking (Peiping) to Nanking, when new regulations were promulgated, providing for an Administrative Court known as the "Hsing Cheng Fa Yuan", which has jurisdiction over all administrative cases in China, and functions as the Court of Final Appeal. The personnel consists of a President—who also serves as Chief Judge of one of the several branches of the Court—and the Court Secretaries. Each branch is composed of five administrative Judges, who must have served as public officers of the second rank under the National Government for more than two years. In other words, they must be trained and experienced in public administration: they must be over thirty years of age, and, furthermore, two of the five Judges must have had experience previously as Judges of ordinary Courts, and thus trained in ordinary private jurisprudence.

The right to sue in the Administrative Courts is limited to private individuals, and private juristic persons. Officials, or Governmental functionaries cannot be plaintiffs—they can only be defendants. The grounds upon which an administrative case can be based are illegal or improper acts on the part of public functionaries, by which private rights or benefits are directly infringed upon. The redress sought by plaintiffs in administrative cases is usually the revocation or cancellation of the illegal or improper acts of public functionaries: restoration of the *status quo ante*, and, where restoration is impossible, pecuniary damages. Where individual members of the Government are guilty of criminal acts, they are handed over to the ordinary Criminal Courts, after adjudication of the administrative controversy.

The laws applied by the Administrative Courts are divided into substantive laws, and procedural laws, and are some nine in number. It may be remarked that during the last twenty years, through the explanatory orders of the Ministry of Justice, as well as of the former Supreme Court, a body of administrative jurisprudence has been developed which guides the Judges of the Administrative Courts in **their** decisions, and serves as helpful material for students of administrative jurisprudence. In making Government functionaries liable for injuries to private individuals, **and** in subjecting administrative **controversies** to administrative **tribunals**, China has gone a long way in perfecting

both systems—administrative and judicial. The old maxim that "the King can do no wrong," and is immune from legal proceedings, has long ago gone by the board, so far as China is concerned. The separation of administrative from judicial Courts is, however, not peculiar to China. Although in the United States and Great Britain, officials and governmental agencies are, under certain circumstances, subject to the jurisdiction of ordinary judicial Courts, many administrative Boards and Commissions, delegated with the requisite powers, are adjudicating and deciding administrative controversies. In Europe—in France especially—the system of separate administrative jurisprudence and tribunals is most highly developed, from which the authors of the Chinese system undoubtedly derived their inspiration.

INTRODUCTION OF MODERN POLICE SYSTEM.

Having given a very general outline of the legal machinery which is being built up for the better protection of the people, something must be said about the measures taken to see that the law is enforced and the public peace preserved.

The word "police" designates the civil executive force of the State—in distinction to the military—which is charged with the functions of maintaining public order and peace, preventing infractions of the criminal law, enforcing positive regulations of the State, and, when crimes have been committed, apprehending or assisting in the detection of the offender. The institution of the police as an organization deriving its authority from the State to enforce observance of law and order has existed from early historic times. The Egyptians, Greeks, and Romans had their police systems, and China, too, had her peculiar national system of no less antiquity. Based upon an innate love of peace the genius of the race for self-government in the *hsien* and villages, under the patriarchal authority of the elders, brought into being a system whereby the little units of society, such as the family, the clan, and the village groups, took upon themselves the task of preserving communal peace, and rooting out violators of law and morality from their midst. In China, it must be remembered, a very rigid moral code existed as unwritten law; while between law and morals hardly any line of demarcation could be drawn, breaches of either being visited with appropriate penalties. That the ancient system adequately fulfilled **its** purpose there is little doubt. Despite flood, famine, pestilence and **other natural** calamities, mis-government and civil war, the even tenor of

China's national life has gone on century after century without perceptible interruption. This ancient system of peace-preservation, however, could not survive the disintegration of the old order and its gradual supersession by the new which followed this country's contact with Western civilization. This is especially so in the river-ports and cities on the coast, where the wedges of foreign influence were driven most strongly into the body of China's social fabric.

To meet the needs of changed times, the police system in China as we know it to-day was introduced a little over thirty years ago. It was basically an importation from the West, or rather, the Western article as seen through Chinese spectacles. Introduced at first as an experiment by the Governor of Hunan Province, Chen Pao-Tsen, in the provincial capital Changsha in 1898, it was discontinued three months after its inception when the *coup d'etat* occurred in Peiping. Two years later the Boxer trouble arose, and after the combined armies of eight foreign countries had entered Peking, they set up a body to preserve peace and order in the city, appointing a number of Chinese as policemen, or "hsiin pu".

This peace preservation organization was called "An Min Kung So" (Peace Preservation Guild), subsequently renamed "Kung Hsun Chu".

When peace was restored in 1901, and the foreign armies withdrew from Tientsin, Yuan Shih-Kai, the then Viceroy, could not fail to appreciate the merits of the system which the foreigners had introduced, and he secured Imperial sanction to retain the system, which was accordingly reorganized as the "Hsiin Ching Chu" for a trial at Tientsin. The experiment turned out quite a success; and, in the same manner as the proven merits of the London Metropolitan Police system, inaugurated by Sir Robert Peel in 1829, led the English legislature to extend it in 1840 throughout the country, so an Imperial order bade all the provinces follow the Tientsin model.

The need for centralization of control in order to harmonize the provincial systems and bring about better collaboration logically caused the Government to establish a new body in 1905, as a Department of the National Administration, which adopted the name suggested by its Tientsin prototype—"Hsiin Ching Pu" or Constabulary Board. This "Hsiin Ching Pu," it is interesting to note, is the historical predecessor of the present-day "Nei Cheng Pu" or Ministry of Interior. From its inception the "Hsun Ching Pu" was recognized

as essentially an organ for preserving peace and order within the borders of the Empire, in other words, for the administration of affairs of the interior. Therefore the desirability of adopting a terminology more accurately descriptive of its functions induced the Government to change the title of "Hsun Ching Pu" to "Min Cheng Pu" or Board of Civil Affairs, which again was changed in the first year of the Republic (1912) to "Nei Wu Pu" or Ministry of Interior Affairs. The present name "Nei Cheng Pu," Ministry of Interior Administration, or Ministry of Interior, was adopted in 1928, on the unification of China under the Kuo-Min Tang.

From this brief history it is clear that the present police organization of this country was originally modelled on the system in force in the Foreign Settlements. The Tientsin organization, from its very *raison d'être* was military in style, and naturally the institutions set up in the provinces after this model also had a strong military flavour. It was not entirely without significance, therefore, that the Nanchang Constabulary was at the beginning called the "Hsun Ching Chun" or Constabulary Army, and placed under the control of the Military Board of the Central Government.

After the centralization of control in 1905 through the establishment of the supreme controlling body, the Constabulary Board, as a branch of the Executive, a number of reforms were introduced from time to time. These were merely imitations of various systems abroad, among which Japanese, German and American influences were predominantly apparent. The police organizations in the municipalities, for instance, were in imitation of the United States model. The innovations introduced, however, were rather haphazard in nature, and, it would seem, according to the personal whim of the head of the Board at the time. The inevitable result, therefore, is a hodge-podge of practices which do not fit into a general scheme, and which may be described as a synthesis of both East and West, not only unsuitable for the use of the whole country, but also unfit to be adapted to any particular place in the country or for any particular purpose. The hybrid character of the pedigree of the police organization is demonstrated by the fact that considerable difficulty was experienced even in standardizing the nomenclature of the body and its members. Thus the constables were first called "hsun ching" which was altered to "hsun cha" and ultimately to "ching cha" while the police office was variously

named in different places, such as "Ching Cha Chii (警察局)", "Ching Cha So" (察警所) "Hsun Ching (巡警局)", "Kung An Chu" (公安局), and so on. With the exception of the "Ching Cha Ting" (警察廳), Constabulary Bureau, in existence at Nanking, "Kung An Chii" is the name now in current use for police bureau.

In view of these facts, the need for reforms is therefore obvious. Police training methods leave much to be desired. Specially trained men represent only a small percentage of the whole force in existence to-day, so that emergencies often arise and are mishandled by the poorly-trained majority because they lack the necessary knowledge as to how to cope with extra-ordinary situations.

POLICE TRAINING METHODS.

Three grades of police education are provided in China. The highest is that of the Police Officer High Grade Academy, established by the Ministry of Interior in 1920, which, from that time till the end of 1932, graduated 1,887 officers, who have passed into the service of the national police force. In addition, 559 men have graduated from the Hygiene Class (which is part of the General Course), and from the Special Course in which training is given in the art of crime detection, use of police-dogs, electricity, construction, etc. There are also 332 finger-print experts. This Academy was located in Peiping, but has recently been removed to Nanking, where it will be used as the medium for effecting reforms in the national police organization through improvements in its scheme of instruction. The Academy will then serve as a model for the secondary institutions described below.

Next in grade come the Provincial Police Officer Academies, which are counterparts of the Ministry's own institution, and serve the needs of their respective provinces. The number of those who have received officer and detective training from these Academies is 2486. Formerly, fifteen of such Academies were in existence in various provinces; but partly through financial difficulties, and partly through doubts entertained by many provincial authorities as to their practical utility, eleven of them have become moribund, and only four continue their activities as before—those in Chekiang, Chinghai, Shantung, and Yunnan respectively.

Finally, there are the Police Training Depots, of which there were formerly 198, now reduced to 144. The number of trained policemen turned out by these depots to date is 48,841.

In the whole country, therefore, the total number of those who have received police education—advanced, elementary, and technical—is, in round figures, 5,000 high-grade academy officers and 50,000 constables. The entire police force of the nation, according to latest figures, is 18,835 officers and 172,837 men, making a total of approximately 190,000 of all ranks. This means that the proportion of trained officers and men to untrained is approximately 25 and 35 per cent respectively—appallingly low percentages. Indeed, there is no better tribute to the Chinese people's characteristic love of peace than is afforded by these statistics,—that such an utterly inadequate and poorly-trained number of peace agents should experience so little difficulty in preserving the country from serious disturbances and disorder, except only such as have been engineered from time to time by "bad hats" under the pay and instigation of political agents of a certain country.

FURTHER REFORMS NEEDED.

Nevertheless, one cannot remain complacent in the face of such disquieting figures by comforting oneself with the reflection that what has been perfectly satisfactory up to to-day will be equally satisfactory to-morrow. The country now faces an unprecedented peril from without. Every now and then situations arise which were calculated to throw another wrench into the machinery of the Chinese Government no sooner has it mastered one crisis and got things running smoothly again. Moreover, as the forces of conflicting Eastern and Western cultures come increasingly into play with the development of closer relations between China and Occidental nations, it may be expected that the growing artificiality of society will bring in its train the concomitant evils of ultra-civilization which we see in European and American cities.

But what are the most pressing reforms needed, and how are they to be effected? It is obvious that the entire organization should be overhauled from top to bottom, and that there should be no hesitancy or indecision in scrapping and discarding entirely such unsatisfactory practices as do not fit into a general comprehensive scheme, under centralised control. It is equally obvious that the powers and duties of the various sub-departments should be clearly defined and understood by them. A well-marked division of labour will necessarily increase general efficiency, as well as prevent diffusion and waste of energy. A complete scheme should be mapped out and a table compiled of the things a policemen should know. Such a basic need is evident.

In proceeding about the task of reform, certain general principles have to be borne in mind. Firstly, the fundamental laws of the Republic guarantee to all citizens full individual liberty, within the prescribed limits, of course; and the perfect police system will aim at preserving the full liberty of the citizen, curbing it only when liberty degenerates into license. Another principle, which really is a development of the former, is that no form of oppression should be tolerated. In various countries, even in this modern age, the police have sometimes become a sort of tool of oppression, justifying the saying of Chateaubriand, "*La police par sa nature est antipathique a toute liberte*" That evil should be avoided, because the usual reaction to oppression is contempt for legal restraints.

Slavish imitation of any foreign system should be scrupulously eschewed. Just as certain political institutions which have attained eminent success abroad may not necessarily be suitable for this country, so also the merits of any particular police organization in its own home should by no means displace our independent judgment as to its workability here. For instance, the German Constabulary Schools, which have a conspicuously martial character, resembling Military Academies, cannot be copied in China. These institutions are peculiar to Germany, and are to be accounted for by political reasons, because that country, restricted by the Versailles Peace Treaty to a very limited standing army, has sought to make up for that serious disability by adding military instruction to police education, so that the police could be called out as emergency reserves in case of need for national defence. It is up to the authorities of this country to study the various systems in force abroad, and to evolve therefrom a synthetic system applicable to the special social, economic, and political order existing in this country. Pier-meal reforms should be severely discouraged; and every innovation should be introduced only after its practical worth and harmony with the general scheme have been tested and proved.

CHINA'S SPECIAL REQUIREMENTS.

In such tests it will be useful to heed the following points. Firstly, every suggested improvement should be studied, not subjectively, but objectively in relation to its practical utility in this country. For instance, in Western countries, city and village police forces are merely counterpart organizations, almost the only difference between them being their size. In China, on the other hand, while city life resembles that

elsewhere, requiring policing on Western lines, in the villages there has been no need for constables because the villagers are a closely-knit body in which no law-breaker can find sanctuary without being found out and handed over to justice. Communal life in the villages is in this respect unique in China. A regular police is superfluous, because organizations already exist for the maintenance of order. Investigations of households can be made through the ancestral halls, while defence of the villages is in the hands of local volunteer corps. This demonstrates that we cannot follow the example of other countries in every respect and have police in every place, whether necessary or not, just because such is the case abroad, nor, again, should we engage 20 policemen simply because other countries have that number for similar areas.

Secondly, it is imperative that one defect in the Chinese system of police training should be eradicated. It has been usual for policemen to be trained at one provincial depot and then drafted for service in another province, with the result that their usefulness often becomes purely hypothetical on account of their unfamiliarity with their new surroundings. Thus, during reorganization of the Metropolitan Police, many policemen were transferred from Peiping to Nanking, and after the cessation of the Sino-Japanese hostilities in Shanghai in 1932, Tientsin police were sent to that city to take over control of certain areas, but the results in both cases were far from satisfactory. There is little doubt that the Peiping and Tientsin police were handicapped by unfamiliarity with the local conditions of Nanking and Shanghai respectively. Indeed, policemen of marked efficiency in their own districts often turn out failures on transfer to new surroundings. It is imperative, therefore, that for effective policing only men thoroughly acquainted with their districts shall be employed. In the matter of precise and profound knowledge of their own "beats," the London Metropolitan Police have earned a most enviable reputation—an example which the Chinese police may with great profit emulate.

PRACTICAL TRAINING IN PROBLEMS.

In order to spread the requisite minimum of police education among the numbers who have not had the advantage of passing through the Government training depots and officer academies, a suggestion worthy of serious consideration is that, apart from their regular duties[^] they shall be required to attend lectures at least once a week, when the authorities can deliver a comprehensive course of instruction covering

methods of coping with divers emergencies and other topics about which a vast lacuna exists at present. Theoretical knowledge garnered from text-books, however extensive and authoritative, can be of little value unless capable of practical application. Therefore, lectures in which practical problems are presented, with the solutions thereto, will meet a real need to a great extent by preparing policemen to meet similar situations. Some months ago it was reported that experiments were being conducted in Great Britain to test the effectiveness of policemen in assisting the work of the fire-brigades—not, be it noted, in actual fire-fighting, but in preserving order and facilitating the work of the fire-brigade. This is a commendable innovation, well deserving of attention. Again, the problem of organizing police-boxes in the most effective manner for serving the public interest is one which will resolve itself when tackled in a practical manner by actual experiment. In conclusion, all ranks should be encouraged to offer suggestions for the improvement of police organization and administration; and appropriate rewards, in money or promotion, given in cases of merit. Such practice is widely current in Western countries, and could be followed in China with great advantage.

CHAPTER IX.

THE BANKING SYSTEM.

ACCORDING to tradition, as far back as 2000 B.C., the Chinese Government was maintaining provident institutions which advanced sums to the public at comparatively low charges for productive purposes, and without any charge at all for the proper observance of religious rites and ceremonies, as marriages and, in particular, funerals. The business of money exchange has always been a prominent feature of Chinese economy; the cash-shop must have been the earliest of China's financial institutions. Some of these shops with an established family tradition for trustworthiness began to act as depositories for the public, somewhat in the same way as the London goldsmiths in the 17th century, and from that it was a short stage to putting the money thus entrusted to them to profitable uses, as lending it out at interest to those in need of funds to finance their business undertakings.

Meanwhile the Government in 806 A.D. invented "Fei-Chien"—"flying money" the first letter of credit. It issued to traders travelling from one part of the country to another notes which were redeemable in cash on presentation at any provincial treasury. Later there came a further development—the public was enabled to buy sight drafts at provincial treasuries at 2% commission.'

THE SHANSI BANKS.

Thus to some extent the troublesome business of transferring money from one part of the country to another was facilitated, but up till the 18th century distance payments were still generally effected by the transport of specie under armed escort. Professional organizations, known as "Piao Chu" existed, whose concern it was to do this. It was a slow, cumbersome, and often risky method, for the routes in many cases led through bandit-infested areas. The convoys, it is true, usually got through, but mainly by reason of an understanding maintained by the Piao Chu with the bandit leaders—an understanding which naturally increased considerably the cost of their services. However, about the middle of the 18th century, a merchant of Shansi, Lai Li-Tai

by name, who was engaged in trade between Tientsin and Chungking and had to transfer cash frequently from one place to another, started a system of draft remittances. The name of his firm, Shih Sheng Chang, rapidly became known, and other traders soon found it convenient to make use of the facilities offered, paying in their money at the Tientsin office and withdrawing it at a slight discount at Chungking, or vice-versa.

In this way the group known as the Shansi Banks developed. Within ten years there were over thirty engaged in the same business, with offices in all the important trading centres in the provinces. They were divided into three groups, the Ping-Yao, Ta-Ku, and Chi-Hsien, and their activities expanded rapidly. At first mainly concerned with inter-provincial remittances, they began to accept deposits, to act as money-lenders, and to finance inter-provincial business undertakings. Capitalized at about Tls. 100,000 each, their deposits amounted to millions, and the annual volume of business handled exceeded ten million dollars. Depositors received very low interest, from 2 to 3 per cent, but borrowers were charged from 10 per cent up. They made huge profits assisted by the fact that in all but name they came to be Government banks, taking charge of Government funds, putting paper currency into circulation, and being given first option on any precious metal coming into the market, so as to enable them to build up a bullion reserve. They engaged in all kinds of banking business, but specialized in the transfer of money, being organized in a uniform and centralized system with head offices at Taiyuanfu and branches all over the country. The internal organization was simple. There were no directors or auditors, merely a manager acting for the owners who had absolute control, though he naturally took advice from senior assistants and branch managers in the matter of granting loans, which were extended solely on the basis of personal standing and business rating. As long as the manager was reliable, trustworthy, and of sound judgment, the system worked well, though the risk was great. In boom years big profits were made, but when hard times came there was a rapid decline. Then came the diversion of Government funds and business to the Bank of China and Bank of Communications at the beginning of the present century, and then came the Revolution in 1911, followed by a crash which caused the majority of these banks to disappear. They were loaded with credit they could not collect, and on top of this many managers absconded in the confusion with such liquid assets as were available.

"NATIVE" BANKS.

Though the original Shansi banks disappeared, other banks had grown up under their tutelage, some of which survived. The Shansi banks had welcomed the appearance of local banking firms to which could be left the task of financing local business, they themselves being chiefly concerned with inter-provincial trade. These "native" banks retain to this day their local character, and perhaps the best way to get an insight into their working will be to examine those of some typical business centres. Three such have been chosen, viz., Foochow, Canton, and Shanghai, and will be dealt with in that order below.

Foochow.—The native banks in this city date back about 100 years, to the time when foreign merchants first began to come in numbers to the port to buy tea. These brought with them large quantities of silver currency, and at the same time mutilated coins flowed in from Canton, with the result that metallic money became inconveniently abundant. To deal with this situation banks were established, whose notes replaced the metal coinage. These notes are even to this day preferred by local merchants, since they are the chief circulating media.

It is with these note-issuing banks that we are mainly concerned. There are a number of other smaller institutions, known as "Chien Yang Tien" but they operate on a small scale with little capital, from two to three thousand dollars each. Their main business is local changing—that is small silver and copper coins for dollars and vice versa. On the 2nd and 16th day of every month notes and silver dollars are in demand, and the exchange-shops accordingly raise the price of dollars; at other times small money is in demand and the price of dollars is lowered. In this way they make considerable profit, and it is said that if a man were to change a dollar into small money and then turn the small money back into dollars, repeating the process at every Chien Yang Tien between Nantai and Nan Ta Chieh, a distance of three miles, he would have nothing left of the original dollar! These smaller concerns also make small loans, ranging from twenty to a hundred dollars, to small merchants and street vendors.

Of the note-issuing banks there are about 45, with capital ranging from fifty thousand to several hundred thousand dollars. Each issues its own notes in ten denominations, from \$1 to \$200, which are drawn on the bank and payable to bearer. An adequate cash reserve is supposed to be kept, but this rule is very generously interpreted. The market,

indeed, is flooded with local paper, note-issuing being among the most profitable of bank transactions.

The native bank is usually a partnership affair with unlimited liability. Its main business is the receiving of deposits and granting of loans. The former are collected by brokers from merchants, mostly at the New Year. On current accounts from 7 to 8 per cent interest is paid, on fixed deposits the rate varies round about 10 per cent. The granting of loans is very much a personal matter, being made far more on the strength of the prospective borrower's personal credit than against any material security he can offer. Indeed, the banks maintain special outdoor staffs whose business it is to make enquiries into the credit and standing of local merchants, and even to approach them with offers of credit, the usual rate of interest charged being from 16 to 20 per cent. When a customer is thus granted credit he is given a cheque-book, and draws against the amount of overdraft he has been allowed.

The banks also discount bills issued by the Provincial Government to its officials, and deal in domestic exchange (though with the appearance of modern banks this business is decreasing), and buy and sell gold bars and ornaments. In this last business large profits are made, as clients are usually ignorant of the current value of gold.

The daily money-rate is determined at a meeting of bank representatives at the office of the Currency Maintenance Association. This body also acts as a clearing-house for notes issued by members. It meets daily at 11 a.m., and here each bank exchanges notes of other banks for its own, balances being adjusted in the afternoon by cash or cheque.

There are now some 18 modern banks at Foochow, but they are not so popular, since they demand collateral against loans. The native bank, which makes loans against personal credit, is far more convenient to the average merchant, being also willing to grant smaller loans and keep open for longer hours. Hence the native banks practically dominate the Foochow money-market.

Canton.—The native banks in Canton date back to the Kang Hsi period, and still retain an influential position in the Canton financial market despite the appearance of both foreign banks and modern style Chinese banks. There are two major groups, the Shuntak and Szcyap of which the former is the older and more important. It is more conservative in methods and policy, representing a purely native type of banking, whereas the latter, founded by returned over-

seas Chinese, is to some extent modelled after the modern type. The Shuntak group represents well over 50 per cent of the number of people engaged in native bank business and of the declared capital invested in such banks. This declared capital, averaging about \$100,000 each, is by no means a true indication of their financial strength. To avoid tax on registering with the local authorities only a small portion of the actual capital is declared; the rest, concealed as supplementary capital, may be equal to many times the declared figure. The banks here, as in Foochow, are partnership concerns, the owners jointly and severally bearing unlimited liability to creditors.

The type of business engaged in by these banks depends largely on their capital. The more highly capitalized are chiefly concerned with deposits, loans, and domestic exchange; the smaller concerns with money exchange and bond and stock brokering. It is with the former, known as "cho-ka" that we are mainly concerned. Each transacts several million dollars of business yearly. The majority of loans advanced by the Shuntak group are made on a personal credit basis. Brokers and representatives go round among local merchants canvassing for business and investigating the financial standing of possible clients. The Szeyap group generally demands security, a practice disliked by local merchants, with whom personal credit has been for centuries the important factor. On the other hand their interest rates are slightly lower.

The volume of business depends on seasonal changes in the commodity and financial markets. From July to December, for example, which is the silk season, silk merchants and filature-owners need a large amount of working capital, and, because of the convenience and simplicity of native banks, go to them rather than to the modern style banks. Thus the success or failure of the silk and other merchants directly affects the native banks, since they are unable to recover loans if merchants fail. It was such failures that brought about the collapse of some of the smaller banks in 1927-28.

Only the larger banks engage in domestic exchange and remittance business. The scope is very limited, the only places to which remittances are possible being in Kwangtung Province. Commission is charged according to distance, the rate varying from 60 to 80 cents per \$100, except in the case of nearby places, when the rate is halved. No foreign exchange is handled.

There are three central organizations:—

1. The Yin Yeh Kung Shih (銀業公市). **Here** all transactions in exchange and currency are made, only members being allowed to operate on the market.

2. The Chung Hsin Tang (忠信堂). This body, organized by the "cho-ka" banks, is the oldest financial guild in Canton. Its origin is unknown, but it was flourishing as far back as 1675, and in 1930 there were 120 members. Its main purpose is to protect the interests of members and to settle disputes between them. It also acts as agent for the collection of the fee (\$25, \$30, or \$35 according to standing) which banks wishing to operate on the Yin Yeh Kung Shih have to pay.

3. Yin Yeh Kung Hui (Bankers' Guild) (銀業公會). This body, established in 1923, has now taken over most of the duties of the Chung Hsin Tang except the collection of fees. Reorganized in 1931 it now includes all types of native banks, as well as a few modern style banks.

Shanghai.—Shanghai being the financial centre of China, it is natural that the local native banks should be the most important in the country. Since their origin some two hundred years ago they have rendered considerable service to China's commercial development, and still do, since most of the dealings of the foreign banks with Chinese merchants have to be handled through them by way of the foreign banks¹ compradores. Practically all business with the interior has to be handled through native banking institutions.

As in Foochow and Canton, so in Shanghai the native bank is a private company organized more or less as a family affair by a small group of partners whose liability is only limited by the extent of their private personal resources. The staff is divided into two sections, indoor and outdoor, of which the latter has the more important work to perform viz. canvassing, consulting, and above all making credit investigations. This last is a most important function, for loans, in Shanghai as elsewhere, are made largely on the basis of personal knowledge of the borrower—or were until recently.

Native banks are classified in three categories, but only those of the first class, known as "Clearing Banks" (Hwei Hwa) (匯劃), need be dealt with here. These form the backbone of the financing of local and inter-provincial trade. At present there are eighty of them, 69

being located in the International Settlement, most of them with a capital of \$150,000 or over.

The native banks control the daily native interest rate, which is quoted twice daily by the Native Bankers' Association, and is of great importance in the economic life of China. The rate varies according to conditions between $\frac{1}{2}$ and 2 per mille per diem. All interior cities keep an eye on this rate, for if they find a higher rate of interest offered for short-term loans in Shanghai than can be obtained in their own locality, they transfer their funds to Shanghai in order to secure a better return.

The three chief functions of the native banks are deposits, loans, and inter-provincial remittances. Deposits are accepted at agreed rates, the minimum on current accounts being 2.4 per cent per annum. Overdrafts are arranged in favour of merchants or firms with good credit standing, to whom soon after the (lunar) New Year pass-books are sent. The amount granted, however, can be recalled at any time, and must be repaid by the end of the year. Failure to do so destroys the borrower's credit, and seriously increases his difficulties in securing accommodation in the future. The rate of interest varies, but the minimum is 9 per cent per annum. Fixed term loans carry a higher rate, the usual periods being from three to six months, and the banks exercise the utmost care in granting them. Periods longer than six months are disliked by the banks, who prefer to keep their assets as liquid as possible, so that they can be used as working capital for a larger and quicker turnover.

Before extending credit, investigations are made by sending the outdoor staff to make enquiries as to the client's business habits and his record. "Credit men," who may be called watch-dogs, visit clients almost daily to observe what they are doing, even after credit has been granted. At one time this credit investigation was a fairly easy matter, but of recent years has become much more difficult. Business no longer remains in the same hands for generations; trade expands, people come and go, towns grow, conditions are continually changing, so that antecedent knowledge is hard to go by, and even when obtained may be of little use. As a result there is a growing tendency among native bankers to demand some form of collateral.

An important feature of the Shanghai commercial world is the "native order," issued as a substitute for cash at the request of clients,

and taking the place of the "cashiers' cheques" of foreign banks. They are made payable on demand or up to ten days after date, and those issued by the "clearing banks" are accepted as negotiable instruments by all banks and mercantile firms in the locality. They are largely used by import merchants to finance imports, and are accepted by banks against the issue of shipping documents.

The native banks have their own clearing organization. Any payment or receipt exceeding \$500 has to be cleared every afternoon at four. It is hoped, however, to bring them ultimately within the scope of the newly-formed clearing-house for modern banks. At present cheques between the modern style banks and the native banks are cleared through accounts which the clearing house maintains with the Bank of China and the Bank of Communications. Foreign banks clear native bank cheques through their compradore offices. Shanghai native banks are not allowed to issue notes.

There are two guilds into which the native banks are organized, one for the North City and one for the South City, but are combined in the Native Bankers' Association to ensure the observance of uniform regulations and co-operative action. The advantages of membership are considerable. If, for example, a bank has to close its doors, the Association will come to its assistance. A committee is appointed to engage, in co-operation with the bank's owners, a lawyer or chartered accountant to liquidate its affairs. If the assets are sufficient to cover the liabilities, funds are advanced to meet immediate claims, so as to prevent loss through forced sales. Thus the assets can be realized more advantageously, making voluntary liquidation possible instead of forced bankruptcy.

GENERAL CHARACTERISTICS.

The following characteristics of Chinese native banks may be mentioned as peculiar to this important part of China's financial system:—

Organization.—A native bank is almost invariably a private concern with two or more partners whose liability is unlimited. Its strength does not depend on declared capital, but on the total personal resources of the partners, which may exceed that amount a hundred-fold.

Methods of Business.—Credit is extended on a basis of actual knowledge of the applicant's personal character, business record, prospects, etc., rather than against material securities. This necessitates

maintenance of an expert staff of credit investigators, and is a method of granting credit which makes the native bank extremely popular among the Chinese mercantile community.

Rates of Interest.—These, in consequence of the method of granting credit, rule higher than those of foreign and modern style Chinese banks. Native interest rates and questions of domestic exchange are largely settled by the native banks.

To a very considerable extent, therefore, the business of the country still depends on the native banks, for they form the main channel through which native business, and especially business with the interior, is financed. How long this will last is another question. One of the main reasons for the continued adherence of the Chinese mercantile community to the native bank is the greater ease with which credit is obtained, and in the bigger and more highly commercialized and industrialized centres this characteristic, as has been seen, is tending to disappear. The increasing difficulty of keeping close touch with and watch on borrowers is gradually forcing even native banks to demand security—the native bank, in other words, tends to approximate to the modern style bank, as in the case of the Szeyap group in Canton. At the same time these modern style banks are growing continually stronger, with branches and connections in the interior. Often they offer facilities much superior to those of the native banks. One of the features of recent banking history in Shanghai has been the advance of these modern style banks which, only a few years ago regarded as unimportant, today play a very prominent part in the city's and country's economic life. For some time to come the native bank will continue to take a large part in the country's economic development. Old customs die hard; their methods undoubtedly suit the Chinese merchant, and where there is no great pressure to abandon these methods the native bank will continue, as in Foochow, to hold the field. But the country is slowly but steadily being industrialized, and eventually Foochow will follow the example of Canton and Shanghai. Modern banking will slowly spread its influence over the country, and the private bank with unlimited liability, depending for its success upon the owners' successful backing of their individual judgment, seems bound—if the record of other countries is to be taken as guide—to disappear with the growth of industry and commerce.

THE MODERN BANKS.

The first modern bank in China was a branch of the Chartered Bank of India, Australia, & China, which opened at Hongkong in 1854. Other foreign banks soon followed, and for many years the foreign trade of the country, concentrated at the treaty ports, was financed through them. The native Chinese banks confined their attention to internal trade, and between the two institutions there were no common interests. In time, however, the native banks began to have dealings with the foreign banks, from which they obtained loans, usually repayable on call, known as "chop" loans. Real co-operation between foreign and native bankers did not begin until the formation of the modern style Chinese banks. The first of these was the National Commercial Bank, founded in 1897 with a capital of a million taels advanced from the Board of Finance, but subsequently it was reorganized as a private and unofficial enterprise. Then in 1904 came the Hu Pu Bank, later known as the Tai Ching, and now as the Bank of China, and in 1907 the Bank of Communications, both official or semi-official bodies, and both fated to have somewhat chequered careers.

The Hu Pu Bank (Bank of China) was the outcome of a decision of the authorities of the day to establish a Government bank. Its authorized capital was four million dollars, but funds were short, and it was not until 1905 that the bank opened, and then with a capital of two millions only. The venture did well, the Government subscribed further capital, and private subscriptions followed. In 1908 the authorized capital was raised to 10 millions, to be subscribed in equal proportions by the Government and the public, and at the same time the name was changed to "Ta Ching". For a time business continued to flourish, but the Revolution brought disaster. The public drained the Peking branch of every dollar, and there was a run on branches throughout the country. Some, as at Hankow, had to close their doors; others, as at Changsha, declared themselves independent institutions and changed their name. The Shanghai branch, however, weathered the storm, and in 1912 launched and carried to success a reorganization scheme, whereby the present Bank of China came into existence with a capital approximately of \$30,000,000. The losses of the Ta Ching were computed not to exceed the amount of the Government's holding, and private shareholders were given deposit receipts on the new bank bearing interest at 5 per cent and redeemable within

five years. In 1913 the authorized capital was raised to \$60,000,000, of which \$19 millions was immediately paid up. During the years ensuing many trials had to be faced, not the least of which were the constant and insatiable demands of the Peking Government for money, and eventually a moratorium had to be declared in March, 1916. This step the Shanghai branch found means of evading, and its action had an undoubtedly good effect in preventing panic and economic disturbance. In 1917 the danger of Government interference was lessened by a clause insisting that the Governor and Vice-Governor must be chosen from directors appointed by the shareholders, and at the same time it was decided that branches were to be kept separate and independent of each other, each issuing its own notes of distinctive design and colour, and keeping reserves against them in its own vaults. This regulation, dictated by the disturbed political state of the country, is probably one reason why the bank sustained so little damage during the ensuing years of internecine strife.

The policy laid down in 1917 was to be one of commercial banking; its notes were to be issued by buying and discounting commercial bills, not as a result of acting as paying agent for the Government. However, as the years went by the bank came to fulfil more and more the functions of a Government bank, and in 1928 it was reorganized once again, this time into a, semi-Government concern with a paid-up capital of \$25,000,000, of which the Government subscribed \$5,000,000. The latter also appointed three out of the ten directors and one out of the five supervisors, while the Chairman of Directors has to be approved by the Minister of Finance. In the spring of 1935 a further reorganization took place, whereby the number of Government-appointed directors is increased to eight and the number of appointees from private shareholders reduced from 12 to nine. The increase of Government appointees in the bank's board of directors is the result of the Government's increase of capital through the 24th Year Currency Loan Bonds, and the assignment of \$15,000,000 out of the bond issue of \$100,000,000, the total Government shares in the bank being brought up to \$20,000,000.

Three years after the foundation of the Hu Pu Bank, in December 1907, the Bank of Communications received its charter to start business with an authorized capital of \$10,000,000 two-fifths to be subscribed by the Government and three-fifths by the public. It was, as the memorial petitioning for its establishment said, "to be the means of

uniting under one control steamship lines, railways, telegraph and postal facilities, and of recovering certain profits." In particular it was to negotiate loans for and generally to undertake the financing of the newly-planned railways. In 1914 it received a new charter, and was reorganized with an authorized capital of \$20,000,000, of which some 7¾ millions was paid-up. From the first it was a hotbed of political intrigue, and it is hardly surprising that under such conditions did not prosper. As time went on it became involved in a struggle with the Bank of China for the control of Government funds. In November, 1928, it was once more reorganized and made a semi-Government institution along the same lines as the Bank of China. Its authorized capital was \$10,000,000, of which two millions was put up by the Government. Three of its 15 directors were appointed by the Government and one of its five supervisors. Its functions are to support industry and further improvement in means of communication. In March, 1935, the Government's holding of stock was increased by \$10,000,000, thus establishing a controlling interest in the bank.

DEVELOPMENT OF MODERN BANKS.

According to the *Bankers' Yearbook*—a huge volume of nearly 1,700 pages published (in Chinese) by the Research Department of the Bank of China—the total number of banks is given as 146, classified as follows—

Government bank ..	1	Savings banks	4
Semi-State banks	2	Industrial banks	7
Provincial banks	15	Agricultural banks .	13
Municipal banks	5	Special trade banks	13
Commercial banks .	76	Overseas banks	10

The head offices of 59 banks are in Shanghai, with 10 in Tientsin, five in Canton, 10 in Hongkong and other foreign centres, and others seat red about the country, with Kiangsu the headquarters of 14 (excluding Shanghai and Nanking), and Chekiang the home of 10. Details of the capital of the 146 banks listed in the *Yearbook* for 1934 (aggregating \$500,000,000 subscribed capital) are as follows:—

<i>Exceeding</i>	<i>No, of Banks</i>
\$10,000,000	
5,000,000	11
1,000,000	55
500,000	31
100,000	27

with two having a capital below \$100,000 and details of three others unavailable. During the last ten years the capital of 28 banks increased by 63 per cent, from 95 millions in 1921, to over 155 millions in 1931. Deposits during the same period increased from 496 millions to 1,974 millions. Savings accounts represent about 12 per cent of the fixed deposits, and since 1921 have increased five times. The total net profit of these 28 banks in 1926 was 13½ million dollars, increasing to over 21 millions in 1931 and to more than 26 millions in 1932. The net profit of the commercial banks in 1932 averaged about 9 per cent.

THE CENTRAL BANK OF CHINA.

In the early years of the 20th century, however, there was not much enthusiasm for the modern-style Chinese bank, until the outbreak of the World War, when the closing of many foreign banks and the sudden great expansion of the country's trade gave the opportunity. At the same time a desire was developing that Chinese capital, Chinese brains, and Chinese enterprise should share in the financing and resultant profits of China's foreign trade. By 1918 Chinese modern banks had definitely begun to take part in the financing of the country's foreign trade, and a fair proportion of them were daily on the foreign exchange market. The crisis of 1921 caused a set-back, and the next few years were mainly devoted to quiet reorganization, but in 1926 a second period of expansion set in. New banks were established, older ones extended their operations and opened branches in the interior, and there were many mergers of the smaller ones, but there was an unfortunate lack of regulation and of supervision, and little co-operation. All kinds of banks, small and great, provincial and national, public and private, issued notes without any check or control by the Government, with the natural result that a heavily depreciated and unredeemable paper currency often caused chaos and diminished public confidence in these so-called modern banks. Then again there was constant depreciation of copper and subsidiary silver coins, due principally to over-supply. As a medium of exchange these subsidiary coins lacked unity of standard, and were regarded simply as a commodity the price of which was subject to constant fluctuations. Consequently the progress of business was impeded to a great extent. Worse still was the persistent use of sycee taels, which had been a conventional unit since the close of the 13th century. In weight and fineness these taels differed from one another according to locality, and on the whole the entire system

was very complicated and cumbersome. All these circumstances revealed the urgent necessity for drastic reform in the banking system, and the first successful step made in this direction was the creation of the Central Bank of China.

This bank was established with the purpose of facilitating reform of the Chinese currency and banking systems, and although thorough realization of an effective central banking policy could hardly be expected within so short a space of time, the Central Bank nevertheless has overcome some of the difficulties and has rendered invaluable service to the Government as a central depository. It has been mainly responsible for a readjustment of Government finances, and the progress of the Bank has been phenomenal. Its note circulation has passed the \$55,000,000 mark with a cash reserve of more than 80 per cent, which speaks well for the sound basis of the bank in comparison with standards in other countries. Moreover, the total assets have increased from \$47,470,796 to \$346,000,000. The strength of the bank was dramatically shown by the fact that even during the Japanese invasion of Shanghai in 1932 it remained unaffected.

Control is in the hands of a Court of Directors, nominated by the Government, from whom are chosen the Governor and Vice-Governor. It undertakes the usual banking business, though there is a strict proviso against anything in the least speculative in character. In accordance with the law governing the Central Bank of China, discount and rediscount are considered one of the Bank's important functions, and of late these activities have been made use of to an increasingly greater extent, especially along the line of rediscounting commercial paper of sound credit, with a view to facilitating the circulation of commercial paper which will foster the development of industry and commerce in this country. The main business of the bank, however, is to act as the Government Bank, to hold Customs, Salt Tax, and other State funds, to take charge of the Central Mint, to issue notes, and to attend to Government loans, both internal and external. While as yet the Central Bank does not perform all the characteristic functions performed by central banks in other countries, since it has no monopoly of the note-issue, it is tending more and more to occupy a key position in the financial structure of China, overshadowing in importance all other banks, including the old-established foreign banks.

In April, 1933, the tael was abolished and replaced by a new silver unit of uniform weight and fineness, viz. the national silver dollar. Previously the operation of the provincial mints had been discontinued, and the Central Mint at Shanghai began coining operations on March 1, 1933, to meet the demand for new dollars throughout the country. In the field of currency reform, continued progress toward simplification and improvement of the monetary system has been made since the abolition of the tael. The Central Mint has functioned effectively, and at the present time is turning out each month about \$6,000,000 in dollars plus bars valued at about \$5,000,000. Down to October, 1934, the mint had coined dollars and bars to the total value of about \$100,000,000. The Ministry of Finance is giving special attention to the improvement of subsidiary coinage, and it is hoped that progress in this direction will also take place in the near future.

In order to regulate currency conditions in the North-West Provinces, the Central Bank of China in July, 1934, was arranging for the establishment of branches at Sian, the provincial capital of Shensi, and in Chinghai (Kokonor). The Sian branch will first be organized. Branches of the Bank of Communications in Tungkwan, north-eastern Shensi, and Sian will be also established for the purpose of establishing standardized currency conditions in that area.

PEOPLE'S BANKS AND OTHER SEMI-OFFICIAL BANKS.

Beginning from January 1, 1935, People's Banks must be established in the various districts of each province, with the District Magistrate as Governor of the bank, according to an order of the Ministry of Finance to the Provincial Bureaux of Finance. The capital of the People's Bank in each district is to be between \$100,000 and \$200,000, subscribed from public funds of the respective districts and by local wealthy citizens. The Board of Directors will consist of prominent citizens and officials. The main function of the banks will be extension of credit facilities to local agriculture and industry.

In addition to the banks already mentioned, there are certain other concerns of an official nature in the sense that the Government contributed part of the share capital, but does not interfere in their management, and these banks transact no official business. Among them are the Agricultural and Industrial Bank, and the Manufacturers' Bank of China, established at the initiative of the Government in 1929. It has an authorized capital of \$20,000,000, of which 5 millions has been paid

up (2 millions by the Government and 3 millions by private individuals). The board of directors are all business-men, and the control and administration are in the hands of the private shareholders. While it engages in commercial banking its main function is investment banking, to give aid to home manufacturers and merchants, and generally finance industrial enterprises.

Almost every province has a semi-official bank. A century or so ago they functioned as Government cash-shops, but at the beginning of the present century were reorganized on more or less modern lines. They do not co-operate with each other, and there is very little inter-provincial dependence. As there are no private shareholders, the capital being supplied by the Provincial Government, they neither publish balance-sheets nor tell the public what they are doing. Accordingly very little is known of them except that they issue—over-issue, usually—notes, and to quote one critic "have not always adhered to the best traditions of conservative banking."

SOME STRIKING FIGURES.

Modern banks are undoubtedly rendering a great service to the Chinese people. There have been no serious failures, and the more responsible institutions have made persistent efforts to maintain cash payment of their notes. All the Shanghai banks of to-day keep their note-issuing department separate from their ordinary business, and the figures of the reserve held against their notes are periodically

ASSETS AND LIABILITIES OF SHANGHAI BANKS (IN MILLION DOLLARS).

ITEM	1921	<u>1931</u>	1932
Total assets	759	2,569	2,748
Paid-up capital	95	155	156
Reserve and surplus	25	47	51
Cash in hand	61	194	253
Loans, discounts and overdrafts	515	1,603	1,661
Current account and fixed deposits	496	1,860	1,974
Savings deposits	13	206	246
Investments in securities	54	239	239
Drafts issued	16	26	21
Notes in circulation	95	393	430
Bank premises, furniture, etc.	14	57	60
Other assets	9	44	62

audited and made public by an independent committee. During the last decade they have made phenomenal progress, as the table on the preceding page relating to the modern Chinese banks of Shanghai shows.

Another comparison of income, expenditure, and net profit shows that since 1921, the first and last items have almost doubled, but expenditure has increased more slowly, showing an expansion of 83 per cent, while income has increased by 92 per cent and profits by 98 per cent. In round millions of dollars the figures are as follows:—

INCOME AND EXPENDITURE OF SHANGHAI BANKS (IN MILLION DOLLARS)

ITEM	1921	1931	1932
Total income	33	61	65
Total expenditure	21	40	39
Net profit	13	21	26

Thirty-seven of the most important Chinese banks in Shanghai realized large profits during 1934 in spite of the economic depression, which compelled no less than eight modern and five native banks to close their doors at the year-end. The following are some of the reported profits:—

Central Bank of China	\$11,500,000
Bank of China	1933,317
Bank of Communications	960,000
Shanghai Commercial & Savings Bank	1,000,000
Chekiang Industrial Bank	560,000
National Industrial Bank of China	600,000
China and South Sea Bank	600,000
Chung Foo Bank	240,000
Joint Savings Bank	1,790,000
Land Bank of China	220,000
China State Bank	400,000
Kiangsu Provincial Bank	150,000
Silk Industry Bank	81,000
Chung Wai Bank	300,000
Native Goods Bank	700,000
Greater Shanghai Municipal Bank	100,000

Recently the banks have been devoting more and more attention to the promotion of commerce and industry. A very large percentage

of the country's capital **has been concentrated in their hands in the large cities, especially at Shanghai, and with the gradual restriction of profitable opportunities for investment there, they are beginning to return these funds to the country in the form of help to industrial and agricultural enterprises.** In 1931, 33 per cent of the loans made by the Bank of China were to industrial and commercial houses. **In 1932** it advanced nearly 40 million dollars to domestic industries, and 10 per cent of this sum went outside Shanghai. Among the concerns thus assisted were cotton-mills, flour-mills, silk-weaving factories, chemical factories, and egg-product and food supply businesses. The Shanghai Commercial and Savings Bank, to give one other example, is acting on the same lines, and 41 per cent of the loans made in 1932 went to industry.

Another step in the right direction was the establishment of the Bankers' Co-operative Credit Service in June, 1933, whose functions are to investigate the character, financial standing, resources and credit of individuals and corporations in the country's commercial centres.

Two of the most important functions of a bank are the remitting and lending of money. It is not possible to give comprehensive figures which include activities of this kind by all Chinese banks, but the Bank of China figures showing the distribution of its loans in the years mentioned are of significance.

BANK OF CHINA: DISTRIBUTION OF LOANS.

ADVANCES TO	1931	1934
Commercial houses	21.79	29.77
Industrial enterprises . .	10.14	13.25
Agricultural enterprises		5.38
Communications		2.15
Public utilities	1.08	1.08
Other banks	15.02	2.15
Private organizations ..	1.37	1.08
Government organizations	47.19	41.91
Individuals	<u>341</u>	<u>3.23</u>
Total	100.00	100.00

In regard to remittances, the business handled by the Bank of China, Bank of Communications, Shanghai Commercial and Savings Bank, and China State Bank increased by 69 per cent in two years:—

	AMOUNT {in thousands}	INDEX
1930	\$1,001,704	100
1931	1,429,408	143
1932	1,695,420	169

Finally, the following statement showing the total assets, deposits, and loans made by eleven of the leading modern banks in China show that from 1923 to 1932 two of these figures have been more than trebled, while the other figure has increased almost threefold:—

ASSETS AND LIABILITIES OF ELEVEN LEADING CHINESE BANKS.

YEAR	ASSETS.		DEPOSITS.		LOANS.	
	Amount.	Index.	Amount.	Index.	Amount.	Index
1923	644,632	100	\$403,566	100	\$418,797	100
1924	723,250	112	463,738	115	478,713	114
1925	890,711	138	561,224	139	583,187	139
1926	1,047,718	163	687,965	170	669,325	160
1927	1,067,685	166	692,895	172	676,920	162
1928	1,261,139	196	860,231	213	773,640	185
1929	1,406,838	218	981,266	243	956,983	205
1930	1,644,670	252	1,195,601	296	995,708	238
1931	1,878,408	291	1,393,158	345	1,204,381	288
1932	1,981,701	307	1,455,461	361	1,203,251	287

In order to encourage the humble wage-earner to save, the Shanghai Commercial and Savings Bank inaugurated a Savings Department in which deposits as low as one dollar are accepted. Other banks followed suit, and to-day this is one of the most popular services rendered to the public. The business of these departments is kept entirely separate. They have their own capital, reserves, and accounting systems. To assist the small man many banks have established loan services up to \$300, repayable in monthly instalments, granted on personal credit alone. Mention must also be made of the Economic Research Departments maintained by the Central Bank of China, the Industrial Bank of China, and the Shanghai Commercial and Savings Bank, which are doing valuable work in investigating rural and industrial conditions, and reporting on the needs of agriculture and industry.

ASSISTING THE CO-OPERATIVE MOVEMENT.

In February, 1935, five of the leading banks in Shanghai formed a trust known as the China Agricultural Investment Company, for the purpose of advancing money to assist agrarian development in general

and cotton cultivation in particular. The sum of \$5,000,000 was set aside by these banks to be advanced to Co-operative Societies in the Provinces of Shensi, Honan, Shantung, Hopei, Kiangsu and Chekiang for the improvement of methods of agricultural production and marketing, and especially the cultivation of cotton. Farmers have been forced to pay very high rates of interest to local money-lenders, ranging from 25% to 40%, but under this arrangement the Chinese banks will make advances to Co-operative Societies at 9% and they, in turn, will make loans to their farmer-members at considerably less than half the rates hitherto paid for such accommodation.

For the purpose of assisting people in humble circumstances in solving their economic problems in petty business and domestic affairs, the China National Economic Co-operation Society has been established with offices in Shanghai. It consists of three departments—savings, loan, and service. The former issues policies which involve the payment of \$5, \$3, or \$1 per month regularly for 5, 10, or 15 years. At the end of the 15th year a \$5 member will receive \$1,000 in cash; a \$3 member \$600, and a \$1 member, \$200. Similar facilities for 5 or 10 year policies are provided. The loan department provides means to help those in need of financial assistance. Credit loans ranging from \$10 to \$1,000 may be arranged for periods ranging from one month to a year, at minimum rates of interest. Other loans cover education, unemployment, etc. The service department provides means of mutual help, including free medical and legal advice, the use of a library and other conveniences, such as furnished dormitories at rentals cheaper than those charged by ordinary boarding-houses. This is the first enterprise of its kind to be organized in China.

JOINT-RESERVE BOARD.

To secure uniformity of policy the majority of the modern banks are members of the Bankers' Association. In Shanghai a Joint Reserve Board (上海銀行公會聯合準備委員會) was established in the early part of 1932 in order to stabilize the financial situation and maintain public confidence. Twenty-six banks became members, pledging between them unimpeachable securities to the total value of \$75,000,000. Membership of the Joint Reserve Board has since increased to 33.

This body issues notes to member-banks in lieu of cash, which are redeemable at the office at 4, Hongkong Road. Treasury certificates issued by the Board will be accepted as security reserve against note

issue. Joint Reserve notes are also accepted as security for call loans. **The** combined resources of members, in fact, are at the disposal of any banking institution which may require assistance in an emergency.

The greater part of the reserve securities deposited with the Board by member-banks have been real estate or foreign bonds and stocks. In view of the more stable market-value of Chinese Government Domestic Bonds since the rehabilitation scheme was put into operation, the Board decided early in 1933 to accept Domestic Bonds as security reserve.

The total certificates issued against properties deposited as security with the Board by member-banks, as on June 30, 1934, represented 66.18 per cent of the appraised value of the security, and reserve securities at the close of the year shows that 85.21 per cent consists of real estate, 9.65 per cent foreign bonds and stocks, and 5.02 per cent of domestic bonds. The notes and certificates obtained by member-banks from the Board have been mostly used as security reserves for note-issue and deposits. In spite of the fact that there was an increase in transactions between member-banks as compared with the previous year, Joint Reserve Notes have not been active in market circulation. Inasmuch as the old notes were payable at sight, and their value in round amounts, they were not altogether suitable for circulation, and in May, 1933 the Regulations relating to Joint Reserve Notes were amended, and the form of the notes modified, with the result that their inelasticity has been remedied while their conservatively sound features have been retained.

The total reserve against call loans has been considerably increased, and the issue of Joint Reserve negotiable instruments confined to notes and certificates on an equal basis. Other amendments came into force on July 4, 1933, and by the end of the year member-banks were making use of the notes in their revised form. They will certainly prove advantageous to commerce and industry as the need for them develops.

Since the introduction of the clearing system, provision has been made in the by-laws that clearing members may, in the event of a debit balance in one medium of payment, obtain loans from the Board with their credit balance in the other medium of payment as collateral, in order to cover their deficit in the daily settlement. Loans of this character **have** amounted to fairly large figures, and the arrangement has proved to be of very great convenience to member-banks.

For the purpose of facilitating settlement, all member-banks maintain deposits with the Board. The total deposits at the end of 1933 amounted

to about \$100,240,000, of which 51.91 per cent was in dollar account and 48.09 per cent in transfer dollar account. This concentration of funds not only facilitates settlement, but maintains the solidarity of the reserves.

CLEARING HOUSE OPERATIONS.

When the Joint Reserve Board was established it was invested by the Shanghai Bankers' Association with authority to draft plans for the establishment of a clearing house. After five months spent in preparing regulations for its operation, the clearing house started to function on January 10, 1933, with a membership of thirty-two Chinese modern-style banks of about the same membership as the Joint Reserve Board. Clearances were made in dollars only, and on the first day the institution was open 1,247 items were cleared to the value of \$2,150,164.26.

The sycee tael had not then been abolished, and there were four different mediums of payment in local use, but, as this clearing house was the first of its kind to be established in China, the Board considered it advisable to effect clearances in one medium at a time, in order to give ample opportunity for the scheme to get into smooth working order. On February 1 clearances in transfer dollars were made, followed on February 16 by clearances in taels and on March 1 by clearances in transfer taels.

In compliance with an order from the Ministry of Finance, on April 6, 1933, the local banks and native banks discontinued transactions in taels, and on the same day the Board suspended clearances in taels. The procedure of clearance had by this time got into good working order, and the abolition of tael transactions made matters still easier and added to the efficiency of the clearing system. The disappearance from currency transactions of this medium of payment of such long standing affords further proof of the contention already mentioned that agitation for reforms of real value are likely to be successful if persisted in.

It should be mentioned, in connection with local banking practice, that for a long time there has been wide diversity in the methods followed by various banks, such as in the use of dollar and transfer dollar items, in the procedure of their collection and payment, and in the matter of banking house. To formulate a unified working system was therefore a difficult task, and many obstacles were encountered between the drafting of plans and their final execution. It was only because of the close co-operation and consistently encouraging support of member-banks that the operation of the clearing system has proved so successful.

During 1934 a total of 1,627,784 items were passed through the

Clearing House, to the total value of \$3,222,116,609. Compared with the totals for 1933, there was an increase of 64% in the total value and an increase of 80% in the total number of items. The daily total for the year averaged 5400 items, to the value of \$10,704,000. When the twelve months are compared, the smallest amount of exchanges were recorded in January, April, and May, when the daily total amounted to about nine million dollars, which corresponds with the largest daily average recorded in 1933. In February, June, and July, the daily total exceeded 10 million dollars, and in the other months, from August to November, the daily total was in excess of 11 million dollars. The largest month by total was for December, when the daily amount reached 13 million dollars, a record to date. The relation of balance of clearings to total clearings for the year, with the dollar and transfer dollar items combined, was 14.80%.

The principal reasons for this increase in the volume of clearings were the admission of new clearing members, and the handling of clearings on behalf of non-members, as already mentioned. The gradual increase of business transactions during the year, and the development of local banking has also helped to increase the number and value of clearances. It should be remembered, however, that the figures here given represent only a portion of the bank clearings of the whole city, and must not be regarded as a definite indication of the measure of any change in the volume of commercial business transacted locally.

As from June, 1934, no bank is allowed to function without having previously received a certificate from the Ministry of Finance. Such banks as have not obtained official approval will be required to apply for registration within a stipulated period, failure to comply being followed by the issuance of an order of suspension. These regulations are aimed principally at checking the establishment of small banking enterprises in the provinces with insufficient capital, a practice which has led to many failures.

