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MAN, SOCIETY AND ENVIRONMENT

THE SCIENCE OF PLANNING SERIES
EDITED BY G. BELL BARKER
VOLUME TWO

MAN, SOCIETY
AND
ENVIRONMENT

THE HISTORICAL BASIS OF PLANNING

BY

BRIAN HACKETT

LONDON: PERCIVAL MARSHALL

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1950

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EDITOR'S INTRODUCTION

This book is an endeavour to measure the relative significance of the important features of town and country planning as shown by the events of history. It is the second volume in the Science of Planning Series, the first volume entitled *Planning and the Law* by William Wood having been published in July, 1949. As the second volume of the Science of Planning Series, therefore, this book represents no more than a single, albeit significant, chapter in the vast study of town and country planning. As a book in its own right, however, it provides a clear historical guide to the growth of planning throughout the centuries.

Mr. Hackett has therefore made a timely and vitally important contribution to a field of planning literature which up-to-date has been all too much neglected. In his book, the reader may follow the rise and fall of great peoples, the surging sweeps of men across the face of the world, settlement, displacement, success, failure, conflict and chaos, yet through it all discern that thin thread of reason and forethought that has in all ages held together the tottering fabric of continuing civilization.

Today planning is passing through the grand phase. Local Planning Authorities armed with vast powers are now able to control each important aspect of physical development, while Government appointed corporations, equally well provided with power, are setting about the job of building new towns. Men and women, in accepting all this, are consciously accepting the need for town and country planning. At the same time, however, there is a real awareness of the vital problem of how best to adjust the ideals of individual freedom to fit into the democratic belief that as individuals we also have an obligation to the community.

A glance back through history will show, to a lesser and greater degree, that these same problems have already confronted civilized society at different periods in its development. Control of development has always existed in one form or other, although the purpose of such control has often been very different from that which exists

today. New towns are no new thing. King Edward I in England and King David in Scotland both ordered the building of new towns, while the problem of the balance of power that should exist between the individual and the community is an age-long one and must by its very nature remain such.

The purpose of the study of history, it should be remembered, is not to chronicle events but to isolate and interpret controlling tendencies. For example, the important feature which emerges from a study of the development of Mesopotamia and Egypt in that area of the world aptly referred to as the 'fertile crescent,' and in our own time the rapid expansion of Copenhagen into the forefront of North Sea Cities, is not so much the historic date of the development as the significant relationship between urban development and rural development. Egypt and Mesopotamia developed rapidly in the 'fertile crescent' area simply because the area was 'fertile'. Similarly, the expansion of Copenhagen was a direct result of the vigorous rural development of Denmark.

To be possessed then of an impressive array of historical facts does not in itself imply a true historical knowledge. Mere facts can be collected by any labour-loving fool. The primary aim in history study should be to gain a comprehensive and accurate knowledge of the past so as to be better able to prepare for the future. Only through deep understanding of yesterday can man ever hope to control development wisely today so that the children of tomorrow benefit. That is not to say we should permit the past to condition our present activities. By studying the trends of the past, by studying man in the past, the type of society and environment he created, one will certainly learn that amid some historical examples worthy of imitation there will be found many more which it were advisable not to follow. It must never be forgotten, that the greatest experiments in planning, as they are capable of the highest excellencies are open likewise to the greatest aberrations. History alone teaches us this.

1950.

G. BELL BARKER.

To F.C.H.

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Acknowledgement is due to the authors and publishers of books from which quotations have been made ; their names are given in the footnotes referring to the quotations. Acknowledgement is also made to all who have given permission for the use of illustrations ; their names and the source are recorded in the List of Illustrations.

The author wishes to express his thanks to Mr. G. Bell Barker, the Editor of the " Science of Planning Series," of which this book forms an integral part, and to the publisher. Both have given valuable advice and assistance in the task of going to Press.

*King's College,
University of Durham,
1947 to 1949.*

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CHAPTER I

RURAL AND URBAN BEGINNINGS

There is no part of history so generally useful as that which relates to the progress of the human mind, the gradual improvement of reason, the successive advances of science, the vicissitudes of learning and ignorance (which are the light and darkness of thinking beings), the extinction and resuscitation of arts, and all the revolutions of the intellectual world. If accounts of battles and invasions are peculiarly the business of princes, the useful or elegant arts are not to be neglected ; those who have kingdoms to govern have understandings to cultivate.'

RASSELAS by Dr Samuel Johnson

THE development of Man and his Environment, from the primitive to twentieth century complexity, can only be fully understood by an ability to think in terms of the integration of every form of activity and of particular phases happening at different times over the earth's surface. There was no sharp division between the several activities ; industrial growth, for example, being as closely concerned with fashionable society as with wars or inventions. Moreover, the industrialisation of different countries did not occur at one and the same time, though as a phase of history it can be considered as indicative of the turning-over of a fresh page. This ability to think co-relatively and in time—for a proper understanding of the way in which Man and his Environment have attained their present state—is most severely tested in studying pre-history and the dawn of civilization. These are the special fields of archaeologists and anthropologists, who measure change in terms of thousands of years and who have pieced together from slight evidence the evolution of Prehistoric Man.

The story of Man as a ' home-maker ' began about 140,000 years ago ; since that time he has sought many varied ways of living with his fellows in a community, such as the City-State of Ancient

Greece, the Monastic Orders, and today in the Neighbourhood Unit. Primitive Man, at first in competition with the beasts for food and shelter, began to assume mastery when he discovered how to fashion simple tools and weapons. Only then was he able to take permanent possession of the earliest form of habitation, the cave ; this was in the middle of the Palaeolithic or Old Stone Age. A definite contribution to the development of Man was made by these early cave dwellers or Neanderthalers, and the nature of their weapons, and the primitive ritual revealed by the mode of burial, points to an advance on previous Ages. It is known that they hunted the larger beasts such as the mammoths, and to do this the resources of more than one family were required. The factors which caused Man at this stage of history to live and work with his neighbours—to live in a community and not altogether as an individual—may be summarized : the search for food, mastery over the beast by weaker Man, and the ritual of the hunt.

* The seasonal migrations of the vast herds of animals drew in their wake Man, the hunter. Now, he had to adjust himself to a varied terrain where there was not always a ready-made home such as a cave. For shelter, the skins of animals would be a likely choice in making some kind of tent, possibly over a pit dug in soft soil. The exact methods adopted do not matter, but it is an important development that rude habitations were actually being constructed. It signified Man's growing ascendancy over Nature, his independence of any particular location, and the opportunity now available for him to live round his own family hearth and yet form part of a group of fellow men living in the adjoining habitations.

Food-production replaces Food-gathering

Man also began to develop cultural and communal activities in the Old Stone Age. For example, the work of the artist on the walls of caves and in primitive figure carvings out of stone or ivory, the symbolism of the burial ritual, and the earliest signs of trade between communities. This Age was, however, one of savagery—Man preying upon Nature with no consciousness of the need to replace what had been taken. Later, a change in climate, marking the Neolithic or New Stone Age, led to the gradual disappearance of the northern ice sheets and to the growth of temperate forests in Europe. With the example of the vegetation now growing around,

a revolution in Man's economy came about, savagery giving place to barbarism and co-operation with Nature. Agriculture in a primitive form became established with the cultivation of the land for the production of food, not only for Man himself but to provide fodder for the animals which were being trained for domestic use. The supply of food was stabilized so that Man became to some extent independent of the natural environment, replacing it with a 'humanized' environment. Thus, the way lay open for communities to live a more settled existence, because a food-producing (as opposed to a food-gathering) community was likely to increase its resources and its numbers ; it lived from sowing to harvest-time rather than from day to day, planning its economy ahead and learning to think. The time had, in fact, arrived when successive generations inhabited the same site ; new dwellings were erected to replace those outworn, the accumulation of the debris over a long time forming a hill or *tell* on the site.

It is reasonable to assume that between 6000 and 5000 B.C. many small farming communities were scattered in the regions of the Middle East where temperate conditions favourable to vegetation existed long before they came north of the Mediterranean. The archaeologist, working back through the various layers of these sites, can date approximately the founding of the settlements : " At Ras Shamra (Ugarit), on the northern coast of Syria, the debris accumulated in the two thousand five hundred years immediately after 3000 B.C. was over 23 feet (7 m.) thick. Below lay nearly 40 feet (12 m.) of prehistoric ruins, which at the same rate would take us back nearly eight thousand years. Even had the prehistoric huts, being flimsier, lasted only half as long as those built within the historical period, the first would date to about 4500 B.C. But in none of these *tells* is it contended that we have reached the beginning of the neolithic revolution ; the pot-sherds, for instance, from the base of the *tells* in each case exhibit a perfect mastery of ceramic technique."*

The inhabitants of these small Neolithic communities developed a common bond amongst themselves, not only in the hunt and in the cultivation of land, but in defence against the wild beasts and later against rival communities. An example of this communal life is suggested by a village site at Koln-Lindenthal (near Cologne,

*What Happened in History : by Gordon Childe. (Penguin Books. Harmondsworth. 1942).

Germany) where an excavation has revealed twenty-seven dwellings within a fenced area and, at a later stage of its development, a defensive ditch and rampart. It was recognized that the survival of the community lay in the union of its members who were brought closely together by the need for combined action against the dangers outside the settlement stockade.

Many of these Neolithic sites reveal a path or pathways within the village, along which the dwellings were built. It is in these 'street' works and the encircling defences that visual proof is found of the communal basis of primitive societies, for the defensive works in particular required sustained and combined human effort in their construction. Whitehawk Camp (near Brighton, England) dating from about 2000 B.C. had four rings of concentric oval ditches, with banks on the inner sides ; each ditch was crossed at irregular intervals by causeways—a feature appearing earlier in Western European and Swiss sites. Lake villages were also built in the Neolithic Age, and a site in Yorkshire (England)—West Furze in North Holderness—consisted of a platform ninety feet by sixty feet, formed by tree trunks supported on poles driven into the lake bottom ; causeways gave access from the shore. Constructional works of this nature were no mean achievement, and could not have been undertaken without some directive and communal organization.

Although the dwellings of the Neolithic Age were primitive and temporary, the fortifications were massive and difficult to remove. The same intensity of purpose that went to their construction was directed also towards the 'monuments' erected for religious purposes. Throughout many subsequent ages, a similar care and expenditure of effort was given to the building of great temples and churches. The Neolithic 'monuments', however, can be classified into distinct groups, such as circles of standing stones, rows of stones in single lines or avenues, monoliths, burial mounds, barrows or tumuli, and sacred slabs with markings. Britain has examples of these 'monuments' which are among the most outstanding of their kind in the world today. The Avebury stone circles form the largest surviving megalithic monument, while Stonehenge is the most impressive and still retains many unsolved mysteries in its symbolism.

Towards Urbanity

The characteristics of the Neolithic economy were elementary ; each man was a producer of food, and the community in which he lived was necessarily small. Otherwise, on the basis of each man working the soil immediately around his homestead, a large number of families in one area would have been too widely dispersed for the security and intercourse proper to a community. The method of food production was elementary and, when endangered by droughts or floods and other vagaries of Nature, the reserves were insufficient to overcome prolonged disaster. The food produced was also insufficient to support any new classes of the community who might want to engage in occupations other than those of food production. Yet Man could not reach a higher urban culture unless conditions were created whereby these new classes might follow pursuits of the mind and of art, and the several occupations which mark civilization. A new economy, therefore, became necessary if urban life was to develop, and it was in river valleys that higher civilizations grew up, the rivers forming the basis of unified systems of communication and irrigation. In the integrated area thus formed the communities became dependent on one another, and, under the protection of combined defensive measures, a higher culture developed.

In the lands eastwards of the Mediterranean during the millennium preceding 3000 B.C., Man progressed towards the new economy so that an urban existence became possible. This part of the world had the essential conditions for such development, namely raw materials, a certain ease of communication, a good climate, and the need for communal action in agriculture particularly through irrigation. The territory in question extended from Egypt, through southern Mesopotamia, to the Indus—a ' fertile crescent ' as it has been called. Although desert land abounded, there were rivers and fertile areas, and the labours of forest clearance were absent. At the time of this ' urban revolution ', the climate in the ' fertile crescent ' was similar to that in Europe today, and the frozen steppes extended from the Mediterranean to the North, where the Neolithic economy had hardly arrived. Two distinct stages in the development of civilization—the rural and urban beginnings—had, in fact, occurred in the Middle East before the first of them appeared further north,

Man's way of life under the influence of urbanity rewarded him for his labour, not in terms of the physical effort involved, but in

terms of the results of his capability to think ahead and harness other forms of power. The horse was domesticated, potters used a fast-spinning wheel and fired their wares in kilns. Houses were built of moulded bricks dried in the sun—a technical advance over earlier mud walls—and progress in metallurgy led to the discovery of the alloy bronze. Dependence took the place of independence in the community as specialization slowly developed ; a craftsman becoming dependent upon another of his kind as well as on the food producer.

The expansion of this civilization took place as a result of diffusion rather than by conquest. For example, the fact that three cultures with similarities appeared coincidentally in different parts of the Middle East suggests an earlier prototype from which they developed, although nothing is known about it. Urban life in the early stages of a city's development favoured population growth, with a consequent movement to new centres, and thus cultural diffusion.* Cities in need of building and raw materials, which were not available in their hinterlands, would also seek communication with peasant communities located in areas rich in these materials. And with a greater diversity of life, there came an interchange of commodities and ideas between communities ; it was not often that one area would be rich in two essentials such as copper deposits and fertile soil, so that communities became more dependent upon one another. To provide for this inter-communication, animals were harnessed to wheel transport, and the wind to the boat through the medium of the sail. In these several ways, the civilization of the Bronze Age spread far beyond the lands around the Mediterranean, reaching Britain about 2000 B.C. Here, in the remains of stone dwellings of the period, and particularly in the internal arrangements, can be seen the evidence of a higher culture which was not a mere copy of the prototype but rather an absorption of it into a native culture.

The Sumerians are generally regarded as the founders of urban civilization in the 'fertile crescent' and as the first builders of cities. Their origin is unknown, but they came to the lands of the Tigris-Euphrates delta and settled down side by side with the old

*In the later stages of a city's development, the urban population often tended to remain static or decline in numbers unless there was some special reason which attracted the countryfolk into the town (thereby frequently interfering with the balance of town and country), or encouraged a new expansion of the native population.

inhabitants. Drainage and irrigation systems converted the swamps and flood-land into a region suitable for habitation of an advanced kind, with a large number of men employed on building, in the crafts, and on purely cultural and religious practices, in addition to those employed in agriculture. The time had been long since Man assumed a distinct human form, but once having discovered the secret of maintaining a civilization with a strong urban bias, progress became exceedingly rapid by contrast.

CHAPTER II

THE CITIES OF THE KINGS

*He encouraged the people and settled them;
Here on the left, there on the right.
He divided the ground into large tracts and smaller portions;
He dug the ditches ; he defined the acres;
From the west to the east,
There was nothing which he did not take in hand.'*

THE BOOK OF POETRY (CHINA) trans, by James Legge

THE community, now increased in size with the development of urban life, became dependent upon some external power that would provide a focus for all the different interests. The need for unity was obvious when the varied activities of families and an elaborate economy (to name only two of many factors in the urban way of living) had to be integrated into a common policy for the ordering and furthering of the city's progress. This external and unifying influence was the power which the gods were believed to have over men, and it was the dominant factor in the change from the earlier simple community to the complex urban structure of the Sumerians.

From the darkest ages men believed that success in the hunt and in cultivating the fruits of nature lay in the hands of some divine power ; appeasement and gratitude for the god could be demonstrated in a practical manner by worship, by gifts, and by the erection of the finest monuments which human skill could build. With the urban revolution, specialization in occupation had improved craftsmanship immeasurably, so that the Sumerians were able to build vast temples ; it is not known whether voluntary, hired, or forced labour was employed, but there is no doubt that the economy of the race must have reached a high state of efficiency to

feed and support the men who erected these buildings. The care and upkeep of the temples and the ordering of the forms of worship, required the services of a large priesthood aloof from the citizens in their enjoyment of the reflected glory of the gods. Class distinction had very clearly developed in the division of the community into the mysterious priesthood, the craftsmen, the labourers, and those who worked in the fields. Society was fast becoming a complicated organism, and its members increasingly dependent one upon the other—the craftsman upon the agricultural worker for his food, and the latter upon the gods for good harvests. By taking advantage of this dependency among the lower classes, the priesthood as the representative of the gods became powerful in civil as well as strictly religious matters.

The urban movement in Sumeria introduced a more elaborate system of land ownership than had existed under the earlier civilizations in which each household worked a particular plot of its own, or one allocated from the land belonging to the little community. The new system comprised the farmland owned by the gods on behalf of the community, town land owned individually, and the common pasture land. The priests took advantage of their control over the farmland and treated it as their own, with the result that equality in the distribution of the food and wealth, which by right should have come from this land, was lacking. Surplus wealth was in this way restricted to the few, thereby increasing the division between the different classes of the community.

The next disturbing element in this civilization was the rivalry between cities, leading to the institution of a defensive system and the appointment of a city-governor to organize it. At first, the city-governors were subservient to the priests, but later they became mediators in disputes, and finally the human representative of the god or the unifying influence when several gods were worshipped in the same city. In effect, kings now ruled over the people in these city-states. Later, in the times of Sargon a Semite and the kings of Ur and of Babylon, kings ruled over a group of cities. Countries and empires in the accepted sense had been formed.

It is not generally realized that the development of an urban way of life from nomadic or pastoral beginnings was indicative of a great age of invention, standing up to comparison with any subsequent period of history until the Renaissance. Among the discoveries that were made, writing, with a numerical notation, was far in

advance of earlier pictorial signs ; it was essential for the recording of transactions and events necessary for the proper organization and maintenance of urban life. The unit of measurement was required in the erection of great buildings, and the unit of weight in the trading that went on between cities.

Mesopotamian Cities

The cities of the Sumerians had a regularity and sense of design about them which could only have resulted from some conscious form of planning. There is no evidence that whole cities were planned 'on paper' or in the mind before the first foundations were laid, but the arrangement of land uses and buildings was certainly not a matter of chance. It proved that Man could develop not only an urban way of life, but also the setting in which he would live this life. The great size of these cities alone dictated that some form of planning was necessary. Lagash, one of the smaller cities, had a population of 36,000 persons (this figure may have related only to males) and the walls of Erech contained an area of about two square miles, physically, these cities were sharply cut off from the surrounding rural landscape by brick walls and ditches. Sometimes the city was built upon a *tell* (Erech, for example) where successive settlements in course of time had created an artificial mound. In other cases, the swamps were made suitable for building by drainage canals within the city-walls and linked with an irrigation system beyond. The temples stood prominently in this new urban landscape, and the *ziggurat* or 'artificial hill' dominated the entire scene. The origin of these *ziggurats*, according to Sir Leonard Woolley, may have been due to the earlier dwelling-places of the Sumerians in some hilly country, and the association of a hill or mountain with their gods.

The growth of militarism and conquest led to the domination of a leader over a group of city-states, and the emergence of a greater or capital city as the seat of government. A warlike spirit may well have developed in defence against the barbaric raids upon the cities, and because it gave security or a sense of security to the husbandman and artisan anxious to improve the fields and the crafts. There was also the need for abundant supplies of raw materials to build up the urban industrial economy, and these were not always available within the associated region of the city, so that conquest of suitable lands followed.

Nebuchadnezzar, King of Babylon, was active in the development of great cities. He succeeded to the empire which had been formed in Mesopotamia shortly before 600 B.C., and his influence was to be seen almost everywhere in the cities which had resulted from the urban revolution started by the Sumerians. Possibly to show his power he rebuilt ruthlessly, as at Babylon. At Ur he carried out works which stamp him as a bold town planner : " The old Sacred



City life began around the Eastern Mediterranean. Xanes and territorial boundaries of the civilizations which rose to importance at various times down to 1580 B.C. are indicated.
(From *The Universal History of the World*, by courtesy of The Amalgamated Press Ltd.)

Area had consisted of religious foundations of all sorts grouped together and in theory forming a unity, but the unity was ill-defined; sometimes the outer walls of adjacent temples were continuous, sometimes the buildings were more loosely disposed, and it would seem in fact that the Sacred Area in many places merged imperceptibly into the lay quarters of the town. Nebuchadnezzar reformed all this. A space 400 yards long and 200 yards wide was marked out, a rough rectangle which enclosed all the important buildings of

Nannar's enclave, and round this was built a wall of mud* brick. It was a double wall with chambers in the middle of it, the flat roofs of which would make a broad passage along the wall-top available for the manoeuvring of troops in its defence ; it was 33 feet wide and probably about 30 feet high, the face of it was decorated with the double vertical grooves which were traditional for temple walls and it was pierced by gateways of which six have been discovered ; the main gate, with a high gate-tower set back in a deep recess, led immediately to the entrance of Nannar's chief temple."*

Babylon was even more completely rebuilt than Ur, with the result that modern excavators find scanty remains of any works prior to the time of Nebuchadnezzar. For our knowledge of this great city, there are two main sources : first, the description of Herodotus, the Greek writer who visited the city about 450 B.C., and second, the remains that excavation has brought to light.

Herodotus described the city lying in a plain and in the form of a square with sides nearly fourteen miles long. Without doubt Babylon was a great city in its time, but it could hardly have been comparable in size with the larger capital or industrial cities of today, which is the measure of exaggeration by Herodotus—an enthusiast carried away by his subject. Nevertheless, his description may well have been that of a man who saw the city, and who had absorbed the details of its structure from others more familiar with it. Around the city, Herodotus says, there was a wall of brick, 340 feet high and 90 feet thick, and also a broad deep moat. One hundred gates gave access through the wall (here again imagination seems to have gripped the writer in his vision of this immense defensive wall). The River Euphrates divided the city into two parts, crossing the site from one corner to the other, and its banks were fortified by brick walls smaller in size than the main encircling wall ; there was also an inner wall on the landward side.

Within the walls of Babylon Herodotus described a scene which in every way suggested that a highly developed and organized society existed there : " The city itself is full of houses, three or four storeys high, and has been laid out with its streets straight, notably those which run at right angles, that is, those which lead to the river. Each road runs to a small gate in the brick river-wall : there are as many gates as lanes." How closely the streets of Babylon

*Ur of the Chaldees : Sir Leonard Woolley. (Ernest Benn. London. 1929)

conformed to a grid pattern based on streets crossing at right angles is a matter of conjecture, but whatever Herodotus saw or heard, it was sufficient to cause him to suggest that the city "has been laid out" to a regular plan and not as a matter of chance. Rising above the houses and other smaller buildings were the temples and the palace : " In the mid-most of one division of the city stands the royal palace, surrounded by a high and strong wall and in the mid-most of the other is still to this day the sacred enclosure of Zeus Belos, a square of two furlongs each way, with gates of bronze. In the centre of this enclosure a solid tower has been built, of one furlong's length and breadth; a second tower rises from this, and from it yet another, till at last there are eight. The way up to them mounts spirally outside all the towers ; about half-way in the ascent is a halting place with seats for repose, where those who ascend sit down and rest." Babylon, according to legend and slight historical evidence, must have been a city of great visual beauty, although the domestic environment of the ordinary man lacked the splendour and luxury accorded to the temples and palaces. The legendary ' Hanging Gardens ' are an indication of the imaginative quality that was doubtless very apparent in the civic design of the period.

The site of Babylon on both banks of the River Euphrates now consists of a large area with the mounds of ruined buildings. Within this area there are two smaller areas—Babil and Kasr—which may have formed the city proper. The walls, the palaces of the kings, the temples of the gods, the streets and the dwelling-houses have been identified by excavation, though insufficiently to reconstruct a complete picture. One great processional street, with the Istar Gate and other streets at right angles, has also been detected. The remains of the houses do not suggest a rigid adherence to a grid street pattern, but sufficient evidence of roads meeting at right angles is available to indicate that this form of town planning was practised to some extent. It is within the bounds of possibility that the influence later extended to Greece and suggested the grid street pattern of Greek planned towns. Other cities of this part of the ' fertile crescent', such as Assur and Nineveh, reveal similar features to Babylon.

Ancient records in the British Museum and elsewhere describe the building works of Nebuchadnezzar and of his father, Nabopolassar, in Babylon and the other great cities of the Empire. An interpretation of these records taken from the various sources is

given by Dr. Thomas Adams in *Outline of Town and City Planning*. and from it a picture of the great cities of Babylonia may be drawn : " Nabopolassar, King of Babylon, my father, made the great ramparts of Babylon but did not finish their erection. He dug the moat and made two strong embankments at its border. He made the embankment of the Arakhtu and the brick walls along the bank of the Euphrates, but did not finish the rest. He beautified the road from Du-Azag to Aiburschabu with bricks. I, his son, finished the ramparts, the Imgur-Bel and Nimitti-Bel. I built the sides of the embankment of its moat ; the two strong embankments and joined them with the embankment my father had constructed and carried them round the city for defence. I threw a brick wall round the fortress on the western side. I filled the Aiburschabu, the street of Babylon, with bricks and stones from the mountains, and beautified the road. The portals of the Imgur-Bel and Nimitti-Bel were too low so I tore them down and laid their foundations firmly with bitumen and brick, and tastefully constructed them. I placed strong cedar beams for their roofing and set up doors of cedar, plated with copper and hinges of bronze. I set up also strong bronze bulls and great serpents at their thresholds, and adorned them to astonish the multitudes of people. In order to prevent wars coming up to the Imgur-Bel and the Nimitti-Bel—and this had not been done before by any king—I threw a mighty rampart round Babylon on the east. I dug a moat and built a mountain-high rampart on its bank, and constructed portals with doors of cedar so that foes might not approach Babylon. I conducted great waters, like seas, round the land, and to cross them was like crossing a great sea. To prevent them from overflowing, I banked them in and put banks of burnt brick round them. I strengthened the defences and made the city of Babylon fit for defence."

Assyrian towns, apart from architectural detail, were similar in their general form to those of Babylonia, and the grid pattern was the basis of their street layout, though it did not by any means condition the arrangement of the whole urban area. At Assur, the capital, and Dur Sharrukin the streets were aligned diagonally to the compass points, doubtless to secure shade from the hot sun. The main streets in these towns were from ten to twelve feet wide,

*Outline of Town and City Planning : by Thomas Adams. (Russell Sage Foundation. New York. 1935). Also by courtesy of the Director of the British Museum.

and the alleys half that width ; they were paved with stone or cobbles and were well drained. The citizens dwelt within the safety of the walls in areas of close development, but there were also open spaces and gardens, particularly in the large cities. The communal meeting-places were at the gates and in the squares behind ; thus the stranger entering within the gates was subjected at once to the scrutiny of the inhabitants.

The progress Man had made by this time as an individual in Society was such that he could appreciate the sanctuary of his own home as well as the full community life in the city. The domestic environment of these Assyrian and other Mesopotamian cities was planned to make provision for this by the arrangement of an internal courtyard in the larger houses with the several rooms around, suggestive of privacy and organized comfort. In particular sleeping, eating, and recreation had their separate expressions in the plan of the house (though not necessarily by individual rooms), giving to them a meaning beyond that of mere habit.

Assur assumed the importance of a great city under Shamsi Adad. He strengthened the great wall by constructing a base of gypsum blocks, the upper part remaining of mud brick. Further technical advances evident in the work were the use of rock asphalt laid cold instead of mud mortar for the jointing of stone and brickwork, and the canals of unhewn limestone and gypsum which drained the wall. It is also believed that Shamsi Adad built the first ramps along the Tigris ; these were faced with stone and had broad bastions. A later king in Assyria, Tiglath Pileser I, restored and improved the temple buildings at Assur and, although his reign was one of conflict, he was able to boast : " I have made good the condition of my people ; in peaceful habitations have I made them dwell "—a worthy maxim for anyone in whose hands the creation of environment rests. Kalhu, a later Assyrian capital, was defended by the River Tigris on the south and west ; the other two sides were protected by moats filled with water. To prevent the flooding of the moats when the river was high, great dams were built. Civil engineering had progressed so far that communications across the Rivers Tigris and the Upper Zab were effected by means of bridges. Within the city itself, a massive temple tower jutting out from the palace platform dominated an urban landscape of temples, the palace with its courtyards, and the houses of the people.

An impression of the physical structure of Assyrian cities is

completed by reference to Nineveh, the most famous of Assyrian capitals and covering about two-thirds the area of Ancient Rome within the Aurelian Wall. The population may well have been 300,000 persons, taking as a basis the standard of density of the modern oriental city. The development of warfare on a large scale occasioned the usual defensive system, of which the inner wall was of stone with a moat in front. There were fifteen gates in the walls identified by colourful names—often relating to their location or use. Besides the great palaces and temples, without which no great city of the time was complete, there was an armoury by the river for the storage of camp equipment and the weapons of war ; it also provided stabling for the animals which belonged to the army. Irrigation at Nineveh had passed from the elementary stage to a great work of civil engineering. It was conceived on the same vast scale as the city itself, and included the building of dams, the formation of canals across difficult terrain, and the lowering of river beds. The objective of these irrigation works was to prevent flooding and increase cultivation.

The Assyrian city included within its jurisdiction and influence a sufficient area of land around (owned by the citizens) for the maintenance of life in times of war and for a balanced development in times of peace. A certain degree of self-rule was apparent in the cities in spite of their co-ordination into an empire ; this was more obvious in the outposts, where government was in the hands of a council of elders, and only nominally by a governor.

The groups of temple and palace buildings of Mesopotamian cities were distinguished by the coherence that the ' raised platform ' motif gave to them. It was upon this solid base that the buildings were arranged to suit the various functions of religious practice, kingly parade, luxurious isolation, and government. The arrangement of public buildings around a road pattern (which is commonly practised today, though there are now signs of a return to a more rational arrangement) was not so clearly distinguishable as, for example, in a Greek or Roman planned town of colonization. The urban landscape of Mesopotamia, at least in the areas devoted to the important buildings, must have produced in the onlooker a feeling that out of the flat terrain a sense of contouring had been created. There was also a sculpturesque quality in the urban groups—as though buildings had been carved out of a rocky hill—and achieved by the setting back of the platforms at various levels

and by the continuity of the buildings in their form as well as decoration. The elements of the buildings were simple, merely the massing of rectangular 'boxes', but colour and architectural decoration served to give interest to the flat surfaces. The simple shapes of the buildings were evolved from elementary constructional methods ; decoration was then applied by way of closely spaced columns, reliefs, coloured glazed bricks and alabaster slab facings.

The Rule of the Pharaoh

Egypt, at the other end of the 'fertile crescent', has less to contribute in a study of Man's early progress than Mesopotamia, the early settlements having been buried deeply in the River Nile silt under towns of more recent construction and under the cultivated fields. From the time of the flowering of Ancient Egyptian culture there is a great deal remaining in the way of buildings, works of art, and the simple tools of industry and agriculture, which make possible a reconstruction of life under completely autocratic rule". This latter was so ordered that the greatest concentration of wealth and effort was centred on the immediate requirements and environment of the Pharaoh, to the detriment of the natural development of urban communities. The city god of Sumeria, it will be recalled, was all-powerful only in the city, and further the king, though representing this god, was never able to achieve absolute unity of throne and temple. The Egyptian Pharaoh, on the other hand, was himself a god ruling over the entire country ; temples dedicated to national and local gods were allowed to exist only by virtue of the will of the Pharaoh. The royal tomb took the place of the temple as the sign of continuity, for it was symbolical of the existence of power beyond life on earth. The surplus wealth of the country passed to the Pharaoh, and then only to those close to him, so that the pyramids and tombs of royalty were great in size and magnificent in decoration. The Pharaoh was the focus of all activity ; the townsfolk living for him and to do his will, rather than as citizens with a part to play in the welfare of the town and with an interest in its land. The Pharaoh considered that the land was his own property, recognizing only that his subjects might use it from time to time ; in Mesopotamia the government had upheld the right of private ownership of land. There was, however, throughout the 'fertile crescent' the same broad division into those who were lords of the soil—the kings, the temples through the priests, and the

upper classes—and the serfs who were bound to the soil and worked it, surrendering a part of their produce and labouring also for public works. Similarly, the artisans in industry were virtually slaves. The merchant alone of those outside the royal or temple circles was to some extent independent, though he was liable for various taxes.

The building of temples and royal cemeteries in Egypt led to the growth of settlements around them, contrasting with the Sumerian towns which generally resulted from the spontaneous development of a community. Visually, this difference was expressed by the greater solidity and magnificence in Egypt of the buildings dedicated to the divinity compared with the dwellings of the people. A class of nobility existed which was in a more favourable position than the common people, but appointment and tenure were at the will of the Pharaoh, and he recruited his court from a limited circle. In the same way, the priests and the craftsmen were members of the Royal Household, enjoying little economic freedom.

The cities of Ancient Egypt were examples of the over-concentration of effort on works of little general value to the community as a whole, resulting in a high standard of 'regal' design for the glorification of the ruler and not of 'civic' design, which latter should properly relate to the environment of every citizen—both domestic and communal. There were examples where the accumulated wealth of the Pharaoh was used to some common purpose beneficial to all; such great works as the 'White Wall' around Memphis and the irrigation canals had a wider implication than that of royal benefit alone. The frontier defensive system and the enforcement of internal peace were also examples of the way in which activities initiated by the Pharaoh for his own purposes became ultimately for the good of all.

Two sites are particularly valuable in enabling a reconstruction to be made of housing conditions in Ancient Egypt. Tell-el-Amarna and Kahun contained small settlements built to house the workers employed on the construction of pyramids and tombs. Tell-el-Amarna had a 'model village' about the fourteenth century B.C. for the workers excavating the rock-cut tombs for royalty and nobility in the desert hills; it was later deserted when the court moved back to Thebes. The 'village' was encircled by a wall forming a square enclosure. Rows of small houses with narrow streets between almost covered the site, each house built to a stan-

ward pattern except the foreman's quarters near the gate. The precise layout, standardized in form and measurement, indicates that the plan was evolved before building commenced, and that it was considered suitable for workmen much in the same way that the nineteenth century back-to-back housing of Britain was considered good enough for the workmen of the Industrial Age.

The city proper of Tell-el-Amarna was founded about 1375 B.C. as the new capital of the Pharaoh Akhenaten. The city was built in a very short time, only to be abandoned about twenty years later. It contained a great temple area in the centre, about half a mile long and 1,500 feet wide. To the south of this lay the city covering a site about five miles in length and a quarter of a mile in width ; later, expansion took place to the north. A main road ran from north to south giving access to the main buildings. The plots of land granted to the wealthier subjects were generally rectangular, suggestive of orderly arrangement but, in excavation, housing areas for the poorer classes have been encountered which corresponded to the modern slum.

The building of the pyramid of Illahun was the reason for the establishment of the workers' settlement at Kahun in about 3000 B.C. Again the arrangement of streets and houses was fairly regular, and there were a few large houses for overseers and craftsmen, and many smaller ones for the workmen. A centre for Kvorship, doubtless also the focus of community life, was sited on the higher part of the ground, and we may assume that it fulfilled a function similar to that of the *acropolis* in the later Greek city. The settlement at Kahun was more of a town in the accepted modern sense than the customary and larger Ancient Egyptian urban group of grandiose palace and temple with a less clearly defined system of housing areas around. Such a group was indicative on the one hand of the all-powerful ruler and on the other of the common-folk whose very existence often depended on the extent of the services they could render to him.

The Egyptian town lacked the urban characteristics of Mesopotamian towns, for the palace and temple group was not only in itself a number of apparently unrelated buildings unapproachable by the people, but was also isolated from the housing areas. This impression of segregation is justified by the severe nature of the external appearance of the great buildings, and by the succession of halls and ancillary rooms within—dark and mysterious. Thebes.

for a time the capital of Ancient Egypt, illustrated the lack of cohesion between all the several parts of the towns for it comprised two main centres—the modern Karnak and Luxor—with subsidiary groupings of villages and private domains covering a large area. *

In monumental architecture, the buildings of Ancient Egypt constituted supreme examples of dignity and craftsmanship. But although the art of grouping had not been mastered, there was a recognition of vista † in the Avenue of the Sphinxes leading to the Great Temple of Ammon at Karnak, and of the psychological effect which may be created through the medium of the axial approach. The effect of the dominant citadel was certainly understood in Egypt and Mesopotamia, whether it took the form of the large temple of the central god or the palace-fortress of the king.

The daily routine of life for the common-folk in the cities of the 'fertile crescent' was generally uneventful, though often rigorous and thankless ; it was directed by the priests, who ordained the seasons and interpreted the meaning of omens and dreams. The people were for the most part grouped in vast cities, although the more rural pursuits of irrigation and cultivation were the common occupations. A number of the inhabitants was employed in craftsmanship and building, and the select few in administrative or priestly duties. In time of war, the younger men were taken into the battlefield, and in time of peace many of them were kept 'at readiness' for war. The building of great pyramids and temples caused a similar disorganization to the economy because of the vast number of workmen required in their construction, though captives were frequently employed. The cost of keeping men in these unproductive occupations was a strain on the community ; it was yet another reason for the development of warfare in order that fresh riches might be brought in to the cities. In the distribution of wealth and goods, the common-folk traded by barter, and then only occasionally ; the rulers and nobility alone dealt in precious metals and stones for large transactions.

*† The evidence about cities is less clear, but my personal feeling is that while there was probably in the first place a rough general ground plan, building and development within that framework was not really controlled but was haphazard, and whatever planning there was would tend to deteriorate as time progressed" from 'Town Planning in Pharaonic Egypt,' by H. W. Fairman.' (The Town Planning Review : Vol. XX : No. 1 : 1949)

†A familiar example of vista is the view of Buckingham Palace seen from the axis of the Mall in London.

Early Civilizations of the Indus and the Far East

A great river system in India was the basis of a third regional civilization in the Bronze Age. The conditions of life, made possible by the natural irrigation and alluvial plain of the Indus in the Punjab, were favourable to the development of an organized civilization with large cities, skilled craftsmanship, trading with far-off lands, and a form of writing. The region was four times the area of Sumeria, and has remains of cities comparable in size with those of the latter—Mohenjo-daro in Sind covered at least a square mile. The region was subjected to severe flooding at times, and there is evidence that after each inundation the lower floors of the houses were filled up with brick, parts of the cities eventually resting on platforms some twenty feet high. Commerce was an important element in the life of the Indus' cities ; a fact substantiated by the discovery of the stalls of traders amongst the ruins, and of a vast granary at Harappa—the largest building yet found.

The art of the Indus also indicates in the use of typical Mesopotamian devices that trading was carried out with remote countries ; there was also a sparsity of battle-scenes and of weapons suggesting that peaceful occupations were more general than those of conflict, and with peace there was less opportunity for centralized monarchies to become all-powerful. Society in the Indus seems to have developed more evenly than in Mesopotamia and Egypt, giving an impression of a democratic bourgeoisie. There were no vast temples and palaces to dominate the cities and to suggest a concentration of wealth, but society was apparently divided into simple classes—the merchants and labourers or artisans ; extremes did not exist corresponding to the supreme regime of the temple or of the Pharaoh and the common-folk of the ' fertile crescent'. The division of housing into large two-storey dwellings, built of baked brick and containing bathrooms and porter's lodge, and monotonous rows of mud brick tenements, each with two rooms and a court, accorded with the close relationship of the classes in the social structure. Well-planned streets and a good system of drains in the cities suggest a vigilant municipal government able to exercise control in the rebuilding which took place after each devastation by floods.

In the Far East, the Shang dynasty emerged as a literate civilization in China shortly after 1400 B.C. when P'an Kêng moved

his people to Anyang and built the " Great City Shang " on the banks of the Huan River. The region was exceptionally fertile and level, and comparable with those other regions which had favoured the emergence of urban life. Anyang was built at a sharp bend in the river, which formed a natural moat on two sides and part of a third. The large buildings were certainly sited in accordance with some pre-conceived plan and in relation to each other ; a fact substantiated by the general alignment with the magnetic north. One part of the site that has been excavated is believed to have contained the royal palace, and adjacent there was an area evidently occupied by artisans. Although no defensive wall has yet been found, it seems probable that a rampart of pounded earth surrounded the city.

Trade and Barter

These various centres of culture, which had developed early in the Bronze Age, reached a stage where knowledge and craftsmanship, as well as an economy and a desire for a richer mode of life, required raw materials and foods which could not be supplied locally. Also, the policy of the concentration of wealth in the hands of a few began to lose its meaning when the countries had reached the limit of internal production and supply. To meet these deficiencies it was not enough to seize the goods and materials from remote barbaric lands, but these lands had to be adjusted to the new social economy so that they might take their place in the growing world of barter and exchange.

In these, and other ways considered previously, civilization spread over the Middle East. Ancient Egypt, for example, developed Byblos, the port for the Lebanon cedar trade and the home of a community which had progressed only as far as the Copper Age. Ambassadors and merchants were sent to Byblos and even settled there, bringing to the city their higher culture. This may be described as the process of peaceful colonization for Byblos was friendly and was allowed to remain independent. The alternative method, generally practised by Egypt and Mesopotamia, was colonization by force of arms, but it spread culture by *imposition* rather than by *absorption*. The civilizations which developed by this latter method, that is through the influence of peaceful trade and barter, took the knowledge that was brought to them and adapted it to suit their particular circumstances ; these differed in

accordance with location, the native raw materials, and the fruits of the earth.

Mediterranean Peoples

There were exceptional opportunities for the development of trading around the shores of the Eastern Mediterranean because of the many short sea routes and the islands of the Aegean with their independent communities anxious to trade with one another. But these parts of the Ancient World were peopled by primitive races and nomads or wanderers at the time urban life was developing in Mesopotamia and Egypt. It was later that the Semitic nomads entered Mesopotamia and established a dynasty there about 1800 B.C., while to the West they became a seafaring race known as the Phoenicians, penetrating along the Mediterranean and building harbour towns.

The civilizations of Egypt and Mesopotamia were well established criteria during the formative period of the new urban communities, of the Mediterranean. Within this sphere of influence, the Minoan civilization has been identified in Crete as early as 2000 B.C., where conditions favourable to the development of higher civilizations existed—such as fertile lowlands, raw materials in timber and copper, natural harbours, and suitable winds and currents for the ships trading with the mainland.

The early urban civilizations of the Aegean—the Minoan and Mycenaean—gave rise to a more closely-knit way of life in the Ancient World than had been the case previously, and as such it was more truly urban. This was expressed in the compact settlements contrasting with the Ancient Egyptian straggle of open development around a temple and palace centre. The Minoans built for purpose rather than pomp, the growth of a large palace being justified by the need to provide housing accommodation for the Court officials rather than by any desire to create a visual expression of the difference in level between the king and his people ; in these cases the Minoan palaces were little towns in themselves. The rulers were merchant-princes as well as priest-kings, as they might well be in predominantly trading countries, and they encouraged any foreigner who could bring knowledge or craftsmanship for the advancement of the native culture and art. There was a similar atmosphere of progress and prosperity in the provincial towns, even those which had no palace as a centre of activity.

Gurnia, covering six and a half acres, had sixty houses of a large size, probably of two storeys and the streets appear to have been laid out to a pre-determined pattern with pavements and gutters, water supply, and a drainage system. In these towns, the houses were in crowded groups, and there was usually a market-place or trading-centre. Insular characteristics and a strong fleet enabled the towns to dispense with massive fortifications.

Knossos remains the most complete example of the urban environment of the Minoans, although it was primarily a great palace for the king and his people rather than a town. About 2200 B.C. Knossos consisted of a series of isolated or almost isolated buildings, with a keep probably to the west of the northern entrance. A disastrous earthquake brought ruin to the site about 1800-1600 B.C., and the remains which have been revealed by archaeologists are those of the building work subsequently undertaken. The Central Court covered the crown of a hill formed by generations of Neolithic settlers. The palace was not defenceless, though hardly an impregnable fortress. It was a sea-king's home, built to resist riots or raids, but reliant upon the fleet for safety against organized invasion. The most impressive approach was from the south, where a causeway carried the road from Phaestus across a deep ravine, and from thence the ascent to the south-west corner of the palace was by way of a stepped portico.* The various rooms of the palace were arranged closely around a central court, for builders had not yet solved the problem of planning rooms with an internal communication system in such a way that natural lighting and ventilation were adequate.

In these early urban civilizations of the 'fertile crescent', the Far East, and the Aegean, it is clear that the way of life peculiar to cities had favoured those developments in the arts and sciences which are called progressive. It had also fostered militarism, autocracy, abuse of class distinction, and misdirection of Man's religious instincts. Until the Romans in the course of imperial expansion began to plan an economy based on territorial exploitation, social and economic patterns continued their association mainly with city development, and not with the towns and the countryside as an integrated productive unit.

Although knowledge of these early civilizations is extensive

*From *A Handbook of Greek and Roman Architecture* : by D. S. Robertson, (Cambridge Univ. Press. 1929)

and has been culled from the smaller works of Man (his pottery, jewellery, and other personal equipment), the remains of his physical environment (the city streets and buildings) are insufficient for a complete assessment to be made. It is certain, however, that for the period a high standard of city design had been achieved, and that Man had succeeded in creating a physical environment which gave him almost complete protection from the vagaries of Nature. The splendour in the city that was created for the king showed that in combining with others, Man had lost individual freedom. He had formed a community, but later in city development it had lost equality amongst its members.

Primitive Cultures

Civilization in Western Europe was still in a primitive state whilst these urban developments had been taking place in the Middle East but, nevertheless, some progress had been made with community life, though to a varied extent as between the different cultures which have been identified. In the more remote areas the food-gathering or forest cultures persisted for a long time after food-producing communities had been established on the fringe of the forest. The Bronze Age appeared in Britain somewhere about 2000 B.C., but there was no comparison between the resultant civilization and the urban way of life which had developed in the Middle East. Britain remained an outpost of civilization until the Romans brought the knowledge and culture of the cities, though several individual features appeared because European influence was necessarily limited by the physical separation of the Channel. Under semi-barbaric conditions the Ancient Briton lived a very simple life in villages with circular stone huts connected to pounds or cattle enclosures ; caves were also used as dwelling-places at this time. Similarly the culture of the Iron Age, which included the rise of a new urban civilization in Ancient Greece after the eclipse of the older civilizations of the Middle East, was primitive in Britain. It arrived about 500 B.C. and led to a period of agricultural development, the outstanding examples of communal habitation being found in the hill-forts and lake villages. The former may have been used as permanent places of habitation or only as places of refuge. Maiden Castle (near Dorchester) had a long history before it was extensively fortified, and the scale of its construction suggests that an organized community must have been concerned with it.

Ditches and banks surrounded the site, the circumference of the outermost being one and a half miles. The ramparts were built of chalk and rubble with layers of earth and clay over, and there were platforms of earth faced with chalk and slabs of stone. The entrances were protected by stone walls, and a road twenty-five feet wide, metalled with flints and pebbles, passed through the east timber gateway. Within these defences, stern opposition was later made to the Romans.

Glastonbury Village is typical of another form of communal habitation in Britain during the Iron Age. Covering some three and a half acres on a site of peat in the marsh, the village was built on a foundation of crossed timbers forming an artificial island, and strengthened under the huts. Sand paths gave communication between the huts, of which there were over sixty in number, each being circular in plan and about twenty-three feet in diameter. In a settlement of this character, where primitive inventions and techniques were needed to overcome difficulties inherent in the site, something of the higher culture of the Ancient World had developed in Britain.

Britain may also serve to illustrate the primitive agricultural methods of the Iron Age in Europe. Previously, there had been agricultural beginnings on the bare chalk downs, for the lowlands were thick with forest trees and were difficult to clear. But the growth of crops had been subsidiary to stock-raising, and took place in small * garden ' plots of irregular shape worked with a hoe ; after being cultivated for a few years the plots were abandoned. In the late Bronze Age and the Early Iron Age, the plough was introduced though, in an elementary form, its use was confined to the poor light soils ; the rich, heavy soils were left untilled. With the plough came the large field, roughly square in shape, and a more settled type of farming. These fields, being sited generally on slopes, tended to assume a terrace form by the washing down of the disturbed soil to the lower edge of the field, giving rise to sloping banks called *lynchets*.

These developments in agricultural technique indicated not only progress in civilization, but also an expanding population which had to be fed and concentrations of people requiring a greater yield from the land around. Immigrants from Europe were influential in effecting the changes in food production for they were peasant-cultivators in search of suitable land, and there was not an

over-abundance of this in their native lands where the dense forest growth covered vast areas. The agricultural revolution which came to Britain at this time is a reminder of a fact too easily overlooked—that the urban revolution had been dependent upon a new conception of food production, just as this latter was encouraged by the large concentrations of population in cities : the inter-dependency of town and country.

CHAPTER III

THE CITIES OF THE PEOPLE

' The longer we contemplate that Hellenic ideal, in which man is at unity with himself, with his physical nature, with the outward world, the more we may be inclined to regret that he should ever have passed beyond it, to contend for a perfection which makes the blood turbid, and frets the flesh, and discredits the actual world about us.'

THE RENAISSANCE by Walter Pater

THE civilization of Greece was momentous in the Ancient World, progressing far beyond the achievements of all those other countries in the Middle East. But was Greece really of this Ancient World—the fulfilment of ancient culture and art—or was it indicative of the Modern World and, flowering before its time, followed by years of decadence and ignorance? This may be illustrated by the architecture: perfection in its own time within the limits of constructional methods and use of the buildings, but now in these respects outmoded. Yet the principles underlying the approach of the Greeks to architectural design are as relevant today as they were when first evolved. The art of living in cities was given quite a new meaning by them, for democracy of a certain kind replaced autocracy in city government and organization. This democracy, however, did not find its equivalent in aesthetic and hygienic balance as between the governmental centre and the domestic environment; in these respects, as will be seen, the city remained Ancient.

It is best to think of the part that Greece played in the evolution of the Great Plan (which is Society in its Environment) in this way: a synthesis of all that had gone before, a unique contribution in its time, and a formative influence subsequently.

The urban Minoan civilization, centred on Crete, was the main cultural influence upon the kingdoms of the Aegean. After its

dissolution about 1400 B.C., the Greek Mycenaean civilization replaced it as the dominant in the Aegean. These early Greeks were probably Greek-speaking Indo-Europeans, a war-like race from the Danube who had subjugated the early Helladic farmers and navigators about 1800 B.C. They inherited the earlier culture and the urban ways of their predecessors, and continued the absorption of Cretan influence. The comparatively late development of urban life in Greece can be attributed to the difficult physical character of the land, to a succession of races and influences, and to the fact that the country was some little way along the route by which urbanism spread across Europe.

Mycenaean Aristocracy

Wealthy, militarized, and lacking in a native culture ; these were the characteristics of the Mycenaeans, newcomers to the Aegean who seized the richest plains and the strongest positions, and who gloried in the art of war. Armament had reached a stage in which it was decisive, but costly. Only those who could afford the long swords, the shields, and the speedy chariots were able to offer combat, and in this way a privileged aristocracy arose. The poorly armed masses, at a disadvantage, could hope for little say in the government of the community.