Regulations have also been promulgated by the Ministry of Finance governing the organization of a Custody Committee to take charge of securities lodged by savings-banks against deposits. Such securities must be first approved by the Committee before acceptance, and are inspected at the end of each month and at any other time considered necessary. The Committee is composed of seven members, consisting of one representative of the Ministry of Finance, two each from the Central Bank

of China and the Shanghai Bankers' Association, and two appointed by the Ministry of Finance from non-members of the Bankers' Association and savings societies.

CHINA DEVELOPMENT FINANCE CORPORATION.

One of the most recent important developments in the general trend of economic progress was the establishment of the China Development Finance Corporation in June, 1934. This organization, originated by Mr. T. V. Soong, came into being for the purpose of providing capital for Chinese enterprises, and is to be run as a strictly business undertaking. Its existence is due to the remarkable progress made by the Chinese modern banks during recent years and to the steady accumulation of Chinese capital for which safe investment has to be provided. If the aims and ambitions of its promoters be realized, the Corporation will be a potent influence in controlling the supply of Chinese capital for all new Chinese enterprises. According to the Memorandum, the objects of the Corporation will be "to study the worth of any business proposition and, if it is found suitable, to arrange for the subscription of capital, Chinese and foreign, both singly and jointly, and later to follow through the development of the particular enterprise on behalf of those financially interested." The capital of the Corporation is \$10,000,000, all of which has been fully subscribed by the leading Chinese banks and private individuals, but this capital has little relation to the work to be undertaken although substantial enough to demonstrate that the Corporation is intent upon serious business. Agencies and branches controlled by the members of the Corporation are spread practically throughout the country, and being thoroughly representative of the modern side of Chinese banking, will be in a position to form shrewd judgments regarding the prospects of any projected enterprise, public or private, which may be brought to its notice with a view to obtaining its endorsement.

THE SILVER PROBLEM.

In the autumn of 1934, while suffering like the rest of the world from general trade depression, China was called upon to face a new and serious problem, arising out of the action of the United States in embarking upon a policy for raising the price of silver. The effect of this move to force the market value of the metal considerably above the level at which it had been standing, was an immediate drain of silver from China. An exchange of views between the Chinese and American Governments regarding the latter's silver policy resulted in

an assurance from Washington that silver purchases would be made in such way as to disturb Chinese interests as little as possible. Each Government realized the position in which the other was placed, and had a friendly understanding of the general policy being followed. China did not presume to lecture the United States Government as to what should or should not be done in regard to silver, but merely wished to ascertain American intentions and point out their inevitable reaction upon Chinese economic conditions. The American reply to these inquiries was friendly and informative, and with the ground thus cleared there was much less opportunity for speculators to take advantage of the nervousness caused by the deliberate spreading of unfounded rumours. Time and again it was "whispered", loud enough to disturb the money-market, that the Chinese Government intended to reduce the silver content of the standard dollar, a rumour which was emphatically repudiated by the responsible authorities.

After several weeks of uncertainty as to what was likely to happen in regard to silver prices, definite action was taken by the National Government in October, 1934 to protect national currency and safeguard the economic interests of the country. It was anticipated that the prevailing "boom" in silver would continue, and this being so it was considered necessary to impose a check upon exports of the metal from China, otherwise currency reserves might be seriously depleted. A complete embargo upon silver exports was not considered desirable, but in order to remove anxiety concerning future developments and to bring about a sense of stability in business circles, the Government decided to impose a duty of $7\frac{1}{2}$ per cent on silver dollars and mint bars exported, and 10 per cent on other forms of silver sent out of the country. Further, an equalization charge was imposed representing the deficiency (if any) between the theoretical parity of London silver and the rate of exchange on London after allowing for the export duty. Every morning at 11. 30 o'clock the Central Bank of China notified the Customs authorities of the official rate determining this deficiency, and this routine was to be followed on every business day until further notice. Another innovation related to the control of gold-bar prices, which passed from the hands of foreign bankers to the Central Bank of China. The Ministry of Finance issued an order that Customs gold units (which are based upon London prices) should be the basis for local gold bar prices. Hitherto gold exchange had been figured on London gold bars,

and the substitution of the Customs gold unit as the basis has the effect of giving the Ministry of Finance (through the Central Bank of China) control of the local prices of gold bars.

To give an idea of the interest taken in the exchange market at this time, following the unsettling reaction to American policy, it may be noted that within a period of 4 days in October, 1934, from 10 to 15 million U. S. dollars' worth of exchange was booked in Shanghai. How much of this business was actually legitimate coverage for commercial transactions, and how much was purely speculative is itself a subject for speculation, but anyone familiar with the normal Shanghai atmosphere and knowing that "business" as such is so quiet that merchants raise their hats reverently when a friend asks "how is trade?" will guess that by far the greater part of this huge amount of exchange was booked by gamblers. In Dairen, another notorious centre for exchange speculators, 100 million yen changed hands during one week (on paper), and an average of well over 20 million yen worth of "business" continued daily. In order to impose all possible checks upon disruptive speculation the leading Chinese bankers of Shanghai had a conference with Dr. H. H. Kung, Minister of Finance, to discuss the advisability of establishing a Silver Equalization Committee. As a result of these discussions, the Chinese Government decided that action be taken to stabilize exchange so that the standard dollar may be maintained at the desired level, and when the Silver Equalization Committee settled down to business (with an equalization fund at its disposal of 100 million dollars) the Government established complete control of the local exchange market. At least, that was the theory, and it was on that assumption that the stabilization scheme was proceeded with. This is not the place to enter upon a detailed discussion of such controversial questions as "silver" in particular and currency control in general, but in the opinion of a recognized foreign authority on financial problems there was no occasion for alarm about the "crisis," and he expressed the opinion that the Chinese Government had shown great patience and restraint in very trying circumstances, while he considered the graduated duty imposed on silver exports to be a very safe and sound move.

STATE MANAGEMENT OF BANKS.

Stringency on the Shanghai money-market in the early part of 1935, and the great difficulties experienced by Chinese engaged in commercial and industrial enterprises in obtaining credit facilities during a period

of severe economic depression, led the National Government to take steps to remedy the situation by bringing under its direct control two of the most important banking and note-issuing institutions—the Bank of China and Bank of Communications. It had long been the plan of the Government to strengthen the position of these two banks and of the Central Bank of China. In view of the general and protracted economic depression, aggravated as it was by the silver-purchasing policy of the United States Government, it was desirable that these three institutions should co-operate to the fullest possible extent. This scheme of closer co-operation between the banks mentioned had no connection whatever with the Government's policy in regard to currency problems, and the three banks retain their individual entities. Mr. T. V. Soong, a former Minister of Finance, and one of the new Directors of the Central Bank, was appointed Chairman of the Board of Directors to the Bank of China, and in an explanatory statement of the Government's policy expressed the belief that with the three big banks working in close harmony existing difficulties in the local money-market would be successfully overcome. He pointed out that with the exception of strengthening capital by increased Government participation, the activities of the Bank of China would remain undisturbed.

A currency loan of \$100,000,000 was authorized by the National Government in March, 1935, to strengthen the capital of the banks, to re-fund loan advances to stabilize the currency situation, and facilitate relief of industry and commerce. The loan was issued at par bearing interest at 6 per cent per annum, and the term of the loan was 10 years, the Customs revenue being earmarked for the service of the loan. The Central Bank, Bank of China, and Bank of Communications were appointed agents to take charge of all matters relating to payment of interest and redemption of principal. The bonds are in "bearer" form, may be freely bought, sold or mortgaged, offered as security in lieu of cash where monetary security is required in public affairs, or used as security reserve by banks. The Government's interests in the Bank of China and the Bank of Communications were increased by two assignments out of the bond issue of \$100,000,000, the Government share in the Bank of China being increased from 5 to 20 million dollars, or half the total capital (increased to 40 million dollars) of this concern is held by the Government.

Since the silver crisis developed in the autumn of 1934, Shanghai

suffered more seriously than any city in China. In fact, districts in the interior were scarcely affected at all, and it was not clearly understood what the crisis was that had arisen in Shanghai. The accumulation of large quantities of silver transferred to that city from the interior, partly because of disturbed conditions in some parts, and partly because the adverse balance of trade between points in the interior and Shanghai, led to an enormous increase in the amount of silver held by Chinese and foreign banks. The total increased from 171 millions at the end of 1928 to 547 million at the end of 1933, and this accumulation of silver provided the basis for a larger volume of credit which, in turn, necessitated increased opportunities for investment. Small commercial and industrial concerns were able to obtain considerable financial facilities, and there was a boom in real estate, but with the commencement of the U. S. silver buying programme in the latter part of 1934 enormous amounts of the metal were shipped abroad by foreign banks, with a consequent tightening of credit and decline in real estate prices. One of the most obvious weaknesses during the financial crisis in Shanghai was the inability to dispose of real estate, due, firstly, to over-expansion of credit granted for real estate transactions, and secondly, the tightness of funds in foreign banks. At the same time industries and trade suffered as a consequence of the financial stringency, but the Chinese banks did their utmost to provide all the assistance possible in production and marketing, and by effective co-operation with the Government and the public hope to establish sounder economic foundations and so tide over the difficulties which for some time had reached a critical stage in Shanghai. That city, because of its geographical situation and economic importance, is naturally the first and worst to be affected by unfavourable conditions, but Shanghai's special position is not representative of the whole of China, as was shown by the fact that in spite of the critical state of affairs in that city, many places in the interior remained quite unaffected. The Government's plans for increasing its holdings in the Central Bank, Bank of China, and Bank of Communications, and organizing a plan for bringing about more effective co-operation between those three organizations, was considered by Chinese financial leaders to be a most important step for stabilizing and unifying the financial market and stimulating Chinese foreign trade by increasing the mobility of Chinese capital.

CHAPTER X.

RAILWAY DEVELOPMENT.

CHINA is still very backward in regard to railway communications, and the extent of its deficiency will be seen at a glance in the following table, which gives approximately the area and population per railway track mile in China as compared with Great Britain and the United States:—

	<i>Area per track mile</i>	<i>Population per track mile</i>
China	300 square miles	70,000
Great Britain.....4¾	" "	2,200
U. S. A.....8½	" "	3,300

In pointing out these facts, however, it must be emphasized that it would be manifestly unfair to expect the same state of railway development in China as in England or the United States—the object of the comparison being merely to bring out as clearly and as simply as possible the magnitude of the problem now confronting this country.

China's railway problem falls into two parts: (1) to make the lines already in existence efficient and put them on a sound financial basis, and (2) to build new lines. Later it will be shown what has been, and remains to be, done. The second part of the problem obviously depends on the first. To build new railways on the scale needed by China, a tremendous amount of money will be required, and this can only be obtained by borrowing. Until very recently China was in default on many of the existing loans and it was difficult to expect the private foreign, as well as the average home, investor to risk his cash in Chinese railway projects. It was indeed possible to raise comparatively small amounts, but if the necessary capital was to be found to put the Chinese railway system on its feet again and to complete the programme of railway construction, it was essential to make proper arrangements for meeting existing loan obligations, however harsh the terms.

This, given a fair chance, the railways can quite easily do. There is not one Chinese railway line that is not, under normal circumstances,

a perfectly good financial proposition. Their present unfortunate position is not due to maladministration or over-capitalization; the reasons were almost entirely political; military leaders were accustomed to regard railways in their spheres of influence as for their own personal convenience. Rolling-stock was commandeered and the whole service dislocated without much ado. Earnings fell off, expenses mounted higher and higher, while the personnel became steadily demoralized with inevitable loss of efficiency. The circumstances surrounding the Lung-Hai line could be taken as typical. An important trunk line through a fertile and thickly populated area, its development had been handicapped by almost incessant civil wars between 1920 and 1930. It had to carry troops and war material free of charge, its revenue was expropriated by successive military chiefs, no repairs were effected, its equipment ruined by soldiery. When, however, in 1930 it at last gained a period of comparative peace, there was an immediate recovery.

Reports from all over the country show that the railway authorities themselves are doing their best. In 1932, the *North-China Daily News* published a series of articles from its up-country correspondents, all foreigners and therefore not likely to err in praise of a Chinese undertaking, in which universal testimony was borne to the improved running of the railways. Peace, freedom from military interference, the loan of some money to enable them to buy more and better equipment at once, and a temporary respite from the persistent pressure of foreign creditors is all that is needed.

THE FIRST LINES.

Railways in China have a history of nearly sixty years. One of the first efforts in railway construction was made in 1876, on a 30 in. gauge, by Messrs. Jardine, Matheson between Shanghai and Woosung, a distance of about fifteen kilometres. There was a general outcry against the project, but supported by the British authorities the company was able to maintain its position for over a year, in spite of the fact that opposition increased when an accident occurred in which a Chinese soldier was killed. The provincial authorities were finally enabled, through the intervention of Li Hung-Chang, to acquire the line in the latter part of 1877, when the tracks were torn up and with all equipment were sent to Formosa on the application of the Governor of Fukien, who was then contemplating the construction of a trunk line on that island, which, however, did not materialize.

Li Hung-Chang was afterwards responsible for obtaining Imperial sanction in 1877 to connect Tangshan with Hsukochuang by rail (now a part of the Peiping-Liaoning Railway) for transporting coal from the mines at Tangshan to Hsukochuang, where a newly-built canal led to the sea. A length of ten kilometres of standard gauge track was completed in 1881, and by 1890 had been extended to Tientsin in the west and to Kuyeh in the east, a total distance of 155 kilometres.

It was not until after the defeat of China in the Sino-Japanese war of 1894 that railway construction in other parts of the country began in earnest. Concessions were granted to the Russians to build the Chinese Eastern Railway, and to the French to build the Yunnan Railway. Germany obtained an assurance of exclusive railway rights in Shantung. Russia was granted permission to construct what is now known as the South Manchuria Railway, while England's sphere of influence along the Yangtze Valley was recognized together with all the privileges usually implied in that term. Belgian financiers also came on the scene, and in combination with British and French interests secured the right to build the Peiping-Hankow Railway. And so the merry-go-round started, each nation vying with the other in a mad scramble for concessions from a country so easily defeated by Japan.

The very avidity of the Powers in securing concessions of this character was in part responsible for the Boxer trouble, though it was also this uprising which gave further impetus to railway construction. Following its suppression, agreements for the construction of the Nanking-Shanghai, Cheng-Tai, Kaifeng-Honan, and the Chinese section of the Canton-Kowloon railways were signed in quick succession. Private companies were also formed for the construction of the Tientsin-Pukow, Shanghai-Hangchow-Ningpo, and Nanchang-Kiukiang lines, while in 1906, the Government undertook the construction of the Peiping-Suiyuan railway solely with Chinese funds. The Tientsin-Pukow and the Shanghai-Hangchow-Ningpo lines were afterwards taken over by the Government, and construction completed with loans from the British and German interests.

From the establishment of the Republic to the removal of the capital to Nanking, the greater part of new railway construction had been in the North-Eastern provinces, the only exception being the Lung-Hai, an extension from both terminals of the Kaifeng-Honan line.

It is not intended, however, to attempt a complete history of

railway construction in China, the following table showing the progress made since 1915 being sufficient for the present purpose.

MAIN AND BRANCH LINES (KILOMETRES) OPERATED AS AT DEC. 31, 1933.

	1915	1925	1930	1933	(1)
PeipinK-Hankow	1,316.240	1,321.177	1,321.291	1,321.291	
Peiping-Liaoning	965.152	974.834	1,355.085	1,355.085	(890.202)
Tientsin-Pukow	1,106.839	1,106.839	1,106.839	1,106.839	
Nanking-Shanghai	327.133	327.133	327.133	327.133	
S'hai-Hangchow-Ningpo	269.934	286.532	286.532	286.532	
Peiping-Suiyuan	429.353	876.531	876.531	876.531	
Cheng-Tai	242.950	242.950	242.950	242.950	
Taokow-Chinghua	152.446	152.440	165.440	165.440	
Kaifeng-Honan	184.000	184.000	184.000	184.000	
Lung-Hai		613.422	638.738	740.550	
Kirin-Changchun	127.740	127.740	127.740	127.740	(127.740)
Canton-Kowloon	143.300	143.300	143.300	143.300	
Hupei-Hunan		422.645	513.045	513.045	
Kiao-Tsi		453.299	453.299	453.299	
Nanchang-Kiukiang		128.350	128.350	128.350	
Ssu-Tao		426.241	426.241	426.241	(426.241)
Canton-Shiuchow			274.331	324.331	
Taonan-Anganki			224.280	224.280	(224.280)
Hulan-Hailun			224.500	224.500	(224.500)
Shenyang-Hailung			326.567	326.567	(226.567)
Kirin-Hailung			183.241	183.241	(183.241)
Kirin-Tunhwa			210.431	210.431	(210.431)
Chaochow-Swatow			42.069	42.069	
Chuchow-Pinghsiang	96.560	96.560	(2)		
Canton-Samshui	48.924	48.924	(3)		
Changchow-Amoy	28.000	28.000	(4)		
Tsitsihar-Keshan			228.310	228.310	(228.310)
Hangchow-Kiangshan (5),				359.500	
Sunning (6)				157.663	
Total	5,438.571	7,960.917	10,010.243	10,697.213	(2,841.512)

(1) Bracketed figures show portion of line under illegal occupation since 1932.

(2) Combined in 1928 with Hupei-Hunan line which is part of Canton-Hankow Railway.

(3) Combined with Canton-Shiuchow line in 1929.

(4) No longer in operation.

(5) Controlled by the Chekiang provincial authorities.

(6) Controlled by commercial interests.

In addition to the above, there are four "concessioned lines" over which the Chinese Government exercises no control, with about 3,800 kilometres of main and branch lines. These are the Chinese Eastern Railway, under Russian management, the Yunnan Railway (a continuation of the French railway in Indo-China), the South Manchuria Railway (Japanese), and the Canton-Kowloon Railway (British section).

There are, therefore, about 14,500 kilometres of railway in China, distributed as follows:—

	<i>Kilometres</i>
In Manchuria, temporarily out of control	2,800
concessioned lines	3,300
In China Proper, north of Yangtze River, Government lines	5,600
south of Yangtze River, Government lines..	2,300
concessioned lines	500

NEW RAILWAY CONSTRUCTION.

The railway policy of previous Governments unduly favoured the North, with lines radiating from the old capital Peking (Peiping). Of the 14,500 kilometres of line, no less than 11,700, or over 80%, are situated north of the Yangtze River. Future policy need not necessarily favour the South, but should take into consideration both the political and economic aspects of the question. The political unification of the country, as well as the extermination of banditry and Communism, depends largely on the existence of efficient rail communications. This calls for the construction of trunk-lines linking Nanking and Hankow with the South, the West, and the great North-West. The economic aspect presents a much larger question. Though primarily an agricultural country, China has to import rice, cotton, etc., because lack of proper facilities restricts the transportation of products from the interior to the coast. The result is the continued existence of large undeveloped areas, and the discouragement of intensive cultivation in many parts of the country. It was in pursuance of a general policy that will permit the proper development of the country that the Ministry of Railways has borrowed from the remitted portion of the British Boxer Indemnity money to complete the Lokchang-Chuchow section of the Canton-Hankow Railway (382 kilometres) at an estimated cost of \$60,000,000.

Direct railway communication between Canton and Hankow, a project started over 25 years ago, is expected to become reality in a year's time. The unfinished section of the line, stretching from Pingshek, in northern Kwangtung, to Ichang, in southern Hunan, will probably be

completed in May 1935, and the entire unfinished section will be completed in the early part of 1936. Ichang is linked to Chuchow by an excellent highway and thus, when the Pingshek-Ichang section is completed, the journey from Canton to Hankow by rail and road will take only about three days. When the entire section between Pingshek and Chuchow is completed, the trip by express will require only 30 hours. Running through several of the most prosperous provinces in the country, the new railway will link Canton not only with the Yangtsze ports at Peiping but with Europe via Siberia. The Tung-Si section of the Lung-Hai railway, from Tungkwan westwards to Sian (132 kilometres), has been recently completed, costing about \$15,000,000. The sum of \$1,000,000 has been allocated by the Ministry of Railways for the further extension of the Lung-Hai Railway westward from Sian, the present western terminus, to Sienyang, 19 kilometres northwest of Sian. The Ministry in January 1935, instructed the Railway Administration in charge of the Tungkwan-Sian section to begin surveys immediately. The Ministry has also encouraged the formation of private railway companies, one of which is the Kiangnan Railway Company, formed for the construction of a line from Wuhu, on the Yangtsze River, to Chapoo, on Hangchow Bay. A detailed account of this line of about 200 kilometres, and the industrial possibilities in the territory through which it runs, will be found on pp. 211-215. The construction of the Wuhu-Nanking section has made rapid progress, and it is expected that passenger service over this 90-kilometre section will be inaugurated some time toward the middle of 1935. Twelve American locomotives will operate on the Wuhu-Chapoo line.

The continuation of the Hangchow-Kiangshan railway from Yushan in east Kiangsi, via Nanchang, to Pinghsiang, in west Kiangsi at present the terminal of a branch of the Hupeh-Hunan section of the Canton-Hankow railway, is also being undertaken by the Ministry of Railways. A company called the Che-Kan (Chekiang-Kiangsi) United Railway Company has been formed with the Ministry of Railways and the Chekiang and Kiangsi Provincial Governments as partners in the enterprise. There are eleven members on the Board of Directors—a Managing Director, three delegates representing the Kiangsi Provincial Government and three representing banking interests, and two each representing Chekiang province and the Ministry of Railways. The Hangchow-Kiangshan Railway in future will also be

controlled by this Company. The first section of the railway from Yushan to Nanchang, about 300 kilometres, is under construction and the cost is estimated at \$17,000,000, to be borne by Kiangsi Province and the Ministry of Railways. The entire line will cost about \$37,000,000, and will be over 650 kilometres in length. All preparations for the preliminary survey having been completed, the authorities have decided to start the construction of the Nanchang-Pinghsiang section of the Chekiang-Kiangsi Railway on Independence Day, October 10, 1935. The Nanchang-Pinghsiang section, which will be about 350 kilometres in length, would cost about \$20,000,000 and plans are being discussed with Shanghai bankers regarding the raising of funds for this purpose. Meanwhile, the General Survey Corps for preliminary inspection along the extension line has been organized and it is expected that survey work will be completed before October 1935.

A marked improvement in railway conditions is seen at Kiukiang, as compared with conditions in June 1931, when operations against the Communists were in progress. In those days Kiukiang resembled more a military camp than a prosperous Yangtze river port. While peace and order were preserved, business activities were at a complete standstill. Passenger and freight services are now again operating on the Kiukiang-Nanchang Railway. In 1931 the railway was in the hands of the transport section of the military, and there were no passenger or freight services on the line.

Great changes have also taken place in Shensi, a province which has been rather neglected in the matter of railway construction. In December 1934, the Chengtai Railway inaugurated a passenger service on its branch line between Yutze and Taiku, a distance of twenty-five miles; but for more than a month previously trains had been running as far as the Wu Ma River, two miles from the Taiku Station, this two-mile stretch being covered by motor-buses chartered by the railway. The Chengtai line now operates two trains a day each way between Taiku and Yutze, and one train each way between Taiku and Taiyuan. All make close connections with main-line trains, enabling Peiping to be reached in less than 24 hours. The Shensi Provincial Government has recently extended the Tungpu Railway to Huochow, some 140 miles southwest of Taiyuan. Since July 1934 this light railway has been operating daily between Taiyuan and Chieh Hsui, a distance of 90 miles. In places the railway runs along the former motor-road connecting the Taiyuan Plain

with the Hotung region. Where the narrowness of the gorge makes parallel roads impossible, the motorcar has been forced to yield to the locomotive. As the Tungpu Railway now carried the mail down the old South Road, all towns along the route enjoy a faster and more reliable mail service than ever before.

The Chientang River, which divides Chekiang Province into two, has always been a great obstacle to communication, and since the construction of the Shanghai-Hangchow-Ningpo line the need of a bridge has been more keenly felt. Hitherto all the highways and railways have been forced to terminate at both its banks, and, therefore, have not been used to their fullest extent. Agricultural and industrial enterprise developments also suffer from this interruption of traffic. Since Hangchow has become a highway and railway centre, it was thought that the bridge should be somewhere in this vicinity, and after careful investigation surveys Zakow, the terminus of the Shanghai-Hangchow Railway, was found to be the most suitable spot. Here the river is about one kilometre wide, the current steady, sand-bars are less numerous, and the position is directly opposite the Fu-Pao valley, which will make the connection of railway lines easy. This bridge is estimated to cost about \$5,100,000 to be completed early in 1936, and will be the first combined railway and highway structure of its kind in China. There will be two decks, the upper for vehicular and pedestrian traffic and the lower for railways. A toll will be levied, and it is expected that the bridge will pay for itself in seven years. The main purposes of constructing this bridge are to carry the Hangchow-Kiangshan line to Hangchow and on to Shanghai, to make possible the completion of the Shanghai-Hangchow-Ningpo Railway, and to connect all the highways which now terminate on both banks of the river. The construction of this bridge, therefore, will serve to link up not only railway communications between Kiangsu, Chekiang and Kiangsi, but will connect the highway network of the provinces along the Yangtze River with those of Kwangtung and Fukien. When completed, the bridge will do much to strengthen national defence and facilitate agricultural and industrial development in eastern and south-eastern China. The benefits to be derived therefrom are thus not only inter-provincial but also national.

In addition to plans for doubling the track between Nanking and Shanghai, there are several other plans for railway development in and near the last-named city. For example, construction of the short line

from the Shanghai-Woosung branch of the Nanking-Shanghai Railway to the Civic Centre in Kiangwan was started early in 1935. The line, which is only a little more than two kilometres long, is of very great importance, and the total cost, estimated at between \$4,000,000 and \$5,000,000, will be borne by the Ministry of Railways, the Shanghai Municipal Government being responsible for the purchase of the land. The building of this line will not only hasten the development and prosperity of the Shanghai Civil Centre, but will greatly facilitate transportation for those interested in the new library, museum, stadium and other reconstruction enterprises in the Civic Centre. It is expected that the line will be completed in time to be available for the National Track and Field Meet to be held in the new Shanghai Stadium on National Independence Day, October 10, 1935.

Construction of a line linking Soochow, on the Nanking-Shanghai Railway, with Kashing, in northern Chekiang, on the Shanghai-Hangchow-Ningo Railway is to be started simultaneously on three sections, the entire line being 75 kilometres long.

Further construction is handicapped by lack of funds, and unless private enterprises are encouraged, there is little likelihood of extensive building. Foreign capital was hesitant to invest in such schemes unless past railway debts were liquidated or at least railway credit was restored. Many years of disturbance and maladministration had left the railways in bad condition. Their total indebtedness as at December 31, 1933 was approximately as follows:—

Funded Debt, outstanding portion, principal	\$316,000,000
overdue portion, principal	•\$363,000,000
Interest	• 260,000,000
Domestic and short term loans overdue	118,000,000
Material debts overdue	114,000,000
TOTAL	\$1,171,000,000

The Ministry of Railways, however, has begun to take steps towards liquidation of this enormous debt. During 1933, amounts of ,£457,500 in capital repayment, and ,£372,414, francs 587,500 and yen 2,400,000 in interest payment have been duly met, totalling approximately \$15,000,000 in Chinese currency. In addition, agreements have been made with various creditors under Domestic and Short Term Loans and Material Debts for the gradual liquidation of about \$88,000,000. It is to be hoped

that more such agreements will be entered into in the near future, so that the total amount of overdue obligations can be adjusted and arrangements for yearly or monthly repayments made.

Although China was feeling the effects of the general business depression, figures published towards the end of 1934 regarding the traffic on railways were decidedly encouraging, and a number of payments were made by the Government in connection with loan obligations. In November 1934 over \$1,700,000 was remitted to the British & Chinese Corporation towards the amortization of loan obligations of the Nanking-Shanghai and Shanghai-Hangchow-Ningpo Railway Administrations. These figures include interest and bank commission. In December over \$96,000, together with accrued interest since October 1st, was remitted to London to pay the 1928 instalment of principal of the \$5,000,000 Crisp Loan of 1912.

As a result of energetic efforts to improve traffic, the Nanking-Shanghai and Shanghai-Hangchow-Ningpo Railway Administrations reported an increase of \$1,130,000 in earnings for 1934. The earnings of both railways totalled \$21,670,000 and net profit exceeded \$3 millions. Compared with the record year of 1931, when the total revenue was \$22,427,953, the receipts for last year show a decrease of \$757,953. The 1934 figures, however, show a gain of \$1,130,000 over the revenue for 1933 which totalled \$20,540,000. Altogether \$5,376,734 was remitted during 1934 to the British & Chinese Corporation, Ltd., towards amortization of loan obligations of the lines.

The year 1934 was a prosperous one for the Tientsin-Pukow Railway, Receipts totalled over \$20,000,000 with an average monthly profit of between five and six hundred thousand dollars. Due to heavy indebtedness, however, little was left for constructive projects after the payment of interest charges. The Ministry of Railways has ordered a number of passenger-coaches and goods-waggon for the line, which are expected to arrive in a few months. The authorities are also considering the possibility of using concrete, instead of American pine, for the replacement of sleepers. Experiments in this direction are stated to be very satisfactory.

Business on the Kiaochow-Tsinan Railway line has been steadily improving and the earnings for 1934 totalled over \$16,000,000. If the line continues to prosper in this way, prospects for the further development of the railway and the redemption of the Japanese loan will be greatly improved.

Returns covering the period of January to October 1934 show that receipts on the Peiping-Suiyuan line amounted to over \$7,970,000, which was \$100,000 more than the total revenue for 1933. It was expected that the final figures for the year would amount to more than \$10,000,000 which would be a record.

A net profit of over \$1,000,000 was made by the southern section of the Canton-Hankow Railway during 1934 up to the end of November, which represents a slight decrease as compared with the preceding year, but in view of the general trade depression this is not surprising.

As a result of the increased traffic on the Taokow-Chinghua Railway in Northern Honan, during 1934, the sum of \$200,000 was available towards the amortization of loan obligations. The net profit of the line for December exceeded \$210,000—a record for this railway.

The Peiping-Hankow Railway had a very successful year in 1934, and its operations resulted in a surplus of \$8,308,000. The returns for 1934 are as follows:—

Total business done, including military transportation	\$31,950,000
Actual cash revenue	\$25,186,000
Operating expenditure	\$16,878,000
Surplus for the year	\$ 8,308,000

These returns are regarded as particularly satisfactory in view of the fact that in December 1933, the railway was handicapped by a debt of over \$90,000,000.

OTHER RAILWAYS IN CONTEMPLATION.

But new construction cannot be put *off*, and must not wait until the final adjustment of all overdue amounts. The building of at least a few of the more important lines are being considered now. With the completion of the Tungkwan to Sian section of the Lung-Hai line at the end of 1934, plans are being made for its extension to Lanchow, the capital of Kansu Province. Preliminary investigation work has been done on this section of about 660 kilometres, and it is estimated that the total cost will amount to \$92,000,000. This line is intended to aid in the opening-up of the North-West, and probably will take precedence over other lines. Another scheme is the proposed line joining the southern terminal of the Tientsin-Pukow railway with a point on the Peiping-Hankow line about midway between Hankow and Chengchow. This line, the Pukow-Sinyang, has been fully surveyed along its

length of 436 kilometres, and construction is estimated to cost \$39,000,000. An extension westward, from Sinyang to Chengtu, capital of Szechuan, has also been suggested. This extension will probably be the most profitable of all the proposed lines, as it taps the rich resources of the upper Yangtze Valley, and provides a safe and certain means of transportation through all seasons of the year as against the frequent vagaries of the Yangtze. It is about 1,440 kilometres in length, and a preliminary survey puts the cost of construction at \$248,000,000. The Tsangchow-Shihchiachuang is another proposed line which has been fully surveyed, and a short length of road-bed laid. The total distance is 220 kilometres, and the cost is put at about \$18,000,000. It will connect Tsangchow, on the northern section of the Tientsin-Pukow railway, with Shihchiachuang, junction of the Peiping-Hankow and Cheng-Tai railways. Construction of this line will bring the province of Shensi closer to Tientsin and the sea. Another of the recently proposed lines is a branch of the Sian-Lanchow section of the Lung-Hai, joining Paoki, a point west of Sian, with Hanchung, an important centre in southern Shensi. This line runs through very mountainous country throughout its length of 350 kilometres, and has not yet been surveyed. A rough estimate of the cost places the figure at \$290,000 per kilometre, or a total of over \$100,000,000.

These are the lines whose construction is most likely to be undertaken in the immediate future. They will connect the provinces of Szechuan, Kansu and Shensi with Central China, and also join the Peiping-Hankow and the Tientsin-Pukow railways in their northern and southern sections. The total length is over 3,100 kilometres, and the cost will total nearly \$500,000,000.

There are many other lines proposed, as for example, those for connecting Nanchang with Foochow, Nanchang with Shaochow in Kwangtung, Hankow with Chengtu via Ichang and Chungking, Canton with Yunnan via Wuchow, Nanning, and Liuchow, Taokow with Tsinan, Yunnan with Chungking via Kweiyang, Chengtu with Sian, etc. Further afield are the lines extending from Yunnan to Tihwa, in the northern borders of Turkestan, Chengtu to Tihwa, Tungkwan via Taiyuan and Tatung in Shansi to Urga in Outer Mongolia, Lanchow to Lhasa in Tibet, and extended thence along the Indo-Tibetan border into Turkestan, joining a line from North Manchuria which would then encircle the entire territory of the Republic. This group of lines will bring the

outlying frontier areas into direct communication with all other parts of the country, but practically none of these routes have been surveyed, and the length involved is over 30,000 kilometres. It is very evident that none of these lines can be undertaken in the immediate future; for the time being they are paper schemes, but are nevertheless important lines which sooner or later will have to be constructed.

PROBLEM OF FINANCING.

Financing the construction of the more feasible lines forms the greatest problem confronting the Ministry of Railways. It would be a simple matter if all existing railways were solvent and all railway debts had been met. Yet the economic development of the country, as well as the need for the creation of rapid means of communication for the unification of the country, cannot await the complete restoration of railway credit. The Ministry of Railways, burdened with all these legacies of the past, has therefore pursued the only course open to it of gradually adjusting its debts to restore confidence, and encouraging private enterprises.

COMPARISON OF OPERATING EXPENSES AND REVENUES (1916-32).

YEAR		Cost of Road and Equipmt. as at Dec. 31, (in \$1000)	Operating Revenues (in \$1000)	Operating Expenses (in \$1000)	Net Operating Revenue (in \$1000)	Percentage return on the cost of Road and Equipmt. represented by			Operating Ratio	Length of Main & branch lines (Bajjama)
						Oper. Rev.	Oper. Exp.	Net oper. revenue		
1916	..	410,818	62,762	28,842	33,920	15.3	7.0	8.3	46.0	5,492
1917	..	410,939	63,874	30,041	33,833	15.5	7.3	8.2	47.0	5,453
1918	..	415,276	77,652	34,322	43,330	18.7	8.3	10.4	44.2	5,475
1919	..	485,110	83,047	38,440	44,607	17.1	7.9	9.2	46.3	5,982
1920	..	510,177	91,444	42,780	48,664	17.9	8.4	9.5	46.8	5,994
1921	..	532,455	96,451	53,967	42,484	18.1	10.1	8.0	55.9	6,104
1922	..	617,893	99,556	56,659	42,897	16.1	9.2	6.9	56.9	6,624
1923	..	689,714	119,406	64,724	54,682	17.3	9.4	7.9	54.2	7,274
1924	..	708,480	118,511	67,378	51,133	16.7	9.5	7.2	56.9	7,546
1925	..	741,439	127,522	73,328	54,194	17.2	9.9	7.3	57.5	7,966
1930	..	766,858	130,413	88,713	41,700	17.0	11.6	5.4	68.0	7,741
1931	..	794,241	152,736	100,637	52,099	19.2	12.6	6.6	65.9	7,557
1932	..	809,126	187,400	97,077	40,323	17.0	12.0	5.0	70.6	6,921

operation and with their revenues. Chinese railways, with even the slightest encouragement, are paying propositions, and the large accumulation of debts is something for which the railways are not to blame. The above table gives a comparison of the gross operating revenues, gross operating expenses, and net operating revenue with the capital cost of the railways, together with the kilometrage represented by them. Figures for the years 1926 to 1929 inclusive are omitted because the railways were operating under abnormal conditions resulting from continued fighting during those years. It will be also seen that the figures for 1930 to 1931 also show the ill-effects of previous years of traffic interruption.

From the above table it will be observed that, under normal conditions, the gross revenue of the railways represents a return of 17 to 19 per cent on the total investment. Previous to 1925, the railways spent the equivalent of 7 to 10 per cent of their cost. Since 1930, they have spent about 12 per cent, the increased expenditure being due to the effects of the period of fighting, when railway administration was more or less under control of the military authorities. It would be more appropriate to take the figures for 1920 to 1925 as representative of normalcy in railway operation. It is, therefore, evident that if the net operating revenue of railways is not subject to appropriation for other purposes, the railways are able at any time to realize a dividend of from 7 to 8 per cent per annum. If the operating ratio could be reduced to the level of 1916-1920, then the net return would reach about 10 per cent. Even at 8 per cent, it is sufficient to cover both interest (say at 6 per cent) and capital repayment (say at 2 per cent yearly, or in 50 years). At the rate of a 10 per cent return, amortization could be effected in 25 years.

This is but one of the many evidences of the earning ability of the railways. In the past, too, much emphasis has been laid on the inability of the railways to meet their obligations, and the general public has come to the conclusion that railways do not pay. The fact is, however, that the huge indebtedness of the railways is the result not of mismanagement but of continuous fighting and interference with normal operation, and that, given the co-operation of the military authorities and freedom from foreign aggression, they will be able slowly but surely to liquidate even larger amounts of indebtedness.

As an example of what can be done, even in a period of severe trade depression, it is interesting to record that traffic receipts on the Peiping-Hankow Railway for 1934 were expected to equal, if not exceed, the

record earnings of 1932, which were \$32,000,000. The revenue for the first ten months of 1934 totalled over \$25,830,000, an increase of approximately \$1,000,000, as compared with the corresponding period in 1933, and this in spite of business depression. As November and December are usually the busiest months, it was expected that receipts would exceed \$3,000,000 each month.

INCREASED FREIGHT REVENUES.

Figures published in the autumn of 1934 show a remarkable increase in the amount of freight carried by the fourteen Government railways during the month of September in spite of trade depression, amounting to 2,300,000 metric tons, bringing in a revenue of about \$7,380,000.

In point of revenue, the Peiping-Hankow Railway ranks first, the Tientsin-Pukow Railway second, and the Peiping-Liaoning Railway third, while the Canton-Kowloon Railway had the smallest figure. In point of amount of freight carried, the Peiping-Liaoning Railway stands first, and the Peiping-Hankow Railway, second, while the Canton-Kowloon Railway again came last.

Below is the complete table published by the Ministry of Railways:—

	J ONS	REVENUE
Peiping-Hankow	361,834	\$1,648,557
Peiping-Liaoning	528,390	964,284
Tientsin-Pukow	295,224	992,085
Nanking-Shanghai	155,360	283,057
Shanghai-Hangchow-Ningpo	66,473	150,999
Peking-Suiyuan	176,044	638,421
Cheng-Tai	199,708	519,677
Taokou-Chinghua	65,501	96,955
Lung-Hai	129,318	724,335
Canton-Kowloon	11,135	21,328
Hupei-Hunan	43,897	157,649
Kiaochow-Tsinan	279,513	920,898
Nanchang-Kiukiang	20,006	41,773
South Section, Canton-Hankow	43,330	220,294
Total	2,375,710	\$7,380,312

The Ministry of Railways has already begun in a small way to settle overdue accounts and to undertake new construction at the same

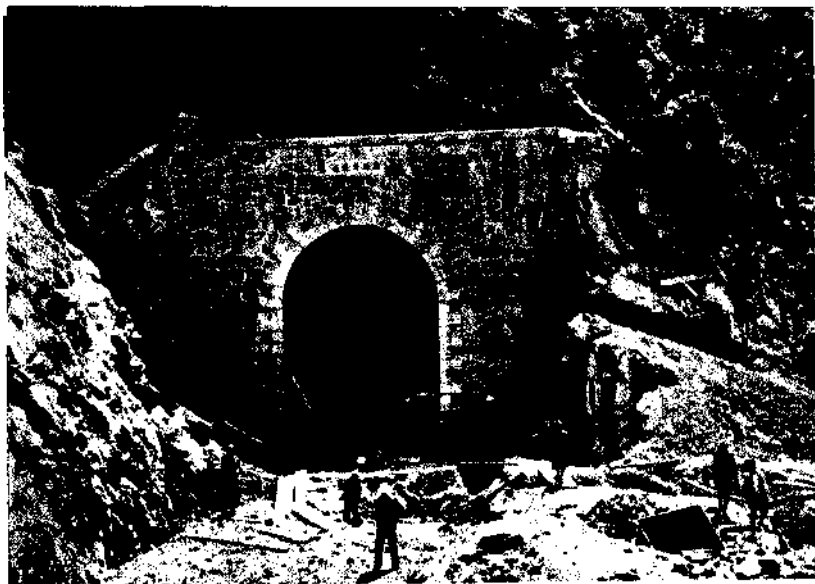
time. It is now for citizens of the Republic who have the welfare of their country at heart to launch out upon extensive construction work and place a vast network of lines on the map of China that will lead to the gradual development of the country, and to her eventual assumption of that place among the nations of the world which is hers by right.

NEW RAILWAY LOANS.

In April, 1934, the issue of a loan of \$12,000,000 for railway reconstruction purposes, to be known as the "23rd Year First Issue of the Railway Reconstruction Loan" was authorized by the Legislative Yuan. This loan is the first of a series of loan issues (expected to total \$100,000,000) which the Ministry of Railways proposes to float for the construction of new and reconditioning of existing lines. This first issue will be devoted exclusively to the construction of a new line in the province of Kiangsi, namely, the Yushan-Pinghsiang Railway. Bearing interest at 6 per cent per annum, the new loan was issued on May 1 at 98. Interest will be payable semi-annually on June 30 and December 31. Commencing from June 30, 1935, redemption of principal will be made by semi-annual drawings, to be completed within a period of eight years, *i.e.*, by the end of 1942.

In November 1934, the Ministry of Railways obtained another loan of \$16,000,000 from the China Development Finance Corporation in conjunction with the British and Chinese Corporation for the completion of the Shanghai-Hangchow-Ningpo Railway. The outstanding loan borrowed in 1908 for the construction of this line will be repaid out of part of this new loan, in which it is also stipulated that the Ministry may repay the whole or part of it after six years.

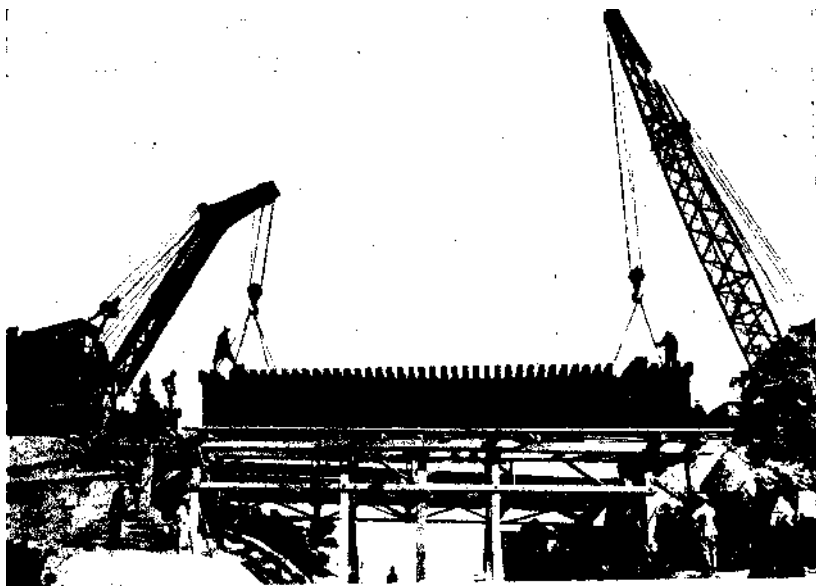
The earnings of national railways under the direct control of the Ministry of Railways will be ear-marked as a sinking fund for the redemption of principal and payment of interest. The Ministry will deposit monthly, with a bank to be designated by the Sinking Fund Commission, requisite amounts as specified in the amortization table to the account of the said Commission, to meet all necessary payments on maturity. The sinking fund will be placed in the custody of a sinking fund commission to be composed of three representatives from the Ministry of Railways, one each from the Ministry of Finance and the Ministry of Audit, and two to be elected by the underwriting banks. The proceeds of this loan will be used exclusively for the purpose specified, and under no circumstances may be appropriated for other uses.



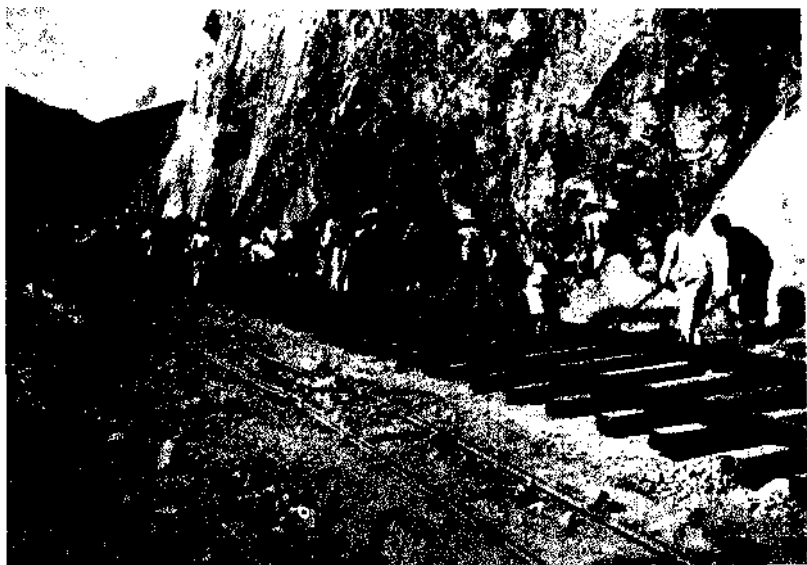
NORTHERN ENTRANCE OF YUAN LO KUO TUNNEL (*Canton-Hankow Rly.*)



THE CHIU-FENG BRIDGE ON THE CANTON-HANKOW RAILWAY



STEEL SPANS OF A 15-METRE BRIDGE LOWERED INTO POSITION (C. H. Rly.)



LAYING TRACK ALONG THE HUANG-NEI-KANC CUTTING (C. H. Rly*)

In the summer of 1934 an agreement was signed between the Ministry of Railways and the Chinese banking consortium in Shanghai whereby the former obtained \$1,500,000 for the purchase of 40 refrigerator-cars and four cold-storage warehouses to facilitate transportation of food-stuffs. These refrigerator-cars will be distributed for use on five lines namely, Lung-Hai, Tsin-Pu, Ping-Han, Nanking-Shanghai and Shanghai-Hangchow. The cold-storage warehouses will be built in Nanking, Hsuehchow, Peiping, and Hangchow. The loan thus advanced to the Ministry by the local Chinese bankers is repayable in six years with the freight charges on food-stuffs as security.

COMPLETION OF THE CANTON-HANKOW RAILWAY.

The Trustees of the British Boxer Indemnity Refund have granted the Ministry of Railways a loan of about £4,700,000 in connection with the uncompleted Canton-Hankow railway. About two million sterling is to be spent in purchasing material and equipment from Great Britain, and the balance, which will be spent on actual constructional work, will be advanced by the Trustees as the instalments of the Boxer Indemnity are paid over by the Chinese Government. In addition, the Ministry of Railways has also floated a loan of £1,400,000 through the Hongkong and Shanghai Banking Corporation. In view of the great importance of the line, connecting south and north China, the Ministry of Railways is making every possible effort to complete the railway by 1936. The programme of construction work includes four stages, starting with Lokchang and ending at Chuchow.

Regarding the development of the southern section, there are all indications that much improvement has been made during the past three years. Many locomotives and new coaches have been purchased, while railway revenue has increased to an appreciable extent. Sixteen locomotives and tenders for the Canton-Hankow Railway were bought in Great Britain in 1933, of an entirely new design of the 4-8-4 type, with huge 4-4 type tenders. The type is expected to develop into one of the standard types of Chinese engines. They are among the heaviest non-articulated engines for the Far East, and have exceptionally large boilers, which necessitate special mechanical stokers. Each engine in working order weighs in tons and each tender 56 tons.

The next two years are thus expected to witness considerable progress in railway development in South China. According to official announcements plans have been completed for the construction of a railway line

linking Canton with Swatow, and another line will be built to connect the southern capital with principal cities in Kwangsi. Work on the Canton-Hankow Railway is in full swing, and a plant for the manufacturing of locomotives is in process of construction near the Saichuen Cement Works in the Canton suburbs. The project will require a sum of \$5,000,000, of which \$2,000,000 will be borrowed from the British Boxer Indemnity Fund.

RISING VALUE OF RAILWAY BONDS.

The prices quoted on the London Stock Exchange for Chinese railway bonds indicate what the reaction has been upon foreign investors of the efforts made by the Chinese Government to get its railway obligations on a more satisfactory footing. Several meetings have been convened by the Executive Yuan to consider measures for the readjustment of existing loans. The Yuan has also instructed the Ministry of Finance and various other organs concerned to work out detailed measures immediately for the readjustment of existing loans, in accordance with the various resolutions adopted at those meetings. The Domestic and Foreign Loan Service Committee of the Ministry of Finance is now engaged in working out these measures, which will be submitted for examination and discussion at an early date.

During the past three years the Ministry of Railways has spared no effort, in spite of the various difficulties involved, to readjust the existing railway loans. As the result of its endeavours there has been a striking improvement in the market quotations of Chinese railway bonds, as will be seen from the comparison of quotations in January of the 21st year of the Republic (1932), April of the 23rd year (1934) and January this year (1935), shown in the following table:—

	<i>Jan.1932</i>	<i><u>Apr.1934</u></i>	<i><u>Jan.1935</u></i>
Peiping-Liaoning Railway Loan	69/4	£86 ³ / ₈	—
Anglo-French Loan	53½	96	99
Nanking-Shanghai Railway Loan	40½	69	79¼
First Tientsin-Pukow Railway Loan	7%	3854	33
Second Tientsin-Pukow Railway Loan	7¾	28	31
Shanghai-Hangchow-Ningpo Railway Loan	63¾	9854	101
Taokow-Chinghua Railway Loan	6	32	25½
Lunghai Railway Loan	—	19	17
Hunan-Kwangtung Railway Loan ..	—	43¾	48½

Railway construction is a very important part of the work of national

reconstruction. The Ministry of Railways has made considerable progress with its plans during the past three years, and such readjustment of existing loans as has been effected by the Ministry is the only sound basis upon which new loans can be expected to be secured. Other departments of the Government are inspired by the same principle, and the record of the Ministry of Railways is typical of the general spirit in which all branches of the National Government are working.

HOW RAILWAYS ASSIST AGRICULTURAL ENTERPRISE.

During the last few months various steps have been taken by the Chinese Government to encourage agricultural production, these measures including the reduction or abolition of many local taxes and levies, and the provision of special facilities for the transportation of produce by rail. As a measure to rehabilitate the rural districts and regulate the food supply of the country, the Ministry of Railways some time ago reduced freight charges for the transportation of foodstuffs on the National Railways. Further reductions in freight for foodstuffs and other farm products have recently been decided upon by the Ministry, with a view to relieving the economic conditions in the rural districts by facilitating the rapid transportation of primary products. The following is a brief report on the special or preferential freight charges granted by the Ministry of Railways for the transportation of foodstuffs and other agricultural products on the various national railways:—

(1). *Tientsin-Pukow Railway*: Preferential freight charges are granted for the transportation of rice from Pukow to Tientsin or from Pongpu to Tientsin, and of flour from Pongpu to Tientsin, or from Pukow or Hsuehchow to Tungkwang.

(2). *Lung-Hat Railway*: Special freight rates are granted for the transportation of various foodstuffs such as flour from Tapu to Hsuehchow, or from Kaifeng to Tungkwang. Special rates are also in force for the transportation of cotton on the western section of the railway.

(3). *Peking-Hankow Railway*: Special rates are granted for the transportation northward of wheat and beans, of rice from Chengchow to Tungkwang, and of barley, flour, and kaoliang from the area around Shaho to Peking. A 15 per cent discount is allowed for the transportation of wheat flour, as stipulated in the 33rd table of special rates.

(4). *Kiaochow-Tsinan Railway*. Special rates are provided for the transportation of wheat, black dates, native products, and peas. Special rates are also granted for the transportation of flour from Tsinan to Tsingtao.

(5). *Hunan-Hupeh Railway*. Special rates are granted for the transportation of rice along the entire railway.

(6). *Nanchang-Kiukiang Railway*: Special rates are granted for the transportation of flour, wheat, canary seeds, yellow beans, sesamum seeds, green peas, and yams.

(7). *Taokow-Chinghua Railzway*: Special rates are granted for the transportation of foodstuffs from Taokow and Sanliwan to Sinsiang.

(8). *Pciping-Liaoning Railway*. Special rates are granted for the eastward transportation of foodstuffs. Special rates are granted for the transportation of Hour between Tientsin and Shanhaikwan.

(9). *Pciping-Suiyuan Railway*: Special rates are granted for the transportation of foodstuffs. (The entire railway is divided into nine sections for this purpose.) Special rates are also granted for the transportation of beans and flour, as well as for the transportation eastward of native milled flour.

(10). *Nanking-Shanghai and Shanghai-Jfangchow-Ningpo Railways*: Special rates are granted for the transportation of foodstuffs.

(11). *Chcngring-Taiynan Railway*: Special rates are granted for the transportation of foodstuffs and cotton.

(12). *Canton-Kowloon Railway*: Special rates are granted for the transportation of rice and other cereals.

In addition to the above, the Ministry of Railways has also reduced the rates for the transportation of peanuts, water-melon seeds, sesamum seeds, and a very large number of other products by the various national railways, and has recently granted special rates for the transportation of wheat. Furthermore, the Ministry has given instructions to the various Railway Administrations to provide every facility for the transportation of rice, and to simplify freight traffic procedure to meet the convenience of farmers and merchants. Railway freight on old and new machinery, destined for the interior for use in industrial enterprises, has been reduced by 10 per cent, in order to encourage industrial development.

With regard to the rehabilitation of currency conditions in the rural districts, the Ministry of Railways has tentatively approved the request of the Four-Province Farmers' Bank (Honan, Hupeh, Anhwei and Kiangsi)—to be given the same facilities as the Central Bank and the Bank of Communications in the matter of preferential rates for the transportation of specie during the period of one year as an experiment.

The Ministry is also engaged in investigating the causes of stagnation in the wheat market, as well as studying market conditions for other agricultural products in the districts served by the national railways.

PRODUCTION ALONG THE WUHU-CHAPOO RAILWAY. (ANHWEI).

PRODUCTS	WUHU		HSUANOHENG		LANCHI		KUANGTRH	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Rice (piculs)	261,000	\$9,846,600	2,890,000	16,030,000	2,680,000	\$7,530,000	3,750,000	\$9,425,000
Wheat (piculs)	64,000	479,000	414,500	2,291,500	33,000	130,000	180,000	560,000
Rapeseed (piculs)	174,000	1,552,000	48,000	428,000	—	—	—	—
Taro (piculs)	—	—	100,000	—	—	—	—	—
Beans (piculs)	1,000	8,000	107,500	640,000	34,000	137,000	50,000	350,000
Tea (piculs)	—	—	18,000	825,000	9,000	400,000	—	55,000
Dates (barrels)	—	—	30,000	480,000	—	—	—	—
Other agricultural products	—	2,000,000	—	—	—	—	—	—
Coal & other mineral products (tons)	—	78,600	25,000	200,000	—	—	—	—
Charcoal (piculs)	—	—	50,000	50,000	—	—	—	1,150,000
Paper (bundles)	—	—	20,800	139,500	6,000	60,000	—	091,000
Hankeen (bolts)	—	—	43,000	86,000	28,000	40,000	45,000	110,500
Cocoons (piculs)	—	—	—	—	6,000	150,000	—	—
Bamboo & lumber	—	—	—	—	—	—	—	290,000
Marine products (piculs)	11,200	200,000	—	—	—	—	—	—
Hand-made products	—	6,379,649	—	—	—	—	—	—
Silk	—	—	—	—	—	—	—	180,000

PRODUCTION ALONG THE WUHU-CHAPOO RAILWAY. (CHEKIANG).

PRODUCTS	CHANGHSING		WUHSING		KAHSING		PINGHU	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Rice (piculs)	51,000	\$306,000	—	—	70,000	—	280,000	\$1,780,000
Wheat (piculs)	—	—	—	—	—	\$150,000	25,000	114,000
Beans (piculs)	—	—	—	—	—	240,000	130,000	770,000
Potatoes (piculs)	50,000	70,000	—	—	—	—	—	—
Rapeseed (piculs)	—	—	—	—	—	—	20,000	170,000
Firewood (piculs)	600,000	700,000	—	—	—	—	—	—
Charcoal (piculs)	250,000	375,000	—	—	—	—	—	—
Bamboo	—	—	—	\$400,000	—	—	—	—
Bamboo-shoots	—	—	—	500,000	—	—	—	—
Tobacco leaf (piculs)	—	—	400	10,000	—	—	—	—
Ginger (piculs)	—	—	—	—	120,000	480,000	37,000	—
Other agricultural products	—	—	—	1,300,000	—	—	—	—
Silk (piculs)	60	43,000	18,150	8,899,000	1,000	750,000	—	—
Silk fabrics (bolts)	—	—	200,000	4,000,000	140,000	1,700,000	—	—
Cocoons (piculs)	150	5,400	102,060	3,072,000	2,400	82,000	3,000	200,000
Cardboard & paper (tons)	—	—	—	—	5,000	420,000	—	—
Candles & Soap (boxes)	—	—	—	—	700	30,000	—	—
Hosiery (dozens)	—	—	—	—	—	—	900,000	—
Cloth (bolts)	—	—	—	—	—	—	900,000	—
Livestock	—	—	—	400,000	—	—	—	—
Waste Silk	—	—	—	70,000	—	—	—	—
Marine products	—	—	—	4,000,000	—	600,000	—	—

INDUSTRIAL POSSIBILITIES ALONG WUHU-CHAPOO RAILWAY.

An example of the economic possibilities attached to railway construction is found in connection with the Wuhu-Chapoo railway, planned by the National Reconstruction Commission to connect the projected Great Eastern Port with the Yangtze, providing a new route for the transportation of export goods from the Upper Yangtze without passing through Shanghai. The line has a length of over 600 li, starting from Wuhu, on the south bank of the Yangtze, to Chapoo, on the coast, by way of Hsuancheng, Langchi, and Kuangteh in Anhwei province, and Changhsing, Wuhsing, Kashing, and Pinghu in Chekiang province. Construction was started in April, 1934, and the section from Wuhu to Sunchiapu having been built, the remaining portion is expected to be completed early in 1935. It is understood that extensions will be made in the next two years from Hsuancheng south to Hsihsien (Hweichow) and to the Fukien frontier via Kiangshaxi, to link with the Hangchow-Kiangshan railway. When the whole line is completed, the products of the regions along the railway, which have hitherto been limited to local markets, can readily find their way outside, and accordingly production will increase considerably owing to the augmented demand. This line will not only bring the various districts in Anhwei and Chekiang within easy reach, but contribute greatly to the development of both provinces. Some details regarding economic conditions in the eight districts along the line are given in the table on page 211, being reproduced from the *Chinese Economic Bulletin*, a weekly publication issued by the Bureau of Foreign Trade of the Ministry of Industry.

The eight districts—Wuhu, Hsuancheng, Langchi, Kuangteh, Changhsing, Wuhsing, Kashing, and Pinghu—are composed for the most part of fertile plains with only a few mountains. Hsuancheng, in Anhui, is the largest district, totalling more than 9,000 square li, while Pinghu is the smallest, with about 1,400 square li. In regard to population, Wuhsing, Chekiang, has the largest, 688,520, with Langchi the most thinly populated, about 150,000. The density of population is highest in Pinghu, averaging 180 per square li, and smallest in Kuangteh, with an average of 24.

Products in the eight districts vary according to differences in the nature of the soil. The province of Anhwei being more mountainous, staple products consist of rice, wheat, tea, and beans, with bamboo, lumber, and fruit next in importance, while silk and cocoons constitute

the principal products of the districts in Chekiang, where the soil is rich and well-watered, suitable for cultivating mulberry-trees, although rice, beans, and sea-food are also important products. Wuhu is the largest rice market on the lower Yangtze, about eight or nine million piculs being exported annually, and Hsuancheng is one of the largest tea markets in southern Anhwei, with annual shipments of approximately 160,000 piculs going abroad. Wuhsing is the largest silk-producing centre in Chekiang, *tsatlec* silk being famous at home and abroad, and Kashing ranks next in silk production, though its rice and wheat are quantitatively more than the crops in Wuhsing, while Pinghu is known for its large production of rice and beans. In Changhsing there is a colliery with a daily output of about 500 tons, and in the eastern part there are many lime-kilns, producing \$700,000 worth of lime annually.

It is generally recognized that communication facilities lead to commercial development. The districts to be connected by this railway handle only a small volume of business every year—except Wuhu and Kashing, whose trade is comparatively large, owing to their respective favourable locations on the Yangtze and on the Shanghai-Hangchow-Ningpo line. Although there is considerable production of tea and paper in Hsuancheng, of rice, beans, bamboo, and lumber in Changhsing, of silk and cocoons in Wuhsing, and of rice and other cereals in Pinghu, the existing poor means of communication impedes any further development. Until the completion of this projected line, such districts as Kuangteh and Langchi must remain commercially backward.

Industries in most regions along the railway remain in the stage of cottage handicrafts, except in Wuhu and Kashing, where there are a few modern factories using machinery, though these are suffering from the general economic depression. In Wuhsing there are some silk-mills, which are also declining owing to market conditions. In Wuhu there are several large industrial concerns, among which a cotton-mill with a capital of \$3,000,000 and an annual turnover of \$2,600,000, a soap factory with a turnover of \$100,000, 13 rice-mills, 6 machinery plants with an annual business of \$70,000, 23 hosiery manufacturers with a turnover of \$300,000, 175 cotton weaving mills with a turnover of \$2,000,000, and an electric power company with an annual business of \$500,000.

Industries in Hsuancheng, Langchi, and Kuangteh have yet to be developed. In the south-east of Hsuancheng there are more than 100 families engaged in making paper by manual labour. The annual out-

put is about 20,000 bundles, worth between \$150,000 and \$160,000. This occupation is followed mostly by farmers when not engaged in the fields. In the city a few towel and cloth concerns are operating on a very small scale, with a yearly output of about \$60,000. Hand-made paper is also produced in Lanchi, the annual yield being valued at approximately \$40,000. In addition, Lanchi straw hats, made of dried wheat stalks, are in good demand in neighbouring districts like Hsuan-cheng, Ningkou, and Kaocheng, though the output amounts to only 40,000 hats, worth \$5,000 per annum. Large quantities of hand-made paper are manufactured in Kuangteh, averaging 80,000 bundles a year, valued at \$700,000 and about 60,000 piculs of paper-fan ribs, worth \$180,000, are shipped to Chekiang markets every year by the peasants, while the women make \$120,000 worth of nankeen per annum, mostly for the local market.

The industries of Changhsing also remain undeveloped. In the city there is a hosiery plant, whose annual turnover amounts to some \$20,000. About 300 silk-weaving concerns are established in the village of Hcngshanchiao, in the eastern section, and the fabrics made are valued at \$300,000 a year. In addition about 40 pottery and limekilns are operating in the vicinity of Yaochiachiao, in the western section, with an annual turnover worth some \$800,000.

Although Wuhsing is the largest silk-producing centre in Chekiang, modern industry is still in its infancy. Near the north gate of the city was the Model Factory, and in Nanhsun and Hsuanlin, two important villages of Wuhsing, there were three large silk-mills, but all have suspended operations owing to business depression. During the boom period there, more than 660 silk-weaving concerns and over 6,000 families were engaged, but now only 22 concerns remain working, with 400 power-looms and 500 iron-looms, while the families engaged have dwindled to about half the former number, operating 3,000 looms, the total output amounting to no more than 720,000 bolts per year, worth approximately \$7,000,000. In addition, there are 40 rice-milling plants with an annual turnover ranging from \$60,000 to \$70,000; six cotton-mills, with a yearly turnover of \$140,000; nine iron-works manufacturing looms, the total output being worth about \$70,000 annually; and nine shuttle-makers, whose turnover amounts to some \$40,000 per annum. Among other handicraft products are Chinese pens and goose-quill fans. Penmakers number over 100, centred in the village of Shanlienchen, in

the south-eastern part of the district, and their annual output is worth about \$200,000, while the quill fanmakers are 14 in number, their annual output being estimated at \$100,000 in value.

Industries operating modern machinery have developed fairly well in Kashing, where there are four silk-mills using mechanical plant, and turning out more than a million dollars' worth of silk per annum; two dyeing and weaving factories, with a turnover of over \$300,000; one paper-mill equipped with machinery, the yearly output being valued at about \$400,000; 31 rice-milling plants, doing a business of over \$100,000 annually; one button factory, making more than \$10,000 worth of buttons a year; two candle and soap makers, whose annual turnover amounts to \$30,000 and one dry-cell maker, having an output worth more than \$10,000 per year. In regard to home handicrafts, there are over 3,000 silk-weaving concerns, who manufacture about 140,000 bolts per annum, valued at \$1,700,000; eight hosiery knitters, with an annual output of \$130,000; and 78 native-cloth weavers giving a production worth about \$600,000 a year. No large-scale factories have been established in Pinghu, where the most notable minor industries are hosiery-making and native-cloth weaving. Hosiery makers number 48 in the district, with a yearly output of about 1,000,000 dozen, valued at more than \$1,000,000, while the looms used in weaving nankeen are about 50,000, turning out 1,200,000 bolts annually. In addition to these, Pinghu has about a dozen rice-milling plants and a few small ironworks, the annual turnover aggregating only a few thousand dollars.

The opening of the Wuhu-Chapoo railway will link all these industrial centres and, by bringing them into close contact, encourage the development of commercial relations between these various districts, and between them, collectively, and outside markets which it is practically impossible for them to reach owing to the absence or unsatisfactory nature of effective means of communication.

ABUSE OF SPECIAL PRIVILEGES CHECKED.

For many years it was the custom to allow Government officials to travel free on the national railways, and in many cases to have special coaches and even trains put at their disposal, but as usually happens all over the world these privileges were abused, and it was recently decided to put a stop to the practice. Orders have been issued by the Ministry of Railways to the various Railway Administrations that special trains or coaches shall not be provided except for the following person-

ages: (a) The President of the National Government; (b) Heads of foreign Governments; (c) foreign Ambassadors or Ministers going to the capital to present their credentials or upon their departure from the country; (d) Presidents and Vice-Presidents of the various Yuan of the National Government; (e) The President of the Military Affairs Commission; (f) Members of the Standing Committee of the National Economic Council and (g) Ministers and Vice-Ministers of the various Ministries. The President of the National Government and his retinue are exempt from payment of fares for use of special trains or coaches, Foreign Ambassadors or Ministers are required to pay only their fares for passage and not for the hire of special coaches. Unless special arrangements have previously been made with the Ministry of Railways, all other Government officials travelling in special trains or coaches will have to pay both the regular passenger fares and the hire charge for special trains or coaches.

NUMBER OF RAILWAY WORKERS.

At the end of 1933, altogether 81,348 workers were employed in the Government railway services in the country, according to statistics compiled by the Ministry of Railways. The wages for the workers total \$51,496 daily. The number of workers on the various railways is given below:—

1.	Nanking-Shanghai and Shanghai-Hangchow Ningpo	9,454
	Tientsin-Pukow	13,475
3.	Peiping-Hankow	15,044
4.	Peiping-Liaoning	10,010
5.	Peiping-Suiyuan	9,039
6.	Lung-Hai	6,117
7.	Kiaochow-Tsinan	6,215
8.	Htipeh-Hunan section of Canton-Hankow	4,233
9.	Chengting-Taiyuan	2,198
10.	Taokow-Chinghua	1,260
11.	Nanchang-Kiukiang	1,131
12.	Kwangtung section of the Canton-Hankow	2,118
13.	Canton-Kowloon	1,053

The number of railway workers in the country in 1931 totalled 99,754 including 14,702 employed on the Government railways in Manchuria. The actual total in China Proper was therefore 85,052. In 1933 figures as compared with 1931 show a decrease of 3,704.

CHAPTER XT.

ROAD CONSTRUCTION.

AS we have already seen, one of China's greatest needs to-day is the provision of better means of communication. These are essential if the country is to be unified in the real sense of the word. Only by travel can her people "get acquainted" with each other, and the barriers raised by different dialects, different customs, and often a different mental outlook, be broken down. Only by intercourse with each other can people attain a proper understanding of each other, and of the fact that, whether they come from the north or from the south, from the east or from the west, whether Szechuan be their home province or Chekiang, Hopei, or Yunnan, they are all Chinese, members of one race, with a common cultural heritage and a common destiny. But travelling is impossible without adequate and speedy means of communication. The same lack makes it impossible for any Administration to function successfully, especially over so vast an area as China, while, last but by no means least, it is hopeless to expect industry and commerce to flourish and develop under such unfavourable conditions.

In her long coastline and the network of inland waterways comprised by her many navigable rivers and canals China possesses, it is true, an asset of great value, though at times one may be inclined to wonder whether it has not been in some ways a drawback, since its existence has apparently seemed to obviate in the eyes of many the need for developing any other system. The absence of railways, and especially of roads, can be attributed in part to the fact that over wide areas water transport and travel is so convenient. At present the country possesses under 12,000 kilometres of railways and 100,000 kilometres of roads to which must be added the facilities afforded by three aviation companies. What this means can be easily realized when its effect on trade is taken. The average cost of transport in China is stated to be 15 times that in the United States!

Of roads, railways, and air services, the first are undoubtedly the prime necessity, if only for the fact that without roads to feed them

railways are themselves robbed of 90 per cent of their potential utility. Moreover, the difference in the construction cost between road and railway is an important factor when the tremendous amount China has to do is compared with the small means at her disposal. For a road the maximum cost is round about \$9,000 per mile, and this is for macadam in mountainous districts; for a dirt road in the plains the cost falls to \$3,000. The very minimum for a railway is put at \$19,000 a mile for a two-foot gauge. For a standard gauge track the figure ranges between \$50,000 and \$125,000.

	ROADS	AREA	ROADS	AREA
	<i>Mile</i>	<i>Sq. Mile</i>	<i>Mile</i>	<i>Sq. Mile</i>
United Kingdom	1 per	0.5	or 2	per 1
United States of America	1 "	1.0		" 1
World as a whole	1 "	6.6	" 0.15	" 1
China	1 "	154.0	" 0.006	" 1

To reach the same standard as the United Kingdom, China needs 8,564,000 miles of roads; as the United States 4,282,000 miles; as the world 630,000 miles. At the present rate of progress of roughly about 15,000 miles of all kinds of roads modern and primitive, per year, this would take 560 years, 280 years, 42 years respectively! It is obvious that a greatly accelerated rate of modern road construction is necessary and, with the energetic carrying out of the various schemes in hand under the direction and guidance of the National Economic Council, and other national and provincial organs, also inevitable.

With all this, however, it should be realized that few decades ago China could only boast a few thousand li. When Nanking was first set up as the new capital of the National Government in 1927, there were hardly any highways connecting it with other important cities, and few roads were found in other provinces. Under the road-building programme of the National Government during the last few years Nanking has been connected with Hangchow, Wuhu, Chekiang and Shanghai by highways. From Wuhu there is a road to Nanchang, while the latter city is now connected with Changsha, capital of Hunan, by highway.

The history of highway development in China may be divided into three periods. The first was before 1927, which was undertaken independently by various war-lords in their own territories. Construction was spontaneous and there was no co-ordinated programme whatsoever. The second period was from 1931 to 1933, when provincial authorities

pushed on their own road-building projects, with the Government having no definite policy of financial aid. Honan took the lead during this period, with Kwangtung and Kwangsi following closely behind. Chekiang, Kiangsu, Anhwei and a few northern provinces gradually followed suit. The third period, which commenced in May 1933, was momentous in the history of China's highway development. The whole scheme was vested in the hands of the National Economic Council* under the National Government. Road construction in Chekiang, Kiangsu and Anhwei was first taken over by the N.E.C. in May 1933. Seven months later, the three-province network was extended to a seven-province scheme, with Honan, Hupeh, Kiangsi and Hunan as additions. Subsidies were granted to any of the seven provinces which lacked funds and experts sent out to supervise the construction work.

ANCIENT COURIER ROUTES.

China has not always been so backward in the matter of highways. At one time her rulers and her people were certainly "road-minded". Tradition ascribes the first efforts at road-building to the rulers of the third millenium B.C. Later the Chow dynasty established a special department for roads. In the first and second centuries A.D. there was contact with the Romans, some of whose ideas may possibly have been adopted. The Tang dynasty made the care and construction of roads the business of the Board of War. Gradually an extensive system of courier routes was built up, until by the time of Genghiz Khan there were 2,000 miles of highways completely repaired and improved. In all there were twelve of these ancient courier routes:—

1. Peking-Tungchow-Yungping-Shanhaikuan-Mukden.
2. Peking-Jehol-Tsitsihar.
3. Peking-Dolonor-Khailar.
4. Peking-Kalgan-Urga-Maimachin-Kiachta.
5. Peking-Kalgan-Kweiuating-Uliassutai-Kobclo-Scmipalatinsk.
6. Peking-Taiyuan - Lanchow - Liangchow - Suchow (Gobi Desert)-Hami-Urumtchi-Kashgar.
7. Peking-Lanchow-Hsining-Kokonor-Nakchuka-Lhassa-Gartok.
8. Peking-Taiyuan-Sian-Chengtuo-Tatsienlu-Lhassa.

*i.e. working in conjunction with the Ministry of Railways, which Ministry has originally sole jurisdiction over all highways in China, as evidenced by its Chinese name *Teh-Tao-Pu*

9. Peking-Chengting-Kaifeng-Siangyung-Changteh-Kweiyang-Yunnan-Tali-Bhamo.
10. Peking - Chengting - Kaifeng - Hankow - Yochow - Hangchow - Kweilin.
11. Peking-Tehchow-Hsuchow-Luchow-Kiukiang-Nanchang-Canton (Ambassador's Road).
12. Peking-Tehchow - Hsnchow - Chinkiang - Hangchow-Wenchow-Foochow.

These roads were cut in as direct a line as possible, often being cut out of hillsides or running through tunnels. On the plains they were up to 20 or 25 yards in width, and in many places paved. By such means it was possible for Imperial messengers to reach any part of the country in a comparatively short space of time. The journey from Peking to Canton, for example, could be made in ten days. With the accession of the Ming dynasty, Government interest in roads gradually declined; the Manchus were equally regardless of the necessity for keeping up these courier routes, and slowly but surely they fell into decay, until to-day they have practically disappeared. Only in a few odd places are they still discernible and passable—the Sian-Chengtzu stone highway is a case in point. By the beginning of the present century, roads, as far as any existed, were merely cart tracks, quite undeserving of the name of road as understood in 19th century Europe. Any construction or repair work that was done was due to spasmodic outbursts of energy of the part of provincial authorities, military governors or associations of farmers or private business interests, and these were not particularly effective. In 1919 a Presidential Mandate laid down regulations for the building of national highways, but the regulations remained a dead letter as far as any actual construction was concerned. The first real work on a large scale was done as a result of the efforts of the American Red Cross Society, which in 1920-21 spent \$2,445,000 in building 850 miles of roads in Hopei, Honan, Shansi, and Shantung as part of their famine relief programme. Their example awakened a general desire for better roads, but until 1927 and the formation of the National Government at Nanking, there was no Central Government able to tackle the problem, and even after that date the Central authorities, while fully alive to the vital character of the road problem, could do little more than formulate schemes on paper. Dr. Sun Yat-Sen, in his *International Development of China* (1919), spoke of a million miles of macadam roads.

The National People's Convention of 1931 passed a six-year plan which looked forward to 200,000 miles of new roads.

TWELVE HIGHWAYS PLANNED.

The formation of the National Highways Planning Commission in 1929 marked the first step towards a really national system of roads. Nineteen provinces sent delegates to a conference at Nanking, as the outcome of which definite plans were submitted to the Government, and these resulted in the promulgation of Highway Laws in September the same year. Roads are divided into two classes, (1) China Proper Roads, (2) Frontier Defence Lines. The title of the latter sufficiently indicates their character; the former are designed to connect the national with provincial capitals. They are to pass through the most populous and productive districts, linking up important commercial centres, and to act as feeders to railway lines. As far as possible provincial highways in existence or projected are to be incorporated in this system. At the same time they are to follow the course of projected railways, which in fact are to be constructed in the first place as national highways. Twelve of these in all have been scheduled, as follows:—

1. *Nanking-Kwangsi Highway*.—This is to link Nanking with Lungchow in Kwangsi, passing through Kuyung, Changhing, Hangchow, Wenchow, Foochow, Changchow, Hoifung, Canton, Wuchow, and Nanning. It is to incorporate the provincial highways of Kiangsu, Chekiang, Fukien, Kwangtung, and Kwangsi. In addition to its commercial and political value it is important from the point of view of the defence of the south-eastern coast.

2. *Nanking-Yunnan-Hsikang Highway*.—Nanking to Kunming via Pukow, Anking, Hankow, Shasi, Changteh, Tungjcn, Kweiyang, Panchn and Chuching.

3. *Nanking-Tibet Highway*.—Nanking to Lhasa via Pukow, Luan, Kwangchow, Tunpeh, Fanchcng, Yunyang, Paiho, Tungchow, Chengtu, Tatsienlu, Litang, Locheng.

4. *Tukien-Sinkiang Highway*.—Foochow to Ili via Yenping, Kwangtse, Nancheng, Nanchang, Paicha, Wuchang, Hankow, Siang-yang, Yunyang, Sian, Lanchow, Anchang, Hami, Tihwa, and Wusu. This is important as connecting the north-western with the south-eastern provinces, and serving to develop the north-west. In the extreme west its main purpose is for national defence.

5. *Nanking-Mongolia Highway*.—Nanking to Maimaichon via Pu-

kow, Yingchow, Chengchow, Tsechow, Taiyuan, Tatung, Pangkiang, Taoling and Urga. This line is to connect Shansi and Mongolia with Nanking and to facilitate defence of the northern frontier.

6. *Nanking-Heilungkiang Highway*.—Pukow to Heiho via Luho, Haichow, Weihsien, Wuting, Tientsin, Peiping, Chengteh, Taonan, Lungkiang and Aihun. Based on the projected provincial highways of Kiangsu, Shantung, and Hopei.

7. *Kalgan-Suiyuan Highway*.—Kalgan to Suiyuan via Chifeng, Singlitun, Mukden, Hailung, Kirin, Wuchang, Fangcheng, ilan and Lingkiang.

8. *Kansu-Tibet-Sinfiyang Highway*.—Hsining to Hotien via Yien-chih, Lhassa, Nichkaxnu, Chiatoke and Lotoke.

9. *SuiyuanSinkiang Highway*.—Paotow to Sula via Wuyuan, Ninghsia, Hsining, Jotsiang, Yutien and Hotien.

10. *Heilungkiang-Mongolia Highway*.—Manchuli to Wusu via Urga, Kobdo, and Tacheng.

11. *TihwaSula Highway*.—Tihwa to Sula via Tulufan, Wcnsu, and Pachu.

12. *Shensi-Kwangsi Highway*.—Tungkwan to Wuchow via Sian, Hanchung, Tungchuan, Chengtu, Luchow, Kweiyang, Chingyuan and Liuchow.

These plans call for 22,500 miles of roads at an estimated cost of 364 million dollars. They are to be built during a period of twenty years—at first of earth, as the provision of some means of communication is the first necessity; later, they are to be macadamized as money and opportunity allow. A good proportion of the roads falling in the China Proper category have already been opened, as they consist to a considerable extent of roads which had already been started.

Construction has been placed under the control of the Ministry of Railways, and the following standards as to costs per /" (one-third of a mile) have been laid down:—

	<i>Earth</i>	<i>Macadam</i>
Level country.	\$3,000	\$5,400
Moderately hilly.	\$4,000	\$6,000
Mountainous.	\$7,000	\$9,000

Regulations have been also issued governing the terms and conditions on which private transport companies may use the roads, the raising of funds, and the conscription of labour, of which the following arc the

most important provisions:—

Private transport companies are allowed the use of these roads on payment of rent. Charges are to be fixed by the Ministry, and equipment subject to inspection by Government officials. Part of the profits are also to go to the Ministry.

The construction of roads in the interior provinces is to be financed by a surtax on farmland, supplemented if necessary by a Customs and Salt surtax. In the outlying provinces the work is to be financed by a Customs and Salt surtax plus appropriations from the basic Customs and Salt funds. On the security of these surtaxes, plus the profits from the highways, public loans, bonds and debentures may be issued.

All able-bodied male residents between the ages of 18 and 50 of the districts through which these national highways pass, and of adjacent *hsien* district, are liable to be pressed into labour gangs for road construction. They will be provided with food and, if necessary, shelter, but must provide their own tools.

BUREAU OF PUBLIC ROADS.

In January 1932, a Commission on Highways was appointed by the National Economic Council, which became first a Highway Department, but is now known as the Bureau of Public Roads. Since then progress has been greatly accelerated. Attention was at first concentrated on the "Three-Province Programme" for linking the existing highways in Chekiang, Anhwei and Kiangsu. This has already been largely completed. The six Nanking-Hangchow, Shanghai-Hangchow, Soochow-Kashing, Nanking-Wuhu, Changhsing-Suichang, Hangchow-Hwcichow highways are designed to link the chief cities of these provinces, and tap a number of areas of considerable commercial and industrial possibilities. The Bureau is now concerning itself with a "Seven-Province Programme" for linking 13,670 miles of roads in Hunan, Honan, Hupch, Kiangsi, Anhwei, Kiangsu, and Chekiang. A road fund of C\$250,000 has been created by appropriation from the National Treasury and placed at the Bureau's disposal, which is utilized in the form of loans to provincial authorities. From 30 to 40 per cent of the estimated cost is advanced in instalments as the work progresses. Definite arrangements are made for repayment, so that the fund may be maintained as a revolving source. Part of the proceeds of the recent American Wheat and Cotton Loan and of the National State Lottery is also used for road construction purposes.

In November 1932, the Bureau issued regulations opening inter-

provincial roads to all properly licensed vehicles free of any further charge. Previously many toll roads existed, and over some sections motor transport was restricted as a provincial monopoly.

Ninety per cent of the roads are of dirt. The usual method of construction is to cut or fill the proposed track to the required level, after which it may be rolled, but as often as not is left for traffic to beat down. If rock is near, it is occasionally used for foundation or surfacing purposes. In the latter case it is generally hand-broken, placed on the road, and filled in with sand or loose earth. Very little mechanical equipment is used, though in the last three years there has been growing realization of the advantages of using machinery, as evidenced in the purchase of steam and Diesel road-rollers, railway dump-car equipment, tractors, road-graders, and air-compressors for drills. Once a road is finished little or no maintenance work is done.

To arrive at accurate figures regarding road mileage is very difficult. In the first place, there is considerable difference of opinion as to what constitutes a road, and car-drivers accustomed to the modern, smooth, straight, and easy-graded highways for "speeding", which is common in Western countries, would not consider some of the roads met with in China to be worthy of the name. It must be understood, therefore, in reading figures relating to road-construction in China, that they include primitive as well as modern examples of construction, and that the greater part of the roadways are far from being up to the standard required to carry motor-trucks or even cars at anything like the speed such vehicles are normally capable of making. With this point clearly understood, the following figures can be presented without risk of misunderstanding their import:—

ROADS IN CHINA

YEAR	<i>Length in Kilometres</i>	YEAR	<i>Length in Kilometres</i>
1921	1,158	1928	30,550
1922	8,000	1929	34,444
1923	13,611	1930	46,666
1924	16,000	1931	66,111
1925	23,333	1932	80,899
1926	26,111	1933	98,161
1927	29,170		

ROAD CONSTRUCTION

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ROAD-BUILDING BY PROVINCES IN 1933.

PROVINCE	Length Projected (kilometres)	Length Completed (kilometres)	PROVINCE	Length Projected (kilometre*)	Length Completed (kilometres)
Kiangsu .	6,126	4,907	Shensi	5,539	1,412
Chekiang	6,748	3,285	Kansu	7,685	2,908
Anhwei	3,247	1,551	Chinghai	10,498	1,104
Kiangsi	2,535	1,223	Ningshia	3,3°3	1,977
Hupeh	4,963	1,485	Suiyuan	3,871	2,410
Hunan	8,437	1,597	Chahar	4,954	3,898
Szechuan	5,419	4,698	Jehol	4,613	2,318
Fukien	4,409	1,936	Liaoning	3,454	2,329
Kwangtung	30,079	7,962	Kirin	4,759	2,044
Kwangsi	8,909	6,531	Heilunkiang	2,340	1,995
Yunnan	7,244	1,344	Sinkiang	3,553	1,317
Kweichow	7,030	1,752	Mongolia	7,655	2,528
Hopei	6,032	3,062	Hsikang	2,839	554
Honan	4,435	2,426	Tibet	8,765	926
Shantung	39,538	23,868			
Shansi .	7,730	2,760	Total	227,772	98,161

ROAD DEVELOPMENT IN YANCTSZE AREA.

Out of a total length of 10,340 li (3,445 miles) of highways planned or constructed in the eight provinces of Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Hunan, Honan and Fukien according to the plans of the National Economic Council, traffic is already in operation on 6,150 li (2,050 miles) of highways. Only 2,615 li (873 miles) remain to be completed.

PROVINCE	CONSTRUCTED	IN PROGRESS	PROJECTED
1. Kiangsu	566	621	171
2. Chekiang	830.2	355.4	50
3. Anhwei	910	96	454
4. Kiangsi .	1,922	53	198
5. Hupeh	544	445	382
6. Hunan	339	187	228
7. Honan	819.9	233.8	57
8. Fukien	218.6	624.2	34
Total in li	6,149.7	2,615.4	1,574

Kiangsi holds the record, the extent of highways built during the years 1932 to 1934 being 4287 kilometres. Special efforts were made to complete the network in that province, in order to provide communication facilities for the Government forces in their operations against the Communist-bandits, which in 1934 were finally crowned with success.

The following further particulars are added in regard to the provinces of Kiangsi, Kiangsu, Kwangsi, Shensi, Hunan, Hupeh, Honan and Kweichow, with the reservation again that mileage figures cannot be guaranteed, if only from the fact that construction is always going on and fresh plans being made, so that the situation is always changing.

Kiangsi.

Six provincial highways are nearing completion, in addition to a number of *inter-hsien* roads. The work is being financed by a surtax of \$1.50 per picul on salt. Transport services have already been opened, employing over 400 motor vehicles. The monthly revenue therefrom averages \$244,000. The six highways mentioned are:

1. *Klang si-K wan tung. (Nanchang to Namhung in Kwangtung).* Total length 326 miles. An important link between Suichuen and Kanchow, in the highway system connecting Kiangsi and Canton, was expected to be completed by the end of July, 1935. Following the success of the anti-Red campaign, highway construction is making substantial progress, in many sections of the trunk highway leading to the Kwangtung territory. As soon as the whole highway system is completed, a motor trip from Canton to Nanchang will take only twenty-four hours, thus bringing these two cities within far easier reach of each other by road than by any other route.

2. *Kiangsi-Chckiang. {Nanchang to Changhsing}.* Total length 198 miles; Nanchang-Yushan section finished.

3. *Kiangsi-Fukien. (Linchuan to Kwangtse, Fukien).* Total length 108 miles; whole finished.

4. *Kiangsi-Hunan. (NiuHong to Pinghsiang).* Total length 57 miles; recently completed.

5. *Klang si-Anhwei. (Yukan to Hukow and Anhwei boundary).* Total length 160 miles. Construction started in 1930 but is now suspended.

6. *Kiangsi-Hupeh. (NiuHong to Kwangmei, Hupeh).* Total length 150 miles; only one small section completed. Rest not yet surveyed. Most of the *inter-hsien* highways have been completed, the total length being 485 miles, of which 350 have been opened to traffic.

A total of over 2,200 kilometres of highways was constructed in Kiangsi during 1934 alone. In 1934, the aggregate volume of road traffic, borne on 419 omnibuses, comprised 1,663,677 passengers and

12,548 tons of freight carried. Gross receipts for the year totalled \$2,930,000, so that the annual revenue was \$125.50 in respect of each kilometre operated.

Chcbjang.

Efforts are being made by the Government to develop the highways which bring within easy reach of the motorist the natural scenic attractions of this province. Says one foreign writer who has been over the ground. "It is not too much to say that the future holds for the beauty-lover in East China not a little of the delight that is traditionally associated with Japan", and a one-time remote area is now within a few hours' drive from Shanghai. A foreign resident of Wenchow, writing in December 1934, says:— "The most important news just now is the extensive road-making in country and city which, in progress now for over a year, has practically arrived at the final stage of completion. Four years ago it seemed hardly credible that any of the plans for roads could come to anything definite. The matter has been on paper now for more than ten years. Sometimes taxes have been raised, and the money diverted; once at least a stretch of motor-road was actually accomplished, only to be left, because an isolated road, to waste. Things have now changed. Roads have suddenly appeared as from nowhere. Great timber and concrete bridges span innumerable creeks and streams. Motor-buses have actually begun to run trial services beside the winding Bowl River, which has never witnessed anything more mechanical than the little passenger launches that take a day to get to Tsingtie. The cars will take only a couple of hours. Most of this road has been cut out of the solid rock of the mountain."

Kiangsu.

With a view to promoting the development of communications in the province, investment of private capital in the construction of highways in Kiangsu province is invited by the Kiangsu Provincial Government. Private interests which undertake the building of highways either by making loans to the Provincial Government or by bearing the cost themselves, will be given from 5 to 30 years' franchise for operating an omnibus service on the highway concerned. Loans made to the Provincial Government will bear interest at six per cent, per annum, and will be duly amortized. Where construction costs are directly borne by the private interests, such outlay will not be refunded, but a long-term franchise will be granted. During the period of the franchise, the private

interests concerned will be required to remit to the Provincial Government annually a sum ranging from three to fifteen per cent, of their total earnings. On the expiration of the franchise, the immoveable assets of the highways will be taken over by the provincial government. The omnibuses will remain the property of the owners or sold to the Provincial Government.

Construction of the Wusih-Shanghai Highway being completed in March, omnibus services will operate from April 1, 1935. The highway, which starts from Wusih and passes the important cities of Changshu, Taichang, Kiating, Nanhsiung, Chenju to Shanghai, is more than 130 kilometres long. There are altogether 149 bridges and 64 tunnels. Four main bus stations will be established at Wusih, Changshu, Taichang and Shanghai, in addition to smaller stations at various stops. An order for 40 omnibuses has been filled in Shanghai.

The Soochow-Kashing Highway was completed in 1933, and serves to connect the two most interesting cities in Kiangsu and Chekiang which are prominent both as industrial centres and beauty spots, especially Soochow. The journey can be performed comfortably by bus in three hours.

An h wei.

According to statistics compiled by the Provincial Department of Reconstruction, a total of 2,605 kilometres of highways have been constructed in the Province during the past two years. The length of highways now under construction totals 595 kilometres, and eight others are projected. Among the important roads recently completed are the Hangchow-Hweichow, Nanking-Wuhu and Hsuan-cheng-Changhsing highways. The first brings these two important cities within 8 hours of each other. The second, about 90 kilometres in length, was opened to traffic on New Year's Day, 1933. Before the completion of this highway small steam-boats were practically the only means of transportation between the capital of China and Wuhu. The third highway is about 120 kilometres long. Journeys which used to take from dawn to dusk for travellers carried in chairs are now made in much greater comfort by motor-bus in a couple of hours or less.

Kwangsi.

The Bureau of Public Highways have recently completed the Nanning-Poseh motor-road. From Nanning the road runs through U-Ming and Pingma to Poseh, a distance of roughly more than 650 kilometres.

About half a million days of individual labour were spent on the job—most of it being contributed by the population of the districts through which the highway passes—and in addition about \$428,000 was expended for skilled labour and material in building bridges, culverts, bus-stations, etc. Part of the road runs through very hilly and picturesque country.

Shensi.

Orders were placed in June 1934 for 6,000 barrels of cement to begin construction work on the Sian-Lanchow Highway, and the National Economic Council was requested to despatch additional engineers to assist in the work. The first omnibus service in Sian, provincial capital of Shensi, was started in July. The service is operated by the Shensi Provincial Department of Reconstruction, and runs across the city from the East to the West Gate.

Disbandment of 20,000 soldiers, the planting of 160,000 trees and the construction of 3,033 kilometres of highways in a period of 18 months are some of the achievements of the provincial administration of Shensi outlined in an interview given in August 1934, by General Yang Hu-Cheng, Pacification Commissioner of Shensi. His troops were transferred to Shensi in 1930 by order of the Central Government, and, in spite of the periodical drought famine, these soldiers have been able to bring order out of chaos. In order to be able to maintain peace and order permanently, it was necessary to lighten the burden of taxation by the disbandment of superfluous soldiers. Thus, more than 20,000 soldiers were disbanded in March 1933, saving for the province an annual expenditure of \$4,000,000. Those soldiers who were retained are being vigorously trained, and are being employed in planting trees and building roads during their spare moments. In this way 160,000 trees were planted along the Wei River. It is hoped to plant 5,000,000 trees in five years, employing 20,000 men to plant 50 trees annually each man. After 10 years, these 5,000,000 trees would be worth at least \$10,000,000, apart from their value as a means of preventing droughts.

In addition to tree planting, the soldiers are also doing very useful work in building the provincial roads. Four main highways amounting to 1897 kilometres, namely, Sian-Lanchow, Nancheng-Peiho, Yiyang-Yuling and Sian-Haichung, have been completed. Six branch lines, 1,136 kilometres long, have also been constructed. The bridges and conduits were constructed by the National Economic Council, but all road-beds were looked after by the soldiers.

Hunan.

By December 24, 1932, Hunan had already 2,315 miles of motor roads. It is planned to attain a mileage of 13,494, with seven trunk roads as under:—

1. *Hunan-Kwangtung. Changsha to Lokchang.* Total length 845 miles; Changsha-Siangtan and Hengyang-Chenchow sections completed (440 miles). Remaining 405 miles under construction.
2. *Hunan-Kwangsi. Hengyang to Kwangsi.* Total length 390 miles, of which many sections have been completed.
3. *Hunan-Kweichow. Siangtan to Chenyuan.* Total length 1,165 miles, of which 470 have been built.
4. *Hunan-Klang si. Siangtan to Yuyang.* Total length 1,110 miles, under construction.
5. *Hunan-Kiangsi. Changsha to Wantsai.* Total length 300 miles, under construction.
6. *Hunan-Hupeh East. Huanghwatze via Pingkiang to Tungchen.* Total length 480 miles, many sections under construction.
7. *Hunan-Hupeh West. Changsha to Shasi.* Total length 695 miles; 100 miles Changsha to Ningsiang completed, and 308 Ningsiang to Changteh are under construction.

Hupeh.

Four main highways to-day traverse this province:—

1. *Siangyang-Hivayucn.* Total length, 256 miles.
2. *Hankow-Ichang.* Total length, 223 miles.
3. *Siangyang-Shasi.* Total length 163 miles.
4. *Yotung Trunk Road.* Hankow to Tsinkiang, 224 miles.

It was reported in November 1934, that about 1,680 miles of highways were open to traffic in Hupeh, and the average daily distance run by the 193 buses is about 3,700 miles, with a consumption of about 2,000 gallons of gasoline. These buses are operated by the Provincial Department of Reconstruction.

Honan.

As on February 4, 1933, details of roads in Honan were as follows:—

1. *Kaochcng-Tengchow.* Total length 319 miles, completed with traffic moving on the Kaifeng-Nanyang section.
2. *Anyang-Shangchcng.* Total length 268 miles, completed and all but 13 miles opened to traffic.
3. *Shanchow-Sanhohsien.* Of the total length of 623 miles, 80 miles have been finished.
4. *Yungcheng-Yehsien.* The whole length, 203 miles, finished and opened to traffic.

5. *Loyang-Shuchozv.* Work started on 30 miles of road.
6. *Chcngchow-Nanyang.* Work expected to start very soon.

Kweichow.

In this province the construction of modern highways began in 1926 with the establishment of a Road Bureau. The following road system has been planned, and is in process of construction:—

1. *Eastern Kweichow Highway.* Kweiyang via Kweiting, Tsunfankiang, Chenhua, Yuping to Tungjen 80 miles, Kweiyang-Kanpashou section completed.

2. *Southern Kweichow Highway.* Kweiyang via Kanpashou, Luchiachiao, Tushan to Luchai. Whole route, 130 miles, opened.

3. *Western Kweichow Highway.* To link up Kweichow with Yunnan. 90 miles, Kweiyang to Kwangkushu, completed.

4. *Northern Kweichow Highway,* Kweiyang to Tungtsé, thence (1) West to Yunnan border; (2) North to Chungking. 140 miles, Kweiyang to Tungtsé, completed with motor service operating.

5. *Minor Roads.* About 370 miles of minor roads have been constructed.

NATIONAL ECONOMIC COUNCIL'S ACTIVITIES.

Up to the end of May 1934, 13,000 kilometres of public highways had been opened to traffic in the eight provinces of Honan, Hupeh, Kiangsi, Anhwei, Chekiang, Kiangsu, Hunan and Fukien. Of these 5,700 kilometres are new roads built under the supervision of the Bureau of Public Highways, while another 2,000 kilometres of new roads are under construction. These facts are disclosed in a report submitted to the Highways Committee of the National Economic Council at its first meeting in June 1934 in Nanking to discuss road projects. The report also shows that the Bureau of Public Highways has been exerting the utmost effort towards early completion of the eight-province road project which, besides the sections already completed and those under construction, calls for another 10,000 kilometres of new roads.

Among the resolutions adopted at the June meeting referred to were decisions to establish automobile factories in China, open petroleum mines for the manufacturing of gasoline, advocacy of highway construction among the people, and the operation of long-distance bus-services by private capital. To speed up realization of the auto works and petroleum projects, it was decided that an Automobile and Gasoline Co-operative Committee be jointly organized by the National Economic Council, the provincial governments, and the municipal authorities. Detailed plans

as to how these schemes should be carried out were to be prepared by the committee. To finance the plans, the N.E.C. would appropriate \$30,000 and each Provincial Government treasury would put up \$10,000.

A close examination of the projected highway network of the N.E.C., which extends from Fukien to Shensi and Kansu, was made at the conference; appropriations of loans to various provinces for the construction of public roads were readjusted; time-limits for the completion of projected highways were set; and ways and means to maintain the already-completed highways in China were also discussed.

In addition to assisting in the construction of the eight-province highway, the Roads Bureau also co-operated with the Fukien Provincial Government in building the 872-kilometre highway along the Fukien-Kiangsi border, and granted a loan for the building of a 570-kilometre road along the Kiangsi-Kwangtung-Fukien border.

At the end of 1934 it was estimated that 14,700 kilometres of highways linking the eight provinces, already mentioned, were open to traffic as a result of the combined efforts of the National Economic Council and the local authorities. In addition nearly 10,000 kilometres of modern roads had been completed in Kwangtung, Kwangsi and Shantung, and, including the highway construction carried out during the year in other provinces, it was estimated that a grand total of 72,000 kilometres was open to traffic at the end of 1934.

ROADS IN NORTH-WEST PROVINCES.

Road construction work in Shensi and Kansu in connection with the programme for the rehabilitation of the North-West is also proceeding in full swing. One of these is the Lanchow-Sian line, another the Sian-Hanchung line. In view of the general importance of the Sian-Lanchow highway, the N.E.C. has decided to appropriate \$800,000 for its early completion. This road, stretching between Sian, capital of Shensi, and Lanchow, capital of Kansu, represents an important section of an historic highway connecting Central China with the populous areas of Central Asia and beyond. It is along this route that the silk caravans were dispatched to Asia Minor for trade with Western countries, Pending the completion of the Sian-Tungkwan section of the Lunghai Railway in the spring of 1935, the Sian-Lanchow highway will perform the invaluable service of connecting industrial centres around some of the ports in the North with vast areas separated by sparsely populated regions or districts having these ports as the natural outlet for their

produce. In the case of the projected Sian-Lanchow highway, it is calculated that the time may be reduced from the two to six months required by camel caravans, to three or four days by regular motor-truck services. With the help of the Shensi and Kansu troops, it is hoped that the first stage of the construction work, the laying out of the road-bed etc. of this 750-kilometre highway, will be finished in the autumn of 1935. For immediate purpose, the highway will first be converted into a dirt road on which buses and motor trucks can run. The construction expenses are estimated to total \$1,500,000.

Linking up Shensi-Kansu-Szechwan is another important highway, the Sian-Hanchung road. The Sian-Hanchung highway, which is 223 kilometres long, is not only important from a commercial standpoint, but is also strategic from the view-point of national defence. Costing some \$2,860,000 for the whole road, the Roads Bureau expected that the first stage of construction would be completed by the middle of 1935.

In November 1934, a fleet of eleven motor omnibuses, carrying 13 passengers and a large consignment of goods, including 16,000 catties of cargo and more than 100 kilogrammes of mails, left Kweihua by the Sinkiang-Suiyuan highway for Hami, eastern Sinkiang. Upon arriving at Hami, a transfer was made to the buses operated by the Sinkiang Provincial Government before proceeding to Tihua, the provincial capital.

Postal communications between Hopei and the interior of China will be considerably expedited with the resumption of this Sinkiang-Suiyuan long-distance bus service. A contract has been signed between the Postal Administration of Hopei and the Suiyuan-Sinkiang Bus Company for mail transportation between Hopci and Sinkiang by bus. Under the new transportation system, an express mail will reach Hami in 12 days, and an ordinary mail 20 days, whereas before it would take at least a month for letters to reach there via Siberia. This step was taken under instructions of the Ministry of Communications. The new delivery route will not only economize time and postage, but will also be without the trouble of mail matters being censored or detained by the Soviet authorities, when delivered via Siberia. Resumption of the service was made possible when the Suiyuan and Sinkiang provincial authorities came to the help of the bus company, as a result of which the capital of the company was increased to a million dollars.

A vote of \$400,000 has also been passed by the Ninth Session of the Standing Committee of the N.E.C., towards the development of highway

freight transport in the North-West. Arrangements have also been made by the Bureau of Roads with the Kansu and Shensi provincial authorities for the operation of a bus service between Sian and Lanchow by a motor-bus company to be organized by the N.E.C. For the training of highway engineers in the North-West, a North-West Highway Engineering Institute will be established by the Roads Bureau either in Sian or Lanchow before long.

In June 1934, the National Economic Council adopted Mr. T. V. Soong's plan for spending \$1,500,000 on the construction of motor-roads and development of transportation in the North-West Provinces.

Apart from the construction of highways the question of transportation has also engaged the attention of the Council, and a special office has been installed to take charge of such questions as traffic control, building of bus stations, business operation, highway patrol and maintenance. In order to make plans for the inter-provincial highway system, and improve the building and maintenance of highways, investigations have been made into the traffic conditions and actual mileage of the various inter-provincial highways; materials with which they are constructed and the places of production, and enquiries have been made into the possibility of obtaining petroleum in Szechuen Province. Two experimental roads have been built in the vicinity of Nanking, the first to test the use of various local materials for making road surfaces and the second to test the use of bituminous materials for surface treatment. For the training of highway personnel and automobile mechanics the National Economic Council has arranged with the Chiaotung University in Shanghai to have courses on automobile engineering in addition to a training school for automobile technique, conducted under the joint auspices of the Council and the Inter-Provincial Traffic Commission.

MOTOR-TOURING IN CHINA.

In concluding this necessarily brief survey of a very big subject, it is worth while mentioning an interesting sequel to the road-making plans of the Central and Provincial Governments. It is now possible in China to indulge in motoring for pleasure with pleasure. Years ago hardy pioneers risked not so much their lives as their vehicles in trying to get about the country by motor, and there was more pain than pleasure attached to these excursions, because the roads—such as they were—were neither wide nor solid enough to carry mechanically-propelled vehicles, and motorists who ventured beyond the limits of the city in which

they lived soon found themselves in serious difficulties. Now this is quite changed and it is possible for the motor-tourist to make some very pleasant trips, especially from such starting-points as Shanghai or Nanking.

A significant sign of the change which has come about in regard to motoring for pleasure was the publication in the early summer of 1934 of a little book by Miss A. Viola Smith, entitled *Motor Touring in China*. From Miss Smith's prefatory remarks we quote the following extracts:—

The opportunity for long-distance motoring has come to Shanghai-landers only within the past two years. Prior thereto, motorists were restricted to the confines of the city with the exception of short spur roads to Liuho, Kiating, Woosung, and Minghong. The official opening of the Shanghai-Hangchow Highway in October, 1932, has revealed new vistas to those with a pioneering spirit. It is now possible to travel within the three provinces of Kiangsu, Chekiang, and Anhwei within the space of one day, thus bringing Shanghai into touch with sections such as Hweichow, which formerly required an arduous trip of three weeks.

Before the end of 1934 it should be possible to travel from Shanghai to Nanchang in Kiangsi Province and even to the Hunan border.

The highways leading out of Shanghai, while of low surface type construction, are for the most part being sufficiently well maintained to present no major difficulties to the motorist. But the lack of service-stations, scarcity of hotel accommodations, rest-stations, and even gasoline on some sections of the roads, constitute a drawback, necessitating careful planning in advance.

The progress which has been achieved by the National and Provincial Governments since the inception of the Bureau of Public Roads of the National Economic Council in June, 1932, with technical assistance from the League of Nations, is outstanding. Not only does it mark a new era in China's means of communication, but in the co-operative relationships as between provinces which is basic to national unity. . . . One may find examples of one province permitting another of greater technical experience to construct the portion of the Inter-Provincial Highway lying within its borders. Another province permits a second to operate its bus services over the road of the former, thereby obviating the necessity of change over at the border and providing through passenger services.

A trip over the existing routes of these provinces is more telling than words, and will but whet the appetite of the motorist for the

time when further roads now under construction will bring the seven Central Provinces of China within his reach.

The highway authorities are bending every effort to facilitate traffic conditions, and motorists will find them ready and willing to co-operate in whatever contributes to the safe and pleasant use of the road. The Inter-Provincial Traffic Commission meets quarterly to survey regularly the use of its roads. One of its biggest achievements has been the abolition of tolls and the provision by which a single license required in any of the three provinces is valid for all roads with them, including the special municipalities of Nanking, Hangchow and Shanghai (Chinese area).

Another motorist, who has recently covered a 650-mile round trip from Hangchow and returning to that city, makes the following tribute to the roadmakers of modern China:— "Most of the motor highways which I have traversed are exceptionally good and for much of the time I travelled at the rate of forty miles an hour. But there are certain sections with corkscrew turns through mountain passes, also with numerous short curves in winding gorges, where the speed limit should be about twenty miles per hour. The country elsewhere is so varied and so beautiful that one is never tempted to travel at high speed. I have motored twice across the States, both by northern and also by a southern route, and I question whether in any State of the Union, there is one that can compare with Chekiang in the wonderful variety of its scenery. It is veritably a paradise for tourists and those who begin the experiment of exploring this wonderful province, will find the charm of its appeal to them, luring them on, year after year to further undiscovered possibilities."

INTERNATIONAL INTEREST IN CHINA'S ROADS.

A report on road construction in China aroused much interest at the International Road Conference held at Berlin in September 1934, when more than 2,000 delegates representing 49 nations were present. China's report on road construction, which was compiled by the National Economic Council from facts and data gathered from many sources, was well received by the conference which showed keen interest in the work accomplished by China. It is hoped that one of the future international roads conferences, which are held once every four years, may be held in China so that representatives of the various nations may have a clearer idea of what is going on in this country. The next and eighth conference on roads will be held in the Netherlands in 1938.

CHAPTER XII.

COMMERCIAL AVIATION.

THE first attempt to establish civil aviation in China was made in 1919, when contracts were entered into by the Government with the Handley Page Co. for 6 passenger planes, and with the Vickers-Virmy Co. for 40 commercial, 40 training, and 65 Avro planes. These machines were to be used for commercial purposes only, a number of foreign experts and pilots were engaged, and an aviation school opened in 1920 at Nanyuan, near Peiping. Elaborate schemes were drawn up for establishing a network of air-lines, but were wrecked by the state of civil war into which the country was plunged. The first lot of planes was seized by various militarists, and a similar fate befell most of those subsequently imported. Passenger and mail services were intermittently maintained between Peiping and Peitaiho, and Peiping and Tsinan, and that was all that was achieved until 1929.

In that year the first regular air line was inaugurated. The Ministry of Communications started a service which was intended to run between Shanghai and Chengtu, but which in actual practice never went further than Nanking. China Airways, an American company, also maintained a service between Shanghai and Hankow (following the course of the Yangtze), on a contract basis for the Government-owned China National Aviation Corporation. Loening amphibian planes were used, and a fixed rate paid per mile flown. The main business of both services was the carriage of mail.

These two services in July, 1930, were combined as a result of an agreement between the Ministry of Communications and China Airways for the formation of the China National Aviation Corporation, with an authorized capital of 10 million dollars, of which the Ministry of Communications subscribed 55 per cent and China Airways the balance.

In regard to State-aid to aviation, it is interesting to note that the subsidies granted to air transport companies in Europe and in the United States average between \$2.00 and \$2.50 U.S. currency per mile. Even at the present exchange rate of the U.S. dollar this would amount to from

\$6 to \$7.50 Chinese currency (7s. 6d. to 9s. 6d.) per mile. The only assistance rendered by the Ministry of Communications to the C.N.A.C. during 1933 amounted to approximately \$0.30 Chinese currency (4½d.) per mile, but the Corporation was able to maintain a regular service on all its lines at a very slight loss. Had it not been for the popularity of air services and the support received from the public the C.N.A.C. could not have been operated except with a very heavy deficit.

Meanwhile negotiations had been going on which resulted in the formation of a second company. As early as 1928, the Luft Hansa, of Germany, had approached the Government on the subject of an air line between Nanking and Berlin. On February 21, 1930, a Sino-German air-mail contract was signed, while in January, 1934, the Eurasia Aviation Corporation was formed with an authorized capital of three million dollars, two-thirds being subscribed by the Chinese Government and the balance by the Luft Hansa. These two companies represent practically all that is being done in China at the moment in the direction of civil aviation, although in Canton there is a concern known as the South-West Aviation Development Corporation, a private commercial enterprise which in April, 1934, opened a service between Canton and Lungchow (Kwangsi), and plans to operate services from Canton to Hongkong and Macao. The Canton-Lungchow line project has proved so successful that in December, 1934, the management decided to operate an additional air-mail and passenger service from Canton to Hainan Island and also with Kweichow province: test flights are already conducted on the projected Nanning (Kwangsi)-Kweiyang (Kweichow) routes with a view to their regular operation. The China National and Eurasia concerns, however, handle by far the greater part of China's air traffic, and are complementary to each other, not rivals, with different spheres of operation and, to some extent, different aims, as their names indicate. The China National Corporation is more concerned with developing air communications within China, the Eurasia Corporation's main purpose is to establish a direct air service with Europe. The following details of the respective routes covered will help to make this clearer.

CHINA NATIONAL AVIATION CORPORATION.

1. *Shanghai-Hankow*, 516 miles. This line was inaugurated in 1929, with a daily service except for Mondays, but the service is now daily. Stopping places and aerodromes are situated at Nanking, An-king, Kiukiang.

2. *Hankow-Chungking-Chengtí*, 784 miles. Inaugurated on April 1, 1931, this service at first only reached as far as Ichang. It was extended to Chungking in October, 1931, and to Chcngrtu in November, 1933. Two round trips a week are made, with stops at Shasi, Ichang, Wanh sien, Chungking. An extension from Chcngrtu to Lhasa is planned this year.

3. *Shanghai-Peiping*, 760 miles. Inaugurated in January, 1933, with a tri-weekly service. Stops at Ilaichow, Tsingtao, Tientsin.

4. *Shanghai-Canton*, 1,000 miles, with stops at Wcnchow, Foochow, Amoy, and Swatow. Opened October, 10,33, and temporarily suspended owing to the loss of one machine and serious damage to another, resumed in October, 1934. Since January, 1935, twice a week.

5. *Chungking (Pahsien)-Yunnanfit (Kunming) via Kweiyang*. Trial (lights started in March, 1935, and service will begin forthwith.

For the first time since its establishment, the China National Aviation Corporation in 1934 offered summer rates on the Shanghai-Hankow and Shanghai-Peiping lines, effective from June 15 to September 15. Rates on single flights were reduced by 25 per cent and a corresponding reduction made for round-trip flights. According to the new schedule, a flight from Shanghai to Hankow can be made for \$150, a decrease of \$50 over the former rate, and a flight to Peiping for \$180, a decrease of \$40. The new round-trip rate to Hankow is \$270, a decrease of \$80, while the round-trip flight to Peiping can be made for \$300, a decrease of \$85. The rate to Nanking is \$40 and the round-trip rate \$70. As the result of this decrease in rates, the China National Aviation Corporation experienced the busiest period since the formation of the company, with a greater number of passengers and miles flown on all routes. While officials of the company expected an increase in business, the unprecedented increase in traffic was not imagined. Traffic picked up to such an extent that planes on every route were usually fully booked in advance of their schedule. In many cases the company was not able to accommodate all the applications by would-be passengers. The success of the temporary reduction in rates was such that it was continued after the summer was over and made more or less permanent.