This sharpening of class distinction was apparent in the Mycenaean cities, where the powerful rulers lived in strongholds built on strategic sites, and the townsfolk dwelt below in simpler fashion. The high town was called at first the *polis* (later *acropolis*) and the lower town the *asty* ; the distinction continuing for a long time in Greece, although in a less marked manner than under the Mycenaeans. The stronghold became the focus of the city and contained a market and temples, as well as the palace of the king and the residences of the aristocracy. In its turn the city became the focus of the surrounding territory, which was inhabited by farmers and shepherds living a detached existence or together in small villages. The Greek city-state had developed physically as the regional city', though not as yet democratically in its government.

The Mycenaeans had inherited trading ways from the Minoans and commercial activity was encouraged by their rulers. The artisans and the peasants were, however, essential to successful commerce, with the result that the rulers began to depend upon them for their own wealth as well as for the improvement of the

community's wealth. The lower *asty* thus acquired an importance in the sharply divided city, for the ruler and the aristocrats in the *polis* were obliged to consider with interest and solicitude the activities of those who were contributing the goods for commerce, that is the townsfolk who lived in the plain below. The king never became a despot in the Eastern manner, as were those kings of Egypt and Babylon. He was merely the head and leader of a clan, and was never held in reverence as a god or human representative of a god. Many aristocrats, who were nearly his equals, lived around him. A further significant difference between Mycenaean communities and those which developed earlier in the 'fertile crescent' was the concept of the community as a productive unit in which all took part in the labours involved, aristocrats as well as slaves. But the specialist was again claiming identity as a craftsman or merchant, as he had done in those earlier communities. These changes in the social structure soon had their visual counterpart in the physical structure of the city, for a defensive wall was built around the *polis* and the *asty*, whereas previously the *polis* alone was so protected. Within this outer wall the city became an entity, accommodating a more balanced community.

Greek Communities

The Mycenaeans had made considerable progress in the development of community life, and it seemed likely that only a short time must elapse before democracy in one form or another would be established in Greece. But progress was stayed for the Mycenaean civilization was broken up about 1200 B.C. by semi-barbaric invaders from the north-west. These Aryans who also came from the east were to disrupt the whole of the Ancient World in their conquest of the Aegean, Babylonia and Egypt. The glory of Mycenae departed and Greece reverted to semi-barbarism, and the *polis* reverted to its original position as the stronghold of the chieftain. Mycenaean culture was not entirely lost, however, for many of the people escaped or emigrated to the settlements which had been developed on the shores and islands of Asia Minor taking with them their art and skill.

There were certain conditions influencing the new Greek communities in Asia which furthered their progress towards the ideal of the 'democratic' city-state. First, the insecure existence which the Greeks lived amongst strange peoples, with the result that

individuals and families from many different parts and tribes of the motherland had, of necessity, to live together as one community in the same fortified position. Second, the freedom from obsolete traditions, now made possible under new circumstances and in fresh surroundings. Third, a geographical position which gave ease of communication with the east and the west, favouring the rise of a merchant class. Fourth, the acquisition of a 'fluid' capital* by the merchants enabling them to compete with the landed and hereditary aristocracy. Finally, the Persian industrial tradition in Asia encouraged the growth of Greek industry. The merchants and the owners of vineyards and factories constituted a new aristocracy, thereby weakening that of the hereditary leaders. As a result of these several influences, city government tended sometimes towards aristocracy—in the sense of government by a few rich and noble families—and sometimes towards democracy. These changes, which were taking place in the social life of the Greeks established on the coast of Asia, appeared more slowly and obscurely in Greece itself, though considerable progress was made there in the seventh and sixth centuries B.C.

Standing now, as it were, upon the threshold of that period of Greek history which is acknowledged to be its greatest in achievement, some of those influences which brought about this final burst of creative genius may be appropriately examined. The Greeks, by developing industry and cultivating extensively the vine and the olive, rivalled the Semitic merchants trading with the great Mediterranean ports; they were considerably aided in this by their seafaring tradition. Prosperity came to the Greek settlements in the motherland and around the Aegean so that high standards applicable to certain aspects of living were existent. Meanwhile, a great Persian empire had embraced most of the lands in which the ancient civilizations had developed, and in 521 B.C. this empire was at the zenith of its power under Darius I, with the races of South Russia and central Europe as its only serious opponents. After an unsuccessful attempt to subjugate them, Darius directed his attention upon Greece, and until 479 B.C. the Greeks were constantly engaged by the superior forces of the Persians. In spite of this, and the devastation of many cities, the invaders were utterly and finally routed. It was under the stress of invasion that Greece

*Capital in the form of money or easily-traded precious metals and jewels which could be invested or loaned at will.

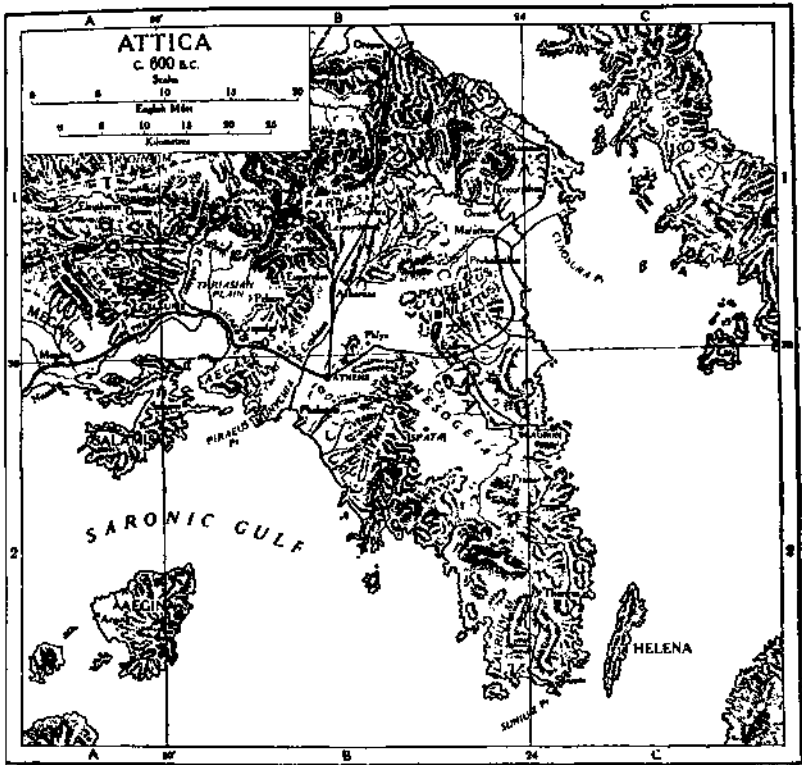
developed a certain unity, a confidence in her power, and a stimulus to further effort.

The physical characteristics of Greece claim equal attention for their contribution to the evolution of the Greek city-state as those other influences relating more closely to human activity, such as the co-ordination of small communities under the leader of the clan and under stress of settlement amongst strange peoples. The narrow valleys in the mountainous areas and the numerous inlets and islands of the coast divided the land into small units of common interest, between which communication was difficult except by the sea. Under these conditions many city-states became identifiable as a small group of villages and little towns under the rule of a city. Independence brought fierce rivalry, which might be tempered under the stress of invasion by a foreign power, and also an absence of monarchical power of a type that Ancient Egypt had known. But these were also the conditions which would enable a new kind of community to develop showing certain of the ideals of democracy, and would give rise to individualism in thought.

But Greece was ahead of her time ; democracy in its present meaning was never achieved, and the kind of democracy of the city-states was never entirely successful as a basis for community life. These and other causes made the return to a monarchy not unacceptable, though it was now one king who ruled over all the city-states and brought unity to the country and, in consequence, a force strong enough to conquer new territory and colonize it. New territory was indeed required because the limited amount of arable land in Greece and the growing population, engrossed in culture and the arts, made her rely on imports from abroad. Philip of Macedon and his son Alexander, both schooled for war and conquest, brought about this unity in Greece and built up a great but short-lived Empire. Under these conditions, the independent city-state could not continue to exist, and it is left to the imagination how much nearer Greece might have proceeded towards the ideals of community and democracy had the enlightened programme of political and social reform continued without that incursion of Macedon. A great deal lived on, for the world later responded to the thought and work of the philosophers and artists of Greece.

The City-State

The Greek city-state was not only an original development of community life, but it was also a progressive step towards social and economic balance as between town and country. Regionalism was not a new concept at the time, for something very near to



Map of Attica in Ancient Greece (c. 600 B.C.), of which Athens was the major city. The valley-lands of the city-states were developed as the basis of miniature regional organizations, isolated from one another by mountain boundaries. (From The Cambridge Ancient History, by courtesy of The Cambridge Univ. Press)

it had already appeared in the urban settlements on the river systems of the 'fertile crescent' and in their irrigation works. But the city-state as an economic unit went beyond this in its pattern of central market town and subsidiary towns and villages, all within the valley 'region', though very soon the Greeks began to rely on food and goods imported from abroad in exchange for specialized

'production. The area of land under the control of the city-state ranged from about 40 square miles to the 3,360 square miles of Sparta ; it was usually contained within a valley whose steep slopes isolated it from the adjoining city-states. A narrow outlet to the sea at the end of the valley formed the means of communication with the outside world and resulted in a concentration of the population near to the coast.

There was nearly always one major town, the cultural and economic centre of the ' region '. The arrangement of the buildings and land uses was much influenced by the form of government and the social life. The *acropolis*, or the ' high place ' of the city built on an eminence, was dominant both visually and functionally, as befitted the centre of government and the stronghold of a community. The statues or temples of the gods were also situated on the *acropolis* because most social activities in Antiquity had some association with religion. Early in the history of Greece, public life centred on the palace of the king but later, when a more democratic form of government appeared, public life centred on the ' common hearth ' or *prytaneum*, the home of the chief or the head men of the city ; and whenever a new colony was founded, the emigrants took with them embers from the ' common hearth ' of the mother city to be kept sacred in the new *prytaneum*.

Close to the *prytaneum* was the *bouleuterion*, the home of the Council. Under the earlier political system in which a king was the leader, the great men who were close to him deliberated apart in the *bouleuterion*, although they were also represented in the *prytaneum*. Under more democratic forms of government, all the people could not be engaged in constant deliberation in the *prytaneum*, so that a limited body of men was appointed by the people to carry out the day to day work of city rule and organization in the *bouleuterion*.

Whatever the form of government, it was democratic enough to recognize citizenship, and in the *agora* or city square—the meeting-place of the citizens—the Greeks can be said to have formed their way of life. The original use of the *agora* had been a market-place where, as Aristotle wrote, the traders could satisfy each other's needs and contribute to the comforts of life " for the sake of which men seemed to have joined together in one community."* He also considered that the place set apart for

*Aris.. Pol.. VII (VI). 5. 2

commerce should be " easily accessible for goods coming over the sea or from the interior of the country." Those who were not directly engaged in commerce also frequented the *agora*—to hear the latest news of the city and from distant lands, to talk, and to listen. In these ways the *agora* became the place where public opinion was formed. As a place of public assembly it was used for meetings of all the people convened by the ruling body, the extent and nature of use varying with the particular form that body took. For example, the cities of Thessaly under a regime of oligarchy had the functions of commerce as the only use of the *agora*, whilst in a democratic city such as Athens the *agora* became too small in the fifth century B.C. for popular assemblies, and instead the hill of the Pnyx was used. The *agora* in the early Greek cities was small and irregular in shape, but, as government became representative of the people, it was consciously planned as a large and regular place surrounded by public buildings with a unity of design. Later, in the days of the Macedonian Empire, the *agora* in the colonial towns was similarly planned, though as one element of a comprehensive town plan. Herodotus, the Greek historian, regarded the *agora* and the social advance that it signified as the most distinctive element between the Greeks and the Persians.

The working of the Greek city-state as an economic and governmental unit, as well as a way of life, can be illustrated by reference to Attica, of which district Athens was the ruling city. When 'monarchical' rule was abolished many reforms were introduced there, including the recognition of industry on an equal footing with commerce and agriculture, the removal of the political influence of the old clans or *genos*, the filling of public offices by lot and not by election, the abolition of the property qualification for the magistracy, and the right of every citizen to attend at public assemblies. The democratic nature of this society made possible such innovations as the selection of leaders from amongst the craftsmen or merchants as well as from the aristocrats, and public services including the provision of drama and assembly buildings. Public works contracts were split up into suitable units so that the small contractor could submit a tender. But these reforms, impressive and far reaching as they may seem in relation to other civilizations of the Ancient World, did not lead to democracy as expounded today. Women had no place in public life ; citizenship was an hereditary privilege from which resident aliens were excluded, although they

were often men of substance and probably formed one-tenth of the total population ; and slavery was the mainstay of industry. It was, however, the existence of this social un-balance that gave to the privileged classes the leisure in which to advance culture and politics, whilst the women, the aliens and the slaves performed the menial daily tasks.

Social un-balance soon had its corollary in economic un-balance, for much of the land was barren or unsympathetic to agriculture, and thus unsuitable for the provision of food to a society in which only a certain proportion of the population worked the land. Industrial development and profitable specialization in agriculture with the vine and olive had led to a population three or four times greater than it would have been under a self-supporting economy ; the Athens region alone was importing four-fifths of its cereal requirements by 450 B.C. When these external supplies were cut off with the division of the Macedonian Empire at the death of Alexander the Great, conflict broke out between those citizens who played some part in the governmental or cultural life of the city and the rest of the people who did most of the essential work. Under these conditions of economic un-balance the Greek civilization could only contribute in a limited manner to the development of the community as a way of life for Man. The limitations of the Greek civilization were exemplified by the restrictive practices indulged in to keep down the birth-rate and in the steady flow of emigrants, both resulting from the lack of good quality agricultural land and from the uneven distribution of property and wealth.

There was some realization in Greece that a community in a particular form might require a maximum and minimum population figure for its maintenance. Plato limited the number of people in a city to 5,040, sufficient for defence and not too large for any man to be a stranger in the city or for an election candidate to be known to the electorate. Hippodamus, the Greek town planner, considered that the ideal city should have 10,000 inhabitants. Aristotle went further and related the population to the extent of the associated territory and the number of people it could support; he considered the quality of the people as much as the number, and in his view the greatness of a city depended upon the citizens and their accomplishments, and not upon a population made great in number by slaves and aliens. The populations of Greek cities did,

CHAPTER IV

ROME: A EUROPEAN ECONOMY

' Wherever the Roman conquers he dwells.'

Seneca

THE Pre-Roman world saw the rise and fall of many great empires, but imperial development at that time was limited because the towns and regions were never fully unified politically, and there was only a limited flow of trade and passing-on of cultural progress. The development of the Roman Empire was, however, of a different order and the result of planning in its widest meaning (although H. G. Wells has spoken of it as an " unplanned novel growth "). Military tactics, economic development, and political system were all directed towards the realization of the Roman plan which was to bring peace and security to the known world, though its primary motive was to make Rome wealthier and more powerful. Rome was to be the centre of this world, and all the lands were to be brought to the Roman way of life. It was a form of planning which would transcend differences of race, creed, and geographical region. It was also a long-term plan, for " Rome was not built in a day ". In the realization of this plan there were several clearly marked stages of particular interest to the historian, although for the present purpose we need consider only three major stages : the unification of the basic region Italy, the extension of Roman rule around the Mediterranean and beyond under the Republic, and finally the developments under the Empire.

We can understand a little of the significance of Roman thought and policy by considering the meaning that the city of Rome had to the people of the Roman World. Rome, in extending her sphere

*A Short History of the World : by H. G. Wells. (The Labour Publishing Co., Ltd. London. 1924)

of influence to engulf first of all the peoples of Italy and later those of the Mediterranean and beyond, became the one great city, and all freemen of her Empire were citizens of Rome. This policy succeeded whilst the tide of conquest rolled on, but it failed to retain the Empire intact when the limits of expansion had been reached. Upon Rome, the Empire and its peoples were centred ; it was the great ' autocrat' and the headquarters of the planning organization. Athens, on the other hand, as the centre of an independent city-state, exemplified the most advanced stage of democracy in the Ancient World.

The period 753-264 B.C. covered the development of Rome from a small settlement, insignificant amongst many others, to the greatest power in Italy. During this time many threatening races were subdued, the Greek colonies were brought to heel, and the Gallic invasion of 390 B.C. was withstood. Moreover, in addition to the confidence gained in overcoming these difficulties, a further impetus was given to the latinization of Italy by the need to acquire more territory to compensate for the poor agricultural methods of early Rome.

Roman Citizenship

From the time of Rome's development into a powerful city, there was a tendency towards systematization which entered into most of her activities, and which may be considered as a rigid form of planning. The organization of the Roman army was an example, and in the community class distinction was more clearly defined than before as a result of this tendency.

At first there were two recognized classes in the community, the Patricians or upper class and the Clientes or lower class. The latter were in the position of serfs without any rights of ownership, whilst the slaves lacked any form of recognition at all. Later, a class of people occupying an intermediate position between the Patricians and the Clientes emerged from certain Clientes who had left the clan to which they were attached, and possibly also from the peasant classes of conquered lands. The people who belonged to this intermediate class were called Plebeians, although in the strict sense the name signified all those (apart from the slaves) who were outside the Patrician class. The Plebeians, having broken away from the ties that kept them in reality as serfs to the Patricians, became a menace to social order. They were, however, granted

recognition in the city and the privilege of bearing arms by the reforms of King Servius Tullius (578-534 B.C.), and in this they were helped by the need for larger armies to fulfil the growing ambitions of Rome. But the Plebeians were not satisfied with these new rights, and continued pressure on their part removed the prerogatives which the Patricians had enjoyed. The new order of society, although in theory democratic, proved to be little more than another version of the old order, because the changes were brought about by the *wealthy* Plebeians and not by a representative body of *all* the Plebeians—one form of aristocracy merely giving way to another.

When all Italy had been brought under Roman rule, the process of converting the different territories and cities to Rome's way of life was varied to suit the particular circumstances of each case. Some of the conquered cities were reduced to slavery. Some conformed to the new ways and were given a share in the government of Rome ; whilst in others the people were denied Roman citizenship although remaining citizens of their native town. These methods were too specialized and varied for application over the vast and distant lands which were later conquered, and in their place a standard policy of colonization was evolved.

The Struggle for Subsistence

Agriculture in one form or another was the chief occupation of all 'classes of Romans, except when they were employed in the army ; but the methods used were so primitive that the growing population of Rome could not be adequately fed. The division and ownership of the agricultural land was in small lots, and proved to be a constant source of discontent among the people when efforts were made to arrange the land in larger lots, for the Romans only knew the tradition of individual small-scale farming. In the Regal or early period, the *ager publicus* or public land was the property of the king and was used for the benefit of the people. When the Republic superseded the Monarchy, the Patricians not only claimed to have the sole right of the public land, but also succeeded in taking over the conquered territory by keeping the Plebeians engaged in military occupations. This territory by law should have been apportioned out amongst the people. The peasants left on the home lands during the wars were discouraged by the unfair conditions and, after selling their holdings, joined the army. Meanwhile, the

Patricians exploited their enlarged estates by the use of slave" labour.

This Roman economy, predominantly agricultural in nature, was clearly in an unsatisfactory condition as a result of these changes and general dissatisfaction. It was barely supporting the people, and would assuredly fail when military operations and plunder ceased, and the citizen-soldiers had not their farms awaiting them when they left the army. The growing attraction of the cities for the countryfolk also added to the strain upon the economy. The Agrarian Laws were then passed with difficulty in an endeavour to create more equitable conditions in land ownership as between the different classes, although in practice little improvement was made. It was not surprising, therefore, that famine and its attendant revolutionary dangers came near to reality and was only warded off by the importation of corn from other countries. This was sold below market price to appease the mob, thereby striking yet another blow at the native agricultural economy.

, The industrial development, compared with the agricultural basis of the Roman economy, was of a very secondary nature. The territory under Roman rule in the early days lacked adequate raw materials, and later, when subsequent conquest made up this deficiency, it was a more attractive proposition to draw upon the industrial capacity of the subjugated peoples than to bring the raw materials to Italy and train the farm worker as a skilled craftsman. The visual arts and industries which were developed in Italy show that the Romans drew upon the arts and techniques of other countries. They possessed a genius for imitation, and then for development into something essentially Roman, rather than for invention in its own right.

The other countries of the Mediterranean basin were carrying on extensive trading while Rome was consolidating her position in Italy ; as a result she was treated as an inferior in any trade agreement. Nevertheless, at this time Rome was building on a small scale those works of public utility and military advantage—the aqueducts and the roads—which subsequently made empire building possible on a vast scale. A great sewer was built in Rome in the time of the monarchy and, in 313 B.C., the first aqueduct was in use to improve the water supply. A little later, the military roads were laid down—the Via Appia, the Via Flaminia, and the Via Valeria. But it was the ruthless use of slave labour that made these engineering projects possible.

Thus "far Rome's contribution to the development of civilization was far less than that of Greece up to the Macedonian Age. But the Romans had devoted their energies towards the unification of Italy, whilst in Greece the peoples in the independent city-states were able to give their time to more peaceful occupations, including the establishment of a ' democratic ' government. Within limits, intensive efforts were made by the Romans to find a way of government by representation and a method of distributing wealth equitably ; but in each case it was economic necessity and growing ambitions on the part of some of the lower classes that finally brought about reform. And then reform was only a re-alignment of existing policy to mitigate the dissatisfaction, so that class and wealth distinction still remained.

Early Rome

We have seen how the unification of Italy was achieved by making every town, as it were, a satellite of Rome, so that Italy, became a great city-state. Under these conditions, the physical structure of the towns over a period of years reflected something of the great city of Rome, and in its turn that city changed as the Roman World became an Empire of many different peoples.

The conditions under which Rome became a great city were unfavourable to any carefully planned scheme for the arrangement and development of the several parts of the urban area. These conditions were an increasing population clamouring for reforms, pre-occupation in military affairs, and devastation by the Gauls. Such disturbing elements were not conducive to orderly growth. Nor was the site of the city very favourable to the application of a regular plan because of the separate hills and spurs jutting out from the adjacent high ground. The size of the city can be judged by the Servian Wall, which probably indicated the extent of the built-up area after the Gallic invasion ; this had a circuit of between five and six miles. When Rome had secured control of the whole of Italy the city, with a population of possibly 300,000 to 400,000 persons, had grown beyond this Wall and did not require further defences.

The Forum was in the centre of the city, and at first it served as a market as well as a public meeting place. Later, its use was essentially political, and a separate building, the Macellum, was built as a market. Around the Forum were several temples and

the buildings concerned with government and trade. To the south areas were set aside for a cattle market and a vegetable market, for these could no longer be accommodated in the crowded Forum. There were other temples on the hills, and the houses of the wealthy classes overlooked the Forum from the Palatine Hill. The more densely populated quarters were to the south, on the Aventine for Plebeians, between the Forum and the River Tiber in an area called the Velabrum, and to the north in the Subura. The houses of rich and poor were intermingled in the districts to the north and east of the crowded centre around the Forum. The Argiletum (to the north-east of the Forum) was the quarter of small tradesmen.

Rome at this time was equipped for only the most essential requirements of life, such as shelter, marketing, business, politics and religion. The urban scene, in contrast to its later appearance, was drab but expressive of the times, because the people were engaged in the realities of bitter struggles. The influence of the Greeks upon the adornment of buildings was still in the early stages. Narrow alleys in the crowded housing areas led into crooked and unpaved streets, which in turn joined the paved main streets. The houses were of stone or brick, and, in the poorer districts, of primitive clay and osiers. Floods, fire, and plague added to the problem of achieving leisurely and orderly improvement.

Beyond the Servian Wall the built-up area of Rome was expanding and filling-up the eastern and southern sides of the Campus Martius (the level open space used for military review and assembly). Across the river, development extended below the Janiculum. The major land uses were, however, becoming clearly defined in the midst of this haphazard growth ; thus a dock and harbour area with warehouses was developed below the Aventine, a naval yard was established at the edge of the Campus Martius, and the burial ground lay to the east outside the walls. As yet the visible signs of luxurious living had not appeared, though a few simple public baths were available. For entertainment there was the Circus Maximus to the south of the Palatine, but no permanent theatres were in existence for the citizen-soldier of early Rome held all arts in contempt, except that of war. The only concession made for the use of the visual arts was on the few occasions when a contribution could be made to the grandeur of some public building to accord with the importance of the State.

The Native Background to Roman Town Planning

The haphazard growth of the city of Rome is an indication of the trend of town development within Italy during these early days of Roman history. Little else could have been expected because the energy and thought which the Romans had been directing towards self-preservation and conquest did not favour a profound study of the technicalities of urban life and environment. The period of vast colonial expansion and consequent familiarity with the town planning techniques of other civilizations lay ahead.

There were, however, in Italy certain early settlements which had developed in accordance with pre-conceived ideas, although their influence on the development of Roman town planning is conjectural. The earliest was a remarkable series of settlements in the north of Italy called *Terremare*, and founded in the Bronze Age. Regularly planned on the grid principle, the *Terremare* added further proof to the fact that the clear-cut street pattern of later Greek cities had been used long before the time of the Macedonian Empire. An urban character was given by the main and subsidiary streets, the small citadel, the defensive ditches and ramparts, and the cemeteries beyond the latter ; all these features indicated a developed communal life, and it has been suggested that the population of the larger *Terremare* reached four or five thousand persons.

An early Etruscan town (probably fifth century B.C.) near to Marzabotto was also regularly planned, although it must be regarded as unique amongst its contemporaries, at least in the light of existing knowledge. Pompeii, at the time of its destruction in A.D. 79, was also a well-arranged city compared with the complicated network of streets in Rome, but whether it had developed in this manner from its first days under the Oscans in or before the sixth century B.C., or at some subsequent period under various races, is still unproved.

Amongst other towns built during the latinization of Italy, Norba was founded about 300 B.C. as a Roman town and had some resemblance to Pompeii in its street plan. There are also important towns in Italy today which were founded in this early Roman period, and still show the signs of a regular street pattern of Roman origin. But surveying the whole span of the development of the Roman World, it must be acknowledged that the first stages were rightly those of military, political and economic co-ordination of

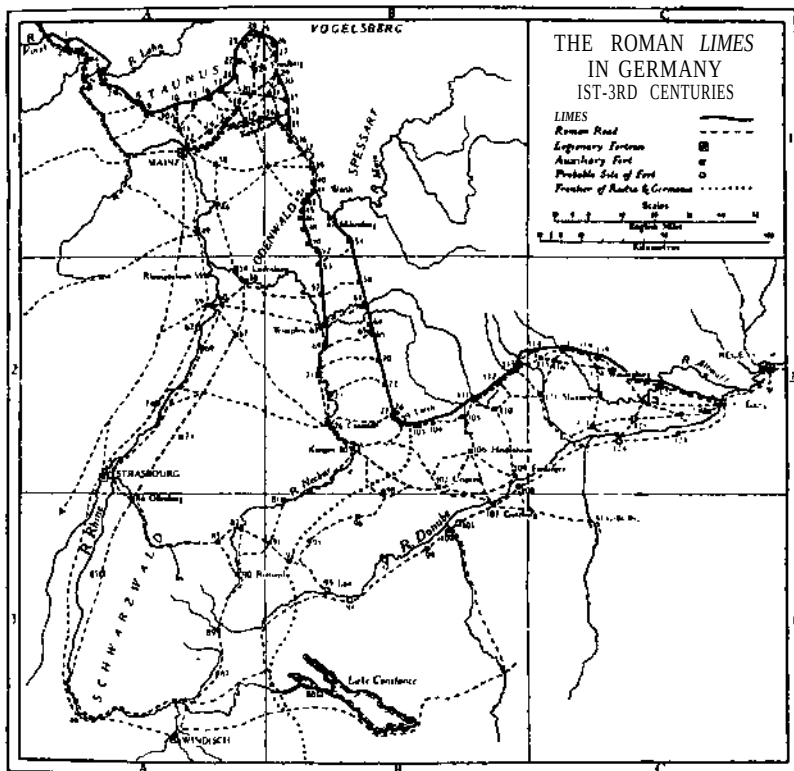
the basic region Italy, rather than the perfection of a model town planning technique. When Rome had established a definitive civilization in Italy, the standard die for its imposition elsewhere could be determined.

Expansion beyond the Seas

The commencement of the Punic Wars in 264 B.C. marked the beginning of territorial expansion beyond the shores of Italy. In Sicily the Romans, now controlling a united Italy, came into conflict with the Carthaginians from North Africa. Carthage at this time was the great power of the Mediterranean, and in the long and bitter struggle which followed the clash in Sicily, Rome gained experience of warfare at a distance from her bases and beyond the sea. This experience later enabled Rome to dominate the whole of the Mediterranean and the known part of the Atlantic.

Unlike the rule of other great empires and the earlier example of latinization in Italy, Rome now pursued a policy in overseas expansion which was short-sighted in its extortion of the wealth and prosperity of the annexed territories. The result was that Rome's own economic system became unbalanced, reliant as it now was upon distant economies which in their turn were being disturbed. The tribute from abroad passed into the hands of the relatively small upper class controlling the affairs of government and justice, and within this class there was little control over the unprincipled actions of its members. If a colonial governor retained part of the tribute for himself, he only ran the risk of trial by his own associates who, themselves, relied on the same sources for their wealth and were likely to deal with him sympathetically. The citizen farmers, who had formed the backbone of Rome's early rise to power and her early economy and to whom military service was a privilege, were unable to look after their farms while busy with the activities of territorial expansion. As a result they fell into debt. It was also impossible for them to compete with the slave labour of the 'capitalist' farms, which had flourished in their absence, and with the cheap produce received from the conquered lands. Similar competition in the towns made conditions difficult for the urban working classes. 'Capitalism' was indeed rife in the Roman World, and the monopoly of wealth and power gave to Rome a surface brilliance. Nevertheless, this apparently prosperous civilization was in reality very 'brittle' in nature.

The Roman ideal that all subjects of proved allegiance should be citizens of Rome lost its meaning when Roman territory became vast and dispersed. Representative gatherings of the people were physically impossible now that the Roman World extended beyond the seas, and a system of elected delegates acting on behalf of the dispersed citizens was not considered or allowed to develop. Under



Roman colonization was a planned development. The map shows the frontier supply and defensive system in Germany, consisting of forts, roads, and limes — roads with watch towers or forts. (From *The Cambridge Ancient History*, by courtesy of The Cambridge Univ. Press)

these conditions the Senate, consisting of the wealthy landowners and others representative of 'capitalism', was free to govern without any effective check over its actions. Theoretically the governmental system was based upon citizenship, but in practice control lay in the hands of the few who often abused their authority. This and other causes, such as the lack of economic stability and discontent among the slaves, gave rise to revolt and civil war in

Italy. Still the amassing of new territories went on, bringing transitory wealth to quieten the people, and the State was able to continue its abuses.

Representative government had given place to a 'capitalist' Senate, and this was now superseded by autocratic elements with the establishment of the professional army. This new organization in the State came into being as a result of the difficulties experienced in subjugating Numidia (North Africa) and in employing the citizen-soldier overseas. The widest territorial ambitions were capable of achievement with the professional army, but the rivalries of the military commanders led to a further period of civil war which the Senate was powerless to curb. Eventually Julius, Caesar enforced that unity which led to the age of imperial rule; the emperor and his officials replacing the senate in government.

An Ill-planned Economy

. During this formative period of the Roman World under the Republic, its economic structure was maintained by a series of emergency provisions, each hurriedly instituted to stave-off a threatened breakdown under an ill-planned economy. To keep in check the threatened revolts by the people, the supply of food was the first consideration on the part of the governing body; the most readily available source was the importation of corn which could be exacted as tribute from the conquered territories. By this means corn was obtained quickly and in large quantity for sale to the unruly people at a low price—to the detriment of the native agriculture and, thus, of a stable economy. Sicily provided most of this essential food, but North Africa, Egypt, Spain, and Sardinia were also forced to send supplies.

The early agricultural pattern in Italy—of small farms and cereal crops—had shown signs of change to large estates as a result of the absence of the citizen-farmer at the wars. In the face of competition set up by the importation of cheap tribute corn, a more drastic change was made in the agricultural pattern. It was opportune that a new luxury market developed in Italy through contact with Hellenic and Asiatic civilizations which required the culture of the vine, the production of vegetable oil, and the raising of table birds. Primitive agriculture now gave place to specialized market gardening requiring considerable capital and the employment of a large number of workers—both beyond the resources of

the small individual farmer. The large labour force needed to work these *capitalist' farms was due to the primitive equipment and the elementary technical knowledge then available, although books on agricultural technique were being written, and the works of Mago, the Carthaginian agriculturist, were translated into Latin and Greek. The 'capitalist' farms or estates—the *latifundia*—were also influenced in their development by the example of large-scale cultivation by the Greeks and the Carthaginians. The owners of these large estates belonged to the upper classes, land ownership being a measure of social position. Farming as an occupation had also been highly esteemed since the early days of Rome, and remained so despite the wealth, luxury, and urban culture assimilated in colonial expansion.

The new agricultural pattern, if it had been properly organized to give a greater yield of essential foodstuffs with fewer workers per unit of land, would have been an example of large-scale rural planning. On the contrary, however, it spelt ruin and degradation for a considerable section of the population of Italy because the small farmer was put out of business, being unable to compete in the labour market against the slaves. At best, the importation of cereals at negligible cost and retailed cheaply would undermine the native will to work and create unbalanced trading between nations. The *latifundia* were also introduced into the colonies despite the efforts of the government to establish communities on a sound economic basis by apportioning-out land in four categories : common pasture, land producing a revenue to meet the cost of public monuments, individual smallholdings, and areas leased to the wealthy classes. The smallholders quickly sold their lots for ready cash and went away; as a result the wealthy classes enlarged their estates, and new families were sent out to replace the first small-holders.

The mineral resources available to Rome substantially increased as one colony after another was established, for many colonies already possessed mines yielding both rare and base metals. The Republic leased the more important mines to great companies, and in other cases private ownership led to the amassing of large fortunes. Marble was also imported from existing quarries in the provinces for the embellishment of a new and magnificent Rome. The importation of these raw materials into the city, and their conversion into articles of luxury or utilitarian use, meant a new industrial activity which was also influenced by the use of skilled

captive workers from countries of a higher culture. The ample resources of cheap slave labour, however, retarded the development of a native industry with individual qualities and capable of a large output, and employing Roman citizens.

In spite of these attempts to draw the industrial capacity of the captured provinces to Rome, their cities still retained industrial superiority—to such an extent that the importation of goods into Rome to meet the needs of increasing luxury exceeded the exportation of goods manufactured in the city. The export of cereals, oil and wine was in any case forbidden because of the anxiety for the food supply position in Italy ; weapons and iron were also limited for security reasons. A further hindrance to trade was caused by the customs duties imposed at every frontier through which the goods passed, although these restrictions were not sufficient to prevent the flow of trade along the good roads and over the sea routes of the new Roman World and its neighbours. The resources of both the East and the West were, in fact, needed to maintain the lavish existence of the wealthy classes in and around Rome. The construction or improvement of the harbours and the removal of the menace of piracy also assisted the development of trading. In the Roman outposts, the half-civilized peoples created further trade currents by their attempts to imitate Roman manners and customs. Indeed, commercial activity was present in all the lands on a vigorous scale, resulting from the efforts of the Roman merchants who penetrated deeply inland by way of the military roads. The traders of the Ancient World by contrast had kept to the coastal lands.

Citizens of the Roman World

The first Romans were heroic and frugal people, aptly described as citizen-farmers. But the expansion of the Roman World and dissension within Italy had taken a heavy toll of these stalwarts, and in their place a motley of strangers came to Rome from other cities in Italy and from the provinces. Artists, craftsmen, professionals and traders came from Greece and the Orient, and with them many slaves who had attained a position in the social scale.

There was an essential difference between the new and old populations of Rome, for the newcomers and those of the old stock remaining in the city had no connection with or interest in the soil. They were parasites kept in idleness by imported foods from the

conquered territories. Rich and poor alike frittered away their time in the 'luxury of idleness', lacking the moral fibre of their predecessors. Life in the city became riotous, lavish, and immoral. For example, men and beasts were brutally exterminated in the arena to amuse the idle crowd. But the Roman World was not made up entirely of the peoples of the city of Rome ; there were many persons with a more balanced outlook living at their country estates, in the armies, and pioneering in the colonies. These were the people who developed a culture which remained Roman through times of decadence as well as of progress, in spite of Greek and other influences. Roman civilization was certainly enriched by contact with Greece, but it never became completely Hellenized.

The New Face of Rome

The changes that took place in the economy and society of the Roman World under the Republic and, later, under the Empire were also apparent in the physical structure of the old cities and in, the new towns of colonization. Rome underwent changes as great as any other city at that time, the new urban environment presenting a very different appearance by the end of the Republic compared to the simple and utilitarian city of the Romans who united Italy and overthrew the might of Carthage. The population had increased from three or four hundred thousand to nearly one million persons, and the spasmodic building growth outside the walls had been filled-in and extended so that the course of the walls was difficult to follow. On the Campus Martius there were so many theatres, baths, temples, and other public buildings that little space remained for display or exercise. At least four bridges spanned the river, and now gave access to a populous district. But the change was perhaps more apparent in the appearance of the city than in the increased coverage, the wood, brick, and stucco of early Rome having been replaced by the stone and marble of the magnificent new buildings. Public and private gardens gave some relief to Rome's 'new face', although they were infrequently used to make life pleasant in the crowded housing areas, where the middle and lower classes lived in tenements four and even six storeys high. The architecture had been influenced by that of Greece, but it was essentially Roman in invention, ambition and magnificence.

Strabo, the Greek geographer, has left an account of this new Rome as it was in its heyday : " The Grecian cities are thought to

have flourished mainly on account of the felicitous choice made by their founders in regard to the beauty and strength of their sites, their proximity to some port, and the fineness of the country, But the Roman prudence was more particularly employed on matters which had received but little attention from the Greeks, such as paving their roads, constructing aqueducts, and sewers to convey the sewage of the city into the Tiber. In fact, they have paved the roads, cut through hills, and filled valleys, so that the merchandise may be conveyed by carriage from the ports. The sewers, arched over with hewn stones, are large enough in some parts for wagons loaded with hay to pass through, while so plentiful is the supply of water from the aqueducts, that rivers may be said to flow through the city and the sewers, and almost every house is furnished with water pipes and copious fountains. To effect which Marcus Agrippa directed his special attention ; he likewise bestowed upon the city numerous ornaments. We may remark, that the ancients, occupied with greater and more necessary concerns, paid but little attention to the beautifying of Rome. But their successors, and especially those of our own day, without neglecting these things, have at the same time embellished the city with numerous and splendid objects. Pompey, Divus Caesar, and Augustus, with his children, friends, wife, and sister, have surpassed all others in their zeal and munificence in these decorations. The greater number of these may be seen in the Campus Martius which to the beauties of nature adds those of art. The size of the plain is marvellous, permitting chariot races and other feats of horsemanship without impediment, and multitudes to exercise themselves at ball, in the circus and the palaestra. The structures which surround it, the turf covered with herbage all the year round, the summits of the hills beyond the Tiber, extending from its banks with panoramic effect, present a spectacle which the eye abandons with regret. Near to this plain is another surrounded with columns, sacred groves, three theatres, an amphitheatre, and superb temples in close contiguity to each other ; and so magnificent, that it would seem idle to describe the rest of the city after it. For this cause the Romans, esteeming it as the most sacred place, have there erected funeral monuments to the most illustrious persons of either sex. The most remarkable of these is that designated as the Mausoleum, which consists of a mound of earth raised upon a high foundation of white marble, situated near the river, and covered to the top with evergreen shrubs. Upon the

The Emperors were never very secure on the throne, and the menace of frontier attack increased when the limits of territorial expansion were reached. Protective measures in both cases meant larger and still larger armies. To this heavy financial burden was added that of the gifts which the Emperor made to the inhabitants of the large towns for their favour and to keep down growing discontent. The cost of imperial rule, therefore, increased alarmingly, and was met by further taxation. In turn, this led the people to seek immunity in the countryside, though they were often countered by the allotment to each person of a legal obligation and a social duty in the town ; the forced labour of slavery was matched by this restriction of the citizen's liberty.

Yet, despite all these troubles, the pomp and luxury of the imperial throne maintained an apparent security until the strain on the people became too great, and the " glory that was Rome " was for a time remembered only in ruins as the barbarian hordes swept across Europe—until a new stability emerged in Medieval* times.

Imperial Economy

The economic system of Rome had been built up on slavery and, when the supply of captives dwindled as the era of expansion passed, certain adjustments had to be made. The lot of the slave began to improve as his value increased in the face of a decreased supply of his kind. Meanwhile the free artisan in Rome, who had suffered in the past as a result of the competition of imported slave labour and of the subjugated countries, regained to some extent his old position. But, again, he was prevented from becoming too important in the community by a tendency to associate the slave with the revival of the artisan class ; a fact which further improved the lot of the slave. Nevertheless, slavery remained through the years of the Empire, including the period when Christian influence began to have some effect. The decline of slavery as a contributor to the Roman economy brought about a change in the *latifundia* system of agriculture. The result was that the workers on the farms rose to a position intermediate between slavery and liberty, which compared in some respects with the serfdom of the Middle Ages.

In this new development of the agricultural pattern, the free man working on the land was legally tied to his holding for which he paid rent in kind or in money. He passed with the land to any

new owner, and in this respect his position was similar to that of a slave. The origin of this 'colony system' can be traced to a number of sources, but its development was due in no small measure to the fact that it was essential for the State to maintain agriculture in a Roman World tending to break-up into self-sufficient regions; these would no longer toil for Rome alone, or send her slaves. The 'colony system' was accompanied by technical progress in farming methods particularly during the first two centuries of the Empire, and due partly to the writings of Cato, Varro, and Columella. Irrigation and fertilization became common practice, and the agricultural implements were improved. But for the increased yield of foodstuffs that was now possible, the reduction in the number of slaves would have had a far greater effect upon the standard of living. The *latifundia*, however, remained the characteristic feature over a great deal of the Roman World until a tax was levied on the increasing areas of uncultivated land belonging to them, which caused many of the owners to leave their properties.

The 'colony system' certainly restored the smallholder, but it arose out of a troubled age of insecurity and barbarian invasion, and failed as a measure destined to retrieve the dwindling fortunes of the Empire. Both the *latifundia* and 'colony systems', although interwoven with the urban economy as suppliers of food, had an eventual influence on the decline of the towns. This occurred as a result of the owners and landlords setting-up miniature urban industrial patterns on their estates which fostered a movement towards self-sufficiency in the countryside, thereby contributing to the decline of industry in the towns. There was evident in this movement a failure to keep an economic balance between town and country, and a step back towards the Neolithic economy of self-sufficiency which even the urban tradition of Roman manners and customs could not stop.

Arising out of the changes in the working class structure which took place as a result of the scarcity of slaves, the free craftsmen were able to improve their status and that of the guilds to which they belonged. Prosperity under the settled rule of the early days of the Empire led to a marked growth of the guilds, but rigid controls were soon imposed on them, though certain privileges were also granted to the members in compensation, such as exemption from municipal duties and from service in the militia. Within the limits

of the guild system, the artisans developed their own democratic communities which made provision for charitable purposes, administered collective property, and ensured honourable burial for the members. The artisans now thought and acted together, and became conscious of the important place they occupied in the economy of town, country, and Empire. They were able to put forward claims for increased prices on their commodities, and in doing so added yet another factor to the general disorder spreading throughout the Roman World.

The guilds were the trade associations of private enterprise but, in view of the diminishing labour force, it was impossible for them to meet the demands of the Empire. They were also cautious in expending money on the development of industry because of the unsettled conditions. The State was, therefore, strongly persuaded that there must be some nationalization of industry and was further influenced by the fact that private enterprise might become too powerful and oppose the State. The possession of considerable resources in wealth and manpower by the State, together with the fact that the needs of the army required an increase in the industrial productivity, were obvious practical considerations in support of the initiation of State industries. And, once the possibilities of this kind of enterprise were recognized, the State exploited them for its own benefit ; the method adopted being the extension of State industry to luxury goods with the protection of monopolies. In the face of this kind of competition, private enterprise, and the liberty it represented, had little chance of survival in a big way.

Trading and commerce likewise passed through a period of prosperity, followed by one of decline, under the Empire, and were also subjected to an increasing measure of control by the State. Rome was at the centre of a commercial activity which extended beyond the boundaries of the Empire to the barbaric lands and to the Far East. The opportunities for trading were unique in that one rule of law extended over many countries, and the passage of goods to and fro included costly luxury goods as well as essential foodstuffs and raw materials. But in the decline of the Empire, commercial activity dwindled because of the dangers resulting from the barbarian invasions, and the restriction of trading liberty by State interference. The transport of heavy goods over long distances was expensive in spite of the good roads, and without trade of this kind a fully inter-dependent imperial economy could not be

developed. There were also two important trends which assisted in the collapse of the Roman economy : first, the payment for goods imported into Rome was being made increasingly with money and not with the products of a healthy industry ; second, the provinces were moving towards a self-sufficient economy.

* * *

The unity which Rome brought to a world of varied and belligerent races under Republican and Imperial rule lasted longer than any similar unity over a group of countries. This fact can only be attributed to careful planning of military, governmental, and economic interests. It was not always good planning inasmuch as its ultimate purpose was Rome in its widest meaning, and not the common good of humanity. Greed and short-term planning led to exhaustion of the soil fertility in one province after another, despite the skill of the Romans in agriculture. The forest lands were denuded and soil erosion took place on a vast scale with a consequent shortage of food. The plan ultimately failed to hold this unity through lack of flexibility, its purpose never changing when the several parts of the Empire were ready to share prosperity and slump with Rome as partners, instead of remaining as satellites.

There were great opportunities under common rule for pooling the knowledge and skill of the several countries of the Empire, but again Rome retarded progress by imposing her own culture to the detriment of native developments. Nothing like the invention and original contributions to culture of the Greeks ever came out of the Roman civilization.

CHAPTER V

NEW LIGHT IN THE EAST

' There will never be produced a new Alhambra, any more than a new Parthenon or new Pyramids ; for these great buildings were the expressions of ideas and aspirations peculiar to societies which have long ago perished. Thus, the Red Palace of Granada is not interesting merely as a Mohammedan edifice left isolated in the far west of Europe, but as the monument of a people and a civilization long dead and gone. A sadness, too, attaches to it, proceeding from the memory of the violent extinction of that people with a mission unfulfilled—fraught, as it seems to have been, with so much of light and beauty to the Christian and the Muslim worlds.'

GRANADA AND THE ALHAMBRA by Albert F. Calvert*

SINCE the emergence of a higher civilization than the primitive in the Middle East, the centre of activity of the Ancient World had been moving gradually westwards along the Mediterranean. Finally, in Rome there existed an organization which gained and kept peace and security over a large group of nations for a considerable period of time. The duration of Roman rule was not, however, long enough for the complete absorption of a common civilization by the different races of the Empire. In particular the more primitive races to the north and west still retained their own characteristics, and when the strong arm of Roman might became weak there was a speedy return to barbaric disorder. Europe was unready to receive and absorb the civilization of the Eastern Mediterranean through and as developed by Greece and Rome in so short a time, and in her own hard way prepared the ground through the Dark Ages for a Medieval civilization which was distinctively European and fully developed.

During this formative period of Medieval Europe the lamp of culture and knowledge was kept alight in the world by three

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civilizations—in Byzantium, Islam, and China. They had certain features in common, particularly the strong force of new religions in the case of Byzantium and Islam, and were also in contact with each other on various occasions. In time their influence spread over large areas of the East and the West.

Christendom

The development of a distinctive Byzantine civilization was made possible by the setting-up of a new centre of Roman organization in Constantinople, between the East and the West. The city of Rome had been the centre of the Roman World and the seat of government by the Senate. When the Emperor of Rome came to be regarded as the central authority holding together all the different races in a union of peace and stability, the city of Rome lost its age-long association with authority whenever the Emperor was away from it. Rome was situated too far away for active control of the frontier defences, where the existence of the Empire was being threatened. As a result the Imperial headquarters were established variously at Milan, at Sirmium or Nish in Serbia, and at Nicodemia in Asia Minor. The Emperors also found Rome uncongenial because of its senatorial and republican traditions, and its lack of sympathy for the Oriental concept of sovereignty which was associated with imperial rule. These were reasons which made possible the establishment of a New Rome elsewhere.

The Roman Empire at this time was fast losing that cohesion which had been based upon the idea of the great and universal city ; from within political, social and economic troubles were disrupting it. These were followed by the physical division of the Empire into eastern and western parts, brought about as a result of the barbarians breaking through the defences and penetrating from the Danube to the Adriatic. The pressure was maintained all along the frontiers by the Franks, the Vandals, the Visigoths, the Ostrogoths, the Alans, the Mongols and a new vigorous Persia. Finally, in A.D. 493, a Goth ruled in Rome to mark the end of the western Latin Roman Empire. The eastern territories survived for eleven hundred years in the civilization called Byzantine.

The city of Byzantium, re-named Constantinople, had long been recognized for its strategic value where Europe met Asia ; the site of the city on a hilly promontory with a natural harbour was also eminently suitable for a fortress. The Roman Emperor Constantine

did not overlook these qualities during his campaign against Licinius, master of the eastern part of the Empire, and made Byzantium his capital in A.D. 330. Around this "New Rome which is Constantinople" the Byzantine civilization arose with its Christian ideals, its Latin-speaking Court, its Hellenic culture, and its Oriental concept of sovereignty.

Christianity had extended its influence during the time the Roman Empire was in decay, for the old religions—the pagan ideals of the Greeks and the State-worship of Rome—gave no message or promise of hope in troublous times. Mithraism (the worship of Apollo, the Unconquered Sun) had secured a firm hold in the Roman Empire in the third century, particularly in the army, and it brought a sense of fellowship and discipline to combat the hopelessness and loneliness of the world. But it had not the wider appeal of Christianity to different cultures and classes of people. Christianity, on the other hand, in allowing Greek philosophy to exercise an influence over its theology, gained the sympathy of the thinker, and its appeal to the lowly was in the doctrine that all men are equal in the eyes of God. The Christians were not prepared to accept the Roman Emperor in the role of a supreme being, and suffered persecution thereby; but the number of adherents continued to increase so that they became a force to be reckoned with in the internal affairs of State. It was the Emperor Constantine who achieved a compromise between the Christian Church and imperial rule in the eastern half of the Roman Empire by adopting Christianity as the State religion, with the Emperor nominally at the head. Throughout the history of the Byzantine civilization the Church accorded with this compromise and, in fact, modelled its own organization upon that of the State. In this way Rome, rebuilt in Byzantium and reconstituted to accept the new force of Christianity, survived through the Dark Ages when the barbarian hordes swept across the western world.

Byzantine Rule

The constitution of the Byzantine government was basically Roman, though it was adapted, varied and supplemented to meet the needs of the time. The measure of its success was that for eleven hundred years an Empire in some form or another was held together in a world full of chaos and change. This fact alone would

surely justify the place of Byzantium as a contributor to the development of Society and its Environment.

The constitution of the Byzantine Empire was primarily autocratic in the absolute rule of the Emperor, but democratic elements appeared to a lesser extent in the election of the ruler by the people, and in the people's right to remove him if he proved incompetent. Before coronation, every Emperor had to be acclaimed by the Senate, the Army, and the People of Constantinople ; his rule then remained absolute so long as he gave satisfaction. It was possible for the Emperor to secure a successor of his own choice by the practice of appointing one or more additional ' Emperors ' without authority, who would immediately fill the vacancy on the death of the ruling Emperor. But the formal assent of the electors was still necessary.