The C.N.A.C. is completing a new emergency landing-field at Yang Kio Kow, between Tsingtao and Peiping. It will be equipped with a radio-station having both sending and receiving equipment and will make daily weather reports. It supplements a similar emergency field and radio station at Nantung, half-way between Shanghai and Haichow on the Peiping run.

The Shanghai-Canton service was resumed in October, 1934, after an interruption of several months, the machines used being Douglas-Dolphin amphibians, which have a cruising speed of 150 miles per **hour**, and can carry 10 persons, comprising the pilot, co-pilot and 8 passengers. At the moment the service is twice a week. An additional radio-station has been added on the line, and there is yet another in process of construction. All the stations on the line maintain two-way communication with the flying planes.

The China National Aviation Corporation is considering plans for the extension of its Shanghai-Canton air-line to Hongkong to connect with the proposed Hongkong-Singapore line of the British Imperial Airways Company, which plans to send a representative to Nanking to negotiate with the Government for the joint operation of a Shanghai-Hongkong-Singapore air service.

At the beginning of operations in 1929, an average of 90 passengers a month were carried between Shanghai and Hankow—today the average is nearer 350. At the fifth annual general meeting of the C.N.A.C., held in September, 1934, Mr. Huang Kiang-Chuan, the Chairman of the Company, pointed out that the passenger-kilometres flown during the past year were 1,811,376 against 1,214,074 of the previous year, showing an increased passenger traffic amounting to 50 per cent. It was also pointed out that 20 per cent more mail was carried during the past year over the previous year, indicating the growing popularity of air transportation notwithstanding the existing trade depression.

In a statement issued late in 1934, Mr. Dai Enki, managing-director of the C.N.A.C., said:—

We are looking forward confidently to the new year, which will witness the arrival of the most modern and up-to-date aeroplanes for the Yangtze and Peiping air-lines. These aeroplanes have long been on order by C.N.A.C., and delivery of the first new aeroplanes should commence early in 1935, with all aeroplanes in use by June or July. The first aeroplane to arrive will be the new tri-motored Ford for operation on the route from Chungking to Yunnan. This plane will be followed shortly by the new 14-passenger Douglas Transport for the Shanghai-Peiping service, and the next planes to start arriving in Shanghai will be the new Fairchild's for the Yangtze River service. Improvements have been made at the Lunghwa field and many arrangements made at other fields for the comfort and convenience of passengers. The Douglas transport will carry a steward who will serve

tea or coffee and light refreshments to passengers bound for Peiping. A feature will be made of sight-seeing trips over the old capital, the Great Wall and the Ming Tombs. Visitors to Peiping will then have an opportunity to view the splendours of the ancient capital while sipping tea, or perhaps a whisky-soda. We expect a considerable increase during 1935 in air-mail revenue by reason of faster and more frequent schedules. Passenger revenue should make even greater gains because of the use of the new, fast, comfortable equipment.

China's first school for the training of pilots for her air-lines was inaugurated at the Lunghwa Aerodrome by the China National Aviation Corporation early in 1935. The object of the school is to give C.N.A.C. Chinese co-pilots complete training of the requirements of flying air-liners, and to find from the large number of Chinese co-pilots those who are competent and those who "can't make the grade." Both sets will eventually "take the air."

From Chungking to Chengtu, the capital of the province of Szechuan, travelling by land and water generally required ten days or more, depending on the level of the river. The journey takes two hours by air. The flight from Shanghai to Peiping, a distance of 760 miles, takes eight hours as against 40 hours by rail. From Shanghai to Canton, a distance of approximately 1,000 miles, travelling by steamship usually takes three to five days, as against approximately eight hours of flying time. Altogether, the C.N.A.C. ordinarily maintains services covering a total distance of 3,050 miles.

In view of the great commercial activity along the Upper Yangtze valley, the C.N.A.C. plans to use the most modern type of machine to fly the route to Chengtu. They will have a cruising speed of 150 miles per hour, as against approximately 100 m.p.h. with present equipment, enabling passengers to leave Shanghai in the morning to reach Hankow at noon, take off the following morning and reach Chengtu at noon, a total flying time of 10 hours for about 1,300 miles.

Till late spring of 1935 the only means of direct communication between Chungking and Yunnanfu, the capital of Yunnan Province, was by pathways winding over high mountains and deep valleys, necessitating 12 days travel by sedan-chair from Chungking to Kweiyang, the capital of Kweichow Province, and a further 12 days from Kweiyang to Yunnanfu. An air-line from Chungking to Yunnanfu, via Kweiyang, which brings Kweiyang within one hour and thirty minutes of Chungking,

with Yunnanfu an additional one hour and thirty minutes ahead, has been inaugurated in March, being the first extension of its service made by C.N.A.C. this year. Three hours in the air as against 24 days of difficult overland travel augurs a bright future for aviation.

Shanghai to Lhasa, capital of Tibet, by aeroplane in three days may soon become an actuality if plans of the China National Aviation Corporation materialize. At present C.N.A.C. planes fly regularly to Chengtu, via Nanking and Chungking. The trip takes two days. Present plans call for an extension of the line to Lhasa, 1,450 kilometres from Chengtu, via Kangtung and Pa-an, and requiring six hours including stops.

EURASIA AVIATION CORPORATION.

1. *Shangliai-Manchuli*, May, 1931. This service was operated a very short time, being at present suspended owing to the Japanese invasion of Manchuria four months after its inauguration.

2. *Shanghai-Berlin*, via India and Indo-China. In preparation; to be established some time in 1935.

3. *The 'North-Western*. Shanghai to Tchukuchak, via Nanking, Chengchow, Sian, Lanchow, Suchow, Hami, Tihwa (Urumtchi); 3,535 kilometres. Weekly service between Shanghai and Lanchow.

4. *Peiping-Canton*, via Chengchow, Hankow, and Changsha; 2,250 kilometres. Twice weekly.

Every effort was made to overcome difficulties in the way of the company's primary object, a service to Berlin. Surveys were completed from Peiping to Tihwa and thence, via Russia, to Europe. With the receipt in May, 1934, of news from Urumtchi indicating the early restoration of order in Sinkiang, there loomed the prospect of the inauguration of, at first, a 6-day air-mail service, and later a 4-day service, between Shanghai and Berlin by the Eurasia Aviation Corporation, a prospect which, however, did not materialize in view of the remote possibility of settling the question of the "Sinkiang passage" on account of Soviet opposition. It is now proposed to avoid Sinkiang by diverting the line from Central Asia to the South via Greece, India and Indo-China. From Berlin to Shanghai, the entire journey of about 14,000 kilometres is estimated to take 53 flying hours.

A new airway connecting Lanchow and Ninghsia city, respectively provincial capitals of Kansu and Ninghsia, was inaugurated on June 19, 1934. As the result of a satisfactory flight between the cities, made by Mr. T. V. Soong, member of the Standing Committee of the National Economic Council, during his trip to the North-West, no test flight

was necessary before the operation of the service. An aeroplane leaves Shanghai every Wednesday morning for Lanchow, whence it proceeds to Ninghsia city. On the return trip, the plane takes off from Ninghsia every Saturday morning for Lanchow, en route to Shanghai, a distance of 1,850 kilometres.

The Peiping-Canton service was opened in May, 1934. Two planes hop off from both ends of the air route about the same time in the afternoon. They meet in Loyang, where the passengers and planes stay overnight, to resume their journey the following morning. The line now links up with the Yangtze River run of the China National Aviation Corporation at Hankow, and with the Eurasia Shanghai-Tchukuchak line at Chengchow. The line passes now through Chengchow, Hankow and Changsha, a distance of 2,250 kilometres. A plane is scheduled to leave Peiping and Canton every Wednesday and Sunday, and Tuesday and Saturday, respectively. Passenger fares are as follows: from Peiping to Chengchow \$70; from Chengchow to Hankow \$60; from Hankow to Changsha \$50; from Changsha to Canton \$150; Peiping to Canton, \$330.

While for the first year or so the journey between Peiping and Canton will be broken into two days, the Eurasia Aviation Corporation is in negotiation with the Junkers Company for the purchase of a Junkers Ju-52 plane which will cut down flying time to one day. This plane will be the first of its kind to operate in China, being equipped with three motors capable of developing an aggregate of 1,725 horse-power. With accommodation for 16 passengers, the plane can cover 280 kilometres an hour and fly continuously for a distance of 2,500 kilometers. As the total distance between Peiping and Canton is about 2,200 kilometres, this big air-liner will be able to make the two-day run in one day. The network of Eurasia air-lines to-day totals 4,400 kilometres—with the Lanchow-Tchukuchak line 6,600 kilometres—and is served by six planes, three being Junkers W-33 and three Junkers W-34, of the most modern construction. In the working year 1933, the company's planes covered altogether 399,000 kilometres, and carried 813 passengers, in addition to mail and freight, while in May, 1934, alone, the 69,251 kilometres flown, with 161 passengers, shows the great expansion in business. Eurasia air-lines were extended in November, 1934, by a weekly service from Ninghsia to Paotou, in distance 426 kilometres, the fare for which is \$180. Since they started flying in the middle of 1931, the Eurasia

planes have flown more than 1,250,000 kilometres without any accidents resulting in injury to any passengers. This is quite a remarkable record especially in view of the fact that civil aviation has only just begun in China.

On the occasion of the fourth anniversary of its inauguration, February 1, 1935, the Eurasia Aviation Corporation offered a special discount of 25 per cent from all the passenger and freight rates for a period of three months beginning from February 1 to April 30, in order to encourage travel by air. According to the special rates the trip from Shanghai to Nanking, or vice versa, cost \$22.50 (for the return ticket \$41.50) the trip from Shanghai to Peiping, or vice versa, cost \$135.00, and from Peiping to Canton, or vice versa, \$247.50.

In equipment and flying personnel the two companies are about on a par. The China National has in actual use two Douglas-Dolphin amphibians, four Loening amphibians, and a number of Stinson single-engine Band-machines, while several new machines are on order by arrangement with the Pan-American Airways. The repair depot is at Shanghai (Lunghwa), with mechanics stationed at Hankow and Chungking for emergencies. The company maintains its own radio and meteorological services, the latter being the only one in China distributing weather reports suitable for aviation purposes. The Eurasia Corporation has in actual use at the moment only six planes, all-metal Junkers carrying five to eight passengers, but a number of others are on order, including six passenger machines with a cruising speed of 130 m.p.h. At every station the company has its own buildings, with accommodation for passengers and employees, and a radio plant. Planes while in flight are in constant communication with the nearest ground station. The repair depot is now also at Lunghwa. The flying personnel of both concerns is almost entirely foreign. The China National employs eight Americans and one German as pilots, and two American and one French citizen as assistant pilots. A Chinese flying staff is gradually being trained, and there are already a number of native assistant pilots. Eurasia employs six German pilots who are expected to train Chinese to become qualified aviators.

Both companies depend on air-mail for the greater portion of their business, though from the figures contained in the table on the following page, it is clear that the China National does by far the more business. Not only has it more services and planes in operation,

but it serves more developed and populous areas. There is relatively more demand in business circles for air transport facilities between Shanghai and Canton, than between Shanghai and the undeveloped, North-Western Provinces, where local traffic, however, owing to the absence of railway competition and the difficulties of other means of communication, is very heavy.

CHINA NATIONAL AVIATION CORPORATION.

	<i>Passengers</i>	<i>Mail Matter</i>	<i>Miles Flown</i>
1929	354	3,932 Kilos	57,893
1930	2,654	17,893 „	330,079
1931	2,296	34,428 „	445,039
1932	3,153	50,851 „	431,145
1933	3,050	49,34 ⁶ „	636,900
1934	4,570	58,052 „	1,341,794(km.)

EURASIA AVIATION CORPORATION.

	<i>Passengers</i>	<i>Mail Matter</i>	<i>Km. Flown</i>
1931 (June-Dec.)	664	14,825 Kilos	120,000
'932	589		253,600
1933	810	26,059 „	399,000
1934 (Jan-Oct.)	151	44,493 „	489,300

At the same time, the areas served by the C.N.A.C present far fewer topographical and kindred difficulties. It is easy, for example, in the Yangtze valley to organize stopping places with aerodromes and supplies of petrol and spare parts, since every point can be reached either by river or rail, if not by both. But flying north-west from Nanking, one passes over some of the least developed parts of the country, where river, road, and rail communication are practically non-existent. The further one proceeds, the more difficult the nature of the country becomes, with high mountain ranges, arid deserts, alternations of intense heat and cold, and sudden storms. Often machines have to climb 13,000 feet and more, and even then in places have to spiral along the mountain sides. Machines forced down in such a country have little chance of escaping damage, if not destruction. One great problem is the maintaining of depots with adequate supplies of petrol and other necessities, which have to be carried long distances overland from one of the two railheads, Sian and Paotou, by motor-truck, bullock-cart, or camel. It is, therefore, understandable

why the Eurasia business is comparatively small, especially as the Shanghai-Berlin line has not yet started to function.

The Eurasia Corporation, too, has had by far the worse political difficulties to overcome. Except between Nanking and Peiping, the China National has not had to suspend any of its services through political disturbance. The only area where this factor has interfered with progress is possibly Szechuan, and there not to any great extent. The Eurasia Corporation, however, had to deal with Soviet opposition, and when a settlement appeared to have been reached, trouble broke out in Sinkiang, preventing the operation of the regular service to Urumtchi and Tchukuchak, on the Russian frontier, where it has been hoped to connect with the Soviet air services and, through them, with the network of European lines—a project now temporarily suspended.

It will be seen, then, that commercial aviation is only in its infancy in China, and future development depends largely on the provision of more machines and a larger flying personnel, not only for opening fresh routes, but for keeping reserve machines and pilots and speeding up the service on those already existing. This is, of course, a matter of money, but not money alone; there is another important consideration. There can be no really satisfactory development of civil aviation in China until the necessity for importing foreign machines and foreign pilots and experts has passed. A Chinese personnel is gradually being trained, and this problem does not present so much difficulty, but there are very great obstacles in the way of the manufacture of planes. China possesses the raw materials, but lacks the basic industries which produce the high-grade manufactured materials necessary for the construction of aircraft, and the building of engines and aeroplanes is a highly technical and specialized business. However, a start has been made towards the building of native planes. The aeronautical department of the Naval Ministry has turned out some ten seaplanes which have proved practical for training purposes, though all were fitted with imported engines. The most recent machine has a speed of 120 m.p.h., a lifting power of 1,116 kilogrammes, and a ceiling of 3,810 feet.

Of the need to foster commercial aviation there can be no question. Already the two companies have proved their worth. The machines of the China National Aviation Corporation rendered invaluable service during the floods of 1931 in carrying supplies, conducting surveys, and transporting officials. Only recently one of the latest machines of the

Eurasia Corporation was detained at Lanchow, on its flight out from Berlin, in order to carry General Huang Mu-Sung, the National Government Pacification Commissioner to Sinkiang, from Suchow to Urumtchi. The bringing of outlying provinces into closer contact with the administrative and business centres of the country, of which this is an example, is indeed a vital necessity. Roads and railways will, of course, ultimately have to be built, but they take years to construct and need a tremendous initial outlay, whereas air services can be established at far less initial cost and in much shorter time. They may not be profit-making concerns at the start, but neither for that matter are roads and railways; the former, indeed, are not expected to be so at all, though they will eventually become so.

Business-men are rapidly discovering the great convenience of getting to the North in one day instead of four, and getting South in one day instead of three. The saving of time in regard to mail matter and certain descriptions of freight, such as films, mechanical spare parts, etc., let alone to individuals with important business to transact, is tremendous. Although, therefore, at present no actual pecuniary return is to be seen for the capital and energy expended, there are no grounds for pessimism. Indeed, considering the tremendous difficulties—financial, political, and geographical—that have had to be overcome, the actual progress made gives every reason to be optimistic about the future of commercial aviation in China.

As this book goes to press it is reported that as a result of a conference between representatives of the China National, the Eurasia, and the South-West Aviation Companies, a national aerial network will be put on the map, all the air-lines being connected at the following points:

P-eiping-Canton and Shanghai-Sinkiang Lines at Chengchow.
Shanghai-Hankow and Peiping-Canton Lines at Hankow.
Hankow-Chungking and Chungking-Chengtu Lines at Chungking.
Shanghai-Peiping and Paotou-Lanchow Lines at Lanchow.
Canton-Lungchow and Peiping-Canton and Shanghai-Canton Lines at Canton.

Such a scheme would greatly facilitate air-travel, enabling passengers and mails to make regular connections, whereby much time could be saved in covering long distances, and bringing the most remote parts of the Republic into close contact.

CHAPTER XIII.

MERCANTILE MARINE.

CHINA'S mercantile marine forms a very small proportion of the world's shipping. The most recent official returns, compiled by the Ministry of Communications, show that the total tonnage, exclusive of junks, was at the end of 1931 only 535,587; the number of steamships was 3,261, of which 177 exceeded 1,000 tons, and only two were more than 5,000 tons. In the Chinese shipping world the "guest occupies the seat of the host", in view of the fact that 70 per cent of the shipping business in Chinese waters is run by foreign firms. Figures show that British vessels, numbering about 100, had an aggregate tonnage of 260,000, Japanese vessels numbering 35 totalled 75,000 tons, while American and French ships numbering a dozen or more, totalled more than 7,000 tons. The total foreign tonnage regularly operating in Chinese waters is estimated at more than 350,000, of which about 140,000 is on the Yangtze River, being 70 per cent of the shipping transportation on that river. Chinese ships of more than 100 tons only number 512, with a total tonnage of 380,000, and compared with the world tonnage of 70,000,000 is a mere drop in the bucket. Registered Chinese ships weighing 2,000 tons are 40 in number, of which 10 are owned by the China Merchants' S. N. Co. From 1919 to 1934 (excluding the vessels built in England in 1934 for the China Merchants', mentioned later), China only built four ships of 2,000 tons and 10 of 1,000 tons. Moreover, their sphere of activity scarcely extends beyond China's own rivers and coast. Yet this was not always the case. There was a time when China had a merchant fleet as flourishing as that of any European country of the period, when her ships were to be seen in waters as far distant as Zanzibar. Ibn Battullah, an Arab traveller of the 14th century, in an account of his journeys, mentioned seeing 13 Chinese ships at one time in Malabar harbour. **They were built of fir, single-decked, with fifty or sixty cabins and from four to six masts, double planked, and furnished with watertight compartments 1**

Under the Tang and Sung dynasties China developed a considerable sea-borne trade. Arabs and Persians, in particular, frequented and settled in her ports, acting as intermediaries between China and Europe. Chinese ships carried Chinese goods to India, where they were landed for transshipment to ports in the Red Sea or the Persian Gulf, whence they went overland to the Mediterranean. There was also considerable trade with the Malay States and with the Arabs at Palembang in Sumatra.

EARLY PROSPERITY.

The accession of the Yuan dynasty witnessed no falling-off in the activity of China's merchant fleet. The whole coastline of Southern Asia, with the islands in the tropic seas, were regularly visited by Chinese ships, and Marco Polo and other travellers from Europe who arrived in the Far East during this period all bore witness to the volume of shipping seen in Chinese ports. Friar Oderic, another traveller of the period, describes Canton as "a city as big as three Venices, and all Italy has not the amount of craft this one city hath." He speaks also of the immense number of junks in the other cities of Southern China. "Indeed," he says, "it is something hard to believe when you hear of, or even see, the vast scale of shipping in these parts."

But with the arrival of European ships in Chinese waters in the 16th century all this changed, and for the ensuing 300 years it has been hardly possible to speak of a Chinese mercantile marine. The reasons are not difficult to discern. The Cape of Good Hope route to Europe had been discovered; the Arab intermediaries were driven out; the Portuguese, succeeded later by the Dutch, made themselves masters of Indian and Far Eastern waters, and thus goods could be carried in one bottom all the way from China to their Western destination. At the same time the foreign ships represented a distinct advance on the Chinese junk, while the average Chinese navigator had little or no knowledge of waters beyond India. It was inevitable, therefore, that Chinese exports should be carried in the ships of the country to which they were consigned. The same factors were operating all over the East. The ports of the Netherlands Indies, the Philippines, and of India all fell under Western control, and the entire carrying trade of the East fell into Western hands, and except on her own coast, the Chinese flag **disappeared from the** seas. The only way in which China could have

kept her former proud position would have been to make direct shipments to foreign countries in her own ships, which would have meant copying Western models of shipbuilding, learning something of Western methods of navigation, and acquiring a knowledge of distant sea-routes. As things were, however, the West might have need of China and her products, but the Chinese of that time felt no need of the West.

Through the 16th, 17th, and 18th centuries this remained the position, and it was not until the 19th century that China began to take more interest in the West and in things Western. The old self-sufficient attitude was abandoned, and the slow process of Westernization begun. The re-creation of a mercantile marine was an integral part of this process, and this time it had to be a commercial navy modelled along lines which would enable it to compete effectively with the West. Unfortunately, for various reasons no great success has so far been achieved, as the following statistics for 1933 will show:—

CHINESE. MERCHANT SHIPS (EXCLUDING SAILING SHIPS AND JUNKS).

<i>Gross Tonnage</i>	<i>Ships unth National Certificate</i>	<i>Ships without National Certificate</i>	<i>Total</i>
Over 5,000 tons	2		2
4,000 to 5,000 tons	4	3	7
3,000 to 4,000 „	12		12
2,000 to 3,000 „	19	12	31
1,000 to 2,000 „	68	57	125
20 to 1,000 „	361	1,538	1,899
Under 20 tons			1,195
Total	466	1,610	3,271

CHINESE MERCANTILE TONNAGE (STEAM AND SAIL)

<i>Gross Tonnage</i>	<i>Ships with National Certificate</i>	<i>Ships without National Certificate</i>	<i>Total</i>
Ships over 20 tons	249,815	274,976	524,791
Ships under 20 tons			10,796
Total			535,587

CHINESE SHIPPING COMPANIES.

<i>Name</i>	<i>Total Tonnage Approx. 1,000 tons</i>	<i>Ships</i>	<i>When Company founded</i>	<i>Capital</i>
C.M.S.N. Co.	56,000	25*	1872	\$12,000,000
San Peh S.N. Co.	50,000	20	1914	2,000,000
Ching Kee S.N. Co.	31,000	15		2,000,000
Chao Shing S.S. Co.	10,000	6		2,000,000
Ningpo-Shaoshing S.N. Co.	9,000	4		200,000
North China S.N. Co.	7,000	4		300,000
Ta Tung Jen Kee S.S. Co. .	5,600	4		400,000

*Plus 5 on charter and 4 ships built in 1934.

In addition to the above, four companies operate three ships each, nine companies operate two ships each, and 74 companies operate one ship each.

SHIPS ENTERED AND CLEARED AT CHINESE PORTS, 1934.

<i>Nationality</i>	<i>Number</i>	<i>Tonnage</i>
British	47,574	58,215,213
Japanese	12,863	20,168,140
Chinese	93,878	37,254,843
American	5,298	5,350,526
Others .	12,112	16,390,452
Total	171,725	137,372,174

PROPORTION OF CARRYING TRADE TAKEN BY DIFFERENT COUNTRIES, 1934.

<i>Nationality</i>	<i>Foreign Trade</i>	<i>Coast Trade</i>	<i>Foreign and Coastal Trade</i>
Japan	16.24%	14.02%	14.68%
Great Britain	43.12%	42.06%	42.38%
America	8.55%	1.91%	3.89%
China	11.12%	33.92%	27.12%
Other countries	30.97%	8.09%	11.93%

The first step in the reformation of a Chinese merchant fleet was taken in 1872 with the establishment of the China Merchants' Steam Navigation Company, with which for the next fifty-odd years China's mercantile marine was to be practically synonymous. The company started with two ships, which were to carry rice to the South. Five years later the purchase of the Shanghai Steam Navigation Company gave it 17 ships, and in addition a considerable amount of property in the form of wharves, godowns, etc., at the various ports.

CHINA MERCHANTS' STEAM NAVIGATION COMPANY.

On the outbreak of the Franco-Chinese War in 1883, the Company was sold to Messrs. Russell and Co., in order to evade risk of the seizure of its ships and property, but was bought back again on the termination of hostilities. During these early years no profit was shown, but on the appointment of Sheng Kung-Pao, a keen Manchu supporter, as Director-General in 1885, things took a turn for the better. Substantial support was received from the Government, and there was steady expansion. New ships were bought, wharves built at various ports, new lines opened, so that Chinese ships were once again seen at Singapore. Until 1904, shareholders received good dividends, from 10 to 20 per cent being paid annually, and in addition the Company contributed substantial sums to the Government Treasury and gave financial aid to educational and philanthropic institutions. In 1904, however, matters began to get unsatisfactory owing, it is alleged, to the Government-appointed directors interfering too much in business management. In 1911 Dr. Wu Ting-Fang was made Managing-Director, with instructions to bring about a reorganization, but before much could be done the Revolution broke out. Money was difficult to raise, and at the same time ships were constantly being commandeered by one side or the other during the prolonged civil wars, while money contributions were also demanded. Almost until 1927 this state of affairs persisted, and from 1923 on there was an average annual deficit of nearly a million and a quarter dollars, while the Company's property had to be mortgaged to obtain ready money for working expenses. By 1927, the Company was on the verge of bankruptcy, and various charges of mismanagement and worse were made.

Nepotism and the compradore system were alleged to be largely responsible for its bad financial position. Godown keepers, branch managers, and ships' compradores were appointed from among relatives

of the Sheng family, and these made fortunes for themselves, it was alleged, at the Company's expense. So bad did the state of affairs become that the National Government was compelled to interfere, a committee of inquiry was set up, and on the strength of its report the Government assumed control. A new Managing-Director was appointed, who for 2½ years tried to bring about an improvement, but the schemes mapped out on paper remained for the most part on paper. Many of the old employees were dismissed, but instead of being replaced by men selected for proven business ability and experience, either politicians or those able to put up substantial cash security, from \$15,000 upwards, were appointed. As a result there was little improvement. The politicians, men of the official class, had the defects of their calling and too often proved ignorant and overbearing; the "security men" looked upon the money they had to put up as an investment, and were mainly concerned to obtain as big a return on that money as possible. Ships' compradores handed over to the Company as small a proportion of the monies collected for passages, etc., as they could; godown keepers squeezed, branch managers ran the business of their offices to suit themselves, often including their personal expenditure in office expenses, even to the extent of the cost of dresses for their concubines. Bureaucratic control proved a failure; superfluous offices were created, and bribery and corruption were notorious. The culminating episode was the \$30,000,000 loan scandal of 1931, when the Government decided to purchase the whole concern, and bought it at the price of Tls. 50 per "set" of shares. The management was entrusted to the hands of business-men, and since then there has been a distinct improvement in the position of the Company.

There are the opening of a new branch of the Company at Haichow, the eastern terminus of the Lunghai Railway, repairs to wharves and godowns, the adoption of actual operation cost system, the abolition of the compradore system and of the 5 per cent commission to the branch managers for soliciting freight for the company. Superfluous offices have been abolished, and more favourable contracts made for the supply of coal. While during the past two years China felt the greatest effect of the world-wide trade depression, the business of the Company kept growing. As complete figures for 1934 are not available, the receipts for 1933 give a clear picture of progress. Comparing the average of the four preceeding years, the receipts from freight for 1933 increased

RECONSTRUCTION IN CHINA

by 29 per cent, receipts from passage by 44 per cent, receipts from godowns by 33 per cent; the total of all receipts by 31 per cent. Expenditure has been reduced by a million dollars a year, while revenue has gone up \$300,000, so that it should not be long before a profit can be again shown. The capital position is sound enough, showing a surplus of assets over liabilities amounting to some \$20,000,000.

The following comments, made by a writer in the *Chinese Economic Journal* for July, 1934, give some further interesting details of the Company's passing under State control and the consequences of that change:—

The Company was in a state of insolvency rather than actual bankruptcy, as the value of its real estate holdings alone amounted to several times the total indebtedness. The concern was not without hope of rehabilitation if a well-defined plan of re-organization could be put through, and with this object in view the Government took control of the management, and determined to work out a plan for putting the enterprise on a business-like basis. During the five months from December, 1932 to April, 1933, the Government was successful in acquiring through the Central Bank of China 39,382 "sets" of shares of the Company, leaving only 2,025 "sets" outstanding. A special committee of experts was appointed, charged with the function of readjusting the Company's liabilities. Wharves and godowns were repaired, and a reconstruction scheme involving the expenditure of \$8,000,000 was framed. In view of the fact that most of the Company's fleet were old ships of obsolete type, unable to compete with the modern and well-equipped vessels of its foreign rivals, the Central Political Council in May (1934) authorized the Company to arrange a loan of £400,000 from the Board of Trustees for the Administration of the British Boxer Indemnity Fund, for building and buying new ships, which are urgently needed to strengthen the present lines of the Company and start new services. With this money at its disposal the China Merchants' Company was in a position to start an expansion plan, involving the construction of four additional liners for its Shanghai-Hongkong service, and three river steamers to be employed between Shanghai and Ichang.

The first year of State control of this premier Chinese shipping enterprise saw a noticeable improvement in the Company's revenue, which amounted to more than \$3,600,000 for the first six months. As compared with the first two quarters during the four preceding years, freight receipts increased by 29 per cent, and revenue from passenger traffic and godown charges rose by 44 and 33 per cent respectively. This is an achievement which will have a great effect on China's

shipping as a whole, as the China Merchants' is the only Chinese-owned concern of any size engaged in this line of activity.

The Company owns, in addition to a number of smaller vessels, 25 ships of over 1,000 tons, and operates five others on charter, the total tonnage being 56,269. (In 1931, the figures were, ships 31, and tonnage 59,332.) The fleet consists of comparatively [small](#) ships, the largest is under 5,000 tons, and many of them are old. The average age, in fact, is well over 30 years, some even dating 50 years back. The Company's operations are confined to river and coast trade, its ships going no further south than Canton, and, since the outbreak of the Japanese trouble, no further north than Tientsin, though it is hoped shortly to extend routes further north as well as south.

But if there is to be expansion there must be new ships and equipment, and a scheme has been presented to the Government outlining an extensive reorganization. Arrangements are being made to raise \$30,000,000, which will allow the building of 20 ships of 3,000 to 5,000 tons, and 10 of 500 to 3,000 tons. These will be placed on the river and coast routes. At the same time ocean-going vessels are desirable, so as to enable a service once again to be opened with Malaya. Early in 1934 a loan of £400,000 was obtained from the British Boxer Indemnity Fund, and orders were placed in England for four new steamers of about 3,500 tons. These ships cost \$1,280,000 each, are 343 ft. in length and 47¼ ft. in breadth, are designed to carry a deadweight of 3,200 tons on a mean draft of 17 ft. 6 inches and to maintain a speed of 13 knots. Hull and machinery have been constructed under the special survey of Lloyd's Register to the requirements of their highest class, and the anti-piracy regulations of the Hongkong Government have been complied with. There are two complete decks with a top-gallant forecastle, poop and bridge, and a boat-deck with a navigating-bridge deck over it. In steel deck-houses on the bridge deck there is accommodation for 20 first-class passengers in two-berth staterooms, the public rooms including a dining-saloon and a spacious combined entrance and lounge. In the bridge 'tween deck there is a dining-saloon and staterooms for 52 second-class passengers, and 28 third-class passengers are berthed in the poop. Space is available for about 900 deck passengers. There are three cargo holds and three cargo 'tween-deck compartments.

It has been more than a decade since any new ocean liners have been ordered by Chinese steamship companies from abroad, and the

completion of the four British-built ships for the C.M.S.N. Co.—the "Hai Yuen", "Hai Heng", "Hai Li" and "Hai Chen", marks a new era in the development of China's mercantile marine. Just as the launch of the Cunarder "Queen Mary" meant the reassertion of Great Britain on the seas, so the launching of these ships meant the reassertion of China on her coastal waters. China does not as yet possess a great mercantile marine, but in recent years her fleet has been increasing rapidly, and, unless a complete dislocation occurs in the affairs of the world, it is safe to predict that the time is not far distant when her friends in Great Britain will see the flag of China regularly represented in British ports in a manner befitting the status of the Republic. In recent years China has had her tonnage increased by purchasing old foreign vessels which can never compete with the modern ships owned by foreign shipping interests. Because of this, the China Merchants' wisely decided to build four new ships in England instead of buying second-hand and out-of-date vessels.

The balance of the loan of ,£400,000 from the Sino-British Boxer Indemnity Refund for the four steamers built in Britain, will be utilized for the construction in China of a river-steamer and two 500-ton motor-boats, in order to meet increasing shipping demands. The actual cost of the four ships totalled £346,000, leaving a balance of ,£54,000, which according to the estimates of the C.M.S.N. Co., will be sufficient for the purpose. The Company has undertaken to be responsible for any deficit in case the estimates are exceeded.

In January, 1935, Mr. O. S. Lieu, Managing-Director of the China Merchants' Steam Navigation Company, stated that since the reorganization of the Company and the reconditioning of the wharves and steamers, business had improved noticeably. Both on the Yangtze River and the South China run, the ships and warehouses of the Company were always packed with cargo. A profit was made in 1934, but payments to meet accumulated loan obligations had left little in the way of surplus for the expansion of the services of the Company.

Of the other Chinese shipping companies none approach the China Merchants' in size or importance. Those ranking next to it are the San Peh and Ching Kee lines. The former, founded in 1914, operates 20 steamers, averaging about 2,500 tons each, most of which are employed on river runs, but services are also maintained to Canton, Swatow, Foochow and Ningpo, Most of its ships were built abroad, and the

average age is 30 years. Except on two river steamers this Company does not employ the compradorc system. The Ching Kee Company owns 15 steamers, with a total tonnage of 30,000 tons, which ply, or used to ply before the Japanese trouble, between Dairen and other Northern ports and Canton. The Chao Shing Company comes next, with six ships, mostly on the Shanghai-Yinkow run, and there are three other Chinese shipping firms with four vessels each.

PROPOSED SHIPPING COMBINE.

In January, 1935, an important plan was put forward for co-operative action among Chinese shipping companies, and a scheme for raising a public loan for the promotion of shipping was under consideration by the Ministry of Finance and the National Economic Council. Meanwhile, the Ministry of Communications has approved the proposed measures for establishing a co-operative shipping scheme. Accordingly a Shipping Co-operative Society is to be created, with all Chinese shipping companies, both State and private-owned, as members. The ships and warehouses of the members are to be at the disposal of the Society, for the use of which definite compensation will be paid. The Society will seek Government facilities, as required, in operating the ships on their regular routes. Members of the Society are required to observe the resolutions adopted, and contribute to its maintenance. The Society will have a Board of Directors, consisting of 11 persons, five of whom will represent the China Merchants' Steam Navigation Company (State-owned) and six will represent the various private companies.

Three officers are to be established by the Society to take charge of shipping (1) along the Yangtsze (2) along the coast, and (3) in the inland rivers. Each shipping office will have a committee, directly responsible to the Board of Directors. The term of office of members of the Board of Directors is fixed at three years. Members are eligible for a second term. They will receive no salary, but will be given travelling allowances. The Board of Directors will have a Standing Committee of two, who will preside at Board Meetings alternately. Resolutions of the Board must be passed by a two-thirds majority, the quorum being fixed at more than half the total membership. A plenary meeting of the Board must be held once each year. In case of necessity, extraordinary meetings may be convened.

The compensation to be paid by the Society to members for charter of their ships or warehouses are to be determined by experts. Any

surplus or deficit of the Society is to be apportioned among the members according to the relative value of their shipholdings. In case a member-company of the Society wishes to sell its ships, first option must be given to the Society. In case it is found desirable to purchase new ships or erect new warehouses, the purchase or construction should be carried out by the Society and the ships purchased or the warehouses constructed will be regarded as the joint property of the members. The Society may engage in other businesses, such as banking and international shipping.

THE PROBLEM OF PERSONNEL.

An important result of China's long dissociation from sea-borne trade and the atrophy of her mercantile marine between the 15th and 19th centuries was the disappearance of the sea-going officer class, although she had in the coastal provinces a maritime population which, given the training, need have feared comparison with none. When, therefore, the C.M.S.N. was started, not only had ships to be bought from abroad but men engaged to handle them. There were no Chinese with a sufficient knowledge of modern navigation or of marine engines to take charge of these vessels. Only very gradually has a Chinese personnel been created, and even to-day foreign captains and chief engineers are employed by Chinese shipping companies. The China Merchants', for example, employs 13 foreigners in these positions, and the San Peh nine. That this should be so after 60 years is only further evidence of slow development. Once it had been decided to create a mercantile marine, one of the first steps should have been to make proper provision for the training of officers, and to lay down an official standard of qualifications, as is done in Great Britain by Board of Trade certificates, so as to establish the confidence of travellers and traders of all nations in the competence of Chinese navigators and engineers. Only recently have any effective steps been taken in this direction. There are now two training colleges, one at Amoy and the other at Woosung, for mercantile marine officers, and the Government has begun to lay down standards of efficiency. In 1934, the first examination for ships' officers was held; previously a certificate could be obtained by producing testimonials of ability and experience from a responsible shipmaster. Foreigners employed in Chinese ships are also required to produce a Chinese certificate.

If China is to have a mercantile marine in proportion to her size and economic interests, she will have to turn her attention very seriously to the question of shipbuilding. A considerable percentage of the larger

ships (those over 1,000 tons) that she owns have been purchased abroad. Fifteen, for example, out of the China Merchants' fleet of 25 arc foreign-built, and, as has been seen, the Company is still going abroad when it requires new vessels. Shanghai possesses 25 dockyards, but only half a dozen at the most could build or repair a ship of any size; the great majority are concerned only with small sailing craft. The Kiangnan Dockyard can build vessels up to six or seven thousand tons, but could not turn out more than half a dozen in one year. Furthermore, engines have to be imported, and in addition a considerable amount of structural material.

NEW DOCK FOR SHANGHAI.

Established 70 years ago, the Kiangnan Dock was originally attached to the Kiangnan Arsenal, but was later divided into two separate organizations. Since the inauguration of the National Government, the Kiangnan Dock has been put under the direct control of the Ministry of Navy.

The No. 1 Dock was constructed 68 years ago. It was originally mud-bottomed, and 325 feet long. Many years after its construction, it was improved and extended to 375 feet. As steamers over 4,000 tons could not be docked there, the dock was further expanded to its present capacity: 545 feet long, 66 feet wide, and 20 feet deep.

Towards the end of 1925, a second dock was opened. Equipped with modern machinery, the second dock is 502 feet long, 61 feet wide, and 23 feet deep. In view of the lack of a dock big enough to accommodate vessels of over 10,000 tons, and the increase in orders for docking, plans for a third dock were discussed and this extension was opened on October 10, 1934. A gathering of about 1,000 distinguished guests, including Chinese and foreign naval officers and prominent shipping men of all nationalities, attended the ceremony, while an aeroplane circled above, and a naval brass band struck up as the cruiser "Yat Sen" slowly crept into the newest addition to the Naval Ministry's shipyard on the Nantao waterfront. The cost totalled \$1,200,000. The No. 3 Dock is 375 feet long, 89 feet wide and 26 feet deep, with ample space for expansion beyond its present capacity. The authorities are planning to complete the entire construction programme with the least possible delay. It is expected that following the completion of the first stage of the programme, work on the expansion will be carried out immediately. When completed, the dock will be 600 feet long, 100 feet wide, and 26 feet deep. The dock will be capable of accommodating steamers of over 10,000

tons and will be the largest in Shanghai. The work has been designed in accordance with the most modern ideas of dock construction, and the two 30-inch propeller-pumps and one 100-inch centrifugal-pump will be able to empty the dock in a couple of hours. Completion of this Shanghai dock will mean that it will be no longer necessary for big ships from that port to go to Hongkong or Japan for docking.

EARLY BLUNDERS AND THEIR RESULT.

The record of the last sixty years is certainly far from impressive. It is true China has increased her share of her own carrying trade from 0.9 per cent in 1864 to 19.4 per cent to-day, but her share of the carrying trade of the whole world remains infinitesimal, while her total tonnage represents less than 1 per cent of the world's shipping. Japan, in the same period, has increased her share of China's carrying trade from 0.01 to 27.8 per cent, while to-day her shipping ranks third in the world. Yet Japan started off from the same mark as China. She also had to build up a merchant fleet from nothing; to train a native personnel while employing foreign experts; to go abroad at first for her ships. It will serve no very useful purpose now to enquire the reason for this difference in the development of the merchant fleets of the two countries. There is a temptation to throw all the blame on the treaty-port system, on extraterritoriality, and the extortion by the foreign Powers of inland navigation rights, but Japan suffered in her early days from the same system so far as the first two points are concerned. To yield to this temptation would indeed be rank self-deception, even though it does contain a great element of truth, especially in connection with the foreign development of river-traffic, which did not exist in Japan. In any case, in the early days steamships were essential if international trade was to develop at all, just as foreign captains and engineers were essential if there were to be Chinese ships capable of competing with foreign vessels for a share of that trade. Neither on the Yangtze nor the coast could the carrying trade be left to Chinese junks. It will do no harm to recognize that fact. The aim should have been to develop a mercantile marine which would eventually be able to take the place of the fleets operated by foreign shipping companies, to create conditions under which China could take back into her own hands the rights granted to foreigners, secure in the knowledge that she would not thereby be injuring her own commercial interests or inflicting hardships on any section of her own people. The establishment of the C.M.S.N. was an attempt to

do this, an attempt successful as far as it went, but it went by no means far enough. Private enterprise failed to "deliver the goods," and there was no very great effort on the part of officialdom to remedy the defect. China, in fact, one fears, in those days was "not interested." There was no national will to reconstruct in this sphere of activity any more than in any other. It is really only during the last decade or so that the Chinese people have awakened to a realization of their own potentialities, and have secured a Government really alive to their needs.

But while recognizing the inevitability of granting these rights of inland and coastal navigation to foreigners at the outset, and the fact also that many of the factors which demanded that step 60 years ago are still operative to-day, it is obvious that it would be inadvisable, even if it were possible, to enforce the rendition—as distinct from the modification—of those rights at the present moment, owing to the fact that China does not yet herself possess shipping to cope with the volume of trade, while tremendous hardships would be inflicted not only on foreigners but on thousands of Chinese as well. This does not, of course, mean that the ultimate rendition of these rights is not a perfectly legitimate and, indeed, a very necessary aim, but a comprehensive scheme needs to be worked out, embodying a gradual approach to this objective, and should embrace the following points:—

1. The steady expansion of China's mercantile marine. Subsidies might be granted to Chinese shipping companies, if deemed necessary and advisable, and, where possible, preferential treatment accorded to Chinese vessels.

2. The training of an officer personnel. Every care should be taken to ensure a high standard of qualifications.

3. Strict supervision of ships to ensure that as regards seaworthiness, equipment, etc., they conform to the best standards of other countries.

[In regard to these last two points a start has already been made. Mention has been made of the Government's plans for examining prospective ships' officers. At the same time Navigation Bureaux have been established to examine the plans of ships to be built, and to see that no unseaworthy or obsolete ships are put in service. China has further joined the International Convention for the safety of life at sea, while a Commission to settle all marine disputes has been appointed.]

4. A steady whittling down of foreign privileges by equitable methods, and, if possible, in agreement with the foreign interests

concerned. Measures that have been suggested are:

- a. A law forbidding any new foreign shipping enterprises to engage in coastal or inland trade.
- b. The buying-up of existing foreign shipping concerns by China, or their transfer to Chinese control with safeguards for foreign shareholders therein.
- c. Restriction on the tonnage of foreign shipping.
- d. An embargo on the replacement by foreign firms of old and worn-out ships.
- e. Prohibition against existing firms opening up new routes and services.

CENTRALIZED CONTROL OF SHIPPING.

An important reform recently carried out by the Government in connection with navigation was the gradual realization of centralized control of shipping. Since the establishment of Navigation Bureaux three years ago, there have been frequent disputes between these Bureaux and local authorities concerning their respective rights in matters of shipping-control, there being no definite distinction made between deep-sea and inland navigation, of which the former comes within the jurisdiction of the Bureaux. Accordingly, in February, 1933, the Ministry of Communications issued orders by which the term "sea-going navigation" was clearly defined, and the various Bureaux were vested with complete control over all ships plying in deep water to which the Admiralty Law could apply. Again, in August, 1933, to further ensure complete control of deep-water navigation, the Ministry declared 46 ports (Shanghai, Nanking, Haichow, Chinkiang, Nantung, Ningpo, Haimen, Wenchow, Wuhu, Anking, Tientsin, Chinwangtao, Luanhokou, Tsingtao, Weihaiwei, Chefoo, Lungkou, Yingkou, Hulutao, Antung, Canton, Samshui, Kongmoon, Swatow, Tungon, Pakhoi, Hoihow, Wuchow, Nanning, Foochow, Amoy, Chuanchow, Santuao, Hankow, Shasi, Ichang, Changsha, Yochow, Kiukiang, Hukou, Wanhsien, Chungking, Harbin, Hulin, Lungkiang and Taheiho) as principal ports, where Navigation Bureaux or their branches had complete control over ships entering and clearing those harbours.

Another accomplishment in the matter of shipping control was China's success in preliminary negotiations with foreign Ministers, especially the British and American, for the enforcement of Chinese jurisdiction over foreign shipping. Arrangements were made for foreign shipping interests operating in Chinese waters to have their vessels

surveyed by Chinese inspectors, instead of by foreign inspectors, as allowed under the treaties of extraterritoriality.

A new chapter in the history of the Chinese shipping industry has been written in the summer of 1934, when a vessel operated by a Chinese concern sailed for foreign ports, carrying both passengers and cargo. A group of overseas Chinese in Sydney, Australia, have organized a shipping company, and as a beginning purchased one 8,000-ton vessel from a British shipping concern for the purpose of developing Chinese shipping. The steamer, which has been reconditioned and refurnished, is named the ss. "Yung Hua." Following registration with the Chinese Government, the company proposes to start regular business, sailing from Australian ports and flying the Chinese flag. If the steamer is well patronized, more vessels will be purchased for the service.

DEVELOPMENT OF RIVER TRAFFIC.

As an example of what can be done by organized effort, given the necessary initiative, it is interesting to record the successful development of riparian transport in the province of Hupeh. The Provincial Government now operates a fleet of 76 river-steamers serving various cities along the Yangtsze and Han rivers in Hupeh. These steamers were taken over from private ownership in 1933 because of inefficiency in management and frequent accidents. Since the Government took over, passenger tariffs have been greatly reduced, while the revenue from the operation has been steadily increasing, the receipts for October 1934, totaling over \$108,000. Since March 1934, Hupeh inland waterway steamers have all been put under Government control and management, with a view to improving the service, ensuring the safety and encouraging the movement of passengers and goods. Private owners of the steamers are guaranteed 8% interest per annum on the assessed value of the vessels; and by the end of June, were paid besides the 8% guaranteed, another 8% as bonus and 10% depreciation in cash. This means that the Government control system works on a financially sound basis, although the tariffs have been curtailed to a great extent as compared with those of the former private companies.

There are at present 57 steamers and 19 motor vessels controlled by the Hupeh Government. Although most of these vessels are less than 90 feet in length, and are built of wood, services are maintained on 21 lines up and down the Yangtsze and the Han River, and their tributaries, with daily schedules. Over 100 cities and towns are regularly served

by these vessels, and over 6,000 passengers are transported every day. Statistics show an increase of revenue month by month, for instance, roughly \$69,000 in July, \$84,000 in August, \$102,000 in September, and \$108,000 in October. Future development of inland water communications will be aimed at by building shallow-draft vessels for the lakes and small streams, conservance of waterways, through billing of cargo for exports, and the general improvement of equipments on board, wharves, and godowns.

Plans governing the operation of through shipping on the Grand Canal are being discussed by the Grand Canal Conservancy Board. It has been decided that all locks along the waterway be made at least ten metres wide, while the depth of the Canal must not be less than two and a half metres, in order to prevent flood and facilitate navigation. It was also decided that all interested organs be requested to co-operate in realization of the plans relating to conservancy of the Canal.

Definite plans for regulating the course of the Siaoching Ho (River), in North-Eastern Shantung, in order to promote irrigation and shipping in the province, have been drawn up by the Shantung Provincial Department of Reconstruction, and submitted to the National Economic Council for approval. According to the plans, the work will be done in three stages. During the first stage construction work will be confined to the Siaoching Ho itself and the mouth of the river, for which a sum of \$5,650,000 is required. The second stage will see the operation of through transportation between the Siaoching Ho, the Yellow River and the northern section of the Grand Canal. For this work \$2,810,000 will be needed. During the last stage, through transportation will be extended to link up the southern section of the Grand Canal.

CHAPTER XIV.

POSTS, TELEGRAPHS, TELEPHONES.

IN almost all countries the Post Office has had its origin in Government courier services maintained in earlier times for the rapid and safe transmission of official messages. So it is in China. As far back as the Chow dynasty (1122—255 B.C.) Government posts, served by mounted or foot couriers, were instituted, and these, known later as I Chan (驛站), were gradually extended throughout the Empire. In the 14th century of the Christian era, according to Marco Polo, their number amounted to 10,000, spaced at an average distance apart of 25 miles, for the service of which over 200,000 horses were maintained.

This organization was under the control of the Board of War at Peking, a special department of which, the Che Chia Sze (車駕司) looked after all I Chan affairs. Under this department there were 16 head bureaux located in various provincial capitals, each under a Director who reported to the Provincial Judge. In addition to the transmission of official messages, the service could also be called upon to provide transport for officials on transfer. The cost of upkeep (estimated in 1902 at three million taels annually) was not met out of the Treasury, but locally, each town taking from the local tax revenue the sum required, a practice which had led to many abuses.

A postal service for the general public did not make its appearance until long after the I Chan, not indeed until the 15th century A. D. and even then it was a matter of private enterprise. A number of postal corporations made their appearance, being known as Min Chu (民局). All these had headquarters at Ningpo, and were usually connected in the first place with a remittance bank or some business establishment with connections in the interior. Having correspondence of its own to forward, such an institution undertook for a consideration to deal with that of other people, gradually extending its operations to other towns in the same direction and beyond the limits of its own ordinary business. Thus very powerful "letter hong" grew up. They utilized every means of conveyance—trading vessels, canal boats, carriers, etc.,

and met in every possible way the convenience of the public, maintaining fast special services where they were wanted, and content with slow conveyances where economy was the first object, keeping open until after midnight whenever it was demanded by business interests, and, what was very attractive, making the addressees pay a portion of the postage, usually half. The rates charged were moderate (from two to twenty cents); they carried drafts, sycee, letters, and parcels, and though not under official control in any way, were most reliable and efficient. They served the public well, establishing a strong hold on their loyalty, but had, from the national point of view, the fatal defect that only the most profitable routes were developed, thus leaving wide areas unserved.

CREATION OF A MODERN POSTAL SYSTEM.

China's contact with foreign Powers introduced a, third element—the foreign post offices, foreign mail steamers, and foreign and overseas correspondence. The creation of a national postal system involved the merging of these distinct interests and bodies into one. It was not a task to be accomplished out of hand by mere Governmental decree. The first steps were taken by the Imperial Customs, within which body the Post Office grew up. After the Treaty of Tientsin in 1858, the carriage of diplomatic mails, which was a Government responsibility, was handed over to the Customs, thus making necessary the creation of postal departments at the Customs Houses at the various coast ports, as well as at the Inspectorate-General. Arrangements had also to be made for the carriage of mails by steamer, and courier lines maintained, first between Peking (Peiping) and Tientsin, and later between other places.

The success attending these operations led to their gradual extension, and by 1882 all ports north of Fukien had a restricted service for foreign correspondence. A little earlier, in 1878, a "letter office"—Shu Hsin Kuan (書信館)—had been set up to deal with Chinese correspondence, and courier lines established in connection with it. In the same year China was asked to join the International Postal Union, and to take over the foreign postal agencies and make herself responsible for the delivery of incoming mail. The suggestion, however, was turned down, hampered as China was by the existence of the I Chan and the letter hong, especially as the then Inspector-General of the Imperial Maritime Customs, Sir Robert Hart, felt it desirable first to be assured of his ground before making any move and then only to move slowly.

Slowly, then, but surely the new postal service grew, and in 1896,

an Imperial decree set up the Imperial Post, but without abolishing the I Chan or Min Chu. The former, outrivalled by a superior organization, surrendered in 1921, and disappeared, but the latter has proved a much more difficult problem to handle. At first they were treated with every consideration, the aim being to affiliate them as agents. But considerable pressure had ultimately to be brought to bear, mainly by measures which deprived the Min Chu of the use of steamer or railway companies for the transport of their mails. Only a fraction of these concerns now remain, as the following details of their transactions show:

<i>Year.</i>	<i>Packages.</i>	<i>Weight in Kilos.</i>	<i>Letters.</i>
1905	262,902	104,929	8,896,782
1932	142,700	34,712	3,927,700

In the autumn of 1934 an order was issued by the Ministry of Communications instructing the Min Chu to close down before December 31, on the ground that the existence of these private postal services was detrimental to the unification of a national postal system. In Chekiang and Kiangsu alone, there are at least 10,000 persons working in more than 400 Min Chu, and the total figure is enormous when the Min Chu in other parts of the country are added. It is the intention of the Postal Administration to establish, after the abolition of the old system, many more inland post offices, and so absorb much of the labour displaced.

The Post Office being at first only a department of the Customs, the Customs districts became the units of area for postal working, and every Commissioner of Customs acted *ex-officio* as District Postmaster. For the first few years the department was carried in a financial sense by the Customs, and not until 1904 was an annual subvention granted. In 1906, a Board of Posts and Communications was established, a sign that sooner or later the Posts would be set up as an independent department, a change which was effected in 1911.

CHINA ENTERS POSTAL UNION.

In 1914, China entered the International Postal Union and had to undertake responsibilities in connection with Union mails. In 1915 income for the first time exceeded expenditure.

The Revolution and its aftermath of civil unrest, followed by difficulties resultant on the outbreak of the World War, put a great strain on the new-born department. Some of the trials that had to be faced, and the spirit in which they were dealt with, can be gathered from the following extracts from the official history of the Chinese

Post Office in the Report for 1921. "The Post Offices, as yet hardly accustomed to stand alone, felt **the full force of the internal convulsion. (i.e. the Revolution).** Some offices were closed for a time, others entirely isolated from all connection with Peking (Peiping). Nevertheless, much ingenuity and resource were shown by those cut off from the directions of headquarters. Chengtu carried on upon the lines so well and truly laid down; the Nanking staff, turned out of their offices and even out of the city during the siege, installed themselves on houseboats ten miles up the river, and continued their handling and distribution of mails. At Hankow, too, where the city was practically wiped out by fire, and 27 out of 32 Box Offices were destroyed, the employees moved into four boats moored in the river and carried on. Hostilities in connection with the Great War spread to the Kiaochow Leased Territory, disorganizing the Tsin-Pu railway operations. The Siberian Railway was closed to passengers and mails, the steamers of the principal mail lines were requisitioned by their respective Governments, and mail connections became irregular and uncertain. But peaceful conditions did not prevail at home either. Bandits were still active, military broils occurred in the Yangtze valley, and floods swept over great areas of the country. The Nanking staff had again to take to the river; the Wuchow Office twice transferred its operations to cargo boats, and on account of floods mails were delivered by sampan."

Nevertheless, in spite of all these and subsequent difficulties during the years 1921-30, the service grew steadily stronger. Starting with communication between Peiping and a few treaty ports, short courier lines were established, extended, linked to one another, connected **where** necessary by junks, hong-boats, post-boats, and steam-launches on inland waterways, supplemented by rafts, camels, mule-carts and wheelbarrows, and thus were woven the first threads of the postal web which **now** covers the surface of this vast country. Railway lines, of **which the Post Office** eagerly availed itself, hastened communications, but **the number of** couriers it is necessary to employ is still vast. **The Post Office is now** installed in all *hsien* cities throughout the country, and **in most of** the smaller centres and towns.

New buildings for post-offices in Chengtu, Changsha, and Wuchang, respectively provincial capitals of Szechuan, **Hunan and Hupeh,** have been completed, or are **nearing completion.** An area of about two acres

in the Civic Centre at Kiangwan, Shanghai, has also been selected for the erection of a new post-office.

A further idea of the growth of the Post Office can be gathered from the following table, showing details of its principal activities:—

	<i>Mail Matter</i>	<i>Parcels in Kilos,</i>	<i>Money Orders</i>	<i>Establish ments.</i>	<i>Courier Lines.</i>
1905.	23 mill.	1,163,403	1,231,266	1,626	121,000 <i>Li</i>
1910.	99 , ,	3,255,130	5,280,000	5,357	287,000 ,
1915.	210 "	7,904,129	11,986,800	8,510	410,000 ,
1920.	400 "	20,776,137	58,923,600	10,469	475,000 ,
	796 , ,	37,418,160		12,523	683,000 ,
1932.	832 "	46,049,800		12,699	686,000 ,

With the expansion of the postal service, the income of the Postal Administration has improved considerably. The total revenue of the Directorate-General of Posts in the 20th year of the Republic (1931) exceeded \$33 millions (excluding the surplus from the postal remittances services), but expenditure amounted to over \$40 millions. In 1932 the situation became worse as a result of the illegal Japanese occupation of the Three Eastern Provinces and Jehol, with the result that the total revenue dropped to \$31 millions. In 1933, however, receipts totalled over \$33,300,000, sufficient to balance expenditure. The quantity of mail matter also increased by more than 40,000,000 as compared with 1932.

THE POSTAL ADMINISTRATION.

The administration of the Post Office is to-day centred in the Directorate-General of Posts in the Ministry of Communications. The whole country is divided into 24 postal districts, corresponding almost identically with the long-established administrative divisions of the country. Each district is under the control of a Commissioner, who has headquarters in the provincial capital. Under these provincial **head offices postal** establishments are classified, according to their importance, into **major establishments**—1st., 2nd., and 3rd. Class Offices, Sub-Offices, and Agencies; and **minor establishments**—Town Box-Offices, Rural Box-Offices, Rural Stations, and Stamp-Selling Agencies. The figures for 1932 give 12,699 major and 32,774 minor establishments.

The staff is both Chinese and foreign in composition. In the early years the higher offices were almost entirely held by foreigners, but

the tendency nowadays is towards a steady sinicization of **the** service, the number of foreigners being steadily reduced. In 1920, for instance, there were 54 ranking foreign officials in the postal administration as against 20 Chinese—Commissioners, respectively 23 and 2; Deputy Commissioners. 16 and 8; Acting Commissioners 15 and 10. In 1932, the proportion had become 40 and 70—Commissioners, 14 and 16; Deputy Commissioners, 14 and 29; Acting Commissioners, 12 and 28. The total staff in 1932 was 38,840, of whom 48 were foreigners; in 1920 the figures were 31,959 and 116 respectively.

The Post Office undertakes all the usual functions of a postal service with the exception of postal savings, money orders, etc. and telegrams. The telegraph system is still a separate institution, but the Post Office, in places without a telegraph office, accepts messages for transmission from both the general public and the telegraph offices. Money orders, etc., are now the business of the Postal Remittances and Savings Bank, which was established as a separate institution in 1930. Details of the various types of postal business for 1932 are appended:—

Ordinary Mail Matter	797,883,000	Weight (Kilos.)	***	46,049,800
Registered Mail	29,966,500	Value		\$136,767,500
Express Mail	9,097,100	Telegrams from public		5,300
Insured Letters	78,600	Telegrams from tele-		
Parcels:—Number ***	6,518,200	graph offices		25,500

MODERN COURIER SERVICES.

Operating over a vast area in such widely different stages of development, the Post Office has to employ a variety of methods in order to transmit its mails. The courier still remains the backbone of the service, as the following figures for 1932 show, distances being in li (i.e. 1/3 mile):—

Major Courier Lines	501,000	Railway Lines	26,700
Minor Courier Lines	185,000	Motor-Car Lines	37,380
Steamer and Boat Lines ***	100,130	Air-Mail Lines	7,569

The courier deserves a special paragraph to himself. His daily stages vary from 20 to 30 miles a day, **routes being often covered by night. The work is arduous and often dangerous, for the courier lines naturally pass through the wildest and most remote parts of the country, where there are not only the dangers resulting from climatic and physical conditions to be faced, but those arising from the presence**

of wild beasts and robbers. Yet it is rare that these men are found false to their trust. "There must," wrote a correspondent of the *North China Daily News*, "be some *esprit de corps* in this wonderful service, of which we on the outside know very little. The mail carrier starts out from Tatsienlu, 9,000 feet above sea-level, with a bag of mail matter on his back, on the long stretch to Litang and Batang, and that bag of mail only once falls below 12,000 feet, on what may be a 20 or 30 days' journey. Between Litang, 14,000 feet, and Batang, 9,500 feet, the Tibetan mail-runner has to spend several nights under the shelter of a friendly rock, or share the doubtful and precarious hospitality of some nomad's tent. For four or five days he may not pass an individual in any shape or form, and only in the distance may he see the smoke rising from some robber or nomadic settlement. He presses on, faithfully performing his duty, arriving at Batang only to report that some wild animal ate not only his mail bag but all its contents! Such is the life of these brave carriers along the Tibetan frontier."

The Ministry of Communications is considering measures for the improvement of the Tibetan postal service. At present there are only about 1,000 kilometres of postal route in Tibet. Owing to lack of railways and motor-roads, mail traffic is largely carried on horse-back and it requires at least a week to complete a journey of 1,000 li or 330 miles.

MAILS BY MOTOR ROUTES.

The rapid construction of roads which has been going on in recent years, and the equally rapid extension of motor transport facilities, has naturally been of material service to the Post Office in speeding-up and extending deliveries of mail matter. Between 1930 and 1931, the length of motor-car lines was trebled, rising from 10,121 to 32,251 li (about 10,000 miles). In the same way, steamer, launch and boat lines are steadily expanding, but railway construction proceeds at a very slow pace, and naturally restricts postal extensions in that direction.

As an example of the tremendous changes which are taking place in regard to the development of postal services in China, reference may be made to what has been done recently in improving communications between Hopei and the interior of China, by the resumption of the Sinkiang-Suiyuan long-distances bus service. A contract has been signed between the Postal Administration at Hopei and the Suiyuan-Sinkiang Bus Company for mail transportation between Hopei and Sinkiang by

bus. An express mail will reach Hami in 12 days and an ordinary mail 20 days, whereas before, it would take at least a month for letters to reach there via Siberia. The new delivery route will not only economize time and postage, but will also avoid delays by being censored or detained by the Soviet authorities when sent via Siberia. The Suiyuan-Sinkiang bus service, after some past interruption, was resumed in November, 1934, when five buses started from Kweihua for Hami.

AIR MAILS.

An important feature of recent years has been the air-mail services. Mails for or via Nanking, Hwaining (Anking), Kiukiang, Hankow, Shasi, Ichang, Wanhsien, Pahsien (Chungking) and Chengtu are forwarded daily from Shanghai by airplanes of the China National Aviation Corporation. Mails for or via Tunghai (Haichow), Tsingtao, Tientsin and Peiping are despatched three times a week. During the temporary suspension of the Shanghai-Canton service from June to November, 1934, air-mail for and via Canton was forwarded from Shanghai daily to Hankow, catching airplanes of the Eurasia Aviation Corporation on Peiping-Canton service on Tuesdays and Fridays. Mail for Chengchow, Changan (Sian) and Kaolan (Lanchow) closes every Wednesday, going by airplanes of the Eurasia Aviation Corporation via Nanking, and returning from Lanchow the following Saturday.

Another new route has been added to the airways of South China with the inauguration by the South-West Aviation Corporation of a direct service between Canton and Lungchow, via Wuchow and Nanning. The new line will connect with all the domestic air mail routes operated by the China National and Eurasia Aviation Corporations. Thus it is now possible for a letter posted in Kwangsi to reach Peiping in four days instead of three weeks, as was the case before the air mail service.

POSTAL ORDER OF BOOKS AND PERIODICALS.

In order to promote education and facilitate the purchase of books etc., by the public, the Ministry of Communications has formulated various regulations by which books and newspapers and other publications may be purchased through the Post Office. The subscription service commenced in April, 1934. A general catalogue of books that can be purchased through the Post Office has been compiled, and the purchasing service is now operative at all post offices. It may be mentioned that the present organization of the publishing trade is not yet very satisfactory; generally, each publishing firm deals in its own books only,

and this, coupled with troublesome procedure in remitting money, causes much inconvenience to purchasers, especially those in remote places, thus greatly retarding the development of education. Books and periodicals can now be purchased through postal channels, thereby eliminating a great deal of inconvenience in obtaining the literature required.

INTRODUCTION OF POST OFFICE LIFE INSURANCE.

This system will afford the poor people an appropriate means of protection and encourage them to form the habit of thrift. The premiums received may be appropriated, as an investment measure, for the development of local public enterprises, whereby society in general—and especially the poorer classes—will receive benefits directly or indirectly. This plan has long been in operation in many foreign countries, either undertaken by commercial organs or the Post Office itself. In Japan, where it is operated by the Post Office, the business is very prosperous. While the maximum insurance is limited to Yen 450, the total premiums exceed Yen 2,000,000,000.

The Ministry has worked out a scheme for establishing this system in China, and the plan is now under investigation by the Legislative Yuan. The maximum amount of insurance is provisionally fixed at \$900. A group of employees will be trained to deal with this branch of postal work, which will be started this year at Nanking and Shanghai as an experiment, and will be gradually extended to other places.

THE POST AS A UNIFYING INFLUENCE.

The Post Office has met with many obstacles to its smooth working. Military operations and the commandeering of railways by the military sometimes upset mail arrangements. In 1930, the Tientsin-Pukow through train service was suspended from March to October for this reason, and in September no trains at all were available on this line. Other railways in North China were also interrupted on many occasions, particularly the Ping-Han line. The Ping-Sui line was frequently suspended for a few days on account of floods, bandits, or military operations. The Cheng-Tai line was also affected. The year 1931-2 was particularly disastrous. In the summer, floods in the Yangtze valley seriously hampered postal communications, then in the autumn came the seizure of Manchuria by Japan, and finally the hostilities at Shanghai in the spring of 1932.

But in spite of all this the work goes on continuously; every year

the services expand, more and more places are brought within the postal net, speedier and more frequent deliveries effected, and with each step forward that the Post Office takes, China is knit more closely together. The National Post has been one of the greatest unifying forces in Modern China. It is, to quote the concluding words of the Report of 1921, the "bond of the scattered family, enlarger of the common life, carrier of news and knowledge, instrument of trade and industry, promoter of mutual acquaintance, of peace and goodwill, among men and nations."

POSTAL REMITTANCES AND SAVINGS BANK.

Since the establishment of the Republic there has been continuous, marked development in the postal remittances and savings facilities available to the public. In 1910 the only remittance service operating through the Post Office was that of ordinary domestic money orders; during that year the total money orders issued amounted to \$5,280,000, the service functioning between 596 offices. In 1934, in spite of no business being done in the Three Eastern Provinces and Jehol, there were 7,977 postal establishments handling remittances, and the total issued during the 23rd fiscal year (ending June 30, 1934), amounted to \$171,000,000. The highest figure ever recorded was for the 20th fiscal year, which included figures for the Three Eastern Provinces and Jehol, when a total of \$186,000,000 was issued.

The Postal Remittances and Savings Bank dates as a separate institution only from March, 1930; previous to that date, postal savings and remittances were branch operations of the Post Office. As early as 1898, money-orders were sold in post offices at most of the commercial ports, and this method of transferring proving very popular, similar facilities were soon extended to post offices in the interior. By 1919, there were 2,374 offices at which money-orders were issued and cashed, the total value of orders issued that year being \$130,000,000.

This was one of the most popular and useful services that the Post Office afforded the public, and proved of particular value during the Great War in connection with the Chinese Labour Corps. The report of the Chief of the Tsingtao Emigration Office, quoted in the Post Office Report of 1921, is an interesting testimonial to its importance:—

The manner in which the Chinese Postal Administration has carried out the payment of allotments has been beyond praise. The

best test of this has been the absence of complaints on repatriation from the most distant homes. This result has only been obtained by very close co-operation. Every complaint received by me connected with our money-order system has been inquired into by the Postal Authorities, often at considerable expense. We have worked with an elaborate system of guarantees, and whenever it has been proved that money has been paid into wrong hands it has been promptly repaid by the Chinese Post Office, which took on itself the onus of recovery from the payee; representations and complaints to Chinese officials in remote districts were thus undertaken by a Chinese Service, whereby the chances of international friction were much reduced. We have identified and settled accounts punctually with men in the most remote parts of the country, and in all payments effected through the Chinese Post Office we have not lost a single dollar of British Government money, though such payments have amounted to several million dollars."

A Post Office Savings Bank was first proposed in 1907, but not established until July, 1919. At first little progress was made—for one thing, a much too conservative policy was adopted, imposing too many restrictions on deposits received. An estimated loss of \$650,000 was incurred between 1919 and 1929.

The Government thereafter became convinced that it would be better to have a separate organization to handle postal remittances and savings. The Post Office had already a gigantic task to handle, and furthermore, the handling of savings and remittances differs considerably in its nature from ordinary postal functions, the latter being a strict monopoly, while the former is highly competitive. A new plan was worked out, and in March, 1930, the Postal Remittances and Savings Bank was set up under the direct control of the Ministry of Communications, though retaining at the same time close relations with the Postal Administration. It operates like any other commercial banking institution, but offers certain facilities which others do not.

Deposits of all kinds are accepted at over 600 post offices, the total on September 30, 1934, amounting to over 35 million dollars. By far the largest number of depositors belong to the "Passbook Savings" section. An account can be opened with a single dollar, and for amounts less than one dollar, stamps can be purchased which, when the required minimum is reached, can be exchanged, and the amount transferred to the passbook account. The maximum interest-bearing deposit allowed

is \$300, Deposits and withdrawals can be made if desired in any office within a postal district. Cheque savings accounts, similar to any ordinary banking account, can also be opened, as well as Fixed Savings Deposits. Deposits can be for a half, one, two, or more years, and bear interest at prevailing rates. On maturity they can be withdrawn at any office, or transferred from one district to another without loss of interest, the process involving book entries only.

The remittance services now comprise ordinary domestic money orders, telegraph money orders, postal orders, C.O.D. parcels and C.O.D. registered articles, and, in addition, international services, covering money orders and C.O.D. parcels and registered articles, involving the handling of 12 foreign currencies and providing remittance facilities between the Postal Administration of this country and all countries in the Postal Union. Domestic money-orders are at present sold and cashed at 7,977 offices (as compared with 2,474 offices at the end of 1929) situated in all parts of the country. The fact that its service is spread over so wide an area is one reason for the popularity of the bank, since through it money can be remitted to small and distant places, which ordinary banks and cash-shops do not reach. At the same time it is willing to handle very small sums, which other banking institutions will not be bothered with. Postal orders payable to bearer have lately been introduced, limited to sums between one and ten dollars. The maximum issue of money-orders, that of 1931, was 186 million dollars, as compared with a maximum of 130 million previous to its establishment, and \$171,000,000 on June 30, 1934 (which last figure excluded the Three Eastern Provinces and Jehol, the service to these provinces being resumed only on February 1, 1935). In order to promote the postal remittance service, postal money orders for sums ranging from \$5 to \$20 will be introduced by the Postal Remittances and Savings Bank. The bank has invested more than \$20,000,000 in the development of industries in the country. Definite plans to advance loans to farmers to assist rural rehabilitation have been formulated and will be tried out in Hunan province.

International money-orders are also issued on, and accepted from, all countries which are members of the International Postal Union. In addition the bank has its own correspondents in London, New York, Paris, Hanoi, and several large Japanese cities. Drafts are bought and sold and telegraphic transfers effected. The amount of international

money orders issued reaches \$1,500,000 annually; while the foreign money orders received through the Bank amount to about \$2 millions annually. In order to encourage postal remittances by oversea Chinese, the Bank has concluded special agreements with the postal authorities of the Federated Malay States, the Straits Settlements, and Canada. Postal orders were first started in 1930, since when the amount of such remittances handled has reached \$1,700,000 annually.

The Bank engages in practically every kind of banking business. It makes loans on real estate and other securities, allows overdrafts, discounts bills, and accepts foreign bills for collection. It also acts as agent for buying and selling of shares and Government domestic and foreign bonds. Despite unsettled conditions at home the Bank's first year was one of remarkable progress, and it seems certainly to have a very profitable and useful future ahead of it. After all expenses had been met, there remained a surplus of over 5½ million dollars, which was handed over to the Postal Administration. There were only 200 Postal Savings Banks throughout the country in 1919, but the latest report submitted by the Director-General of the Postal Remittances and Savings Bank to the Ministry of Communications states that the number on June 30, 1934 was 952. In 1930, when the Bank was first opened, postal savings deposits amounted to somewhat less than \$13 millions; in June, 1934 it amounted to \$34,128,859. It should be noted, in connection with the seizure of Manchuria and Jehol in 1931, that the Bank accepted liability for deposits in these areas, although the usurpers had seized property to a value many times in excess of the deposits.

Regarding interest rates, the latest report available states that for fixed saving deposits the interest is usually 6 per cent per annum for the first two years, and 7 per cent per annum for longer terms. Interest percentage on special savings is 5½, on cheque savings 3, and on pass-book savings 4%. The total amount of interest credited by the Bank to depositors during the past five years is as follows:—

1929	\$	<u>475,318.46</u>	1932	1,139,034.88
1930		807,550.72	1933	1,251,811.25
1931		1,373,186.07		

For the first time in its history the Postal Remittances and Savings Bank is investing its savings funds for the extension of the Post Office, in the form of a loan for the erection, at several important places, of new post office buildings. Arrangements for a loan of \$1,000,000 have

been concluded between the Postal Remittances and Savings Bank and the Postal Administration for this purpose.

TELEGRAPHS AND TELEPHONES.

China's internal telegraphic system dates back to 1881, with the opening of a line from Shanghai to Tientsin. The following year a line was carried up the Yangtze valley to Nanking, and in 1884 extended to Hankow. At the same time lines connecting Canton with Kowloon and Hongkong, Shanghai with Canton, and Peiping with Tientsin were constructed. In 1897, a line across Mongolia, from Kiachta to Peiping, gave overland telegraphic communication with Europe. The system was in the hands of the Chinese Telegraph Administration (established in 1882) until 1908, when the Ministry of Communications took it over.

The civil wars and almost unending internal strife which followed the Revolution did tremendous damage to the telegraph system. Lines fell into disrepair where they were not wrecked, offices had to be closed, instruments were destroyed or were worn out and could not be replaced, with the result that the National Government found itself faced with a heavy task of reconstruction when it came into power in 1927. In the seven years it has been in office, it has repaired 4,000 miles of line, and constructed 1,800 miles of new lines, including one of 800 miles from Hankow to Chengtu. At the same time wrecked offices have been restored and ruined instruments made good, while in over 50 districts modern equipment has replaced antiquated apparatus.

Comprehensive plans have now been completed by the Ministry of Communications and the National Telegraph Conference, for the improvement and the expansion of the telegraph service. New lines are to be built, old and neglected ones repaired and reconditioned, new equipment installed, and stricter training methods adopted for the instruction of operators. In order to improve the efficiency of the service, high-speed instruments, such as the Creed High-speed Automatic Apparatus and Teleprinters, have been installed on the more important circuits. The Morse instruments are gradually taken out of service owing to the high cost of maintenance as well as high initial costs, and more satisfactory instruments installed.

With regard to the telegraph service, it was decided first to repair all national trunk and branch telegraph lines. Direct telegraph communication between the following localities is being restored or establish-

ed: Fukien - Kwangtung, Hankow-Canton, Chengchow - Lanchow, Chungking-Yunnan, Chungking-Kweiyang, Canton-Nanning, Yunnan-Kweiyang, Changsha-Kweichow, Hangchow-Kwangsi, and Hunan-Kiangsi areas. A large number of telegraph lines including the Lanchow-Pingfan, Lanchow-Suchow, Lanchow-Tsinchow (Tientsin), Chungwei-Ninghsia, Lanchow-Taoho, Pingliang-Lungsi, Kuyuan-Chungwei lines, are also to be repaired, while the telegraph lines in the North-West and in Hunan are to be readjusted and improved.

Until 1930 international telegraphic communication was entirely in the hands of three foreign cable companies. In that year their contracts expired, and China regained her cable rights. The companies had to negotiate new agreements, applying for cable-landing rights, and the Ministry of Communications gained control over the offices.

TELEPHONE SERVICES.

Most of the chief cities now have telephone services, some of them excellent. Long-distance lines connect Nanking with Hangchow, Tientsin, Hankow and Shanghai. There are also toll services between Peiping and Tientsin, Tientsin and Mukden, Tsinan and Tsingtao, while the Nanchang-Foochow and Peiping-Charhar lines are also now in operation. Plans have been devised for installing telephone services in the provinces of Kiangsu, Chekiang, Anhwei, Honan, Shantung, and Hopei by utilizing the wires and posts already installed there. Over 300 districts in the first two are already linked up. Other provinces, among which may be mentioned Suiyuan, are also busy developing telephone services. In May, 1932, the Loyang 300-line magneto exchange was opened; and in April, 1933, the conversion of the Shanghai 4,500-line exchange to an automatic system was completed. Besides these, there is the establishment of new exchanges in Nanchang and other places. More public telephones are to be installed in important business centres, the calls being limited to 3 minutes. Special organs for administration of the long-distance telephone service are to be established in the more important commercial centres, such as Nanking, Tientsin, Hankow and Shanghai. A long-distance telephone department is to be established in each Provincial Telephone Administration. Most of the telegraph lines have further been simplexed or composited, or so re-arranged that they can be used alternately for telegraph and telephone.

As far as possible, telephone materials used are of Chinese manufacture. It has also been decided that telegraph apparatus factories should

be re-opened, and that branches be established at Peiping (or Tientsin) and Hankow. A factory for the manufacture of telegraph accessories is to be established with funds raised through a loan from the proceeds of the British Boxer Indemnity Refund.

In the course of a recent address at the Hankow Rotary Club, the head of the Hupeh Provincial Reconstruction Department gave some interesting details of the work being done in that province for improving communications. "Long-distance telephone lines go mostly side by side with the highways, and traffic has been opened to the public at very low rates in the Eastern, Western and Northern part of the province, while in the Southern districts poles and lines destroyed by bandits some three years ago are being replaced. Machinery and material were purchased in 1928-9 totalling over a million dollars. The province has now one 50-line exchange, 17 10-line exchanges, 31 5-line exchanges, and 106 telephone sets. As the city telephone services are not well developed in Hupeh (only three city exchanges are operating now, namely, Wuhan, Shasi and Ichang) no great financial success can be expected from the long-distance service, but it proves an efficient instrument for military purposes. It also serves well some small towns having no telegraphic facilities, as written words can be transmitted by telephone in code just as by telegraph.

NINE-PROVINCE NETWORK.

Details were published in Nanking in July, 1934, regarding the projected nine-province telephone system, for which the Government Purchasing Commission in London has been instructed to purchase the necessary material by means of public tender. The provinces that are to be linked by telephone are Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Hunan, Honan, Shantung and Hopei. In addition to existing lines, four principal new lines are contemplated—the Nanking-Hankow, Nanking-Tientsin, Hsuehchow-Chengchow and Hankow-Changsha lines. When the entire system is completed (about the end of 1935) all important cities within the nine provinces will be in contact with one another by telephone, forming the backbone of a national telephone network. In addition to exchange switchboards, repeaters and loading coils, the use of a considerable quantity of underwater cable will be necessary for crossing the many rivers that will have to be negotiated en route. Eventually, the nine-province service will be extended to Sian (Shensi) and Taiyuan (Shansi); telephone communication between Peiping and

Hankow is to be installed and the long-distance telephone service in Hunan expanded.

By arrangement between the Ministry of Communications and the Chekiang Provincial Government, direct long-distance telephone service between Shanghai and the various districts in Chekiang Province was initiated in July, 1934 by the Chekiang Provincial Government. Telephone communication between Shanghai and Chekiang Province has been handicapped in the past owing to conflict in the administration of the service between the Ministry of Communications and the Chekiang Provincial Government; but under the new arrangements, traffic will be greatly facilitated, as it will be in the sole charge of the Chekiang authorities, who will contribute a certain part of its revenues to the Ministry of Communications as licence fees.

As there are only two main lines linking Shanghai and Chekiang Province, telephone calls from the various districts in the province to Shanghai are connected through the Hangchow and Kashing Telephone Bureaux. For ordinary long-distance calls from or to Shanghai via the Kashing Office, a fee of 60 cents is charged. For calls via Hangchow the fee is \$105. An extra five cents is collected for calls from the International Settlement and French Concession in Shanghai, from Paoshan, and Nanziang.

INTERNATIONAL RADIO TELEPHONE.

Plans for the inauguration of a domestic wireless telephone service, as well as connections with foreign countries, are well under way. In February, 1935, the announcement was given that important progress had been made in the long-discussed scheme for establishing contact by radio-phone between China and European and American stations. Calls from points in China to London, Paris, New York and other stations abroad, at which long-distance facilities are located, were brought closer to reality with the signing of an agreement between the Telephone Administration of the Ministry of Communications and the Shanghai Telephone Company, governing complete interchange of long-distance telephone facilities within as well as outside China. The Ministry of Communications, in anticipation of the signing of this agreement, had already imported radio-telephone equipment for the erection of sending and receiving stations in Chinese-controlled areas near Shanghai, so that test calls to foreign countries may be started at any moment. The agreement brings developments in long-distance communication in China up to date, so

that its service will be comparable to similar services in other parts of the world. The agreement is for an initial period of five years **and** will continue indefinitely after that time, unless either party serves notice six months in advance of its intention to terminate its contractual obligations.

In order to extend the wireless service to South China, the installation is proposed at Shanghai of four 2-kilowatt automatic radio apparatuses for communication with Foochow, Amoy, Swatow and Canton. Wireless operators will be sent to the International Radio Station at Shanghai by the four radio stations in the southern cities to receive proper training. The opening of the Canton-Shanghai wireless telephone is expected about July, 1935, following an understanding with the Ministry of Communications to spend between \$2,000,000 and \$3,000,000 for the service. The Shanghai station will be located at Chenju, while the Canton station will be housed at the Observatory in Chungshan Park, Shekpei. Modern equipment from England for domestic and international radio-telephone service is being installed at the Chenju wireless station by the Bureau of International Telegraphs of the Ministry of Communications.

It has been announced by the provincial Telephone Administration in Canton that, by the summer of 1935, wireless telephonic communication between Canton and America and Europe will be possible, as the result of negotiations which have been concluded. The service will be operated at the Canton end by the Telephone Company at Hongkong, but equipment for the transmission of communications from Canton has been ordered from England and will be installed in the near future. When this has been done, communication from Hongkong to the outside world will be made along the existing trunk cable from the Colony to Canton, where it will be wirelessly to the station which is to be erected in Shanghai, and from Shanghai to Europe or America. To ensure secrecy of conversation, the latest device in the process known as "scrambling" is to be adopted. By this process certain frequencies are eliminated which scrambles the words at the point of transmission and re-forms them at the receiving station. The cost of a three minute conversation with Shanghai would be in the region of \$10.00, and for a similar period to Europe £4 or £5.

NEW LONG-DISTANCE SERVICES.

The Kwangtung provincial authorities are planning to establish a long-distance telephone service along the West River. This is part of

the three-year scheme of toll telephone lines, which has been drawn up by the Provincial Government. The line, about 340 li in length, connects Fatshan, Sham-shui, Ko-yiu, Tak-hing, Wai-on and Foong-chuen. Besides its three-year plan for the development of the telephone network in the province, the Kwangtung Provincial Government is also proceeding with a scheme for the installation of a long-distance telephone service with the neighbouring province of Kwangsi. The service will be first installed between Canton and Wuchow, Eastern Kwangsi, and then extended gradually to other cities in the two provinces.

Installation work on the new direct long-distance telephone service between Nanking and Shanghai, along the Nanking-Shanghai highway, was completed in August, 1934. The line, which covers a distance of more than 600 li (200 miles), links up, besides other cities, the districts of Taichang, Ihing and Liyang, which have never before been connected by telephone.

Direct long-distance telephone service between Kalgan and Kweihua, respectively provincial capitals of Charhar and Suiyuan, was put into operation in November, 1934. The line passes through the two districts of Hing-ho and Shang-ho in Eastern Suiyuan.

The Telegraph School in Shanghai is to be reopened, and similar schools established in other parts of the country, including Nanking, Canton and Peiping. For the benefit of telegraph employees, supplementary Telegraph Schools will be opened.

A telegraph materials improvement experimental station is to be established with a view to training technicians; an international wireless research institute will be opened, and a telegraph research laboratory installed in the telegraph apparatus manufacturing works.

With regard to the training of telegraph and wireless operators, special training is to be given to all operators now on active service, who are under 35 years of age. Engineering training is to be given to operators who hold a good record, so that in course of time they may be promoted to administrative positions. Telegraph officials are to be despatched to study advanced scientific methods or gain practical training. For their selection, examinations are held by the Ministry of Communications every three years. Employees of the International Radio Station who have been on active service for four years with a good record, are also to be sent abroad for practical training.

WIRELESS TELEGRAPH SERVICE.

Wireless telegraphy was introduced in 1905, from which date on, there has been steadily, if slow, development. In 1914, the Ministry of Communications took over all existing wireless stations. To-day there are 32 long-wave stations under the National and Provincial Governments, and in addition a short-wave network has been set up with 72 stations, operated by the Chinese Government Radio Administration, under the Ministry of Communications. Most of these stations, both long and short-wave, date from 1927, for the provision of effective wireless communication, both internally and externally, was one of the first problems to engage the attention of the National Government. In view of China's vast area, the paucity of roads and railways and the high cost of installation and maintenance of land lines, wireless is of especial importance in the internal administration of the country. By its means remote districts and the frontier provinces are brought into closer contact with, and so under more effective control by, the Central Government. Stations have been erected at Sian, Loyang, and Kalgan, while one at least is in course of erection in each of the following provinces: Suiyuan, Charhar, Sinkiang, Kansu, Szechuan, Chinghai, and Ninghsia. Eleven sets have been purchased to be installed in Ili, Hami, Seotsimaosing, Tungshung, Chaihansao, Newyangchun, Changpeh, Chihcheng, Paochang, Tushihkow and Kingmen.

Direct wireless communication between Lhasa, capital of Tibet, and China was inaugurated on February 2, 1935, when the Ministry of Communications announced that the radio station erected by the Ministry at Lhasa was open to the public.

For the purpose of Communist-bandit suppression several portable radio sets have been installed in Hungkiang (Hunan), Santai (Szechwan) Lienkiang, Loyuen, Ningteh, Hsiapu, Fuan, Pingnan, Futing (Fukien), Hofeng, Wuchang, Isze, Kienshi, Hsingsan, Shihshui, Chikiang, Mienyang, Kiangling, Yuenan and Yinsan (Hupeh).

In regard to external communication, traffic agreements have been concluded with the Philippines, the United States, Germany, France, and England for direct circuits. In order to implement these agreements, powerful stations have been erected at Chenju and Liuhong. These were partially completed and opened in December, 1930, giving direct communication with the Philippines, the United States, and the continent of Europe. Later two 20-kilowatt beam stations were purchased from

the Marconi Company for direct communication with England from Shanghai. Outstanding in the wireless network linking China with foreign countries is this Shanghai-London service which was put in operation on February, 1934. More than half of the wireless transmissions handled in China are with Europe.

England takes more than half of the total of wireless messages from China to Europe. Prior to the opening of the Shanghai-London wireless service, such transmissions were done via the China-Germany or the China-France routes, while a portion was handled by the Eastern Extension and Great Northern cables. Since its opening the Shanghai radio station handles a daily average of 100 messages sent to and received from London.

Other foreign services inaugurated during the last two years include the China-Russia, China-America (Mackay), China-Italy, and the China-Japan routes. The first China-America wireless service was opened during December, 1930. The second China-America wireless service, which was established by a contract concluded with the Mackay Company by the Ministry of Communications, aroused criticisms from some people who predicted a decline in the business consequent upon the change. Contrary to such speculations, business has proved exceedingly satisfactory. Instead of decreasing, the total daily transmittances handled by the Ministry of Communications' service has increased to between 200 and 400 messages, while that handled by the Mackay system amount to 150 messages daily.

Following several years of effort on the part of the Ministry of Communications, a total network of 13 direct wireless services, linking the principal cities in China with those in the leading foreign countries, has been established and are now in operation, making China absolutely independent of the foreign cable companies which formerly had complete control over China's international communications. Seeking further to augment its work in this connection, the Ministry has instructed the Bureau of International Telegraphs to make preparations for the installation of radiophones both internally and externally. Many sets of radiophone receiving and despatching apparatus have been purchased and are being installed at the Chenju and Liuhang stations. It is expected that radiophone services will be inaugurated before the summer of 1935.

The improvement in the services of coastal radio stations, to facilitate communications ensuring greater safety of navigation, is also engaging

the serious attention of the Bureau of International Telegraphs. The coastal radio station of the Bureau of International Telegraphs in Shanghai communicates with all steamers at sea at regular hours of the day; storm warnings are issued, and distress calls can be picked up and forwarded to the steamers nearest to the ship in distress.

BROADCASTING SERVICES.

Great strides in broadcasting in China have been made during the past few years through Government initiative as well as by private amateurs in this country. There are altogether 92 broadcasting stations in China Proper, but although this number is small as compared with more advanced countries in Europe and America, it represents a tremendous progress, if it is realized that China had only 18 stations at the end of 1931, the other 74 stations being erected during the last three years. In 1932, the then biggest station in Eastern Asia was erected by the German Telefunken Company for the Publicity Department of the Central Kuo-Min Tang at Nanking. This station, XGOA, has a strength of 7V2 kilowatts operating on a frequency of 660 kilocycles (454 metres). XGOA can be heard throughout the world.

The second largest radio broadcasting station in China, the new 5-kilowatt water-cooled XGOW of the Hankow Municipal Government, was opened on January 1, 1935, when the first regular programmes were broadcast. The station was built entirely by Chinese engineers, and more than 70 per cent of the materials used were obtained in China.

Altogether 48 stations were in operation by the end of 1934, in the French Concession, the International Settlement, and the districts under Chinese jurisdiction, in Shanghai alone. Owing to the complicated situation resulting from the heavy interference there, listeners could hear very little. It is now the intention of the Central Kuo-Min Tang to establish such a powerful station at Shanghai as to be able to control and remedy the situation. Early in 1935 the Ministry of Communications purchased from its foreign owners the Shanghai Radio Station XQHC. With the installation of crystal control and of new microphones, programmes broadcast from XQHC will not be subject to the annoying fading and swinging which is a characteristic of reactance-controlled transmitters.. It is not proposed to broadcast stock quotations or similar advertising announcements between entertainment matter, which is the general practice among the foreign stations in Shanghai.

In Peiping today there are five stations in operation, but the Chinese

station in the West City is the only station which is under the direct control of the Ministry of Communications. The other stations are operated privately under license from the Ministry, except the station XGOT, which was initiated a few months ago by the Central Kuo-Min Tang. Other stations are in operation in Soochow, Wusih, Nanchang, Wuhu, Changsha, Chungking, Tsinan, Kaifeng, Yunnanfu, Tsingtao, Taiyuanfu, Canton, Foochow, Hangchow, and Tingsien, or practically in all provinces in China Proper. The Tingsien station in Hopei was specially erected to assist in the promotion of Mass Education.

City and country people in China today are rapidly becoming "radio minded", particularly the illiterate masses in this country, many of whom find the loud speaker the chief source of amusement and of knowledge concerning conditions outside and inside their own towns or villages.

Unfortunately, a "war of the ether" is now in progress in Manchuria, for in order to combat the powerful station in Nanking, the Japanese authorities in illegal occupation of the territory had established an even more powerful station in Changchun in the autumn of 1934. It operates on a frequency of 555 kilocycles and is rated at 10 kilowatts. In addition, a special interfering station was erected in South Manchuria, with the sole function of blotting out the Nanking signals as to make them entirely unintelligible to the Chinese inhabitants of Manchuria.

The Legislative Yuan had adopted a resolution ratifying the International Telegraph and Radio Convention, but with an important reservation, stating that no foreign countries or individuals have a right to instal or operate, without the permission of the Chinese Government, telegraph or wireless equipment in foreign concessions, settlements, leased territories, and railway zones. The reservation also applies to the foreign Legations in China.

CHAPTER XV.

RURAL REHABILITATION.

THE problem of rural rehabilitation is not the least important of the many difficulties the Chinese Government has had to face. A happy, contented and prosperous agricultural population is essential to the well-being of any State; it is the base on which the whole edifice rests, and particularly is this so in China which, despite its increasing industrialization, still remains predominantly an agricultural country, and must so remain. With her vast area China should be self-supporting in the matter of food and most of the raw materials she needs for her developing industries. It would be sheer folly for her to attempt to develop the towns to the neglect of the countryside, in the vague hope of copying England and paying for imported foodstuffs and raw materials by the export of manufactures. As it is, however, China is not self-supporting—she imports wheat, rice, timber, and far more raw cotton than she should have need to. At the same time, her silk and tea trades, both important factors in her prosperity, if not languishing, are certainly not so prosperous as they ought to be. The political disturbances of the post-Revolution era, the extortions of marauding militarists, and in particular, the Communist-bandit evil, have been responsible to a large extent for the sad plight of the farmer in so many districts. But not wholly so. Throughout the country primitive methods of cultivation, lack of transportation facilities, shortage of capital and inability to get credit, steady deterioration of irrigation schemes, decay of the cottage industries, which play so large a part in the farmer's household economy, and general ignorance and lack of education have all been contributory factors in creating a situation which the National Government, through the Rural Rehabilitation Commission and the National Economic Council, have been striving hard to improve, and with no little success.

The primary needs of any agricultural population are peace, access to the land, and assurance that they will be allowed to reap the fruits of their toil without fear of the depredations of militarists or the extortions of tax-gatherers. Once these conditions have been secured,



PRESIDENT WANG TREE-PLANTING ON ARBOUR DAY (MARCH 12, 1935)



AIR PHOTO FOR LAND TAX SURVEY (ALTITUDE 1500 METRES)

the farmer next requires adequate transportation facilities to enable him to get his products to market, credit facilities to enable him to utilize his land to the best advantage, irrigation schemes, and education, both to raise his general standard of knowledge and intelligence, and particularly in the adoption of improved methods of cultivation. The soldier of fortune is now a sporadic evil; only very occasionally and in odd spots does the predatory war-lord raise his head, and then in most instances he is swiftly dealt with, but even the militarist usurper has been known to do some good work.

A general review of the farm-land indices for China during the last twenty years shows that the farming area is neither increasing nor diminishing. Since land utilization and land distribution are fundamental problems in the field of agricultural research to-day, land statistics are needed for a study of their solution. In China such statistics are not so complete and accurate as they are in other countries. Some people have maintained that farm-land in China is increasing, while others have argued that it is diminishing. After going over 1,532 reports from the 22 provinces of China, the National Agricultural Research Bureau has come to the conclusion that the area of farm-land in China, taken as a whole, has remained very much the same as before.

In considering the changes by provinces, however, some show an increasing and others a decreasing area. In Chinghai, Szechuan, Hupeh, Kiangsu, Chekiang, Kwangsi and Kweichow provinces, the population has increased during recent years, and most of the arable land has been brought into cultivation, thereby increasing the area of farm land. In Suiyuan, Charhar, Ninghsia, Shensi, Hopei, Shantung, Kiangsi, Hunan and Fukien provinces, there has been a decrease in the amount of farm-land. In Suiyuan the decrease has been due mainly to bandits, floods and drought. In Shensi and Kansu there has been much suffering from drought, especially in 1929-1931, when many of the inhabitants emigrated or died. In Shantung and Honan the people have suffered from floods and drought, war and bandits and excessive taxation. For these reasons they have been forced to abandon farming for other pursuits. Furthermore, the overflowing of the Yellow River has deposited sand and gravel on much farm land, making it unsuitable for cultivation. As for Kiangsi and Fukien, the decrease in their farm-land area is due to the recent trouble with the Communists. During the last 60 years the population **has** increased 31 per cent, whereas the area of farm-land has increased

only one per cent. About 19.1 per cent of the land area covered by the survey is not under cultivation, and of such area only one-third is suitable for cultivation. In other words, only 6.4 per cent of the land area covered by the survey is arable but at present uncultivated.

REDUCTION OF RURAL TAXATION.

In most parts of the country the chief evil lies in the exorbitant levies and miscellaneous taxes which are the rule in far too many provinces. The Rural Rehabilitation Commission, set up in 1933, discovered that in some places the Farm Surtax amounted to 25 times the regular farm tax. A matter of primary importance, therefore, is to reduce or abolish these extortionate levies, and a start was made in Kiangsi Province forthwith.

In the course of an address delivered at the memorial service held on March 12, 1934, at the Central Kuo-Min Tang Headquarters in commemoration of the ninth anniversary of the death of Dr. Sun Yat-Sen, Mr. Wang Ching-Wei, President of the Executive Yuan, reported that the abolition of exorbitant levies and miscellaneous taxes would at once be carried out in Kiangsi. At that time burdens of this character in that province amounted to \$250,000 a month, the greater portion of which was employed for the promotion of education and the maintenance of local militia to defend the population against Communist-banditry.

In view of the fact that Kiangsi was one of the most important provinces in the zone where bandit-suppression operations were being carried on, the Executive Yuan decided to instruct the Ministry of Finance to remit a monthly appropriation of \$250,000 to the Kiangsi Provincial Government, in order to enable the authorities there to abolish immediately the exorbitant levies and miscellaneous taxes then being collected. The decision was immediately translated into action, and Mr. Wang Ching-Wei was in a position to state that, while the abolition of exorbitant levies and miscellaneous taxes was first carried out in Kiangsi, it would eventually—or rather in the shortest possible time—be carried out throughout the country.

Thus at the National Finance Conference held in Nanking in June, 1934, ways and means were devised for the solution of the various financial problems confronting both the Central and various local authorities, i.e. how best to bring about the reduction of the Farm Surtax and the abolition of exorbitant levies and miscellaneous taxes.

These levies, it was realized, cannot be reduced or abolished merely by the simple process of the issuance of instructions from the Central authorities. In order that tax reduction or abolition may be effected by the various local authorities concerned, the Central Government must therefore first devise measures whereby the loss of revenue resulting from such action may be made good.

The resolution adopted by the Finance Conference providing for the reduction of the Farm Surtax and for making good the resultant deficit was forwarded to the Executive Yuan by the Ministry of Finance, and approved by the Yuan. The Government decided that from July 1, 1934, the entire revenue from the Tobacco and Wine Licence Tax shall go to the various local authorities. Measures for the apportionment of the proceeds from the Stamp Tax have also been determined. Beginning from the new fiscal year (July 1, 1934), 10 per cent of the proceeds are remitted to the provinces, 30 per cent to the districts (*Hsien*), and 20 per cent to the border provinces in need of financial assistance.

In pursuance of another resolution of the Finance Conference, the Ministry of Finance also petitioned the Executive Yuan, recommending that the National Government be petitioned to issue a Mandate enjoining the abolition of exorbitant levies and miscellaneous taxes as from July 1, 1934, a date which is memorable in that it marks a new departure in the system of national taxation—a concrete manifestation of the policy of the National Government to alleviate the burdens of the peasantry.

The resolution adopted by the Finance Conference for the complete abolition of exorbitant levies and miscellaneous taxes within the period of July 1—December 31, 1934, was reported by the various delegates to their respective Provincial Governments immediately upon returning to their provinces. Without waiting until July 1, the Kiangsu Provincial Government, in a communication to the Ministry of Finance on June 10, reported the abolition of 42 different kinds of levies and taxes in various districts of that province. The Executive Yuan issued a special order of commendation to the Kiangsu Provincial Government, recognizing its prompt and effective action as an example for other Provincial Governments to follow.

On June 28, 1934, the Hupeh Provincial Government reported to the Ministry of Finance its decision to abolish 27 kinds of miscellaneous taxes from July 1. On June 25, the Kiangsu Provincial Government

reported to the Ministry of Finance its decision to abolish, as from July 1, the "Production Levy" on the export of local commodities to other provinces. From that date all local products were exempt from the "Production Levy" and the people of Kiangsi relieved from yet another burden. On June 29, the Chekiang Provincial Government reported to the Ministry of Finance its decision to abolish over 280 different levies and miscellaneous taxes hitherto collected in that province. Similar reports followed almost daily from various other provinces.

Since the first part of the programme for the abolition of exorbitant levies and miscellaneous taxes has been achieved with such encouraging rapidity, the speed with which the second part of the programme is likely to be accomplished can be imagined. The abolition of these local levies and taxes will not only alleviate the sufferings of the people, but will also develop their strength and resources, and consolidate the nation's vitality.

Some people are inclined to think that, since the Government is determined to achieve the task of national salvation and self-preservation, it should concentrate its activities upon the development of national resources, and engage actively and solely in the work of national reconstruction. They consider it inexpedient for the Government to lighten the people's burden of taxation on the ground that such a policy will render all projects of national reconstruction impossible of realization. Such critics, however, fail to recognize the fact that the Chinese people are already in great financial distress, and that if no steps be taken immediately to aid and protect them, they would soon find it utterly impossible to carry the burden of taxation which is bearing so heavily upon them.

As is generally known, over 80 per cent of the population of China are farmers. The greater portion of the national revenue is obtained from these peasants. It goes without saying that the various surcharges on the Farm Tax, are collected from the peasants, and even the larger portion of the exorbitant levies and miscellaneous taxes is also obtained from these people who get their living out of the land. Criticism is also often made that reforms planned on paper are not put into practice. This does happen sometimes, and not only in China, **but** in this particular case it is possible to show actual results. In the autumn of 1934, a statement was issued by the Ministry of Finance showing what had been done in the matter of abolishing exorbitant levies and taxes.

ABOLITION OF EXORBITANT LEVIES AND TAXES.

PROVINCE.	MISCELLANEOUS TAXES.		FARM SURTAX.	
	<i>Already Abolished,</i>	<i>To be Reduced.</i>	<i>Already Abolished.</i>	<i>To be Reduced.</i>
Kiangsu	\$195,911		\$137,987	
Chekiang	247,511		1,604,037	
Anhwei	184,979	\$283,997	66,891	
Hupeh	286,000	1,200,000		
Hunan	1,600,000			
Fukien	294,006			\$900,000
Kwangtung	4,862,206	1,681,283		
Shantung	141,562	197,556		
Weihaiwei	3,640			
(Peiping)	(280,000)			
Hopei	555,360		799,000	596,000
Shansi		6,450,855		
Shensi		290,000		
Ninghsia		770,576		
Charhar	500,000	220,000		80,000
Kansu		290,000		300,000
Kwangsi	400,000			

In November, 1934, the Minister of Finance announced that there had been a reduction of taxes in Shansi by more than \$14,000,000, while a second group of exorbitant levies and miscellaneous taxes to be abolished in Shantung was announced by the Provincial Government, which includes \$166,761 hitherto collected in 67 districts, and 254 miscellaneous taxes, yielding \$30,795 annually, collected in other districts. These levies were abolished on December 1, 1934. The deficits resulting from the abolition of these taxes will be made up by a grant of 10 per cent of the provincial quota and 10 per cent of the district quota from the proceeds of the Documentary Stamp Tax collected in Shantung. Further deficits will be made up from the reserve funds of the provincial and district authorities. It is realized that the progressive abolition of levies and taxes of this character is the only effective measure for lightening the heavy load carried by the peasants and for restoring their powers of productivity. Once that productive power is stimulated, the strength

of the people will be automatically developed, and the national vitality consolidated.

CO-OPERATIVE SOCIETIES AND AGRICULTURAL INSTITUTES.

The areas still in the hands of the Communists, or such parts as have been and are being recovered from their control are the ones which at the moment demand most attention. The establishment of a regime of law and order in those districts is one of the most urgent tasks the Government has to face; military successes are of little use unless they are followed up by the settlement of a happy and contented population in the recaptured territories. Extensive provisions have been made with this end in view. The principle of private ownership of land has been reaffirmed, subject to two limitations:—

- i. The obligation on landowners to give all persons in their neighbourhood an opportunity to work on the land.

2. A limit to the maximum holding of land, those holding more than this limit being subject to a graduated system of taxation, the money thus collected to be used to finance agricultural enterprises for the general public benefit.

In order to decide questions of ownership and farming rights, Rural Rehabilitation Committees are set up in each village which take charge of the land pending settlement of these questions. In the allocation of the land the original owners and cultivators, if identifiable, are given priority of claim. Land of which the ownership cannot be decided is let, and the rent received is used by the Committee for the general good. Adults are allowed to cultivate as much land as is necessary for their support, and minors are granted half that amount. Tenant-farmers pay rent, possibly in kind, to the owner at a rate fixed by the Committee.

Co-operative societies can be formed to cultivate land, and these are given a first option of any land coming up for sale. Farms thus acquired are distributed to members of the society for cultivation, who pay rent, which money is used by the society to improve methods of cultivation. At the same time co-operative credit societies are formed to enable farmers to obtain loans at a low rate of interest. Farmers' Banks have been established with a total capital of \$2,500,000, advanced out of the relief funds to finance these societies.

These provisions apply most particularly to the ex-Communist areas, but they can, if necessary, be applied elsewhere; for example, those

ensuring every adult access to the land at a fair rent can be extended to districts where land-ownership is concentrated in a few hands. The co-operative credit society is a distinctive feature of rural organization in many parts of the country, but is in fact nothing new, being antecedent to the present Government. The first society of the kind was formed as far back as 1919, under the patronage of the Shanghai National Co-operative and Savings Banks, and the movement then spread to North China, fostered by the International Famine Relief Commission. In 1928, the plan received the approval of the National Government, and has had its support ever since. The Kuo-Min Tang has been particularly active in promoting the formation of such societies, and to-day there are co-operative organizations in most of the provinces. According to figures published by the Kuo-Min Tang in 1931, there were then 1,576 in all, with a total membership of 63,000 and a capital of \$400,000. In addition there were some 900 organized by the International Famine Relief Commission, with a total membership of nearly 14,000. Credit societies are not the only rural co-operative societies—there are others for transport, irrigation, cultivation, marketing etc. According to the *Industrial Handbook for Kiangsu*, there were at the end of 1932, 2,673 co-operative societies in the whole country, with a membership of 98,778 and a capital of \$972,000.

That the co-operative movement is fulfilling a real need of rural society is clearly evidenced by its rapid growth during the last few years. The gains have been especially notable in the provinces of Shensi, Shansi, Hunan, Hupeh, Honan, Anhwei and Shantung. The total number of co-operative societies at the end of 1934 was almost double that of the preceding year 1933, being around 14,000, having an aggregate membership of 370,000. According to a report published in March, 1935, by the Agricultural Research Bureau of the Ministry of Industry. Kiangsu tops the list to-day with 2,937 societies, followed in the order of their names, by Shantung, Hopei, Chekiang, Anhwei, Kiangsi, Honan, Hupeh and Hunan.

The National Economic Council has decided to appropriate the **sum** of \$1,900,000 for rural development purposes in Kiangsi Province. Of the amount, \$500,000 is to be put aside for financing a number of **rural** co-operative societies in **the** province. In addition, an agricultural institute has been established at Nanchang on March 6, 1934 to train **a number of qualified** men **to** direct development and improvement of

agriculture. Started with an initial budget of \$330,000, **the annual** expenditure has been estimated at around \$250,000. **The work of the** institute is handled by six departments, comprising **those** of general affairs, plant industry and horticulture, animal husbandry, forestry, agricultural economics, agricultural extension, and agricultural education. The institute has established two main stations in Lientang and Nankwankow, Nanchang; and maintains, in addition, forestry sub-stations at Lushan, Hukow, Chintehcheng and Tuchiapu, a fruit station at Lao-hua and Nanfeng, a tea station at Hsusui, and a cotton station at Yung-shu. Its active and experimental work includes seed selection—such as a study of the comparative merits of about a hundred different kinds of rice grown in wet fields; purchasing from abroad and selecting from indigenous fruit trees and vegetables, seeds of the highest grade for extension of fruit-farming and vegetable-gardening; keeping a forest nursery to maintain an adequate supply of saplings for afforestation; introducing selected milch cows from Holland to promote dairy farming; and encouraging poultry and pig rearing. Thus the Kiangsi Provincial Institute of Agriculture bids fair to become an influential medium for reviving rural enterprises, and rehabilitating, first, Kiangsi, and subsequently other provinces seeking the benefit of its experience.

Plans for the development of co-operative enterprise in Shantung on a large scale have been formulated by the Provincial Government. Hitherto such enterprises have been confined to those *hsien* where there are special products, but they will be now extended to all *hsien* in the province. To finance this scheme, arrangements have been made with the Min Sheng Bank, a local joint Government and commercial enterprise, to make loans to the different *hsien*. Co-operative enterprise was started in Shantung in 1929 when co-operative workers were sent to a number of *hsien* as directors of co-operative work. Towards the end of 1933 there was a total of 600 co-operative societies scattered in different *hsien*. Funds varying from \$1,000 to \$3,000 were appropriated by the different district governments for the establishment of rural credit bureaux, through which loans were made to well-run co-operative societies for the development of rural enterprises. Since the transfer of **the** management of industries to the Provincial Department of Reconstruction, another stride has been taken in the development of co-operative enterprise. Over 150 cotton co-operative societies have been **established** at Tsitunghsien with a \$150,000 loan from the **Bank of China, and over 400**

sericultural co-operative societies, at Yunyih sien, Linchuhsien, and Changshanhsien, also with borrowed funds, as also a number of tobacco co-operative societies, at Lintzuhsien.

Some interesting and independent testimony concerning the development of co-operative societies is given by Mr. C. F. Strickland, who was sent out to China, at the end of 1934, by the Universities* China Committee in London, (which administers a portion of the British Boxer Indemnity Fund) to engage in educational work in various universities in Nanking, Shanghai and elsewhere. Mr. Strickland is an authority on co-operative work, and has had many years experience in India and other parts of the British Empire. As a result of his observations in China, Mr. Strickland said that he found the field particularly hopeful, as the Chinese farmer offers fine material for organization into small groups to circumvent the money-lender and to improve marketing. The groups already in operation, he said, were mostly small, with a membership numbering from 20 to 30 farmers in one village, who have subscribed a few dollars of their own, and borrowed from the bank for agricultural and other purposes. It was his opinion that in course of time there would be from 200,000 to 300,000 of such groups in China, and all that was needed was co-ordination between the various groups working in different parts of the country. There are two remarkably good factors in China—firstly, the farmer seems able to manage his own affairs very capably, having his own primitive, but strong, organs of village life into which co-operative societies fit very well; secondly, Chinese banks are more willing to lend money to co-operative societies of farmers, if properly organized, than had been his experience anywhere else in the world, which was a mighty asset. "I have immense faith in the possibilities of this movement in China. It is only necessary for the Chinese to build the foundations of the movement securely, and then to realize the full scope of the field before them. If they are willing to do the thing slowly and methodically it will be all the more lasting and efficient."

Scattered about in various parts of China are nearly 700 institutes for the study of agricultural problems, and upon which it is estimated more than \$2,000,000 are spent yearly. The work includes the study of improved agricultural methods, education of the farming population, research work in agriculture, the study of agricultural administration, rural economics, rural organizations and the study of miscellaneous

subjects having to do with the land. The following is a list of the agricultural institutes in various provinces and in the national capital:—

Kwangtung	96 Fukien	19
Shantung	97 Hupeh	12
Chekiang	98 Shensi	11
Honan	40 Szechuen	10
Nanking	29 Suiyuan	8
Anhwei	26 Kweichow	6
Shansi	24 Yunnan	5
Kwangsi	22 Charhar	4
Kiangsi	21 Kansu	8
Hunan	20 Chinghai	1

Total		691

Of the above, 52 are National, 356 Provincial, 174 District, 76 private and 33 under the control of various public organizations. The staff members of these institutes number over 7,600 with over 21,000 students and a similar number of members.

RIVER CONSERVANCY.

The *provision* of adequate transport facilities is another matter of vital importance to the farmer. Often lack of them means that, to the farmer, a good crop is worth no more than, if as much as, a bad one. He cannot *get* his surplus produce to market at an economic price, and consequently is left with it on his hands, prices being depressed, as a result, to an almost ruinous level in his own district. However, more progress has been made in this direction since the National Government took office, than during any other period, as has been shown in the chapters dealing with roads and railways. Many thousands of miles of roads have been constructed, thousands of miles of bus and lorry services established on them, and hundreds of towns and districts linked up that were formerly isolated. The new railways which are slowly being built are proving a great boon to the rural populations of the areas through which they pass. Particular mention may be made here of the Hangchow-Kiangshan line and its extension, which passes through some of the most fertile and prosperous parts of Chekiang Province. But no less important is river conservancy.