The people of Constantinople were at first divided into four self-governing municipal bodies or *demes*, later reduced to two in number. A further sub-division into the Political and Peratic sections was made for the purpose of delegating special tasks ; to the former, civic duties relating to the upkeep of the city ; to the latter, defensive duties. The people were able to express their wishes constitutionally through these bodies, and if this method failed the people resorted to unrest and rioting. The Senate took the form of a vast body comprising all the wealthy and prominent persons in the Empire, but it lacked the tradition and the constitutional rights of the Roman Senate. After its most influential period in the sixth and seventh centuries A.D., the Senate ceased to have any political importance.

The Law, as something independent of changing customs and governments, had been well established by the Romans. In Byzantium, as a stabilizing influence, the Law was primarily responsible for keeping the imperial authority within constitutional bounds. The Emperor was the source of the Law, but, nevertheless, it remained in some way a higher authority which he must respect. This form of autocracy, which was defined within constitutional limits, was a great advance upon earlier autocracies with unlimited powers.

Less visionary than the Greek political theories, it may be said that the Byzantine system of government contributed in its own practical way to a world unready to accord with the reasoned argument of democracy.

A Cosmopolitan Society

The nature and characteristics of Byzantine Society are more fully understood against its cosmopolitan background. At the outset the Empire consisted of many races, and, in the course of its history, new strains were constantly drawn into the population structure so that racial pride and hatred gave way to the directing of racial characteristics towards a national unity. Any foreigner who was orthodox and spoke Greek was acceptable as a fellow-citizen, and to some extent men were judged for their own value to Society rather than by the luck of high birth. Through culture and education, a man might rise in the social scale for the Byzantines respected learning and appreciated beauty in art. Women were also less restricted than they had been under earlier civilizations, and were able to enter into the life of the cities with the same freedom as men. This new attitude towards women demonstrated the influence of Christianity in Byzantium, although the old paganism of Rome was to be seen in the slave system which survived in spite of a growing public conscience that it was wrong. Pagan traditions were also apparent in the sport of the Hippodrome and in the brutality of the mob in moments of passion.

Life in Byzantium for the Emperor and the upper classes was ceremonious, and was regulated by the strict canons of Church and State. For the poor, although living in squalor in the city, conditions were rather better than was their usual sorry state through history. Extreme poverty and State-aided idleness, such as Rome had encouraged, were not allowed to become too great a menace because of the initiation of public works to counter unemployment, and by closing the gates of the city to all those not on authorized business and who might become a charge on the community. For the orphans, the old, and the infirm, there were numerous charitable institutions. Aristocracy was not regarded as the hereditary privilege of a special class of people, and it could be achieved by any member of the middle class who had ambition and good fortune. There was yet another special class of person in Byzantine society—the *eunuch*—who was often selected for the important governmental and civil positions. By virtue of his disability, the *eunuch* could not establish an hereditary right to his office and would thus counter the growth of hereditary feudal power to menace the State.

The progress of education was favoured by the liberal outlook

of Byzantine Society and by its cosmopolitan character. These were characteristics which would allow new ideas and new methods to develop, as they did in the several universities throughout the Empire which flourished at times or suffered the fate of closure that, for example, the Emperor Justinian ordered for the School of Athens. The heritage that Christianity could now bring to knowledge and culture was added in Byzantium to the classics and learning of Greece and Rome, and in due course Islam became another cultural influence in return for all that Byzantium had given to her. The Byzantines, however, found their real *metier* in knowledge and culture which could be expressed in a practical or visual manner. The practice of Medicine was ahead of that in other earlier or contemporary civilizations ; while the symbolical nature and the emotion of Byzantine Art and Architecture became essentially a native expression, although basically a superb blend of the purer forms which had been developed by other nations.

The Centre of World Trade

A successful constitution and a social pattern which conceded some respect for the individual would not in themselves have maintained the Byzantine Empire during the eleven hundred years of its existence. They were supported and implemented by the efficiency of the armed forces, the diplomatic service and the internal administration ; these, in turn, were financed by the wealth from commerce. Constantinople was admirably situated as a centre of world trade until the rise of Venice and the discovery of the New World because it was at the junction of the East and the West, and on the land route between these two areas of the known world. Among the citizens of Constantinople were Greeks and Armenians, both long experienced in the business of trading and eager to contribute to the prosperity of the new Empire.

The necessities of life, such as corn and meat, came for the most part from within the Empire so that a favourable export balance of trade was possible. This was achieved by making-up the raw materials of the East into expensive articles for sale abroad ; these were exchanged for money or other valuable goods rather than for essential foodstuffs. The luxury articles which came from the East for sale in the West were made subject to customs duties in passing through Constantinople.

There was a tendency in Byzantium towards specialization in the

manufacture and export of costly silks and brocades, jewellery, and exquisite works of art. The result was that a decline in the prosperity of neighbouring countries had its effect on the prosperity of the Empire, the luxury trade being the first to suffer in times of slump. Commerce in Byzantium was subject to State control and intervention, particularly in the case of the foreign traders who came to the cities ; but State control had the advantage of keeping down corruption although at the same time discouraging private enterprise.

The State also controlled industry through the guilds in the following manner : each guild purchased the raw materials for the use of all its members, and the finished articles were then sold direct to the consumer, at a profit fixed by the State, without having to pass through the hands of a middleman. In the case of the artisans their wages and hours of work were laid down, and they were also protected against the possibility of unemployment by the obstacles put in the way of dismissal, and by the employment of surplus labour in public works. These controls guaranteed a sound economy while Constantinople held the monopoly in commerce, but their lack of flexibility gave no provision for a re-alignment to meet the foreign competition which later developed when the rise of Medieval Europe influenced the setting-up of new commercial centres further to the west.

The rural pattern of Byzantium was based upon an agricultural economy of self-sufficiency in essential foods. To this end the agricultural colonization of the countryside was accorded a high place in domestic policy, as it had been under the Romans. The result in Byzantium was, however, more successful than the Roman example, for the methods, while showing some of the characteristics of the earlier empire-wide economy of Rome, also anticipated the later self-sufficiency of the medieval feudal unit.

The thickly wooded countryside was patterned by village communities grouped around townships which, in the early days of Byzantium, were more often servile than free. Many of these communities were established as part of the policy of agricultural colonization and, in one area alone, seventy thousand prisoners were settled on the land. The serf was bound to the soil, while his master took all the produce and paid the taxes. In the case of the free tenant-farmer, he paid his rent in money or in kind, and was in reality just as tied to the land as the serf because the State discouraged

desertion of the land. By taxing the village community as a whole, the State ensured that in the common interest the villagers would make certain each man paid his share and would not add to the burden of his fellows by deserting. State control inevitably led to an increase in the number of large landowners because they were the only people who could afford to pay the taxes in a period of depression or of bad harvests. The smallholder lacking the capital to tide him over these times was forced to sell his holding to the wealthy landowners, including the Church. The State initiated legislative measures in a vain attempt against these abuses which resulted from its own strict control.

The division of the land of the village farming communities had much in common with that of Medieval Europe. The different farming uses were arranged so that the fenced orchards and vineyards lay closely around the village proper. Further out were the unfenced arable fields in private ownership, and beyond was the rough pasture in common ownership. Any villager who cleared and cultivated waste or scrub land on his own initiative was allowed to claim it as his own. Comprehensive regulations ordered the life of the village community under the Farmers' Law of the eighth century A.D., and were very necessary when common land and unfenced adjoining plots were in use. The Byzantine peasants were also to be found in scattered farms and in fortified *burghs*. Apart from the fear of invasion, which tended to depopulate the countryside, the Byzantine farmer led a contented, if a poor life.

Constantinople, the Spacious City

The Byzantine Empire showed nothing of that territorial ambition which characterized Alexander's Greece or Imperial Rome. If it ever aspired to rival the latter at the height of its power, continued pressure from without militated against expansion. The new-built cities of colonization did not, therefore, appear in the Byzantine scene ; instead there was the improvement, the rebuilding, and the enrichment of existing urban centres such as Constantinople, Antioch, and Alexandria. These cities had traditions, and yet they responded to the development of the Byzantine civilization in the changing urban environment. They should be remembered for their position as the centres of a brilliant and prosperous urban culture during the time when Europe was almost without city life after the collapse of the Roman Empire.

Constantinople was originally founded by Greek colonists in 657 B.C. and, by virtue of its strategic position, it already had an eventful history when Constantine rebuilt the city as the Imperial capital. The population, excluding the people of the * suburbs', may have risen to about one million persons at the height of the city's prosperity, though it had decreased to under one hundred thousand in the fifteenth century. A further indication of its size is given by the area covered by the city for the defensive wall across the promontory, upon which the city was built, was some five miles in length, and was pierced by eleven gates. The two sea frontages, about seven miles long, met in a blunted apex to complete the roughly triangular shape of the city. Within this large area the urban development was concentrated into crowded districts and villages separated by orchards and parks, and in this respect noteworthy as having an open space pattern which had some relation to the urban areas. Variety was also introduced by the extension of the urban development up the sides of a range of hills in the middle of the promontory. These hills sloped steeply towards the Bosphorus and the Golden Horn, and more gently towards the Sea of Marmora.

The central point of interest in Constantinople was the Imperial Palace, in itself a city of special character and containing all the associated buildings of court and government as well as gardens. Close to the Imperial Palace was the Patriarch's Palace, the Hippodrome, and, from the Imperial Square before the main gate of the Palace, the Central Street ran westwards across the twojfora of Constantine and Theodosius before branching into two main roads. The frontages on each side of the Central Street were arcaded and filled with the more important and expensive shops of the city. The commercial activity of Constantinople was also seen in the harbour of the Golden Horn where a colourful picture would be given by the shipping, the wharves and warehouses, and the busy life. Along the coastline of the promontory, there were many smaller harbours, each with its little settlement. In the residential districts, the houses of rich and poor jostled closely together, and the streets were narrow although subject to laws regarding width, height of balconies, and privacy of view. Public health received more careful consideration than was customary at this time, the control of drainage being strict and ensuring that the effluent discharged into the sea. To compensate for the congested

residential areas, there were public gardens, and also the open spaces between the urban development referred to previously. It was this division of the built-up area into units well separated from each other that gave the city its spacious quality. Around the city were the 'suburbs', such as the busy commercial town of Chalcedon across the Bosphorus, the residential resorts, and the villages to which the wealthy classes retired in the summer.

The urban scene of the city became expressive of the Byzantine civilization in spite of strong Roman influence for the public buildings were rich in that variety of form and detail which characterized Byzantine architecture, and the domes of the churches and monasteries gave variety to the skyline almost everywhere. Today, there is little left of Byzantine Constantinople. When the great city became old and venerable with the millennium, the rivalries in trade and politics of a Europe working out her destiny brought ruin to Byzantium and, unable in these circumstances to withstand the Turks, the Empire was overwhelmed in 1461.

The Byzantine influence upon the Old World was extensive, if often difficult to trace precisely. For a time, Russia absorbed a great deal of the culture of Byzantium until the Mongols came, and there was also a gradual diffusion westwards across Europe which helped to formulate the Medieval culture. A later movement of Byzantine scholars westwards in the decline of the Empire made a contribution to the Renaissance in Italy. But in the most prosperous days of its own time, Byzantium was the strongest influence upon Islam.

The Rise of Islam

While Byzantium stood firm as a Christian Empire between a troubled Europe to the West and its rival the Persian Empire to the East, another powerful and cultured civilization—the Muslim—emerged in Arabia to form a new Empire of Islam. The initial impetus was given by the prophet Mohammed, who established himself as master of the pagan city Mecca in A.D. 629 and built up a unity and a new religion among the Arabs around the framework of the Koran. The new faith was simple and clearly defined, and insisted on the equality of all believers before God. Like Christianity and its influence in Byzantium, Mohammedanism was a new and appealing religion, and an important factor in holding together the Arab races as the hard core of a great Empire. And

also like Byzantium, Islam benefited from earlier civilizations and successfully combined their achievements into her own expression.

A remarkable feature of the new Muslim civilization was the rapidity of its development, which was activated by contact with other civilizations in the course of its expansion. Syria, Persia, Egypt, North Africa and Spain were contained within an Islamic Empire in less than one hundred years from the death of Mohammed ; and the knowledge and culture of India and China were also met in the East. In this short time, the lands to the east, the west, and the south of the Mediterranean became part of the Orient, whereas previously under the Romans they had been part of Europe.

Despite the fact that the School of Athens had been closed by the Byzantines and the Alexandrian Library sacked by the Arabs, Greek philosophy and science were preserved in Byzantium and Islam. In particular, Medieval Europe was indebted to Arabic culture by way of its influence upon France and Italy ; the former country receiving it from Spain which had become part of Islam. On previous occasions the earlier and higher cultures of the Near East entered Europe along the direct routes. But this entry of the Muslim civilization from the West was a new departure, although Carthage and Rome had both used Spain to some purpose before. And because Spain was such a link between the Ancient World and Medieval Europe, the sojourn of the Moors in that country is important in tracing the progress of civilization.

The Muslims from Africa secured control over most of Spain by A.D. 717, instituting many centres of culture and learning which were in correspondence with the scholars of all the important centres of Islam and elsewhere by the ninth century. The most famous of the Schools were located in Cordova.

Islam in Spain

At first, the Moors in Spain were subject to the Caliph of Islam, who had established his Court in Asia. Later, in A.D. 758, Moorish Spain became an independent kingdom and remained so until the early part of the eleventh century when the natives made headway in regaining control over their country. Spain had already experienced in its land the superior forces of the Carthaginians, the Romans, and the Visigoths. But compared with their predecessors, the Moors showed a greater respect for the religions,

the laws, and the customs of the inhabitants although the method of government was autocratic and highly organized—the Caliph being an absolute and hereditary monarch. The Caliph, however, relied upon the advice of a Council of State, the administration of his government being carried out by ministers assigned to various offices under the prime minister. In the provinces, local governors were appointed to carry out the State policy, and were supported by the authority of the Law administered through judges, magistrates, and police officers.

Complementary with efficient government was the highly developed intellectual activity of the Moors, although there still remained in Society the sharp division* of the people into classes, providing opportunity for some and restricting it for others. These class distinctions were not dissimilar to those of Byzantium, and included the wealthy upper class, the free common-folk, and the slaves ; the *eunuch* was also of some importance as an influential member of the community.

The most important achievement of the Moors was their preservation and furtherance of the knowledge that had already been acquired in the Ancient World—to the great benefit of civilization subsequently. The subjects generally studied were poetry, history, philosophy, law, and the natural sciences, and progress in them was stimulated by the intellectual rivalry between the Caliphs of Spain and of Africa. Throughout Islam, there was considerable activity in the founding of libraries and in collecting books to fill them, more than seventy libraries being established in Cordova and other towns of Moorish Spain alone. But Islam, though contributing so much to the evolution of the Medieval civilization in Europe, was really more in tune with the Ancient World and did not react strongly to the later and particular developments of the Middle Ages and of the Early Renaissance.

The poetical imagination and mysticism of the Moors gave a new character to the ancient knowledge which they absorbed ; thus, superstitions, beliefs and abstruse formulae were evolved from the more practical Greek sciences. The scholar became a magician, chemistry developed into mysterious alchemy, and astronomy into astrology : " The culture of those peoples, artists rather than thinkers, more curious than scientific, literary and refined, setting store almost exclusively by imagination and scarcely employing reason, gives them a certain feminine or puerile cast ; they give

the preference to beautiful forms, elegant style or subtlety, and all the excesses and extravagances of imagination which supply the place of a truly rational or scientific inquiry".*

To what extent the Muslim culture was a preservation, a distortion, or an advancement of the original Greek learning is a matter on which historians are at variance—the Spanish nationalist taking a different view to the impersonal outsider—but the Muslims certainly began the renaissance of classical civilization in Europe. In their contribution to the visual arts, they developed a rich form of decoration which owed a great deal to Asiatic and Byzantine influences ; this was the most distinctive feature of their buildings for there was little evidence of any discovery of new architectural forms.

Moorish Luxury

The Moors were conscious of the fact that intellectual activity was unlikely to flourish for any length of time unless the country was also prosperous, and they gave considerable encouragement to industry and agriculture, including the improvement of conditions for the labourers and the independent small-holder. But the Moors' knowledge of agriculture was restricted to traditional farming methods in North West Africa which were pastoral rather than arable because in that area crops were difficult to grow. The nature of the land in that part of Africa did not favour irrigation (although the technique was understood) and the rainfall was slight. The farming methods of Europe, based on the natural watering of crops by rainfall, were foreign to the Moors who, in their ignorance, laid waste considerable areas of forest land in Spain with consequent further damage by erosion. Some parts of Spain were, however, suitable for irrigation and, aided by the techniques of soil-fertility restoration and contour terracing, the yield was increased. New crops—for example rice, pomegranates, sugar cane, and cotton—were introduced, thereby making a definite contribution to European agriculture. The gardens constructed by the Moors were indicative of a scientific approach to agriculture, and of a cultured existence, as shown by the particular use of plant and other landscape material. *The Book of Farming* by Ibn-Al-Awam, who lived in Seville in the twelfth

*A History of Iberian Civilization : by J. P. de Oliveira Martins. (Humphrey Milford. London. 1930)

century, was also an indication of the Moors' knowledge and skill in agriculture.

The prosperity of the country was also furthered by the improvements made in industry, the products including textiles, glass, writing paper, weapons, leatherwork, and carved ivory. In these luxury goods a brisk trade was built up with Mediterranean markets, the Arab races having a long tradition in commerce by virtue of the position of Arabia between the Indian Ocean and the Red Sea with their established trade routes.

The prosperity and advanced culture of the Moors were reflected in the well-developed civic life, and this in turn had a visual expression in the numerous public and cultural buildings. Cordova, the great centre of learning, is alleged to have contained within its urban area about 200,000 houses, 600 mosques, and 900 public baths, while the streets were paved with stone and there was an efficient water supply system. The city had a fresh and gay appearance with whitewashed buildings, bright colours and decoration being reserved for the interiors. But Granada has more to offer today than Cordova in the way of a Moorish urban landscape, although it did not attain the size of a large city until late in the Moorish sojourn in Spain. It was also the last outpost of the Moorish civilization, and became the centre of an independent kingdom in the first half of the thirteenth century until Cardinal Mendoza hoisted the silver cross of Christianity over the palace of the Alhambra in 1492.

The Alhambra dominated the city of Granada both physically and as the emblem of autocratic government, for it was the strongly-defended palace-town of the Sultan. It played a part in the life of the city similar to that of the *polls* in the early Greek cities, and in this respect it was dissimilar to the *acropolis* of the later Greek cities. Yet there was little apparent difference in the nature of the site of the Alhambra and, for example, that of the Acropolis at Athens, or in the principles adopted in relating the buildings to their sites. The Alhambra had not the social significance of the medieval city, with which it was contemporary, but there was a similarity in the methods of fortifications and in the choice of a strategic site.

A relaxation of the strict puritanism of the Mohammedan creed during the last two centuries of Moorish occupation in Spain was noticeable in the Arts and Architecture. This was true of the

Alhambra, for some of the later building work was a visual indication that the Renaissance movement, despite its Christian associations, had some influence upon the shrunken Moorish Empire.

An earlier and smaller Moorish town, with defensive walls and a citadel, was in existence on the site before the Alhambra began to assume its present form with the building of the great outer wall in the thirteenth century. The site occupied the middle of three eminences which extend out from the Sierra Nevada, and was naturally suitable for defence. The surrounding walls and towers of the Alhambra appear to grow out of the steep slopes of the hillsides ; an illusion created by the close relationship of the humanized urban landscape and the basic rock formation. Within the walls, the palace was built in a central position, while the Alcazaba or earlier Moorish fortress remained at the western end of the site. Close to the palace in Moorish times were the dwellings of the men who were in contact with the throne—the leaders of powerful tribes, the ambassadors, and those concerned with the administration of the Empire and the court. The palace-town also contained the mosques and the various buildings associated with the defences. In these several respects the Alhambra anticipated the Palace of Versailles in France and its associated town—built to house king and court in great splendour.

The lower city of Granada was separated from the Alhambra by spacious gardens and leafy groves at the foot of the walls. This open space still exists, and the lower slopes of the hill are planted with elms brought by the Duke of Wellington from England in 1812. On the eminence to the east of the Alhambra stands the Generalife or Palace of Recreations, preserving in its gardens some of the beauty of the once dominant Moorish scene in Spain.

The arrangement of the buildings in the Moorish cities was typical of the Islamic tradition. It was based upon the idea of privacy for the family or for a group of families, the rooms of a house or of the houses being turned, as it were, to face inwards on to a court. The street, therefore, became merely a means of communication and not also the frame upon which decorative facades were built-up. There were exceptions such as the market streets, of which Granada had its Arab Raw Silk Market with colonnades on each side—though it was pedestrian in scale and unlike the Roman processional street. Around the houses or blocks of houses, the narrow streets followed a labyrinthine path of varying

width and direction, more often than not terminating in a blind alley. Here then, was a new approach in urban design with the private open space of the courts compensating for the tunnel-like streets, although the idea of arranging the rooms of a house around a court or *atrium* was in itself an established tradition around the Mediterranean, for example, the larger Greek and Roman houses. The influences of a warm climate, strong sunshine, and a creed which required domestic seclusion led to this Islamic urban pattern.

In the lower city of Granada the Moorish streets remain in part, but in Seville and Toledo their existence through the centuries is even more marked : " In its plan the city (Toledo), the ' Spanish Rome ', still bears an unmistakably Oriental character. Its narrow crooked streets spread themselves like a net over the uneven rocky plateau, without ever expanding into open squares or affording any distant vistas ".*

History has shown that those cities built under autocratic regimes were in general regularly planned with straight streets. Islam, was, however, an exception although its governmental systems were autocratic and its vast imperial expansion provided ample opportunities for the building or rebuilding of cities. There may be at least two possible reasons for this organic growth of the cities. First, the Islamic civilization owed a great deal to the earlier civilizations of the East, as well as to the Greek and Roman civilizations with their traditions of regularly planned cities, and in these earlier civilizations the arrangement of urban areas was often haphazard. Second, the intellectual activity of Islam was less scientific and practical than that of Greece and Rome ; it was certainly not of a kind that would lead to the precise arrangement of cities. We may credit Islam, therefore, with the gradual development of an urban environment that suited its needs and its time, rather than with an efficiency that would produce a ready-made urban environment.

Revival in China

The progressive civilizations in the Far East had equal importance at this time with those in Byzantium and Islam, but geographical isolation prevented any great influence of the Far East on the various stages of progress around the Mediterranean. There were, however, numerous contacts between them which continued up to

*Spain and Portugal : Baedeker. (Karl Baedeker. Leipzig. 1901)

the present time, but these had limited cultural and commercial implications. The western limit of the Chinese World was the 'kingdom of Fu Lin', or the Byzantine Empire, and in A.D. 713 the ambassadors of the Caliph of Islam arrived at the Court of China. In particular, Marco Polo's relationship with China in the thirteenth century gave a stimulus to European culture. This fact alone, apart from our interest in China as a country with an organized civilization, is the justification for turning aside from the progressive succession of cultures and peoples in the Old World to a consideration of this China that Marco Polo knew.

While the Old World was in a state of movement and change after the decline of the Roman Empire, China settled down to a secure and civilized existence under the Tang dynasty (A.D. 618-907) of the Second Empire, and her way of life established during this period changed very little through the centuries that followed. In the economic sphere, amongst many agrarian reforms, feudalism had given way in the First Empire (221 B.C.—A.D. 221) to central control by the State and to the right to own land being dependent upon its efficient cultivation rather than upon legal ownership. Agriculture was the main occupation of the people and the dominating factor in the nation's economy. Industry, on the other hand, never developed to a high degree of organization because a system of small self-supporting communities prevailed, and trading with far-off lands was discouraged by inaccessibility and the pre-occupation of the people in their own vast land. The fact that slavery existed only on a small scale prevented the development of a Roman economy in which one part of the community worked to keep the other part in idleness.

The fountain head of the Chinese agricultural economy was the Emperor. He was the symbol of welfare and prosperity rather than the autocratic and war-like ruler, and the responsibility for good or bad harvests was assigned to him. His work, therefore, lay in peaceful administration and in the organization of great works of irrigation and of protection against flood. It was in these major administrative matters that the villagers looked for State control and aid, but within their own communities they were to a large extent self-governing.

The necessity for irrigation on a broad basis was the primary common interest between Chinese communities, and it produced the typical 'humanized' landscape of water channels with low

banks on each side, or the narrow terrace formations following the contours in the hilly districts. The villages grew up in haphazard fashion, usually straggling along one street ; an arrangement that was suggestive of self-interest unrestricted by external control or guidance. The usual method of distributing agricultural land was by the Tsing Tien system, with a cluster of eight plots—worked individually, and grouped around a central plot—worked co-operatively. The produce from the central plot was given to the government as a payment of tax.

The existence and distribution of the towns in China at this time conformed with the agricultural and village pattern of the country and, in fact, depended upon it because a town existed only where the land was sufficiently cultivated and peopled to support an urban centre ; there was no great importation of food from one part of the country to another or from abroad. Under this economy, with its own particular distribution pattern of towns and villages, the commercial* and colonial fortress towns of the Old World did not appear in China. Nevertheless, the Chinese town was the centre of administration and regional trading, the cultural habitat of the wealthy class, and the fortified place of refuge for the surrounding district in time of war.

The Walled Cities

The typical Chinese city, which has changed little in the arrangement of its streets and land uses during the centuries, was regularly planned and spacious in the north of the country, but in the south it was more densely built-up with narrow winding streets and lower surrounding walls. The irregular terrain of the south, and the need for using the most suitable land to grow rice, were reasons for the development of a city such as Canton which had many alleys only wide enough for two men to walk abreast. The cities of the north were more frequently laid out on level sites, with a regular street pattern within the rectangle enclosed by the city walls. The form of the city was conditioned by these walls, which were built first and divided town from country with an abrupt finality ; they were the most prominent feature of the urban and rural landscape, and were regarded with reverence. Within these walls, the buildings formed a close and even ' texture ' with very little relief in the way of varying building heights and minor open

*In the sense of centres of trading between different countries.

spaces, but there was usually a large area of open space belonging to the secluded palace. The main streets were clearly defined and their association with the gates in the walls was similar to the alignment of the *cardo* and *decumanus* with the gates of the Roman planned towns. The secondary streets, although following the rectangular form of the city, were determined by the position of the building blocks which varied considerably in size. Hence, the resultant street pattern was of sharp right-angle bends, and the roads constantly changed direction or ended in a *cul-de-sac*.

The various elements in the plans of Chinese cities related to a symbolism and an elaborate ritual. In Peking, the Forbidden City or Palace of the Emperor was in the centre and was protected by a wall and a moat ; its four gates were restricted in use, each gate to a different class of the community. A stream, symbolical of the River of Golden Water, ran through the courtyard and five bridges represented the Five Virtues. In this way, the physical environment was related very closely to the spiritual life as well as to the routine functions of the inhabitants. This, indeed, was town planning in the highest sense, and illustrates the lack of those sharp divisions which, in the communities of other civilizations, have tended to categorize and break-up Society's concept of life into many separate aspects that should relate to one another, but more often do not.

This dual approach to town planning—the physical and the symbolical—was less apparent in the city proper of Peking where the different classes of the community dwelt within clearly defined limits. The Imperial City, in which the nobility and lesser members of the Court lived, lay around the Forbidden City. The Tartar City formed a second encirclement and had the strongest protective wall. To the south, the Chinese City was built to house the people who had been displaced from the Tartar City by the Manchus in A.D. 1644.

Peking was founded in 1121 B.C., but a rebuilding in A.D. 986 formed the basis of the present city. Its main function was political rather than economic ; commerce and industry being related primarily to the domestic needs of the inhabitants, and were regulated by a guild system. Marco Polo, who visited Peking in the latter part of the thirteenth century, recorded his impressions of this great city : " On both sides of the streets there are all kinds of booths and shops. All plots on which houses have been erected

have the form of a rectangle and are arranged in a straight line side by side. Every unit offers sufficient space for the houses with their courtyards and gardens. Thus the city is divided, like a chess board, in squares. Outside the gates the extent of the suburbs is so great that they adjoin each other and house an even greater number of persons than the inner city. In these suburbs there are, about two miles from the city proper, numerous inns and caravan-serais. Everything that is precious and rare on earth is brought to the capital to supply the gigantic needs of the crowds who assemble around the Imperial Court. Here the exchange of goods surpasses the trade of all other places."

It is remarkable that, in so vast a country as China, a common civilization and culture gradually emerged (although there were discernible local differences) in direct contrast to the many civilizations of the Old World striving to attain a position of stability. It is even more remarkable that a high standard of culture developed in a country which was geographically isolated from the stimulus of competing races. What this culture meant in terms of urban life is clear from an account of the City of Kinsai or Hangchow in the thirteenth century which has been culled from the record of Marco Polo and Odoric of Pordenone.* Kinsai, at this time, was the capital of the Sung emperors who ruled Southern China : " In its market-places men chaffered for game and peaches, sea-fish, and wine made of rice and spices ; and in the lower part of the surrounding houses were shops, where spices and drugs and silk, pearls and every sort of manufactured article were sold. Up and down the streets of Kinsai moved lords and merchants clad in silk, and the most beautiful ladies in the world swayed languidly past in embroidered litters, with jade pins in their black hair and jewelled earrings swinging against their smooth cheeks.

" On one side of this city lay a beautiful lake (famous in Chinese history, and still one of the fairest prospects upon earth), studded with wooded islands, on which stood pavilions with charming names : ' Lake Prospect', ' Bamboo Chambers ', ' The House of the Eight Genii ', and ' Pure Delight '. Here, like the Venetians, the men of Kinsai came for pleasure parties in barges, nobly hung and furnished, the cabins painted with flowers and mountain landscapes, and looking out they saw on one side the whole expanse of the city, its palaces, temples, convents, and gardens, and on the

*Medieval People : by Eileen Power. (Methuen & Co. London. 1924)

other the stretch of clear water, crowded with coloured pleasure boats, over which came echoing the high, clear voices and the tinkling instruments of the revellers. There is no space in which to tell of the King's palace, with its gardens and orchards, its painted pavilions, and the groves where the palace ladies coursed the game with dogs, and, tired of the pastime, flung off their robes and ran to the lake, where they disported themselves like a shoal of silver fishes."

In these Chinese cities of regular design, which were bounded by the dominating wall, there must have been a pre-determination of the major streets and land use areas in an outline town plan. At the same time, as we have already noted, the cultural ideal remained constant in one great and lasting civilization, so that there were not the changing ideals of the different civilizations of the Old World to influence new ways of building or of altering cities. This would, in some measure, account for the similarity of technique through the centuries and for the even quality of the urban environment over the entire city. In these circumstances, the method of building cities would be inherent ; they might well develop naturally in a regular manner without very much of the preliminary thought or decision of a drafted town plan.

In the sphere of rural planning the same process would apply, although the varied terrain required adjustments to the standard irrigation and the stepped-field techniques. The countryside was intelligently used to build-up the agricultural economy of China, and its use was also influenced by the cult of *fêng shui* or the astrology of siting. Artificial changes in the landscape were judged by their likely provision of the necessary *fêng shui* to commend them to the spirits, with consequent good fortune to the country and its peoples. The preservation of much lovely scenery resulted from this, particularly in the valleys which were supposed to be the abode of spirits.

It is no exaggeration to say that China, with Byzantium and Islam, carried forward the development of civilization in an otherwise retrogressive Age by means of social and cultural progress in town and country.

CHAPTER VI

MEDIEVAL SAGA

*' Ther is at the west syde of taile,
Doun at the roote of Vesulus the colde,
A lusty playne, habundant of vitaille,
Where many a tour and toun thou mayst bilioldc
That founded were in tyme offadres olde,
And many another delitable sighte,
And Saluces this noble contrce highte.*

*A markys whilom lord was of that lend,
As were hise worthy eldres hym bifore,
And obeisant and redy to his hond
Were alle hise liges, bothe lasse and moore.
Thus in delit he lyveth, and hath doon yoore,
Biloved and drad thurgh favour of Fortune
Bothe of hise lordes and of his commune."*

THE TALE OF THE CLERK OF OXENFORD
by Geoffrey Chaucer

THE rise of the Middle Ages is significant in the history of planning, for the development of Man and his Environment passed beyond the stage of remote urban and rural development. We are now concerned with the formation of a social and physical pattern which was the basis of that existent in Europe today, for many of the current problems and opportunities that confront planners in the twentieth century are medieval in origin. In illustration we may recall that, in the town, there remain today medieval street patterns which are admirably pedestrian, but unsuitable for the mechanically-propelled vehicle. While, in the country, there exists in some measure the medieval village pattern of an obsolete economy.

The Emergence of Medieval Europe

There is no satisfactory term or limiting period to express clearly and simply that part of history which includes the emergence of

Western Europe from the ruins of the Western Roman Empire until the ' Age of Discovery ' of new lands, of new political methods, and of a new approach to the arts and sciences—or, more familiarly, the Renaissance. With the use of the terms the ' Dark Ages ' or the ' Middle Ages ', there is inherent the idea of two clearly defined civilizations associated with particular dates, although for the sake of brevity it is often necessary to make use of them. These terms are as unsatisfactory as the word ' Gothic ' which implies barbarism, and yet is applied to architecture of great beauty and invention. Medievalism should rather be considered as relating to an Age of great development and of several revivals which drew upon the past to enrich the future.

The collapse of the Western Roman Empire had left Central and Western Europe in the hands of numerous barbarian chiefs, some aspiring to the title of king, and others not much better than brigand chiefs. There could be little progress for civilization under these conditions, but, gradually out of the chaos, came an increasing order of power which in time became indentifiable as the Feudal System. In the beginning, this was a form of communal-protection, for the insecurity of the time caused men to seek safety under their more powerful fellow-men to whom they surrendered some of their liberty in exchange ; military service and the payment of dues were given in return for security of tenure.

At a higher level, this social development took place in the allegiance of the chieftains to those of their number with still greater qualities of leadership—until finally imperialism was re-born when Charlemagne (a descendant of Clovis, the founder of the Frankish kingdom early in the sixth century) ruled over most of Western Europe, including North Italy and Rome where he was crowned Emperor by the Pope in A.D. 800. This, incidentally, was a ceremony that took place in an unguarded moment, and against Charlemagne's will, because it signified that the Pope was superior to the Emperor in power and influence. Charlemagne stood out in a disorganized Europe as a bold organizer who built roads, planned canals, and encouraged commerce on a wide scale by supporting trading fairs and by arranging commercial treaties.

The three grandsons of Charlemagne divided up his Empire in A.D. 843 into three parts which were suggestive of the face of Europe today. The first kingdom comprised the lands of modern France, without Burgundy or Provence ; the second included the lands of

the Eastern Franks, including Bavaria and Saxony ; and the third or middle kingdom contained the capital cities of Aachen and Rome —its several races having little in common with one another. A brief revival of the Empire was attempted by Otto, a Saxon, in A.D. 962, but France remained outside and in A.D. 987 passed out of the hands of the descendants of Charlemagne to the House of Capet.

Britain, after the withdrawal of the Romans in A.D. 410, was left to the mercy of the barbarians who, in this case, were the Anglo-Saxons from the shores of the North Sea and the Baltic ; they occupied most of Britain from the Forth to the borders of Cornwall. There were also the Jutes who settled in Kent. These invaders were agriculturists, and quickly broke-down the Roman urban pattern, replacing the native language with their own Teutonic dialects. Britain was now isolated from Europe as regards cultural progress, but Augustine's mission in A.D. 596 re-established contact. In the ninth century, Britain was raided by the heathen Danes, and for more than two hundred years both Saxon and Danish regimes ruled over the country until the vigorous Normans established themselves in the eleventh century. Contemporary with Norman rule in England were other strong monarchies whose powers extended over large areas of Europe. The scene was set for a revival of organized urban and rural life.

Papal Influence

The Christian bishops and priests were primarily responsible for keeping alive at least some of the culture of the Greeks and Romans in Western and Central Europe during the Dark Ages. The Church, valuing independence, had its own organization as distinct from the State, thereby contrasting with the marriage of Church and State in the Eastern Roman Empire. As an independent organization, Western Christendom entered the arena of nations a body politic as well as pastoral. The bishop in Rome claimed succession from St. Peter in the Apostolic See, and soon became *pontifex maximus* ; in this supreme position the Pope was often in conflict with the secular princes of the various States. Even so, the rule of the Pope over Western Christendom from the beginning of the eleventh century came near to achieving a unity in Europe which might well have altered the course of history.

The Church must also be given credit for the part it played in

helping to replace barbarism by law and order. The extent of its influence was such that many of the nations found a common ideal and purpose in the Crusades—though the first rush of enthusiasm ended in massacre, and kings and rulers were restrained from assuming complete autocracy by the threat of excommunication. In the fourteenth century, the Church within the Papal framework was clearly losing its hold over the rulers and its influence over the people. Prominent among the several causes of this decline (referred to later) was the unprincipled leadership of many who filled the high Papal office : by precept " the Apostle of religion, the organizer of civilization, the heart and soul of Christendom,"* but in practice displaying the weaknesses of human nature.

The Church in Society

The Pope's sphere of activity was in high politics. To the common people in town and country, the influence and teaching of the Church was taken by way of the monasteries, the wandering friars,* and the parish priests who, within their own immediate circles, wielded an authority no less effective than that of the Pope. For centuries, the Church through its several organizations played a very large part in the environment and culture of the Middle Ages.

St. Benedict took the first important step in the setting-up of religious communities towards the close of the fifth century. The medieval monastery of feudal Europe, however, derived its inspiration from the Abbey of Cluny in Burgundy, which was founded in A.D. 910 in a period of and as a witness against monastic secularization. With the establishment of numerous priories under the jurisdiction of the Abbot, the influence of the Cluniac Order soon extended over a large area. In the centralization of authority at Cluny lay the secret of the Order's power and, through the journeyings that went on between the lesser priories and Cluny, knowledge was spread over a large area. The new monastic organizations became national, and to some extent international, in character ; they were in direct contrast to the tendency of feudalism to separate Society into localized and rival units. But the temptation of increased wealth and power, which feudalism offered to those who owned land, was not without its effect on the Monastic communities and, in time, they often became great feudal lords in their own right.

*Church and State in the Middle Ages : by A. L. Smith. (Clarendon Press. Oxford. 1913)

The development of the medieval town, and all that it represented in the way of independence, was not welcomed by the monasteries because the monks were unable to enter into the life of the towns like the secular clergy. The towns were also encouraging a new freedom for the common man ; this was a threat to the feudal order upon which the wealth and comfort of the monks depended.

The place that the monasteries took in the development of medieval Society must not, however, be under-estimated. In wielding feudal power, they prevented an overwhelming domination of the lay lords over the countries of Europe. The Church, in fact, owned half the land in Germany and was the chief landowner in England, Flanders, Spain, and large parts of Italy and France. The monasteries were virtually alone in providing education, poor relief, and medical services, and in preserving learning in Western Europe up to the twelfth century (and then for a time they were only assisted by the secular clergy). Their international character meant that there was contact between nations, though it was conditioned by the limited travel possible in early medieval times. Against the charge that the monastic and more important secular clergy acquired an abundance of wealth at the expense of laymen, both rich and poor, it can be fairly stated that a large part of this wealth enabled progress to be made in architectural design and in standards of construction through the range of experiment in the erection of great ecclesiastical buildings. The results of this progress filtered through to the lesser religious and secular buildings to give that standard of physical environment which, for the time, was high.

The other side of the Church's organization, with which the layman was more directly concerned for his spiritual welfare, was served by the bishops, the secular parish priests, and the wandering friars. The importance of the Church in the Medieval World, and of its ministers who directed teaching and policy, is shown by the fact that dismissal from membership was feared by the highest in the land. The Church, therefore, was paramount in the lives of the people, just as the great ecclesiastical buildings of the towns silently and emphatically dominated the urban scene. This relationship of the Church to Society was an important factor of the medieval tradition, and it sustained the position of the Church in the days when the moral standards of many of the clergy declined.

The bishops had taken part in the affairs of the State at a time when few laymen of rank had sufficient education to act as the

king's ministers. Later, as education became more general, the bishops were loth to give up the work with its possibilities of increased power and wealth. This example of preoccupation with secular duties on the part of the bishops was followed by the lower orders of the clergy ; it indicated the decline of the Church as a spiritual body and the entry of the Church into almost every walk of life in a lay rather than a spiritual manner. Among other causes were the accumulation of wealth and land by the Church ; the too-frequent use of authority so that its effect was diminished by familiarity ; the growing isolation of the clergy from the people ; and the intolerance towards those reformers who were fired with a religious enthusiasm which was not strictly in accordance with accepted doctrines. The Church was also losing its supreme position because it was set fast in a rigid framework that would admit no change. There was little effort at adjustment to meet the growing knowledge of laymen or to encourage the new force that came into the world with the invention of printing. In these , last two mistakes of the Medieval Church, there was alone ample reason for its decline because Society has always refused to acknowledge those institutions which do not respond to change until, finally, Society sets up a new institution more fitted to its contemporary needs in place of the old.

The Medieval Guilds were closely concerned with the Church because they were the religious communities of the merchants and craftsmen as well as trade organizations. The Guilds completed the medieval pattern of Society : the nobles and peasants allied to the Feudal System, the monks and clergy to the various Orders of the Church, and the townsfolk brought together within the Guilds. It was an age of association for collateral power, mutual worship, and economic stability.

The Medieval Guilds went beyond the trade guilds of Rome and Byzantium. They may be considered as an early form of social insurance (though limited in membership and scope), and as an educational system providing for the future of the craft. A division of responsibility was determined between master, journeyman, and apprentice to avoid disastrous competition within the craft, and to make possible the eventual attainment of the position of master for any member. The Guilds also demanded a high standard of workmanship, fair prices, and regulated the hours of labour ; in these respects some of the objectives of the present-day commercial

association, the professional society and the trades union were pre-conceived.

The Guilds assisted in the establishment and regulation of a decent ordered life in the town and, as they increased in power and wealth, their buildings added further beauty to the urban landscape. But, as between one town and another, there was not a national organization to ensure a common standard for the Guilds of the same craft, and in parts of France the system was almost non-existent. As a result, the poorer craftsmen were powerless to stop the growing class of wealthy merchants from directing the activities of the Guilds in their own interests. The last days of the Guilds—as active trade organizations—were dominated by rivalry for wealth and power, in contrast to the original purpose of economic brotherhood.

The Feudal System

In time the feudal order became a well-defined organization, and was based on the feudal law of the manor in England. The unit of settlement over the feudal lands brought into agricultural use was the village community. Only later was it set in the manorial frame through the clarification and hardening of feudal power under the organized rule of the Norman conquerors and their like.

The serf occupied a position midway between slavery and freedom ; his class accounted for more than fifty per cent of the population in England in 1324, while the number of freemen diminished with the growth of the feudal system. G. M. Trevelyan has written of these serfs in England : " On this democracy of peasant cultivators was heavily superimposed the feudal power and legal rights of the lord of the manor. The peasant cultivators, in relation to each other were a self-governing community, but in relation to the lord of the manor they were serfs. They had not the legal right to leave their holdings : they were *ascripti glebae*, ' bound to the soil'. They must grind their corn at the lord's mill. They could not give their children in marriage without his consent. Above all they owed him field service on certain days of the year, when they must labour not on their own land but on his, under the orders of his bailiff."*

In France a monk, Pierre Berchoire, wrote of the serfs in Chaucer's time : " The truth is, that these lords and tyrants continually steal

*English Social History : by G. M. Trevelyan. (Longmans, Green & Co. London. 1942)

from those who have little or nothing (to wit, peasants and diggers of the earth) and seize and take from them that little which they have. . . . For the poor men's goods are continually taken away, while rich men daily heap up other men's goods, as Isaiah saith (iii, 14) : ' The spoil of the poor is in your houses.' These (words of Matt, xiii, 12) may be applied to lords of our own day—*modernos dominos*—who in truth love no bondman or servant unless he bring gain and make for their profit."* In Germany, Hans Beham or Joannes Boemus, chaplain to the Teutonic Knights at Ulm, described the lot of the German peasants in 1520 when they were near the height of their medieval prosperity : " The (fourth) last class (of Germans) are those who live on the land in villages and hamlets and who till that land, wherefore they are called ' rustics ', or ' countryfolk '. If they will believe it, their condition is very wretched and hard. They live apart from the rest, in lowly fashion, each with his own household and his beasts. . . . There is nothing which this servile and wretched folk is not said to owe to these (lords) ; nor is there aught which, if the lord bid them do it, they dare to refuse without peril ; the defaulter is heavily punished."† These contemporary descriptions of the peasants' position in the Medieval World show the evils of the feudal system upon the individual. Upon Society as a vvhole, the system led to the multiplication of petty tyrants and the weakness of central power, particularly on the Continent where security was rarely to be found. In contrast to his fellow in England, the peasant on the Continent was, therefore, more willing to sacrifice his freedom to gain protection.

The feudal system, however, had certain features to commend it as a pattern for Society in its own time. Men and women joined together in a secure and permanent feudal community, not because of a common loyalty to one another, but in common allegiance to an hereditary lord. Their way of life was set in a regulated framework, with the scales of benefit weighted more favourably on the side of the lord. But regulation also meant the maintenance of public peace and the removal of public nuisances because penalties could be imposed on an erring member. The old Roman tradition of the master's responsibility towards his slave had survived, and in some countries a serf in need of assistance could claim maintenance

*Moralitates : lib. xxix, c. 17

† Mores, Leges et Ritus Omnium Gentium : lib. iii, xii, p. 253, ed. 1604

from his lord. Special benefits were available under certain conditions—to a woman on the birth of a child—and some of the lords were intelligent and humane, contributing to the general betterment of the serf's position. The monastic manors, in general, gave evidence of a greater awareness of fatherly responsibility than the manors ruled by the temporal lords, but the monasteries required a closer adherence to the laws and customs.

The feudal system did not break down suddenly. Over a long period certain changes and influences brought a greater freedom for the peasant. In England during the twelfth century, it was customary for a serf to obtain temporary freedom, renewable yearly, by paying money rents in the place of servile dues ; he was often more useful as a hired labourer than in 'working-out' his rent by set days of labour. In the following century, a rise in the population decreased the amount of land available to each peasant, in spite of further clearing of forest and waste land, so that there was greater competition for a holding. As a result commutation became less frequent because the lord's authority over his people increased as his land gained in value.

The catastrophe of the Black Death in 1348-49 brought great changes to the rural pattern. It resulted in a marked decrease in the population and the lower classes were now in a strong position, commutation took place again, the free labourers demanded higher wages, and the servile farmers enlarged their holdings by taking over the plots which had belonged to the victims of the plague. With this improved status a new class of yeoman farmers developed, whose members worked large areas of land and were willing to lease more from the manorial lords. The lords were anxious to dispose of some of their land because the wages now commanded by the hired labourer were often too high, and in these circumstances the lords were not willing to undertake farming on a large scale.

The great days of the feudal system in England had now passed. The efforts of idealists and reformers like John Ball, Wycliffe's Lollards, and Wat Tyler, led to the Rising of 1381, and if this did not bring about an immediate change in the feudal order, it certainly encouraged the spirit of freedom. On the Continent, bondage gave place to emancipation earlier than in England, and there was a similar spirit of reform. In France, the peasants became rich enough to buy their freedom collectively for a large sum. In Flanders and Northern Germany the pioneer-peasant, who had

cleared the forests and drained the marshes, received his reward in land and on terms that made him virtually a yeoman. In Italy, the same thing happened, and also the rapid expansion of the cities gave greater opportunities to the peasant for exchanging rural for urban life, thereby improving his bargaining position.

The Rural Pattern

The 'open field' system of agriculture in England was developed by the Anglo-Saxons. It was based on small settlements in the valleys, and remained as the agricultural pattern until the various phases of field enclosure (completed in the nineteenth century) had affected a sufficiently large area to change the countryside into the 'field and hedgerow' landscape of the present time.* Until the eleventh century, the inroads of clearance and cultivation into the forest and wilderness were small, and the landscape remained for the most part wild and wooded throughout the Middle Ages, with tracts of waste land, such as swamps and heaths, and areas devastated by invading armies. The royal forests were controlled by special laws to preserve the king's hunting, and probably included a certain amount of cleared land within the boundaries which was unproductive because it was reserved for hunting. The Normans deliberately ravaged land which had been cleared, but the colonizing traditions of the Anglo-Saxons and the Danes persisted so that the recovery of this land, with further clearing of forests and the reclamation of swamps, went ahead slowly and quietly under clerical and lay lordships.

The growing of crops on the cleared land was not the only farming occupation in England. Most of the peasants kept livestock and, in particular, concentrated on sheep rearing because England was able to produce the best wool in Europe. Also, the development of the medieval civilization brought a demand for more woollen clothes and furnishings, and of a more luxurious quality than before. The pastoral areas were mainly in the Yorkshire dales, the Gotswolds, Sussex and the islands of the Fens.

Between 1450 and 1550, the price of wool reached its maximum, and the manorial lords found it profitable to enclose their arable land and turn it over to pasture, thus enabling them to dispense

*Other and less common systems of agriculture in use when the Normans came to Britain were the Celtic system, also known as the 'infield-outfield' or 'run-rig', the Jutish system in Kent, and various modifications of the 'open field' and Celtic systems.

with many of the farm labourers. This change from arable to pastoral farming led to unemployment and decline in the villages—though also to urbanization in some of the great wool producing areas through the development of rich market towns. The Crown made determined but largely unsuccessful efforts to prevent the growth of this one-sided farming economy. The enclosure of the open fields into single and defined ownership was not entirely due to this change from arable to pastoral farming, because it had been progressing slowly for some time in the conversion of waste land and forests to arable land, in the recognition of the advantages of adjacent hedged fields over isolated strips, and in the enclosure of village commons.

The task of clearing forests and reclaiming waste land in Europe continued throughout the Middle Ages. The peasant-pioneers were primarily responsible for this work in Italy and, as early as the sixth century, the reclaimer enjoyed the full benefit of the land he reclaimed. Even when the social pattern had developed with powerful clerical and lay lords in possession of large estates, the reclaimer was granted generous terms. The Italian cities also initiated clearance projects by establishing new communities in waste areas. In France, the laymen were more active than the monks in draining and clearing, and after the ravages of the Hundred Years' War, the peasants themselves rebuilt the villages and brought the land back into cultivation, with the result that they secured greater independence and made headway towards establishing a new class of peasant proprietors. The clearing of forests and draining of swamps in Germany was carried out by immigrants who had been brought in by the Teutonic Knights to replace the original Slavonic peasants; the latter were either driven out of the area or reduced to servitude. In the eleventh century it was still possible to journey through the forests of Germany for days on end without meeting another human being because the medieval clearance projects were as yet very small patches in the wild landscape.

All these trends and changes in the agricultural economy and the social pattern of Western Europe during the Middle Ages were significant in the formation of the countryside as it exists today. It is, therefore, worth while summarizing the most important of them in chronological order. First, the foundation of the village as the stabilizing unit of the countryside, and effected by the initiative of small groups of people. Second, the loss of individual freedom in

the village when the monasteries and the feudal lords accumulated land and acquired wealth and power.' Third, the preservation of large areas of forest for hunting. Fourth, the emergence of the yeoman farmer and peasant proprietor and, at the same time in England, the increase of pastoral over arable farming. Fifth, the first signs of the change to the present-day landscape of enclosure in England. And finally, the devastation of the forests through the failure to re-plant where timber had been cut for urban and naval purposes.

The feudal village required co-operation between the various peasant families if it was to be successful as a communal farming unit, otherwise the 'open field' system was doomed to failure. The peasants had to work one with another because there was no physical division between the different strips of land, and each man was allotted several strips in various parts of the cultivable area. A system of this nature required that the methods of cultivation should conform with the common interest; it also meant that experimentation by individual farmers to find new methods of growing crops was hardly possible.

In the 'open field' system, the recuperation of the arable land after a period of yield was arranged by temporarily enclosing one or more large areas under crop. After the crop had been gathered, the enclosure was removed for the cattle to graze on the stubble, and the land lay fallow as common land until it was considered ready for a further period of cultivation. The grazing of cattle ensured that the land was regularly manured. The meadow land was divided up in strips amongst the villagers for the hay crop during the Summer, but after the hay had been cut the cattle were put out to graze in the meadow until the following Summer. The pasture land, in contrast, was common and available all the year round for grazing cattle. Each inhabitant of the village also had a private holding: the *demesne* of the lord of the manor, and the hedged *tofts* or garden patches around the cottages of the peasants.

The 'open field' system supplied all the food required in England at a time when only a small part of the total yield was needed to sustain urban life. But when the growth of cities was in full swing, the balance between the requirements of town and country changed and a more scientific method of farming was necessarily introduced. The 'open field' system survived in some backward areas until

the early nineteenth century ; for example, on the lands of the monastery of Leubus, Silesia, in 1806. The new and more progressive farming methods introduced the systematic growth of turnips and the planned rotation of crops—each new crop benefiting from the previous crop. These methods were common in Flanders at least two centuries before appearing in England, and probably resulted from the parcelling-out of land in compact holdings after the large-scale drainage and forest clearance operations of the clerical and lay lords.

The importance of agriculture over other industries in the national economy of the Middle Ages was recognized by William the Conqueror in England when he instituted a National Survey—the Domesday Book. The record included landed property, the tenants, serfs, animals, agricultural equipment, and fish-ponds. Another example of an early Survey was the record of the industries of Paris in the thirteenth century, compiled in the *Book of Trades* by Etienne Boileau. This, however, was carried out with the intention of maintaining existing conditions and customs. Domesday Book was a national stocktaking to ascertain the possibilities for future development, and as such it was a *planning* rather than a *preservation* Survey.

Although the enclosure of land, as a formative influence in landscape, steadily increased during the Middle Ages, it was not until the seventeenth and eighteenth centuries that enclosure had been applied to a large enough area to produce a new * humanized ' landscape in England. The Cotswolds were an exception, and enclosure before the sixteenth century gave to them an appearance similar to that of the present day.

As a general rule in the Middle Ages, the farmers in the arable areas resisted enclosure, while those in the chalk or pastoral areas welcomed it. In the north of England enclosure on a large scale came later than in the south. The legal right to enclosure came into existence with the Statute of Merton in 1235, granting to the lord of the manor a legal interest in the common land ; forty years later the Statute of Westminster gave the lord power to enclose land against his tenants.

The close of the fifteenth century found the landscape of England wild and untamed over large areas, just as it had been in the eleventh century when the forest covered two-fifths of the total area of the country. Marshland extended around the Wash and

in the basin of the Yorkshire Ouse. Kent and Sussex were thickly wooded, but there were substantial clearings in the fertile valleys of the Thames, in the Vales of Evesham and Aylesbury, in Norfolk and Suffolk, and in the Midlands. Even at the end of the seventeenth century, it has been estimated that little more than half the total area of England was under cultivation, and three-fifths of this was still being farmed on the old ' open field ' system.

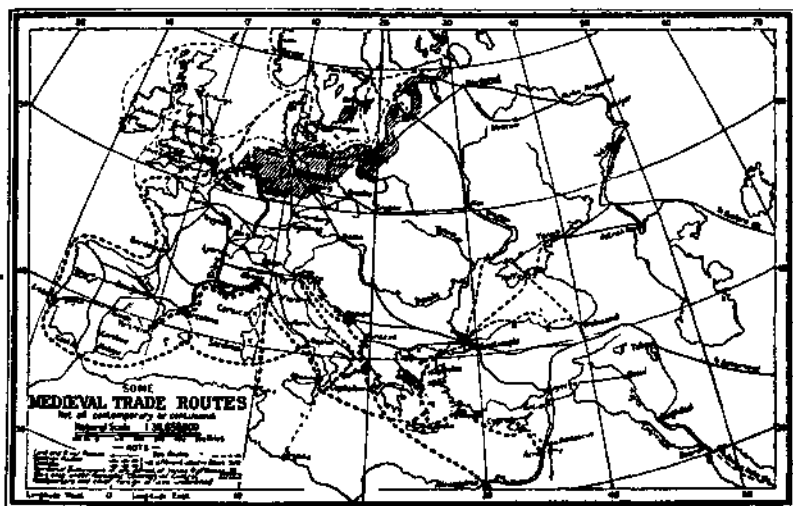
The good cross-country roads of the Roman occupation in Britain were kept in use to some extent during the interim up to the Norman conquest, although the Saxon rural pattern was one of small villages sited in obscure positions rather than on the exposed main roads of military occupation. But the sharply-defined appearance in the landscape of the well-kept Roman road was soon hidden by overgrowth after the Romans left the country. The medieval roads were ill-defined, and little more than cart tracks in green or muddy ' strips ' through the forests ; the ' strips ' were very wide because it was necessary to avoid travelling close to the trees and bushes in the interest of safety from ambush. When the track in the wide ' strip ' became impassable, a new track was taken to one side or the other on firmer ground. The Statute of Winchester in 1285 legislated for these wide ' strips ' of land which contained the roads : " Highways leading from one Market Town to another shall be enlarged, whereas Bushes, Woods, Hedges, or Dykes be, so that there be neither Dyke, Undergrowth, or Bush whereby a man may lurk to do hurt within two hundred foot of the one side and two hundred foot of the other side of the way."

Merchant Adventurers

Whatever the merits or the faults assigned to the feudal regime, we are certain that under it Medieval Europe had an economy of self-sufficiency which produced those conditions of stability which were necessary for a revival of successful trading. The development of medieval trading was encouraged by the improved standard of living which accompanied the rise of the prosperous yeoman-farmers and the land-owning aristocracy, and also by the increasing importance of the medieval town. Europe was beginning to settle down after the Dark Ages, and the amalgamation of small states into larger political units enabled trading to be carried on with reasonable security. The Crusades were also effective in this way because they joined Christian countries together in a unity of

purpose, and made them familiar with each other's products through the journeyings to and from the Holy Land.

The revival of trading on a large scale between the countries of Europe was a gradual process, although the most favourably placed centres went ahead quickly after the initial stages had been passed. In the case of England, the feudal order was so deep-rooted that many years elapsed before a native middle class, occupied with commerce, rose to compete with the foreign merchants.



Medieval trade routes. Some of the major trading routes are shown on this map. The shaded area to the south of the Baltic was under the commercial control of the Hanseatic League. (From The Cambridge Medieval History, by courtesy of The Cambridge Univ. Press)

The new and active trading of Medieval Europe and the trading of Islam over the Mediterranean competed with Byzantium. In fact, the trade route between the East and West now by-passed Constantinople through the Syrian ports. The centre of world trade was pulled westwards to Venice and Genoa. Constantinople also suffered because of the widening breach in the Christian World between Byzantine Christendom and the Western Holy Roman Empire. After some attempt at co-operation between the two in the first Crusades, the fourth and final Crusade developed into a pretext to subdue Constantinople, partly through Venetian influence ; this was carried into effect ruthlessly and without scruple in 1204.

The field of commerce was now left clear for Venice " lying at the head of the Adriatic, half-way between East and West, on the one great sea thoroughfare of medieval commerce, a Mediterranean seaport, yet set so far north that she was almost in the heart of Europe, Venice gathered into her harbour all the trade routes overland and overseas, on which pack-horses could travel or ships sail. ... To Venice, therefore, as if drawn by a magnet, came the spoils of the East, and from Venice they went by horse across the Alps by the Brenner and St. Gothard passes to Germany and France, or in galleys by way of the Straits of Gibraltar to England and Flanders ; and the galleys and pack-horses came back again to Venice, laden with the metals of Germany, the furs of Scandinavia, the fine wools of England, the cloth of Flanders, and the wine of France."* The Venetians were a stubborn and independent people, supreme on the sea, and quick to turn every opportunity to account—as indeed they did in the Crusades. Venice became a centre for equipping the crusading expeditions, and also established trading ports in the Eastern Mediterranean. After the abolition of Byzantine trading competition her other rival, Genoa, was defeated at sea.

Commercial treaties between towns and between countries were as common in Medieval Europe as political treaties, with which they were often associated. The State also took part in promoting trade agreements and in looking after economic interests when commercial relations between individuals became frequent, and when countries became increasingly dependent on one another for raw materials to meet the needs of a richer culture.

The Hanseatic League was instituted to foster trade between the cities of the Baltic and the North Sea, but it soon became an important factor in European politics. For the purpose of trading, it was divided into three separate units : the Low Countries and the Rhineland centred on Bruges and Cologne ; the ports of Germany—Bremen, Wismar, Rostock, Hamburg and Lubeck ; and the eastern lands extending to Muscovy, with Danzig and Novgorod as the important commercial centres. This powerful organization also established control over the mineral wealth of Sweden, the fish and fur trade of Norway, and, for a time, had an interest in the wool trade of England. In the fourteenth century, the expansion of the cloth industry enabled English merchants to compete in the

*Medieval People : by Eileen Power. (Methuen & Co. London. 1924)

areas previously monopolized by the Hanseatic League. There were also smaller trading organizations of a specialist nature, such as the Merchants of the Staple and the Merchant Adventurers in England. The former simplified the task of collecting the customs revenue by acting as an agent of the Crown, as well as of the Staplers ; all the goods, in which the Staplers traded, passed through the Staple—located finally at Calais. The Merchant Adventurers exported cloth made in England, and thereby competed with the Staplers whose trade depended largely on the textile industry of the Netherlands.

Trading in the Middle Ages was often initiated or stimulated by the great Fairs held annually or several times a year in various centres. As early as 1196 the records of Boston Fair in England disclosed the presence of the ships and merchandise of foreign merchants, indicating the international character of the Fairs and the unity of thought and action existing in Medieval Europe until the rivalries of localized feudal units gave place to the organized warfare of powerful states. International trade was limited at the Fairs by the difficulties and dangers which beset lone travellers on road, river or sea, and soon the Fairs were largely replaced by the Merchant Companies whose strength lay in a large membership and organized travel.

Centres of Learning

Overshadowed by the flood of knowledge and artistic achievements of the Greek and Roman Worlds before, and of the Renaissance after, Medieval Europe has often failed to receive credit for its contribution to culture, and this was not inconsiderable when it is understood that a fresh start had to be made as much of the earlier culture had been swept away by barbarism.

The monasteries were, at first, the centres of learning in Medieval Europe. Cluny, it will be recalled, was not only such a centre, but was also a distributor of knowledge through its European monastic pattern. There were also the early Benedictine centres of Corbie, Luxeuil, St. Gall, and Bobbio, while in Italy, the monastic centre of Monte Cassino flourished intellectually in the eleventh and early twelfth centuries. North of the Alps, the monastery at Bee was noted for its philosophers and grammarians in the latter part of the eleventh century. When spiritual and moral decline became evident in the monasteries, it was accompanied by the rise of the

cathedrals as intellectual centres, and they were now associated with urban life whereas the monasteries were often in rural and to some extent cultural isolation. In the twelfth century, the cathedrals in France were notable in this respect, while Canterbury and Toledo ranked high in England and Spain respectively. The courts of the kings and of the feudal lords were also centres of medieval culture, though not on the same level or so early in point of time as the ecclesiastical centres. At best, it may be said that among the courtiers the appreciation of and desire for knowledge and the Arts was very mixed. They did, however, encourage the interchange of ideas between countries through diplomatic missions, and the proof of this lies in the literary works of Chaucer who went to France, Flanders, and Italy on the king's service.

Even more significant than the widespread influence of the ecclesiastical centres was the revival of the university as an independent centre of culture. The Universities of Salerno, Montpellier, Bologna, Oxford, and Paris were all inaugurated by the end of the twelfth century. Cambridge and Salamanca following in the thirteenth century. The universities were unfettered by the bias which the Church naturally gave to the knowledge it nurtured, and they brought into the curriculum all the several branches of learning. As a result, the university stood for freedom in thought, speech, and invention in so far as this was possible in an age of despotic rule and under the university's own growing conservatism. The university was able to provide a broader education than was customary at the time in other institutions, and the subjects taught comprised all the seven liberal arts of classical times, divided into the *Trivium* : grammar, rhetoric, and logic ; and the *Quadrivium* : arithmetic, geometry, astronomy, and music.

Before the thirteenth century, the medieval town was far too occupied in organizing itself as a protective unit, and in determining its political and commercial functions, than to develop as a centre of a truly urban culture. But, by the end of the fourteenth century, the town had acquired a rich culture of its own. The miracle or mystery plays, acted in the streets, were typical cultural developments and the citizens' own expression of the Church's pictorial way of teaching the Faith. Chaucer can also be instanced as a representative of the new urban culture in England. He, a citizen and a layman, was able to bring all the beauty and artistry of chivalry into literature, and to describe so ably the varied

personalities that contributed to the warm and rough culture of the town. In Italy, Chaucer's contemporaries — Boccaccio, his one rival among medieval story-tellers, and Petrarch, a leader of the classical revival — were also at work.

The development of medieval culture and the standard of its appreciation naturally depended upon the existence of educational institutions for the young in centres of population ; these were a necessary preliminary to any form of higher education. The earliest of these medieval schools were under the patronage of the Church—in monasteries, cathedrals, and collegiate churches. Another method of education existed in the feudal castles, where children of high birth were brought to know the arts of chivalry and of war. Later, in the thirteenth century, the towns undertook the training of the sons of yeomen, of merchants, and of craftsmen in schools which were associated with charitable endowments, such as those of the chantries and guilds ; in England these schools were subsequently merged into the Grammar School system. The towns were also the centres of technical education for commerce and industry, for in the houses and workshops of the merchants and craftsmen the guilds fostered the apprenticeship system, which required that citizenship should be taught as well as the trade.

All these different centres of learning built up an educational system of varying quality, and their growth—in intellectual achievement as well as in size and range of influence—spread over many centuries. In contrast, however, the diffusion of knowledge was revolutionized by the manufacture of paper in Europe at the end of the thirteenth century, and by its association with printing at the end of the fourteenth century. The mass production of books meant that classical knowledge was made available to a large reading public. Even more significant was the publication of books in the native languages, and the resultant influence upon native culture.

It was inevitable that this revolution in the methods and speed of cultural diffusion should lead through the printed book to disinterested study, discussion, and criticism of the traditional criteria ; the seed of a new outlook had, in fact, already been sown by Roger Bacon in the thirteenth century when, in accusing his age of ignorance, he insisted upon experimentation. At the same time, Marco Polo challenged the local and conservative outlook of the Medieval World by his discovery of the Far East. It was the

influence of such men as Roger Bacon and Marco Polo, and of the mass-produced printed book, that stimulated exploration and, with later scientific developments, led to the discovery of the New World by Columbus in the fifteenth century. In a different sphere, the new attitude of mind was influential in bringing about the breakaway from the Roman Church in Northern Europe during the Reformation, and the reforming movement which took place within the Roman Church itself. We may well say that the early stages of the Renaissance movement had appeared in the Medieval World long before medievalism in general showed any tangible signs of giving way to a new order.

The cultural attainments of the Medieval World relating to the Arts and the physical environment were indicative of those spiritual, social, and cultural changes that we have considered. Medieval Architecture well illustrates this point. Early in the period, the buildings were rugged in character and exhibited qualities associated with defence. The only buildings upon which lavishness in size and quality was bestowed were those most prominent in their service to the spiritual and defensive aspects of the community's life, namely, the ecclesiastical buildings and the castles. The dwelling-place of the family had yet to become something more than the mere enclosure of space to keep out the worst of the weather. Then, as life in the Middle Ages became richer and as culture became more diverse, special buildings were required for special purposes, such as the town hall, the guild chapels and halls, and the merchants' houses. There was also a greater difference between the type and accommodation of the houses belonging to people in the upper and lower classes.

The study of that rich visual heritage of Medieval art and architecture will bring out certain salient points which are illustrative of the solid foundation of medieval culture. First, the independence of craftsmen who worked partly by intuition and partly by direction from a master, and who yet produced a unified whole in a building or work of art. Second, the forthright use of materials and constructional methods to produce a simple beauty of form and design. Third, the inherent sense of scale and judgement. And fourth, the wit and ingenuity that went into the carving and painting, and not less the decorative sense that seemed never to fail by exhaustion or in medium. The creation of all things concerned with physical environment in the Middle Ages was of

such a high order that, judged against its barbaric inception, it must surely stand the test of comparison with any other Age. The range and variety of this environment is from Italy, in the south of the Medieval World, where Gothic subtlety and mystery were never really absorbed ; through France, most glorious in Gothic experiment ; to England, in the north, where the final development in architecture (known as Perpendicular) was unique and an adequate expression of a new independent middle-class. The sculpture of Medieval France well illustrates the skill and vision of the individual artist-craftsman, and yet he also worked with others towards the creation of the great building.

* * *

The reversion to barbarism after the decline of the Roman Empire produced an equal standard of culture over most of Europe, though it was of a very low level. Upon this basis, Medieval culture , developed more or less equally and simultaneously in the various countries, and throughout the whole population in town and country. There had been a cultural level in Europe under Rome, but it was imposed from above and did not apply to all the people. On the other hand, Medieval culture developed amongst the people as their own expression, though it was also a progression from and was largely based upon earlier civilizations. These two characteristics—cultural equality in the different countries, and its spontaneous emergence—are those by which the Middle Ages are judged to have made a new contribution to the development of civilizations.

CHAPTER VII

TOWN AND VILLAGE IN THE MIDDLE AGES

' *Havijig now,, my good Mephistophilis,
Passed with delight the stately town of Trier,
Environed round with airy mountain-tops,
With walls of flint, and deep-entrenched lake,
Not to be won by any conquering Prince ;* '

THE TRAGICAL HISTORY OF DOCTOR FAUSTUS
by Christopher Marlowe

HERE was a greater difference between the social structures of the town and of the village in the Middle Ages than exists today. The medieval village was essentially feudal, but the urban way of life in the town conflicted with the autocratic rule of the feudal lords over their territories of scattered settlements. People living together in the towns instinctively formed a strong and independent community, unless they were compelled to acknowledge an all-powerful king or emperor who had encouraged the growth of the town for his own purposes. But there were few rulers of this kind in the early days of rivalry among the many feudal lords. The medieval town had, therefore, to rise out of and above its feudal surroundings in strength and culture if it was to flourish.

The Rise of the Medieval Town

The disruption of the organized urban pattern of the Roman World left a barbaric and terror-ridden Europe whose peoples were constantly on the move—driven here and there by rival forces or carried along in the stream of conquest. These were not conditions under which towns would continue to exist or develop from small beginnings. Yet, in many ways, it will be seen that these very conditions later encouraged the people to establish urban communities in contrast to the almost universal practice of rural

settlement. The importance of this revival of urban centres in Europe is the fact that it formed the basis of our present-day urban pattern, although some urban centres had an earlier origin.

The influences which have determined the siting and growth of medieval towns are legion. In Greece and Rome, colonization and trading policies were prominent factors in the distribution of urban settlements, but in the Middle Ages it was often the gradual evolution of many trends in conjunction with obscure location factors of which no certainty exists. In general, however, the desire for security brought back the town into Medieval Europe. Sometimes a "strong ruler conquered a district adjacent to his old dominions, or wished to defend his frontier against a neighbouring enemy. He built rude fortresses and encouraged his subjects to live in them, so that they might undertake the responsibility of their permanent defence".* And again, "if the wall could protect the town from outside invasions more successfully than the feudal war-band, could it not also protect the community from the invasions and usurpations of these greedy and arrogant protectors ? "† We may say that the Roman method of controlling unruly peoples by urban centres of power and order had been revived ; but now it came from a mutual arrangement benefiting both master and common man. The home in the village had to be renounced for the home in the town, and feudal power ran the risk of being undermined by the establishment of the town. These were the sacrifices which were made by both parties to gain security. Later, the revival of trading influenced the development of towns and sometimes their foundation, because the merchants required a centre or base after their journeyings ; but it was not the fundamental cause of the medieval urban revival.

There was yet another minor contributory reason for the revival of towns. The Dark Ages were not entirely devoid of cultural progress ; there were monasteries preserving and enhancing whatever knowledge came to them from earlier civilizations, and also cultural movements such as the Carolingian Renaissance centred on the Court of Charlemagne. This knowledge could be translated into material benefits for the whole population, and laymen could acquire and extend it, only in those conditions of

Mediaeval Town Planning : by T. F. Tout. (Manchester Univs. Press. Manchester. 1934)

†The Culture of Cities : by Lewis Mumford. (Seeker & Warburg. London. 1938)

security which were given by the fortified towns ; in the monasteries and courts, there was a tendency for learning to be restricted to the clergy and nobility.

This was the general picture of the urban revival in Medieval Europe and, with it in mind, we can examine in greater detail the circumstances attending the revival in one country, for example, France. In the ninth and tenth centuries, the towns in that country were destroyed in a period of terror and anarchy. The peasant left his ravaged fields to seek safety with his fellows in more obscure places where these new ' families ' became larger social units under a born leader, and dwelt behind a stockade and ditch. The leader occupied a wooden tower built on a mound inside the fortifications, and around the tower lay the dwellings of the members of his * family '—his relatives, companions, and servants. These fortified mounds increased rapidly in size and number during the second half of the tenth century and, in the eleventh century, stone began to replace timber for the walls and buildings. By the twelfth century, the ' families ' had grown to a size sufficient for small military expeditions ; the original units of feudalism, which had been protective, now sought further power and land from rival units. The medieval town in France, however, had not as yet come into its own ; the unit of settlement (other than the primarily rural settlement) was still the strong castle, and the * family ' comprised those who attached themselves to the lord by subordinating themselves and their lands to him, and also those whom the lord attached to himself by grants of land. This community met the needs of the time, the serf working for the lord in return for assistance and protection ; it was not, however, an urban community in the accepted sense.

A result of the new feudal pattern was the increase of law and order in France during the eleventh century. This improvement in the internal security of the country made possible the commercial and cultural intercourse between towns which was essential to their growth. Journeys were undertaken from one district to another with a reasonable chance of safety, and progress was made in industry, for the people had not to hold themselves in a perpetual state of defensive readiness. Merchants and artisans settled within the precinct of the castle and, as time passed, the dwellings of the growing population spread beyond the castle walls to form a town, with its own wall encompassing the earlier castle and the new

dwellings. In many of these towns, such as Paris, Tours, and Aries, there were several of these castles, each with its retinue of merchants and artisans owing allegiance to their respective lords.

When these early medieval towns of France were small in size, the lord received the taxes, market dues, and tolls in return for his leadership and protection, and this was an equitable arrangement. But, as the towns expanded, the wealth accruing from these sources grew out of all proportion to the services rendered by the lord. Meanwhile, although still within the original feudal unit, the merchants became wealthy and more powerful, and towards the end of the eleventh century there were signs of a communal revolution against feudal overlordship in the towns : on the one hand the lords and their direct underlings, and on the other hand the merchants and the artisans. Many towns received their charters of freedom and self-government at this time, the inhabitants taking advantage of the absence of the lord on some overseas military expedition to press forward their claims. These towns were still feudal units in the sense that protective forces had to be maintained, that class distinction on the old pattern still existed, and that the right of the lord to administer justice merely passed to approved or elected representatives of the new upper classes. There were also towns in France which were developed by the kings (whose influence was strongest in the North) for the purpose of controlling the power of the feudal lords in the South. These were not the towns of a colonization policy, for the South already had an advanced culture and many flourishing and independent cities.

In the other European countries, the fortified settlements, which later became the towns of Medieval Europe, were established well before the tenth century. The Danes maintained their position in Britain by means of a group of settlements such as Derby, Lincoln, Leicester, Stamford, and Nottingham, and, later, the recovery of Danelaw by the Anglo-Saxons was followed by the establishment of over a score of new *burghs*. For very similar reasons, but with the emphasis on colonization, the towns of the Carolingian conquerors in Saxony and those of the Saxon Emperors between the Elbe and the Oder were founded ; these towns served the dual purpose of controlling the native peoples and imposing the Teutonic culture upon them. The mere subjugation of a country was not in itself an attractive proposition the native people had also to conform with and contribute to the new economy of their con-

querors, who had in general learned to live more richly. Because of this dual purpose of conquest and development, the towns which were established to carry it into effect were more than fortresses.

The medieval town, with its urban life, had therefore appeared in Europe, though early in the Middle Ages its influence was limited by the fact that the population of the towns in Western Europe was not more than one-tenth of the total in town and country. Breslau, Cracow, and Vilna (in the lands south of the Baltic) for example, were no mean Teutonic settlements behind a stockade, but were consciously laid out on the simple grid pattern as towns in the true sense. All the features of a highly-developed urban existence were present—the encircling fortifications, the great and lesser churches, and the market-place where trading was carried on and men could meet to disseminate knowledge.

The Bastide Towns

The *bastides* or fortresses established in the south of France in the thirteenth century were not originally conceived as new towns with all the familiar urban features, although some attained that position quickly and were distinctive amongst medieval towns. The idea of the *bastide*—the manning of a fortress with settlers—was not entirely original when St. Louis, King of France, and his brother Alfonse, Count of Poitiers, built the *bastides* of Languedoc and Toulouse because, in the former region, the monasteries had earlier improved their lands by attracting settlers to small fortified settlements.

Some of the *bastides* were enlarged and urbanized through the initiative of the feudal lords in constructing the defensive works and giving land to attract people. In return for this land and the security given by the lord's defences, the newcomers built the houses and brought trade into the settlement—often diverting it from rival territory; they also assisted in making the town a stronghold of law and order over the surrounding district. The settlers in these new towns did not, however, give up their association with the land when they left the countryside, for the plots on which they built their houses were large enough for gardens, and they also received arable and pasture land outside the town walls and were encouraged to bring waste land into production.

The inhabitants of the *bastide* towns must have been aware of the fact that they had been offered many inducements to come

and live inside the town wall, and it was not long before they used this knowledge to bargain with the feudal lord for position and authority in the town. Acting together, the inhabitants were a powerful body and well able to demand privileges and rights, such as a market, law courts, and a measure of self-government.

The *bastide* towns were built in most cases to a regular plan, which was capable of extension when it became apparent that the town would serve other functions as well as that of defence. The regular plan, with its grid pattern of streets, was in contrast to the majority of medieval towns of gradual and organic development.

In England, this regular town planning was adopted under Edward I (who also founded many *bastides* in Northern France) in the true fortress *bastides* of Wales, such as Flint, Conway, and Caernarvon. The massive castles were linked with fortified towns, but these remained small because they were unfavourably situated in relation to the national trade routes and economy, though well situated politically and strategically.

This same energetic monarch also founded the ports of Hull and Winchelsea which, despite a similarity to the urbanized *bastides* of France in the disposition of the various parts of the town, were laid out from the first to act as busy commercial centres, with their defensive systems forming necessary appendages to the town. It was in such towns, and others similar in character but of slow growth, that the new social order of merchant, craftsman, and free citizen grew up to rival the established feudal order. The new citizen gave his loyalty more readily to his town than to his king or lord, so that political and trading relations were carried on between towns in the manner of one kingdom with another, instead of through the channels of central government. Many of these medieval towns soon acquired a large population, giving some indication of their power and wealth. Venice and Milan each had over 100,000 persons in the thirteenth century ; Paris had an increase in population from 100,000 to 240,000 persons in one hundred years from the end of the twelfth century ; and Florence in the fourteenth century had about 90,000 persons.*

The Purpose and Siting of Medieval Towns

The factors which influenced the development of medieval towns on particular sites were as numerous as those which brought the

*The Culture of Cities: by Lewis Mumford. (Seeker & Warburg. London. 1938)

town back into Europe as the environment for an urban way of living. First, there were factors of a topographical nature which are self-explanatory and may be listed as the existence of a natural harbour : a river crossing at a ford or easily-bridged point ; the crossing of two important routes ; a wind gap or a pass through hilly country with their easy gradients for approach roads ; and land above the flood level. Second, the factors concerned in area or ' regional' development by man : the mineral deposits or the agriculture of an area often led to the growth of a town as an industrial or market centre. Third, the factors of defence and attack, which were manifest in the development of strategic sites to implement home and foreign policies. Fourth, the religious and cultural factors which led to the growth of towns around cathedrals and abbeys, and of the university towns. More often than not, several of these factors contributed to the organic growth of one town on a particular site. But, in the case of the ' planned ' new towns of Medieval Britain and elsewhere, their purpose and siting factors were usually clear and easily discernible.

The towns, which appeared in England during the latter part of the Anglo-Saxon period, were those established as strongholds to hold the Danelaw after its reconquest. Edward the Elder (901-925) actually founded just over a score of new ' boroughs ', These were often sited to control a river crossing, and were built as ' dual towns' to protect the crossing from each side—a fact supported by the Anglo-Saxon Chronicle : " in this year (A.D. 913), about Martinmas, King Edward commanded the northern fortress to be built at Hertford between the Memer, the Benemic, and the Lea "; in 918 he " went with his forces to Buckingham and . . . erected both the forts on either side of the river "; in 922, at Stamford, he " commanded the town to be built on the south side of the river : and all the people which owed obedience to the northern town submitted to him."* The fortress towns of the Normans were sufficiently strong to command river crossings from one bank only. Ludlow on the River Severn was an example, the castle being founded at the end of the eleventh century on a strategic site overlooking the river, and the regularly planned town, built in front of the castle gates, following early in the twelfth century.

*Towns and Town Planning : by Hughes and Lamborn. (Clarendon Press. Oxford. 1932)

The new dynasty of the Plantagenets marked the commencement of a period of town-building in England. Henry II founded the borough of New Woodstock as a regularly planned town to provide better accommodation for his retinue when with amorous interest he visited a certain fair Rosamund Clifford. He also ensured that the new borough was developed on terms that brought him adequate monetary return for his trouble. John, before he became king, was astute enough to divert the growing Irish trade to his own lands around the Ribble and the Mersey by establishing the port of Liverpool. His brother, Richard I, founded Portsmouth and ensured its future by granting concessions to those who would become citizens.

The Church was also active at this time in the founding of new towns, such as Eynsham in Oxfordshire by Abbot Adam of Eynsham Abbey, Francheville (now destroyed) in the Isle of Wight by a Bishop-elect of Winchester, and Salisbury or New Sarum by Bishop Le Poer. The earlier town of Old Sarum had occupied the flat summit of a hill, but the site did not allow for expansion to meet the needs of a growing population ; it was also exposed and lacked a good water supply. Although some of the citizens of Old Sarum had moved to the plain below, where better conditions prevailed, it was the Bishop who was responsible for New Sarum when in 1220 he initiated the building of a new cathedral on the rich meadow land. After seven years had passed, the new town had so progressed that it was granted a royal charter. The regular plan of New Sarum conformed with current town planning practice, and provided for a large market place and a spacious setting for the new cathedral and its ancillary buildings. The new location of the town also brought a change in the regional pattern, the steep road to the West being diverted to pass through the new town with the result that the commercial superiority of Wilton on the old road was transferred to New Sarum.

The *bastide* towns of Edward I, which he set up in Wales, were distinguished from other new foundations in Medieval England by certain characteristics. The various sites were selected carefully and primarily to establish a pattern of strong centres of English might and culture over Wales. In each respective locality the best strategic positions were chosen, and advantage was taken of any natural features which might form a basis for the artificial defences. All these aspects of strategic planning in Wales were more skilfully

conceived than in England. Commercial interests were of a secondary nature in selecting sites for the Welsh *baslides*, but the existence or otherwise of a potential catchment area for a market centre was not without its influence, and was really quite an important factor because the monopoly in trade granted to the English colonists was of little value without a local market. Both Welshmen and Jews were debarred from becoming citizens, whereas in Gascony the sole qualification was reputation.

We need only consider two of these *bastide* sites in North Wales to illustrate the usual reasons for selection. Conway stood guard over the river crossing, the coastal route of North Wales, and the entrance to a route leading into the heart of the mountains. Flint, on the estuary of the lower Dee, guarded the entrance to this important waterway and also the northern route into Wales. The emphasis of these two towns was on military rather than on civilian use, so that the castle always dominated the urban pattern of a few streets and houses, and it remained as the dominant feature for a long time through the lack of commerce and industry in the wild' and barren country.

Later, in England, Edward I founded the new towns of Hull and Winchelsea to accord with broad military policy, but more directly for supply purposes than for the establishment of 'strong points'. Hull replaced Ravenser as the Humber port for York, where Edward had established his headquarters whilst fighting the Scots* ; a further incentive to the new town was the inheritance by the Crown of the lands around. The selected site had a natural water defence on two sides formed by the River Hull and the Humber, and a channel was cut around the other two sides to complete the encirclement of the town. Hull was built from the beginning as a port and commercial centre which was intended to become prosperous, and it received the Royal Charter in 1299. The waterways gave excellent docking facilities, and the plan of the town made adequate shore provision for the commercial and docking interests. A great parish church was also built in confidence that it would serve a large and prosperous town.

In the south of England, Edward I had been negotiating with local interests for the establishment of a new port to replace Old

*It has also been suggested that a port was already established at the mouth of the River Hull before the time of Edward I (Plan for Kingston-upon-Hull : by Lutyens and Abercrombie : 1945)

Winchelsea because of the danger of inundation by the sea ; this port he needed for his military expeditions on the Continent. The selected site was on the wooded hill of Iham overlooking the broad estuary of the River Brede, but the negotiations over the rebuilding of the new town, which took place between the king's emissaries and the people of Old Winchelsea, were protracted and lasted from 1281 to 1288 for the thought of moving from the old home-town, with its associations and commercial ties, was not welcome. A further serious inroad by the sea and the promise of a more liberal administration for the proposed new town overcame local prejudice. The sea, however, played the same trick again—but in reverse—on New Winchelsea by receding so that the town was left high and dry. Its future was that of a peaceful village forming part of the regular urban layout of the once prosperous town.

Edward I was also attracted to the idea of extending his town planning activities as far north as Berwick-on-Tweed, where he had in mind a physical and racial re-development scheme to establish an outpost of English influence. This was never realized, but the preparatory work has a place in the history of planning as an early example of public relations, numerous attempts being made to seek the best advice and the support of the important towns of England.

The great work of the English medieval town planners ended with the rebuilding of Calais in 1347 to a regular plan with strong fortifications. Edward III was responsible for this, and he peopled the town with English settlers after expelling the French inhabitants.

The Medieval Village

The physical structure of the Medieval Village in England had greater unity than its counterparts on the Continent. The reason for this would seem to be the uninterrupted development of rural settlements since Saxon times, whereas on the Continent there was a great deal of movement and change wrought in the countryside by political rivalries and invading armies.

Most of the traditional English villages date in their present form from the rise of commerce in the heyday of the wool trade. At that time urban influence was strong in the countryside, particularly through the new market towns in the wool districts. This influence was apparent in the villages of the period, for they were not entirely ' of the country ', as so many people imagine, but had an urban character in the arrangement of streets and buildings, and

were in the right places for the comfortable working of the town and to accord with the nature of the site, and each of these elements was adequate for its task. The city of Carcassonne (France) was one of the oldest of this type of medieval town, and retained its compact form in spite of later extensions. Malines and Bruges (Belgium) had plans with an over-complicated road network which detracted from the convenient siting of the main elements, but there was a sense of vitality and human interest in these towns which does not appear so prominently in others of strict geometrical form. Bruges was a great commercial centre for Northern Europe ; it was enlarged in 1297 and the new walls were four and a half miles in circumference, the population being three times as big as that of the London of the time.

The layout of this last major group of medieval towns was expressive of the characteristics of their communities—the democratic and individualistic tendencies in local government and amongst the people, and the lack of an hereditary aristocracy. In particular, the university towns exhibited freedom of thought and action in their physical pattern. In towns such as Oxford and Cambridge (England) the medieval precinctual method of town building was most clearly demonstrated. By this method, the urban structure was built-up with a number of elements each devoted to some particular use, and each to a large extent self-contained. The many colleges were in themselves small communities or neighbourhoods, with their own internal communication systems ; and outside the colleges, the town streets gave access from one college to another. The City of London in its medieval form (and to some extent today) was also built-up on a precinctual basis of guilds, trades, shopping districts, and religious communities.*

Medieval Eclipse

It is more fitting to speak of the end of the Middle Ages as an eclipse rather than as a decline, for its cultural and social precepts have often illuminated later Ages. The ardent medievalist in the Gothic Revival of the nineteenth century pressed for the complete renaissance of medievalism, but he failed to realise the impossibility of retracing the footsteps of time. Today, there is a tendency towards smaller and self-supporting units in Society ; this results

* Precincts and Trade Quarters : by N. G. Brett-James and M. B. Honeybourne (Architectural Review : Nov. 1946)

from a social awareness and the necessity for reducing to reasonable proportions the reliance which is placed on sensitive world markets. How was it, then, that such an admirable way of life as the later medieval urbanity gave place to a new way of life in the Renaissance?

The farming pattern of England had lost its local and feudal character by the latter half of the fifteenth century. It had been re-organized to meet the demand from the Continental wool markets and, for a time, many towns flourished as centres of the wool trade or upon its prosperity. But, just as this new economy was European rather than local, so did the towns lose their local individualism and medieval characteristics in the new national and international patterns. The medieval town, with its conservative self-government and guild system, was ill-fitted to join with other towns and with the rural districts in a wider economic policy that took account of the rapidly growing world (both in new lands and in the opening-up of old lands by improved and safer communications). There had also never been close inter-reliance, or a sense of social and economic unity, between town and country in the Middle Ages. The town had produced the merchant middle-class and a complete medieval environment, but the country now had its yeoman farmer middle-class and the raw materials awaiting development for the richer life of the Renaissance. The merchant and the yeoman never became sufficiently cognizant of each other to weld town and country into a strong national pattern. Nor did the medieval town and the feudal countryside survive under the 'growth of absolute monarchies, which marked the end of urban independence and the decline of the powerful feudal lords.

CHAPTER VIII

THE RENAISSANCE I

EXPANSION, INTEGRATION AND MECHANIZATION

' Printing, a gross invention ; artillery, a thing that lay not far out of the way ; the needle, a thing partly known before : what a change have these three made in the world in these times ; the one in state of learning, the other in state of war, the third in the state of treasure, commodities and navigation ! '

THE PRAISE OF KNOWLEDGE by Francis Bacon

THE Renaissance has a special meaning for the planner of today. It was the beginning of the complex modern world wherein the integration of its several activities can only be achieved by " thought before action ", for that in short is the meaning of planning. In the Middle Ages the self-sufficient community required only the environment of custom and slow growth, but, in the Renaissance, direction was necessary to weave into a balanced pattern the ever-growing diversity of life and the physical environment. As it happened, this direction became autocratic planning for the benefit of the State and the aristocracy—in the ' grand manner ' as to the physical environment, and towards capitalism as to social and economic development—while the needs of the common man were often overlooked.

The new Age did not suddenly flower at a particular point in time, as we have already noted. The seeds of the Renaissance were sown just as deeply in the Medieval World as they were in Ancient Greece and Rome, although the influence of the latter was more readily apparent to eye and ear in the revival of formality and classical technique. There was also more than a little of imagination and invention in the Medieval World and, in this atmosphere, the pioneers of the Renaissance were able to go forward in that spirit of freedom which characterized the new Age at first. Such

diversely opposite characters of the early thirteenth century as Emperor Frederick the Second and St. Francis of Assisi—the one living richly in every way, and the other similarly at first, but later, by faith and in poverty—illustrate the flow of the transition from one Age to the other. Both men lived within a wholly medieval framework though in different ways, and yet gained their freedom from the limitations of conventional thought and were imbued with a new concept of humanism. Roger Bacon, in the same century and in Oxford far away from the Italian nursery of the Renaissance, may also claim this recognition as the father of modern experimental science. It was this spirit of freedom which gave birth to the brilliant creative works of the Arts, of Literature and of Science in the Early Renaissance.

The new Age was full of contrasts, the spark of genius lighting-up imagination and enthusiasm in all classes and races. In Italy, its effect was almost pagan; truth and beauty existing side by side with brutality and lack of moral restraint. In Germany and England, it fostered the Reformation and disciplined morality. In France, where the movement was late in its influence, it appeared on the one hand in the spirit of reform manifested by the Huguenots and the Inquisition, and on the other hand in moral laxity at the court. These diverse results were signs of the creative genius of the Renaissance. Even classical philosophy and environment were not merely used as models for imitation, but as the basis for fashioning a new attitude to life and a new environment. And, because Italy had the firm foundation of Antiquity and was prosperous in the Medieval World, a particular significance is attached to that country in the early days of the Renaissance.

The most precious jewels of the Renaissance were to be seen in its early days in the work of independent and free thinkers, scientists, and artists. But the years of maturity were contained within the rigid framework of international politics and the formality with which the new aristocracy surrounded themselves to maintain their strong position.* The use of artillery in warfare was also prominent among the contributory factors which limited the early promise of the Renaissance. Artillery signified the end of the local wars between small feudal units and independent cities, and it heralded

*The term *Renaissance* is used for convenience in this and the following chapters for that period which commences in the fourteenth century with the new Humanism and ends in the early nineteenth century with the large-scale application of the Machine to industry.

international warfare on a large scale. Against artillery the cities were vulnerable, and with artillery there came the professional or specialist soldier who must be employed in defence or attack to justify his pay. To keep the new full-time armies in readiness, discipline and regular drill or parading were introduced, and this was quickly taken up by the courts of kings and princes in formal manners and customs, though there was a concomitant reaction in the excessive freedom in the courts from moral discipline.

Influences : of Circumstances and of Individuals

In Medieval Europe, people lived within limitations ordained by the feudal system and by the Church, and it was only when the breaking-down of this restricted way of life was hastened by a series of pertinent events and influences that suitable conditions appeared for the Renaissance movement to develop. Three examples will suffice in explanation. First, feudalism and the Church, in their fully medieval forms, would never have accepted the freedom of thought and independence of action which were characteristic of the Early Renaissance, if their hold upon Society had not been weakened by the social disorders following the Black Death, and by the national consolidation which occurred in France and in England as a result of the Hundred Years' War. Second, the cultural developments of the Renaissance were influenced by the introduction of paper and by the invention of printing, by the growth of international trading which had established the routes for cultural interchange, and by the impetus given to the movement of Greek scholars westwards to Italy when Constantinople fell. Third, new political concepts were evident, for example, in the entry of Spain into the field of international politics after the Moors had been evicted from the country in 1492 and in the rise of the Italian free city-states. There were many such apparently unrelated influences at work in Medieval Europe, creating conditions favourable to a renaissance.

The influence of the individual in Society is not only more easily discernible and definable in the Renaissance than in earlier civilizations by virtue of the greater wealth of historical record, but also by the independent development of the individual under conditions of greater intellectual freedom. Men of genius had therefore a stronger influence in the Renaissance than their predecessors in the Middle Ages who were hidden behind the curtain of the

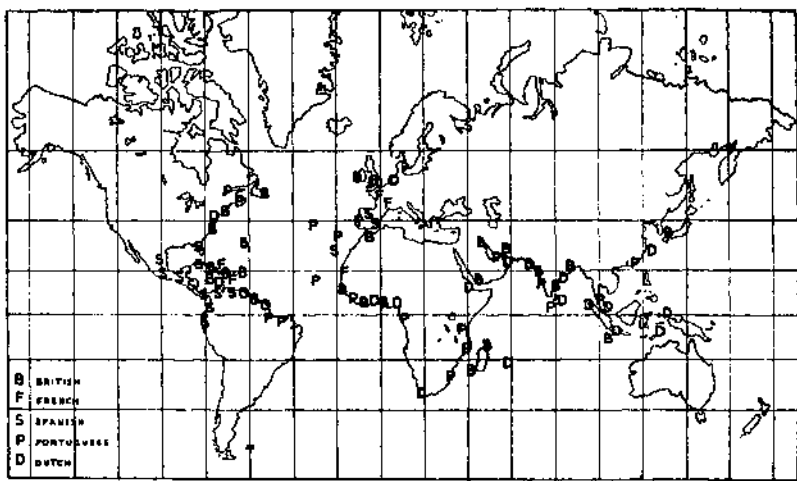
Church or were subdued by suspicion. It is, however, not always possible to say whether the men of genius who were pioneers of the Renaissance movement belonged to the Renaissance or to a final creative period of the Middle Ages. Thus, the work of Dante (1265-1321) "was distinctive of the period during which human thought was held in the iron grasp of the Church, and who yet by virtue of his commanding gifts reached forward towards the age that was to follow."* But there were also pioneers in other fields who were late in the Renaissance in point of time.

The wide range of cultural development that these men of genius covered is suggested by reference to Petrarch (1304-74), hailed by many as the father of modern poetry and humanism ; to Erasmus (1467 ?-1536) who applied the new learning to problems of the day far removed from its original background of Antiquity ; and to Chrysoloras the Greek scholar who came to Florence towards the end of the fourteenth century bringing the culture of Ancient Greece. In the direct pursuit of Science, Copernicus (*De Revolutionibus*—1543) was able to prove that the earth and the five planets revolved around the sun, and that the earth spun also on its own axis ; Galileo (b. 1546) besides making important discoveries in physics, added to the new astronomy by his development of the telescope ; and Sir Isaac Newton (*Principia*—1687) affixed the final seal for the general acceptance of the Copernican theory, as well as making scientific discoveries. In the field of the visual arts, a great number of works of all kinds emphasized the importance of the new movement. The high standard of these works was made possible by an interest in the arts of Antiquity and by inspiration associated with the intellectual freedom of the time. Among those who sought and were able to give a new expression to their art, two men were outstanding : Giotto (1276-1336), the painter, who depicted a wider range of subject than was contained in the strict canons of the Church ; and Brunelleschi (1377-1446), the architect, who showed how the decorative and constructional forms of Antiquity, already being used by his contemporaries, might also be used in architecture more expressive of the Renaissance.

All these men of genius would have produced little for the benefit of civilization if they had not received support and encouragement from the wealthy aristocracy, for the Renaissance was the great Age

*The Renaissance and its Makers : by J. D. Symons and S. L. Bensusan. (T. C. & E. C. Jack. London. 1913)

of the private patron. Although this was the time when the despots came to power in Italy with their often tyrannical rule, they were great patrons of the arts and fostered the production of masterpieces which might otherwise have remained only in the minds of the artists and authors. The patronage of the Medici in Florence, the Sforzas in Milan, the D'Estes of Ferrara, the Gonzagas of Mantua, and the Popes who made the Vatican a nursery of culture, illustrated well enough the contrast between the oligarchical rule of the period and the freedom allowed to those who were contributing to the development of culture and, as it happened, to the eventual overthrow of all that the despots represented.



The extent of world colonization and trading at the middle of the 17th century. The dependency of the settlement pattern upon sea communications is apparent from the map, the nations taking part being the great seafaring powers of Europe.

All these early signs of the Renaissance movement were indicative of the liberation of the human mind from the restraining influences of medieval authority, and of the far-reaching developments in Man's way of life that took place within the territory of Medieval Europe. But later, they led to exploration and discovery, to a new terrestrial outlook, and to colonization. The discoveries in astronomy and science and the new conception of the Earth figured prominently in the advances in seamanship which made possible the historic voyages of Columbus (1492), of Cabot (1497), and of Vasco da Gama (1498). The exploration of new routes was also

to some extent influenced by the Turkish conquests around the Eastern Mediterranean which blocked the old trade routes from the East. It was now found that the physical boundaries of the Old World were a myth—a fact which was emphasized by the later voyages of Drake (1577) and others. The opening up of the New World was also aided by the missionary work of the Jesuit Order ; the Jesuits were particularly active in combating the lethargy of the Roman Church after, and because of, the Reformation. In this way the work of the great reformers, such as Luther (1483-1546), was linked to the physical as well as to the intellectual and spiritual widening of Man's horizon.

Developments in Town and Country Planning

The contributions that were made in the Renaissance to Man's way of life and to his environment varied considerably as between one country and another, for the progress of the Renaissance across Medieval Europe was not that of a victorious army moving consistently towards its ultimate goal and consolidating its conquests in each country. The parallel of a revolt, breaking-out here spontaneously or there as a result of external influence, is closer to the truth. Even so, the picture was confused by the wide variety in the dates at which the Renaissance appeared throughout Europe. For example, the Elizabethan Age in sixteenth century England signified the highest manifestation of the spirit of the Renaissance in England, but it was not until the first quarter of the seventeenth century that Inigo Jones introduced the architecture of the Renaissance into the country as a complete break from the medieval tradition.

The contribution most closely allied to the practice of town and country planning was the urban setting in the ' grand manner ' created for the new aristocracy. This was an environment consciously planned for a particular section of the community. Less obvious, but equally important to subsequent development, were such diverse movements as the re-afforestation in England associated with John Evelyn's propaganda (*Sylva*—1678), the national unity achieved under autocratic monarchies as in France and Spain, the colonization methods in the New World, and the new farming pattern and humanized landscape of Enclosure in England.

The early free spirit of the Renaissance, and the ' organic ' planning consequent upon it, had been transformed into the controlled

policies of ' autocratic ' planning—sometimes wisely, sometimes of necessity, but often with anti-social methods. It is these several contributions and others of a similar nature that we must now relate to the historical basis of our Society and Environment.

ITALY In general, Italy was unique in Europe for her incomplete acceptance of Medievalism and as the nursery of the Renaissance. But in her examples of town and country planning very little was produced in the way of the great and later urban and rural projects of the European autocracies. The reasons for this are clear in the tradition of self-government of her cities at the time of the Early Renaissance—which persisted when the despots were in control—and the strong central authority of the Church. Against such opposition, an Italian monarchy could hope for little real power over the whole country. Italy also became the battlefield of the ambitious princes of Europe and had little opportunity to build in a single effort great cities with magnificent streets and *places*. The urban and rural projects were, therefore, limited to isolated achievements on a small scale with a few exceptions like Vanvitelli's Palace at Caserta. Even so these projects established the new technique for urban development, and are, therefore, of major importance in town planning.