To indicate the urgent necessity of conservancy work for the protection of the farming community, the following statistics relating to the damage to crops in the three provinces of Hopei, Shantung and Hunan,

as a result of drought and flood in 1934, compiled by the Central Agricultural Experimental **Station** of the Ministry of Industry, are of importance. A total of 57,361,579 *mow* of farm-land was damaged in the province of Hopei, and 41,808,073 piculs of agricultural products were destroyed, involving a loss of \$239,548,791. The total area laid waste in Shantung province amounted to 48,094,477 *mow*, and crops damaged totalled 24,989,511 piculs, valued at \$510,615,650. In the province of Hunan, 22,389,000 *mow* were damaged, with crops lost totalling 53,293,615 piculs, valued at \$188,821,892. The chief crops affected in these areas were kaoliang, maize, millet, seeds, cotton, and soya-beans.

A great deal of work has been done on river conservancy and irrigation schemes under the direction and supervision of the National Economic Council, which, since November 1934, has control over all water-conservancy organs throughout the country. A Hydraulic Engineering Bureau was formed to carry out schemes formulated by the Hydraulic Engineering Committee of the now defunct National Flood Relief Commission. It has strengthened and raised the main dykes along the Yangtsze, Huai, Han, and Kan Rivers for flood prevention, and has installed a large number of culverts along the dykes of the Huai River and its principal tributaries for regulating land drainage. It has channelled and dredged the outlets to the sea in the Li Tsia Ho Basin, in the north of Kiangsu, to discharge the water in the Huai River, which overflows from the Grand Canal. Two sluice tidal gates have been erected in the Tou Lung Kong and Ho Tu Ho estuaries to prevent sea water from running upstream at high tide, and to regulate the streams for irrigation and navigation purposes. Finally, the Bureau has constructed and repaired spur dykes, dams, bridges, and bank protection work at important points along the Yellow River, and the **Lo**, Sha, and Yin Rivers in Honan Province. This work of construction and repair has been instrumental in protecting millions of people against the dangers both of drought and inundation.

In April and May, 1933, the level of the Yangtsze having begun to rise, steps were taken to institute a system of safe-guarding the dykes and preventing floods in the event of a high-water year. Towards **the** end of June the Yangtsze had risen **to** the highest level recorded **that month**, reaching in several places a height only one foot below **the** 1931 Central China flood level. Great uneasiness was felt, but the systematic repair and proper maintenance of the dykes constructed the

previous year by the National Flood Relief Commission, enabled a repetition of the disastrous effects of the 1931 flood to be successfully averted.

Among typical examples of the work that is being done in various parts of the country, the following may be cited:— The latest system of irrigation has been introduced in 25 places along the Yellow River, in Shantung Province. Although only \$100,000 has been spent on the work, the results achieved equal those attained along the valleys of the Ching, Wei and Lo Ho in Shensi province, which cost ten times that amount. Work on the Lohui Irrigation Canal, in Northern Shensi, is nearing completion, and will be the means of irrigating 600,000 *mow* (100,000 acres) of farm land. Arrangements are being made by the National Economic Council with Shanghai banking circles to invest capital for the development of conservancy work in the North-West. In order to convert the half-barren salt districts in South-Western Hopei into productive areas, measures governing improvement of the soil for farming purposes, in order to increase the revenue, have been drawn up by the Changlu Salt Administration. These measures provide for technical experts being invited to make a study of the soil to ascertain if the project is practicable. Steps will then be taken for the digging of wells and the opening of canals, ploughing the soil, and selection of seeds for planting.

Owing to the previous mal-administration of the Conservancy and Dyke Bureaux of Hupeh, the N.E.C. in November 1932, took over their duties with a view to securing positive improvements. Within a short time it was able to show a surplus of receipts over expenditure which was utilized for the construction of more permanent hydraulic engineering work in the province. Part of the surplus has already been used to enable the 10-year old Kinshui Reclamation Project to be carried out. The Kinshui is a tributary of the Yangtsze, into which it flows at Kinkow. In the summer the Yangtsze rises here some 50 feet above its winter level, causing its tributaries, and particularly the Kinshui, to rise with it, and so flooding land. In taking up this long-delayed project, the N.E.C. will preserve many hundred thousand *mow* of land for cultivation.

An important agreement was signed in November, 1934, between the Commissioner of Reconstruction of the Shensi Provincial Government, and Chinese bankers in Shanghai, whereby the latter promised to advance \$1,500,000 for dredging the Wei River. This is one of the most important reconstruction projects being carried out in the North-

West in accordance with the Government's policy of developing that part of China. Good crops of rice and cotton can be grown along the banks of the river once the dredging is complete and the land made cultivable.

Among the projects of the Kwangtung River Conservancy Commission to be completed in 1935 are the damming of the Pakong River mouth; building of the Suinam and Taikok dykes; and completion of the Taiwan dyke in Kohyiu Country. Funds loaned by the River Conservancy Commission are being used to finance these projects. The cost of damming the Pakong River is \$101,900. After the dam has been built, the overflow of water from the North River will be prevented from flooding the Pakong basin. At present, when the river overflows, 94,000 *mow* are under water, and when the river is at normal level, 70,300 *mow* are under water. By taxing this latter land 50 cents per *mow*, and the former 20 cents per *mow*, \$39,310 can be raised yearly, which means that in three years the people will have returned the funds spent on the project.

When the dam at Pakonghou has been completed, water from the river can still penetrate into the western section of the district at Taiying, hence it will be necessary to construct dykes at Suinam and Taikok. These dykes will be one foot, standard measure, higher than ordinary, and 3 feet wide at the top. The length of the dyke from Chang-liang to Taiying is 20,500 feet, and it is estimated that it will cost \$14 to build each foot. From Taiying to Taimin the length is 7,000 feet, and estimated cost of building is \$12 per foot. Two drains will cost \$60,000. Expenses for administration, surveying and miscellaneous fees will amount to \$64,000, bringing the total estimates up to \$495,000. The land reclaimed for farming will be 41,000 *mow*, while 52,000 *mow* will be forever free from danger of flood. The former will be taxed \$2 per *mow* and the latter \$1 per *mow* to pay for the expenses of this project.

The third project is the completion of work on the Taiwan dyke which is 3,950 feet, standard measure, in length. It is proposed to finish the construction of the remaining 2,295 feet costing about \$90,000. This project will reclaim an area of 38,000 *mow*. Of this area, 35,750 *mow* will be taxed at \$0.60 per *mow*, bringing an income of \$21,500 annually. In five years the cost of the project will be repaid.

ENCOURAGEMENT OF SERICULTURE.

One of the most important of China's rural industries is sericulture,

but of recent years it has been hard to stand up against Japanese competition, largely because of the superiority of the silkworms bred in that country. The Japanese obtain a bale of raw silk from some 280 to 300 catties of dried cocoons, but with the indigenous Chinese variety of silkworm 600 to 700 catties of cocoons are needed for one bale of silk. Scricultural farms and institutes have accordingly been established to improve Chinese breeding methods and stock, and experts are sent round to instruct farmers in modern methods, to educate them in using a better quality of egg, and to inspect private hatcheries, only those of the latter which have been officially approved being allowed to sell egg-cards. At the scricultural institutes egg-cards are prepared under official control, and these are gaining tremendously in popularity with the farmers. While the number issued in 1928 was only 10,580, it had risen by 1931 to 600,000. The distribution of these egg-cards has resulted in a great improvement in the type of silkworm bred. The new variety gives a greater yield of fresh cocoons which, owing to their much greater resistance under unfavourable weather conditions, have a much larger yield in dried cocoons and hence more raw silk. As a result the quantity of dried cocoons required per bale of raw silk has been reduced from 600 catties to a little over 400, and these improved methods have already benefited very materially over 27,000 families.

The Department of Reconstruction in Shantung is planning the establishment of sericulture experimental districts. There will be a sericulture instruction office, with branches at various places in the district, the function of which will be to teach the villagers scientific methods in sericulture. If this system proves successful at Linchu and Hsintai, it will be extended to other districts where a notably large amount of silk is produced annually. Scientific methods for raising silkworms will be introduced and the improved breed distributed in the province. Government help will be accorded to private interests breeding improved silkworms, by supplying them with young mulberry trees and eggs free of charge, funds for the construction of buildings, and assistance in the sale and distribution of improved silkworms. Model silk factories will be established at Changshan and I-tu, which will have the double advantage of serving as a model in factory management and silk manufacture, as well as training competent workers who are in growing demand. Such model factories have proved successful at Hangchow and Huchow in Chekiang Province.

Poor organization for the sale and distribution of raw silk constitutes one of the primary causes for the depression of the silk industry, and as a remedial measure, it is suggested that raw silk sales co-operative societies be established at all silk-producing centres in Shantung to unify the packing and sale of raw silk, in addition to a joint sales office in Shanghai, to maintain direct connections with all silk centres inland and abroad.

To meet the dumping of foreign silk in the Chinese market, two methods are suggested. First, improvement should be made in colour, pattern, size, etc. It should be made more durable, attractive and cheap. Second, publicity should be undertaken to influence the public to give preference to native silk. Delegates should frequently be commissioned to other provinces and foreign countries to investigate the conditions of sericulture and the silk trade. This investigation system has been adopted by Kiangsu and Chekiang, which provinces, besides sending students to study sericulture in Japan, has commissioned delegates to that country to make investigations of her silk industry. A three-year course in sericulture should further be given by the Provincial Experimental Stations, open to all graduates of primary schools, irrespective of sex, and to include both theoretical and practical work.

In all the provinces where the production of silk is extensive, the local authorities are either acting in co-operation with the National Government, or taking special measures to improve the conditions of those engaged in sericulture. What is being done in Kiangsu and Chekiang may be cited as typical of the measures being taken all over the country to revive the silk industry. The raising of silkworms was formerly left in the hands of the farmers, whose conservative attitude and lack of resources precluded the possibility of introducing reforms to improve the industry. During the present depression in trade, Chinese raw silk, produced by time-honoured but inefficient methods, is always at a disadvantage in competition with the Japanese product on the world market. The Kiangsu and Chekiang officials, as a preliminary step toward improvement, organized a Commission for controlling the silk industry. At the outset the Commission contented itself with preventing competition among cocoon merchants by suggesting an official price for fresh cocoons. In the autumn season the Commission's attention was directed to stock improvement, which it tried to accomplish by replacing inferior indigenous varieties of silkworms with improved breeds. The egg-cards

used by the Chekiang farmers were issued by the Government sericultural experimental stations, the production of egg-cards by private hatcheries being prohibited. In Kiangsu similar control was exercised during 1934, though the measure, being tentative, was not so thorough-going as in Chekiang, for in spite of official prohibition, a small number of egg-cards of inferior breeds were still sold to farmers. In addition to stock improvement, the Commission also fixed an official price for fresh cocoons, and limited the number of collecting agencies in each locality according to the local output of fresh cocoons, thereby preventing cut-throat competition among the merchants.

A three-year plan for the improvement of the silk industry in the provinces of Kiangsu, Chekiang, Shantung, Szechuan and Kwangtung has also been drawn up by the Sericultural Improvement Commission of the National Economic Council. The scheme calls for the expenditure of \$1,500,000 for the realization of the first year's plan in 1935.

For the financial year, July 1934 to June 1935, the National Economic Council has allocated \$400,000 for the use of the Sericultural Improvement Committee. Of this amount \$100,000 will be allotted to silkworm breeding in various provinces, \$120,000 for experimental stations in Nanking and Hangchow, \$100,000 for various other purposes including subsidies to the Kiangsu and Chekiang joint filature and general research work.

CO-OPERATIVE FILATURE SCHEME.

The largest silk filature ever established in this country was being planned when this book was in the press. This gigantic scheme is the outcome of strenuous efforts recently made by the Silk Improvement Committee of the National Economic Council to revive the silk trade of the country, and came about as the result of a conference, called by the Committee, of the leading silk merchants of Chekiang and Kiangsu, the two best known silk producing provinces of China. Capitalized at \$30,000,000, the filature will be owned jointly by leading silk industrialists of the nation, and the Kiangsu and Chekiang provincial governments. Location of the filature has not been fixed as yet. The plan that has been formulated by the silk producers with the assistance of provincial government leaders and the National Economic Council, includes the purchase of 500 up-to-date machines from abroad, and is now being received with great enthusiasm.

It was expected that the new filature will be financed by Chekiaiiig

and Kiangsu silk leaders with Government assistance, and the name "Kiangsu-Chekiang Amalgamated Filature" has been tentatively chosen for the big industrial organization. The object of the filature will be improvement of the quality of silk products on the one hand, and on the other, promotion of silk exports. The scheme is two-fold, namely: (1) to effect a unified management over 14 factories, with special reference to the purchase of cocoons, dyeing and designing of silk, so as to adapt it to the needs of foreign countries, and (2) to devise ways and means of pushing the sales of Chinese silk abroad. The planned joint management, however, must not be taken to mean that the 14 factories contribute capital for the establishment of a new and separate factory. It means merely the institution of a unified control over the production of silk on the part of the 14 factories, with the understanding that profit and loss continue to be the affair of each concern separately. As particular attention is to be paid to the question of marketing, the syndicate, to live up to its purpose, will despatch special salesmen abroad to push the sale of its production, and branch offices of this joint enterprise will be established in Shanghai, Hangchow, Chinkiang, and Wusih, all being noted silk-producing centres in China.

Meanwhile the Silk Section of the Commodity Examination Bureau of the Ministry of Industry in Shanghai has received a letter from the International Silk Association in New York, inviting China to it as a member, and, in pursuance of a decision reached at a meeting of leading silk manufacturers convened by the Commodity Examination Bureau, a reply has been addressed to the International Silk Association accepting the invitation and offering co-operation with other countries in the international silk trade.

In January 1934, the construction was commenced of the Sericultural Experimental Station near Nanking, and in the spring half a million seedlings of mulberry trees were distributed without charge to farmers in Kiangsi, Chekiang and Anhwei. In the vicinities of Nanking and Hangchow 2,000 *mow* of barren hills had been reclaimed for planting mulberry trees, and scientific methods of cultivation have been demonstrated to the farmers. With regard to seed selection, the National Economic Council has established collective seed stations at Nanking and Hangchow. The former has planted over 100,000 trees and **the** latter twice that number. The work of silkworm breeding has proceeded in two directions—intensive direction given in prosperous seri-

cultural regions, and general supervision of production all over the country. A large number of administrative stations have been established, at which instructions are given to farmers in regard to incubation, disinfection of rearing-rooms and implements; improvement of rearing and promotion of sericultural co-operative societies. With reference to the installation of modern cocoon drying machines and modern reels, sericultural districts are urged to raise funds to purchase such equipment and the necessary land through the Council, repayment to be made by instalments. Preparations have been made for the establishment of union filatures for the collective purchase of cocoons and technical co-operation in management and improvement of machinery. In the matter of training personnel, the Council has organized a training school for sericultural field workers and also a sericultural institute to give training to more advanced workers.

REVIVING THE TEA INDUSTRY.

Similar work is also being done for the tea and cotton industries. Experts have been sent to the tea-growing areas to investigate conditions, to give advice and instruction, and make plans for improvement both in the quality and yield of the crops. The Central Agricultural Station, in conjunction with the Bureau of Testing and Inspection at Shanghai and Hangchow, has taken over a plantation for experimental purposes, and the provincial authorities of Chekiang and Anhwei are following the same plan.

In conjunction with the Ministry of Industry and the Anhwei Provincial Government, the National Economic Council has re-organized the tea experimental station at Chimen where more than 760 *mow* of tea plants are in cultivation. The investigations into various aspects of the industry are being carried out not only in different parts of China, but also in such tea-growing countries as India, Ceylon, Java and Japan.

The estimated annual consumption of tea in China is about 500,000,000 catties (a catty equals 1 $\frac{1}{3}$ lb.). The kind of tea preferred and the percentage consumed varies in different provinces, but on the whole, people seem to prefer green tea to black; for instance, in Shensi, Shansi, Suiyuan, and Chahar, more black tea is consumed, while in Chekiang, Fukien, Kwangtung, Hunan, Anhwei and other provinces, green tea is favoured. The average price of tea per catty in China is approximately 60 cents and the annual average consumption per capita is about one catty. Green tea represents 64 per cent of the total tea

production in China and black tea 36 per cent. If classification is made according to the time of picking, most of the tea is picked in the spring, averaging 53 per cent of the total crops, with 31 per cent picked in the summer and 16 per cent in the autumn. For the past 10 years the trend of prices has been gradually rising, the highest point being reached in 1934, but in some provinces such as Anhwei, Kiangsi, Fukien and Kwangtung, prices have been declining for the last five years.

Once holding the prime position in the world's tea market, China now occupies fourth place, trailing behind India, Ceylon, and Netherlands-Indies. Statistics show that, whereas the world's consumption of tea has been generally increased from 364 million to 880 million pounds during the last 40 years, China's share in the trade has dropped from a record figure of 222 million to 87 million pounds in 1932. Many factors have been responsible for the depressed Chinese industry. Among them may be mentioned lack of demand due to the international economic depression, the poor quality of Chinese leaves, preferential tariffs in favour of some other leaf by several tea-consuming countries, overproduction of tea in the world market, and severe international competition. But above all these is the poor quality of the Chinese leaf. Although Chinese teas possess distinctive flavours, the methods of cultivation are based on tradition and the needs of the moment; and have been entirely divorced from scientific knowledge. Furthermore, the Chinese product has not had a fair chance during recent years. Many of China's most famous tea plantations have been ravaged by the Communists, a factor which has seriously impaired the tea industry.

The National Government has taken steps to ameliorate conditions in the tea industry, the first of which is to improve the quality of the leaf. The National Economic Council decided to appropriate \$64,000 for the establishment of experimental stations in various tea centres and practical projects relating to scientific tea culture. With the co-operation of the Department of Agriculture of the Ministry of Industry and the National Agricultural Research Bureau, the N.E.C. expects to stimulate China's tea exports by 30 per cent after two or three years.

While plans for the development of China's tea industry are being drafted by various organizations, other suggestions are that China should establish tea co-operative societies, open schools of tea culture and/or lower the freight on tea; commission Chinese students to study scientific tea culture abroad; offer tea culture courses in industrial lectures,

popularize the use of machinery in plantations; abolish the tea tax; and build more tea godowns.

COTTON PRODUCTION INCREASING.

Although large quantities of American and Indian cotton are imported every year, China has a large domestic crop, which is increasing both in quantity and quality. Statistics published in November, 1934, showed that the area of land under cotton was 45,007,579 *mow*, and the crop was estimated at 11,172,013 piculs (lint). There was an increase of 566,532 *mow* in area and 674,089 piculs in production compared with an earlier estimate for 1934. These figures were based on conditions reported by the 11 provinces of Hopei, Shantung, Shansi, Honan, Shensi, Hupeh, Hunan, Kiangsi, Anhwei, Kiangsu and Chekiang, and the two municipalities of Shanghai and Tientsin. The following are the figures of area and yield of the different provinces:—

	Area (mow)	Yield (piculs)		Area (mow)	Yield (piculs)
Hopei ...	7,813,440	2,835,917	Hunan ..	885,989	100,395
Shantung	5,493,402	1,324,026	Kiangsi .	237,759	33,790
Shansi	1,796,260	601,096	Anhwei	1,075,330	219,400
Honan	4,091,370	1,022,356	Chekiang	1,634,167	462,618
Shensi ..	3,710,938	1,004,132	Kiangsu	<u>10,207,010</u>	<u>1,664,395</u>
Hupeh ..	7,861,914	1,903,888	Total	45,007,597	11,172,013

For comparison, the figures of area and yield in the whole of China for the last ten years are given below:

		Area (mow)	Yield (piculs)			Area (mow)	Yield (piculs)
1934	1st est.	44,441,047	10,497,924	1929	Final est.	33,811,255	7,587,021
1933	2nd. est.	39,684,369	9,838,286	1928	" "	31,926,311	8,839,274
	Final est.	40,545,023	9,774,207	1927	" "	27,610,276	6,722,108
1932	" "	37,099,800	8,105,637	1926	" "	27,349,727	6,243,585
1931	" "	31,637,779	6,399,780	1925	" "	28,121,027	7,534,351
1930	" "	37,593,012	8,809,567	1924	" "	28,771,577	7,808,882

There has been a steady improvement in the quality of China-grown cotton during the past few years, thanks to efforts made to introduce and acclimatize American seed. At the same time a superior variety of cotton from native stock, known as the Million Dollar, has been developed, which compares very favourably with the American product. This is of particular importance, since it has been found that climatic conditions render American seed unsuitable for the lower Yangtze regions.

To promote the cultivation of American cotton in Hopei Province, the Provincial Reconstruction Department decided to distribute American

seeds to farmers free during the spring of 1935. Recipients will be required to give back to the Reconstruction Department next year twice as much as they received. According to an estimate of the provincial authorities, it will take five years to complete the work being done in the cotton fields of Hopei. Latest figures show that there are 8,000,000 *mow* of cotton farms in Hopei, 30 per cent of which are devoted to the cultivation of American cotton, while the rest are used for raising the native variety.

As a result of the energetic efforts of the Provincial Government, cotton production in Shantung has improved both in quantity and quality. Two experimental stations have been established one in Lintsingshien, north-western Shantung, and the other at Chitung, north-east of Tsinan, the provincial capital, to improve the quality of cotton seeds, and 1,450,000 catties of improved seeds have been raised by the Chitung station for distribution to farmers. No less than 680 cotton co-operative societies have been established, which obtain loans from banks and in turn lend funds to planters. To ensure a high standard, adulteration with water or other material is strictly prohibited. The cotton belt in Shantung covers an area of over 5,000,000 *mow*, with a yield of over 6 million piculs in 1934. With the improvements made and encouragement given by the Provincial Government, a larger crop is expected this year. The 1935 cotton production in Tungchow and districts around Peiping promises to be increased two or three-fold as a result of the sowing of improved grades of seeds. The excellent quality of the cotton produced in the district of Linpao, north-western Honan, has resulted in the Bank of China and the College of Agriculture of the Honan Provincial University deciding to establish a Cotton Cultivation Station there for the further development of the cotton industry. Funds for the project will be provided by the Bank of China, and technical experts will be selected by the school authorities.

AID FOR THE COTTON INDUSTRY.

The National Economic Council is taking active steps for the rehabilitation of the cotton industry. According to statistics compiled by the Cotton Industry Commission, under the Council, the production of cotton is on the increase, but the price level on the market is still very low. In order to increase the production of cotton, so that the country may become self-sufficient in this respect, the National Economic Council is investigating the local methods of cotton cultivation in the various

cotton producing centres with a view to devising measures for their improvement, while the Cotton Industry Commission is also conducting investigations into local market conditions with the object of rehabilitating the cotton market as a whole.

The National Economic Council in July, 1934, thus decided to establish a Central Cotton Improvement Station to attend to matters relating to cotton cultivation in the country. Cotton seeds, totalling more than 30,000 piculs, distributed among the provinces of Kiangsu, Shansi, Hupeh, Shantung and Chekiang by the Cotton Industry Commission, are expected to yield a total of 1,800,000 piculs of cotton. In order to improve the cotton crop along the banks of the Wei Ho the Cotton Industry Commission has requested the Kincheng Bank, Bank of Communications, Shanghai Commercial and Savings Bank, Chekiang Industrial Bank, the Four-Province Farmers' Bank* (for Honan, Hupeh, Anhwei and Kiangsi) and the Bank of China to organize a syndicate for loans to the farmers, in cooperation with the Cotton Improvement Station. It is further planned to establish a cotton mill in the Shensi cotton belt.

In the North-West Provinces there has been a rapid development of co-operative societies under the technical guidance of the National Economic Council. As a visible result of one year's activity of the co-operatives, bales of cotton were to be seen collected not only at the railway stations along the newly extended line from Tungkwang to Sian, but also along the Wei River awaiting transportation to other provinces. The 1934 cotton crop in Shensi alone amounts to 1,000,000 piculs, valued at \$4,000,000, actually double the 1933 crop. There are now under construction four large plants for pressing cotton and five more will be started in the near future. Mills will also be erected for crushing cotton-seed for the production of oil.

The Honan Provincial Cotton Improvement Institute, which has its head office at Anyang, in the northern part of the province, has purchased over 1,000 *mow* of land for experimentation. In order to assist the industry, measures governing the improvement of cotton production, prevention of adulteration by unscrupulous merchants, selection of cotton-seeds of superior quality for experiment, and classification of cotton

* Renamed, as from April 1, 1935, Agricultural Bank of China. The original capital has simultaneously been increased to \$10,000,000 by contributions from the provinces of Shensi, Kansu, Szechuan and Hunan.

into grades for standardization, have also been formulated. The Honan Provincial Agricultural and Afforestation Bureau is planning to secure 500,000 *mow* for planting trees and 150,000 *mow* for the cultivation of American cotton in the spring of 1935.

At Nanking a cotton improvement centre has been formed for the improvement of cotton quality and the extension of cotton growing, with branch bureaux in Kiangsi, Shensi and Honan Provinces. There is also a cotton administration staff in Shensi, primarily for cotton extension works. For the training of personnel for cotton grading, cotton growing and cotton co-operative societies, both the Central University and the University of Nanking have been asked to offer courses with grants in aid from the National Economic Council.

The improvement of cotton spinning, weaving, and dyeing technique also forms part of the programme of the Cotton Industry Commission established. In concert with the Academia Sinica, the Council has formed a special bureau with laboratories, one for spinning, weaving and dyeing, and the other for research, both being temporarily housed in the Engineering Institute of the Academia Sinica. Recruitment of the personnel for cotton spinning, weaving and dyeing will be drawn from such institutes as the Nantung, Tientsin and Soochow Technical Institutes, which have received financial aid from the Council for personnel training. To exercise control over the malpractice of cotton adulteration a Central Bureau has been established in Shanghai with branches in the provinces. Investigations into the conditions of cotton growing, manufacture and marketing have been made by the Cotton Industry Commission in the various cotton growing regions, and the results of such enquiry will, after examination, be acted upon.

IMPROVED TOBACCO PRODUCTION.

A large quantity of tobacco is grown in China, some of which is used without blending with Virginia leaf, while other varieties—particularly those used in making cigarettes—are mixed with imported tobacco. The province of Shantung is one of the most important producing centres, tobacco grown there being well-known for its fine quality and large output. However, the methods of production have been rather primitive and unprogressive, and the Reconstruction Department of the Provincial Government, anxious to put a stop to inefficient management and remedy the absence of modern and scientific methods, has decided to establish an experimental station with a view to im-

proving methods of production. An area of over 100 *mow* has been selected about 50 miles north-east of Changtien, and about \$50,000 is to be spent on the establishment of the experimental station, while the annual maintenance will be about \$30,000. In 1934 the Reconstruction Department established a number of co-operative societies in the principal tobacco growing centres, in order to promote the development of the industry, and the establishment of the experimental station is expected to produce encouraging results in regard to increasing output and raising the standard of quality.

STOCK-RAISING AND FORESTRY.

As part of the general scheme for rural reconstruction a number of agricultural experimental stations have been established, where the technical problems of farming can be studied and, it is hoped, eventually solved. There are 62 such stations in all, most of them under the Provincial Government of the district. The most important is the Central Agricultural Experimental Station, set up by the Government in 1933. The Ministry of Industry also operates a number of stock raising ranches. That at Kalgan has been placed under the supervision of the Provincial Government, but the others are to be amalgamated into a central ranch.

The National Economic Council is paying particular attention to the improvement of stock-breeding in Chinghai, as the main product of that North-West Province. Scientific breeding of live-stock, now being experimented with by the N. E. C. in Chinghai is expected to develop the stock industry and improve the quality of the output of wool, hides, and other products.

Afforestation forms an integral part of the Government's reconstruction plans. Schools of forestry have been set up and officers are being trained to take charge of this vitally important work, especially in the North-West. Meanwhile an increasing number of trees are being planted every year, the total for the three years 1929-31 amounting to 54,025,965.

A report from the Administrative Bureau for the Central Model Afforestation Area, under the Ministry of Industry, shows that over 17 million trees have been planted by the Bureau alone in the last five years. The extent of land devoted to cultivation totals 700,000 *kung mow* (7,000 hectares). In order to protect the forests, the Bureau is co-operating with the Kiangning (Nanking) Rural Relief Association to employ 2,000 refugees for the construction of roads and installation of fire-extinguishing facilities. The roads total 300 kilometres in length

and are to be completed in the middle of 1935. In Yunnan Province over 800 forest areas have been established during the past three years. A programme for afforestation work in Chekiang Province, designed to prevent the recurrence of drought, has been drawn up by the Chekiang Provincial Agricultural Station, which provides that six forest areas be laid out along various waterways in the province. Trees will be planted on both sides of all public highways. Four "economic" forest areas will also be created at Chientang in the north, Kueichi in the east, Kinhua in the west and Ouhai in the south. An Economic Afforestation Station will be established in each of the areas to guide the people in the work of afforestation. The present four branch stations already in existence in the province will be converted into tree nurseries. The Provincial Agricultural Station will establish an afforestation department to centralize control of afforestation work in the province.

With a view to relieving financial stringency in farming villages, the Kwangsi Provincial Government has ordered the various district governments to establish loan departments for farmers. These are to be attached to the district treasuries. The functions of these loan departments are to make loans to farmers at low rate of interest, to receive deposits, and to settle the accounts of farmers.

DEVELOPMENT OF FISHERIES.

Along the Yangtze Valley there are hundreds of what may be called "fish farms"—where the farmers engage in pisciculture as a side-line to their agricultural activities. The annual production of fresh-water fish in Kiangsi (most of which is marketed in Shanghai) is about 1,000,000 piculs, of which about one-third comes from ponds stocked by farmers, and the remainder from rivers and lakes. The conditions under which the fishing industry is carried on in Kiangsi call for radical improvement. In transportation the junk must be replaced by more rapid means of transport. Crude ways of preserving fish must make room for more up-to-date methods, and refrigeration, or at least ice packing, must be used. Fish salted or preserved by primitive methods loses much of its flavour, and can never fetch good prices. It has been suggested that the establishment of a cannery is a necessary prelude to the development of Kiangsi's fishing industry, as fish in tins finds more favour than salted fish.

On the coast of China there are thousands of junks engaged in deep-sea fishing, but as yet only a few steam-trawlers, and the industry

has not been developed along modern lines. Plans in this direction are under consideration by the Government, and are being gradually put into operation as circumstances permit, with Shanghai as the chief distributing centre, handling about one-third of the \$60,000,000 worth of fish and marine products marketed in China annually. In addition to schemes for the improvement of fishing methods, the Ministry of Industry has given attention to the problems of storing and marketing, and an up-to-date fish-market is now being built in Shanghai which will cost nearly a million dollars, including cold-storage for 1,500 tons of fish, and wharfage for trawlers and junks. In planning this project the Ministry aims at bringing to the public all the advantages that a modern fish-market should have. A large amount of refrigerated storage space will be provided, capable of storing fish brought in when catches are plentiful, and which can be held to meet subsequent shortage. By this means it will be possible to regulate supply and demand and consequently stabilize prices. Unnecessary losses to fishermen through sharp market fluctuations can be minimized, while merchants can also run their business more methodically. The organization of the market will be effected in such a way that control of supply and demand will be most efficiently adjusted, and the improper and illegal admission of foreign fish and sea products, which has been for years a most disturbing factor in the market, can be effectively prevented. With centralized administration of the fishing industry, adequate connections with other cities can be established in order to develop new markets, so that any excess in supply in any one centre can be avoided.

Meanwhile the Biological Research Institute of the Academia Sinica is planning a four-year investigation of the depths of water along the coast, the composition of sea-water, the species of fish found in various waters, and the growth and distribution of seaweeds and other marine plants. The whole coast-line is to be divided into four zones for investigation: (1) from Weihaiwei to Chinwangtao in the Gulf of Chihli; (2) from Chekiang to Kiangsu in the Yellow Sea; (3) from Chekiang to Fukien in the East China Sea; and (4) from Fukien to Kwangtung in the South China Sea. It is planned to spend one year in each zone, and application has been made to the Commander of the Fourth Squadron, to place the gunboat "Ninghai" at the disposal of the party. Work has started early in April, 1935,

RURAL REHABILITATION IN THE SOUTH.

Apart from instructing the Agriculture and Forestry Bureau and the Sericulture Bureau to expedite the completion of their work, as outlined in the three-year plan of reconstruction, the Department of Reconstruction in Kwangtung has taken every possible measure to prevent the outbreak of diseases among livestock, and has rushed preparations for the establishment of another silk factory in Shuntek County. Up to the present, afforestation has been carried out in 22 districts.

In order to facilitate communications, the Department has pursued the plan of highway construction. The roads completed are: (1) the Hing-feng Road, in Hingning district; (2) Onpu-Hoppu Road, (3) Suechi-Onpu Road, (4) a section of the Kwang-yuen Road, in Yuenfah district; (5) a section of the Kak-pei Road; (6) a section of the Loting-Shunyi Road. Many roads are in course of construction and were expected to be finished by the end of 1934, when others would be started.

Other branches of work of the Department include protection of commercial and industrial interests and encouragement of private enterprises. The Department has not lost sight of the development of mining in the province. A notable example is the Government monopoly of wolfram ore, the mining of which has been successfully encouraged, resulting in mutual benefit to the Government and the people.

A number of industrial undertakings are being promoted, which have a direct bearing upon rural rehabilitation, and may be therefore mentioned here. According to the report published by the Investigation and Statistics Bureau, the number of factories which must be built within three years, according to the plan, is 24, and the funds to be appropriated over \$96,000,000.

From the beginning of 1933 the Government has exerted great efforts to carry out this plan of industrial reconstruction. The factories which have already started operation or are under construction are 21 in number. They include a silk factory, hemp and waste silk weaving factory, cotton mill, wool factory, silk filature, sulphuric acid factory, soda works, phosphate fertilizer factory, nitrous fertilizer factory, cement works in Saichuen, the second unit of the cement works, Sinchu sugar refinery, wine and spirit factory, Szetow sugar refinery, the first sugar refining station of Swatow and Chao-chow, electric power-station in Saichuen, hydro-electric power-station at Yungkong River, and a steel and iron

works. **The** total amount spent up to November, 1934, on these undertakings was \$15,390,000.

Government farms will be opened in different parts of the province for the raising of cattle, horses, sheep, pigs and poultry. Encouragement will be given thereby to the farmers whose land under no circumstances can produce satisfactory crops, to switch over to the raising of some kind of livestock or poultry. Better breeds will be introduced, for there is the realization that many of the domestic animals and poultry raised for profit are not the species which return the most value for the investment. In this regard, also, there will be experimentation and demonstrations so that farmers may take to stocking their lands with cattle, chickens etc. of the most approved breeds. The Provincial Government has already given the plan its stamp of approval, and the Bureau of Agriculture and Forestry will take the initial steps to put these ideas into practice. Other features of rural reconstruction work include measures of general education—in particular the mass education movement and public health—and the establishment of provincial granaries.

REPATRIATION OF OVERSEAS CHINESE.

According to the latest statistics compiled by the Overseas Affairs Commission at Nanking, there are 7,838,895 Chinese living abroad and, up to the end of September, 1934, no less than 117 laws discriminating against them have been enacted in the various countries where they have settled. It is true that Chinese Governments in the past did not take any great interest in the welfare and protection of its nationals abroad, but it is very gratifying to note that the present Government is giving the closest attention to this matter. The lot of Chinese residents abroad has become increasingly difficult during the last few years, and the combined effect of the world depression and discriminatory laws have forced many to return to their native land. This has seriously affected economic conditions in China, as the remittances of overseas Chinese had helped very substantially to offset the country* adverse trade balance.

The Overseas Affairs Commission, set up some years ago by the Government to look after the interests of Chinese abroad, has been supplying those who have been compelled to return home with funds to enable them to reach their respective villages, but it was generally agreed that a more comprehensive plan must be found for a satisfactory solution of this problem. Accordingly, Mr. Chen Shu-Jen, Chairman

of the Overseas Affairs Commission, went to Anhwai in August 1934, to investigate the possibilities of establishing a special colony there for the returned Chinese who are in need of employment. The result of this investigation has been the purchase of land at Hsuan Cheng, in the district of Shui Yang Chen, and the establishment of the "Chiao Lo Ts'un" (or "Overseas Happy Village"), which is to be reserved exclusively for returned Chinese from overseas. All who possess documentary evidence proving that they have come from abroad, and are unemployed, who are not under 17 or over 60 years of age, are able to cultivate the land, willing to endure hardship and free from disease and bad habits, are qualified to settle in this village. The settlers are divided into three classes, namely, (1) those who have their own capital; (2) those who carry on with credit loans, and (3) those who work on a co-operative system. The first two classes are allowed a fifty-year lease of not more than 30 *mow* of land each, at graduated rentals, leases being renewable, subject to a rent revision not to exceed twice the original amount. The third class can till an area of not more than 30 *mow* without any lease. All these villagers will also be given instructions in modern agricultural technique and stock-raising.

PLANS FOR DEVELOPING THE NORTH-WEST.

Of special importance in the schemes for the making of a modern China are the plans for the development for the North-West. While not without their political and industrial significance, their chief value lies in the field of rural reconstruction. Thus in July, 1934, Mr. T. V. Soong, member of the Standing Committee of the National Economic Council, informed Mr. Shao Li-Tzu, Chairman of the Shensi Provincial Government, stating that he had secured more than \$2,000,000 for rehabilitating the farmers in Shensi Province as part of the Government's policy of reconstruction in the North-West. Of this money \$1,000,000 was invested by local bankers, while \$200,000 was set aside by the National Economic Commission, the remainder being obtained from private sources.

In the autumn of 1934, General Chiang Kai-Shih and Dr. H. H. Kung made an extensive tour of North China by aeroplane, and their impressions, as expressed in interviews given on their return from this long but rapid journey, were very favourable. In regard to rapid progress made, the provinces of Shensi, Kansu, Shantung, Suiyuan and Shansi were cited as most worthily exemplifying what could be done

for the welfare of the people, despite lack of adequate financial resources, when the authorities had strong determination to tread the right path of conscientious work. A shrunken provincial treasury had not delayed the Shansi and Suiyuan authorities in reconstruction work, and the Tatung-Puchow Light Railway in Shansi, built by soldier labour, is a noteworthy example. In Suiyuan peace and order reign. Aside from much progress made along the lines of agricultural development, there are woollen industries, breeding of ponies, establishment of granaries, co-operatives and pasturage institutes. The arsenal in Shansi has been turned into a factory for manufacturing articles such as tractors, parts for railway coaches, lamps, electric fans, pumps, weights and measures, needles, and numerous other things. General expenses for maintaining the factory are kept very low, yet efficient administration is in clear evidence. Kansu Province, despite its turmoil in the past, has opened a way for future reconstruction through its efforts in suppressing banditry and disbanding superfluous troops. Irrigation projects in Shantung have been brought to a high order and the paper industry has made rapid strides. The Kincheng Banking Corporation is prepared to devote \$20,000,000 for general rural rehabilitation in Shantung province. Part of the funds will be invested in the development of facilities for the transport and sale of Shantung wheat and the promotion of the Hua Hsing paper mill and the Feng Hua needle-factory in Tsinan city.

Development of water conservancy is the first step in the Government's programme for the reconstruction of the North-West, the opening of irrigation-canals being absolutely indispensable for the rehabilitation of the rural districts in the North-West. Several irrigation canals are already in existence in Shensi, various banking interests having invested heavily in the development of those canals. It is now planned to open more canals in Shensi, the funds for which will be raised jointly by the National Economic Council and the Shensi Provincial Government.

The Government is also contemplating the opening of irrigation canals in Ninghsia and Kansu. For this purpose, it has already decided to remit a sum of \$500,000 to the latter province. It is estimated that the canals, when completed, will be able to irrigate an area of 600,000 *mow* and turn this into fertile farm-land. In four or five years, a total of two or three million *mow* of farm-land will be made productive by the development of waterways.

The N.E.C. has further established a Preparatory Office for the pro-

jected North-Western Animal Husbandry Improvement Stations. It has been decided to establish the main station in Chinghai (Kokonor), with branch stations in Shensi, Kansu, Suiyuan and Ninghsia and an office in Sian city. The expenses for the project have been fixed at \$300,000, to be directly remitted by the N.E.C. Special attention will be paid to the improvement of animal breeds, prevention of diseases, and the teaching of cattle-raising methods to the people.

The soil in the North-West is fertile provided it receives sufficient water, and this supply can be regulated, and agriculture made independent of the caprices of nature by means of proper irrigation. A loan of \$1,500,000 has been advanced by Chinese banks for an important irrigation scheme near Sian.

IMPORTANCE OF THE NORTH-WESTERN PROVINCES.

The development of this region has figured in every scheme for China's reconstruction since Dr. Sun Yat-Sen first made economic planning the official policy of the Kuo-Min Tang and so of the Chinese Government. It formed an integral part of the programme postulated in his *International Development of China*, published in 1919. Mr. Sun Fo, in his Ten-Year Plan of 1928, made provision for irrigation works, afforestation, and the settlement of these districts, while in his railway and road plans the construction of means of communication to serve the North-West Provinces were given a prominent place. The completion of the Lung-Hai railway and its extension to Urumtchi was put second on the list of railroad projects, while five out of the 11 national highways were to traverse this North-Western region. In the Six-Year Plan passed by the National People's Convention of 1931, the 10th item reads:—"In the development of the North-East and North-West the construction of communications, opening up of land and mines, immigration, and colonization shall be emphasized." Since then the National Government has been continually occupied with the problem of making these proposals effective. In the autumn of 1932 the Ministries of Industry, Finance, Education, Railways, and Communications held a joint meeting to discuss reclamation schemes, and a Commission was sent to investigate the resources of these border districts. In December, 1932, a Four-Year Plan was drawn up, in which it was proposed to set aside the districts of Linho and Wuyuan, in Suiyuan, as a model reclamation area. Schemes for technical education have been drawn up, including

the establishment of agricultural and forestry schools at Sian, and later of a North-Western College of Science.

The Economic Reconstruction Committee at Taiyuan has established a Bureau of Controlled Economy for the economic development of Shansi and Suiyuan, and the Kansu provincial authorities have set aside \$300,000 for construction work.

In all these plans three main lines of advance are laid down:—

1. *Settlement* with a view to easing the pressure of population on the more densely inhabited parts of the country by means of redistribution, and at the same time by increasing the output of agricultural products and rendering the country less dependent on imports.

2. *Reforestation and Afforestation.* One of the tragedies of China is the manner in which the country has been denuded of timber, so that in spite of her vast territory she is today importing timber to the average annual value of Hk. Tls. 24,313,423.

3. *The development of mineral resources and commercial possibilities.* Behind everything—implicit, though not explicitly expressed in so many words—is the necessity for bringing these outlying provinces into closer contact with the rest of the country, and so completing the task of unification.

As recent events have shown, dangerous forces are at work, especially in Sinkiang and Suiyuan. The population, for one thing, is racially very mixed. Ten different groups there can be distinguished. The bulk of the population are Mohammedans, which introduces the religious factor, while communication with China Proper is long and difficult. The overland journey through Kansu takes from nine to ten weeks. The usual route is via the old caravan track from Kalgan to Urga, and thence to Tihwa, but this also lies for most of the distance outside China Proper in Outer Mongolia. However, new roads are rapidly being constructed leading over their whole length through Chinese territory, which should bring Tihwa (Urumtchi) much nearer. At present, however, communication for the inhabitants is far easier from the North and South-West, so that such outside relations as they have are with Russia, British India, and Afghanistan. With China there is comparatively little trade, as the following figures taken from the *Chinese Economic Journal* for July, 1932, show:—

EXPORTS, 1931.

To China Proper	Rupees	737,250
Russia	Rubles	13,528,000
India	Routes	2,814,565
Afghanistan	Rupees	547,540

IMPORTS, 1931.

From China Proper,	Rupees	1,939,850
Russia	Roubles	10,647,000
India	Rupees	1,186,848
Afghanistan	Rupees	830,500

NEED FOR IMPROVED COMMUNICATIONS.

It is obvious that the very first steps to be taken in regard to all these North-Western Provinces (Shensi, Suiyuan, Chinghai, Kansu and Sinkiang) must be in the realm of communications. There are three rail heads—Tungkwan, Taiyuan and Paotow, the western termini of the Lung-Hai, Cheng-Tai and Pei-Sui lines respectively. All these lines run east and west, and west of the Peiping-Hankow line there is no communication to the north and south. The Lung-Hai line has been extended to Sian; and a start has been made on a line to run from Tatung through Taiyuan to Tungkwan, but beyond this no new construction is taking place, though a line from Taokow to Ninghsia is talked about.

Among the plans which have been considered by the National Economic Council for the improvement of communication facilities in the North-Western Provinces, is the suggestion for the use of motor trucks driven by Diesel engines consuming crude oil, which is cheaper than gasoline, and it is possible that before long it will be practicable to use cotton seed oil or some other locally produced fuel. Another interesting development which has been carried out, is the modernizing of the old-fashioned carts which are in common use in North China. They are seen in thousands on the roads, the surface of which they damage unmercifully. In Sian a practical solution has been found whereby the carts used there for the transportation of water, and for the carriage of heavy goods, have been fitted with wheels from old motor-cars. Being fitted with pneumatic tyres traction is made much easier and the roads are no longer badly damaged by this great volume of traffic.

With regard to roads no definite figures can be given—the situation, for one thing, is continually changing—but even allowing for the new ones that have been made in the past few years, and are still being made, there can be no question that the mileage is very small. Figures were given in the *Chinese Economic Journal* as for August, 1933, as under:—

Shensi	990 miles completed; 2,450 under construction
Kansu	1,960 „ „
Chinghai	290 „ „ 1430 „ „

Suiyuan	2,126	„	„	207	„	„
Sinkiang	766	„	„	1,370	„	„

which works out at 1 mile of road to over 200 square miles of area. Some idea of conditions can be gathered from the position in Hotao, in Suiyuan. Here a good crop is looked on almost as a calamity, since prices in consequence rule very low, and transportation difficulties render it impossible to send out the surplus profitably to other regions. Wuyuan, the centre, is some 130 miles from Paotow, the nearest rail head, and it takes from five days to a week to cover the distance. This adds as much as \$3 a picul to the cost of wheat and other cereals, with the result that they cannot compete in the Yangtze regions with imports from America. If this is so of a district which, by comparison, is fairly well served and is no great distance from a railway, what must be the position in the infinitely remoter districts of Kansu, Chinghai and Sinkiang?

However, the position is slowly improving. New roads are being constructed steadily, of which some—it is not possible to mention all—are the following:—

1. The *SinKiang-Suiyuan Motor Highway*, running from Kuisui, in Suiyuan, via Hami to Urumtchi. A motor-bus service has only recently been inaugurated over this route, reducing a journey through desert formerly covered by camel caravans in eight or nine months to one of about a week.

2. The *Kansu-Sinkiang Highway*. Of this the section Urumtchi-Hami has been built and the Hami-Hsinghsinhia section is in course of construction.

3. The *Paotow-Ninghsia Highway*, opened early in 1933.

4. The *Lanchow-Ninghsia Highway*, opened at the end of 1933.

5. The *Shensi-Szechuan and Shensi-Suiyuan Inter-Provincial Highways*, linking up Sian with the North and South.

Once leaving Tungkwan, Taiyuan and Paotow behind, however, travel and transport are still inevitably very slow. The only means of reaching the North-West quickly is by the planes of the Eurasia Aviation Corporation. These are undoubtedly of great value, but that value at the moment is chiefly political. In the realm of commerce their use is confined to undertakings of especial importance and emergency, but they are still largely in the experimental stage. Landing-fields, refuelling, and repair stations will be needed much in excess of the present state of affairs before such essential services can be established and maintained

adequately; roads and railways are necessary to allow the transport of gasoline in sufficient quantities, and also of machinery and spare parts.

SETTLEMENT PLANS.

Once a start has been made on the provision of adequate means of communication, something can be done in the way of colonization. This is probably the part of the development programme which looms largest in the eyes of the Government. The economic pressure of the agricultural population is, over wide areas, appalling. China's population of 450 million, if distributed equally over its whole area, would give an average density of 105 persons to the square mile, but the distribution is not equal. The people are concentrated in five thickly populated areas, 83 per cent occupying only 17 per cent of the land, where the average density is over 500 to the square mile, rising in some places as high as 1000. Sixty-five per cent of the rural population is in dire need of land. The cultivable land averages out at 15 to 20 *mow* per family of 5 to 6 persons. This figure is small enough, and even that is misleading, for there is a large proportion of big landowners, as the following figures for typical areas show:—

3% of the population own				20% of the land.			
3%	„	„	»	„	80%	v	„ „
6%	„	„	„	„	47%	„	„ „
2%	„	„	„	„	71%	„	„ „
65%	„	„	„	„	20%	„	„ „

From such a condition of over-population there are only two ways of escape: (1) the historical way of destruction by calamities, such as famine, civil war, pestilence, earthquake, flood, or (2) emigration either within China itself or overseas. It is in this latter connection that the North-West is so important especially now that Manchuria is temporarily lost as an outlet.

Settlement is governed by climatic conditions, soil, and topography. Most of the land which is suitable, by the nature of the soil, suffers from lack of water—which, after all, is only to be expected, since otherwise it would have been taken up long ago. Irrigation schemes, therefore, must be an essential complement of any plans of settlement that are entertained. When this is taken into consideration, there are (if we exclude, as we must for the present, Manchuria and Mongolia) six areas which lend themselves to such development.

1. The *Weiho Plain in Central Shensi*, 4,500 square miles in extent.

It has a very low annual rainfall of from 10 to 14 inches, but it is possible to irrigate it, or rather certain parts of it. As far back as the 4th century it possessed an intricate system of canals connected with the Wei and Ching Rivers, which can be made to serve some 1,000 square miles. The Lo River can be utilized to serve a similar area, and various smaller rivers can be used to facilitate the cultivation of a number of scattered districts. In the last few years extensive irrigation work has been carried on with the help of the Famine Relief Committee. The chief accomplishment has been the Ching-Wei canal, which was opened in June 1933. This fully completed, can provide water for 500,000 to 600,000 *mow*. At the same time the Provincial Department for Reconstruction is assisting farmers to dig wells. A plan has been drawn up which provides for the digging of 145,000 wells south of the Wei River during the next five years, and 421,000 to the north in the next ten. The sum of \$30,000 has been appropriated for the purchase of 200 sets of well-sinking apparatus, which will be loaned free of charge to the farmers.

2. *The Suiyuan-Patow Plain.* Area 3,000 square miles. This has an average annual rainfall of 10 to 20 inches, and until recently was occupied chiefly by nomadic Mongols. Primitive irrigation by means of waters from the Tachingshan mountains to the north was all that was attempted until the Famine Relief Committee in 1930 constructed a canal system, known as the Saratsi Irrigation Project, which utilizes the waters of the Yellow River to irrigate some 600 square miles. This provides far more water than the present population require, and so makes colonization here an immediately practical proposition.

3. *The Hotao Plain*, north of the great bend of the Yellow River. Area 4,000 square miles. This region is drier even than the two mentioned above. Artificial irrigation is indispensable, and canals based on old channels of the Yellow River serve some 1,800 square miles, but topographical conditions prevent their extension over the whole plain.

4. *The Ninghsia Plain*, between the Alashan Mountains and the Yellow River. Area somewhat under 4,000 square miles. In the 4th century canals were dug from the Yellow River, and others have been added subsequently, so that this plain is one of the richest in the North-West. The irrigation system, however, needs careful maintenance, and has not been well looked after in recent times.

5. *The West Kansu Plain* around Liangchow, Kinchow and Su-chow. Area 12,000 square miles. This area depends for irrigation on

waters from the mountains to the north and south, especially the Nanshan range. These it usually gets in good time for agriculture.

6. *Sinfyang*. The area of this province (700,000 square miles) is five times that of Chekiang, but extensive deserts and mountains reduce very considerably the area suitable for cultivation. Agriculture is only possible in scattered places along the foot of the Kuntun and Tienshan mountains, from which they get water. Roughly there are two such areas (1) round Urumtchi in the north—area 7,000 square miles. (2) round Kashgar and Aksu in the south—area 10,000 square miles. There are also another 3,000 square miles in the neighbourhood of Jli.

There are thus in all some 47,000 square miles available for settlement, which at 300, or at the most 400, persons to the square mile would support a population of from 14 to 19 million. Allowing for the people there already the total possible increase cannot be more than 10 million, which is not really a great number in comparison with the need. Commercial and industrial developments may, of course, enable this figure of 10 million to be increased, but even at that it seems as if the high hopes entertained of the North-West as a solution to China's agricultural problems have been somewhat too optimistic, though again that is no reason for neglecting the possibilities offered.

MINERAL RESOURCES.

With regard to minerals, Sinkiang, according to the data at present available, would appear to be the richest. The North-Western Scientific Expedition, on its return in 1931 from a five-year surveying tour in Mongolia, Tibet, Sinkiang, and Kansu, reported the existence of extensive coal, gold, oil, and other mineral deposits in Sinkiang awaiting development. The coal deposits are said to be second only to those of Shansi, the coal itself being of exceptional quality. Of one brand, known as "Tou-Mei", it is said that a large lump will burn for hours, leaving only a small residue of ash. "Shcntai," another brand, provides great heat, and "Lan-tan" is practically smokeless. Coalfields are being worked at Kitai, Urumtchi, Suilai, Ili, Hami and Turf an., and these, despite the primitive methods employed, have quite a large output sold in the immediate neighbourhood on the streets at \$1 to \$1.50 per picul. The high cost of transport makes large-scale development impossible.

Gold has been mined in the Altai Mountains for a long period. As far back as the beginning of the 19th century, thousands of workers were employed there, and today their number is estimated at 60,000. The

mines in the north are in the hands of Chinese commercial organizations, while those in the south are controlled by Indian interests. Methods are extremely crude, and it is generally agreed that with the adoption of modern methods the output could be very considerably increased. Most of the gold mined goes at present into Russia.

Rich oil deposits are found at Wusukuchi, Urumtchi and Suilai, and also round Kuchar and Aksu, extending into Russian Turkestan. These are worked by Chinese, but the methods employed are primitive, so that much Russian oil is still being imported. Other mineral products include jade and copper. There are no accurate statistics of the value of the deposits of the latter, but they are undoubtedly extremely rich. The mines are mere surface scratchings, as the Chinese who work them do not know how to carry shafts to any depth. Even at that, however, the annual output is 40,000 lbs., and most of the natives use copper household utensils rather than earthenware. The chief copper area is in the foothills of the Tianshan range to the north and north-west of Kashgar. The other provinces of this North Western area do not seem to be so rich. Kansu has a certain amount of iron and coal, and Suiyuan is rich in coal, the deposits having been calculated at 75 million tons. Some 41 mines are being worked at present by primitive methods, with a total annual output of 190,000 tons. There are also asbestos deposits at Kuyang.

SOLDIER SETTLERS.

Before any of the mineral resources can be properly tapped, roads and railways will have to be built, hence the stress laid on the North-Western trunk lines from Sian through Kansu to Urumtchi. The road, as has been seen, is in process of construction, but for the completion of the railway China, one fears, will have to wait many long years. In Suiyuan, however, development may be quicker, since there is the Pei-Sui line to act as a starting point, and the distances are not so great. Adequate transportation facilities are a prerequisite also of commercial development, but afforestation has no need to wait for road and rail. It is to this problem, accordingly, that attention is for the moment being chiefly paid. At the same time something can be done in the way of settlement, and here a start has definitely been made, the Hotao plain in Suiyuan being the scene of the experiment.

This area was formerly entirely in the hands of Mongols, who made no attempt to cultivate the land, being content with a pastoral nomadic existence. The rights of these people have been respected, and wide

areas left to them for pasture. At the same time large areas have been taken over for the settlement of Chinese farmers, who will develop the arable possibilities of the soil, but pay rent to the original Mongol owners in the form of a share of the crops. Two bodies are mainly responsible for this work—the Shantung Colonization and Reclamation Office, which is concerned with settling civilian immigrants from Shantung, and the Directorate-General of Military Reclamation Affairs of Western Suiyuan. This, as its name implies, aims at settling surplus soldiers on the land.

The former body has been at work for some years in the neighbourhood of Hsiangtaikwei, about 70 miles from Wuyuan, in the heart of a plain which irrigation canals have made extremely fertile. In 1925 about 700 families were settled on 75,000 *mow* here, and another 400 families on 40,000 *mow* near Ta-ta-chi. In 1926 another band was placed on 108,543 *mow* near Linho, and in 1928 200,000 additional *mow* were opened to settlement, while at Hang-ching-chi 320,000 *mow* have been made available. The Suiyuan Land Reclamation Bureau, the Canal Conservancy Bureau, and the Shih Shih Chu are bodies which are assisting in this work. The first surveys and stakes out land for settlement, the second is in charge of the irrigation system, and the third acts as the administrative body, performing the same duties as a Magistrate's Yamen, the Mongol princes not being competent to govern Chinese settlers. As the population and the cultivated acreage of any area reaches a certain standard, it is given *hsien* status, with a regular *hsien* organization. At the moment there are seven such.