Nicholas V, who was Pope from 1447-55, had planned a number of these individual projects for Rome : the rebuilding of the city walls and the restoration of the aqueducts and bridges ; the repair of forty churches ; and the rebuilding of the Vatican Borgo, the Papal Palace, and St. Peter's. Premature death prevented him from completing more than a large part of the first two projects, and some work on the Palace in 1450. He also had in mind a plan for the Vatican that would bring within its confines all the government offices and residences of the cardinals—a plan for a Vatican City. This was one of the earliest town planning proposals of the Renaissance (though it was not carried to the stage of a town planning scheme), and Leon Battista Alberti acted as architect and adviser. Pope Sixtus IV (1471-84) was responsible for some improvements of a practical nature to the city of Rome ; he also sponsored the building of twenty churches and the famous Sistine Chapel. But the two outstanding and influential examples of the ' grand manner ' in town planning in Italy were the piazza of the Capitol (Michelangelo—1536) and that of St. Peter's (Bernini—1655), both showing a new treatment of geometrical forms for the enclosure of space and

an understanding of perspective in *place* design—the equivalent in town planning of Baroque in architecture.

Pope Sixtus V (1585-90) and his architect-planner, Domenico Fontana, are associated with the large-scale town planning developments in Rome. Fontana was able to carry out the first comprehensive scheme of the Renaissance that both served a practical purpose and introduced the new aesthetic appreciation into civic design. The work has been described by Sir Patrick Abercrombie thus : " Sixtus V by his Aqua Felice made the healthy high lands once more habitable, and Fontana set himself to open up the vast area of deserted Rome which was thus available for building. For this purpose he constructed a series of bold straight streets which had neither connection with building plots nor outside country roads. But, though uninhabited, this tract of ancient Rome was dotted with great basilicas erected on holy spots, such as St. Maria Maggiore, St. John Lateran, and S. Croce in Gerusalemme. By a stroke of original genius Fontana decided to punctuate his straight roads with these mighty monuments, and even where a church was not handy to create monuments or place an obelisk to take their place. Where several of these streets met on a monument, a traffic *place* was naturally formed. So was evolved the vista or straight avenue leading directly up to a monument, which at once invested the system of straight roads with an architectural quality. . . . Fontana's work at Rome has had an incalculable influence on European Town Planning. We know that when Paris was first being planned by Louis XIV's architects, Rome was looked upon as the only model from which anything could be learnt. The vistas which were then devised must all be put down to Fontana's inspiration. But it was probably not until the French Revolutionary Artists' Commission propounded their daring projects, which Napoleon I partially realized and Haussmann improved and achieved, that the climax of this phase of Renaissance planning was reached."*

The city of Florence was fortunate in the high level of culture of her citizens and mercantile nobility—the Medici, the Pitti, the Rucellai, and the Strozzi. The guild system was also highly developed and able to bring vigorous opposition or support into the political life of the city. Under these conditions of a patronage able to appreciate the arts, a people valuing culture, and a healthy

*The Era of Architectural Town Planning : by Sir Patrick Abercrombie (The Town Planning Review : Vol. V : No. 3)

countering of supreme despotic power, the new architecture of the Renaissance emerged in Florence, though, for a time, it was overshadowed by the existence of a lavish medieval setting—a fact which also limited any great work of town planning. Michelangelo's plan for a unified treatment around the enlarged Piazza della Signoria was the largest project envisaged at the time. Nevertheless, the organic development of the city of Florence in the Early Renaissance was a physical expression of the humanistic spirit of the free cities of Italy ; for example, the palaces of the nobility were built adjoining the houses of the lesser citizens in the continuous street frontages ; these palaces also lacked the dignity given by garden or forecourt space. The contrast appeared later in the commanding sites allotted to the palaces of the autocratic princes in other countries, emphasizing the social, cultural, economic, and political domination over the cities.

Venice, like Florence, had the same happy relationship in residential land use, and was fortunate in her citizens who, disliking the rule of despots, built-up a constitution that was unique in Europe. The key-note of this administration was the curtailment of the power of the Doge. Venice had succeeded Constantinople as the trading centre between East and West, and it was the common interest of trade that united the citizens. Even the aristocracy were almost entirely dependent for their position on the wealth acquired in trading. The influence of this vast trade with the East induced a love of pomp and display, and a mingling of the stylistic conventions of various countries and periods in the architecture, which latter was a sign that Venice was not prepared to accept the criterion of Antiquity in full. The limitations that were imposed upon any large-scale projects of civic design by the natural water channels made it difficult to carry out city re-development or extension in a formal manner. Nevertheless, the existence of the element of water in the site of Venice provided opportunities which were used by her builders to create an environment of imagination and spatial freedom. Pietro Casola writing when the development of the city was in full swing said : " The city, although it is in the water, has so many beautiful piazzas, beginning with that of St. Mark, that they would suffice for a very great city placed on the mainland. It is a marvel to see how long and spacious they are." The *piazza* of St. Mark was a particularly fine example of town planning which sought to respect function and architectural relationship. It had

the form of a Medieval *place*, the spaciousness of a Renaissance square, and a cosmopolitan appearance in the variety of elevational treatment.

But if Venice fell out of line with the Renaissance tradition in town design or re-development, her satellite town, Palma Nuova, displayed the ordered classicism which superseded the 'organic' approach of the Early Renaissance, and also the influence of artillery. Palma Nuova was established in 1593 because the island site of Venice restricted expansion ; it was the perfect realization of the town planning theories which had appeared in published form as 'ideal' plans.

The practice of formulating rules for the design of building facades had been revived in the Renaissance, just as the architectural remains of Antiquity were studied anew, but it was mistakenly extended to the formulation of rules for planning centres of population. Such methods were not likely to be successful when human variety had to be accounted for in town planning. Alberti's *De Re Aedificatoria*, written about the middle of the fifteenth century, and a treatise by his contemporary Filarete, discussed the arrangement of streets and areas of land-use in towns. Several ideal concepts for town plans were drawn-up showing the application of this approach 'by rule'. These had octagonal or circular boundaries which limited the town, and usually conditioned the concentric street pattern with its streets radiating from the centre.

Much the same result was arrived at by the engineering theorists and practitioners in considering the effect of the new artillery on the defensive systems of towns. Many books were published on this aspect of town planning, the earliest being *Della Architettura Militare* by Francesco de Marchi, written about 1540. Here, again, the concentric and radial street pattern was favoured, with 'stellar' fortifications to bring the attacking artillery into the range of the defenders' guns whilst at the same time limiting the former to a range that would not reach the town proper.

A third theoretical consideration—if not directly supporting the concentric and radial street pattern—was the application of perspective to painting. Through the sense of distance and vista which perspective gave to the flat surface, theorists were led to consider the vista along the streets of the ideal town plans and the placing of important buildings at the end of the vistas. The ideal cities designed by Vasari and Scamozzi (at the end of the sixteenth and

the beginning of the seventeenth centuries respectively) showed an elaboration of the vista theory by the introduction of a number of places, with some terminating feature to the vistas.

Ferrara, in the north of Italy, was considerably enlarged in the sixteenth century by the prince, Hercules I, and his descendants ; the town planning technique being typical of that customary in Italy at the time, and in contrast to that of the ' ideal' plans referred to. A new quarter was added to the town and new walls were built ; the layout of the former was considered to be so well planned that many wealthy refugees were attracted to the town, building their own palaces. Hercules planned to achieve ; greater prosperity in the town by draining marshland to make it suitable for agriculture, by his encouragement of agriculture generally, and by framing laws which were beneficial to commerce. But in general, planning schemes of this magnitude were still exceptional in Italy, and another mid-sixteenth century project, the Strada Nuova in Genoa by Galeazzo Alessi, was more truly representative. This was a prototype for the urban landscape of the Renaissance in other countries : " The Via Nuova, by later Renaissance standards, is narrow—not more than 20 feet wide—and is only 250 yards long. But it was something quite new and even in Alessi's own day was regarded as the finest street in Italy—*The Street of Kings*. It was, in fact, a street of palaces : Alessi laid down a standard height of 70 feet to the crowning cornice and built most of them himself. With their rich modelling, they form a complete contrast to the flat stucco façades of medieval Genoa."*

For the first time in the development of civic design in the Renaissance, the street was envisaged as a unit of design with the flanking building facades relating one to the other, and to the scale of the street. This concept of the street—as an architectural whole to which each building must be subservient and with which each must accord, joining *place to place* and related to them—was to be a standard for the urban development later carried out by the great princes of Renaissance Europe. It did not accord with the Humanism of the Early Renaissance, which favoured individual and organic development of the buildings, streets, and different parts of the town.

NORTHERN EUROPE At the close of the fifteenth century in Germany, the signs of a new movement were apparent in the

*Cities of the Early Renaissance : by Cecil Stewart : (Town Planning Institute Journal : Vol. XXXIII : No. 3)

recently-founded universities of many commercial towns, and in the number of scholars travelling along the trade routes between these towns and to other European countries. The military leaders and the common soldiers of the German lands had also met the culture of the Early Renaissance in Italy, where they were engaged between 1494 and 1559 in the struggle for European power between France and the Hapsburgs. But the work of the leaders of humanist thought failed to develop as a major cultural movement because religious impulses in Northern Europe seeking reform overshadowed all other aspects of the new movement, and emphasized the *Reformation* instead of the *Renaissance* aspect.

The system of autocratic rule, which soon became associated with the Renaissance, was well-suited to the three hundred and fifty or so Sovereign States of Germany. It enabled the tradition of feudalism to continue at a time when England, France, and Spain had achieved unity in a supreme monarchy ; a similar unity did not exist over all Germany until 1871.

The main contributory factors which brought about this division of Germany were first, the lack of clearly defined natural frontiers over the great expanse of the German lands and the broken-up character of the terrain ; and second, the pre-occupation of the nominal leaders of Germany with the establishment of authority in Italy for, since the coronation of Otto the Great as Emperor of the Holy Roman Empire in A.D. 962, the Imperial Crown had carried with it those of Germany, Italy, and Burgundy. Luther's efforts to reform the Church hastened the clash between Protestantism and Catholicism, and thus the division of the country. After the peasants' revolt against feudalism, a settlement in 1555 helped to give permanence to the multitude of Sovereign States because the princes were empowered to dictate the creed of their subjects ; enforced religious unity as well as sovereign rights now helped to define each State.

Under the stress of these internal troubles, little creative work of any kind in planning was realized in Germany. Yet, the achievements of other countries during the Renaissance were not unknown because foreign intervention in the Thirty Years' War (1618-48) brought the Danes, the Swedes, the French, and the Spaniards into the struggle, and professional soldiers from other countries. Later, when more settled conditions prevailed, the palace-towns were established in the various States of Germany, many of them

EXPANSION, INTEGRA!

modelled on Louis XIV's *Versailles*
one operation and to a plan the
symbol of autocracy. Mannheim,
(in the province of Baden), comment
examples of the 'grand manner' of
planning in Germany.

The palace-towns and their princely
enhancements, were not, however, the most
powerful Germany of the future, for it was the
planning of Frederick William, the 'Great Elector'
after the Thirty Years' War that laid the foundation.
Besides consolidating his scattered dominions and
provincial authority, Frederick William organized the
so that it became pre-eminent in building-up Prussian
power. He established a strong army, and the financial
necessary for its maintenance. His other works included those
physical planning at the regional level; the drainage of large areas,
of marshland, leading to agricultural reform; the improvement of
communications by cutting canals; and the encouragement given
to the settlement of Protestant refugees from other countries so that
they might raise the standard of industrial production and introduce
new ideas into the native culture. The 'Great Elector's' son, the
first King of Prussia, and his grandson, Frederick the Great, carried
forward the work of planning in accordance with the nationalistic
and imperialistic ambitions of the Hohenzollerns—to initiate the
building-up of that Empire which so often dominated Europe.

In the other countries of Northern Europe, the reformation of the
Church was also more prominent than the cultural changes of the
Renaissance. In Sweden, the Church was relieved of its obedience
to the authority of Rome after 1527, but the reason was political
rather than doctrinal and accorded with the policy of increasing the
power of the Crown when the country gained its freedom from
Scandinavian rule; a large part of the Church property was, in fact,
handed over to the Crown and the Nobility. The break from Rome
was achieved more slowly in Denmark—between 1527 and 1536—
and most of the Church property went to the Nobility. But the
contrast of the meaning and effect of the Reformation as between
Germany and the Scandinavian countries was religious on the one
hand and political on the other. In Switzerland, the motives were
primarily religious, and the work of reform was carried out by parties,

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who were fiercely opposed to the
rest in the Netherlands retarded
ism there until 1572, but, despite the
est in its 50,000 victims, the teaching
vin met with a ready response.

vi by religious controversies, the several
,*he Renaissance nevertheless made con-
rthern Europe. In particular the Schools
cnerlands were noteworthy in their continua-
outlook of the Early Renaissance into the later
'tight and action were hidebound by custom and
A succession of creative artists produced work of the
,r upon a medieval tradition of illuminators. Rem-
006-1669), in particular, worked with a freedom such as
en evident in the Early Renaissance in other fields, and had
advantage of the technical progress made by Europe's Schools
of Painting.

The painter was often free to work as he liked—though he might suffer thereby—and did not necessarily have to give expression to the requirements of Society in general or of an autocrat in particular, as was the case with architecture, town planning, or landscape design. Thus, in contrast to the freedom accorded to the painter, the town planning of the cities of the Netherlands in the sixteenth century was greatly influenced by the elaborate fortification systems which were necessary to resist the Spanish intrusion and the resultant internal friction. Many cities, such as Amsterdam and Haarlem, were redeveloped and enlarged at that time, and fortification rings of walls and water were constructed which determined the layout of the urban area.

This Dutch tradition in town planning and defensive engineering was influential in urban development in Sweden and Denmark during the seventeenth century. In the former country, Goteborg was founded on the west coast in 1604 as a bulwark against the Norwegians ; Dutch town planners from the Netherlands were employed, and their work was apparent in the canal system and stellar fortifications. Dutch architects, town planners, and engineers also carried out a great deal of redevelopment in Copenhagen, and they were followed in the eighteenth century by Frenchmen who brought yet another town-planning tradition of the Renaissance.

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ENGLAND The liberal outl
not so easily seen in England as in
England was at the time still outw.
environment of her cities was virtua
revival in art and architecture of the
motifs were eventually brought across i
of simple craftsmen who did little more ti
tradition with the new ornamentation. Bt
' façade ', the culture of the Renaissance was
As early as the year 1425, Duke Humphrey of
Italy for books to fill his library, and he enlarged ti
the nursery of the Renaissance by inviting some of
Italian Humanists to England. Young English scholar
to Italy and came back with Italian manners as well a.
learning ; they combined skill in fencing and horsemanship
intellectual achievement.

This mastery of the physical and cultural arts produced the all-round man of the glorious Elizabethan Age—as swift with the sword as he was skilful with the pen. But the acquisition of classical culture for its own sake or to aid the pursuit of knowledge was uncommon, and in its European sense the Renaissance was abortive in England until the seventeenth century. It may well be argued, however, that if the Renaissance meant a development of the artistic sense in courtliness and music, a new creative ability in literature most ably expressed by Shakespeare, and the philosophy of Francis Bacon, then the movement flourished as nobly in Elizabethan England as in any other country.

The geographical separation of England from the Continent necessarily meant a measure of cultural isolation. But it also gave a detached view of the Reformation on the Continent, with its bitter religious and political struggles. When the Church in England ceased to acknowledge the authority of Rome, the changes that were made took place in comparative quietude at first. The second stage of the Reformation in England under the Puritans, although not without bloodshed, was as political in motive as Henry VIII's break with Rome ; its major achievement was a republican government for twelve years, and the limitation of the power of subsequent monarchs.

The results of these political changes were soon apparent in the environment of town and country, for the limitation of monarchical

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ed estates (the speculative urban
ats of the gentry), while on the
mces were increasing their power
r the example of the kings of France
sful in making their position supreme.
• 'medieval fields' in England gave larger
.op, and favoured the wealthy landowner.
id passed from ownership or control by the
, and these latter also drew rent from the land
want to farm themselves. The rural social order
• the landed gentry and the farm labourers, with an
iass of farmers between the two. The landed gentry,
ardly merited the epithet "idle rich". In spite of an
.arious existence—though this also meant an arduous social
—there were many who assumed responsibility for the
improvement of their estates, and who enriched the native culture
of Georgian England. The productivity of the countryside today is
not a little due to the rural planning and development carried out
by the landed gentry of the seventeenth and eighteenth centuries.

The geographical position, and communication systems that were
still slow and precarious, also isolated England from the warfare
consequent upon the political rivalries of Renaissance Europe,
except when her own initiative prompted adventure across the
Channel. During these centuries of internal peace, and when
natural barriers were still effective in maintaining comparative
external peace, the full development of the Renaissance in England
was to be seen in the quiet dignity of Georgian squares and terraces,
in the measured words of her politicians, and in the sagacity of her
essayists. The inventive genius of the Elizabethans was on the
whole absent, except with the craftsman who began to make
revolutionary changes in his methods and to lay the foundations of
the mechanization that was to change the standard of urban
environment and the social order in the Machine Age.

SPAIN The part that Spain played in the Renaissance was
more akin to the large-scale organization of Imperial Rome than to
the cultural and religious movements that were taking place else-
where. But Spain was only supreme in this role during the sixteenth
century. From that time until 1810, when her colonies declared their
independence, her power was gradually decreasing. The Spaniards
had acquired confidence and experience in military affairs during

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the campaigns which finally led the middle of the fifteenth century, given to the country by reducing ti. doms to four. Complete unity ove achieved in 1580, although Portugal sixty years later. In this new native-nil sixteenth century, the Crown represented though not with the complete autocracy of The wealth and glory, which came to the Crow colonies across the Atlantic, helped to raise the S to this position ; the gradual curtailment of the p aristocracy was another contributory reason.

The humanist expression of the Early Renaissance i progress in Spain because the Moorish civilization, and the , struggle that were needed to rid the country of its exponents, not provide the right conditions for unconventional thought an action. The chances of a reformation in religious thought and practice were eliminated by the firm hold that the Counter Reformation of the Roman Church took in Spain. But, nevertheless, a great deal of the work of the pioneer navigators, and of the native artists and authors, contributed to the advance that was made in European civilization as a whole by the Early Renaissance.

The complete expression of all that the Grand Renaissance meant in Europe was seen in Spain and France. In the former country, we may take as an example the great monastic community of the Escorial, where in the combined palace and monastery building the autocracy of Church and State was represented. It was a vigorous Roman Church that had been awakened by the shock of the Reformation in Northern Europe ; a Church that was the partner of the monarchy in an *Imperial* Spain, for a great Empire was in process of formation in the New World. Across the Pyrenees in France, the palace-town of Versailles was the visual expression of Europe's greatest autocratic monarchy. There was, however, a difference in the significance of these two building-groups : Church and State represented equally in the Escorial, and State primarily with Church secondarily in Versailles. But the most important contribution made by Spain in the Renaissance to the wider twentieth century planning basis was the development of the resources of the New World and of a Latin-American civilization. This merits separate discussion in relation to the entire field

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ries of Renaissance Europe.
ceptible influence upon the urban
i Versailles was the most important
sance in France. This statement is
palace-towns which sprang up in many
-he Versailles model, and in these towns
e Renaissance was well represented in the
es and in the design of the various buildings.
enaissance, France had no outstanding contri-
caution limited her Humanists and, in any case,
elopment which might have been followed by these
jneers was restricted by the early consolidation of the
the feudal pattern, and also by the strict discipline of the
Church after its own Counter-Reformation.

ie frequent contact with Italy—by way of the merchants and
nurch officials—did little more than bring a superficial expression
of the Renaissance to France. For example, when Charles VIII
of France entered Italy in 1494, moving about that country at the
head of a large but ignorant body of men, the real significance of
the new cultural movement escaped him. He was more impressed
with 'visual' developments, such as the gardens at Naples, and he
brought back Italian workmen to France so that they might
introduce the new landscaping at Amboise and Blois. More as a
fashion than as the expression of a deeper hidden meaning, the
hackneyed motifs of the Classic revival were superimposed on the
facades of the chateaux of Francis I (1515-47). These chateaux
were in essence still medieval, and only superseded castles of the
feudal pattern designed primarily for defence. Francis I introduced
the culture of the Renaissance into his court, but his interest was
merely that of a dilettante and had little real effect.

At the end of the sixteenth century in France, the influence of
the Renaissance began to appear in the physical and social develop-
ments which are most generally associated with planning. The
conflict between the Roman Church and the Protestants had
broken-out, for geographically France was the battlefield where the
forces of the Reformation, sweeping across Europe in the North,
would meet those of the Inquisition from the South. After civil
war and the anarchy of this conflict, the country was consolidated
by Henry IV (1589-1610), who gave and kept religious equality,
but only as a result of a powerful monarchy—the price of national

unity and worth the payment unc

Reforms in agriculture, com
carried out by Henry IV and th
adviser. The Dutch were brought
and support was given to Olivier a
d'Agriculture ", which advocated scier*
Barthélemy de Laffémas was made Con
he was a political-economist whose theories
should aim at self-sufficiency and produce
goods required, instead of importing them i*
office of Chief Inspector of Public Works was taken
in 1599, and he was able to improve the roads, inclu
of the highways round Paris and the planting of elm
sides. There was also a lot of work carried out in conne
canals, leading to the building-up of a system of inland na
covering many parts of the country.

The course of the Renaissance in France gave an almost compleu
picture in itself of the town planning developments that were
taking place in different parts of Europe. At the commencement,
there was every opportunity for experiment with the new fortified
town of the Artillery Age during the troubled years of religious
strife and the overthrow of feudal power. In these experiments a
precedent was also formed for the ' grand occasions ' of the seven-
teenth century. New centres of population were founded in some
cases, and elsewhere the rebuilding of devastated towns and villages
took place.

At first, the Renaissance town planning in France was in the
medieval tradition, with the fortifications projecting beyond the
urban boundary after the manner recommended in the writings of
military engineers. Later, within the same fortification system,
the grid pattern of the medieval city was given punctuation by
relating the central streets of each direction to the central *place* in
axial manner (Gattinara, rebuilt after destruction in 1524 and
1526 ; Vitry le Francois, commenced in 1545). The ' radial' town
plan of the Italian theorists was realized in Villefranche-sur-Meuse,
Mariembourg, Philippeville, and Rocroi.

But the trend of town planning practice—towards the grandiose
schemes of the autocratic rulers—was more clearly seen in the new
settlements which were built for Huguenot refugees. Freudenstadt,
built in the Black Forest for refugees from France, was planned with

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of squares, each larger and out-
o the usual grid pattern, for there
< In the centre of the town was the
built. The significance of the new
•e expressed in the equality of position
from this street arrangement, but even
pon the projected castle as representative
the town. The Duke of Sully was respon-
of the Huguenot town of Henrichemont ; the
was again a square, but the grid division of the
the four radial streets from the central *place* to the
s, suggest the fortress town and the axial vista of the
planning usually associated with autocratic regimes,
·Aor a Protestant community.

ther stage towards the later palace-town came with the
ang of Charleville (c. 1608-20) on the Meuse by Charles de
-onzague, Duke of Nevers and of Rethel, Prince of Mantoue and
of Montferrat. Here, the regular grid street plan was adapted to
conform with six *places* of varying size and position. The central
Place Ducale formed the ' courtyard ' of the Ducal Palace, and it
was designed as one architectural conception to emphasize and lead
up to the Palace. It also provided the setting for the pageantry of
the court. Leading out of the Place Ducale, the streets of the town
were designed to carry through the architectural character of the
Palace, just as though they were ancillary extensions of the Palace
itself.

Although Charleville gave a foretaste of the kind of urban
environment that was to be the lot of the people at the monarchical
centre of Versailles, it also represented the power of the nobles who,
in partly maintaining their feudal supremacy, still countered an
absolute monarchy. Soon afterwards, however, Cardinal Richelieu
(Chief Minister from 1624 to 1642) completed the work of unifying
France by exalting the monarchy as the permanent focus of the
country ; this was the only way in which he could foresee a great
and prosperous France. As a result of his work, Louis XIV, who
reigned from 1643 to 1715 and who built the Versailles of the
' grand manner ' was able to say " L'état c'est moi " with the
certain knowledge that this was indeed the true position. But the
home policy and social conditions under this exalted monarchy
added to the discontent which eventually led to the French Revolu-

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tion ; Louis XIV's contribution of his taxation upon the people, tants and unorthodox Catholics sible for another contributory cau of gaining national unity : in remc nobles, he had allowed them to ri privileges over the lower classes, such taxation and the right to exact certain s in the traditional feudal manner. We may in France with that existing at the same †. described elsewhere.*

Thus Versailles, the creation of Louis XIV, repn years of revolution and disunity in France, as well a Renaissance glory. It also signified the brilliance of the rich and sensuous quality of French art, and the great repu French craftsmen. If the architecture and planning of Vei. offended the purist, there was no faltering hand in the building- of an environment of town, palace, and garden, which was meant for pomp and display. The influence of Versailles spread to the petty kingdoms and the princedoms of Europe, sometimes as the model for the planning of a palace-town, as at La Granja in Spain, or more frequently as the inspiration for other physical expressions of Renaissance autocracy : " A la ville il a donné non seulement son plan et sa forme extérieure, mais son âme royale et sa signification urbaine en la liant expressément a la demeure du souverain ; par lui Versailles est devenu le type de la ville-residence, telle qu'on en verra naitre ensuite beaucoup en Europe."!

The prototype for Versailles was the palace-town that Richelieu built in 1631, named after its founder. At Richelieu, the typical forest-avenues of the French Renaissance radiated from a circular place or *rond point* at the end of the garden, and they served a double purpose : first, by making it possible to range over the entire forest in comfort and without loss of dignity which would arise in travelling through scrub and undergrowth ; second, by making it possible to keep up the constant parading of Renaissance Society even in the sport of the chase. At Versailles, it was not sufficient to have only forest-avenues radiating from the garden, but there had also to be

*See pages 148 and 181.

fHistoire de l'Urbanisme : by Pierre Lavedan. (Henri Laurens. Paris. 1941

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•lues radiating from the palace
piration for the radial avenue
the ideal town plan devised by

ng expansion and decoration, many
nd manner ' in civic design into the
ther been completed or were in process
-- of these schemes was a rich overlay of
acting the eye from the well-worn and ill-
t of the city ; this latter by now had intoler-
the poorer classes. Later, the French Revolu-
. not dissipated, its energies in attempting to bring
mental change in the pattern of Society, and the
. which it lived, before men were ready for it. Then
,, in the guise of imperialism, reaffirmed its position as the
ant in French Society. The physical expression of this was
new scenery of the Parisian stage ' which Haussmann and
Deschamps achieved for Napoleon III between 1853 and 1870.

The new environment was as typical of the Empire as Versailles
had been of " Le Grand Monarque ". Basically, an improved
system of communication was driven through the congested urban
area of Paris ; it was efficient for the traffic requirements of the
nineteenth century and for controlling the mob, and it was appro-
priate for the parading of vast armies. At the meeting places of
Haussmann's avenues there was usually a *place* with some monument
or special building to give point to the vista, the ensemble acting as
a constant reminder of imperialism.

All this was strictly of the Grand Renaissance, which was still very
much alive in the new Machine Age. Many of the great capitals
of Europe and the cities of the New World were, like Paris, investing
in similar projects in the nineteenth century which would enhance
their civic dignity. Even so, the squalor of industrial and slum
housing was fast becoming a menace as the industrial machine
increased its tempo. In Britain, the well-meant efforts of the
Public Health movement tried to regulate potential squalor into
something approaching a decent residential environment and, in
fact, influenced Napoeleon III to the extent of his ordering a new
sewage system for Paris. But, behind all this apparent redevelop-
ment, the congestion of the older parts of the city of Paris still
remained.

RUSSIA In most European countries, the Renaissance had appeared as a spontaneous development in its various forms, though also subject to external influences, particularly from Italy. This was not the case, however, with Russia where the Renaissance was imposed upon the people by Peter the Great, Tsar from 1682-1725. Russia at this time was a curious mixture, still half barbaric and half Byzantine. The feudal tradition remained strong in serfdom, and yet a little of the manners and customs of Western Europe reached the capital in the seventeenth century. There was also some justification for Russia's claim that the succession of the Roman Empire had passed from Constantinople to Moscow after the fall of the Byzantine Empire. Peter the Great was doubtless aware of his country's lack of a single cultural, social, and economic tradition, and of the difficulties that would beset him in any work of reorganization, for he prepared himself very thoroughly for this task. He journeyed through Europe, not as a Tsar, but as an earnest student of every facet of life. On his return to Russia he took back with him many specialists to form the basis of his reconstruction team : " Planning was not a novelty in Russia. Peter the Great made a plan for industry and created many officials to run it."*

St. Petersburg (now Leningrad), founded by Peter the Great in 1703 as an outlet to the Baltic for his country, was a visual sign of the Tsar's assimilation of the Renaissance. It was to be in his own words " a window through which to look out upon Europe ", and was more European than Asiatic in design, for it became yet another example of the best Versailles manner after Italian, German, and French architects had worked upon it. In the wider fields of national development, the Tsar initiated schemes for furthering science and education as a necessary preliminary to the introduction of the new methods of warfare into the army. He could not, however, visualize the transformation of his country in any other than a savagely autocratic manner, for he was still barbaric at heart although intellectually European. In his great schemes, we can see the decline of human values as they concerned the individual, and the diminution of the human scale in the wider concept of autocracy. These were indicative of the change that the Renaissance ultimately wrought upon Society. The importance of the individual in the medieval town and feudal village was replaced by

*Russian Cavalcade : by E. H. Carter. (Thomas Nelson & Sons. London. 1943)

the supremacy of the royal capital and the larger political units.

THE NEW WORLD. The Renaissance was also imposed upon the New World, not as in Russia where the initiative came from within and was directed towards her own people, but in the form of the immigration of new peoples who were already well-schooled in the autocratic traditions of Renaissance Europe or had suffered by them. The visionary and exploratory motives which led the early navigators across unknown seas to the New World were followed by the material interests of trade, bringing a transitory population more intent upon exploitation than upon building new civilizations. Later, prospecting and mining for precious metals and the cultivation of the land meant that colonization in its permanent sense was in full swing ; the peoples from Western Europe now established homes and communities in these strange lands. There were other contributory causes which led to large or small-scale colonization, such as the persecution of the Puritans, the missionary zeal of the Jesuits, punitive action against debtors, and a distaste of accepting responsibility for orphans in the home countries.

The methods which were adopted by the European countries in their colonization projects varied considerably. In South America, the policy of the Spaniards was near-feudal in the concentration of land ownership in the hands of a few great nobles, while the Roman Church acted as an unofficial autocracy and was inspired and encouraged in this role by the Inquisition. The less important colonists and the natives were in a state of subjugation under these regimes, and their riches were taken away. The eventual result was that, early in the nineteenth century when the mother-land was in difficulty, the people in the colonies sought and gained independence—with the example of an independent United States of America before them.

The colonial interest of many other European countries was directed more towards North America, South Africa, India, and the Far East. Britain's secure position in the European military scene—behind the Channel—enabled her to develop overseas interests to a greater extent than her rivals, because they were engaged in the political confusion of the Continent by their own choice or by the exposed nature of their territories. But the British policy of colonization in North America was as short-sighted as that of Spain in the South. It exploited the new lands and imposed taxation without giving representation in the Government at home, and it

led to the struggle for independence by the colonists of British and other European stock, although poor communications between the old and new countries naturally led to misunderstanding on both sides. This was not the case in South America because mutual interest had been strong between the autocrats of Spain and those of her colonies. Any possibility of this mutual interest developing between North America and the mother countries was prevented from the start by the fact that many of the colonists had been influenced or forced to leave Europe for one reason or another, and they became a new pioneer type who developed the natural resources themselves, rather than by exploiting the natives. The years of independence have shown a tendency for tradition and hereditary position to linger on in South America, and for natural ability to rise to the top in North America.

The New World was an undeveloped area for the building-up of a new civilization which might have both avoided the mistakes of earlier civilizations and proceeded from their more successful experiments. A precedent for colonial planning on a large-scale was, for example, the Roman Empire, and a great deal of the thought behind it was clear and logical in its time, although harsh in the consideration of human values. The countries of Renaissance Europe were too antagonistic to one another to develop any unified colonial plan in the New World, yet we cannot ignore the fact that Spain's colonization policy in South America was clearly defined within its limited vision ; elsewhere there was little evidence beyond the planning of individual communities.

After Spain's initial exploitation of the New World, colonization began in earnest when Charles V, King of Spain and Emperor of the Holy Roman Empire, sent missionaries, settlers, and engineers to develop communities under the Laws of the Indies : " First written in 1523, but revised many times, these included the first planning legislation of the Western Hemisphere. They were actually based on colonial building laws of Greek and Roman times and, like them, took into account the quality of the soil, availability of water, suitability for defence, and other factors essential to site selection. The Laws established consistent standards of design : size and form of the main plaza, width of streets, orientation of gates and walls, location of public buildings, and subdivision of land into lots. The Laws of the Indies looked ahead to future development only by requiring a quadrangular street layout *in order to extend and*

expand the city".* There was also a similarity in the policy of Colonial town-building between the Spaniards and the Ancient Greeks and Romans, for a standard pattern was usually followed in each case. The grid form was the basis of the town plan, and it was uniform in its dimensions, the *insulae* being about 336 feet square surrounded by streets about 39 feet wide. At first, each *insula* was devoted to the living requirements of a single family, including quarters for the members, servants, and guests. This arrangement of living space was perhaps a social consequence of newcomers settling in a strange land ; in similar circumstances of hidden danger, the members of the first ' feudal' families of barbaric Europe had lived in close contact with one another. The location of the colonial cities in South America was determined by the best vantage points from which the native population could be robbed of its wealth, by the requirements of defence against piracy, and by the existence of natural resources. The planning of the Portuguese cities in Brazil accorded more with the real needs of each community than the stereotyped formula of Spain ; it was not standardized in the belief that it would serve each and every occasion.

The treatment of the natives in South America as a lower order of humanity resulted in the allocation of special areas for them—*Las Reducciones* ; these had narrower streets and smaller *insulae* than in the urban areas for the people of European stock.† A similar disregard for the less fortunate citizens was also prevalent in the larger cities of the European autocracies, but its physical expression was in sporadic slum growth behind the houses of the upper classes rather than in the planned segregation of the *Reducciones*. The gulf which separated those of high and low estate was present in both the Old and the New Worlds, but in the latter it was officially acknowledged in such an example of planned urban definition as the *Reducciones*.

The activity which marked the early days of colonization in

*Cities of Latin America : by Francis Violich. (Reinhold Publishing Corporation. New York. 1944)

†E. A. Gutkind in *Revolution of Environment* has drawn attention to the 'Reducciones' of South America as an early experiment in planning : "The origin of the 'reducciones' had its roots in ecclesiastical as well as in secular considerations. From the latter point of view they were a defensive measure in favour of the Indians against the brutal aggressiveness of the Spanish colonists, while the interests of the Church and the Missions could best be served by a systematic supervision of the newly converted. ..." Francis Violich in *Cities of Latin America*, however, considers that the 'Reducciones' amounted "to little better than concentration camps".

South America was followed by a static period under the restraining influence of the mother countries, until independence was gained by the colonies early in the nineteenth century. Then, as young nations of South America, they turned to the grandeur of European autocratic planning for their model in expressing a new pride and ambition in a civic manner.

The early development of North America did not show the unity of purpose that was in the South American policy of Spain and Portugal, because there were too many European countries competing with one another. But, in time, the colonists from these countries, who by force of circumstances had to work for their own existence and profit, achieved a unity of purpose among themselves for the development of the country. Many of the new settlements were built in simple fashion for permanent habitation, and for the development of natural resources to support a local population and not idle sponsors back in the home country. The first towns and villages were, therefore, organic in their growth from the primitive beginnings, with some semblance of conscious planning in the division of the land. A well-developed sense of communal understanding and goodwill was fostered by the need for communal activity in defence and food supply, by the particular religious beliefs, and by the common bond of suffering under persecution that many of the colonists had suffered in their home countries. This community sense favoured the regulation of the later urban development along orderly lines ; nevertheless, in the southern part of North America the model was the regular town plan of autocratic Europe. William Penn, a Quaker, introduced the strict grid plan into North America at Philadelphia in 1682, thereby establishing a precedent for this kind of town planning which L'Enfant could not forget in his axial conception for the new capital of the United States at Washington in 1791.

There were noticeable differences in the early town planning in the northern part of North America. Quebec and Montreal, established by the French in the first half of the seventeenth century, were already well-developed cities at the beginning of the eighteenth century. Even so, their town plans were Medieval rather than Renaissance in character.

During the Renaissance the early interest of the peoples of the Old World in the East was in transitory exploitation rather than colonization. This was not surprising because among the four

active countries—Portugal, Britain, the Netherlands, and France—the last three had already shown a similar interest in the Americas. Furthermore, any urban or rural settlement of a permanent character that had been made by these three countries was the work of refugees who favoured the West and not the East. The home governments may have had good intentions with respect to the planned development of the East, but these were incapable of fulfilment after the East India Companies had been established with irreparable harm to relations between Europe and the East.

There was not such an activity in urban development in the East as in the Americas. Instead, the ancient and highly-developed cultures of the East persisted in the well-established cities, and these became centres for trade rather than for colonization. Also, the countries of the East were already more extensively populated and developed than the Americas when exploitation or colonization began. Those new cities which were established at this time usually accorded with the prevailing manner of town planning in the home country. Thus, Batavia in Java was developed as a typical Dutch city with a canal system defining the grid pattern. There were some exceptions: at Mogador in Morocco, the town plan was a curious mixture of Renaissance formality and Islamic informality. This plan had been commissioned by the Sultan Mohammed ben Abdullah in 1763 and although it was not the outcome of colonization, the cultural penetration of Renaissance mannerisms was sufficient to bring about the appointment of the French architect, Theodore Cornut, as adviser. His influence was seen in the development of the main streets on regular lines ; the lesser streets were, however, on the irregular *cul de sac* pattern of Islamic towns.

Beyond the Renaissance

The Renaissance, as a creative and not a repetitive movement, had spent most of its energy by the nineteenth century. Even the later scientific and mechanical inventions were not applied on a large scale to industry in its own time, and they have become more generally associated with the Industrial Age. The movement as a whole died hard, for the Classics long dominated all learning ; autocracies survived in one form or the other or reappeared in new guises ; and its architectural and town planning influences still afford the ready solution for those who ignore the way of life and

the techniques of the Machine Age. The link between the first glorious outburst of Humanism in the Early Renaissance and the twentieth century may well lie in the pioneering spirit of North America, where the local outlook of the Old World has, in certain respects, given way to the wider—and thus more liberal—regional and national outlook. Those who had acquired the new outlook used the railway and the steamboat as the instruments of national development, when these transportation methods had earlier followed such development in the Old World.

CHAPTER IX

THE RENAISSANCE II

SOCIAL AND ECONOMIC ASPECTS OF DEVELOPMENT

*' Hither the Heroes and the Nymphs resort,
To taste awhile the Pleasures of a Court;
In various Talk th' instructive hours they past,
Who gave the Ball, or paid the Visit last :
One speaks the Glory of the British Queen,
And one describes a charming Indian Screen ;
A third interprets Motions, Looks, and Eyes;
At ev'ry Word a Reputation dies.
Snuff] or the Fan, supply each Pause of Chat,
With singing, laughing, ogling, and all that.
Mean while declining from the Noon of Day ,
The Sun obliquely shoots his burning Ray;
The hungry Judges soon the Sentence sign,
And Wretches hang that Jury-men may Dine;
The Merchant from th' Exchange returns in Peace,
And the long Labours of the Toilette cease—'*

THE RAPE OF THE LOCK by Alexander Pope

THE most significant development in the Renaissance was the removal of the barriers of time and distance between the towns and countries of known geographical regions, and also the penetration of the greater barrier of ignorance which divided the known from the unknown lands. The world was opened up locally, regionally, and terrestrially so that each and every part became more aware of and more dependent upon the other. The result of this was that the social and economic aspects of civilization began to lose their localized character, and to require varying degrees of direction or planning to relate them to the changing pattern of a world of increasing complexity. Apart from the historical interest of these

large-scale planning movements, the social and economic developments were to continue into the twentieth century as a more important element in planning than the problems set by the existence of Medieval and Renaissance street and building patterns in our towns and villages.

In an Age so rich in cultural and scientific developments as the Renaissance, there were naturally many influences upon Society that made for great variety among the people. Two major tendencies, however, brought early changes in the distribution of communities and in their nature : first, the movement of people from the country to the towns ; and second, the change from the local government of feudal manor and free city to the ' regional ' or ' national ' government of autocracy. There were also important changes in the total number of people in the countries of Europe.

The Population and its Distribution

The population of most countries increased during the Renaissance, though accurate records were seldom kept. France during the seventeenth century added about three millions to her sixteen millions, and England about one million to her four and a half millions ; the Netherlands remained stationary at about two and a half millions, and Spain showed a decrease from about eight to six millions. The likely reasons for this overall increase cannot be determined with any confidence in their real effect. Nor is the task simplified by the uncertain extent of such contrary influences as the mortality of the numerous wars, bad sanitation, and the lack of medical knowledge set against the prolific breeding of Mankind in those times.

The influence of economic developments upon the rate of population change was considerable. During the eighteenth and nineteenth centuries the expansion of industry was followed by a large increase in the population of the industrial centres. It is not unreasonable to attribute the steady growth of population over the whole period of the Renaissance to the same influence, because the growing demand for luxury and entertainment had called for increased production from the various trades, and in turn the town required more food from the country—both encouraging the growth of the rural and urban populations.

On the other hand, it can be argued that the growing demand for manufactured goods arose from the increasing population. If this

were true, other reasons must be sought, and among them we may examine the effect of the new political set-up and the new methods of warfare of the Renaissance. Professional armies came into being with the appearance of a clearly defined pattern of autocratic states in Europe, and they formed a large part of the unproductive section of the population. The soldiers could not be drawn from a community which was still medieval in the sense that most members were productive and fully employed in a self-sufficient economy. Therefore, in some way, either the natural laws of reproduction, the balance of life and death, or the industrial and food production ratios* had to change to meet this requirement of a large unproductive surplus in the population. It was even thought at the time that a large population would bring prosperity because it could support a large army. Prosperity certainly came with the exploitation and development of the colonies, where new opportunities for the settlement of large families were available. We can be certain, however, in saying that the economic and social conditions of the Renaissance were favourable to an overall increase in the population.

There had been comparatively little change in the people and in the social structure during the Middle Ages because the distribution of the population was then on a predominantly rural basis of small isolated communities. With the rise of the medieval towns, however, and their liberation from feudal rule, certain opportunities were presented in them for the acceptance of the new concept of Man's individuality. Thus, it was in the towns that the Early Renaissance community first developed, and it was to the towns that the gentry and serving-men of the countryside flocked ; the latter were disturbed by the changeover from arable to livestock farming and by the enclosure of common land, both of which acted against the interests of the small peasant-farmer.

There was now a larger proportion of urban peoples than in the Middle Ages, and the threat of a breakdown in the administration of the rural areas ; in England the position became so ominous that a law was made in 1633 compelling the gentry to spend some part of the year on their country estates. From this time onwards, the rural areas had of necessity to undergo reorganization in economy and productivity to meet the changes in population, its distribution and the increase in the number of 'leisured' persons in communities,

*The amount produced per man.

including administrators and soldiers, who contributed nothing directly to industry or agriculture. It should not be assumed that the majority of people lived in towns during the Renaissance, for as late as 1800, 78 per cent, of the population of England and Wales still lived in the rural areas. Nevertheless, the attractions that a town could offer in the way of diverse employment, luxury goods, and entertainment continued to act as a magnet for the scattered people of the countryside. The economic balance between town and country was not seriously disturbed until the phenomenal growth of existing and new urban centres and of food importation in the eighteenth and, more particularly, the nineteenth centuries.

The distribution pattern of the rural population changed very little during the Renaissance, for the determinants in the location of villages and farms were still the geographical factors, the market centres, and the communication systems to the markets. There were, of course, a few exceptions such as the village of Blanchland in the county of Northumberland (England) built in the second half of the eighteenth century to serve the neighbouring lead mines, and the village of Milton Abbas in the county of Dorset (England) built about 1786 to replace an earlier village which interfered with the amenities of the local great house.* There was also no general realization of the importance of soil fertility in rural settlement. In the case of the new country seats of the English gentry, proximity to a town was favoured because of the urban facilities there available,

The distribution of the industrial population, however, changed considerably in Britain, both as to density and location of settlements, and depended upon the movement of the factories from the towns to the country where they were distributed along the rivers to make use of water power. Because the swift rivers were in the North of England, the industrial development was most noticeable in that area. In two out of the three early wool manufacturing districts, the industry declined : in the Eastern Counties the guild tradition was unfavourable to the new concept of industry on the factory level ; in the South-Western Counties the tradition of industry on the rural and domestic level acted similarly ; but in Yorkshire rapid industrial expansion occurred upon the basis of the existing domestic and primitive factory systems, and with the incentive of the swift rivers. The industrial settlement pattern in

*The Anatomy of the Village : by Thomas Sharp. (Penguin Books. Harmondsworth. 1946)

the cotton and wool manufacturing areas in the North remained on this dispersed rural basis until nearly the end of the eighteenth century, despite the overall expansion of these industries.

The urban pattern of the fully-industrialized Britain was discernible at the outset of the nineteenth century. The steam-engine made it possible for industry to be again concentrated in towns because the new source of power—coal—was brought from the mines to the factories. Even so, haulage costs and transport difficulties determined that industrial location should be based on the coalfields. The expansion of trade and industry also depended upon transport systems which could deal with increased loads, but the cost of canals, roads, and docking facilities limited the distribution and number of the ports. For this reason alone, the development of big industrial towns—like Manchester—and great seaports—like Liverpool—were typical of the new economy with its concentration of activity. At the same time, many of the old seaports declined because the coalfields were at a great distance, the rivers had become silted-up, or the depth of water was insufficient for the larger ships that were being built.

In the eighteenth and early nineteenth centuries another kind of town also developed for the purpose of meeting the needs of pleasure and health, such as the spa towns of Bath, Tunbridge Wells, Cheltenham, and Buxton. The seaside resort had also made its appearance though, in the first instance, for its curative rather than for its pleasurable properties.

Government by Autocrats

The Despots of the Italian cities were among the first of the Renaissance aristocrats who were influential in the development of the new social structure of the autocracies. The Despots were upstarts rather than hereditary lords and had risen to power through a natural superiority over their fellows. Rivalry and treachery were characteristic of their rule ; they could be cruel and yet also merciful, domineering and generous, and were uneducated but not unmindful of the arts. In these ways, the Despots were true to the contrasts of the Renaissance. In the part of merchants and financiers, they were " of the city and of the people ", but in course of time the aristocrats assumed an exalted position that was " over the city and above the people ".

Many of the discoveries of the Renaissance, or the practical

application of earlier discoveries, were favourable to these autocratic governments. The warfare of artillery and the professional army made the townsfolk dependent upon a leader who could organize and initially finance these new forces, and, once possessed with authority, he could increase it by imposing taxation up to the limit. The wealth from the new colonies went into the coffers of the princes, for by virtue of their position they were able to send out expeditions. This wealth was not allowed to accumulate, but was expended in many ways that brought statesmen and men of letters and of arts around the persons of the princes. Thus, the court life of the Renaissance was established to add even greater glory to the central figure. The important merchants and financiers were also part of this wealthy class of Society. But, although the standard of living was improving, the rest of the people were by comparison more poverty-stricken than in the Middle Ages, for their limited resources, were insignificant in comparison with the wealth of the upper classes. The distinction was now between the rich who rode in carriages and the poor who must walk, whereas rich and poor had jostled against each other in the streets of the medieval town.* The physical expression of this distinction was the new palace-town, in itself different from other towns, and in the whole realm superior to them.

Renaissance People

It will be seen that the physical planning of the Renaissance, though greatly influenced by autocratic governments, was also very much concerned with the different classes of people living in the urban and rural centres, and that it reacted to their special characteristics. In relation to the different classes of people, land uses, densities, and aesthetic standards in the town were separated and varied ; they had been combined in one organic whole in the medieval town. A proper understanding of the physical planning therefore merits first some discussion on the peoples of the Renaissance.

Men of the upper classes in the early days of the Renaissance, although cultured in some ways, possessed the arrogance of their forefathers, and they had not learned to restrain animal instincts. They were just as likely to read the Classics as to engage profitably

*The Culture of Cities : by Lewis Mumford. (Seeker & Warburg. London. 1936)

in commerce, or to seek some violent physical expression of their abundant vitality. Luxury and moral laxity, however, softened their descendants into dilettanti and exponents of studied idleness.

The statesmen included the men behind the throne, such as Cardinal Richelieu of France ; men who could wield great authority by attending to State business while the king was ' on parade ' as the visual representative of power. Closely allied to the court was the financier, now establishing himself as a man who used money rather than goods as his commodity ; he supplied money to initiate industrial and speculative enterprises ; he might act as an agent on a commission basis ; or he might be a member of the new class of bankers. The medieval outlook on the sin of usury was changing to the acceptance of usury as a necessary factor in commercial well-being. Francis Bacon (1561-1626) in his essay *Of Usury*, after drawing attention to its evils, noted this changing outlook : " On the other side, the commodities of usury are, first, that howsoever usury in some respects hindereth merchandizing, yet in some other it advanceth it, for it is certain that the greatest part of trade is driven by young merchants upon borrowing at interest ". In the realm of political power, money was becoming as important as territory, and the grant of royal monopolies for trading in some particular commodity signified the union of monarchical rule with the financial interest of countries. There was a tendency in England to put the new wealth into the land so that a class of landed gentry came into being, replacing the aristocrats of feudal descent whose power had been curbed by Parliamentary action.

The gap between the upper and the lower classes widened in the Renaissance, and was reflected in their very different ways of living. The new luxury was supported by a large servant class which had little social value as it was not contributing to the essential needs of the community ; in the days of feudal overlordship, the lord and the serf had been active contributors to the village economy, and were close in social relationship. The two largest classes which had emerged out of the rural social pattern of the Middle Ages found life very difficult in the Renaissance : the small-holder was forced to give up his little plot when Enclosure took in the common grazing land (in England he virtually disappeared in the sixteenth century) ; and the yeoman farmer was similarly affected from the late seventeenth century onwards, though he managed to retain his identity. With the advent of the factory worker, a new class of

artisan appeared which did not accord with the old system of domestic apprenticeship and independent craftsmen. The transition was illustrated by the change in industrial training : in the Middle Ages the apprentice was bound to the master, then he was attached to a craftsman working for the master, and finally he was ' apprenticed to the trade ' for, by the nineteenth century, the factory had become too large an organization to retain the personal relationship between master and worker. This was the new industrial pattern—the end of that intimate bond between employer and employee.

There was also a large and varied group of people who may conveniently be called the middle class ; they were not in the circles of the court and provincial aristocracy, or from the peasant and servant classes. We may think of them in the Middle Ages as the townsfolk, and in the Renaissance as the yeoman farmer in the country and those people in the town who never became highly successful merchants or were servants and artisans. The professional men, master craftsmen, shopkeepers, and civil servants belonged to this middle-class group in the town, the civil servants attending to the administrative work which accompanied the extension of the affairs of State to a wider range of interest. The middle classes had been active in the ordering of town life during the Middle Ages, but autocratic tendencies in government caused them to withdraw to a large extent from public life during the Renaissance, particularly on the Continent.