The soldier farmers of Hotao are divided into three corps—an Officer Corps composed of 500 discharged officers, the Experimental Corps consisting of three companies drafted from the 70th, 72nd and 73rd divisions, and the Reclamation Corps consisting of a battalion from the 72nd division and a brigade from the 30th division. The Officer Corps is divided again into three groups, which hold between them some 715,000 *mow* in Linho, of which about one-seventh has been developed. This body does no actual reclamation work itself, but lets out its land to Shantung immigrants, who pay a rent in kind of from 40 to 50 per cent of their crops, the Corps paying the land tax. The Corps also extends credit facilities to the tenants in the form of loans of seeds, which has to be repaid in kind at the rate of 1½ piculs for each picul lent. The Experimental Corps has 56,000 *mow* also in Linho

hsien, and the Reclamation Corps has 250,000 *mow* divided between Neilinpao and Hatanao. While these two bodies also let out a portion of their land to tenants on similar terms to those granted by the Officer Corps, they also are doing a considerable amount of work themselves. These soldiers are much better equipped and housed than the civilian immigrants, being provided with implements, furniture, and houses built in barrack style. In addition they receive pay for five months of the year, being liable to be called to the colours at any time.

The chief need of the Hotao plan is irrigation, and here the Reclamation Corps has done some very useful work in the construction of the Pa Chuan canal, running from the Kang Chi Irrigation canal to Tien Shen Hao, a distance of 27 miles, and watering 60,000 *mow*. Soldier labour has also been responsible for another canal in Wuyuan, 20 miles long, irrigating 50,000 *mow*. The Paotow-Ninghsia highway is another military achievement.

Enough has been said to indicate the possibilities of the North-West. These, even if not as great as they are sometimes represented to be, are still considerable. An account has been given, too, of the efforts so far made to take advantage of them. Perhaps the strongest impression that will remain will be one of the magnitude of the task that confronts China and her rulers in this region, yet is it so much greater than that which the Middle and Far West presented to the people of the United States at the beginning of the 19th century, or that which the people of Canada had to face at the same time? What is needed is the same spirit of enterprise as distinguished the hardy pioneers who created modern America and Canada, and the same confidence and faith not only on the part of the pioneers themselves but on the part of onlookers.

CHAPTER XVI.

TOWN-PLANNING AND MUNICIPAL DEVELOPMENT.

SPEAKING of China, a foreign observer with exceptional advantages not only for knowing, but actually seeing what is going on in different parts of the country, recently declared that "there are more cities under reconstruction at present than ever before, in any other country, in all of the world's history." The authority for this statement is Mr. Julian Arnold, Commercial Attache to the United States Legation in China, whose official duties make it necessary for him to travel widely, and keep himself well-informed on all aspects of economic affairs and progressive developments in the country. Mr. Arnold, in a recent review of Chinese commercial and economic conditions, mentioned that the widening of the main thoroughfares in many cities and towns—especially in Central and South China—has encouraged other civic improvements, such as the provision of waterworks and lighting systems, telephone services, parks, playgrounds, and public health facilities, and has also involved the construction of bigger and better buildings. In many of these cities modern-style structures of three, four, and five storeys are replacing the old-style tiled-roof buildings of one, or at most two, floors. It is obviously impossible, within the scope of a single chapter, to give a detailed account of the extensive changes of this character which are taking place throughout the Republic, but a few facts relating to the more important schemes which are in course of execution will give an idea of what is being done in this direction.

NANKING AS THE NATIONAL CAPITAL.

Nanking has always been a city of historical interest, scenic beauty, and strategic importance. Situated on the south-eastern bank of the Yangtze River, about three hundred kilometres from Shanghai, it is well connected with other important cities of the country by the Yangtze, the Tientsin-Pukow railway, the Nanking-Shanghai and Shanghai-Hangchow-Ningpo railways, and various inter-urban and inter-provincial highways. With the Yangtze on the north and west, the Mo Tzu

Lake on the west, the Purple Mountain on the east, the Lotus Lake on the north-east, the Yu Hua Hills on the south, and hills and canals here and there, the city abounds in picturesque scenery. For some two thousand years Nanking figured in Chinese history under various names, and many a time flourished as the capital of the country, having once again resumed its former glory as the capital of China by a decree of the National Government, dated June 21, 1928, being thus proclaimed in deference to the plans of the late Dr. Sun Yat-Sen. The city, however, has never quite recovered from the havoc and devastation wrought by the Tai-Ping Tien Kuo during their occupation between 1853 and 1864. Indeed the effect has been so lasting that one finds inside the city-walls of Nanking waste spaces, ponds, and patches of cultivated land scattered here and there in the same way as they are outside the walls.

With the establishment of the National Capital here, people began to pour into the city. Housing accommodation, supplies of daily necessities, and means of communication and transportation were miserably inadequate and insufficient. There was no water service nor any sewage system. A city notorious for its dim electric light, narrow and uneven roads, and poor telephone service, was taken by surprise, and found itself suddenly confronted with serious problems calling urgently for solution. It was, therefore, no small nor light task which faced the authorities in being called upon to transform a rapidly-growing city from a veritable *rus in urbe* into a modern capital, with public utilities and services befitting the political centre of the country. In spite of the immensity of the task and the financial difficulties involved, the municipal authorities have faced the problem boldly and with quiet determination. One by one, improvements have been carried out, and the great financial set-back due to the Shanghai hostilities in 1932 only made the authorities more determined than ever to forge ahead with their work.

RECONSTRUCTION IN NANKING.

Whoever visits Nanking to-day after a few years' absence will certainly find the city greatly changed, and still changing. The old city has been rejuvenated! An automatic telephone service has been installed and the electric light now (as it had never done before) beams with a standard brightness. New buildings, private as well as public, are to be seen in every part of the city, springing up like "bamboo shoots after the spring rain." A net-work of wide avenues, with their busy but regulated flow of vehicular traffic, stretches in all directions, connecting

various parts of the city. There is a reservoir with a complex network of about 120 kilometres of distributing mains to supply the city with nearly 12,000 tons of wholesome water daily; a sewage system is under construction; the canals are being repaired and improved; and two large aerodromes bring to the city the amenities of a regular mail and passenger air-service, linking it with important ports and provincial capitals in the Republic. Plans are also under way to utilize the whole length of 34 kilometres of ancient city wall as an elevated roadway, accessible by a convenient number of approaching slopes, thus affording from this high level a drive-way which will give an impressive panorama of the scenic beauty around the city.

Over \$20,000,000 has been spent on private building construction in Nanking during the past three and a half years, according to the statistics compiled by the Public Works Bureau of the Municipal Government. Figures of investment during the period from January, 1931, to June, 1934, are as follows:—

1931.	\$7,149,495
1932.	3,916,352
1933.	5,059,369
1934 (January to June).	4,266,034

More capital would have flown into this channel of investment had it not been for the Sino-Japanese hostilities at Shanghai in 1932, one result of which was that the Government greatly reduced salaries of civil servants and, with a view to helping them, enforced a 50 per cent cut in rent. Full payment of salaries to Government employees and of rent to house-owners was not restored until the latter part of 1933. Hence it will be noted from the above figures that investment in building construction declined considerably in 1932-3 as compared with 1931. The signing of the Tangku armistice on May 31, 1933, and the general improvement of the political situation that followed, once more accelerated building activities in Nanking, which were entirely justified by the acute housing problem. The figure for the first half of 1934 shows a large increase over the corresponding period of any previous year, and in view of the large number of new buildings going up, it is evident that the flow of capital into this channel is continuing more strongly than ever. A total of 192,675,000 *mow* was purchased by the Government for various public purposes in the past six years (1929-1934). The uses to which this land has been put are as follows:—

	<i>Mow.</i>
Public buildings	1,663,000
Communications	12,637,000
Port expansion	46,916,000
Public health ..	1,338,000
City-planning	5,926,000
Education	96,036,000
State enterprises	742,000
Public works ..	7,014,000
Miscellaneous	20403,000
TOTAL _____	192,675,000

NEW SPIRIT IN MUNICIPAL ADMINISTRATION.

The period from 1932 to 1934 has been particularly trying for the Nanking Municipal Government, owing to financial difficulties, with a city steadily growing and work constantly expanding. Salaries were in arrear, and obligations could not be met in due time. By applying the strictest economy, the Municipal Government, under the able direction of Mayor Shih Ying, has been able to effect a saving of about \$4,000 a month in the budgets of the Bureaux of Land, Health, Education, and subsidiary departments, so that the total savings during the past two years amount to no less than \$960,000 in this direction alone. Similar measures in other departments have created a surplus in their budgets; economies in the Secretariat alone, for instance, have yielded a saving of about \$130,000. Improvement in methods of tax-collection has brought about a substantial increase in Municipal revenues. Receipts from house-tax, with the collection of arrears, are double the revenue collected for the corresponding periods two years ago, while the vehicle-tax also shows a gain of 25 per cent. Again, the business-tax, which became effective in the 20th Year of the Republic (1931), amounted to \$10,400 for the first quarter of the following year, and now stands at no less than \$30,000 for each quarter. On the other hand, the Municipal Government has abolished its only exorbitant tax of a 0.4% duty on rice and grain. Thus by increasing revenue and reducing administrative expenses, the Municipal budget has been successfully balanced and all due payments are now regularly made. Owing to the extension of school accommodation, the monthly education budget has increased from \$45,000 two years ago to \$60,000; and road-maintenance costs have increased from \$6,000 to \$10,000. Additional appropriations for various public and sanitation



SHIH YING
Mayor of Nanking (1932-35)



MA CHAOCHUN
Mayor of Nanking

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works have also been made. The Municipal debt, which formerly stood at \$5,000,000, is being met and \$1414,000 worth of Municipal bonds have been redeemed. A monthly instalment of U.S. \$6,000 for the purchase of water-pipes costing altogether U.S. \$144,000 has been regularly paid as required by a former contract.

The Municipal Government, realizing the importance of an adequate water-supply, has vigorously carried its waterworks programme to completion; the total investment during the past two years has amounted to \$1,350,000. Twenty new roads, having a total length of 47,560 metres and costing \$600,000, have been constructed. Extensive road and pavement repairs, including improvement of the drainage system, have been carried out at a total cost of \$223,000. Besides repairing the city gate towers, the Municipal Government has constructed five new ones. The cost of constructing school buildings has amounted to \$400,000. The purchase of pumps and the maintenance of dykes at Pa-Kwa Chou, has cost \$106,000, half of which sum has yet to be collected from farmers in that district. Relief work at Ta-Huang Chou and Hsiao-Huang Chou has cost \$46,000 for the past two years, while the revenue from this source is only \$13,300. Other reconstruction work, such as the building of bridges, culverts, city gates, dykes, planting of trees, and installation of pumping-stations has cost about \$200,000 in all.

Public primary schools formerly numbered 39, with 309 classes and 13,300 students, but now number 41, with 407 classes and 19,600 students. Thirty-three free schools, with 143 classes, have also been established. Thus there are at present 550 classes with 26,370 students, representing an increase of almost 100 per cent within the last two years. In order to promote mass education, there have been established ten day schools and twenty-eight night schools for adults, and one educational institute for the farmers of Pa-Kwa Chou. Consequently, expenditure under this heading is much higher than it was two years ago. The number of books in the Municipal Library has been increased, and there are now 54,000 books and 5,000 papers, periodicals, etc., on various subjects, as compared with 31,000 books and only a few newspapers available before. The Municipal Government has established for poor students, besides thousands of scholarships in primary schools, ten new scholarships, six of which are for junior middle schools, two for senior middle schools, and two for the University. Grants also have been made to private primary middle schools. In order to promote the "Buy Chinese Goods"

Movement, the Municipal Government has invested \$20,000 in the Nanking Chinese Goods Emporium, the total capitalization of which at present amounts to \$100,000.

In spite of reduced funds and retrenchment in staff, the Bureau of Health has continued to carry on its work. The record includes the establishment of a hospital for infectious diseases, the establishment of a hospital for the treatment of opium addicts, and the organization of a School Health Committee for the inspection of sanitary conditions in schools and the promotion of health education. Free maternity clinics have also been established, 1,900 cases have been handled, and the number is increasing as the people are learning to appreciate this service. To eliminate unqualified practitioners in Chinese medicine, they are now required to pass an examination before licences are issued. Two such examinations have already been held, and 189 licences issued.

A credit system has been inaugurated for small traders and poor people, and the sum advanced during the two year period under review exceeds \$14,000. Recently, the Municipal Government signed a contract with a local bank in Nanking to jointly operate a credit system for small traders and family industry workers, with an initial capital of \$15,000. The Municipal Government has also reorganized the administration of the Poor House, which had been in a very unsatisfactory condition. Greater efficiency and better conditions have been brought about, together with the substantial annual saving of \$36,000 as a result of this reorganization. The number of inmates has increased from 200 to 500, and they are now better provided for. A fund has also been set aside for establishing small industries to keep the inmates occupied and give them some vocational training. As the present Poor House is in a very dilapidated condition, the Municipal Government has purchased a plot of land near the Tan-Fu Mountains, outside the Chung-Hwa Gate, for a new building. Work has been already commenced, and will be completed in a short time, the total cost being estimated at \$130,000.

THE REVOLUTIONARY MEMORIAL.

The Revolutionary Memorial on the southern slope of Purple Mountain, and not far from the tomb of Sun Yat-Sen, is a splendid example of one form of reconstruction which is taking place. The Memorial is planned to contain a number of coffins, representative of the 24,000 soldiers who laid down their lives for the Republic, and besides the new buildings and the general lay-out of the grounds, the grand old "Beamless

Hall" has been restored, and a pagoda, the most beautiful in China, marks the site of the Memorial from a distance. With the completion of the Memorial, and with the Ming Tombs and the Mausoleum of Sun Yat-Sen at equal distances from one another and from the Memorial, a three-point composition of particular splendour is achieved.

Future development necessitates the moving of the National Central University to a much larger and more appropriate site. The new site which has been selected is in the most beautiful and tranquil part of Nanking, the east suburb of the capital, and will have an area of about 2,000 *mow*. According to the city plan all the cultural institutions, such as the National Library and the National Museum, are to be situated there. It is the ideal site for the new University. The whole building programme is to be completed in thirty months, at a total cost of about \$2,400,000. The first 20 months will be devoted to the erection of buildings for the Colleges of Sciences, Agriculture and Engineering, which will cost approximately \$1,600,000; while the buildings for the other three colleges will be erected in the other ten months at a cost of \$800,000.

NANKING AS A PORT.

With the recently improved railway and highway facilities, Nanking is now the centre of a vast area which urgently requires seaport facilities, and the possibilities of developing a great world port are very favourable. There is already a channel of sufficient depth to take ships of considerable tonnage at high water, and when the volume of shipping demands it, this channel, together with the Lang Shan flats (the only shallow spot) will be dredged. Once safely over this shallow part, the depth of water varies from 50 to 160 feet within the upper and lower anchorages, the great depth insuring smooth water even in heavy winds. The river is over a mile wide between the anchorages, and the current seldom exceeds five knots, so that ample space and safe manoeuvring is provided for large vessels.

By means of three systems of transportation the products of industry and agriculture of over a hundred million people will be conveyed to the port, and from thence to the great markets of the world. River boats can only serve a certain area, but the highways projected and already completed will make port facilities available to large areas by means of motor transport. Nanking is the terminus of two trunk-line railways, the Tientsin-Pukow and the Nanking-Shanghai, the former terminating on the north bank of the Yangtsze at Pukow, and the latter on the

south bank at Hsiakwan. With the completion of the Canton railway, which will serve a considerable area in the south, and the inauguration last October, of the Nanking ferry service, on which trains are conveyed across the Yangtsze in 25 minutes, it will be possible to travel by rail across China from Canton to Shanghai via Peiping and Nanking. At the present time the largest wharf in Nanking is the new naval wharf at Hsiakwan, at which large steamers and warships can be berthed. It was opened on October 25, 1933.

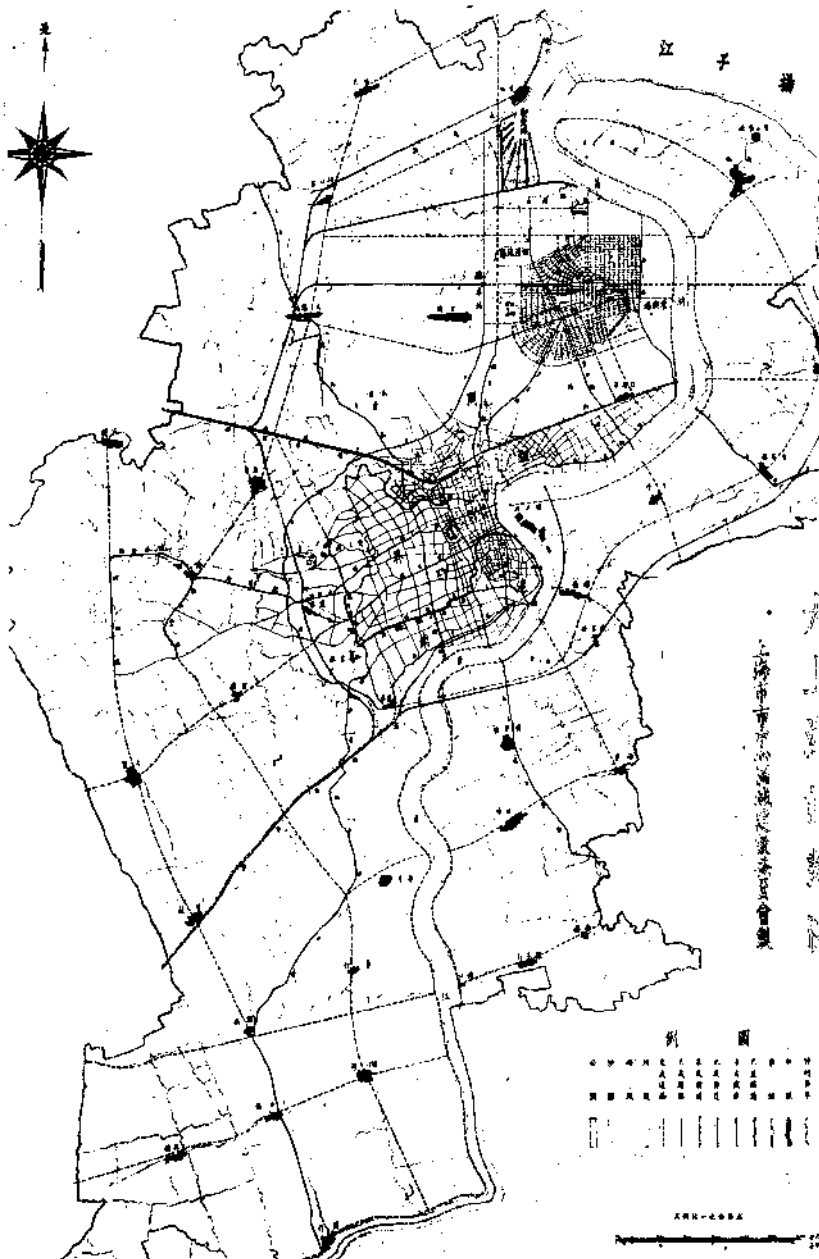
There are great possibilities of rapid commercial development in Nanking once port facilities are available, and with the increased population since the establishment of the National Government, when many old residents of the city returned—during 1933 alone no less than 7,000 building permits were issued—new avenues of trade which have suffered during the slump of the last two or three years will open up. Strategically situated in the lower reaches of the mighty Yangtsze, Nanking is the radiating centre of influence to every part of the country. More and more visitors to the nation's capital are now realizing the significance of the forces at work which in another 10 or 20 years will make it one of the largest and most modern capitals in the world.

DEVELOPING VACANT PLOTS.

Vigorous steps are being taken by the Government against undeveloped land in the capital, especially along Chung Shan Road, the main thoroughfare. The municipal authorities are dissatisfied with the fact that there has been very little building construction along the Chung Shan Road, especially the section between Yi Chiang Gate and the Drum Tower. This is mostly due to the exorbitant prices demanded by owners of land along the road. As a result, persons who are ready to put up buildings are prevented from doing so. In order to encourage building construction in the capital and to take suitable action against undeveloped land here, the Municipal Government has issued an order that beginning from July 16, 1934, all owners of undeveloped land within 30 metres on both sides of Chung Shan Road must register their property with the municipal government within four months and must take out building construction permits from the same office within another two months. At the end of six months, if construction work has not yet been started, the Municipal Government will be entitled to take over land at prices to be fixed by the Government.



GENERAL WU TEH-CHEN
Mayor of Greater Shanghai



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SHANGHAI CIVIC CENTRE.

Shanghai is the name given to the old walled city built in 1290. In 1830, according to local records, the population was placed at 540,000. It was a market for farmers and fishermen, who made up the bulk of the population, but in the city, native handicraft workers were in the majority. The growth of Shanghai during the last half-century has staggered all imagination. From a small beginning of less than half a million people, the population has risen to over 3,400,000. Those who were given the responsibility of planning a new and greater Shanghai kept their eyes wide open. In selecting a Civic Centre, and mapping the approaches and outlets, the planners kept in view two main points—the needs of the present, and the certain development in the future.

In approaching Shanghai by ocean steamer the Mayor's official residence, which is part of the scheme of the Municipality of Greater Shanghai for building a Civic Centre, soon attracts the notice of the visitor. The Mayor's official Residence is the first of a group of nine that will house the entire City Government of Greater Shanghai, and early in 1934 the Mayor and staff moved into the new building, while other members of the Municipal Government are using temporary offices until the permanent ones are completed.

The style of the Mayor's Residence is in traditional Chinese architecture—adapted to the modern age—similar to the old Palace buildings at Peiping. Its main features are a glazed tile roof and ridges with animal decorations, vermilion columns, polychrome beams, rafters, eaves, etc., and carved balustrades. The building is planned with the view of expressing the Chinese national character, but at the same time the comfort and convenience of modern office requirements are given every attention. The construction is of concrete and steel, with a group of six huge trusses over the auditorium having a span 75 ft. long. This is the only one of its kind in Shanghai. The over-all length is 335 ft., width 215 ft., and height 102 ft. The area covered is 25,000 square feet, and the floor area 85,000 square feet. Modern heating and sanitation, elevators, electric lighting, electric clocks, telephone-exchange, fire protection, etc., are all part of the general scheme.

The Civic Centre is planned in the shape of a cross, covering an area of about 330 acres. The east and west axis is represented by a 200 ft. wide, three-tracked boulevard, and another 200 ft. boulevard completes

the cross from north to south. The centre of the cross which will be known as the centre of Shanghai, is marked by a pagoda 200 ft. high, which can be seen from all directions, and from which a complete view of the new city may be obtained. The Mayor's Residence is located 500 ft. north of the pagoda, flanked by eight more buildings comprising the eight Bureaux of the City Government. Approximately 20 acres are devoted to the plaza, where public meetings and reviews may be held. A huge reflecting-pool, about 2,500 ft. long, with double-tracked boulevards on both sides, mark the southern approach to the Civic Centre; two smaller pools are located similarly to mark the east and the west approaches. Immediately behind the Mayor's building rises the great roof of the Municipal Auditorium, which can accommodate 3,000 people. Clustered around the cross are the library, museum, art gallery, court-houses, and other public or semi-public buildings. An existing waterway about 40 ft. wide supplies the water to the reflecting pools, and its banks are to be improved and made into parks. Several bridges add to the beauty of the waterway, and a five-arched Chinese bridge spans the large pool. At the south end of the long pool is a five-arched memorial "Pai-Lou" representing the gateway to the Civic Centre. The existing main thoroughfare, Hsiang Ying Road, crosses diagonally at the extreme south of the Civic Centre.

In December, 1934, General Wu Teh-Chen, Mayor of Greater Shanghai, laid the foundation stones of the Municipal Library and Museum. The library, which will be two-storeyed and of reinforced concrete, will occupy an area of 23,000 sq. ft. It will have a total volume of 1,100,000 cub. ft., with 50,000 linear ft. of book-shelves. With a typical Chinese gate-tower over the centre portion and an artificial granite facing, the library will have two main reading-rooms with seating capacity of 150 persons each, a periodical room and a stack-room (about 400,000 volumes of books) with steel book-ranges and plateglass deck-floor, offices, store-rooms, etc. The museum, which is being erected to the south-east of the new City Government offices, will have a building area of 26,000 sq. ft. and 1,400,000 cub. ft. It will be a two-storey reinforced concrete construction, consisting of entrance hall, exhibition halls, galleries, library with seating capacity for 100 persons, a lecture hall with seating capacity for 300 persons, offices for administration, etc. Each building will cost \$300,000 for construction, exclusive of equipment.

The building of a large hospital to hold 2,000 beds is another important plan included in the development scheme. This hospital, equipped in the most modern manner and efficiently staffed, will be also a School of Medicine.

The rapid growth of Shanghai during the past few decades and the necessity for further expansion to provide for the needs of an ever-growing community, as also the great interest shown by the citizens in civic development, give great hope that the building of a new Shanghai will probably take less time than many anticipate.

MUNICIPAL STADIUM AND GARDEN.

The nine buildings for the Municipal Government are by no means all that the City Planning Commission of Greater Shanghai contemplate for the development of a new and magnificent metropolis. Details are now being worked out for the erection of a stadium which will appropriately express the ever-increasing enthusiasm for sports among the Chinese people. Plans were announced in July, 1934 for the giant Greater Shanghai Stadium Group which is to be built in the Municipal Park at the Civic Centre at a cost of \$1,000,000. The contract signed calls for completion of the work in order that the ground may be ready for the National Athletic Meeting to be held in October 1935. Containing seating accommodation for 40,000, the main stadium will include a 500-metre track, two 200-metre tracks, a football field, three tennis-courts and three basketball courts, while sleeping accommodation for 3,000 athletes will also be provided. A vast gymnasium with a floor area 20 metres by 40 metres, and an arched ceiling 20 metres high, will contain facilities for indoor tennis, basketball, volleyball, and other games and will be specially heated. The swimming-pool will be 20 metres by 50 metres and have seating accommodation for 4,500 spectators. The depths will range from 4 feet 6 inches to 11 feet.

Space has been left for the future addition of three lawn-tennis courts with seating accommodation for 4,000, with a club-house close by. A standard-sized baseball ground is also among additions planned, and seating 4,000; this will also have club quarters. The area covered by the whole group of buildings will be approximately 270 *mow* (45 acres). Even bigger than the grounds built at Manila for the Far Eastern Olympic Games, the Greater Shanghai Stadium will be the largest in the Orient, and will be most up-to-date in design and facilities. The cost of the work has been appropriated from the three and a half million dollar

loan floated recently by the Greater Shanghai Municipality.

The construction of a garden, larger and more beautiful than any now in Shanghai, is included in the programme of the Kiangwan Civic Centre development. The unique feature of the garden will be a 12-storey pagoda to be erected overlooking the Municipal Auditorium in which memorial services for Kuo-Min Tang martyrs will be held. The history of the Kuo-Min Tang and the National-Revolutionary movement will be written chronologically on the pagoda.

Around the pagoda will be set up bronze statues of the 72 martyrs, and tablets bespeaking the sacrifices with which they paved the way to success of the National-Revolutionary movement. A lake to be known as the Chung Shan Lake, in remembrance of the founder of the Chinese Republic, will be made behind the pagoda, and in the centre of the lake will be built the Chung Shan Memorial Hall.

The Pootung side of the Whangpoo is also being rapidly developed, and land values there have risen considerably in recent times, in contrast to the land values in the International Settlement, which are steadily on the decline since the Sino-Japanese hostilities in the spring of 1932. The Pootung Highway has been completed, while public utilities such as a telephone exchange and an electric power-station have been erected. Modern ferry-boats maintain contact between the two sides of the river, and a motor-car ferry will be in service in the near future. The Greater Shanghai City Trust has already ordered machinery, equipment and materials for the construction of an up-to-date waterworks so that Pootung residents will have no more water problems to solve.

HARBOUR DEVELOPMENT AT WOOSUNG.

Plans are also under way for the building of a harbour which, however, will be used only temporarily, the main plan being designed on a far greater scale and is to be built at a later date. This temporary and smaller harbour will be a little higher up the river from Woosung than the site marked out for the main docks.

Although Shanghai is known as the greatest port in the Orient, much improvement is needed in the way of docks and wharves, warehouses and shore communications. The Woosung District offers an ideal site for port development. With its extending waterfront over 30 feet in depth, vessels of all sizes and tonnage will have no difficulty in finding accommodation. An area of some 10,000 *mow* has been allocated for this purpose.

The lay-out of the harbour will be of the "basin type," with access from the river to a succession of basins, on both sides of which will be piers slightly inclined toward the river. The piers will have transit sheds along one side and godowns on the other. The details of the wharves will be planned with a view not only of allowing comfortable transfer of freight from rail to ship, but also to provide ample means for the loading and unloading of small coastal and river boats.

Construction of what will be the largest and most important structure at the Civic Centre, the Jukong Wharf, has been entrusted to the Central Bank of China. The undertaking is estimated to cost over \$3,000,000, and the wharf, when completed, is expected to play an important part in the development of business and trade in Shanghai. It is to be located at a point on the Whangpoo, north-east of the Military Road, Yangtszepoo, where the water is deep and wide enough for vessels of all descriptions. One of the many questions which have perplexed the Customs authorities at Shanghai for years past has been the inaccessibility of the southern section of the Whangpoo to large ocean-going vessels, necessitating launches to convey passengers to and from ships which often are obliged to anchor near Woosung. There being innumerable small boats on the southern part of the Whangpoo, the presence of many large vessels might result in frequent collisions. With the carrying out of the Jukong Wharf scheme, passengers from ocean liners will be able to board and land directly without the service of small launches, and many ships will be saved the trouble of proceeding futher up-river.

The idea of developing Woosung, the district situated at the mouth of the Whangpoo River, as a future world-port dates back over thirty years, when Liu Kun-Yi was Viceroy of Kiangsu Province. It was thought that the logical development of the port of Shanghai would be near the mouth of the Whangpoo, that the river-front would eventually move from Yangtszepoo towards the north, that factories and other plants would rise in the northern district near Woosung, and that business and residential development would follow.

In 1927 the city of Shanghai became a Special District by order of the National Government at Nanking. The City Government of Greater Shanghai was then established, and to Shanghai's first Mayor, Mr. Huang Fu, belongs the credit of reviving an idea which was conceived over three decades ago. Mr. Huang's successor, Mayor Chang Ting-Fan, continued to carry on the idea, although it was not until

the inauguration of the next Mayor, Mr. Chang Chun, that definite steps were taken for carrying out the scheme. In 1932 General Wu Teh-Chen succeeded Mayor Chang Chun, and under his administration much has been done toward realization of the project. Whereas it has been customary in recent years for successive administrations of the Municipal Government to replace important staff members when a new chief was appointed, the City Government of Shanghai has been fortunate enough to do away with this vicious practice. Thus, most of the technical experts still remain, and have been able to carry out the programme of municipal development without interruption in spite of the change of four Mayors in the past eight years.

TIENTSIN: TUNNELLING THE HAI-HO

The third largest city in China, following Shanghai and Peiping, with a population of some 1,300,000, Tientsin is the chief port and commercial centre of North China. The municipal authorities of this important city are fully awake to their responsibility for making adequate provision for the further growth of a flourishing commercial centre which has expanded enormously since it was opened to foreign trade in 1860. An effective scheme of city-planning and zoning is being carried out under very peculiar circumstances—owing to the fact that part of the city is under Chinese administration, while certain other sections are set apart as Foreign Concessions. It is hoped that this plurality of control will not interfere with the extensive plans which are in preparation for meeting the modern requirements of a great and growing community, and that mutual understanding and appreciation of those requirements will make it easy to carry out the general scheme for the improvement of Tientsin.

Among the various projects being put in hand is the building of a tunnel under the river, which will link up the First and Third Special Areas on the banks of the lower reaches of the Hai-Ho. The construction of this tunnel will greatly assist the development of Tientsin by bringing two important districts separated by the river into close touch with each other. Some time ago the establishment of a ferry-service was suggested, but for various reasons a regular and continuous service could not be maintained, especially in the winter. Nor was it considered practicable to build a bridge, which would impede navigation where the river traffic is heaviest, while the opening and closing of the central span to allow steamships to pass would mean an interruption of bridge traffic for at

least two hours daily. A tunnel, therefore, was the obvious solution of the problem, and while the original plan was estimated by the Hai-Ho Conservancy Board to cost over \$4,000,000, an alternative design is under consideration which it is hoped will cost only about half that amount.

As giving some indication of the attention being given by the Tientsin authorities to more commonplace municipal affairs, it is worth noting that during 1933 over 67,000 square metres of macadamized road was laid, over 8,000 of concrete, and 147,000 of asphalt, while more than 13,000 feet of sewers were laid. The construction of a municipal waterworks was started in 1933, being scheduled for completion within a period of two years. The city already has a supply of 900,000 gallons a day from two artesian-wells, against a peak-load during the summer of 600,000 gallons each, so that future requirements will be well provided for.

A large area of marshland is being reclaimed by dumping silt dredged from the Hai-Ho, and the park in the ex-Russian Concession—which had been neglected for a long time—is in process of renovation, and will provide the site for a public-hall which is to be built of characteristic Chinese design. Plans have been prepared for a new electric-light plant in the First Special District, and a steel bridge in the northern section of the city will be completed sometime in 1935.

CANTON: CITY OF PROGRESS.

In this great commercial and industrial centre on the Pearl River, forming a gateway to South China, as Shanghai provides the main door to Central and North China, amazing changes have taken place during the last few years. It is not so long ago that tourists were in the habit of making a side-trip from Hongkong to Canton merely for the thrill of riding in sedan-chairs through crowded streets so narrow that it was impossible for two chairs to pass without the carriers having to manoeuvre their loads into the premises of an indignant shopkeeper, accompanied by much shouting and excitement on the part of all concerned, including numerous interested onlookers. Today there are in Canton over 80 miles of wide, well-paved, and well-drained streets, with asphalt surface, and more miles in course of construction. Three bridges are to be built *across* the river for the purpose of relieving traffic congestion in the city of Canton and for developing Honam Island; one bridge has already been constructed. The City Planning Commission is dividing the municipality into three sections—residential, commercial, and industrial, and one of the ideas behind

the inauguration of the next Mayor, Mr. Chang Chun, that definite steps were taken for carrying out the scheme. In 1932 General Wu Teh-Chen succeeded Mayor Chang Chun, and under his administration much has been done toward realization of the project. Whereas it has been customary in recent years for successive administrations of the Municipal Government to replace important staff members when a new chief was appointed, the City Government of Shanghai has been fortunate enough to do away with this vicious practice. Thus, most of the technical experts still remain, and have been able to carry out the programme of municipal development without interruption in spite of the change of four Mayors in the past eight years.

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this scheme is to reduce house-rents and prevent over-crowding. There are four public parks, to which three more will be added, with two large recreation-grounds modelled on American plans. The public swimming-pool has proved so popular that two more are to be provided. The city of Canton covers an area of nearly 10 square miles, and has a population of slightly over 1,000,000, and although some of the old narrow streets remain—as is also the case in London and New York—they are just as obviously out of keeping with current requirements.

Along the Bund there are huge ferro-concrete buildings from five to ten storeys, and in all parts of the city constructional work is proceeding with remarkable activity. During 1931 the number of new buildings erected in Canton was 5,885, at a total cost of over \$25,000,000, and covering an area of more than 4,000,000 square feet. Most of these were tenements and apartment-buildings, shop premises coming next in order. Taking the population of the city at one million, the new constructional work carried out during 1933 represents a *per capita* average of \$25, which is several dollars above the high average for 1932. In the suburbs of Canton many new roads were built and pavements laid, with modern drainage. The total length of roads built during 1933 was 21,000 yards, and over 4,000,000 feet of paving was laid and 136,000 feet of drainage completed. Work on the south-west bridge was started, and the construction commenced of a municipal bank, municipal school, public hospital, creche, and several primary schools. Another municipal power-plant is to be built to meet the growing demand for electric current. One station is to be built near the water-works, where current will be generated in the ordinary way by steam-driven dynamos. Its cost is about \$2,500,000, while a hydro-electric plant is being built about 150 miles from Canton at a cost of \$20,000,000.

ROADS AND BRIDGES.

In city planning the most important project is the communication system, and public streets and roads undoubtedly occupy front place. The first roads for vehicles were built in Canton towards the end of the Ching Dynasty. At that time there were only 12,000 feet of wide streets on what is now known as the Bund. During the following years various political upheavals were the main factors which caused the further delay of the public road construction programme in Canton. Up to as late as 1918, there were only 20,000 feet of roads and it was not until 1921 that the roads in the city were finally mapped out and definite steps taken

to construct them. When the Bureau of Public Works was organized the same year, more roads were added to the city as the years went by. Today Canton has 129,000 metres of modern roads which have contributed greatly to the rapid development of the city.

Why the Greater Canton area could not be rapidly developed at the same time is due to the Pearl River which separates the main city and the island known as Honam. While roads have been enormously increased on the north side of the river (where the city proper is situated) only a few hundred feet of modern roads were constructed on the island side. The authorities, therefore, drew up plans to build several large bridges to span the river and to increase communication facilities between the two areas. Four years ago construction was started on the Pearl River draw-bridge near the central district, which was completed in 1933. At present plans are being made to construct two more bridges at the West Bund, while another bridge is also being planned for the southwest section. In connection with the harbour plans, part of the construction has already been completed on the new bund, the bund on Honam Island and the dredging of the river.

MUNICIPAL ENTERPRISES.

Water supply for drinking and fire prevention purposes is considered by the authorities as one of the most essential problems, and special emphasis has been given to provide a clean and sufficient supply. The first waterworks company was established in Canton towards the end of the Ching Dynasty. For the first 17 years of the Republic the company was operated by private interests but was not maintained on a satisfactory basis. The Municipal Government took over the waterworks company in 1928, and three years later built a new plant near the city. The average daily output at present is 19,000,000 gallons of water. A branch was established in Tung Shan, the residential district east of the city, and the water-tower there supplies 500,000 gallons of water daily to that section of the city.

Before automatic telephones were installed in Canton, people had great difficulty in getting their messages over the lines, owing to old equipment and inefficient service. One hundred new automatic telephones were installed in 1928 as an experiment. The new system proved a great success and the demand for dial phones increased. The telephone administration the following year installed 6,000 automatic sets. In addition, long-distance lines have also been installed to Hongkong, while

other lines now link Canton with Fatshan city and the Shuntak district.

The Municipal Government also operates a broadcasting station, and daily lectures, general and political news, and musical programmes are given over the air at regular schedules. At present the authorities are contemplating the construction of a larger and more powerful station enabling broadcasts from Canton to be heard in all parts of the country.

The year 1929 saw a rapid increase of appropriations for construction work in the city following a more peaceful era and systematic study of the financial situation. For the last five years an average of \$1,938,000 were spent annually by the Municipal Government for construction work. Compared with the previous four years the amount of appropriations during the last five years have been increased by 60 or 70 per cent. For educational work during the last five years an average of \$1,695,000 annually were appropriated, which shows a substantial increase over the previous four years also.

RAILWAYS AND HIGHWAYS.

When the big bridge near Kung Yik is opened to traffic, it will be possible to go from Kongmoon to Toishan City by road. \$1,200,000 is being spent on this bridge, which is of the bascule type, and 1,388 feet in length. It is to be a combined highway and railway bridge, trains of the Sunning railway, running between Pakkai and Toishan City making use of it. The two bridges at Wongsha will be part of the link bringing together the Shiukwan-Canton and the Canton-Samshui railways. The two bridges have a combined length of 1,665 feet. The first will start from near the Wongsha railway terminus across to the north side of Belcher's Island. From the south side of the same island the second bridge will span the Pearl River, its southern foundations being on the shore near the Shekwaitong railway terminal. There will have to be a slight extension of the tracks of the two railways, and tracks will have to be laid across, and between the two bridges. When this work has been finished, without changing cars passengers can go from Samshui clear through to Shiukwan, and eventually will be able to reach the city of Hankow. These twin structures will be of the swing-span type. There is to be a drawbridge provided, but only in one section. \$3,500,000 will have been expended before these bridges are finally opened.

WHAMPOA HARBOUR-SCHEME.

In addition to reclamation-work along the Pearl River, where about 500,000 square feet of land is to be made available and a bund

3,800 feet in length built by the Municipality of Canton, there is a much larger scheme being planned at Whampoa, twelve miles from the city, where it is proposed to develop a deep-water port for ocean liners. This idea was put forward years ago by Dr. Sun Yat-Sen, but for various reasons has remained in the blue-print stage. The provincial and municipal authorities, however, have been recently giving very close attention to this scheme, and are determined to proceed with plans for its execution. The cost is estimated at approximately \$40,000,000, an expenditure which, while large, would mean that direct contact would be established between Canton and overseas shipping. Engineers who have surveyed the site are of opinion that Whampoa could be developed into a first-class harbour, and ships which now load and discharge South China freight at Hongkong for transshipment to Canton could proceed instead to Whampoa. The completion of the Canton-Hankow railway (which is expected to be accomplished within two years) will also make a great difference to the position of Canton as a commercial centre. Domestic, import, and export freight from Szechuan, Hupeh, Hunan, and Southern Kiangsi can be handled by rail through Canton instead of going round by sea, via Shanghai, as at present. By utilizing the Canton-Hankow railway for such traffic, a saving in time of from five to seven days would be effected, and the risk of damage and loss arising from numerous handlings would be greatly reduced, assuming that the railway were extended from Canton for a dozen miles to the deep-water docks at Whampoa. Completion of the Canton-Hankow railway, and construction of Whampoa harbour, will make a tremendous difference to the commercial importance of Canton, now dependent upon Hongkong as a link with oversea shipping services, and it is only a matter of time before this long-contemplated plan is put into execution.

The Whampoa scheme is included in Canton's Three-Year Reconstruction Plan, but carried out in stages will take fifty years to complete. No dredging is contemplated within the initial period. Skirting 4,200 feet of waterfront, concrete piles are to be sunk, the spaces between being filled in with stone to form a bund. Four public godowns are to be constructed, and private wharves may be built, so that before five years there will be increased facilities for handling shipping at Whampoa. At low tide, the harbour is to be at least 20 feet deep in all parts. Dredges will increase the depth where required, but this

work will be in the second stage. Public docks will be provided during this stage, which will cover ten years.

From a depth of 20 feet, the bottom of the harbour will be lowered before the third period (which will be of 15 years duration) has expired, so that when the tide is out the water will be 27 feet deep over an area of 7,924,000 square metres. Permanent buildings to house the Port Administrator are to be erected during this stage.

An area of 4,298,000 square metres will be further deepened during the last of the four periods, this one lasting 20 years, to take the depth to 30 feet. Drydocks, more wharves and godowns are to be provided.

HAICHOW HARBOUR.

The North-Western trunk line, known as the Lung-Hai railway, which will eventually be extended in a westerly direction to link up with the overland route to Europe, has its eastern terminal at Haichow, on the coast of Kiangsu, about 130 miles south of Tsingtao, and 380 miles north of Shanghai. There are some who believe that what is now a tiny fishing-village will some day become one of the greatest ports in China—if not the greatest. Plans have been made to build a harbour capable of accommodating the largest ships afloat, but for the time being, work is being carried on with more modest ends in view—a harbour which will allow ships of 3,000 tons to enter at low tide, but which will be available at high water to vessels up to 6,000 tons. The work now being done by the Netherlands Harbour Works Co. is being carried out in such a way that, when practicable to do so, the original, and much larger, plans can be completed. The work now in hand will cost about \$3,000,000, but the complete plan naturally calls for the expenditure of a much larger amount. The general idea behind the Haichow harbour scheme is to make that port the gateway to North and West China, at which deep-sea shipping can load and discharge freight from and for the vast area which will be opened up when the Lung-Hai railway is completed, and becomes the greatest trunk line of China. Simultaneously with the construction of the harbour works, the Lung-Hai railway has been building about 28 kilometres of track to connect the main line from a point east of Sinpu station to the harbour site. The harbour was recently opened to shipping.

HANGCHOW AS HOLIDAY CENTRE.

Extensive plans have been prepared by the Chekiang Provincial

Government for the development of the picturesque city of Hangchow as a tourist centre. Over 600 miles of good modern highways have been already opened in the province, a bridge costing \$5,000,000 is to be built across the Chientang river (carrying railway, motor, and pedestrian traffic, as described in a previous chapter), a golf-course, race-track, and swimming-pool are to be built in Hangchow, which city is the hub of eight provincial highways along which pleasure-seekers may tour with pleasure, and business enterprises trade with profit. The idea is to make Chekiang the "playground of China," and already it is possible to motor with comfort and safety to a large number of picturesque places which were formerly difficult of access, though famous for centuries for their natural beauty and historic associations.

These modern highways will greatly popularize touring in Chekiang Province, and by reason of its proximity to Shanghai many motorists from that city are expected to visit Hangchow and other famous beauty-spots now that the Tourist Association is definitely laying itself out to attract visitors and provide for their comfort and convenience. Many improvements have been made in and around Hangchow for the purpose of adding to the natural attractions of this famous holiday-resort, and with the building of half-a-dozen new hotels along the highways, there will be ample accommodation available for visitors. With eight main roads leading to Hangchow from adjoining provinces, it is expected that the stream of holiday-makers flowing toward the West Lake will be large at almost all seasons of the year, especially from Shanghai, in which area there are few places within easy reach for those in need of a brief vacation and a change of air and scene.

TSINGTAO.

This important port in North China is also becoming an increasingly popular summer-resort. Its white sandy beaches, blue water, beautiful mountain scenery, and invigorating climate are but a few of its attractions. The local government has been untiring in its efforts to make the place attractive to visitors. The streets and public buildings are kept very clean, traffic is well regulated, and efficient police protection is given. Good roads are being constantly constructed, and those in and around the city are all surfaced with asphalt. There are also several newly-built highways connecting Tsingtao with other large towns of the province. It is now possible to reach, by car, Weihsien in eight hours, Huanghsien in

nine hours, Shaho in five hours, and Haiyang in six hours. Tsingtao can now also boast of a \$360,000 new dry-dock which can accommodate vessels of 5,000 tons. It is 480 feet long and the width of its entrance gate at the top is 75 feet and at the bottom 59 feet.

NANCHANG.

This capital of Kiangsi Province has undergone many great changes for the better since General Chiang Kai-Shih made his Headquarters there in connection with the operations for suppressing Communist-banditry. Broad, paved streets have replaced the narrow ones; the old city wall has been demolished and a wide boulevard is being constructed to take its place; a huge public park has been laid out; the lake has been drained of silt and numerous buildings are being put up, among which are branches of the leading Chinese banks. At present the two main roads are the Chungshan Road and the Teh-shing Lu (Victory Boulevard).

A bridge, to be called the Chungcheng Bridge (in honour of General Chiang), is being built and will be completed this year. The planning, engineering and construction work of the bridge is entirely in Chinese hands. When completed, it will have 56 arches, a total length of 1080 metres, a roadway $5\frac{1}{2}$ metres wide for vehicular and heavy traffic, and side-walks for pedestrians, $1\frac{1}{2}$ metres wide on either side. The entire structure is estimated to cost \$640,000. Municipal reconstruction is proceeding apace in many other directions as well. The land Administration Bureau has launched upon an extensive survey of agricultural land. The entire Municipal area and a considerable extent of its environs have been newly re-mapped, with the result that the jurisdiction of the Municipality has been extended ten-fold. As to water-supply, the present installations in the water-works have an output of 100,000 gallons per day of pure drinking water. But, in order that this most important necessity of good health shall be readily and abundantly available to everybody, extension of the plant will soon be taken in hand to increase the capacity supply to 6,000,000 gallons a day. Other public works include a sewage system, now being laid, completion of which is expected by the end of 1936. Business and industrial expansion is already making the existing electric power plant inadequate, and a 1,000-kilowatt installation has recently been added, which will be further increased to 3,000 kilowatt in another couple of years. The telephone service has proved popular beyond expectations. Scientific town-planning will ensure that

Nanchang's growth shall proceed along the most systematic and healthy lines.

A new residential district is rising up according to these plans, and in the opposite direction, a poor-house for the city's unfortunates is also being built. Construction work has been begun on the Communications Office. In the heart of the Central Park is a Central Hall which has an open, oval-shaped stage capable of accommodating several hundred persons, and free concerts are given here regularly by amateurs. Two new railway lines are being constructed with Nanchang as the centre, one going to Pinghsiang, Hunan, (which is connected with the Canton-Hankow line), and the other to Yushan, on the Kiangsi-Chekiang border, which is connected with Shanghai by the Shanghai-Hangchow line and the Yushan-Hangchow line. When completed these two lines will serve both halves of the province.

PEIPING AS A TOURIST RESORT.

Efforts are being made to develop the immense possibilities of tourist traffic in Peiping, and the Mayor of the former capital has drawn up a three-year plan which will involve the expenditure of 2½ million dollars, and is designed to attract visitors to that city—a plan which is already approved by the Central Government. Briefly, the idea is to bring all places of interest under direct or indirect Municipal control. At present there is considerable confusion and division of authority in regard to the administration and maintenance of historic places and scenic spots in and around Peiping. Palaces, temples, museums, parks, and gardens are to be brought under the direct administration of the Municipality, which will undertake to keep such places in good repair and also provide for the construction of modern roads which will facilitate the use of motor-cars for the convenience of visitors. Attention is also to be given to the matter of hotel accommodation. There are already several first-class foreign-style hotels in Peiping, but there is room for more, and especially in typical Chinese-style buildings equipped with all the modern conveniences expected by foreign visitors. About 154 million dollars are to be spent on road construction within the next three years, and it is possible that the former Presidential Palace on the South and Middle Lakes may be converted into an hotel for the accommodation of tourists. It is estimated that this building could be made to accommodate 800 visitors, but an expenditure of

about \$750,000 would be needed on alterations and repairs, improvement of roads, rebuilding of jetties, and dredging the lake.

It is also planned to build a theatre with seating capacity for 2,500 persons on a site near the former Presidential Palace, which it is estimated would cost about \$500,000. Designs have been called for from architects, who are given a free hand in regard to interior arrangements, but must adopt a facade typical of ancient Chinese architecture. The Mayor's plan also includes the establishment of a Tourist Bureau whose activities will be very comprehensive, undertaking not only the usual duties connected with travel service and the supply of interpreters and guides, but will be responsible for the management of the hotel, theatre, restaurants and the sale of locally-produced goods likely to appeal to visitors as souvenirs. It is proposed to establish this Bureau with a capital of \$2,000,000, 35% of which will be subscribed by the Municipal Government, 35% by public subscription and 30% by the railways serving Peiping.

Altogether the Peiping Municipality under this scheme will have to raise about $2\frac{1}{2}$ million dollars, of which over half a million will be spent on repairs and renovations to historic buildings, $1\frac{1}{4}$ million for road construction and about three-quarters of a million as its share in the capital of the Tourist Bureau. The Ministry of Finance has been approached with a view to obtaining the necessary grants, either directly or by local taxation. Meanwhile the Ministry of Railways has already contributed \$200,000, and the Finance Ministry a similar sum in order to enable immediate steps to be taken toward execution of the plan for developing the resources of Peiping as a sight-seeing centre.

CHAPTER XVII.
NATIONAL DEFENCE.

IT is sometimes said that China has more fighting men than any other country in the world, variously estimated by critics of her alleged "militarism" at from two to five millions. This is one of the many half-truths frequently utilized in making disparaging references to China, together with the other silly legend that Chinese soldiers stop fighting when a shower of rain damps their military ardour. It is unfortunately quite true that an enormous number of men in China are banded together in what are known as "armies", and that the problem of disbanding these forces is a very difficult one, but like the other disastrous inheritances of the monarchical and *quasi-icudal* regime, this question is being slowly but surely dealt with, as will be shown later. As for the qualities of the Chinese as soldiers, it is worth while quoting the opinion of General Chiang Kai-Shih, Chairman of the Military Affairs Commission, the highest military organ in China, in reply to a recent interviewer who asked "if the Chinese people, spiritually, morally, and physically, are potentially first-rate soldiers". General Chiang's answer to the American journalist who put this question was: "They unquestionably are. They are loyal and courageous, and willingly lay down their lives for a worthy cause. Physically, they can endure indefinite hardship. Some, to be sure, are better fitted to fight than others. Particularly, the natives of Shantung, Honan, and Hunan, and of part of Chekiang, Kwangtung, and Kwangsi, embody fine military material, needing only scientific training." In reply to a further question: "Is the rise of a great national army in China a necessity of Chinese political consolidation, and economic reconstruction?" General Chiang replied: "No. China's deepest passion is for peace. Militarist megalomania never has charmed us. We entertain no designs of aggression against our neighbours. Neither do we desire to maintain a big army for domestic purposes. Steps already are being taken to reorganize and reduce the large existing forces mobilized for bandit-suppression. We shall have an army only **large enough to ensure law and order at home and to defend our**

sovereign rights in case of necessity. For political consolidation depends upon popular education, and upon zealous co-operation among the leaders, not upon armed force." And having thus cleared up one or two general points, we may proceed to a more detailed study of China's defence forces.

CHINA'S LACK OF MILITARY TRADITION.

The late Party Leader (Dr. Sun Yat-Sen) once said that the people must possess capacity for self-defence and self-government as well as adequate education. To enhance the people's ability of self-defence, various systems have, from time to time, been devised and adopted. The most efficacious was devised by Wang An-Shih in the Sung dynasty (960-1179 A. D.) and is generally known as the *Pao-Chia* (mutual guarantee) system, whereby the community is held responsible for the conduct of the individual, and for the maintenance of peace and order in the area. This system is being revived in various parts of the country with a view to increasing the strength of the local militia in districts where banditry and lawlessness exists.

One of the most pronounced characteristics of China's history has been the lack of any real military tradition. For the last two hundred years, at least, she has never possessed, for any considerable length of time, a really efficient standing army, one which could be held to symbolize properly her power and prestige—one in which her people could take a proper martial pride. China has always preferred to pursue the arts of peace rather than those of war, an attitude of mind which has revealed itself in the common contempt in which, until very recently, the soldier's trade was held—an attitude of mind which has also passed over, to a not inconsiderable extent, to the present generation. "Good iron should not be used for making nails, nor should good men be employed as soldiers" went the old saying, and it was this philosophy which accounts very largely for the fact that even when, under the stress of the times, a good fighting force was created, it rapidly deteriorated once the emergency which called it into being was over. Thus, although immediately after the overthrow of the Mongols the country did possess a spirited national army, it was not long before it had become hopelessly inefficient. The Manchus, on overthrowing the Ming dynasty, kept on the old system, but buttressed it with their own Banner forces. In time, however, these sank to the same low level as the other troops, so that by the end of the 18th century the country once again possessed no

army worthy of the name—so much so, indeed, that when rebellions broke out in Hupeh and Szechuan, they had to be put down by specially-enlisted recruits. These troops, however, despite the fact that they showed themselves worthy fighters, were disbanded once they had served their immediate purpose, and so, when revolt broke out again some years later, again special troops had to be recruited to put down the trouble, and recover Kansu and Chinese Turkestan.

The army that thus failed so lamentably to justify itself was composed of two elements, (1) the Eight Banners, (2) the so-called "Green Flag" troops. The former were made up of the descendants of the Manchu garrisons which had been stationed in practically all the important towns of the country. They were commanded by Tartar Generals, and had various privileges as to pay, support, etc., but, whatever their military value in the early days, by the middle of the 19th century they had long since become utterly worthless; "untrained, undisciplined, cowardly," is how one candid observer described them. The second class of troops were provincial forces maintained by the Viceroy of the respective provinces, and supported by them out of provincial revenues. These also were of little, if any, military value.

Against trained Western troops, with their far superior equipment, forces such as these could be of no possible avail, hence the sorry tale of the 19th century, with its long record of treaties and concessions forced from China by the Western Powers at the pistol's point. But in spite of defeat, and humiliation coming on top of defeat, nothing was done to improve matters—save for a few abortive efforts by Li Hung-Chang under the influence of a British soldier, General Gordon—until the crowning disaster of the Sino-Japanese War in 1895, which drove the lesson too bitterly home for it to be disregarded any longer. Then Li Hung-Chang got definite orders to reorganize the army on modern lines, and the first real steps were taken towards the creation of an efficient national defence force. The driving force in all that was done in the next 20 years was Yuan Shih-Kai. By 1899 he had succeeded in creating one good Division. In that year Admiral Lord Charles Beresford paid a visit to China, and his report gives an interesting picture of the army in those days. The "Banner" and "Green Flag" troops were still in existence and as inefficient as ever, but with them the "Model Army," as it was called, was growing up, though, except for one Division stationed in Chihli under Yuan Shih-Kai's direct control, it was far from

"Model." His Division was the only force complete in all details to be found throughout the length and breadth of China; in particular it was the only one that had any target practice to speak of. Nor were other Divisions always up to strength—except on paper. Generals drew pay and allowances for 10,000 men, but often only had a tenth of that number actually enrolled. When inspections took place, coolies were pressed into a day or two's service to fill up the ranks, a state of affairs which is reminiscent of 17th and 18th century Europe—"squeeze" being, after all, not a purely Chinese failing. However, although he speaks so harshly of the organization, Lord Charles Beresford spoke highly of the Chinese as military raw material. "They make," he said, "splendid soldiers, easily managed, quick at learning, brave." Lord Charles, it may be noticed in passing, also praised the Military College for Officers which had been founded in 1895.