The Renaissance clearly brought a greater diversification in the social grouping of communities. It also witnessed the formation of new special groups such as the Puritans with a common religious interest ; yet many of these special groups included members from all classes. There was also at the same time a considerable improvement in the position of women, so that they formed a special group with important functions and influence in Society. Girls and young women were given education, not so much for its own sake, as to fit them for marriages which had political and financial implications. Women now developed strong personalities and achieved a unity of outlook among themselves, thereby gaining authority and respect among men. The women of the days of medieval chivalry were supplanted by the women of the courtly Elizabethan Age, and later by the influential amorists of the French Court. At the other end of the social scale, the wives of the labourers took an active part in the industries, as well as performing their household duties. At first,

they worked in their cottages spinning and weaving for the cloth trade ; later, they laboured with their children in the small workshops of the metal industries. Although the full employment of women of the lower classes meant that they lost some of the grace and dignity of a wholly domestic responsibility, it engendered a spirit of independence which became manifest in the sex equality of the twentieth century. The women of the upper classes, however, withdrew completely from active participation in housekeeping as they moved in society life with some degree of independence ; then they lost this independence for a time in the polite Drawing Room of the nineteenth century.

Education, Culture and Entertainment

All these wide differences among Renaissance people were symptomatic of the educational facilities then available to the different classes. These facilities were spasmodic and unequal in the different classes and parts of the countries, apart from such isolated examples as the compulsory system in the State of Weimar as early as 1619, and the State-sponsored elementary education which gave Scotland the most enlightened lower class by the end of the seventeenth century.* In educational matters, the Renaissance was a transition period between the universal systems of education under the Church and the Guilds in the Middle Ages, and those under State control in the twentieth century. As so often happened in a time of transition, there were many serious gaps in the application and content of education, but also some results of the first magnitude. The Reformation, in youthful enthusiasm, had done incalculable damage to the educational institutions of the Church. The State neglected its responsibility for the education of the masses because it was busy with politics and with measures that were designed to increase its wealth and glory. And the new schools or re-endowed foundations that took the place of the old Church institutions were only for the sons of those who could afford to pay. Education had now become the preserve of the upper classes, to whom it gave opportunity for consolidating and bettering their position, and the knowledge and confidence to plan on a large scale for a future that would benefit their own children.

The best education in the Renaissance was perhaps that given by the private tutor in the wealthiest families. The tutor lived with the

*The Education Act of 1591, passed by the Scottish Parliament.

family, and his educative influence was present throughout the day, and extended to the Grand European Tour undertaken by the sons of the aristocracy in the Elizabethan and later Ages. But, in general, the educational methods lacked imagination and were pedantic ; they were centred around the cultural achievements of Ancient Greece and Rome without any real understanding of the meaning or the application of the Classics to new cultural developments. The standard of higher education was lowered when in the universities the spirit of reform had spent itself, though there were advantages in this because the men of genius, left to their own devices, were able to develop along independent lines.

The first signs of new social problems were evident in the rise of industry in the eighteenth century, and in the revolutionary tendencies which were most rampant in France. The question that now had to be faced was the proper education of the lower classes, because the new social problems were unlikely to be solved by any system similar to the casual handing-down of the ' folk education ' that sufficed in the countryside. Both Church and State were not a little uneasy about their educational responsibilities in England, but they did not shoulder them until the nineteenth century, and then only after the pioneer work to establish the principle of universal and free education had been done by voluntary effort.

A great deal of cultural progress was made through methods and influences which were not a part of organized education. The scope of printing as an educational medium was enlarged by way of the journal and the newspaper. The new Learned Societies convened the educated aristocrat and the men of Science and of the Arts. Personal tuition in Music and the Fine Arts was another example and led to creative works succeeding one another with such rapidity and technical development that it is difficult to believe so much could be accomplished in the span of two or three centuries.

Despite the low level of education for the people as a whole, the townsfolk appreciated and enjoyed a high standard of cultural entertainment; they also revelled in entertainment of another kind—brutality towards animals and between men. The new forms of entertainment were a good indication of the wider culture of the Renaissance people : the simple ' folk entertainment ' around the hearth was replaced by the transitional ' family entertainment ' of Elizabethan England, and finally the professional stage and concert platform appeared in the Renaissance. In high society, there was a

surfeit of entertainment to fill the abundant leisure hours that were made possible by the large servant class. Concerts and theatrical performances were given in the courts of the kings and princes, and were soon imitated in the towns where the aristocracy now lived for the greater part of the year. This excessive demand for entertainment—though it sprang from conditions of disproportion between the upper and lower classes—had a social consequence in that it provided the opportunity for artists, musicians, and writers to perfect the technique of their art for the lasting benefit of Society.

Entertainment had also widened its scope to contain activities which were primarily necessary to life. For example, clothing, food and habitation were brought within the daily round of pleasure by the upper classes. Shopping and the ordering of elaborations for the palace or mansion were as much part of entertainment as the organized theatrical performances. Physical exercise was in a stage of transition now that military exercise had been limited to the professional army, and the organized games of the nineteenth and twentieth centuries lay ahead. Nevertheless, physical health was maintained by hard work for the lower classes (and also often wrecked by it), and by the rigorous conventions of court and society for the upper classes, with hunting and fencing as particular manly pursuits.

Global Resources and Trading

All these different aspects from which we have considered the social structure in the Renaissance point to the inequalities existing between the different classes. A small section of the community had more than enough of the world's goods, while a great many people were living in conditions of poverty. But this state of unbalance in social and economic conditions was only evident within the small communities, and not obviously between town and country, one town and another, or one nation and another, as it became in the nineteenth century. The tendency was for economic anomalies to be localized, and they remained in obscurity even when extended to larger units until a national uprising like the French Revolution brought them to light. Except in the case of the great cities, the food supply of the towns still came from their agricultural belts. There would have been enough food for everyone if all the farms had been efficient and the supply of food had been evenly distributed among rich and poor.

Europe became richer during the Renaissance as a result of the discovery of new lands and of new ways of developing the resources of old lands. Even the flourishing trade of the Hanseatic League and the Italian free cities was exceeded and replaced by the opening-up of the sea routes to the West, the South and the East. The distribution of this wealth took place first as a general improvement in the standard of living, and second (and more obviously) to the advantage of the people who were directly concerned with the social, business and political life of the autocratic rulers. The manifestation of wealth was now in money, land, and commodities of all kinds, whereas previously it had been mainly in commodities. Money and land had a certain permanency of value and, in the case of the former, an immediate realizable value so that when a man became wealthy beyond his need, the rapid developments that were taking place in the Renaissance readily accepted his riches to his further advantage. The investment of money and the formation of companies were the signs of an Age in which surplus wealth and unearned income were prevalent amongst the upper classes. They were also indicative of the rise of capitalism,* and of the new national and international dimensions of wealth which went far beyond the localized circulation of medieval wealth.

Exploitation was also prevalent and was sometimes undertaken for the common good, but more often at the cost of the ordinary folk. An example was land exploitation—in the winning of minerals, through the improvement of farming methods, and by urban estate development. The State also supplemented the income from taxation by entering into these new profitable spheres, and the wealth acquired was spent in warfare on a professional scale and on the luxuries which its princes demanded.

Communication Systems

A most important influence in the flow of trade and the increase of wealth during the Renaissance was the development of communications between and within countries. The revolution in

*" In other words, the essence of capitalism consists in the use which is made of accumulated wealth, and we can therefore distinguish between 'commercial' capitalism, in which wealth is mainly used for the expansion of trade ; 'financial' capitalism, in which money is an actual commodity, to be lent, bought and sold ; and 'industrial' capitalism, in which capital is primarily used for the control of industrial production." (An Outline of European Economic Development : by Roger H. Soltau. Longman, Green & Co. London. 1935)

sea voyaging was, however, more significant in this respect than the improvement of the road and inland waterway systems for it brought to Europe the goods and raw materials of distant lands ; it augmented trading as a whole and did not merely encourage the exchange of the commodities which were already present in European countries. The physical signs of the sea traffic were to be seen in the new harbour works of the ports of Western Europe, and in the marking of deep channels by buoys and of dangerous coasts by lighthouses (the first Eddystone lighthouse was completed in 1699), as well as in the strange new commodities that came from other lands.

Land communications were greatly improved by the coaching traffic introduced in the Renaissance, although it was not the first use of vehicles on the roads for goods had been transported by carts at the close of the Middle Ages. In the towns, the wide roads of the avenue type were suitable for the wheeled coach, but in the country map-making and legislation were the only tangible results of the new form of transport; the technique and practice of road-making and mending in the countryside were not then understood. In England the local Turnpike Trust method of control and upkeep (generally instituted by the eighteenth century) had no relation to the national and regional requirements of main routes, or to the provision of new local roads. The common failings of the Turnpike Trust system of road maintenance were : first, the standard of upkeep varied as between one Trust and another ; second, the road lengths under the control of each Trust were short ; third, the Trusts were only interested in main roads, because of the small income that would have been forthcoming if the minor roads had been included ; and fourth, the administration was not always honest. During the eighteenth century the industrial developments in England brought the problem of road improvement to the forefront ; a satisfactory solution was not, however, adopted over the whole country until the engineers, Telford and Macadam, had revolutionized method and application in the early nineteenth century. The iron bridge, which had been experimented with in the last quarter of the eighteenth century, was another essential link in the development of a road pattern to meet the needs of an industrialized nation.

A similar state of disrepair existed along the road communications of Europe, and it was not until the eighteenth century that any

real progress was made towards a system such as the Romans had built. The Duke of Sully's self-appointment to the office of Chief Inspector of Public Works in 1599 suggested national control over the roads of France, but, apart from some improvement around Paris, little of importance was done until Cardinal Fleury instituted road construction and control on a wide basis about 1735. The inauguration of a school for the instruction of road engineers in 1747 was a further step towards a national communication system which included roads and inland waterways, France being the first country to have such a system.

The economic developments could hardly have taken place if the inland waterway systems had been as inefficient as the roads. This, however, was very far from the actual position. In France, where many of the rivers had been used for navigation during the Middle Ages, the inland waterways were improved under the instructions of the Duke of Sully—with greater effect than his control of the roads. Navigable rivers were declared royal property (a form of nationalization) ; five rivers were made navigable ; and when the Atlantic was joined to the Mediterranean in 1681 by canal and river, the movement of heavy goods across Western Europe had been achieved without the long and rough sea passage around the Iberian Peninsula or the difficulties of road transport. In Germany the waterways were being developed on a local basis that accorded with the division of the country into the numerous princedoms. Therefore, the advantages that inland waterways had over other forms of transport (i.e. its long cross-country routes without intermediate unloading and loading operations, and its ability to carry heavy or bulky goods in an assembled form) were largely cancelled out by the varying conditions of administration, tolls, and customs. The Netherlands had already a long history of inland waterways that related to the winning and retention of land for living space and essential food production, and during the Renaissance it was a matter of further improvement and extension under State control.

England's industries up to the middle of the eighteenth century had to rely mainly upon the large river systems (such as the Humber, the Wash, the Thames, the Bristol Channel, and the Mersey) for the transportation of heavy goods. But the coverage of the river systems left large areas of the country inadequately served by river transport; it was also difficult to link up these river systems

because they were far apart at the navigable reaches and the terrain that lay between them was often hilly. The difficulties in the way of an overall national system of inland waterways, therefore, were great, and it was not until the industrial growth in the eighteenth century assumed proportions beyond the capacity of the existing river systems of transportation that canal construction began in earnest in the second half of that century. The canals made possible the transportation of coal from the mine to the factory on a scale that could not be achieved on the poor roads. The heavy goods of the iron industry now reached markets and ports well out of the manufacturing areas. Also the growth of towns and industries became less dependent upon the location of natural resources.

The Factory in Town and Country

The simple craftsmanship technique of the Middle Ages was not capable of extension to meet the needs of Renaissance Europe. We can, therefore, trace the development of a new and more efficient system of industrial production based on the factory, although certain crafts still followed the old methods in the nineteenth century, particularly in remote districts. By the middle of the sixteenth century, many new industrial organizations had appeared, such as paper mills, gunpowder factories, shipyards, and iron foundries. They were new in the sense that the demand necessitated a different conception of production methods requiring the employment of a number of workers in a single organization, and the provision of costly plant that was beyond the resources of individual workers. Mining for coal, iron, and other minerals had also to be transformed for similar reasons.

The factory, as we know it today, developed slowly. The old system of master, journeyman, and apprentice within the framework of the Guilds gave way to the domestic system in which the dispersed cottage or workshop unit manufactured the goods for a collecting and distributing agency. The transition to the factory was then influenced by the invention and application of machinery to industrial production, and to a less extent by the demands of the luxury market which could only be met by the frequent and exact repetition of an article, that is, by mass production methods.

At first, the factory was associated with the towns, for they had been the centres of industry in the Middle Ages. But, in the seven-

teenth century, there was a tendency for industry to move out into the countryside where water power and wood fuel were ready to hand ; the restricting influence of the medieval Guild tradition was also avoided in the countryside. There were some exceptions as in Holland where the industries remained small in scale and within towns.

The vast industrial expansion of the late eighteenth and nineteenth centuries resulted in the formation of new urban centres around the dispersed factories, so that the factory was again associated with the town. The signs of specialization in industrial location were also to be seen in the seventeenth century dispersal, particular industries moving to the places where suitable raw materials, climatic conditions, and communications existed.

The large-scale factory of the nineteenth century had appeared before that time in a few isolated cases, the most noteworthy being the ' industrial villages ' at Swalwell and Winlaton in County Durham, established by Ambrose Crawley, the great ironmaster, in 1690. The physical and social pattern which Crawley devised for the factory and community anticipated the planning of Robert Owen and others in the nineteenth century* ; but while social progress was evident, the customary autocratic domination of the seventeenth century leaders was also present. This was true of the ' Social Village ' of Claude-Nicholas Ledoux, which he designed and partly built in 1774 at Salines de Chaux in Lorraine. The proposals of Ledoux, a professional architect, were even more fantastic than those of the later nineteenth century amateur town planners and social reformers. Nevertheless, within such fantasy there was " a strong sense of the dignity of labour and a foretaste of the new social principles that were henceforth to control civic design."

France, under her great monarchs, had become the leading industrial country by the seventeenth century, and her methods were taken to other countries by the refugee Huguenots. But Britain became the pioneer in mechanization and in the mass production methods which heralded the Industrial Revolution. While Britain's industrial centres were building up drab and insanitary urban patterns in the eighteenth century, the non-industrial centres had another half century of gracious building in the Renaissance

*See *A New Society and New Environments* : Chapter XII

†New Towns : by Professor W. G. Holford (The Journal of the Royal Institute of British Architects : February 1947)

tradition before them : the growth of the Black Country being, for example, contemporary with Regency Cheltenham and Leamington Spa. This early development of mechanized industry in Britain, at a time when many other countries were equally favoured with men of inventive capacity and could show a similar population increase, was due to a number of factors, such as the peaceful conditions enjoyed within the country (while across the Channel the armies of Europe were continually in conflict), the great overseas resources and markets of an expanding Empire, and the immense coal reserves which had been developed at an early date when the timber reserves were depleted.

The Agricultural Revolution

The general increase in the population of Europe during the Renaissance called for a complementary increase in the production of food, and if the pattern of settlement had continued on the basis of small villages with a self-sufficient economy, the agricultural methods of the Middle Ages would still have sufficed. But instead, the towns were expanding, while the villages were kept more or less constant in number and size because the tendency for the population to increase was offset by the movement of the gentry and agricultural labourers to the towns. To meet this new balance of the urban and rural populations, and the demand for greater variety and luxury in the food supply, a new agricultural pattern emerged in some of the European countries.

England underwent greater changes in rural land use, and consequently in landscape, than most other countries. Among the several reasons for this were first, the concentration on pastoral farming over open-field cultivation and the enclosure of land ; second, the close pattern of towns and villages left few isolated pockets of land where the old ways of farming might linger on ; third, the comparatively small forests were cut down to provide fuel for industrial expansion and lusty timbers for the ships of a busy external trade, and later re-forestation effected still further change. In common with other countries the higher urban life of the Renaissance in England called for a greater variety in food production which was met by new crops and by market gardening ; in this respect we may note the early influence of the organized Italian garden of the Renaissance upon horticulture. The growth of the towns also affected the countryside, for agricultural produc-

tion was intensified around them. In the case of London, remote regions responded to its need ; from the middle of the sixteenth century Norfolk, Essex, and Sussex were sending food to the capital, and a hundred years later the north, west and south-west extremities of England were also contributing.

The enclosure of land—in square or rectangular fields outlined by hedges, banks, walls and occasional trees in the hedgerows—was the most apparent formative influence in the new landscape. Its effect over the common lands and in the amalgamation of small-holdings was extensive in England during the sixteenth century, and brought half a million acres, or 2½ per cent of the total area of the country under 'capitalist' farming, mainly concentrated in the centre, in Norfolk and on the Welsh border. During the eighteenth century, over three million acres of land were enclosed under Parliamentary powers, and by 1830 the appearance of the productive areas of the countryside had completely changed to the compact field pattern of the present day. The part that Enclosure played in the development of farming methods was considerable, and its advantages over the 'open-field' system can be summarized : first, the shelter given to the crops by the hedges ; second the shade and shelter given to livestock ; third, the compact pattern of the enclosed fields around the farmhouse ; fourth, the improved shape of the fields ; and fifth, better supervision and segregation of the livestock countered the indiscriminate breeding which had taken place on the common pasture.

Another development in English agriculture made possible by enclosure was the system of crop rotation in which a field, because of a certain crop grown in one year, would favour some other crop in the following year, and the land would not be wasted by having to lie fallow every three or four years to recover its fertility. For example, a cereal following clover, or the manuring of land in the winter by feeding sheep on the turnips *in situ*. Crop rotation of this kind had already been practised for some time in Flanders, and from there the idea came to England. Flanders had also been influential in starting the system of enclosure in England because of its demand for wool in the Middle Ages ; it therefore has a claim to be the " father of modern agriculture ". The best known system of crop rotation was the Norfolk four-course of the seventeenth century. The series consisting of wheat, root crop, barley, and finally clover, while the period of fallow was eliminated.

The production ratio was considerably increased with the revolution in agricultural methods that enclosure and crop rotation initiated, and as a long-term improvement the revolution was necessary to provide for the new settlement and industrial patterns. But in the transition period when the 'open-field' system first changed to crop rotation, the peasants suffered hardship for they lost their smallholdings and had not yet been fully absorbed into the new agricultural and industrial patterns. If the peasants had been able to keep their holdings, the small area of land would not in any case have sufficed for the higher standard of living, though it may have seemed adequate in the Middle Ages. During the late seventeenth and early eighteenth centuries the peasant farming population was replaced by a large proportion of tenant farmers and wage-earning labourers.

The English countryside—as an economic unit—was further improved by the introduction of new trees and crops ; for example, the potato, brought from the New World at the end of the sixteenth century, was well-established fifty years later when it was also becoming popular in France. New plants and farming techniques were introduced into England from Flanders, which had maintained its supremacy in European agriculture for some time. The conversion of the potentially fertile marshland into agricultural land also helped to increase food production ; land reclaimers having made some progress in the reigns of Elizabeth and James I, notably in the Fen Country, where a Dutchman—Cornelius Vermuyden—made a substantial contribution in the reign of Charles I.

British agriculture was perhaps most indebted to the work of the seventeenth and eighteenth century specialists who introduced a scientific approach to the problem of increased production. The seventeenth century writers on agricultural method and technique prepared the ground for the great Jethro Tull—in arable farming, and for Bakewell in stock-breeding, during the following century. Tull virtually revolutionized British agriculture through his book *Horse-hoeing Husbandry* (1733). He advocated the efficient preparation of the land, and introduced the narrow furrow which gave a particular textural value and scale relationship to the English landscape. He also produced a drill for sowing the seed, and claimed that by his methods a crop of equal value could be produced at one-ninth of the cost of the indiscriminate methods of sowing used at the time. Tull's jibes at the rich landowner were certainly

justified and led to an improvement in the care of landed estates, particularly in the latter half of the eighteenth century ; large sums of money were invested in the development of rural land for the first time, many small-holdings were consolidated into larger holdings of an average size of a little under three hundred acres,* and the new agricultural methods were applied.

The work of Charles, second Viscount Townshend, in the improvement of his Norfolk estates was typical of the results obtained with rural planning on a small scale in eighteenth century England. During the thirty years from his retirement from politics in 1730, Townshend converted an extensive heath into fertile agricultural land, and the rough carriage track across it—which at times became a mile wide with the constant seeking for a firm surface—was replaced by a good turnpike road between a quickset hedge. The improved land was then let out in enclosures at ten times its original value.

The great landowners were also inspired to carry out re-forestation programmes by John Evelyn's *Sylva—a Discourse of Forest Trees*, sponsored by Charles II and published in 1678 to draw attention to the serious and indiscriminate stripping of the forests for ship-building, for fuel in the home and industry, and for building construction. Evelyn's influence, it has been said, resulted in the planting of a million trees. The substance of his appeal is contained in the Foreword to *Sylva* : " that such woods as do yet remain entire might be carefully preserved, and such as are destroyed, sedulously repaired. It is what all persons who are owners of land may contribute to, and with infinite delight, as well as profit, who are touched with that laudable ambition of imitating their illustrious ancestors and of worthily serving their generation ". Many great landowners responded to Evelyn's call to action and planted out their lands in the new manner of the French park with symmetrical patterns, straight avenues, and geometrical plan shapes.

The history of British agriculture during the Renaissance illustrated well enough the growing inter-dependence of one form of activity upon another. The Agricultural Revolution, as it has often been called, was at first closely related to the growth of towns, to a higher standard of living, and to the rise of capitalism. In

*The advantages of scientific farming applied to large holdings were noted by Arthur Young in his *Tour of France* (1787-9) ; he drew attention to the inferiority of the small French farms compared to those of England.

the latter half of the eighteenth century a scientific approach to method and technique resulted in a quicker tempo of change that was the counterpart of the gathering momentum of the Industrial Revolution. At the end of the eighteenth century, the war with Napoleon brought a period of temporary prosperity to the land-owners and farmers because of the cessation of competing imports from the Continent ; the home market had no rivals, prices were high—so also was taxation—and Enclosure was entering its final and most active stage. When the war boom was over, prices fell and the farmers were unable to adjust their methods to meet the normal conditions of foreign competition. The Government, in a clumsy effort to save British agriculture by the Corn Laws, widened the gap that had been slowly developing between town and country. It was this lack of an economic balance between town and country that became one of the features of the Machine Age. The leisurely improvement of the countryside in the Renaissance had set a pace which could not keep up with the industrial development of the nineteenth century. Industrialized countries were now drawn more and more into the web of a world economy wherein self-sufficiency had no meaning.

The progress of agriculture in Scotland differed in several respects from that in England, and was much concerned with soil erosion-control because the limited areas of flat land had to be supplemented by the slopes for arable farming. Development was late, however, for the 'open-field' system was retained until after 1695, when the first general Enclosure legislation was enacted, and as late as 1780 the farming methods were still crude. But in the next thirty-five years, the improvement was so great that Scottish farming was often regarded for a time as the best in Europe, and North America gained most of her early soil-conservation practice from Scottish methods. These latter included the formation of horizontal ridges on the slopes to retain water and soil, a spiral around small hills to produce a sloping terrace effect, and parallel ridges sloping diagonally down the hill so that the drainage was controlled.

During the Renaissance, Britain had few rivals in rural planning—which may be defined as the direction of the use of the countryside. In Prussia, Austria, Switzerland, Scandinavia, and Spain, agriculture in the eighteenth century was fairly well organized, though there was not the same intensive use of land that had developed in Britain, and the peasant was still very much a serf. In the other

countries of Europe, agriculture was carried out on a primitive basis, legal serfdom still continuing in many districts of France in the latter part of the eighteenth century. The French farms were small in size, and remained so when land ownership passed to the peasants after the French Revolution. Individual ownership in France acted as an incentive to production, though much larger farm units under single control were necessary to meet the needs of the large towns—so that there might be an integrated economy of town and country.

CHAPTER X

THE RENAISSANCE III

VILLAGE AND TOWN DEVELOPMENT

'No man also seweth a piece of new cloth on an old garment : else the new piece that filled it up taketh away from the old, and the rent is made worse ,'

ST. MARK III, 21

ONE result of that ever-growing diversity of life in the Renaissance—to which reference has been made in a previous Chapter—was the tendency towards specialization on the part of the individual. We begin to see what kind of men were actually responsible for the development of new and existing towns, of communication systems, and of industrial and agricultural activities. Until the nineteenth century, the professions most concerned with creative physical planning—the architects, engineers, surveyors, and landscapists—were not precisely defined. Men who had the necessary broad vision and opportunity were thus able to turn to the larger works of planning without being restricted by their attachment to one particular profession. Le Notre, working primarily as a landscape architect, yet made an outstanding contribution to town-planning technique at Versailles ; Sir Christopher Wren, best known as an architect, had a sufficient knowledge of engineering and science to produce a very good solution to the problem of a new City of London ; and L'Enfant, first an artist and then a military engineer, most ably grasped the possibilities of the monumental in his plan for Washington. In the Renaissance we note how the creation of environment was often placed in the hands of one of these men, who made the plan and controlled its implementation for better or worse. The evidence that similar methods had been adopted in the outline plans of Greek and Roman towns is convincing, but in the

Renaissance it is certain that the master planner was at work and that his plan was often delineated in great detail.

The Village

In general, the villages of the Middle Ages and of the Renaissance differed but little in their physical characteristics, though architectural design followed—at a decent interval—the stylistic mannerisms which appeared in the towns from time to time. The countryside changed slowly for it had enjoyed comparative immunity from the disturbances of feudal warfare for some time, and the villages were isolated and not subject to contemporary social influences to the same degree as the towns. In the villages there were no requirements of urban 'stage scenery' to be satisfied, but merely those of a practical environment for a working community, and development, therefore, continued organically upon the physical pattern laid down in the Middle Ages. A building was often built or rebuilt in the new Renaissance manner, nevertheless it took its place naturally in the existing pattern.

On the Continent there was a tendency for the buildings of the villages to be dispersed, while in England the new buildings added to the sense of enclosure, and created street facades which resembled the built-up facades of the town. The reason for this variation in the layout of the villages on each side of the Channel may well have been that the independent peasant farmer living on his small plot of land continued to survive on the Continent. In contrast, the larger farm units and landed estates of England supported more highly developed villages.

The small number of new-founded villages displayed in some measure the techniques of Renaissance town planning, and there was usually a single and definite reason for building them. In addition to the two mentioned previously—Blanchland and Milton Abbas—we may take as examples, Harewood in Yorkshire (England) and Stomsbro near Gavle (Sweden); the former to serve the estate of a great landowner, and the latter to house the workers in a new schnapps factory. These four villages had varied but nevertheless urban characteristics. Blanchland, in its rectangular arrangement of terrace cottages, had some of the qualities of the residential square. Milton Abbas, in its wide single street and semi-detached cottages linked together by large chestnut trees, had some of the qualities of the urban avenue. In Harewood the cottage-homes

were arranged to form an axial *place* approach to the entrance gates of the Park ; an example of the use of buildings in an urban manner to fulfil individual purposes (as cottage-homes) and yet also to serve *in toto* as the visual setting for the approach to some great building. Finally, the grid street plan of Strömsbro was a miniature of the town planning practice in Sweden at the time. In most of the villages that were planned with an urban technique, there was an existent or newly planted background of trees to relieve the monotony of the simple buildings ' in terrace ' ; the variety and interest of an elaborate urban decoration would have been out of place on the facades of the villages.

New Cloth on an Old Garment

In considering the urban structure of towns during the Renaissance, an impression has often been given that the techniques and mannerisms of Renaissance town planning were applied everywhere. This was a mistaken point of view, and arose from the illustration of the main argument by new-built towns like Karlsruhe and Mannheim, or by extensive re-development proposals like those of Wren for the City of London. A more correct picture would have been given by a cross section of towns in the Renaissance stage of their development, and selected more or less at random. The new-built towns were, of course, most typical of the kind of environment that the advanced sections of the community wanted ; they were hardly typical of the average town. Our first concern is, therefore, with this average town—basically a medieval town that had been altered, improved, and expanded to meet the requirements of people in the Renaissance. When the development was imposed upon the old structure, it was often a case of " new cloth on an old garment ". But when the new work related to the existing structure, we can say that the gradual process of change in Civilization had been accounted for in the urban environment.

The focal centre of the town moved during the Middle Ages from the peripheral castle into the physical centre of the built-up area, and its emphasis changed accordingly from an expression of feudal overlordship to an expression of communal pride and civic function. In the Renaissance the autocrat dominated the community, and, as his way of life was essentially urban, the focal centre remained in the town, but its emphasis was now directed towards the person

and purposes of the autocrat. The palace of the prince occupied the most commanding site in the town, and the buildings of the court circle were distributed among the other important sites.

The first impact of the Renaissance upon the urban structure was the clearing of open spaces in the closely integrated medieval town, not only for the building of churches and the palaces of the nobles, but to give a proper setting for them by an organized architectural treatment of the fa9ades around. The purpose of the *place* had changed from a communal meeting ground to a grand architectural setting for a particular building. In Rome the piazza of St. Peter's and the piazza of the Capitol gave physical expression to the domination of Church and State respectively. Michelangelo, in the piazza of the Capitol (commenced in 1536), evolved a masterly conception in the relation between the Palazzo del Senatore, the flanking buildings, and the space that was enclosed by them. The plan shape of this piazza, increasing in width towards the main building, was also used by Bernini in the immediate forecourt to St. Peter's ; it gave a sense of greater enclosure than could have been achieved by a perfect rectangular plan shape with one open side ; and in the perspective view it limited the influence of the flanking buildings. Michelangelo's solution of the problems existent in the site levels is also noteworthy of study.

More ambitious and more difficult in composition was the creation of a satisfactory approach to St. Peter's—a building with an encircling architectural Order that was far greater than the conventional scale. A successful ensemble was, however, achieved by siting the piazza at a distance from St. Peter's, and giving it sufficient emphasis to exist as a unit of design by means of an elliptical plan shape. Thus, the immediate effect of the piazza—as the onlooker made his way through it—would tend to reduce the unwieldy proportions of the main building. The continuation of the Order of the piazza along the sides of the immediate forecourt prevented any sense of separation that might otherwise have arisen between the elliptical piazza and St. Peter's. Although this piazza was great in expanse (650 feet at its maximum width), it served no ordinary purpose for it had a world-wide significance, and multitudes gathered there to receive the Papal Benediction.

The piazza of San Marco in Venice was of a different order. The work of many men at various stages of history had contributed

to a setting that accorded a generous measure of dignity to the buildings of both Church and State, and some mention has already been made of its unique qualities. Yet another philosophy of *place* design may be illustrated by Covent Garden, London, designed by Inigo Jones in 1631 ; pride of place was given to the church of St. Paul, but it was not allowed to dominate the real purpose of the *place*, viz., a housing scheme for the upper classes initiated by a civic-minded landowner, though his interests were also those of profit. Finally, there were the *places* built for the further glorification of the king—the Place Royale (now the Place des Vosges) and the Place Vendôme in Paris, where the setting was primarily for centrally-placed royal statues, and also in France the series of related *places* at Nancy, which included the setting for a statue of Louis XV in the Place Royale and the forecourt to a palace.

The great civic architects of the Renaissance had now mastered the art of enclosing space in a manner which revealed a knowledge of all the techniques necessary to create a desired impression upon the onlooker, such as those of perspective, scale, and contrast. The next stage after the early isolated *place* was the formation of related *places*, either by a series in juxtaposition as at Nancy, or joined by the 'architectural street' which had been introduced by Alessi in Genoa. Haussmann's work in Paris was the most ambitious of these 'surgical operations' that were performed in cities so that the life-blood of autocracy might flow unimpeded through the urban 'jungle', for in truth that was the state of the medieval city after intensive building-over in the Renaissance to meet the needs of an increasing population. The city walls were only rebuilt beyond their original site when the pressure from within became too great or the guns of attackers had large areas of the city within range.

Within the major influence of autocratic rule upon the earlier medieval town, there were three distinct ancillary influences upon the 'opening-up' of the closely-knit pattern by the new streets and *places*. First : the functional, comprising the wheeled carriage and the new scale of warfare with its regular military parades and long-distance weapons. Second : the social, for the new aristocracy wanted an 'urban scenery' resplendent enough for their performance through the daily round of pleasure. Third : the architectural, wherein the renaissance of the Antique styles required new settings on the scale of the Roman forum and processional street. Behind this new 'urban scenery,' the medieval pattern

remained—so thickly built-over that it was little better than a slum. The only association between these two distinctive parts of the town was that given by the slightly and ill-planned backs of the new and magnificent street *fasades*.

The Renaissance *place* was later used as the model for a method of housing layout which led to a new community grouping of the upper classes, particularly in the British Isles, and the parade space was given over to grass and tree planting. In these residential squares (conveniently referred to as Georgian Squares), the emphasis was not upon a prince or the Church, but upon a new order of Society—the aristocrats released from the restrictions of court life—whose members drew close together in Town during the Season, and at other times dispersed into the Country. The Squares of London's eighteenth century suburbs and the New Town in Edinburgh were representative of Britain's quasi-democratic outlook, which had curbed monarchical domination through the Parliamentary system. With the extension of this method of housing layout to lower class areas, such as the squares with small terrace houses in London's eighteenth and early nineteenth century outer suburbs and in the new industrial towns of the Midlands, a worthwhile element of town planning was adapted to accord with social progress.

Strict formality and a rigid adherence to the criteria of Antiquity were the bases of all aspects of town design for a long time in the Renaissance, and with them were associated the ordered mode of life under the autocratic regimes. Late in the Renaissance, however, there were tangible signs of a greater freedom in design, though within the limits set by class distinction and autocracy. In Central Europe the Baroque attained in architecture its finest expression, and in Spain its most decorative, while in England a School of Landscape swept away formality in the garden. There was, in fact, a tendency to break away from the conventional required by Society, and from the traditional in town planning. The enclosed Renaissance *place* and street gave place to the great open terraces by Nash overlooking the Mall and Regent's Park in London, and to the greater experiment of Landsowne Crescent at Bath where the snakelike curves of its plan shape introduced new possibilities in civic design. Urban building in this manner became part of a greater urban landscape—a conception that went beyond a mere residential or civic environment enclosed within the *place* or street.

The flexibility and open character of some of the later town-planning in the Renaissance coincided with the development of considerable green open spaces in the town. Recreative open spaces in the town had been restricted to the gardens of the palace and of the nobles' mansions; then came the pleasure garden in which the fashions set by the court in recreation and entertainment were enjoyed by the townsfolk who could afford them. Parks were also laid out in the great cities, though in the first place they were not for general public use. In London, Regent's Park was, with Nash's terraces, part of that new urban landscape. The other well-known central open spaces of London—the Green Park, St. James's Park, and Hyde Park—were already well-established landscaped areas by the end of the eighteenth century, though not exactly as they appear today.

Some Aspects of Renaissance Planning Practice

The overriding powers and ruthlessness of the autocratic patrons enabled Renaissance town planners to plan with the minimum of interference from other interested parties, and to see their work constructed as a complete whole. But this only applied on those 'grand occasions' when the planner worked more as a scenic artist, creating 'urban scenery' in special parts of the town. Over the town as a whole (particularly in the older parts) the services of town planners were not called upon, and the land was more and more built-upon so that it became in time a legacy of slum or near-slum property to later generations. The reasons were precisely those which set limitations upon Wren's plan for rebuilding the City of London after the disastrous fire of 1666, and finally resulted in its non-acceptance. The property owners in the City clung to the sites they had always occupied, even though their requirements had outgrown the available space. In some cases, the owners were anxious to extract the last possible penny from the development of their sites; in other cases, they hesitated to join in a scheme for re-distributing land uses which for centuries had been associated with particular areas. Wren restricted his town planning to a revised street pattern with a number of focal points at appropriate junctions, and these were to be the only open spaces. He went just as far as a good town planner should go to meet the self-centred and narrow-minded interests of the citizens, offering to give them back land for land (though often in a different place) and a good

road system, and he resisted the temptation to dramatize the architecture by means of the great Renaissance *place*. His plan was the most practical of all the various schemes prepared for the City of London at that time.

The New Street

Wren's plan for the City of London was primarily a 'communications plan'—a remodelling of the haphazard growth of the commercial centre to meet the requirements of a new Age—and it was indicative of the new scale of urban communications: the carriage-way in the place of the pedestrian-way of the medieval town.

The introduction of the horse-drawn carriage to facilitate movement about the town was the most apparent influence which led to the new street; the size of the carriage and its speed requiring that the new street should be wide and straight. Also, the journeyings of the upper classes about the town had to take place continuously in a setting that had some relationship to their new residential environment. The introduction of the 'architectural street' in Genoa by Alessi provided the answer. The new street also served two military purposes: as an extension of the parade ground for displaying the armed forces of the autocrat to the people throughout the town, and as a defensive network which could be controlled by artillery and rifle fire.

The architectural harmony along the streets of the medieval town was derived largely from the subjugation of individuality to the common denominator of the contemporary way of building. In the Renaissance, however, the common denominator was a unity of purpose that was centred upon autocracy, and its architectural expression was the gathering together of many buildings behind one great facade. In the extreme—as at Charleville (France) and Karlsruhe (Germany)—the facade of the palace was the determinant and its character was imitated around the remaining facades of the central *place*, and in turn along the streets to the lesser *places* of the town. The 'architectural street' lent itself to standardization, the models being established in the architectural manuals that were published at that time, and the methods being the new building techniques of mass production. Complete new streets were built within a few years, and thus accorded with the quicker changes in fashion that were a mark of the Renaissance. The straight and wide

'architectural street' was a suitable setting for the residential terrace now favoured by the upper classes who had forsaken feudal isolation for fashionable communing ; the small town house standing by itself would have lacked the dignity it acquired when 'in terrace'.

Within the concept of the new street of the Renaissance, there were signs that specialization in street usage was developing. A distinction existed between the street built to fulfil the need for housing, the grand avenue laid out for reasons of policy by some autocrat, and the shopping street with its covered arcades and fashion parade. Society had now developed to such an extent that special buildings for different activities failed to meet all its requirements ; there had also to be specially designed streets and open spaces.

Street Patterns in the Old Centres

The clearing of spaces in the medieval town for the laying-out of the Renaissance *places* was a comparatively simple exercise in town planning. But the major operation of cutting new street patterns was difficult, particularly in those towns which had gained a considerable measure of freedom and self-government—as Wren found to his cost in making proposals for the partly cleared site of the City of London after the Great Fire. The tendency was, therefore, for the older parts of the towns to remain medieval in the scale and pattern of the streets. Perpetual building-over had rendered these parts unhealthy, and the upper classes were only too willing to forsake them for the 'suburban' extensions which were being built to a regular layout and at a lower density. The upper classes were only interested in the older parts of the towns in so far as the activities of business, government, and entertainment went on there ; if they could travel from their new houses through the older districts to the important buildings of the town *places* by way of straight and dignified roads, and without meeting the squalor behind the new *fasades*, they were content. These new roads, in joining the central *places* to the town extensions and in linking together all the *places* of the town, often formed a diagonal pattern of main roads, with the greatest number converging upon the most important *places*. The arrangement of communication ways in this manner was also to be seen in the avenues of the Renaissance garden and hunting park. It made provision for

speedy inter-communication between important foci of the town, whereas the classical and medieval grid street pattern had made all parts of the town equally—but not so readily—accessible.

There were many urban re-development schemes of the Renaissance in which the arrangement of streets and land uses was based wholly or partly on the diagonal street pattern ; for example, the plans submitted for rebuilding the City of London, the numerous proposals for the 'improvement' of Rome and Paris, and the work actually carried out at Bordeaux. But the nineteenth century re-development of Paris under Haussmann's direction was the only extensive realization of a single operation of 'urban surgery', because this ruthless method of town planning was beset with difficulties, requiring from the planner a determined and forceful personality and from the sponsor complete accord and governmental support. In London, Nash's Regent Street, which joined Regent's Park to St. James's Park, was an example of the usual extent of 'urban surgery'. Nevertheless, Nash showed a great deal more imagination in the design of Regent Street (in its curves, its points of interest, and its variety) than Haussmann's team in the endless vistas of Paris. A more realistic and practical example was the early nineteenth century re-development and extension of Newcastle upon Tyne (England) by Dobson and Grainger. Here, it was a growing industrial city and port that needed room in its main streets more urgently than the aristocrats their parade space in the grand avenue. Yet in Newcastle upon Tyne, this new urban landscape and functional arrangement was in every way superior to that seen in the vast majority of other busy industrial towns later in the nineteenth century, and even in the twentieth century.

At this point it is well to relate the streets of the Middle Ages and of the Renaissance to twentieth century requirements. The medieval street pattern in the towns of organic growth catered for the pedestrian and none other ; it provided the comfortable way of communication for him by accommodating his special needs in the direction, width, and building arrangement of the street. While Man continues to make use of his natural way of moving from place to place, this street pattern requires little modification in those parts of the town devoted only to pedestrian use—provided that the insanitary accretions of the intervening centuries are removed. The street improvements of the Renaissance were designed, however, for the horse-drawn carriage, and they are now

unsuitable for the fast and increased traffic of the present day. In both cases, there is a contemporary problem—soluble in the case of the medieval street pattern by precinctual division of the urban area, and in the case of the Renaissance street only by radical alteration to the streets and their junctions.

In contrast to the difficulties met with in the old medieval core of the towns, the urban extensions that were made in the Renaissance had few problems. The upper classes were the first to seek better housing accommodation when the growing urban population had overstepped the greatest exploitation of housing accommodation in the old urban area. This urban decentralization occurred in the industrial as well as in the important governmental towns. Thus, for example, while the leisured and professional classes moved out to the Bloomsbury extensions of London, the new industrialists left their house-workshop properties for the congenial surroundings of St. John's Square in Wolverhampton on the fringe of the Black Country. Sometimes a monarch or prince unwittingly initiated the growth of a town extension when he built a new palace on the outskirts of the old town, for all those who were in any way associated with the court were intent upon residing near to it.

The town extensions were frequently planned on the basis of a grid street pattern, with the buildings conforming to a standard of architectural design. As a result, the character of the extensions was quite distinct from that of the older part of the towns. At Lidköping in Sweden, this distinction was emphasized by the physical division of the new and old areas by a river, and at Haarlem in Holland, the continuation of some of the roads of the old city gave rise to a slightly irregular grid street pattern in the extensions. In the case of the successive half-ring extensions to Amsterdam, the logical concentric-radial street pattern was, in places, put aside in favour of the regular grid. The English practice of introducing landscaped open spaces to fill certain units of the grid was a decided improvement to the ultra-urban character associated with this mechanical pattern. This Georgian Square tradition in its most highly developed form, was used for the New Town in Edinburgh, and variety was there introduced by the circle and the crescent forms. Towards the end of the Renaissance there were signs of a new freedom in site layout which we have previously noted in Lansdowne Crescent at Bath, and in Nash's terraces in London.

The significant fact common to all the new street patterns in the Renaissance was the dominating influence that they had upon the physical environment. The streets made up a framework upon which the arrangement of terrace houses and other buildings was based. This method of site planning was in complete accord with the classical tradition of large units of design and the repetition of motifs, and also expressed the conventionality* of the people. The largest terrace houses contained the kitchen and servants' quarters in the basement, the mews for the coachman at the back, the attic for the servants to sleep in, and the comfortable middle storeys for the owner and his family ; this was the model in greater or less degree for all classes except the lowest.

The terrace was an admirable form of residential development while the town was still looked upon as the ideal basis for a community and a convenient place to live in. Any large scale building of detached and semi-detached houses would have extended the communication system beyond the comfortable limit of the coach and pedestrian, as it subsequently did to form the suburbs of the nineteenth and twentieth centuries.

The terrace house remained as the model for the rapid development of urban areas in nineteenth century Britain, but only because of its suitability for mass production and high density development rather than for its architectural possibilities. It lost popularity, however, among the new upper class of the wealthy industrialists, who aimed high in the social scale, and preferred a domestic environment of detached houses that was modelled upon the great country estates of the gentry.

The Renaissance New Town

The new-founded or rebuilt town gave the Renaissance planner his best opportunity to introduce all the clichés of the period, for there were no medieval structures or well-established routes to restrict or condition the use of the avenue and its architectural setting. These towns were established for a variety of reasons, the most important leading to the fortress-town, the palace-town and the domiciliary-town—the latter including the towns built to house

*Among the upper and middle classes of the old towns, and among all the people of the new towns, there existed a certain similarity and unity of purpose. Between one family and another the organization of the house, the use of the days of the week, the pursuit of pleasure, and religious observance were consistent, though class distinction made certain differences.

refugees or the people who were to contribute to some particular new development in the economic or governmental spheres.

The fortress-town in its purest form was based upon the 'ideal' plans of the Italian engineers, and was bounded by 'stellar' fortifications with a road system radiating from the centre of the town. Other forms included the grid street pattern still enclosed within 'stellar' fortifications, and sometimes a peripheral fortress was also built. The fortress-town made its appearance all over troubled Europe, particularly in the North where Dutch influence led to the use of elaborate water defences. Many of the palace-towns were also strongly fortified, such as Mannheim where the palace stood aloof on one side of the urban area, though within the fortifications; in contrast, the palace at Charleville was centrally placed. When more settled conditions appeared within the countries, the palace was often the deciding factor in the arrangement of the town, and the radial avenues were centred upon it—passing on one side through the urban area, and on the other through the palace garden to the limits of the park, as at Karlsruhe. There were also less ambitious examples with a similar disposition of the main elements; at Richelieu the town was planned on a simple grid basis at a little distance from the palace, and at Buenos Aires in South America the fort on the bank of the river took the place of the palace.

The town planning of the domiciliary-towns was as varied as the purposes they served. In illustration there were the simple grid plan of William Penn's Philadelphia, built for colonists; the diagonal 'vista' avenues cutting across the basic grid plan of L'Enfant's Washington, built as the capital of a great nation; the several stages of growth at Bath, the pleasure and health resort, which were as near to 'organic' planning as any example of 'conscious' planning in the Renaissance; and the regular platting of the early industrial and village settlements near to Berlin.

Street Patterns in the New Towns

The simplest street pattern in the new towns was based on the grid form, and was used for the magnificent palace-town of Mannheim as well as for primitive colonial settlements. The Renaissance town planners were no doubt attracted to the grid form because of the many advantages given by straight streets. These advantages were first, the straight facades accorded with the severe classicism

of the architecture ; second, military control over the town was not difficult ; third, the carriage was only impeded in its swift passage by the risk of collision at the cross roads ; fourth, the *places* were easily accommodated in the *insulae* of the grid ; fifth, it was possible to emphasize the main streets by the simple expedient of increasing the width ; sixth, the work of laying-out the streets on the ground was comparatively easy. The grid plan, like other regular geometric plans, was also in keeping with the discipline and precise division of social and military activities in the countries ruled by autocrats. Nevertheless, wider social interests were inherent in the grid, particularly the reasonable and fairly equitable standards of light and air that it made possible for every house, and the frequent wide streets in both directions ensured that no continuous and extensive areas of high density development existed without some break in the pattern. In the New World it was the simple and direct qualities of the grid that must have appealed to the colonists and influenced them to adopt it in preference to any other town planning precedent of the Old World.

The progression from a grid made by square or rectangular figures to a grid formed by the combination of circular and radial lines was not in itself a very great achievement. But the application of the latter to the arrangement of streets in town planning meant that the interests of the autocratic rulers were in every way better served. The domination of the monarch or prince and his military supremacy were now evident in the siting of the palace and military headquarters at the centre of the town, and in the emphasis given to some of the radial roads compared with the circular roads. There were also advantages in this arrangement for the townsfolk ; at the numerous cross roads, it was a little easier to determine the most important road and the location of the town centre than in the case of the square or rectangular grid, and therefore the movement of traffic was faster and safer. In most examples, the disposition of the subsidiary elements of the town radially about the main centre shortened the distances between them in comparison to an arrangement on the grid basis. The concentric-radial plan also gave great opportunities in design for the architect, and these were particularly evident in the central site of the palace and the several radial vistas leading up to it. The awkward angles made by this street pattern were unsympathetic, however, to classical perfection in the architecture.

We may trace the development of the radial avenue in the early theoretical exercises of military engineering, in its application to the hunting forest of France, and finally its visual possibilities were exploited to such an extent that town planning based on the grid street pattern also included further sub-division of the urban area by wide avenues radiating from several points—this last we may conveniently call diagonal street patterning.

At first, the radial avenue had been an integral part of a 'ring and radial' street system. Then, its superiority as a setting based on the vista occasioned its use in preference to the ring road. For example, at Versailles the grid street pattern was subordinated to the great avenues leading up to the palace and the ring road had completely disappeared. The ring road was, however, given a new lease of life at St. Petersburg and Amsterdam as a communication route and not as an integral part of an urban division system, i.e. for traffic purposes rather than as a basis for arranging buildings. The most highly developed use of the radial avenue as a traffic artery was probably that adopted by Wren in his plan for the City of London. He made little use of the radial avenue to create special visual effects by placing important buildings at the *rond points*, except St. Paul's Cathedral, the Royal Exchange and the Customs House ; even then he did not exploit every opportunity of vista. L'Enfant, on the other hand, in his plan for Washington tried to make the radial avenues serve both purposes—to assist in the attainment of a monumental setting, and to provide direct routes between the important buildings.

The Town Scene

The Renaissance town scene* was at first perfectly adequate and correct in a strict architectural sense ; there was enough decoration, interest and colour in the continuous facades and in the paving of the streets and *places* without having recourse to the foil of tree and plant material. Except in the special case of the forecourts to St. Peter's, Rome, and the great palaces, the scale of the unbuilt-on areas—in relation to building size—was 'human'. When, however, the scale was increased later in the Renaissance, the use of tree and plant material made it possible for the vast projects of civic design with their equally vast open spaces and wide streets to be acceptable as urban landscapes. Here, it should be noted that trees of forest

*Also termed *townscape* or *urban landscape*.

or near-forest size and great lawns relate to the vast scale of natural scenery, and yet also to the 'human' scale by their sub-division into separate branch and plant forms. In this manner the two different scales in the urban landscape of the late Renaissance were able to exist happily together. Thus Haussmann's over-size avenues in Paris would be appropriate only for State occasions if there were not any trees to limit the vast expanses to everyday use.

Trees, shrubs, plants and grass had been used in the Early Renaissance town, though in the back gardens of large houses in some towns rather than in the public areas. At a later date these gardens were continued around the fronts of the houses, giving some physical division between the street or *place* and the houses. Throughout this time the tree and plant material was used for decoration applied in a formal manner as an extension of the design and scale of the house. There were also attempts to enhance the formality of the Renaissance street and *place* by the regular planting of trees; this was better achieved by the low and pleached trees which were centrally grouped in the Place de la Carrière at Nancy than in the Champs Élysées of Paris, where repetition of a tree shape along its great length was wearisome, although there were other advantages in the planting to which reference has been made. In the eighteenth century the influence of the English School of Landscape was mainly responsible for a new association of architectural forms with those of the 'natural' landscape so that a new urban landscape was created. This new association gave a 'domestic' quality to the mass-produced terraces of the squares and around Regent's Park in London, which they would not otherwise have had.

The achievement of a high standard in urban landscape was aided by the fact that there was little divergence between the aims of town planning and architecture in the Renaissance. The social and economic life was ordered and formal—and likewise the architecture—so that the extension of these characteristics into the fields of street arrangement and use-location was logical in its time. The terrace houses accorded with these characteristics in every way, and also with the social mixing and communing that went on among the members of each class—though not between the classes. The terrace houses formed the most extensive part of the town scene, and they bring us to a consideration of the continuous street facade.

In the Middle Ages and the Renaissance the uses of the several buildings along a street were not vastly different. There was a norm of residential use, with sometimes an added professional or craft use. Thus, the various buildings were capable of a similar—though not necessarily identical—expression in a continuous facade. Each building in the medieval street had its individual qualities, but within the limits of good neighbourliness. But in the Renaissance, Society had become organized into a rigid system of class distinction so that a whole street or a *place* was restricted to one level of income or social position. Symmetry and the repetition of building volume and elevation were the natural results of the social order, and were manifested in the continuous facade—a common sight in the towns all over Renaissance Europe. The principle was even extended to the buildings which were sufficiently large and important to fulfil all the architectural requirements of the continuous facade by themselves. For example, the four palaces built around the octagonal Amalienborg Place in Copenhagen, though not forming the continuous facade of one palace, are readily accepted by the eye as such ; they became, in fact, the property of one owner—the king—in 1794.

When it was desired to create some special effect in the town—such as a town planning scheme in the ' grand manner '—mere size of building and forecourt or the unlimited application of decoration were by no means the criteria.* It was rather a new technique in space enclosure by buildings, and a new concept of the relationship of one building to another, that created the most interesting urban landscapes. In the medieval *place* the concept of civic design was limited to the simple rectangular plan shape or some haphazard variant. But in the Renaissance—and particularly in its Baroque development—the enclosure of space was an adventurous undertaking in creative planning, well exemplified by the elliptical plan shape of the piazza in front of St. Peter's, Rome, and by the octagonal plan shape of the Amalienborg Place in Copenhagen. At Nancy in France the idea was further developed in the enclosed spaces of different shapes arranged in sequence.

The conscious use of colour *en masse* in the urban landscape of the Renaissance was an advance upon its casual external use in the

*The garden facade of the palace at Versailles is an example of the failure of a vast building frontage to give the impression of magnificence and beauty that its builders envisaged.

'Middle Ages. One new method of giving colour variety was the introduction of tree and plant material, and there was also a wider and conscious use of materials with colour value in the buildings—the warm brown-reds of brickwork and the blue-green copper roofs in Denmark, the browns and buffs and pinks of Swedish stucco, the cream of Regency stucco and a wider range of the more conventional brick and stone combinations in England. This wider use of colour in the urban landscape was certainly appropriate because it has often been considered that the Renaissance facade was a 'stage backcloth' for the brilliant fashion and military parades. Without the movement of crowds, the streets and *places* were but empty stages for the architecture of the Renaissance often had a motionless quality in contrast to the dynamic quality of medieval architecture.

The main tendency of Renaissance designers in urban landscaping was to create in the 'grand manner' as far as circumstances would allow. Even in a terrace of small houses there was often a pediment breaking the cornice in the centre of the street facade, thereby emphasizing the central house, when in fact all the houses were of equal size and importance. A good deal of building was undertaken, however, which respected function rather than ostentation, such as the Nyboder housing scheme built for Navy personnel at Copenhagen in the seventeenth century. This was economically planned with parallel streets, and the terrace houses had small tree-planted back gardens between them, and were in every way more 'human' and pleasant than any nineteenth century housing scheme for artisans. In the northern Scandinavian countries, the simple timber houses were frequently built detached along the residential streets as well as 'in terrace'—a logical arrangement in view of the fire risk.

Aesthetic Considerations of Landscape in Town and Country Planning

The developments that were made in aesthetic and productive landscape during the Renaissance were not only in themselves part of the physical environment that Man was planning and creating, but were also influential in establishing the new techniques in civic design. Orderly design in landscape was practised in two different spheres of activity : first, in the formal garden with emphasis on the aesthetic approach—the landscape of pleasure and amenity ; and second, in the countryside with emphasis on the functional rather

! than the aesthetic approach, and producing in England the humanized landscape of Enclosure and of the improved farming methods—the productive or economic landscape. Later, in the eighteenth century, the two landscapes met on the common ground of yet a third landscape, the parkland—a creation of the English School of Landscape. These are the landscapes which first claim our attention.

The formal garden of the Renaissance first appeared in Italy, though formal design in gardens had, of course, been practised elsewhere and at much earlier dates. Its influence upon the new relationship of buildings to their own special open spaces may be explained by the progressive developments of the Italian garden. The medieval garden of seclusion became the museum or sculpture garden with the new interest in Antiquity, then the garden of cultural fraternization with the new Humanism, and finally the garden of social parade. A similar progression can often be traced at later dates in the uses of the urban streets and *places*. There was also an analogy between the inter-relation of the various use-spaces of the Italian garden (so that they combined in a greater unit of design) and the inter-relation of the several open spaces of the fully developed Baroque town. Again, in the detailed layout of these gardens and the town *places*, a common element may be observed in the use of architectural form and design ; thus, Michelangelo's piazza before the Capitol in Rome—il Campidoglio—might well have served as a public sculpture garden as well as its real purpose, namely, an architectural approach to the buildings. The layout of this piazza was doubtless the outcome of the nature of the site rather than an adaptation of a particular garden development. It will, therefore, serve to illustrate not only the point in question, but also that one cannot always be certain of the exact influence of design in one sphere upon design in another sphere.

These Italian formal gardens were essentially terrace gardens, influenced by the hillside farming methods, the steep topography, and the 'discovery' of the natural landscape as a distant amenity to be viewed from a point of vantage, while architectural and social influences were apparent in the detailing of the design and layout. They revived a concept of three-dimensional design which had not been purposely exploited to any great extent since the terraced platforms were built in the Babylonian cities. This revival was extended to civic design and may well have appeared, for example, in the terraced steps of the Scala di Spagna (1721) in Rome, in

the terrace which marks the change in level between the Mall and Waterloo Place (1813) in London, and in the various terraces along the vista leading to the Colonne du Congres (1850) in Brussels.

The garden of the Villa d'Este (1549) at Tivoli is a well-known example of the use of the terrace in Italian landscape architecture, but it does also illustrate the advancements made about that time in the art of relating a building to a site, establishing a criterion for a similar relationship in the larger scale civic design of the Grand Renaissance. Another element used in civic design which owed a great deal to the formal garden was the avenue, as in the garden of the Villa Montalto in Rome by Domenico Fontana. This was one of the earlier examples in the Renaissance of a layout of avenues on a large scale with some definite point of architectural or sculptural interest at the termination of the vistas, and was indicative of the aesthetic and social motives of the vista along the Renaissance urban avenue. It should be noted, of course, that the avenue in one form or another had been earlier used by the Egyptians, the Babylonians, and by the Romans.

From this point—the technique of formal garden design having been established—the development of the garden into a vast social parade ground, and its influence upon town planning on a monumental scale, centred on France. When the monarchy of that country became strong enough to subdue the rival feudal units, the garden outgrew the space within the castle walls and became a landscaped setting for the buildings, though it was often a setting for the 'social parade' in its own right. The castle moat was extended into a series of canals and pools adding to the decoration of the garden. The other elements of landscape architecture associated particularly with France in their most highly developed forms were the park, the avenue, and the parterre. We have noted previously the significance of the park and the avenue, and their influence upon town planning; their affinity with town planning was suggested by René Rapin, a Jesuit poet of the seventeenth century. He said that when you step out of the garden, the park must at once appear as a stage formally arranged; the trees must line the avenues—five deep in regular arrangement each side, and the avenues must be straight; the paths must be of fine sand or closely mown grass, and at the sides the beeches or cypresses must be clipped so that they are like walls.* The parterre brought into prominence

*History of Garden Art: M. L. Gothein. (J. M. Dent & Sons, Ltd. London. 1928)

the value of two-dimensional form in open spaces as a contrast to the three-dimensional form of buildings, and its intricate patterning of plant and paving material was a model for a new urban canvas to be seen from the palace terraces and the first floor drawing rooms of the town.

Andre Le Nôtre (1613-1708), who designed the garden layout at Versailles, was the greatest single influence upon the later stages of landscape architecture in France. To him the garden was a vast stage for the performance of the conventions and recreations of the court—the royal fetes, the fireworks displays, and the fashion parade of the courtiers. The immense scale of his garden at Versailles was indeed the same as that required for the great schemes of urban development which the autocrats had in mind, and by the successful negotiation of the problems inherent in site layout to this scale, his work served as a model for town planning in the 'grand manner' all over Europe, and is generally acknowledged as such. The great avenues of the garden were, in fact, echoed in the town of Versailles set out in front of the palace.

With this Versailles' tradition formal design in town planning had been carried to its furthest limits, but inspiration in landscape design was far from exhausted in Europe for a new philosophy of landscape was introduced by the English School of Landscape in the eighteenth century, and was the handmaiden in England—if not the parent—of some later experiments of Renaissance architecture and town planning which paralleled the Baroque movement of the Continent. It is also a present influence upon the evolution of a landscape treatment suitable to the needs of urban design in the Machine Age and perhaps also for a new rural landscape of mechanized agriculture.

There were many influences which can be said to have made some contribution to a less obviously regulated manner than that of the Renaissance formal garden, but it is only necessary to refer to them briefly for our present purpose. At the time when the Renaissance culture first appeared in England, the Elizabethan and Jacobean country houses were being set in gardens in which the simple grass lawn was as much a feature as the decorative *knot* beds. Also the possibilities of the natural forms of tree and plant material and of their casual growth became clear as the new landscape of Enclosure reached maturity; even the formal planting of the great hunting parks was infrequently carried out in its entirety. The particular

climate of England was another basic influence of this kind, favouring the growth of vegetation associated with the landscaping of the English School. Although Europe was in contact with China, there is little evidence to show that the latter country's particular development of the art of the informal had any major influence upon the English School of Landscape.

The new philosophy of landscape was, however, associated rather with the work of artists, poets and authors. These men were working towards a greater appreciation of Nature and against the absurdities of the formal manners and customs of their time. In their own particular fields they were men of the highest ability. And because they were representative of so many interests, the new philosophy of landscape was something very much bigger than an isolated art movement, and was more closely related to the present meaning of town and country planning as an all-embracing activity, though it is unlikely that this was understood at the time.

Francis Bacon in his essay *Of Gardens* had included a heath within his imaginary garden, while Milton often expressed a preference for a sylvan landscape. Later, the new philosophy was clarified early in the eighteenth century by the critics and essayists in their attacks upon the formal garden ; Addison, Steele and Pope were most prominent in this respect. Rousseau disliked artificiality in Nature and in the social structure, and this quality was evident in the garden of the ' grand manner ', and also in the autocrats of France. With the publication in 1798 of the *Lyrical Ballads* of Wordsworth and Coleridge, landscape on a regional scale was established as an essential part of Man's cultural environment ; Wordsworth, in particular, enlightening the public on the wild landscape of England's Lake District. The work of artists in revolt against the stiff portraiture and formal background of the seventeenth and eighteenth centuries was a visual influence which embraced both the sylvan or simple rural scene and the wilder landscape of crag and torrent ; Poussin, Claude and Watteau were associated with the movement in France, and Pannini and Salvator Rosa in Italy. Hogarth, the English painter, though in revolt against the artificialities of Society but not directly concerned with landscape, had a place in the development of the new philosophy.

The first professional designers translating the new philosophy into living landscapes had been brought up in the tradition of the French or Italian formal gardens. It is, therefore, greatly to their

credit that a new approach and technique was evolved within so short a time, which helped to bridge the gap between the civic design of the Renaissance and the more liberal planning of today. Bridgman became known for his work about 1720, and was recognized as the herald of the English School by Horace Walpole : " I have observed in the gardens at Gubbins, in Hertfordshire, the seat of the late Sir Jeremy Sambrooke, many detached thoughts, that strongly indicate the dawn of modern taste." Bridgman invented the *ha-ha* or sunken fence, making it possible for the garden to be securely bounded but at the same time giving an unobstructed view of the open country. Today, a planner's problem is to keep the town within an urban limit and yet related to the countryside around. Sir John Vanbrugh's garden at Castle Howard also showed a departure from strict formality where it merged into the park. But William Kent, the protege of Lord Burlington, was the outstanding figure among those who laid the foundations of the new landscapes of the English School, and again it is appropriate to quote Horace Walpole* : " The great principles on which he (Kent) worked were perspective, and light and shade. Groupes of trees broke too uniform or too extensive a lawn ; evergreens and woods were opposed to the glare of the champion, and where the view was less fortunate, or so much exposed as to be beheld at once, he blotted out some parts by thick shades, to divide it into variety, or to make the richest scene more enchanting by reserving it to a further advance of the spectator. Where objects were wanting he introduced temples, etc., but he especially excelled in the management of water. . . . He followed Nature even in her faults. In Kensington Gardens he planted dead trees, but was soon laughed out of the excess. His ruling principle was that Nature abhors a straight line." It is not difficult to discern the application of such principles of landscape design to town design in this century, although they have been evolved also by a study of social needs.

Once the new approach to landscape design had been firmly established, its application to considerable areas of the English countryside required a man of persuasion to convince the land-owners that their mature formal gardens were *démodé*. Lancelot (Capability) Brown was such a man, and he also succeeded in influencing adjoining owners to co-operate in planting schemes, though he cleared away a great deal of fine landscaping by his

*Essay on Modern Gardening (1785) by Horace Walpole.

predecessors in the course of his work. Brown's new landscapes were severely criticized by his contemporaries, for there was by no means an established style within the English School. One can go further by saying that, in the search for novelty, a yearning for earlier and simpler ways of living was evident. Humphrey Repton, Brown's successor as a notorious professional landscapist, was more catholic in his views as he himself suggested : " I do not profess to follow either Le Notre or Brown, but selecting beauties from the style of each, to adapt so much of the grandeur of the former as may accord with a palace, and so much of the grace of the latter as may call forth the charms of natural landscape." Repton's approach was far more practical and realistic than that of his predecessors for his layouts and landscape detailing were well suited to the way of living prevalent at the end of the eighteenth and the beginning of the nineteenth centuries, instead of being conceived for an artificial way of living modelled on some Age long past.

The importance of the English School of Landscape as an influence upon the physical environment can be measured by the number of countries which copied its characteristics as the latest fashion in park or garden design, or as the model for the greater and more recent landscapes of the parkway and waterfront. In the town, the larger scale and informal arrangement of the land form and planting pattern of the English School was the complement of a new freedom in the arrangement of the great building masses of the continuous street frontage.

There were signs of social levelling and democracy in some countries during the eighteenth century which contributed in no small way to this new urban scene. As a result, the axial planning of the Renaissance—centred upon the palace—had for a time little purpose until Parliaments and Town Councils acquired an importance in the State and the town in the nineteenth and twentieth centuries that justified a revival of axial planning and formal landscaping. The work of the English School, as pure landscaping in the new urban scene of the late eighteenth and nineteenth centuries, was illustrated by the planting of the English Georgian Squares, of the open spaces adjoining the great English Regency terraces, and of the redundant fortification systems of some Scandinavian and Continental towns.

A large part of the English countryside had already been brought

into agricultural use at the time when the landed estates were being landscaped in the manner of the English School, and in many areas the system of agriculture was bound up with Enclosure. But although this agricultural landscape of Enclosure might well have been a perfectly regular field pattern on flat terrain—the counterpart of the formal garden in design, the haphazard methods of Enclosure and the undulating topography, rather than any attempt at conscious design, produced instead the irregular English chequer board landscape. The landscaped parks of the eighteenth century were not alien to this agricultural landscape, for the disposition of spaces and the recognition of the natural land forms and boundaries were to some extent common to both, and the irregular planting of groups of trees in the hedgerows and in the parks gave an appearance of homogeneity to the entire countryside. With some of the landed estates there was evidence of country planning as we understand it today in its proper sense of economic necessity, and social well-being. Sometimes the aesthetic aspect was prominent as in the *ferme ornée*, the best known examples being Woburn Farm and The Leasowes. It is important to note that the country parks of the seventeenth and eighteenth centuries had an economic value in the tree plantations and to a small extent in the grassland, and that the aesthetic value could be maintained at little cost compared with the formal garden. These particular characteristics of the English School of Landscape explain its relevance to the conditions of the twentieth century.

The development of industry and communication systems in the eighteenth century was on a large enough scale to materially affect the rural landscape. Quarrying and mining were carried on with little thought for the landscape, except in a few cases. For example, around the hall and grounds at Seaton Delaval in Northumberland (England), the spoil heaps of the small coal workings were planted with trees, and now relieve an otherwise monotonous landscape of the coastal plain. Another example of the affiliation of industry with the landscape was the simple building of local stone used for the mills in the rural areas of Lancashire and Yorkshire. The English roads were often re-aligned to fit in with the field pattern of Enclosure, and were also divided from the adjoining fields by hedges, banks, or walls in accordance with local custom. The canals, however, were cut to follow more direct routes ; even so, they passed from sight in a cutting or were elevated on a grassy

embankment when the route was against the land contours. The growth of vegetation along the banks of the canals, the use of hedge boundaries, and the occasional alignment of the canals to skirt woods made them more acceptable features in the landscape than the ribbon-like appearance might at first suggest.

The landscape of the eighteenth century park and farmland in England was an example of the widening scope of planning in the Renaissance wherein, as we earlier noted, "direction was necessary to weave into a balanced pattern the ever-growing diversity of life and the physical environment." But in the new industrial areas, the direction was one-sided, and therefore not planning, because amenity in the physical environment was ignored, while the industrial machine was well-organized to the benefit of the factory owner. The consequences of these two eighteenth century activities—the one resulting from planning in the rural areas and the other from self-interest in the industrial areas—may be seen in the landscape of England today.

CHAPTER XI

THE MACHINE AGE I

NATIONAL, REGIONAL AND LOCAL CONSIDERATIONS

⁴Man had acquired formidable tools for refashioning his life before he had given the least thought to the question of what sort of life it would be well for him to fashion.'

ENGLISH SOCIAL HISTORY by G. M. Trevelyan*

TOWN and country development of almost every kind has been dominated by the influence of the Machine since the early years of the nineteenth century. This came about because outworn political, economic, and social organizations remained while the Machine was making revolutionary changes in the world. These changes covered a wider field than is understood by the customary interpretation of the term Industrial Revolution. We find, for example, that the Machine altered the scale of inter-communication so that the sensitive relationships which had hitherto existed only between towns now appeared between countries, even those isolated by vast stretches of ocean. Man, who had largely mastered Nature, created a dangerous rival in the Machine when it was uncontrolled, and yet also a powerful ally when disciplined.

This conflict gives to the nineteenth and twentieth centuries certain characteristics which are distinctive from those of other periods of world history. We are now concerned with the Machine Age, which has been more precisely defined by Lewis Mumford in three stages : Paleotechnic referring to the coal and iron economy, Neotechnic referring to the economy of electricity and lighter metals, and Biotechnic referring to the emergent economy in which the

*Published by Longman's, Green & Co., London, 1942

biological and social arts become dominant.* Because Man failed to control the Machine and to use it for the common good, the result has been a quickening of social change within countries, and destructive war instead of constructive peace between them.

The changes brought about by the Social Revolution (which is still in progress) received greater attention in town planning theory and practice than in the wider national and regional fields. This was because satisfactory advances were more easily achieved at the local or community level than at the higher levels with their specialized political and economic problems. It is, however, now becoming increasingly obvious that a new and more difficult international planning must emerge to control the Machine. The temporary expedients of diplomacy, of trade agreements, and of independent colonial development are insufficient in and by themselves to integrate a world pattern of all the peoples, the unevenly distributed but ample resources, and the vast areas of land—so that a balanced and peaceful body of nations may exist.

Although the nineteenth and twentieth centuries have these distinctive characteristics, there were many developments of the eighteenth century which formed the bases of the later physical pattern of town and country. The Industrial Revolution had already begun with the new concept of industry which resulted from the factory, mechanical power, mass production, and new and improved systems of communication. It was also possible to identify at the beginning of the nineteenth century the main areas of urban expansion and settlement which followed this new industrial development. There was a definite visual link between the speculative building developments of the two centuries, for the repetitive and continuous Georgian facade of the squares and terraces of Britain was flimsily built in the nineteenth century behind a serene mask of Regency stucco, though the detailing of the architecture changed. A more significant fact was that a technique of mass production in building had been established, and was applied all over the industrial areas, and later to the inter-War housing expansion of the twentieth century. In a similar manner, but as a distorted reflection rather than as a logical development, the suburban estates of the wealthy nineteenth century industrialists were modelled upon the landed estates of the eighteenth century

*For a complete analysis of these stages, see Lewis Murnford's books, *Technics and Civilization* and *The Culture of Cities*.

country gentlemen ; the social significance of this has been referred to in the previous chapter.

New Planning Problems

The scale of life in the Machine Age became very different to the ' human ' scale which determined the extent of all activity up to the latter part of the eighteenth century. Whereas industrial development and urban expansion had been restricted by communications that depended on man and beast, they now became unlimited with the introduction of the railway train, the petrol-driven road vehicle, the steamship, and the aeroplane. It was at this juncture that a new planning problem emerged, namely, the limitation of machine-aided activity at the local level to accord with a balanced social pattern of ' human ' dimensions. Hitherto, planning and expansion had been usually synonymous in the form of a suitable environment for the needs of the different Ages. But long before any adequate planning control, or even the necessity for it, was recognized in the nineteenth century, the rural and urban patterns of the industrial countries had been radically changed by haphazard and short-term development which today stands in the way of positive planning.

Although planners are now working to preserve or bring back the ' human ' scale in communities, they must also plan to utilize the Machine at the city and regional levels where it can be developed to the greatest advantage. This is another problem because, on the one hand, planning must curb and control the Machine to preserve the ' human ' scale in life, yet on the other hand, it must direct the Machine to give progress for the common good.

The Social Revolution changed the tradition that planning was the prerogative of the wealthy classes, and in particular of the great landowners. Thus, when the affairs of central and local government were more evenly distributed throughout the community, a new technique in planning practice became necessary to account for the many and varied interests of the people. Planning became democratic instead of autocratic in nature. But for a long time Planning Committees, under inadequate legislation, were forced to carry out negative rather than positive planning ; this was the weakness of planning under democratic governments. In Britain, adequate powers have now been given under the Town and Country Planning Act of 1947, and the obstacle of finance no longer

becomes an hindrance to positive planning at the local level.

Technological developments have also raised new problems in planning, for the tempo of physical development, and its very nature, was changed in the Machine Age from the slow erection of buildings by individual craftsmen to the speedy assembly of machine-made units. The length of time that could be devoted to the control and direction of development therefore tended to decrease, and development often took place before any planning was carried out. The low environmental standards of the nineteenth century terrace housing were partly due to mass production methods and the rigid nature of the building bye-laws, as well as to social and economic influences. Yet there can hardly be one way of living under the old craft-technology in the domestic environment, and another way under the new machine-technology in the outer world. A final answer has not been found, but it will have to account for the maintenance of the 'human' scale in buildings, and a new aesthetic in the relationship of machine-made units to the landscape.

Industrial Expansion

When the industrial machine had developed so that its products were known all over the world, the countries in which it originated began to lose their monopolies in the twentieth century. The spread of industrial activity over the world was also aided by the damaging effect of major wars on external trade, and by the constant demand for new raw materials. For example, Australia now places increasing reliance upon her native industry for the manufacture of goods required by her own people, instead of importing these goods from other countries in exchange for food exports; Sweden, rich in timber and iron ore, has been industrialized by contact with the industrial countries needing these raw materials. The tendency in industrial expansion over the world was, therefore, towards industrial self-sufficiency after the initial world monopoly of the earliest or basic industrial countries—Britain, France, and Germany. In the case of Britain, the Barlow Report acknowledged the fact that "by the middle of the nineteenth century Great Britain had become the workshop of the world. . . ." *; a position she can hardly claim to hold at the present time.

The nineteenth century industrial pattern in Britain was based

*The Barlow Report of the Royal Commission on the Distribution of the Industrial Population of Great Britain : 1940. (H.M.S.O. London)

mainly upon the location of the coal measures. A new distribution pattern of the population also appeared, and in many respects it was similar to that of the industrial pattern because the people gathered around the busy factories and close to the coal supplies. The rule that "coal signified people" was applicable everywhere except in the case of areas with very good transport facilities or with other vital raw materials. The other basic industry of Britain was the production of iron and steel, which had been revolutionized at the end of the eighteenth century by the requirements of war. The demand for iron and steel was kept up in the nineteenth century by civil uses, such as gas and water mains, bridge components, and structural members for buildings; the rate of this expansion can be judged by the output of nearly 260,000 tons in 1806, and of nearly 700,000 tons in 1830.

With industry as a whole, the signs of a complete revolution in technique were not discernible until after the first quarter of the nineteenth century, despite the fact that the all-important mechanical inventions had been made in the previous century. The subsidiary industries in Britain were generally located in the areas of the basic industries, where potential local markets existed in the rapidly increasing populations.

The expansion of industry was also related to the development of communications, because new industrial processes and techniques would have been restricted without transportation systems of a more localized and flexible nature than the canals. At first, better roads were constructed in the nineteenth century as a result of the work of the engineers, Telford, Macadam, and others. Later, the railway track was made available for passenger and goods services by steam train during the second quarter of the century—with such rapidity that a very large part of the present railway system was at that time laid down. The earliest railway routes joined important industrial and administrative centres, making them more attractive for industry and more convenient to live in, with the result that these towns expanded. In course of time, the railways were extended to the old non-industrial centres, and, in some places along the routes, new industrial centres were developed.

The period of great railway development was also significant in the development of education for industry, facilities for the basic general education being made available to the lower classes in England, though not in a fully comprehensive or even satisfactory

manner. Nevertheless, a large number of young workers received some education in childhood. The rapid expansion of technical education was of even greater importance to industry, and by the middle of the nineteenth century more than seven hundred Mechanics Institutes were in existence—the greater number in the industrial North.

The progress made by Britain in nearly every field of industry was demonstrated to the world by the Great Exhibition of 1851, held in London. This was not only a visual sign of industrial supremacy, but of the great Empire which was largely responsible for making such a concentration of industry possible in one country. The importation of food from the Empire supplied most of the needs of the industrial population, and enabled agricultural workers to change over to an industrial occupation without endangering the food supply. The development of the Empire also provided a market for the products of Britain's industry. The other countries of Europe and elsewhere eagerly availed themselves of the products of the Machine Age from the basic industrial countries until they, themselves, turned over to industrial production.

The 1851 Exhibition may also be considered as a sign of the culmination of the Age of steam power, although the development of the turbine lay ahead. But it was not until the twentieth century that the nature and physical pattern of industry was changed noticeably by the availability of power, heat, and light all over the towns and in certain rural areas which came about with the fully-developed use of gas and electricity. When the national electricity grid and a few regional gas grids were constructed, industry was no longer dependent upon the location of the coal fields ; the existing industrial areas, nevertheless, still maintained their attraction for new industries.* Other changes that the use of gas and electricity made in industry were the reduction these forms of power made possible in the number of persons employed in a particular process, and the greater technical ability required from a proportion of the workers for the servicing of complicated machinery—from the rest of the workers the only accomplishment needed was that of patience in repeating simple motions. During the major Wars of the twentieth century, the maximum use was made of the new methods

*" The substitution of electricity for coal during the same period (after the 1914-18 War) reduced the attracting power of the coal fields to some extent, though it is impossible to measure that extent " : Report of the Royal Commission on the Distribution of the Industrial Population : 1940

and of the greater flexibility in the location of industry, the expansion being so rapid in certain areas that the housing development was unable to keep pace with the workers' needs.

The most noticeable change in industry during the brief spells of peace in the twentieth century was the expansion of light industry and its dispersal in the chief market areas. Around the luxury market of London, light industries were sited in the new as well as the old urban areas—a pattern which owed as much to the development of road transport as to the availability of gas and electricity. In the heavy industrial areas, the practice of contracting-out small and highly specialized equipment influenced the settlement of light industries in the neighbourhood.

The tendency for industry of a particular kind to settle in one locality was advantageous during the time of Britain's industrial expansion, because communications were simplified and a tradition of local labour skilled in the trade was built-up. But, when competition developed or a slump in the market occurred, these localities often became Distressed Areas with little work available because alternative employment did not exist. Under these conditions, it was extremely difficult to produce a regional, or even local, plan which would account for the integration of the Geddes' triad—Folk, Work, Place*—on anything like a permanent basis. Efforts were made, however, with State backing to encourage the settlement of alternative industries by such means as Trading Estates or through the powers of the *Distribution of Industries Act* of 1945-

Naturally, all these industrial changes of the nineteenth and twentieth centuries brought accompanying changes in population growth and location. As a whole, the peoples of European descent in Europe and the New World increased rapidly by comparison with those of the rest of the world during the nineteenth century and the centuries of the Renaissance, although the position is now reversed. In Great Britain, the population was 10,501,000 in 1801, 37,000,000 in 1901, and 46,008,000 in 1937 ; this great increase could hardly have occurred without the improved techniques in agriculture within the country and the large imports of foodstuffs from overseas. The death rate was also decreasing as a result of the better food supply, improved sanitation, and the discoveries in medicine and surgery : in 1800 the death rate was between 25 to 30

*See page 231.

persons per 1,000 ; and in 1937 it had been reduced to 9.3 per 1,000.

The movement of the rural population to the towns, which had been apparent in the Renaissance, proceeded at an alarming rate in the nineteenth and twentieth centuries. At the end of the eighteenth century, probably no city in the world had more than one million inhabitants, but in the following century and a half urbanization developed to such an extent that there are now about fifty cities or conurbations with over a million inhabitants.

Britain's industrial pattern was at first the continuation of eighteenth century expansion in the North, the Midlands, and South Wales. Later, the pattern changed with the decline of some parts of these areas, and with the movement of population towards the South when light industry began to develop in its present form. Finally, the war-enforced and State-sponsored dispersals from the South to derelict heavy industrial areas and to virgin areas are now making still further changes. In connection with the latter, the problems of re-housing and the industrialists' desire for an availability of local skilled labour should be noted, as indeed also the greater use of semi-skilled female labour that the Machine has made possible.

Rural Decline

The phenomenal progress of the industrial machine in nineteenth century Britain absorbed all the interest and energies of those in whose hands lay the direction of development, the result being that the countryside was allowed to decline in comparison with urban development. A short-sighted attempt was made to preserve British farming by the Corn Law of 1815, but it acted unfairly against the townsfolk and was repealed in 1846. The extent of this agricultural decline was emphasized by the fact that in 1851 roughly one-thirteenth of the population in England and Wales was associated with agriculture, and thirty years later the figure was one person in every twenty-one. After the lapse of a further thirty years the figure was less than one person in thirty-seven. During this sixty year period the total population in England and Wales increased by more than 100 per cent., while the number of people associated with agriculture increased by only 37 per cent. The major reasons for this decline in the nineteenth century were first, the attraction of industry, with its better wages, regular hours, work throughout the year, and urban location ; and second, the

increasing importation of cheap foodstuffs from other countries.

The contribution of agriculture to the internal economy of nineteenth century Britain would have been a great deal less if improvements had not been made in methods and technique. For example, early in the century the breeding of cattle was established on a properly organized basis ; the fertilization of land was common practice, but lacking in scientific application until the middle of the century ; and land drainage was generally carried out on sound lines after 1830.

The use of the Machine in agriculture on a comparable basis with its use in industry might well have produced a rural economy able to maintain a large part of the urban expansion. But rural development was kept on slow and traditional lines by the isolated farming population with its suspicions and fear of unemployment, and by the lack of State initiative. Agricultural machinery was, however, introduced to a limited extent at an early date, for instance, the threshing machine between 1780 and 1790.

There was also a distinct change in the kind of farming practised during the nineteenth century, and continuing into the twentieth century. British agriculture had been concerned primarily with mixed farming since the great days of medieval sheep farming, but the farmers, now faced with the competition of cheap foodstuffs from overseas, tended to specialize in the production of perishable foods, including dairy produce, vegetables, and high-quality meat. A general neglect of arable land resulted, which was aided by the importation of cheap animal foodstuffs in place of home-grown fodder crops. In 1871, the amount of arable land in England and Wales was 14,946,000 acres, and in 1938 it had been reduced to 8,877,712 acres.* Rising taxation and death duties made it difficult for the farmers to maintain their lands in good condition during the twentieth century. After the 1914-18 War, low prices and increased labour costs forced the farmers to economize on labour so that there was a further deterioration in the condition of agricultural land. The decline in arable farming was to some extent arrested by the use of the tractor, and in farming as a whole by the intensification of State support after 1931. In recent times, the 1939-45 War and the subsequent world unrest have enforced a greater consideration for a healthy native agriculture.

*Report of the Committee on Land Utilization in Rural Areas : 1942 (H.M.S.O. London)

The market towns and the villages lost a great deal of their former prosperity during these years of agricultural decline. The local trade declined when the people began to move from the country to the industrial towns, while those left behind were able to shop in the large county and regional centres by means of the improved transport. The large towns were also the only places in which it was profitable to introduce the expensive amenities that people now required, even if they were living an isolated existence in the country. In a few cases attempts were made to revive the prosperity of the old rural centres by social activity or by folk-craft, but it was not a realistic solution of the whole problem.

The countryside was also changed physically as a direct result of the expansion of urban areas. A great deal of the best quality agricultural land around the towns was taken up by sporadic and unplanned circumferential development ; in Middlesex and the County of London the agricultural land was practically eliminated, and urban growth has already covered half of Surrey.* Many villages on the outskirts of the towns were absorbed into the urban structure, and further out others lost their agricultural character in becoming dormitory villages for the towns. New industries, and also those in need of more land than was available in the urban area, moved outside or to the fringe of the towns along the communication routes. Outdoor recreation sterilized large areas of rural land for golf courses and playing fields, and recently the strategical and technical requirements of the Armed Forces in war and peace have brought about the reservation of further large areas for aerodromes and training sites. The motor car has also affected the countryside by its need for service buildings and different standards of road design. In the latter case, the new roads were often badly sited functionally and aesthetically because their designers ignored the existence of areas of common interest and showed little sense of affinity with the landscape. The extension of ribbon development along the roads leading out of the towns was a greater evil ; it destroyed much beauty in the landscape and created anti-social conditions.

The attitude towards afforestation and deforestation varied considerably as between the different European countries in the nineteenth and early twentieth centuries. In Norway, Sweden, and Germany, where the forests were still extensive at the beginning of

*Report of the Committee on Land Utilization in Rural Areas : 1942

the nineteenth century, no serious depletion of the timber reserves had been made before it was recognized that proper forestry methods must be applied to maintain the value of such a national asset. But in Britain, although the planting carried out by the eighteenth century landowners was making an appreciable contribution to the stocks of timber, the requirements of war at the end of the century were a great deal more than the potential stocks from newly-planted trees. As a result, the total area of woodland decreased rapidly—a situation which gave rise to some concern, as evidenced by the various Acts of Parliament which were introduced to control the management of the Crown Forests. Even so, most of the nineteenth century afforestation in Britain was carried out by individual owners, particular attention being given to the planting of oak trees, until it became apparent that the days of the wooden ships were over. The afforestation practice at that time clearly demonstrates the relevance of the historical basis to contemporary planning—a relevance that goes beyond academic interest—for a great deal of the native timber felled today was, in actual fact, planted in the nineteenth century: the hardwoods at the beginning, conifers and pole coppice between 1850 and 1900, and the quick-growing conifers between 1900 and 1920.

The vast industrial activity of Britain demanded large supplies of timber, the balance changing from hardwoods to softwoods in the course of the nineteenth century. The main sources of supply were the softwood areas of the Scandinavian countries and North America, the native timber reserves being quite inadequate as we have noted. From the end of the nineteenth century up to the present time, the State has progressively interested itself in afforestation, the Forestry Commission now having large areas of woodland under its control.

The recent history of Britain's countryside was marked by the time-lag existing between rural and urban development. Afforestation, in particular, is a rural activity which gives little monetary reward in the present, and it requires a large area of land to make any real contribution to the national economy. In a small and densely populated island like Britain (except for areas like the Highlands and parts of Wales), these characteristics are magnified, and it remains to be seen whether comprehensive planning can weld the countryside into a productive unit with a satisfying landscape and social well-being for the inhabitants.

Modern Systems of Communication

The significance of the canals, the metalled roads, and the railways in the development of town and country has already been explained, but these physical components of planning are of an importance that justifies closer study. The systems of communication cannot be thought of in isolation because they became inter-related in the nineteenth century—either by competition or to their mutual advantage. The internal systems were also inter-related with the external or sea communications, the latter being revolutionized at the time in speed, regularity, and carrying capacity by mechanical propulsion and iron ships. At the coast, great docks and harbours were built, and the navigational lighting around England was nearly complete in 1830. Within the country, new roads and railways were built to link the seaports to the industrial and other important centres, for example, the London-Holyhead road and railway.

Until the development of the railway in the second quarter of the nineteenth century, the canals were supreme in industrial transport. Although this method was slow, greater loads could be carried than by road, and the cost was very much less ; in the case of fragile goods, the smooth passage by water was an important factor. These advantages offered by the canals were, however, curtailed by the lack of planning at the national level, the width and depth of the waterway varying between one system and another; this necessitated additional unloading and loading operations in cross-country transportation. At the regional level, a good point in the planning of the canal systems was that they served the areas traversed as a whole, as well as the industrial centres in particular. When the railway became a competitor of the canal in goods transportation, a great deal of the latter's carrying trade was lost [because prices had not been reduced in anticipation of the great railway expansion ; also, money which should have been expended on improvement was spent in opposing the railways. On the Continent, a long tradition of inland waterways and canal construction across large areas of flat land had not only made the people 'canal conscious,' but had also provided a system which enabled great barges to ply between different countries. As a result, the canals on the Continent still play an essential part in the communication systems.

The first quarter of the nineteenth century was the heyday of the stage coach, and at last the country roads were being made suitable for wheeled traffic. The early efforts of the pioneers in road construction of the previous century had culminated in the application of scientific principles by the two engineers, Telford and Macadam. Telford's achievements in physical planning included road improvements and the Caledonian Canal in the Highlands of Scotland, the London-Holyhead road, and the Carlisle-Glasgow road. Macadam was sufficiently far-sighted to envisage a central department for the administration of the roads, though it was not introduced in his time. He was much sought after in a consultative capacity, and carried out road works in the Bristol area. These two engineers are perhaps best known by their methods for improving the road surface : Telford believed in a firm foundation and easy gradients, and he cambered the foundation as well as the finished surface : Macadam, on the other hand, considered that the sub-soil was a sufficient foundation provided that the road surface was well-drained and weatherproof.

Britain had as good a system of roads as any other country during the first quarter of the nineteenth century, until the coming of the railway ; then the loss of the coaching traffic led to neglect and lack of interest. A proposal to place the administration of the roads in the hands of the County authorities, after being rejected in 1819, was not put into force until 1888, and for some time afterwards no improvements were allowed which might compete in any way with the railways. Thus, when the internal combustion engine was introduced into Britain in 1895, the roads were quite unsuitable for the automobile, and legislation nullified the advantage of speed. Nevertheless, during the first decade of the twentieth century, the automobile increased in popularity so that the administrative authorities were forced to improve the construction and surfacing of the roads and to allow greater speeds.

The recent history of road development has included the following : the construction of great cross-country roads, such as the German autobahnen and the American parkway and expressway ; traffic segregation according to the class of user, and the safe design of road junctions ; the conversion of earlier road systems in the towns to take the new scale of traffic by such devices as the one-way limitation of streets, speed limits, and street widening ; the bye-pass for traffic passing through a town ; and also the

Construction of the ring road and the radial road systems.

The two revolutionary methods of transport introduced in the Machine Age were the railway and the aeroplane, both having a considerable influence upon the physical pattern of town and country—the railway over a period of more than one hundred years, while the aeroplane has many years of development ahead.

The railway locomotive had been experimented with by Trevithick as early as 1802, and twelve years later George Stephenson introduced it on the Killingworth Railway for the transportation of goods. In 1823, Stephenson persuaded the directors of the new Stockton and Darlington Railway " to make and erect such and so many locomotive or movable engines as they thought proper, as well as certain permanent or fixed engines ". It was, however, the trial of the Rocket locomotive for the Liverpool and Manchester Railway that established the future of the steam locomotive. Very soon, the journey from London to Newcastle took only nine hours. The railway had arrived and was ready to challenge the road and the canal, and to influence the spread of culture and knowledge, with the result that considerable changes were made to the industrial pattern of Britain and other countries.

The primary advantage of the railways over road transport as a passenger service in the early nineteenth century was the fact that long-distance travel could be undertaken in comparative comfort ; later, the time-saving factor appeared with higher speeds. But the piecemeal and haphazard growth of the railways led to inequalities in the track gauge of the various Companies and to unco-ordinated timing at the places of contact between one system and another. The advantages referred to were, therefore, not fully exploited until the lengthy process of amalgamation and consolidation produced tangible results in the second half of the nineteenth century. From that time, the railways were unchallenged until after the 1914-18 War when the countryfolk rightly sought an end to their isolation, which had not been much improved by the railways because it was uneconomical to serve the small centres of population. During the 1914-18 War, considerable progress was made with motor transport, and its suitability for carrying small numbers of people was quickly realized in these thinly-populated areas. The motor transport services were then extended to compete with the railways on the main routes.

At the end of the 1914-18 War, the aeroplane had reached a stage

in its development which made it a suitable medium for passenger transportation on cross-country journeys. But it was little used for this purpose during the following quarter of a century except in America and some other large countries, the main reasons being the high cost and the cancelling-out of the advantage of speed by the location of aerodromes at some distance from town centres. The further intensive development during the 1939-45 War has now made the aeroplane supreme in transcontinental and trans-oceanic journeys, although the high cost is still a limiting factor. Planning on an international level is more likely to be concerned, in the first place, with the effect of the aeroplane because of the possibilities for developing remote and unexplored territories with this form of transport, bringing them into association with the highly-developed countries.

Planning Theories

Very few people were concerned about social complexes in urban populations before the nineteenth century, or with speculation on idealistic ways of living. Indeed, hardly any attention was paid to the question of land use distribution in relation to social well-being. At all stages and levels, the social structure was comparatively simple in analysis and to provide for in physical development because there was one dominant interest which had to be considered ; sometimes this was autocracy or some other ruling class or person, and at other times religious or civic interests were supreme. The few pronouncements that were made on planning theory also related to clearly-defined matters such as defence, population size, and civic architecture.

The Industrial and Social Revolutions of the Machine Age, however, altered the concept of this dominant interest in the social structure, so that attention was focussed on the community as a whole. The social, economic, and physical patterns now began to change so rapidly that planning methods and techniques were quite unable to keep pace with them. A few people realized this situation and formulated theories on ways of living and on State control over matters which had gone far beyond local significance. The pious hope was that these theories would overcome the time-lag between the out-dated planning technique and the physical development actually taking place on the land. The contributions of these pioneers and an increasing awareness of the need for the

proper direction of development were related to the gradual evolution of a theory of planning.

There were two major characteristics which should be kept in mind when tracing the evolution of planning thought during the last century and a half. First, the wide division of opinion that existed between the theorists, and the consequent lack of precise dictation in planning practice. Second, the concentration upon Western European and North American conditions, to the neglect of a basic approach transcending racial and geographical limitations.

The most important of the social developments influencing planning theory in the nineteenth and twentieth centuries were the disintegration of autocracy, and its replacement on the one extreme by various forms of socialism and communism, and on the other by the magnates of industry and commerce. Between these two extremes, democracy has strived to preserve freedom and uphold the right of the individual to ascend or descend the levels of class distinction. Within the last quarter of a century, a new form of autocracy—dictatorship—has exerted considerable influence. Reformatory work of a practical nature, such as the control of child labour and bye-laws demanding certain minimum hygienic standards in physical development, also had its effect on planning theory, but its limitation in application to the small and isolated social unit only encouraged theorists to think in these terms, and not from the national level down to the local level.

There was a very considerable time-lag between economic development and its influence on planning theory. For example, despite the fact that the international pattern of countries, relying on imports and exports, had become established in the nineteenth century, it was only considered as a global planning matter when the United Nations Organization was inaugurated in 1945. National planning was not regarded seriously until the second quarter of the twentieth century, in spite of the need arising from road and rail developments in the previous century.

France and Britain were the countries in which the Social Revolution first appeared in a violent and successful form, and the first developments in planning theory were made against this background of social revolution. In some cases the contributions were in general terms on political, social, and economic matters, and in other cases the working of a small social unit was considered in relation to its physical structure, its people, and its industry.

Saint-Simon (1760-1825) was one of the first to call for positive reconstruction in France after the devastation caused by the French Revolution ; such reconstruction to be based upon technological developments replacing the feudal methods which had long survived in social and fiscal matters. Later, Saint-Simon found a basis for applying his theories in the industrial pattern of the Machine Age, expressing his belief in " everything by industry ; everything for industry ". His followers applied these theories in Egypt, where a great undertaking that they had inspired—the Suez Canal—was completed in 1869.

William Thompson (1785 ?-1833), although a wealthy Irish landlord, was a pioneer in political economy, and has also been looked upon as the founder of scientific socialism. His indirect influence upon the evolution of planning theory was largely contained in his principle that the just distribution of wealth was a major element in political economy, and also in his *Practical Directions for the Speedy and Economical Establishment of Communities on the Principles of Mutual Co-operation, United Possessions, and Equality of Exertions and of the Means of Enjoyment* (1830). Thompson, like Saint-Simon, was only one of many kindred spirits ; he was, in fact, influenced by Bentham, and he supported Robert Owen in many of the latter's ideas.

The first attempts to evolve a planning theory in its own right were made by the nineteenth century idealists or pioneers, such as Fourier, Robert Owen, J. B. Papworth, Moffat, and James Silk Buckingham.* These men restricted their outlook to community planning, for we can hardly regard it as town planning, and it was a long way from the present relevance of planning. They had little knowledge of the technique of creative physical planning. Even so, their proposals introduced the following ideas which were new at that time : the provision of social services and other facilities within communal units ; the association of agricultural and urban land use ; the nucleus with its satellite communities ; housing density standards ; and the dormitory village. The practical application of these ideas was made by Sir Titus Salt in his Yorkshire village of Saltaire (1851), by Fourier's disciple Godin in the model co-operative *familistère* at Guise (1859), by George Cadbury in Bournville (1879) near Birmingham, and by Sir William H. Lever in Port Sunlight (1887) near Birkenhead. Each of these

*See Chapter Twelve for an account of the work of these men.

settlements was associated with the sponsor's new factory.

Another aspect of planning theory, relating to the physical structure of towns, was established by Camillo Sitte, a Viennese architect, when his book *Der Stddtbau* was published in 1889*. His basic principle was that the talent of the artist as well as the science of the technician was necessary to urban planning. In enlarging upon this principle he formulated a theory of urban design which accepted other ways of arranging buildings and enclosing urban space than the strictly formal arrangement of classical tradition or the mechanical precision of the purely functional approach. The value of Sitte's theory was not merely its immediate influence upon street and building arrangement in Germany (as evidenced in the plans for Kufstein by Otto Lasne, and for Pforzheim by Thomas Langenberger), but also its later influence upon Sir Raymond Unwin and others who carried this theory to its logical conclusion.

The modern technique of siting buildings somewhat freely in open space and irrespective of road alignment certainly owes something to Sitte's breaking-down of the cliché of formality, despite his liking for continuous facades and the 'enclosure of space'.

Ebenezer Howard's book *Tomorrow; A Peaceful Path to Real Reform†* appeared in 1898 and heralded the Garden City movement. As a contribution to planning theory, the book was a landmark because it suggested a new way of living : " There are in reality not only, as is so constantly assumed, two alternatives—town life and country life—but a third alternative, in which all the advantages of the most energetic and active town life, with all the beauty and delight of the country, may be secured in perfect combination." Howard was deeply moved by the nineteenth century urban conditions and he wanted to see the townsfolk living in a much happier and healthier environment. But when it came to the building of the Garden Cities at Letchworth (1903) and Welwyn (1919) a practical application of his " third alternative " was not made. Instead, the two garden cities became urban centres with the life and work associated with the conventional town ; they were, however, more pleasantly laid out than the usual urban development of the time.

*Now available in an English translation by Charles T. Stewart as *The Art of Building Cities*. (Reinhold Publishing Corporation. New York. 1945)

†Issued in a Third Edition in 1902 as *Garden Cities of Tomorrow*.

The fact that Ebenezer Howard thought about urban decentralization to new towns, and about the integration of his proposed new settlements with the countryside around, was a sign that his concept of planning went a little way beyond the urban and community planning of other nineteenth century theorists ; Owen and Buckingham did, however, include agricultural land around their proposed settlements. There were also signs of a regional concept developing independently of the town planning approach ; in particular Comte, the sociologist, and Le Play, the social reformer and engineer, were strong in their condemnation of the tendency towards centralization in France. Le Play advocated new administrative units with agricultural and industrial homogeneity.

Tony Garnier, a young French architect, exhibited a plan for an ' Industrial City ' in 1901, which demonstrated that a city could be designed to meet the problems of the Machine Age. This was a more realistic proposition than Howard's town planning diagrams suggested because it was considered in such great detail that any weaknesses in the functioning of the plan must have been revealed to the designer, and rectified by him before completion. Nevertheless, it was narrower in vision than Howard's nucleus and satellite pattern, for Garnier's contribution was rather to the theory of town design than to planning as a whole. His proposals suggest that he intended land use to be single in purpose, with clearly-defined areas for industry, housing, administration, and open space. Some of his ideas on site planning are now carried out in practice : for example, small residential units segregated from the traffic routes, communal gardens, and the availability of school playing fields to the people in general.

The various suggestions made in the nineteenth century for the planning of new settlements were in the nature of individual contributions rather than progressively better solutions to the problem of planning an environment which would account for the changing social structure. The task of integrating the earlier pioneer work into a theory relating to practice fell to Sir Raymond Unwin, whose book *Town Planning in Practice* was published in 1909. This kind of contribution was just as valuable as the more spectacular, but unrealistic, proposals of the several revolutionary designers in planning who produced some very interesting schemes from the latter part of the nineteenth century onwards. These revolutionary designers performed a useful stimulative function in

the evolution of planning theory, although they were not directly concerned in the same way as Sir Raymond Unwin had been through his book.

Arturo Soria y Mata, a Spanish engineer and the first of the revolutionary designers, produced his scheme for a Linear City in 1882. A main thoroughfare, one hundred and sixty feet wide, was the basis or spine of the city. The urban area was arranged in a number of separate units along both sides, and was served by the main transport and utility services along the spine. Soria y Mata envisaged a linking-up of existing urban areas by this linear arrangement. The idea was further developed by a Russian, N. A. Milyutin, in proposals for a new linear urban pattern for Stalingrad, published in 1930. In this example, a number of land use zones (recreational and park, residential, green belt, and industrial) ran parallel with the main road and railway. The most important principle established by the linear city idea was that of close association between the urban area and the country on either side of the attenuated urban form.