A decree ordering further reorganization was issued in 1901, and by 1906 six Divisions had been got more or less into shape. In that year a comprehensive scheme was drawn up whereby in the next 10 years the six Divisions were to be raised to 36. In 1907 they were ordered to be ready in 1912, and by 1911, 12 had been created, along with 19 Mixed Brigades. In that year the Chinese army could be divided into three sections. (1) The new troops 240,000 strong, modern drilled, well equipped, and officered by men trained in the military schools. (2) The remnants of the "Eight Banners" and (3) the old-style "Green Flag" troops. Orders had been given for the disbandment of these latter units, but the Viceroys had taken very little notice. Between the first and the third very little love was lost. The "Model Army," which by 1911 was coming to deserve its name, despised the provincial levies, and these, in turn, hated their better-paid brothers in arms.

THE CREATION OF A MODERN ARMY.

Then came the Revolution, and after the Revolution civil strife. The Republican Government of 1912 promulgated an official military system under a Ministry of War. The Banner Troops had now disappeared—mostly eliminated in the revolutionary troubles, and attention was concentrated on the new army, though the provincial troops still remained. By 1914 there were 31 Divisions and 19 Mixed Brigades. Of this force about one third were personally attached to Yuan Shih-Kai, another third were Northern troops but not Yuan Shih-Kai's personal adherents, and the remaining third formed the army in the South. This last was

largely under the influence of Dr. Sun Yat-Sen who, subsequently in 1923, founded the Whampoa Military Academy, from which came officers inspired with a new spirit and a new conception of duty. These formed the core of the Revolutionary Army which in 1926-28 overthrew the Northern Militarists. The system of military education was entirely reformed. A Military Council was established under the civilian Wang Ching-Wei as Chairman, with General Chiang Kai-Shih as Commander-in-Chief on the field during the period of military operations. In addition to military instructors, there were political officials charged with the task of teaching officers and soldiers alike the full meaning of the rights and duties of revolutionary citizenship. A new spirit thus animated the units of the new armies which came from Canton (but were not necessarily or even predominantly Cantonese); the soldier ceased to be a mere machine, a tool; he no longer fought for the exclusive interests of his superior chiefs, but became a citizen-soldier fighting for an ideal, for the triumph of the Revolution—the prelude to the establishment of democratic Government. Among foreign missionaries and business-men, there were many who were pleased to find in the new military units an entirely different class of men, from whose eyes "shone a new flame," as they put it. The mercenary bands, however, still formed a substantial part of the Chinese national army, not always subject to rigorous training and discipline; thus occasionally excesses were committed, which the Chinese themselves were the first to deplore.

During the years following the overthrow of Yuan Shih-Kai's *quasi*-monarchical regime, China's military forces had become tremendously swollen, and most of the country's sufferings could be ascribed to this perverted militarism, which not only bled the country white financially, but prevented the establishment of any strong central authority. There is this, however, to be said on the credit side, that it did produce a large number of Chinese soldiers trained to some degree, at least, in the theory and practice of modern warfare; brought large quantities of military equipment into the country, and along with it facilities for making the same at home; created a military spirit in the population; and it is undoubtedly true that all these represented a gain to a China which was fighting, and still has to fight, to secure her rightful place in the world. In the long run, it has only been by demonstrations, even if only indirectly, of potential military strength that she has persuaded the Western Powers to agree to revisions of the so-called "uniquel treaties."

DOOM OF THE NEO-MILITARISTS.

In 1926-28 the successes of the Kuo-Min Tang troops had driven the first nail into the coffin of the *Tuchun* system. In those years an army inspired by national motives had taken the field and succeeded in establishing the National Government. From that date it has gone on from success to success, wiping the war-lords and neo-militarists one by one from the Chinese military map; forcing them either to disband their troops or incorporating these latter in the national ranks. The evil has not yet been entirely eradicated, it is true; in remoter provinces Generals are still inclined to pay but nominal allegiance to the Central Government, but the days have gone when military men could look on themselves as virtual autocrats of three or four provinces, could defy with impunity instructions from the capital, could raise the banner of independence and revolt with any hope of success. Nor can disgruntled troops and disaffected Generals break away as they used to do, or blackmail the Government with threats of breaking away. The ease with which the Fukien revolt was crushed, in 1933, was an admirable and most salutary lesson, demonstrating very clearly the efficiency of the military machine now at the disposal of the Central Government.

Without being blind, therefore, to the fact that a certain looseness of central control still remains, that the provincial jealousies which were noted by observers in the old Manchu days still operate, and that in some cases armies still tend to be the personal retainers of their immediate leaders, rather than loyal sub-divisions of a national defence force, one can nevertheless say that China now possesses a really national army, and that being so it will be as well to proceed to account in some detail its organization, equipment, and personnel.

MILITARY ORGANIZATION.

A Ministry of Military Affairs was set up in 1928 to take charge of the army, but this has made very few changes in the theoretical details of organization, recruitment, etc., laid down by previous Governments. The infantry unit is the Regiment, some 2,250 strong, made up of three Battalions and a trench-mortar battery. Two Regiments form a Brigade. A Division is the highest single command, and is of various types, the most popular being made up of two or three Infantry Brigades, one squadron of cavalry, and three batteries of artillery along with engineers and other auxiliary troops, making a total strength of approximately 12,000. The popular tactical unit is the Army—i.e. any Army

Corps, Army Group, or Route Army—an Army comprising anything from one to six Divisions. There is a proper roster of Regiments and Divisions, and the fact of any particular body being aligned for the time being with anti-Government forces has not meant its being struck off this roster, since there has always been the probability of its returning eventually to its proper allegiance.

Recruitment is voluntary, at least there is no legalized form of conscription, although the system has been adopted in principle, and regulations laid down in 1919 still remain theoretically in force. Under these, men join up for a term of three years, to be followed by three in the First Reserve, and a further period in the Second Reserve. Recruits should be between the ages of 21 and 25, be of a minimum height of 5 ft. 6 in. (slightly less in the Southern provinces) and able to undergo satisfactorily certain physical tests. Officers were to come into the army after a course of three years at a military primary school, two years at a military middle school, followed by six months practical training, and then another two years at a military high school.

In actual practice, however, many cadets became officers straight from the military primary schools, while in the armies of the provincial and local war-lords, promotion was mainly from the ranks or from among the leader's personal friends. The regulations, in fact, remained as a body, largely a dead letter. Local war-lords raised troops as they thought fit, often the designation of a Regiment on the national roster was disregarded, units preferring to be known as such and such a Battalion of such and such a General's army. Insignia of rank and identifications marks, as to unit or branch, were also rarely used in their proper completeness, arm-bands being a favourite device for distinguishing one body from another. Only gradually, with the subordination of all to the Central military authorities, has order been brought out of chaos.

The standard uniform is of grey cotton, quilted for warmth in winter. Some crack units are supplied with blankets and waterproof sheets, but apart from this there can be said to be no definite standard. Troops vary in their clothing and impedimenta very much according to the area in which they are stationed, their immediate activities, and the financial resources at their disposal.

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dozen different makes being in use—6.5mm Mannlichers, 6.5mm and 7.9mm Japanese, 6.8 and 7.9 Mausers, and 3-line Russian. The bayonet is light and short, acting as a cutting as well as thrusting weapon, the commonest model being Austrian, 10 inches long and one inch wide. Machine-guns are very popular, being manufactured even in many of the provincial arsenals, though often of a very out-of-date pattern. Old-style Maxims, Hotchkiss, German Pack, Rex, and Japanese air-cooled are among those in use. Krupp 75mm., Greyson 57mm. and 75mm., Arisaka 75mm., Schneider-Creusot 75mm., and Hotchkiss 37mm. are among the field and mountain-guns with which the artillery is equipped. There is practically no heavy artillery. Trench-mortars have become popular in the last few years; as has been seen, there is a battery of these attached to every regiment. Armoured trains are a favourite part of an army's equipment, and there are also a good few armoured-cars. Transport arrangements are probably the weakest point of most commands—save in rare instances, an army has a very inadequate fleet of lorries and motor-ambulances at its disposal. When it has to move, the great bulk of the baggage has to be hauled on conveyances and animals commandeered from the peasantry, who in the past often received very little compensation. A distinct improvement, however, has to be noted in this respect during the last two or three years, as also in the arrangements for dealing with the sick and wounded.

At the present time, Chinese troops are armed and equipped largely with material imported from abroad, but there are a number of arsenals engaged in the manufacture of munitions in China. There are in all, perhaps, twenty odd of these, but the majority are small and ill-equipped, being often industrial establishments converted in a hasty and makeshift manner for the purpose by some private General or provincial Governor. They do not all turn out the same type of arms and ammunition, a number of foreign and usually out-of-date models being imitated.

The strength of the army at the present time is approximately 1,876,000 men. Of these, 1,132,000 (including an air-force of 2,100) are directly under the National Government. The remainder are so-called Provincial Defence Forces, maintained by the provinces with a subsidy from the Central Government.

This represents a large, indeed an enormous, military force, but its numerical strength far exceeds its fighting potentiality. In the first place, there is the question of finding officers, especially those capable of holding

the higher positions. The existing training academies cannot meet the demand, and it has already been seen how the stipulated courses have been abbreviated, if not dispensed with altogether. A great part of China's forces still consist of erstwhile "war-lord" troops, whose officers often have had no military education at all, save that obtained by rule of thumb on the field of civil war. The institution of a Central Military Academy at Nanking, which takes in 3,000 candidates annually from the middle schools all over the country, is a step in the right direction, while the Staff College at Nanking which takes 100 candidates yearly, selected by competitive examination from nominees by Divisional Commanders, will, as time goes by, be a good way towards supplying the efficient staff on which success in the field so much depends.

MILITARY TRAINING FOR STUDENTS.

Taking advantage of the 1934-5 winter recess, 430 students, representing over 30 colleges and higher middle schools in Peiping, enrolled in a class of military training specially opened for them by General Kwan Ling-Tseng, Commander of the 25th Division, in his barracks at Peiyuan. General Kwan, in an address to these young men, asked them to forget their identity as students and consider themselves as soldiers who had just enlisted, reminding them that life in the army was entirely different from college life, and that they must learn to endure hardships. Most of the students had already received some military training in their respective schools, but in order to prepare for service in the event of a fresh national crisis decided to undergo another period of training in General Kwan's army.

Compulsory military training has been introduced into Chinese colleges and higher middle schools since the Mukden "Incident" of September 18, 1931, exposed the weakness of China. According to the regulations of the Ministry of Education, every high school or college student is required to have at least three hours of military training each week throughout the academic year. In addition he has to undergo a month of military training during the summer vacation. A recent order issued by the Ministry states that all first-year students in higher middle schools are required to undergo three months' military training as from April 1, 1935. The authorities of the various schools concerned throughout the country have been instructed to wind up the work of their students before that date. From Tientsin comes word that 2,500 Hopei higher middle first-year students will gather at Paoting in April and

receive three months military training. The old military barracks at Paoting are being prepared for this purpose, and during the period of training students will live the life of an ordinary soldier.

Another great weakness is the dependence on outside sources for arms and equipment. A great deal, too, of what China has is very inferior compared with other national armies, while its diversity has already been referred to. Standardization in favour of a modern rifle, and provision for its manufacture and the manufacture of ammunition within the country are urgently needed. A standard modern machine-gun is also badly wanted. In artillery again, especially heavy artillery, and the means of manufacturing it, China is woefully deficient. A great deal, in fact, remains to be done before China will be able to boast an army worthy of her. Money is, of course, the key to the situation. Yet, even as it is, the size of her military budget is a constant source of complaint and criticism. But with much less expenditure far better results could be obtained. Disbandment of a very large proportion of the present troops is long overdue. A small, compact force, well disciplined, well equipped, and under strict Central control, would in the long run cost China far less than the present swollen and unwieldy organization, and prove far more efficient.

THE RANK AND FILE.

Finally, what of the man in the ranks—on whom, when all is said and done, everything ultimately depends? All observers, Chinese and foreign, combine to praise him. There is no better fighting material when properly handled. Once disciplined the Chinese soldier remains so, as long as he is under proper command. He respects his superiors. He bears without murmur the hardships to which he is subjected. Unpaid, he does not claim his due, satisfied with having something to eat when he is hungry. The camps are to him refuge, where he lives without preoccupations. He has a surprising power of resistance. Privations do not frighten him. Badly clothed, poorly nourished, frozen with cold or suffocated with heat, he does his work at the call of duty. To appreciate his military value and his morale one has to consider his origin and the mode of recruiting. And in judging him by comparison with the Western soldier of different training and mentality, one has riot always been just to him.

Of his courage and spirit he has given ample proof on more than one occasion, one of the most recent being during the Japanese attack on

Shanghai in 1932, when the (former) 19th Route Army and the 5th Army astounded everyone by the gallant resistance put up against overwhelming military superiority. Wearing cotton-padded uniforms, carrying merely a scanty supply of biscuits, quenching their thirst only when Waterboys could reach them during lulls in the fighting, Chinese soldiers were known to have been fighting in Kiangwan for 72 hours without relief. Heroes, they fought like demons in spite of heavy losses. Their spirit unbroken by hunger, thirst or cold, they refused to stop resisting the better-equipped and well-rested Japanese reinforcements. Many who were lightly wounded returned to the front as soon as their wounds were dressed; others who were seriously wounded doggedly continued to fire their rifles till they could hold them no longer. They never complained of overwork, they never grumbled over the lack of comfort.

In the long run it is the man, not the machine, which counts. China need never despair in her struggle to establish herself as an independent nation while she has soldiers animated by such a spirit as this. But it is up to her to give them a fair chance—to see that they meet their enemies on level terms, rather than leave them to wage an unequal struggle against others better armed and better equipped.

TRAGEDY OF THE NAVY.

Until 1863 China's navy—if navy it could be called—consisted of old-fashioned war-junks, which left her about as well-prepared for a contest with the Western Powers as a Saxon bowman would be for fight with a man armed with a modern rifle. In that year a flotilla of gunboats was purchased by the then head of the Customs, but due to a dispute arising over the matter of their control, they were resold almost at once. The example, however, had been given, and in the course of the next thirty years a fleet of some 47 vessels, many of quite modern type, was built up, naval colleges founded to train officers, and an Admiral appointed in command. At the same time, however, each province maintained its own portion of the navy independent of the Central Government, so it is not surprising that, while making a brave show on paper, this fleet should fail badly when put to the test, first in 1884, when all vessels were sunk in the Min River by the French, and later, in the Sino-Japanese War, in which the Northern Squadron of 20, comprising some of China's most modern vessels, was either destroyed or captured by the Japanese. But it would not be fair to blame this defeat on the personnel of the navy. Neither officers nor

men showed themselves deficient in courage; they had both, too, received much careful training. Official corruption, combined with the vanity and ignorance of the naval authorities ashore, were the causes of this disaster, along with the sectionalism which led the captain of a ship belonging to another portion of the navy to demand, when captured, to be set free, on the ground that he was not attached to the Northern Squadron, which alone, he said, was at war with Japan!

From this set-back China, it is hardly going too far to say, never completely recovered. Save for the purchase of four light cruisers in 1897-8, little was done under the Empire to repair the damage done in 1895. Lord Charles Beresford in 1899, while praising the work of the Imperial Naval College, could find little good to say of the navy itself—the fleet of 24 ships was under-manned and badly cared for, and the waste of money was terrible. This, perhaps, is hardly to be wondered at, when it is remembered that the Empress Dowager was misappropriating the funds voted for the purchase of modern ships to erect the Summer Palace at Peking (Peiping).

With the Revolution there came hopes of an improvement, and an official system was promulgated in 1912, but these hopes were doomed to disappointment. In 1916 the personnel was about some 6,000 officers and men, manning a fleet of four cruisers, 19 gunboats of various descriptions, 10 torpedo-boats, and three destroyers—all these vessels being old, small, and out-of-date. During the civil wars there was, naturally, no improvement. The navy played very little part in them, and the rival war-lords were not concerned about a fighting instrument which could be of very little, if any, use to them. Thus there was none of the expansion which has been noticed during the same period in the army—the navy simply stagnated. Indeed, in 1926 the Peking Government actually abolished the Ministry of the Navy. Hardly any money was available, ships were docked very infrequently, and very little was spent on repairs, and the result showed itself in greatly decreased speeds. When in 1927 the National Government came into existence it found a fleet of some 40,000 tons of obsolete vessels (four cruisers by then over 30 years old, 52 gunboats, four destroyers, and eight torpedo-boats).

REORGANIZING THE NAVY.

The triumph of the Kuo-Min Tang put fresh life into this as into every other Department of the Government. A Naval Ministry was inaugurated in 1928, and the process of slow deterioration was check-

ed. At last, in fact, the navy began to move forward. In the first place attention was given to the much-needed training. A British Naval Mission visited the country, and arrangements were made for sending Chinese cadets to England for instruction. Between 1929 and 1932, 34 young officers were sent to that country for training in seamanship, and another five to study dockyard work. At the same time British instructors were engaged for the Naval College at Mamoi, while a new naval college is to be erected at Nimrod Sound.

With regard to the possibilities of building up an efficient navy, it is worth while quoting a glowing tribute to the seamanlike qualities of the Chinese, paid by Captain J. A. Morse leaving London in November, 1934, to take up his appointment as advisor to the Chinese Navy. "The Chinese are wonderful seamen and their ships are spotlessly clean," he said in an interview on the eve of his departure. "There is nothing I can possibly instruct or advise them about in that respect. My duties will be to advise the Chinese Navy on questions of sea-work and tactical manoeuvres when at sea. I spent six enjoyable months on the China station in 1928. The Chinese naval officers are a fine lot of chaps, and practically all of them speak perfect English." Captain Morse is now serving Admiral Chen Shao-Kuan, Minister for the Navy, who underwent a period of training with the British Navy in his younger days, and served with the British Fleet during the Great War.

Since 1928 the fleet has steadily been improved. Old ships have been docked and repaired, and many have been rebuilt and reconditioned. A number of new vessels have been added to it in the form of 6 gunboats built at Kiangnan. The question of China's naval needs has been systematically gone into, and it has been decided that a navy of 71, including capital ships, cruisers, destroyers, submarines and aircraft-carriers, should be aimed at, with an auxiliary fleet, 34 strong, of minesweepers, etc. At the moment this, of course, merely represents a scheme; the more immediate aim is a programme providing for 3 additional new cruisers, 2 shallow water gunboats, 2 surveying ships, and 1 aircraft-carrier, and the overhauling of the existing ships, which will be accomplished during 1935.

RECENT NAVAL ACTIVITIES.

Progress has been made in a number of other directions. A naval hospital has been built at Shanghai, and a new dock at Kiangnan, while the mine and torpedo training-station and the naval barracks at Mamoi have been enlarged.

The aircraft factory in Shanghai turned out a number of planes. The history of the plant dates back to 1918, when the establishment was first erected at Foochow, Fukien. Since then 7 types of seaplanes and flying boats have been built with imported motors. Owing to financial difficulties, however, only 15 machines have been built, and all the machines are now in active service. The plant was removed to Shanghai in the spring of 1931. It is now staffed by 16 technical experts and more than 100 specially trained workers. In October, 1934, a new shop, which covers more than 10 *mow* of land, and in which 6 aeroplanes may be assembled at the same time, was opened. A new expansion plan, aims at manufacturing native aeroplanes at a low cost and with as few foreign materials as possible, capable of turning out 24 different types of aircraft, ranging from training planes to fighters and bombers.

The year 1934 witnessed satisfactory progress in the Chinese Navy in spite of the work being handicapped by lack of adequate finances. The construction of 10 gun-boats for coastal patrol work at the Kiangnan Dockyard, Shanghai, was planned for 1934. The "Hai Ning," "Fu Ning," "Sui Ning" and "Kiang Ning" were first completed and joined the fleet. The "Wei Ning" had been launched on October 10, 1933, and the "Sun Ning," sister ship of the "Wei Ning," was completed early 1934. Both gun-boats have been commissioned. The "Ping Hai" cruiser is still under construction and is expected to be completed soon for service in the Navy. The Kiangnan Dockyard in Shanghai constructed 4 more gunboats, the "Chung Ning," "Yih Ning," "Cheng Ning," "Chang Ning," and these ships were commissioned in October, 1934. Some creditable achievements have further been attained by the Naval Aviation Bureau. The first training and scouting plane, the "Kiang Chiao" was built early in 1934 and a round-the-country flight made in the machine by Captain V. L. Chen, chief of the Bureau. Two other planes, one of the "Moss" type, and the "Ning Hai II" were constructed by Chinese mechanics, using foreign engines and wood from Fukien for the wings.

In an attempt to train more technical men for the navy several senior officers have been sent to foreign countries to study engineering, wireless and aviation. Three men were sent to the United States, six to Italy and five to England. The Kiangnan Dockyard also commissioned three men to England for further studies.

Considerable progress has been made in the field of river and sea administration. Detailed charts have been published, while the

hydrographic department has done considerable work in surveying the sections near Shanghai, Swatow and Taichow-wan, while to aid naval ships and merchant vessels a publication on Storm Signals has been issued which is widely used by various ships as well as the Hongkong Observatory. Another publication known as the Light List gives mariners additional aid during night navigation along the coast.

Maintenance of peace and order and the suppression of piracy on the rivers and along the coast has been one of the most important problems which occupied the attention of the navy. On the Yangtze River the "Kiang Ching" and "Chu Tai" were sent to patrol the section at Fuchikow Tienkiachen and Weiyuenkow. Other gun-boats were commissioned to patrol the river at Wukiangchen, Paichow and Yangsen, as well as to rout the bandits causing considerable trouble in that section of the country. The marines also played an important part in fighting bandits and routing pirates on land in co-operation with the gun-boats, collaborating closely with the Coastguard Administration.

DEVELOPMENT OF THE AIR FORCE.

Military aviation began in China with the purchase of two planes by the Southern leaders in 1911. Later these were sent to Nanking, where they stimulated a great deal of interest, with the result that 12 more planes were bought in 1913, along with equipment for a flying school, and foreign instructors were engaged to train Chinese pilots. Not much more, however, was done until 1919 when the Government at Peiping bought six Handley-Page and 40 Vickers-Vimy machines. After this there was another period of stagnation. Most of these 46 machines were either captured by the Generals who from time to time proved victorious in the civil wars, or were wrecked.

Not until 1929-30, indeed, was there any considerable development. The National Government was quick to see the need for an air force, and the 32 machines it purchased in 1929 played a considerable part in its victories in the wars of 1929-30. Since then the air force has been steadily augmented. Especially great has been the progress in the last three years. In 1932 the Aviation Institute was placed under the Aviation Bureau and moved to Hangchow, which place is now the air force centre. Details as to the actual strength of this fleet are not ascertainable, but it is variously estimated at between 500 and 1000 machines for the whole country.

With the arrival at Canton in January, 1935, of large consignments

of American machinery for the manufacture of aeroplanes, the equipment was commenced of the new aircraft works at Shiukwan, which will cost over \$10,000,000. Motive power will be supplied by the hydro-electric plant at Yungyuen, south of Shiukwan. Until the completion of the Provincial Government's work, materials for making aircraft engines will have to be imported.

These, of course, would be no good without the men to fly them, so side by side with the purchase of these machines has gone the training of pilots. As on the land and on the sea, in the air the individual Chinese has shown himself, given the proper training and tools, no whit inferior to other races. Chinese pilots have earned high praise from their instructors, though the same cannot be always said of the ground and repair staff, whose duty it is to keep the planes in trim. The Chinese mechanic is sometimes rather too apt to "make do." He shows considerable and often praiseworthy ingenuity in improvising out of the most unlikely materials, but in handling aeroplanes "making do" will not do. Things have got to be just so, and this some mechanics apparently cannot or will not realize.

The newest of China's fighting services, the Air Force is probably also the most efficient. It has had the advantage of starting with a clean slate, of Central Government control and of efficient backing from a Government which fully realizes its importance. The aeroplane, indeed, seems likely to prove as great a unifying force in China as gunpowder proved to 15th century Europe. Just as that invention spelt the final end of the great feudal lords with their "liberties," and changed the suzerain into the sovereign, so the aeroplane, as the Fukien revolt showed, has given China's Government that military superiority on which firm administration has always in the first place had to rest.

From this brief survey it will be seen that China is far from being "the strong man armed who keepeth his house safe." As maritime power she does not, to all intents and purposes, exist. On land she has an army of great numerical strength, but in many other respects still inadequate in comparison with those of other Powers. In the air she is steadily getting together a fleet of modern aeroplanes and a corps of skilful and daring pilots to fly them, but here again it is only the nucleus of a fleet, inadequate to meet the needs of the country. In all three services, too, China is almost entirely dependent on other countries for weapons and equipment; she cannot as yet, manufacture these things at home, not,

at least, to an appreciable extent. Moreover, to complete the tale of woe, she has not the money to buy from abroad a tithe of what she needs.

Looked at in this light the picture is rather gloomy, unless the view is taken that the truest defence lies, not in arms, but in international accord—which no doubt it would do, if international accord seemed at all likely to be achieved. Unfortunately, there are no signs of this, and China has already learnt to her bitter cost the limitations of the League of Nations. She knows now that she will have to rely on her own unaided efforts, and the one bright spot is that her leaders and her people have learnt that lesson and are acting accordingly. China may be weak, but she is by no means so weak as she was only a bare half-dozen years ago. In the army, in the navy, and in the air force the National Government has brought about great improvements, and the process of reform is steadily going on. Every year sees her stronger, and the time will come when she will be able to face the world in the proud confidence that no one dare lightly disregard her wishes, still less seek to do her injury.

As this book goes to press some interesting references to the Chinese army and air-force appearing in a British newspaper in Hongkong come to notice which are worth a brief summary. Foreign experts, who have been in close contact with these services, and are thus well able to judge their merits, say of the air-force that "the Chinese, when properly selected, make pilots as good as any in the world." Nothing in the way of spectacular "stunts" was being attempted, but the young men under training were enthusiastic and intelligent and had flying ability. "There is no reason why the force should not become as good and efficient as any in the world provided it be given time to develop." In regard to the army, a military expert said it had improved immensely, particularly during the last two years. "You may see it in every soldier in the street. Their appearance has improved, they are in neat uniforms, Sam Brown belts, all the modern soldiers' equipment, and even in their faces you may see the new spirit. . . . The men of the Chinese Army are extremely willing, they will suffer hardship without complaining and they are clever. The younger soldiers are particularly eager to learn and they ask a thousand questions about the how and why." It was admitted that the Chinese soldier has yet a lot to learn, but there was no denying that the remarkable improvement during the last few years was a fact, and that the National Government now has a first-class fighting force at its disposal.

CHAPTER XVIII.

MISCELLANEOUS PROGRESS.

THE MARITIME CUSTOMS SERVICE.

THE life-blood of any Government is money. In the long run it is finance which decides whether Governments shall stand or fall. In this field the National Government has had a long and hard row to hoe, and to-day it can look over its record, if not with complete satisfaction, at least with the assurance that things are vastly better than they were seven years ago. For this satisfactory state of affairs no little credit is due to the work of the Customs Service, which has stood unshaken during all the turmoils and troubles, providing the Treasury with a constant and certain source of income.

The early history of the Maritime Customs is too well known to need recapitulating here, but a word or two may be said about post-Revolution developments. The period since 1911 can be conveniently divided into four parts:—(1) 1911-1914, from the Revolution to the Great War; (2) 1914-1921, from the outbreak of war to the Washington Conference; (3) 1921-1929, from the Washington Conference to Tariff Autonomy; (4) 1929-1935, from Tariff Autonomy to the present day.

During the first period the outstanding feature was the entrusting to the Service by the Government of the task, not only of assessing and rendering accounts of the duties to be collected, but also with collecting and paying them over to the Treasury. This necessitated an agreement between the Government and the foreign Powers, since the Customs receipts were pledged as security for payment of the Boxer Indemnity and interest on various loans.

It was during the second period that China developed her internal loan policy, which she was able to do since the disposal of surplus Customs revenue after meeting foreign loan charges and Boxer Indemnity commitments was left in the hands of the Chinese Government. At the same time there was a revision of import tariff rates to bring them up to an effective 5% *ad valorem*.

The third period opens with the signing of the Nine-Power Treaty

at Washington in 1922, as a result of which a Tariff Conference met in Peking in 1925. Although the conference dispersed without any agreement being definitely signed, certain resolutions were passed which have been tacitly taken to have the force of agreements. The two most important were that China should be granted Tariff Autonomy by 1929, and that she in her turn should abolish *likin*. In 1928 treaties were signed with the various Powers (except Japan, who waited to 1930 to conclude a new tariff treaty) whereby these resolutions were given effect. China had meanwhile been effecting a unilateral revision of rates which foreigners had seen it wise to pay, though not without considerable protest. It was during this period that the present Customs House was built at Shanghai, and at the same time a reorganization of the staff was taking place. More and more Chinese were being introduced into the Service, and promoted to the higher positions.

In February, 1929, a revised Import Tariff was put into operation and by May, 1933, China had gained complete tariff autonomy. This created a smuggling problem, and as a result specially constructed armed preventive-vessels had to be built to patrol the coasts. By the middle of 1935, there will be a fleet of 26 such ships for deep-sea work and a similar number for use on inland waters. Other changes included the following:—

1. Strengthening of the examining and appraising branch.
2. Institution of a Tariff Board of Enquiry and Appeal.
3. Calculation of duties in terms of a new unit, viz. the Customs Gold Unit.
4. Abolition of *likin*, transit dues, and coast trade duty.
5. Introduction of a bonding system.
6. Closing of all native Customs Houses. These had been notorious for mismanagement and corruption, and the Government decided in 1930 to hand them over to the control of the Maritime Customs. The first to be taken over was the Fengyang Native Customs, which is said to have been one of the most corrupt; large sums used to be paid for an appointment as Superintendent. Before control was transferred its average annual remittances to the Central Government for the years 1927-8-9 were under \$600,000. In the first icy; months of Customs control, remittances to the Central Government **amounted** to **nearly** \$1,400,000.

Other recent reforms include the following:—

1. Complete overhaul of all lights on the China coast. These have

been modernized and equipped with the latest apparatus.

2. Reorganization of the Statistical Department.
3. Creation of a Customs Library.
4. Removal of discrimination against Chinese personnel.
5. Institution of a system of travelling scholarships, whereby selected members of the Chinese staff are sent abroad to study the Customs services of other countries. It is the fixed policy of the Government to create a highly trained Chinese personnel, able to fill the highest and most responsible positions in the Service, and in this way such a staff is being built up.

The Customs Administration has now the reputation of being the most efficient revenue-collecting system in China. That efficiency is entirely due to the fact that it functions as an integral unit and that security of tenure is enjoyed by the staff.

THE MARITIME CUSTOMS A CHINESE INSTITUTION.

On the occasion of a presentation to Mr. T. V. Soong in November, 1933, on his resignation of the post of Minister of Finance, the former Minister made some complimentary references to the loyalty of the Customs Staff, from Sir Frederick Maze, the Inspector-General, downward. Some of the remarks made by Mr. Soong are worth quoting here in full, as they refer to events of historic interest:—

"Upon leaving the Ministry of Finance, it will, I think, be pertinent for me to mention certain facts which have not been well understood by the general public. At the time that the National Government was removed to Nanking, many grievances were harboured against the Customs Service by the Government and people. It was said that the Customs had become an *imperium in imperio*; that it was an adjunct of Legation Street; that the word of the Inspector-General had become law in national finances; that the Inspector-General had played the role of King-maker to every Finance Minister at Peking; that Customs funds were deposited almost *in toto* with foreign banking institutions, and had served merely to build up their strength and credit to the neglect of Chinese banks; and that the higher ranks of the Service were exclusively occupied by foreigners and were not open to Chinese.

"In consequence of these grievances, there was a deep-seated desire both within and without the Government to completely reorganize the Service. It was my belief, however, that the political character, which the Service was allowed to drift into, was not indigenous to it, that

there was so much that was sound and wholesome in the Service that the abuses or anachronisms could be removed without injuring the organism itself.

"I am glad to say that my opinion has proved well-founded. To-day the Inspector-General is a loyal servant of the Government and obeys implicitly the decisions of the Minister of Finance. The obligations upon China's finances rest no longer with the Inspector-General but with the Minister of Finance, whose word is final. Customs collections are made into a powerful instrument to strengthen the credit of Chinese banking institutions. Finally, arrangements are made so that promotions are made on merits irrespective of nationality. No new recruiting of foreigners is made except quite rarely for work of a technical nature, but on the other hand, existing foreign members of the Customs are treated fairly and honourably and are not discriminated against. It is gratifying to record that the whole Customs Staff from Sir Frederick Maze downward have responded loyally to these reforms, accepting in letter and in spirit the changes that I have introduced. They have no doubt found that greater confidence and goodwill have come to them with the limitation of the Customs objectives into becoming a purely national non-partisan institution."

THE SALT GABELLE.

The Administration of Salt Revenue in China., which had been carried on with many defects for some years, has been reorganized by the National Government, which resorted to many effective measures to bring about reforms and improvement. It is evident that these measures, according to the report for 1933 issued from the Chief Inspectorate in Nanking, have resulted in an increased revenue, notwithstanding many adverse factors, each having a direct or indirect effect on the salt trade and consequently the curtailment of salt revenue.

The statistics prepared by the Chief Inspectorate of Salt Revenue disclose total releases of taxed salt during 1933 (excluding Manchuria) as approximately 38,000,000 Ssuma (salt) piculs, an increase of about 1,400,000 as compared with 1932 releases. The salt revenue collections for the same period totalled approximately \$160,000,000, representing an increment of \$14,000,000 odd over the collections of the preceding year. Bankruptcy of rural communities, industrial stagnation, and widespread business depression are other factors that hindered the salt trade. In certain Central China provinces an economic blockade—which included

alimentary salt in the list of contraband—was imposed as a measure for the suppression of banditry. The increased clandestine production of "earth salt" in inland alkaline regions, and the dumping of "light duty" salt from Manchuria, seriously affected the consumption of taxed salt.

Despite the adverse factors that brought about directly or indirectly a reduction of salt revenue, an increase was shown in the 1933 record, due to the following measures introduced by the Government to improve the administration of salt revenue. Administrative and preventive functions, previously exercised by extra-Inspectorate authorities, have been consolidated with the Inspectorate service. Partial unification and direct control are maintained. New constructive policies have been adopted by the Ministry of Finance, making the Inspectorate responsible for the suppression of smuggling and assigning administrative functions to the concurrent charge of the Inspectorate.

Unofficial fees known as "loukuei", formerly collected in various guises by the Transportation Offices, were definitely suppressed. Other malpractices and so-called "perquisites" in various districts where the administrative and preventive functions had been taken over, were eradicated during 1933. In order to prevent abuses, all salt refineries throughout the country were required to be registered. The salt preventive force, numbering over 20,000, has been reorganized. Efforts have been made to improve the preventive service by the complete removal of undesirable elements, by rigid training of revenue guard officers at special training institutes, by constant inspections by senior officers, and by strict enforcement of discipline and of regulations relating to efficiency in carrying out preventive work. Taxes on salt have been readjusted to make rates as uniform as possible, in order to prevent leakage from lighter into heavier duty areas.

For the purpose of stimulating consumption and protecting merchants' interests, it was ruled that the official selling price in both producing and consuming districts should be taken as the maximum price, which merchants were allowed to reduce at their own discretion. Selling agencies have also been established in some places, whereby the monopoly transportation merchants are permitted to deliver consignments of their salt to such agencies for free competitive sale without being subject to the restrictions of the rotation order.

It has been found that the effectiveness of controlling salt-producing works depends upon **the development of good storage and communica-**

tion facilities in the works areas. For this reason, construction works in the great salt-producing areas of the Huaipei district were completed, and so successful have the results been that similar plans have been drawn up for the construction of depots in Shantung, Huainan, Liangchih, Sungkiang and Kwangtung.

It is the desire of the Government to extend its official control over the taxation of salt. In the past, the consumption of officially-taxed salt in Shensi province had been limited, but now (with the approval of the Minister of Finance) arrangements are under way for the establishment of an Inspectorate in the North-West Provinces, with the central administrative office at Lanchow. In 1933 the salt revenue system showed great progress, and with increased centralization of functional control, further progress may be confidently anticipated.

THE EMANCIPATION OF WOMEN.

From time to time there is a brief reference in the world's news to a Chinese woman aviator who has made a remarkable flight, or to a girl student who has arrived in Europe to complete her musical studies, but for every one of such outstanding personalities, there are thousands of Chinese women doing things which their grandmothers and grandfathers would have considered either utterly impossible of female accomplishment, or highly improper in the sex. In China today there are women doctors, artists, athletes, writers, bankers, teachers, lawyers, film stars, and the hundred and one other occupations followed by educated and ambitious women in Western countries. There has been a tremendous change within the last few years both in regard to the mentality and the status of women in China. The Chinese woman of today is no longer confined to the home, simply doing domestic duties, but is taking an important part with the other sex in political, social, and economic activities. She has come to the realization that she is not merely a female of the species but a citizen of China, and, being a citizen, must do her share towards the advancement of the nation. Hers is the duty to cherish the great and good traditions on which the nation has relied from time immemorial for power and strength, and at the same time to assimilate what other civilizations may have to offer for the elevation of China's standing in the world.

Much of the credit for bringing about this rapid change in the emancipation of women must be given to the schools. The first girls' schools were founded by missionaries, and then followed the establish-

ment of many Government and private schools where girls were given an equal chance with boys to acquire learning. Through education many Western principles and ideas were introduced, and at the same time literature of all kinds supporting the claims of women, and especially their demand for emancipation, spread all over the country. In this way women became conscious of their individual personality and collective power, and realized that, in order to understand the facts of life, they must acquire ample and up-to-date knowledge. The Chinese woman discovered that she was intelligent enough to realize that she was an individual, with every right to choose the kind of life she wants to lead, and to have access to all fields of activity. According to her ability and aptitude, she can now choose the kind of work she likes best or considers most important.

It has been remarkable to note the rapid changes that have taken place in recent years—the disappearance of the custom of foot-binding, the appearance of bobbed heads, the free mixing of the sexes in business and social functions, and the confidence with which women appear in public. These changes are merely some of the outward signs of the inward changes—changes in the mentality of the women themselves, as well as of society at large. The first and most outstanding change is in conceptions of morality. The Chinese women of today are judged by the same standard as men. Monogamy is recognized as the right form of marriage. The Chinese woman no longer loses her individuality after marriage; she retains her profession, political views, and her property. Marriage in China is now looked upon as an institution founded on mutual affection and help, rather than a one-sided surrender of the woman to the man, as it was in the past; and it is only natural that divorce should be allowed when the basis of love and mutual help is gone.

The second important change is in the general outlook upon life. The Chinese woman is no longer content to occupy herself solely with domestic duties. She realizes that she has a mission to fulfil and a contribution to make to her country. The desire for higher education, the seeking of a profession, and the demand for suffrage are some results of this outlook. In short, she has discovered the vast potentialities of life, and will not be satisfied until she has satisfied her ambition to the fullest extent. Though she recognizes the importance of the home, she will not allow it to fill the whole of her horizon, and endeavours to be a worthy citizen as well as a loving wife and good mother.

The third change is in social status. Men, on the whole sympathizing with the women, have been aiding and encouraging the emancipation movement. It has been realized that, in order to save China, it is necessary to uplift, educate, and emancipate Chinese womanhood. It is no use planning all sorts of reforms when half the nation's population is ignorant of even the most rudimentary principles of living. For this reason, there exists no jealousy on the part of men in China on the question of equality, and the sexes have worked side by side without prejudice and friction in political, educational, and business circles.

In the face of these great changes in social customs Chinese womanhood has not faltered, and has met the demands of the age courageously and creditably. Even during the Revolution, women gave of their best for the rejuvenation of China, and today their leaders are increasing in number, prestige, and influence. No matter whether it is a Kuo Min-Tang headquarters, a Yuan, a Ministry, a Bureau, or even military headquarters, there are women officials to be found actively working on the staff. Most of them hold relatively unimportant positions, but those who may be regarded as Government officials in positions of responsibility are by no means few. In the Legislative Yuan, for instance, there are three women members, and there are scores of unmarried young women in the police force. These law-preserving amazons are given special training and are specially assigned to the work of census-taking. In educational and social enterprises, Chinese womanhood has asserted itself in great measure, especially in such organizations as Young Women's Association, Child Welfare, Doors of Hope, and kindred institutions. Also, the agitation for woman suffrage, birth-control, and for property-rights has already borne good fruit. In business and in the professions, as in all other lines of activity, the Chinese woman has to be reckoned with. The establishment of a woman's bank in Shanghai some years ago seems to have inaugurated a new era for women inclined toward business pursuits, and today they are to be found in every line of commercial activity in numbers that are increasing steadily. The achievements of the modern Chinese woman are too numerous to be adequately dealt with here, but must be put on record, however briefly. The spirit which manifested itself during the period of transition from old to new has given reassuring evidence that women will continue to help earnestly and energetically in moulding the destiny of the nation.

STANDARDIZATION OF WEIGHTS AND MEASURES.

NEW METRIC STANDARD.	OLD SCALE.	BRITISH EQUIVALENT
公 兩	兩	
1 Kung Liang	= 2.646 Liang	= 3.527 ounces
公 斤	斤	
1 Kung Chin	= 1.654 Catties	= 2.2046 pounds
= 10 Kung Liang	(1 catty = 16 Liang)	
= 1 Kilogramme		
公 担	担	
1 Kung Tan	= 1.654 Piculs	= 220.462 pounds
= 100 Kung Chin	(1 picul = 100 catties)	
公 寸	寸	
1 Kung Ts'un	= 2.7933 Ts'un	= 3.937 inches
= 1 decimetre		
公 尺	尺	
1 Kung Ch'ih	= 2.7933 Ch'ih	= 1.0930 yards
= 1 Metre		= 3.281 feet
公 升	升	
1 Kung Sheng	= 1.649 Sheng	= 0.220 imperial gallon
= 1 litre		

OLD SCALE.	NEW METRIC STANDARD.	BRITISH EQUIVALENT
兩	公 兩	英 兩
1 Liang	= 0.378 Kung Liang	= 1.333 ounces
斤	公 斤	磅
1 Catty	= 0.605 Kung Chin	= 1.333 pounds
寸	公 寸	英 寸
1 Ts'un	= 0.358 Kung Ts'un	= 1.409 inches
尺	公 尺	英 尺 碼
1 Ch'ih	= 0.358 Kung Ch'ih	= 0.133 imperial gallon
升	公 升	英 加 倫
1 Sheng	= 0.606 Kung Sheng	= 1.175 feet = 0.391 yards

Among the many problems taken up by the National Government on its establishment in 1927 was the unification of weights and measures. The extraordinary confusion caused by the lack of uniformity in regard to such standards throughout the country was really amazing. During the 40 centuries of Chinese history almost innumerable changes were made in the matter of weights and measures, for each Dynasty seems to have considered it necessary to establish a new standard and try to put it into effect, but in no case with complete success. The weights and measures used by the people throughout the country were never in accordance with official standards, and the most extraordinary variations were encountered by those who made enquiries as to prevailing conditions. The so-called standards varied in different businesses, in

different localities, in different shops—and even in different homes I Variations in units of length covered a range of from 19 to 63 centimetres. Units of weight varied from 350 to 808 grammes, and units of capacity from 476 to 1576 cubic centimetres. In 1928 the Government decided upon the adoption of a system which, while in conformity with scientific and international usage would, at the same time, be convenient for the general public. As the result of careful investigation and comparison of the units prevailing in different parts of the Republic, it was found that one-third of a metre—if taken as a standard unit of length—would be equivalent to more than 100 varieties of "foot" as recognized in various parts of the country. It was also found that half a kilogramme, as a unit of weight, would represent the average already recognized by the public, while a litre, as the unit of capacity, would be the most convenient substitute for the very many varieties of capacity measures in use, widely differing in volume. This standard arrangement is known as the "1-2-3" system from the fact that one-third of a metre, one-half of a kilogramme, and one litre forms the basis of the new scale.

Generally speaking, two kinds of standards are now in use, namely, the old and the new. The old standard was formulated from the Weights and Measures Law promulgated in 1914, establishing a double system, the standard metric unit and that based on *ying tsao ch'ih* (營造尺), or "builder's foot" for length and Kuping tael or *liang* (兩) for weight. The law governing the new standard was promulgated by the National Government on February 6, 1929, and it is intended to be legal standard of weights and measures acceptable throughout China. For the sake of convenience and customary usage, the Government also established a double system; one is the standard metric unit and the other, which is temporary in nature and to be abolished as soon as the people are accustomed to the use of standard units, is designed only for market use. However, the latter is derived from the former by taking one litre or Kung Sheng (公升) as one Shih Sheng (市升), which is nearest to the Chinese customary unit of capacity "Sheng" (升); one half kilogramme as one Shih Chin (市斤), which is the average weight of the different varieties of "Chin" (斤) in different localities; and one third of a metre or Kung Ch'ih (公尺) as one Shih Ch'ih (市尺) which is the average length of different varieties of Chinese "foot" in different localities, thus constituting the so-called 1-2-3-system of Chinese weights and measures based on the international

STANDARDS OF MEASURES (I)

MEASURES OF LENGTH

MARKET SCALE (Temporary)		OLD SCALE (Abolished)		STANDARD METRIC SCALE (Permanent)	
市毫	市釐			公釐	
10 Shih Hao = 1 Shih Li				1 Kung Li = 1 Millimetre	
	市分				公分
10 Shih Li = 1 Shih Fen				10 Kung Li = 1 Kung Fen	
	市寸	分	寸		公分
10 Shih Fen = 1 Shih Ts'un		10 Fen = 1 Ts'un (or inch)		10 Kung Fen = 1 Kung Ts'un	
	市尺	尺			公尺
10 Shih Ts'un = 1 Shih Ch'ih		10 Ts'un = 1 Ch'ih (or foot)		10 Kung Ts'un = 1 Kung Ch'ih	
		= 1/3 Kung Ch'ih		= 1 Metre	
		= 14.2 inches			
		= 0.35814 metres			
	市丈	丈			公尺
10 Shih Ch'ih = 1 Shih Chang		10 Ch'ih = 1 Chang		10 Kung Ch'ih = 1 Kung Chang	
	市引	引			公尺
10 Shih Chang = 1 Shih Ying		10 Chang = 1 Ying		10 Kung Chang = 1 Kung Ying	
	市里	里			公里
15 Shih Ying = 1 Shih Li		18 Ying = 1 Li		10 Kung Ying = 1 Kung Li	
				= 1 Kilometre	

MEASURES OF AREA

MARKET SCALE (Temporary)		OLD SCALE (Abolished)		STANDARD METRIC SCALE (Permanent)	
		方分	方寸		
		100 sq. Fen = 1 sq. Ts'un			
			方尺		
		100 sq. Ts'un = 1 sq. Ch'ih			
			方步		
		25 sq. Ch'ih = 1 sq. Pu			
			方丈		
		100 sq. Ch'ih = 1 sq. Chang			
		絲	毫		
		10 Ssu = 1 Hao			
市毫	市釐	釐	公釐		
10 Shih Hao = 1 Shih Li		10 Hao = 1 Li	1 Kung Li = 1 Centiare		
	市分	分	公畝		
10 Shih Li = 1 Shih Fen		10 Li = 1 Fen = 6 sq. Chang	10 Kung Li = 1 Kung Fen		
	市畝	畝		公畝	
10 Shih Fen = 1 Shih Mow		10 Fen = 1 Mow	10 Kung Fen = 1 Kung Mow		
		= 1/6 acre	= 1 Are		
	Shih Ch'ih	= 60 sq. Chang or "Fang" (方)	= 100 sq. Kung Ch'ih		
	市頃	頃	公頃		
100 Shih Mow = 1 Shih Ch'ing		100 Mow = 1 Ch'ing	100 Kung Mow = 1 Kung Ch'ing		
			= 1 Hectare		
		方里			
		360 Mow = 1 sq. Li			

STANDARDS OF MEASURE (II)

MEASURES OF CAPACITY

MARKET SCALE (Temporary)	OLD SCALE (Abolished)	STANDARD METRIC SCALE (Permanent)
市撮 市勺	勺	公撮 公勺
10 Shih Ts'o = 1 Shih Shao	10 Ts'o = 1 Shao	10 Kung Ts'o = 1 Kung Shao
市合	合	公合
10 Shih Shao = 1 Shih Ho	10 Shao = 1 Ho	10 Kung Shao = 1 Kung Ho
市升	升	公升
10 Shih Ho = 1 Shih Sheng	10 Ho = 1 Sheng	10 Kung Ho = 1 Kung Sheng
= 1 Kung Sheng	= 1.03546 litre	= 1 Litre
= 0.966 Sheng	= 0.2735 gallon	(or 1,000 c.c.)
市斗		公斗
10 Shih Sheng = 1 Shih Tou	10 Sheng = 1 Tou	10 Kung Sheng = 1 Kung Tou
	10 Tou = 1 Hu	
市石	石	公石
10 Shih Tou = 1 Shih Shih	= 1 Shih	10 Kung Tou = 1 Kung Shih
	引	公東
	2 Shih = 1 Ying	10 Kung Shih = 1 Kung Ping

MEASURES OF WEIGHT

MARKET SCALE (Temporary)	OLD SCALE (Abolished)	STANDARD METRIC SCALE (Permanent)
市鎰 市毫	毫	公鎰 公毫
10 Shih Ssu = 1 Shih Hao	10 Ssu = 1 Hao	10 Kung Ssu = 1 Kung Hao
市釐	釐	公毫
10 Shih Hao = 1 Shih Li	10 Hao = 1 Li	10 Kung Hao = 1 Kung Li
市分	分	公分
10 Shih Li = 1 Shih Fen	10 Li = 1 Fen	10 Kung Li = 1 Kung Fen
		= 1 Gramme
市錢	錢	公錢
10 Shih Fen = 1 Shih Chien	10 Fen = 1 Chien (mace)	10 Kung Fen = 1 Kung Chien
市兩	兩	公兩
10 Shih Chien = 1 Shih Liang	10 Chien = 1 Liang (tael)	10 Kung Chien = 1 Kung Liang
= 31¼ grammes	= 37.79937 gr.	
	= 1.333 ounce	
市斤	斤	公斤
16 Shih Liang = 1 Shih Chin	16 Liang = 1 Chin (catty)	10 Kung Liang = 1 Kung Chin
= ½ Kung Chin	= 604.7899 gr.	= 1 Kilogramme
= 13.4 Liang*	= 1 1/3 lb.	
市担	担	公衡
100 Shih Chin = 1 Shih Tan	100 Chin = 1 Tan (picul)	10 Kung Chin = 1 Kung Heng
	= 133.33 lb.	
	= 60.47899 kilo	

* Kuping weight

公銀
100 Kung Heng = 1 Kung Tun
= 1 Tonne

metric standard. The tables on pp. 380-1 show the old and the new standards (temporary and permanent), together with some approximate foreign equivalents.

The law and regulations governing the standardization of weights and measures came into effect on January 1, 1930, and Government organizations and public institutions took the lead in adopting the new system. In view of the widely contrasting conditions, economic and otherwise, prevailing in different provinces and municipalities, enforcement of this law was to be carried out in three different periods. Seventeen provinces and eight Special Municipalities along the coast and up the Yangtze were to carry out the new regulations before the end of 1931; interior provinces before the end of 1932, and frontier territories before the close of 1933. A National Bureau of Standard Weights and Measures was established, attached to which is an institute for the training of weights and measures inspectors and a factory for the manufacture of the necessary instruments. Inspectors are of three grades—the first being graduates in science or engineering, the second graduates from recognized high schools, and the third graduates from middle schools. About 100 first-class inspectors, 300 second-class, and 900 third-class have been trained for service, and local bureaux have been established in most of the provinces and municipalities. In all work connected with the construction of railways and roads the new standards are observed, and throughout the country the public is gradually being converted to the recognition of the new weights and measures. It must be confessed that the hope of enforcing general observance of the new units—the customs of centuries not being easy to abandon—throughout the country has not been fulfilled completely, but it will in time.

THE CHINESE PRESS.

No account of the national reconstruction movement in China can be regarded as complete without some reference to the development of the Press. Although it is estimated that only about 3,000,000 copies of newspapers are printed daily throughout China, yet this total, small though it is, represents a tremendous advance upon the conditions prevailing about 10 years ago. As yet there is no newspaper published in China which has a circulation even approaching a quarter of a million, but with the rapid development of communication facilities—by road, rail and air—it is not unlikely that within the next few years some of the enterprising newspapers published in Shanghai and Canton

will be able to develop their circulation in districts far removed from those cities, and gradually work up their total circulations to figures at least double, if not treble, the present ones. There are in Shanghai two daily newspapers which have a circulation of 150,000 copies, and these are typical of the enterprising spirit which inspires Chinese journalism in these days. There are in Shanghai 11 daily papers printed in Chinese, together with 25 "tabloids", 10 small semi-weeklies, 30 weeklies, and 43 monthly magazines, to say nothing of over 30 weekly and monthly publications written in English but edited and published by Chinese. An interesting development since the hostilities in 1932 has been the increased circulation of evening papers in Shanghai. Prior to that exciting period very little interest was taken by publishers in the possibilities of developing evening journalism, and a few attempts which were made in that direction came to an early and disastrous end. During the Sino-Japanese hostilities in Shanghai there was, naturally, a tremendous demand for news, and the public could not wait for the morning papers to know what had been happening during the day. Consequently, the newspaper publishers brought out evening editions which covered the events of the hours intervening between early morning and the afternoon. The habit of buying evening newspapers thus created—not only in Shanghai, but in other large cities—soon became confirmed, with the result that during the last two years there has been a considerable expansion in this field of journalism. There has also been a very remarkable growth in the number of Chinese pictorial publications, some of which are very creditable productions, consisting of well-reproduced photographs of current events and portraits of interesting personalities and leaders of the day.

It is impossible, in such a short sketch as this, to give an exhaustive account of Chinese periodical literature, and it must suffice here to say that during the last decade, and especially during the last three years, there has been a great improvement, not only in quality, but in quantity of printed matter produced. The Chinese Press has undoubtedly made tremendous progress, and is rapidly adopting methods of news-reporting and reproduction so highly developed today in Europe and the United States. Domestic news is received by long-distance telephone and radio, in addition to the telegraph, and the usual connections are made with the leading foreign news agencies for cables and mail despatches covering news of the outer world. Much more attention has been given

recently to the reporting of sport and athletic news, and Chinese newspaper-readers are taking increasingly keen interest in these events, particularly football, swimming, and field athletics. Reports relating to finance, commerce, and other economic subjects are also being given much more attention in the Chinese Press than used to be the case, and the editorial articles deal vigorously with political affairs, both domestic and international.

A general principle liberalizing Press censorship more conducive to the freedom of the Press was fixed by the Standing Committee of the Central Executive Committee in January, 1935. It was decided that, with the exception of reports disclosing military and diplomatic *secrets* or endangering the fundamental principles of the Kuo-Min Tang or the State, publication shall be freely permitted of news concerning Party and civil affairs which are based on facts; and of editorials and comments made in good faith. Propagation of principles contrary to the "Three People's Principles" (*San Mm Chu-l*), however, are prohibited.

Another field in which there has been tremendous development is that of newspaper advertising. The amount of space devoted to announcements by manufacturers of cigarettes, patent medicines, and toilet goods, and the advertising of cinema shows is enormous, and some of this publicity is laid out in a most attractive manner with illustrations and popular slogans of great appeal. In regard to mechanical equipment it is not, of course, possible to make use of the linotype in the composition of Chinese periodicals, but all the leading newspapers have installed rotary-presses, and many of them use two-colour printing for special advertisements and headlines, while photo-engraving studios are attached to all the larger offices.

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ERRATA AND ADDENDA.

- Page 10: Line 28. After "country" insert "by military force"
- » 15: » 6. After "position" insert "analogous".
- „ 82: „ 30. After "ment" insert "has been made".
- „ 105: „ 24. For "31,527" read "71,827".
- „ i n : „ 32. For "1,2000" read "1,200".
- „ 114: „ 23. For "Infant" and "Maternal".
- „ 124: „ 13. For "Leithin" read "Lecithin".
- „ 139: „ 15. For "Linear Parrial" read "Lirv.ar P-innl".
- „ 151: „ 26. For "recommended" read selected, and *vice versa*.
- „ 196: » 8. For "at" read "and".
- „ 199: » 8. For "Civil" read "Civic".