The plan for London by the M.A.R.S.* Group (1939) applied the linear city principle in a manner that went far towards meeting the special requirements of urban life in the Machine Age, though it would have been more logical as a New Town than as the major re-distribution of a vast capital city of tradition. In this plan the continuous urban development along the River Thames remained as the backbone of the city. To the north and south, the residential areas extended like ribs in linear manner from this spine, with wedges of open country penetrating between them to the heart of the city. The M.A.R.S. plan for London showed that the impracticable linear principle could be turned into a logical plan for new towns, and for existing towns under certain circumstances. In contrast, Ricardo G. Humbert's *Hexagonal City* (published in book form in the Argentine in 1944) was a very different approach to the use of geometrical forms in town planning; advantages were assigned to the hexagon as the basis of a street grid—another and less successful version of an established precedent.

The conventional planning theory of the inter-War years was also challenged by the invigorating, but unrealistic, theories of the architect, Le Corbusier, which appeared in his book *Urbanisme* (published after the exhibition of his *Contemporary City* in 1922), and

* Modern Architectural Research Group.

in later publications. Le Corbusier proposed to overcome the difficulty of securing a convenient working ratio between population and distance in a great city by building 'vertically' to a great height; he claimed that a generous measure of open space could be introduced at the same time. Whilst we can say that Le Corbusier had evolved a form of town planning which appeared to meet the requirements of urban life in the Machine Age, he overlooked the fact in the *Contemporary City* that the human and physical aspects of planning—Society and its Environment—have more of the past in them than either the present or the future.

About the time that Sir Raymond Unwin was collecting together the accepted ideas on town planning of the early twentieth century, Patrick Geddes was expounding his own very wise, but no less practical, ideas to any group that would listen to him. A special Chair of Botany had been created for Geddes at University College, Dundee, which required his residence during the Summer Term only ; for the rest of the year he was free to devote himself to the work nearest his heart. Thus, Geddes was able to give serious attention to numerous planning matters in which there was no hope of paid employment by the authorities concerned.

We cannot say that Geddes established a new theory of planning, but his wisdom touched upon so many aspects that he certainly revolutionized planning thought and prepared the way for the theory that is now crystallizing. Geddes was the prophet of the art of living for this Age of global understanding and misunderstanding, and of mechanization. He was one of the first to see that a relationship existed between Society and its Environment throughout history, that geography meant a great deal more than an understanding of place names and the earth's surface, and that the pure and natural sciences were inter-related with the pattern of human life. In physical planning, Geddes recognized that town structure was always changing ; this led him to plead that the past and the present need review, analysis, synthesis, and projection before the framework of the future can be delineated a little more clearly—the doctrines that planning is a continuous and not a static process, and that Survey must come before Plan. Geddes was also a pioneer in regionalism in that he recognized the dependency of communities and their environment upon national and regional trends and characteristics. This new way of approaching planning problems was inspired by Le Play, from whom Geddes took his

objective method of studying Society : Folk, Work, Place. The idea of Survey had also been made known by Charles Booth in his survey of London commenced in 1889.*

The Geddesian approach to planning was clarified and developed by Lewis Mumford, the American sociologist, in his books *Technics and Civilization* and *The Culture of Cities*, published in 1934 and 1938 respectively. Mumford exerted a great influence upon contemporary planning theory and practice. One of the most important of his contributions drew attention to the relationship that exists between the physical, social, and economic factors of a town or region in the past as well as in the present ; this carried Geddes* teaching a stage further. The doctrine that, despite mechanization and technological progress, Man is limited to the ' human * scale in his way of living was put forward by Mumford, and has influenced a breaking-down of the vast metropolis into social units based on school patterns and neighbourhoods. At a higher level, the regional approach to planning was emphasized in its relation to large areas with a common element or elements, and also the need for planning on this level to secure order out of a chaotic world.

Lewis Mumford was not alone in his efforts to find the way to a better order, but he was more successful than most others because he sought realistic principles and not theoretical physical patterns. For instance, Sir Raymond Unwin in 1935†, after describing the evils of the existing pattern of urban development, said that he knew of only *one type of design* which would provide an answer : " That form consists essentially in a central unit or town planned to reach a certain maximum size within which the right detail relations of parts, or the pattern, can be maintained. Further growth of population would be provided for by planning of new units of urban development, each as complete as possible, intended to localize the daily life of the inhabitants, while securing such relation to the parent town as will open its greater central opportunities to all who need them, and secure that the new units are at once linked to the parent unit by easy communication, and separated by a sufficient background of open land to maintain definition and satisfy all the needs already referred to, both of the centre and the satellite units as we often call them ". Other planners would

*Life and Labour in London : by Charles Booth.

†Urban Development. The Pattern and the Background : by Sir Raymond Unwin : Town Planning Institute Journal : Vol. XXI : August 1935

suggest different physical patterns for the solution of the evils referred to by Sir Raymond Unwin. Mumford, however, was more concerned with principles which could be applied as the circumstances required.

Another example of this concern for a physical pattern which could be applied arbitrarily was Walther Christaller's settlement and service pattern for an area, which he published in 1933. He took South Germany as his example, and the basic unit was the market town with a service radius of two and a half miles. The central unit was the equivalent of a country town with a population of about 30,000 to 100,000 persons. Christaller's pattern was based upon a hexagonal framework representing the service areas.* Eric Gloeden published a proposal for a co-ordinated system of settlements spaced closely together, each settlement being limited to the pedestrian distance-scale, and self-contained. He considered that the settlements would develop their own particular characteristics, and that expansion would be accounted for by adding to the number of settlements†.

During the years immediately preceding the 1939-45 War, the wider concept of planning was supported by a small minority of professional planners who were prevented from exerting any great influence by the fact that their practice had to conform with the limitations set by the planning legislation. The School of Planning and Research for National Development in London was, however, at greater liberty in this respect—as an independent organization devoted to planning. The School, instituted by the Architectural Association in 1934 with E. A. A. Rowse as Principal, was in sympathy with Geddes and Mumford. By gathering together interested specialists—geographers, economists, geologists, statisticians, doctors, industrialists, and many others—a proper study was made of national and regional planning based upon adequate survey. The pioneer work of the School, and the Association with which it was connected, was spread by propaganda, by published research, and through a small group of students. During and after the 1939-45 War, the School and the Association ‡ have become increasingly influential in planning.

*See *City, Region and Regionalism* : by R. E. Dickinson. (Kegan Paul, Trench, Trubner & Co. London. 1947)

†See *The New City* : by L. Hilbersheimer. (Paul Theobald. Chicago. 1947)

‡Now reconstituted under the Association for Planning and Regional Reconstruction.

The 1939-45 War, disastrous as it was to Society, gave time for thought and consolidation to those who were not engaged in military or civil operations directly concerned with the War. There was time enough and opportunity for the wider concept of planning to be studied in relation to practice ; for example, the principle of the breaking-down of a metropolis into social units was now defined in carefully detailed Neighbourhood Units. Human convenience, well-being, and happiness constituted the gospel of planning theory at this stage of its evolution, but it was not generally realized that Man was far from being ready to live in an ideal environment. The Geddesian approach of gradual improvement was forgotten in the new enthusiasm for re-development schemes which, despite careful survey work and well-intentioned planning, too often savoured of imposition instead of absorption. The present danger is that of a dogmatic and formalized theory to suit one opinion at one stage of history, when the need is for a theory of planning which is a social, physical, and economic philosophy.

Planning Legislation and Organization

The mechanical and inhuman pattern of urban development at the beginning of the Machine Age was sufficient evidence to show the lack of the protective social rights inherent in planning legislation and organization. In some towns where development was slow and orderly, local tradition, and sometimes local bye-laws, were effective in controlling the location of new streets and buildings, and in securing amenity and convenience. But in the industrial towns, expansion was so vast and rapid that it became necessary to enforce minimum standards for engineering and public health requirements, otherwise there was little hope for the survival of the population. The *Public Health Act of 1848* enabled emergency measures to be adopted in English towns for this purpose, but they were not strictly planning measures. The revised *Act of 1875* imposed a minimum standard of urban design, which made possible a minimum standard of public health, although it took no account of social well-being or the building-up of a reserve of public health for the future. The term "bye-law housing development" is associated with the monotonous design of the new residential areas built to the standard set by the *Public Health Act*.

The first positive planning measures in England were those relating to the housing of the working classes. In 1890 the *Housing*

of the Working Classes Act gave local authorities the power to purchase, demolish, and reconstruct insanitary areas. Legislation was also introduced in the second half of the nineteenth century to make provision for some urban amenities, such as open space, public libraries, and baths and wash-houses. Nevertheless, positive planning was, in fact, officially recognized in a few European Countries at this time. In 1865 a *Town Extension Act* brought under control suburban development in Italy, and in 1874 the first official recognition of the need to prepare a comprehensive plan for town development was made in Sweden, though the results were not considerable. A year later, measures were passed in Germany to institute the zoning of land for various future uses, and the *Lex Adickes* of 1902 enabled re-development to take place in Frankfurt on a co-operative basis by pooling adjoining properties and by re-distribution to give better arrangement of streets and buildings.

During the first years of the twentieth century, the need for some kind of planning control over urban development was becoming clear. Ebenezer Howard's book had stimulated interest, and the example of Germany showed how planning legislation worked in practice. In Parliament John Burns, secured the passage of the first British planning legislation in its own right, although as its title implied—the *Housing and Town Planning Act, 1909*—town planning was a secondary consideration. Even so, control over suburban development was now a reality and, in special cases, over land already built-on. In 1919, further legislation compelled local authorities with a population of over 20,000 persons to prepare planning schemes, and in 1922 interim development control was introduced in areas where planning schemes were in preparation.

The year 1925 was another landmark for planning. In Britain, housing and town planning being accorded separate recognition in legislation. But, despite the increased status that town planning now acquired, the division of urban development into housing and planning was contrary to the new concept of planning—that it must be comprehensive, and integrate development of every kind. At this stage, we should not overlook the fact that numerous Acts of Parliament had been passed to facilitate the development of roads, agriculture, and other uses or activities concerned with physical planning.

In the nineteen-thirties, the *Town and Country Planning Act of 1932* was the basis of planning practice in Britain. The scope of planning

widened under this Act, but the provisions were not of a sufficiently positive character for planning authorities to insist upon orderly development and even carry it out themselves. The main stumbling block was the lack of financial support from the State in dealing with compensation at the local level, and it was almost impossible to disturb existing land uses without the need for compensation arising. There was also a tendency for planning to be carried out on the principle of zoning vast areas of land for particular uses without reference to the national requirement for these uses. Nevertheless, the 1932 Act gave some recognition to national and regional planning, provision being made for the setting-up of Joint Committees to advise on the planning of a group of adjacent local authorities' areas. The *Trunk Roads Act of 1936* also contained measures which, if implemented, were to meet the problem of long-distance road transport by a national system of routes. On the other hand, the *Restriction of Ribbon Development Act of 1935* and the *Housing Act of 1936* encouraged piecemeal planning and disorderly development at the local level.

The 1939-45 War speeded the progress of planning legislation in Britain. It was a struggle that required a greater pooling and submission of independent effort than had ever taken place before, and in the spirit of national unity that this engendered the passage of new planning legislation was achieved more easily than anyone could have thought possible before 1939. A separate Government Department for planning was established by the *Minister of Town and Country Planning Act of 1943*. -in the same year, all land in the country was made subject to planning control by the *Town and Country Planning (Interim Development) Act*. The *Town and Country Planning Act of 1944* gave local authorities the power to realize planning in terms of physical development, though war damaged areas were the major consideration. Finally, the *Town and Country Planning Act of 1947* extended positive planning to the whole country, and overcame the difficulty of financing schemes by transferring the responsibility for compensation and betterment charges from the local authorities to the State.

The nationalization of major undertakings, such as coal mining, power supplies, and rail communications, has placed still further power in the hands of the State for planning on a national basis. The special planning legislation of the *New Towns Act of 1946* also admits of national planning in the location of new towns, and of

town planning of a most comprehensive and detailed kind in urban development.

This flood of planning legislation has placed Britain ahead of any other country in the extent and range of planning powers. Other war-damaged European countries have tended to institute emergency legislation enabling rebuilding to take place quickly, but neglecting the national and regional aspects apart from an acknowledgement of their importance.

A necessary appurtenance of planning legislation was the organization responsible for the professional work of planning. Until the nineteenth century, most of the conscious and positive planning had been carried out by 'private practitioners' appointed by the autocrats, while 'organic' development had resulted from one person after another making a small contribution to the physical structure of the town; on occasion, there had also been 'development control' by the elected governing body. In the nineteenth century, the responsibility was given to the local government service, and sometimes in the case of major development proposals a private practitioner was called in. The local government service was, however, a number of specialists in various aspects of town function, whose duty was to advise the master body (the town council) on the intricacies of their particular fields, to implement policy, and to carry out the day to day business of town government and function. The task of integrating these particular fields lay in the hands of the elected town councils who were rarely qualified to undertake such work without professionally qualified assistance. In these circumstances, it was not surprising that development was spasmodic and unrelated to the real needs, though the difficulties of finance were usually paramount. Physical development was to some extent controlled by the local authority through the engineer or surveyor, or as in Sweden, by the town architect, but this was not positive planning.

The planning legislation of the twentieth century enforced the preparation of development plans upon the local authorities in Britain. The responsibility for this work and for the subsequent control was nearly always given to the engineer or surveyor of the local authority because he was the official concerned with roads and buildings—the major physical elements of urban development. In this way planning, the master activity of rural and urban integration, was officially recognized as *one* small part of the work

of a specialist in *one* aspect of town function. In central government, planning suffered a similar fate as a new sub-department of the well-established Ministry of Health. But we should also recognize isolated cases in which planning was properly the major purpose of an organization, such as the Regional Planning Committees and the Joint Committees of the inter-War years. The very great contribution of the private practitioner should certainly not be overlooked in the field of town and regional planning, and even in planning control and direction. The value of the private practitioners' work lay in the individual approach by different minds, not perhaps an ideal way for the greatest public service, but one leading to the establishment of a wide range of criteria. The contrast is a single standard criterion which may well come with bureaucratic planning unless there is a determination to combat this tendency in the present organization of regional areas administered by the central government department, and county and county borough areas administered by county and local government departments. Yet, if the work of the planning departments is restricted to administration, while outside agencies carry out the creative work, the best men in local government will seek another outlet for their ability.

Hardly less important than the setting-up of an organization to administer planning in Britain was the inauguration of a professional body, the Town Planning Institute, in 1914. Under the guidance of this Institute, a professional code and standard was established—an undertaking of great difficulty in view of the fact that membership was usually through one of the four professions principally concerned in physical planning, namely. Architecture, Engineering, Surveying, and Law.

National and Regional Planning

It is now generally recognized that the particular conditions of the nineteenth and twentieth centuries justified planning at the national and regional levels. Yet, until recently, there had been nothing comparable with the Domesday Book survey of England, the international road system of the Roman Empire, or the planned settlement pattern of the larger Monastic Orders over Northern Europe. There were two major reasons for the lack of planning at these higher levels in the nineteenth century. First, the power and authority which the anti-planning sections of the community

had gained through the phenomenal expansion of industry, population, and the urban areas. Second, national directives were not acceptable to the people in the industrial countries, who were enamoured by the freedom of the new social structure and democracy. In spite of these, the framework of regionalism was being steadily built-up in France, where administrative divisions and social units (the small *pays*, and the larger *province*) had existed before the nineteenth century. Later, an excessive concentration of the administration in Paris led to further consideration of a regional division of the country : " Many schemes were put forward for the creation of new political divisions in place of the *départements*, including those of Auguste Comte, the philosopher, and Frédéric Le Play, the sociologist. In 1898 the *Union Regionaliste bretonne* was founded, and in 1900 the *Federation Regionaliste francaise* came into being with the objects of affording a link between all advocates of regionalism and of providing for the propaganda and defence of regional ideas and interests. Its organ was *L'Action Régionaliste* and its chief exponent M. Charles-Brun ".*

During the 1914-18 War, large-scale planning was forced upon the warring nations, but it was of a kind that related to the immediate requirements of war, and its possibilities in peacetime application were soon neglected in the immediate post-war years, except in a few isolated cases. For example, in 1920 a Regional Planning Federation of the Ruhr Coal Mining District (1,470 square miles in area) was established in Germany. The main task was the revision of the settlement pattern which became necessary as a result of the replacement of worked-out coal mines by new mines. The reclamation of the Zuyder Zee in Holland was commenced in 1927 with the intention of winning about 864 square miles from the sea, and a special government department was created to plan and implement the project. In Italy, the reclamation of 300 square miles of the malaria-ridden Pontine Marshes took place in the nineteen-thirties, the land being converted to agricultural use with modern farms, village centres, and new country towns.

A further international disaster—the great economic Slump of the early nineteen-thirties—led to a great American experiment in the technique of regional planning—the deservedly famous Tennessee Valley Authority. Here, the land associated with a

*City, Region and Regionalism : by R. E. Dickinson. (Kegan Paul, Trench, Trubner & Co. London. 1947)

great river and its tributaries was being devastated by mismanagement and by uncontrolled natural forces, and the intention was to develop the region as a social and economic unit, with productive control or taming of the natural forces for the benefit of the people. There was no clearly-defined T.V.A. master plan but " a planning agency, the first of its kind in the United States. The great change going on in this valley is an authentic example of modern democratic planning ... we have deliberately been sparing in the use of the terminology of ' plans ' and ' planning ' within T.V.A. and outside. . . . ".* Such a planning agency, whose objective was direction as the circumstances required rather than imposition on a contemporary basis, was in the line of succession of the organic development in the past.

Soviet Russia's Five Year Plans of 1928, 1933, and 1938 were even more ambitious and wider in scope than T.V.A. They included not only schemes for obtaining a greater output from industry and agriculture, but also the provision of social services such as schools, hospitals, creches and rest homes, as well as scientific research in all its branches : " The great Plan (1928) had as its aims : to industrialize Russia ; to socialize agriculture ; to reduce the number of illiterates and reform education. Only so could the Soviet Government equip and maintain the Red Army and the Red Navy for its defence against external enemies, and in due course ensure higher standards of life ".† Elsewhere in the world, planning on the scale of T.V.A. and the U.S.S.R. Five Year Plans was only practised in relation to special aspects, such as national parks in the United States, and Britain's electric power grid and unification of Greater London's transport systems by the London Passenger Transport Board. The few regional planning schemes that were prepared did not meet the problems of their areas because of inadequate survey and the failure to plan with the assistance of a team of specialists. The absence of these two essentials was often recognized by the professional planners, but it was not easy to convince the authorities concerned of the need for them.

The influence of the 1939-45 War upon national and regional planning practice was twofold : it established a precedent for international planning which is now vested in the United Nations

*TVA Democracy on the March : by David E. Lilienthal. (Penguin Books. Harmondsworth. 1948)

†Russian Cavalcade: by E. H. Carter. (Thomas Nelson & Sons. London. 1943)

Organization as the master directive : and it caused such an upheaval to the economies of individual nations that some of them have been forced to proceed on the level of international planning themselves, for example, the Ground Nuts Development Scheme in East Africa which was instituted to meet Britain's fat shortage. In many of the war-damaged countries, the emphasis has been on speedy *reconstruction* rather than on *redevelopment*, the latter being a slower process in the preliminary stages. Even so, the present tendency is for a greater cognisance of national and regional integration. Poland is the only country which has prepared an official National Plan on anything like a comprehensive basis, and which includes the general pattern of physical development.* But such an approach from the top downwards is of no greater value in the way of good planning than Britain's new method of planning in general terms at the top, and at the same time working in detail progressively from the County sub-area, through the County, the Region, and finally the Ministry of Town and Country Planning.

*Studies for the National Plan : Central Office of Physical Planning, Warsaw.

CHAPTER XII

THE MACHINE AGE II

WAYS AND MEANS OF LIVING

'Unless there is a ground of beauty, vain it is to expect the fruit of beauty. Failing the spirit of Art, it is futile to attempt to leaven this huge mass of 'man styes' by erecting specimens of architect's architecture, and dumping down statues of people in cocked hats.

"We should begin on the humblest plane by sweeping streets better, washing and white-washing the houses, and taking care that such railings and lamp-posts as are required are good lamp-posts and railings, the work of the best artists attainable.'

OF BEAUTIFUL CITIES by W. R. Lethaby

PLANNING in its present meaning is applied to the social, the economic, and the physical patterns of any environmental unit, and its purpose is to direct the development of these patterns for the good of Mankind. During the nineteenth century, the emphasis was on the social aspect, which was invariably the major consideration in the few planning schemes of a progressive nature that were produced. The people's livelihood and a new or better physical pattern were, of course, part of the plan, but the improvement of the social conditions was the main reason for the plan, and also its major objective. A study of planning in the last one hundred and fifty years must then deal at some length with this social aspect.

A New Society

A new social pattern came into being in the Machine Age as a result of the Social Revolution which, in turn, was closely related to the Industrial Revolution. The chief characteristics of the new social pattern were the levelling-up of the social and wealth classes,

and the distribution of governmental power and responsibility among the people. Some account has been given of the violent reaction of the people of France to autocracy in its worst form, and also of the influence of the Machine upon Society. There were two other factors which caused men to seek new and better ways of living : the development of education and its extension to the working classes, and the bad living and working conditions which appeared in true perspective to them with this development of education.

The educational requirements of the Renaissance were met by schools for the children of the upper classes, and through folklore and craft-training for those of the working classes. But simple traditional methods, such as the latter, did not exist in the new and crowded centres of population that sprang up around industry in the nineteenth century. Even if they had existed, the new industrial techniques required a higher form of education for the key workers. At first, then, in the absence of traditional and new methods of education, there was a danger that a race of ignorant people would emerge in the industrial countries.

Three national institutions were in a position to foster education in industrial England : first, the State, but it was content to leave education to others : second, the Established Church, holding fast to the principle that education was a spiritual matter alone : third, the Nonconformist Churches, more prone to spontaneous initiative on a local basis than to co-operate nationally and regionally. The State and the Churches were slow to recognize the great social changes that were inherent in the new industrial pattern, and the desire for education that was sure to come in time. The working classes were, in fact, led to believe that ignorance was their proper and natural state, and accordingly the schools that were established for their children provided a ' utility ' form of education.

A few attempts were made at the end of the eighteenth century to start free day schools, and by 1811 the new educational movement had gained sufficient ground to encourage the Nonconformists to form a voluntary schools building association. This was followed by another association sponsored by the Established Church. Many gaps still remained in the provision of education over the country because the main interest of the Established Church was in the older rural areas, and the Nonconformists could not alone supply all the educational needs of the new urban areas. The

* State was now compelled to acknowledge some responsibility for education, and in 1833 a small grant was made for schools. In the last stage of this phase of the development of education, the *Elementary Education Act of 1870* ensured State responsibility for a school coverage of the country, and free education lost the stigma of charity. From that time, continual progress was made upon the basis that education should be possible for every child, and today the school pattern is one of the first considerations in physical planning. The improved distribution and quality of education also continues to foster a demand for a better physical environment.

This struggle for a proper educational system was linked with the struggle for better working conditions, the employment of children in factories necessarily being affected by their attendance in the schoolroom. Working conditions were, in general, very bad in the industrial countries : the hours were long, the hygienic standards were bad, and the pittance was miserable. Women and children under ten years of age were employed in the mines of Britain up to 1842, and children in chimney sweeping up to 1875 when this method was made illegal. There was little relaxation from work, and little daylight left at the end of a long day to enjoy it ; in fact, the daylight only exposed the drab monotony of the rows of slum dwellings. Small wonder, then, that a release from the drudgery of work was found in the real and imaginary brightness of the gin palace and bar parlour.

Within the major tendency for the classes in the urban areas to draw closer together—a social levelling process—there were other changes of a contrary nature in the social structure. For example, during the first half of the nineteenth century, employer and employee drew apart, both as to their respective financial and social positions. More recently, this has been modified by the increasing power of the Trades Unions, by specialization wherein general workers become key workers, and by opening the higher grade schools to the brilliant student whatever his station in life.

The division between employer and employee was reflected in a new urban pattern, with insanitary areas where the workers merely existed, and the new suburbia where the rich lived in comparative luxury. Between the two extremes of wealthy industrialist and factory worker, there was a new and increased middle class, with varying incomes and occupations, ranging from the skilled artisan to the professional man. The aristocracy were still

able to maintain their position in the nineteenth century. Large families were common in all these classes ; but whereas the upper classes were in a position to employ the cheap and plentiful domestic labour, the working classes were overburdened with children. There was for the parents, however, some promise of assistance from a large family in their old age.

A strict moral code conditioned life in the well-ordered family of the nineteenth century ; requiring, for example, the rigid observance of Sunday as a day of rest. But there was also a smug self-righteousness which overlooked the other side of life—the evil that existed in the densely-populated industrial areas. Often in desperation, a reaction took place from both these extremes whereby people from all classes mixed in the communal entertainment of the music hall and unintellectual or unsavoury pleasures.

The working and living conditions of the wage-earners began to improve during the second half of the nineteenth century in association with the industrial prosperity, and as a result of new reforming legislation and the growth of the Trades Union and Co-operative movements. The popular seaside resort which developed near to industrial areas, such as Blackpool for the Lancashire cotton towns, was a sign of these better conditions ; even so, the new holidaymaker was so tied and moulded to the industrial environment that he asked for nothing better in his holiday environment than the same urban pattern—minus the dirt and grime—and a sight of the sea here and there at the extremities of the bye-law street pattern of these seaside towns.

The social improvements made in industry during the twentieth century have been outstanding. Unemployment relief and national health services replaced the voluntary Friendly Societies, and factory legislation and inspection ensured better and safer working conditions, recreational facilities, increased wages, and shorter working hours. In the rural areas, social progress took place in a more leisurely manner, but it included better housing, cultural, and educational facilities.

These social improvements were not easily gained, and it must have appeared at the time that any independent action towards reform was doomed to failure because the social pattern was closely interwoven with the exploitation of the working classes by the industrialists and other influential members of the upper classes, who did not want their comfortable position assailed. Yet,

men and women of all classes and interests worked for reform, as the following list will show : Mary Wollstonecraft in defence of the rights of women ; William Cobbett in social and economic affairs, through his writings ; Hannah More by improving social conditions in the mining districts of the Mendips ; William Wilberforce in his battle for the abolition of slavery ; Charles Dickens in the social system and Charles Reade in the prison system, through their novels ; Francis Place, Robert Owen, and William Lovett, through their work for the Trades Union movement ; George Cruikshank by exposing the evils of drink through his caricatures ; Florence Nightingale in hospital services ; Elizabeth Fry in prisons ; Edwin Chadwick in public health ; Joseph Chamberlain in municipal government ; Octavia Hill in housing ; Lord Shaftesbury by his efforts to restrict the employment of children ; Thomas Wall in his pioneer nursery school and in his efforts to secure a green belt around London. These, and many others in Britain and elsewhere, proved that the nineteenth century was a period notable for great men and women who take their places with the great figures of other Ages.

The Social Revolution produced further changes in the social structure during the early years of the twentieth century, such as the even closer relationship between employer and employee, a higher average standard of living, and smaller families. In terms of physical planning today, the Social Revolution influences the evolution of a uniform standard of environment in town and country. This, however, is countered by the people's desire for variety and by the difficulty of converting socially out-dated, but structurally sound and aesthetically desirable, urban areas to fit the new social pattern.

Apart from the initial violence of the Social Revolution, the subsequent changes in the social structure took place quietly and gradually, except in the case of a few experimental communities, or proposals for them, when 'revolutionary' characteristics brought them notoriety. Nevertheless, these experiments contributed to social progress because they often contained some feature of general value. Co-operation in one form or another was the basis of the experimental communities, but they were short-lived except for a few established in the eighteenth century. Three of these early communities still exist : the Amana Community, Iowa, U.S.A., founded in Europe in 1714 : the Doukhobors,

organized in Russia about the middle of the eighteenth century : and the Hutterites, who originated in Moravia in 1528.*

Robert Owen (1771-1858) founded New Harmony in the United States in 1821, and was closely concerned with Queenwood, established in 1839 near East Tytherley, Hampshire. His disciples founded an industrial community at Orbiston, near Motherwell in Scotland, in 1820, based upon his *New View of Society* published in 1813 ; the Ralahine community in Cork was also started in 1831 as a result of his influence. Owen's proposal was the establishment of a number of communities to take the overspill and the unemployed from congested areas. The population of each community was to be 1,200 persons working as a co-operative group for common service, and not for individual profit. Agriculture was to form the basis of the economy, but workshops and factories were also to be provided. Fourier (1772-1837), a Frenchman who has been called the father of Co-operation, based his proposed social pattern upon a *phalanx* of 1,620 people who would cultivate 5,000 acres of land. Apart from co-operating in production, each member of the *phalanx* was at liberty to follow his own impulses, and the principle of private ownership was maintained. Fourier's disciples in America, the *Furyites*, were very active, though often unsuccessful ; Brook Farm was the best known of their communities.

The influence of Co-operation in Society had become important by the twentieth century and soon began to appear in many different fields. Its application on a large-scale to farming in Denmark brought facilities and techniques to the small farmer which he would never have had by himself. Its application to industry in Sweden had the effect of lowering the price of many essential commodities.

During the nineteenth century the setting-up of new co-operative communities continued in different parts of the world irrespective of the large percentage of failures in the previous century. There have also been some interesting developments in this form of community during the twentieth century. The Llano Co-operative Colony was founded in 1914 and, after taking over an abandoned mill town in Louisiana (U.S.A.), remained there until 1939. The aim of Job Harriman, the founder, was to establish a co-operative colony in which each individual would have an equal social advan-

*Co-operative Communities at Work : by Henrik F. Infield. (Kegan Paul, Trench, Trubner & Co. London. 1947)

tage : " The purpose of all this was to show that a community could live together in harmony, could produce its own living, direct all of its members, maintain a higher standard of living than is usually maintained—and all with far less labour ".* In Palestine, the efforts of the Jews to establish a sound agricultural economy led to the first *Kvutza* or agricultural settlement in 1909 ; this now has a minimum of sixty families, a number considered necessary for the practice of large-scale farming and to give a sufficient variety in social relationships. The *Kvutza* constitutes " what is probably the highest possible degree of co-operation. There is virtually no private property and, in the final analysis, no group property ".†

The Russian agricultural communities came into being after 1918 and, in forming part of a greater National Plan, are unique among other similar communities. There are three types : first, the *commune*, in which co-operation extends to both consumption and production ; second, the *toz*, in which co-operation between farmers is applied to certain limited tasks ; and between these two in degree of co-operation is a third, the *artel* or more familiarly the *Kolkhoz*, which is the dominating type. The *Kolkhoz* is a community of peasant neighbours who pool their farming activities and property except for their own homes, a small garden, and a few livestock. The cultural level of the Russian peasant has been raised through the medium of this village community and a measure of social security introduced. Two further examples of the co-operative farming community, both established in the nineteen-thirties, are the F.S.A. Co-operative Corporation Farms in the United States and the collective *Ejidos* in Mexico.

The uncontrolled growth of urban areas beyond the limits of human convenience has done perhaps more than anything else to foster a new consideration of the community in the urban way of living. In recent times, physical planners have purposely encouraged the development of communities of a reasonable size. Sometimes, the building of one or more blocks of flats has influenced community development through common interest, the communal garden, and the focus of associated shops and nursery schools. The *Kollektivhus* of Sweden is such an example, though of a specialized character because it caters primarily for the family in which husband and wife have outside employment. The Neighbourhood Unit,

* Communities of the Past and Present : by Ernest S. Woosfer.

† Co-operative Communities at Work : by Henrik F. Infield.

now entering upon its experimental period, seeks on the one hand to meet the needs of convenience in the daily life of its people by providing social services in the right places, and on the other hand to recapture the spirit of the old communities.

The Greater and Lesser Wens

William Cobbett, the journalist-reformer, was one of the first men to make an assessment of the trends in nineteenth century urban and rural development in Britain. His survey of the social and economic conditions and the physical environment was based upon first hand information obtained in the field ; it was published at intervals in the *Political Register* from 1821 onwards, and later in book form as *Rural Rides* in 1830.

The swift unplanned growth of certain urban areas was recognized by Cobbett as being something quite new in social and economic development, and he gave a new name to them—the *wens*. Referring to the naval centres of Chatham and Portsmouth, he said : " This Chatham has had some monstrous *wens* stuck on to it by the lavish expenditure of the war. These will moulder away. It is curious that I should meet with a gentleman in an inn at Chatham to give me a picture of the house-distress in that enormous *wen*, which, during the war was stuck on to Portsmouth. Not less than 50,000 people had been drawn together there ! These are now dispersing. . . . The dispersion of the men is the only real difficulty that I see in settling the affairs of the nation and restoring it to a happy state. But, dispersed it must be ; and, if there be half a million, or more, of people to suffer, the consolation is, that the suffering will be divided into half a million of parts ". But no such dispersal took place, and the *wens* continued to grow without any form of planning so that they became inconvenient and unhealthy as places for men and women to live in.

In the great industrial areas of the Black Country, Lancashire, Yorkshire, and Tyneside, many towns and villages expanded so that they formed one great urban area or conurbation ; in some districts the development was compact, and in others very loose. Always, the aim was the short-term provision of housing accommodation for the workers in industry. The social needs or convenience of the people were hardly considered at all, nor was any provision made for possible future changes in the economy.

Middlesbrough in North East England is a typical example of an

industrial town which expanded rapidly in the nineteenth and early twentieth centuries. The town began as a small community of 154 persons living in Joseph Pease's well-arranged urban structure of 1830 (the plan was for a town of 5,000 persons), and it became involved in the industrial race when the iron ore of the adjacent Cleveland Hills was exploited in 1851. By 1931, the population had risen to 138,000 persons, and the central core of the town was a blighted area. The present conditions in Middlesbrough are described by Max Lock, whose task was to sort out the urban mess into a reasonable plan for better and future development : ". . . out of 138,000 citizens the 45,000 who live in the central areas suffer deposits from the smoke and dust-polluted atmosphere that are nine times as much as is found on the outskirts (450 tons per square mile per annum). The houses are ten times as densely sited on the ground. In the blighted areas none of the houses have baths ; there are no gardens ; there is an open space deficiency of ninety-five per cent. Street accidents are two or three times more frequent. All ten schools in the blighted area are sub-standard. Education is seriously handicapped. In fact it was found that in the blighted areas only one in 77 children passed the entrance examination to secondary schools, as compared with one in 5 in the outer housing estates even though their fathers received the same wages in the same jobs ".*

The physical structure of these vast new urban areas was either haphazardly arranged between the main roads leading out of the original settlement or, when it was known that a large expansion was required immediately, the pattern was established by streets laid out in grid form. The streets merely gave access to the houses, and were not aligned to lead directly to the foci of the urban area—the shops, the schools, the churches, and the places of recreation. A distinction existed between this use of the grid street pattern in Britain as a simple method of arranging houses for a *particular* expansion of the urban area, and the pre-conceived grid street pattern for *every* expansion that might take place in the towns of the non-industrial countries of the nineteenth century. The latter method was evidence of a town plan and of a consideration for future growth, and it was applied in many European cities, such as Barcelona in Spain and Uppsala in Sweden, and also overseas at

*Black Cities of the 19th Century : by **Max** Lock (Town Planning Institute Journal : May-June 1947)

Melbourne in Australia, Rosario in South America, and Chicago in the United States.

Urban expansion in the industrial countries followed rather than anticipated the growing need for housing accommodation. The old central areas, therefore, were densely built-over before expansion took place, and the standard of hygiene was lower than during the eighteenth century. In Britain, the wealthy upper classes, followed by the middle classes, soon moved out of the central areas to the outskirts where the familiar nineteenth century suburb appeared with its detached and semi-detached villas. On the Continent, the suburb never attained the same measure of development as in Britain, and instead, the increased accommodation was provided in tenements built in the central areas or closely around them.

The open layout of the nineteenth century suburbs in Britain was partly determined by the desire to emulate the earlier landed estates of the country gentry. Nevertheless, these suburbs had certain characteristics which accorded with sound planning principles. Social foci of a limited type were provided by the churches, which were built without delay and at frequent intervals throughout the residential areas ; shopping centres were often adequate and well-sited, although it was the incentive of wealthy custom and not of social service that brought about their growth ; and, once the trees and shrubs of the gardens had reached maturity, a pleasant and quite new urban landscape was created, whose unity in the summer months came from the overall picture of verdure. Once the suburban growth had become well-established, the new local shopping centres, which were sited in the old main roads leading out of the town, expanded into major shopping centres for the whole district around.

A period of decline began in the old central areas of British towns as these suburbs developed, and it lasted until early in the twentieth century when the great expansion in business administration brought a new daytime activity of advertising, insurance, banking, agencies of all kinds, and central and local government services. During this period of decline, land use in the central areas was indiscriminate, and houses were hastily converted into flats, workshops or offices—anything, in fact, that would provide a revenue in rent and rates. Then, when rebuilding took place, it was often upon the old site, so that land use remained indiscriminate. In many cases, these areas of mixed land use acquired a character and tradition of their own which should not be despised.

The railway was a new element in the towns, and the ease with which it could be raised or sunk beneath the old urban structure—in comparison to the canals—often seriously affected the convenience and unity of the existing urban pattern. The railway tracks were pushed through urban areas regardless of social and aesthetic results. Sometimes, a social unit was physically split in two, or a quiet precinct was overshadowed by great viaducts. At other times, the traditional land use pattern of a town was changed because the noise and smoke reduced a prosperous residential district to a state of poverty, or the business and administrative centre would move towards the railway if the latter had been constructed on the outskirts of the town. The factories were also built near to the railway as a general rule—a fact which preserved not a few central areas from industrialization.

At the end of the nineteenth century, the levelling-up of the social and wealth classes began to have an effect upon urban structure, and in nearly all new residential development a middle course was adopted between the very open development of the nineteenth century suburb and the heavily built-up town centres and industrial housing. The influences upon the new residential development were the improvement in social and economic conditions, the nineteenth century suburb, the plans of the idealists, and the few settlements built to these plans. The aim was to provide each separate house with a private garden for cultivation in the householder's leisure hours, for the Machine had not as yet influenced the field of recreation or speeded the tempo of life to such an extent that little energy remained for 'productive' recreation. The Garden City movement produced the best examples of open development in England at Letchworth, Hampstead Garden Suburb, and Welwyn.

This open development was used for the greater part of the rapid expansion of the inter-War years of the twentieth century, and it failed to give that close contact essential to a well-knit community. Thus, no universal demand came from within these communities for proper social services. Even if the social services were provided by the developers in accordance with the number of people, the large area covered by this kind of development necessitated great distances between houses and shops or schools. A less apparent • weakness, though just as important, was the sprawl of open development across the countryside or in ribbon form along the main roads, which destroyed valuable acres of agricultural land around towns,

robbing them of the proper source of fresh food supplies in dairy and market gardening produce. The worst of this development came from the hands of the speculative builder; but the responsibility was not his alone, for the local authority and the electorate were in possession of controlling powers, if they had a mind to use them. The municipal housing estates were better designed, although the street pattern generally followed some accepted geometrical figure for no reason at all, and the use of the terrace for the arrangement of the houses revived the compact nature of earlier housing.

The growth of dormitory towns in the twentieth century around the great centres of population can be attributed to the following : first, the attraction of a lower cost of living (cheaper rates, property values etc.) in smaller and less important towns ; second, the fact that swift train services from the dormitory towns gave equal accessibility to the parent town centre as the slow train or bus services from the suburb ; and third, a sentimental or deep-rooted desire to live the old way of life for part of the day in ' small-town ' surroundings. Dormitory towns had existed in a few cases early in the nineteenth century ; William Cobbett, for example, noted the change in Brighton when referring to its growth from a town of 7,000 persons in 1801 to 40,000 persons in 1830 : " Mark the process ; the town of Brighton, in Sussex, 50 miles from the Wen . . . is thought by the stock-jobbers to afford a salubrious air. . . . They skip backward and forward on the coaches and actually carry on stock-jobbing in Change Alley, though they reside at Brighton ".

The dormitory towns generally served other purposes. Bromley in Kent, a market and shopping centre for the district, is now also a dormitory for London. Southport in Lancashire, a seaside holiday resort, serves also as a dormitory for Liverpool and Manchester, and Whitley Bay similarly for Tyneside.

Along with the twentieth century urban expansion ' by area ' (in contrast to the nineteenth century expansion ' by population '), the large towns increased their local traffic services. In the case of London, the Underground Railway often anticipated urban expansion and, by virtue of its speedy services to the centre, attracted urban development to virgin sites. Industry also moved out to the new areas, particularly light industry along the main roads where a new form of transport was available in the motor lorry. These peripheral industries helped to stabilize the new areas by providing local employment, but they also raised difficulties for

the older workers who had earlier located their homes in a ' house-to-work ' pattern based upon the original location of the factory in or near the centre of the city.

The accumulation of years of over-building and disinterest remained in the central areas as slum property ; this was generally hidden behind the smart commercial facades of the main roads, just as the near-slum areas in the Renaissance town had been hidden behind the continuous facades of the new avenues. Since 1875 in England legislation had been available to housing authorities for the improvement of slum property, but too often the policy was one of *laissez-faire*, until in the nineteen-thirties a serious attempt was made to deal with the problem of de-centralization to new areas and by the re-development of the old areas.

New Environments

The nineteenth century pioneers in town planning limited their proposals to new urban environments, although their vision in regard to social questions was often very much wider. They saw around them three kinds of urban environment already well-established early in the century : first, the older urban areas which had deteriorated into slums ; second, the new housing areas for the working classes, which were little better than slums ; and third, the better class urban areas which had been added to the towns in the previous two centuries, and were still being built in England in the Regency manner. The last kind of urban environment was the only suitable model for improvement and adaptation to meet the requirements of these pioneers—at least in England. Yet it was generally ignored until early in the twentieth century when it was studied by the best architects in those countries where terrace housing was accepted. The nineteenth century was, however, an age of experiment under the spell of the Machine, and little attention was paid to the models of past ages. To seek for a new urban environment was only a sign of the times.

I Robert Owen put forward one of the first schemes for a new I urban environment in 1818.* His proposal was a number of Villages of Co-operation set in the countryside, but in design they were, nevertheless, urban in character. The most interesting idea, apart

*Dialogue on the New View of Society (1817) : by Robert Owen. Report to the Committee of the Association for the Relief of the Manufacturing and Labouring Poor (1818) : by Robert Owen.

from the social-economic basis of his plan, was the close relationship between the dwellings and the public and social buildings of the villages—an arrangement that had a precedent in the medieval town. The model for the layout was, no doubt, the Georgian square, but Owen also applied the principle of the village green or communal open space with the dwellings in terraces around. Private gardens were provided behind these terraces. His plan indicated large public and social buildings located in the centre of the open space and set in elaborate public gardens, although it would be hardly possible for his small community to need or even support them. The factory or workshop area was sited on the main axis, but on the other side of the road which surrounded the village. Thus, despite Owen's forward social outlook, the physical planning was still that of autocracy—the factory area merely replacing the palace of the prince as the axial dominant.

A proposal was made in 1827 for^a 'rural town' on the banks of the River Ohio, Kentucky, U.S.A. ; this was never built. The town was to be called *Hygeia*, and, in contrast to the unhygienic conditions in the older centres, had a very low housing density and a generous separation of the several parts of the urban area. The plan was the work of J. B. Papworth, an English architect who had experience of the spacious manner of Regency town planning in the extensions to Cheltenham. In *Hygeia*, he was still trying to adapt the geometrical forms of the Renaissance as the framework of a new environment for a new society. He certainly made an attempt to create the kind of environment now associated with the garden city. There were many features in his plan which had not often been purposely introduced into towns of an earlier date, the most important being : the suggestion of density zoning in the division of housing into types and areas ; the promenade or river-front road ; the studied variation in the size of the private gardens ; the open character of the layout and the generous allowance of open space ; and the grouping of the public buildings. *Hygeia* abounded in faults when judged against present-day technical standards ; this is, of course, true of most of the town planning experiments of the nineteenth century ; nevertheless Papworth's plan was a sign of the progress that was being made in evolving a fitting environment for the new Age.

In 1849, Another suggestion for a more spacious urban environment came from a London architect named Moffat. But it was

rather a diminutive of the suburban environment, to which the new wealthy classes were moving, than a serious attempt to find a new environment for the less-wealthy classes. After an earlier proposal, which proved too ambitious, Moflfat produced a modest scheme for a residential * village ' near Ilford Station in Essex. The population was to be about 5,000 to 6,000 persons, and the sketch showed the houses detached and standing in separate gardens. The best feature of the plan was the open space pattern which linked with the surrounding countryside.

In these few proposals of the early nineteenth century, there was a common desire to break away from the closely-knit town structure which is associated with ' urban character '. A return to the urban tradition was, however, made in James Silk Buckingham's ideal town *Victoria* in 1849*, the boundary of the built-up area being as clearly defined against the countryside as in the old cities of China. *Victoria*, as a town plan, had some good points, but also many of a fantastic nature. Buckingham required 10,000 acres of land for his proposed town, of which the built-up area was to occupy only one-tenth, the rest being given to agriculture. In this very concept, there was a return to the earlier and better association of urban and rural life and economy, and it was also evidence of Buckingham's wide interests and foresight. The plan is best described as a series of squares within one another. The outer square was made-up of 1,000 houses with gardens, the second square with workshops and a covered arcade, and in similar manner until the town centre was reached with its more expensive houses and public buildings. Industry was to be sited outside the built-up area, although workshops and light trades were to be allowed inside.

The kind of environment that Buckingham wanted is suggested by his own words : " The objects chiefly kept in view have been to unite the greatest degree of order, symmetry, space and healthfulness, in the largest supply of air and light, and in the most perfect system of drainage, with the comfort and convenience of all classes : the one proportion of accommodation to the probable numbers and circumstances of various ranks ; ready accessibility to all parts of the town under continuous shelter from sun and rain when necessary : with the disposition of public buildings in such localities as to make them easy of approach from all quarters, and surrounded with space for numerous avenues of entrance and exit. And in addition to all

*National Evils and Practical Remedies : by James Silk Buckingham.

j these a large admixture of grass lawn, garden ground and flowers and an abundant supply of water—the whole to be united with an elegance and economy as may be found practicable ". This was to be a ' static ' town—to cover a square mile, and to house 10,000 persons, and no more. If there were any signs that expansion was necessary or desirable, then satellite communities ranging from 2,000 to 5,000 persons were to be developed in the district around.

It is important at this stage to note the influence of these several proposals upon the building in 1851 of Saltaire, a factory-estate above Shipley in Yorkshire. Here, at last, was a chance to test theory in practice, and it was taken by a Bradford manufacturer, Sir Titus Salt, when he was faced with the prospect of adding to the overcrowding in the city as his business expanded. The site was on the south bank of the River Aire, and twenty years after the commencement of building operations the new settlement had 820 dwellings for a population of 4,389 persons, and social buildings including a church, a library, a school, and almshouses. Saltaire was a great advance on the usual environment in which the working classes had to live, but it was not a ' garden village ', for the houses were built in long terraces closely arranged on a grid street pattern, with passages between the backyards. The church and the factory were given prominent sites in true ' Victorian ' manner, but the provision of rest parks and a recreation ground was a novel feature at that date and for that kind of development.

Saltaire was an exception to the customary urban layout in the industrial towns during the second half of the nineteenth century. The greater part of the housing was standardized and monotonous, and in conformity with the unimaginative public health and building legislation. The better class suburbs were more varied and flexible in layout, but elsewhere the roads, the plots, and the size of the houses varied only as between the areas associated with particular income groups ; within each separate area there was a sameness which presaged a moulding of the people to one pattern.

Certain regional differences in the character of the nineteenth century residential environment should be noted, apart from the obvious differences in the use of local building materials. In the south of England, the access roads generally served the fronts of the terraces, so that the back gardens or yards of each pair of terraces adjoined. In the north, there was often a service road at the back of the houses, and back gardens were exceptional. In Scotland,

the tenement building was an even worse evil than the ' back to back ' housing in some parts of England. In Germany, high tenement buildings and excessive site density had been deliberately encouraged in the bye-laws of the eighteen-fifties.*

The Public Health Acts in England, and the building bye-laws which resulted from them, were instrumental in preventing some of the causes of indifferent health and disease associated with sub-standard housing, but they took no account of the influence of the physical environment upon the minds of men and women, or of the influence of the careless siting of shops, schools, and other essential services upon physical health. This one-sided view of public health seems to have guided Dr. Benjamin Ward Richardson in his proposal for *Hygeia : A City of Health*—the title of a paper which he read before the Health Department of the Social Science Congress at Brighton in 1875. Many of Richardson's ideas were sound : the suggested gross density of twenty-five persons to the acre for a large town of 100,000 persons was generous compared to that of the existing congested areas. The layout was evidently determined by a grid street pattern because Richardson referred to three broad streets or boulevards running from east to west, and intersected by streets at right angles. The lesser streets were also to be wide and planted with trees and shrubs.

The filling-in of Richardson's basic pattern for his *Hygeia* was evidently meant to produce an ultra-hygienic environment ; the houses were to have glazed brick for the internal wall surfaces, and fresh air of gale force would often sweep through the arches on which the houses were to be built. Richardson advocated the control of smoke pollution, though his railway tunnels under the main streets were unnecessary smoke traps in a town that hardly warranted such a costly arrangement of local and main line rail traffic. *The City of Health* was indicative of the kind of environment that might well have developed with town planning governed entirely by the *Public Health Acts*.

The honour of being the first person to build a new settlement which included the social basis of Saltaire and the public health standards of Richardson's *Hygeia* was shared by George Cadbury, founder of Bournville, and Sir William H. Lever, founder of Port Sunlight. Bournville dates from 1879, but development did not

*Europe Re-housed : by Elizabeth Denby. (George Allen & Unwin Ltd. London, 1938)

start in earnest until 1895. Port Sunlight was founded eight years later than Bournville, but in 1892 it had progressed sufficiently to rank as a community settlement.

At the time George Cadbury moved his cocoa factory from the congested central area of Birmingham, the built-up area was separated from Bournville by open country. His main purpose was to provide better accommodation in pleasant surroundings for the factory and for his own workers, but he was also a man of wide vision and allowed workers from other factories in Birmingham to live in Bournville. He saw that Bournville would have to pay its way if it was to be a model settlement and an example to the rest of the country, and in 1900 he felt able to hand over responsibility to the Bournville Village Trust. The standard and kind of environment was set by a regulation that factory buildings should cover only one-fifteenth of their sites, and houses only one-quarter. The roads were wide and planted with trees, and open spaces were generously provided. The houses were arranged in groups of two, three, and four, which gave ample scope for variety in grouping and architectural treatment. Yet Bournville was something more than a pleasant environment for habitation ; it was in a very real sense a community built around social and educational activities for which provision was made in a School of Art and Crafts, a Concert Hall, a Village School, and the Selly Oak Training Colleges.

Port Sunlight, near Birkenhead, is hardly less important than Bournville in its example of a proper basis for fostering the growth of a community. The Gladstone Hall was built there in 1891 for general use, and had theatre accommodation ; the Pavilion was the centre for the men's club in 1896. Other buildings of community interest included a church, a technical institute, the Bridge Inn, the Cottage Hospital, an open air swimming bath, and a gymnasium.* The outstanding features of the layout included : the distribution of public buildings over the site, and their association with a system of linked open spaces ; the arrangement of the houses around allotment gardens, and the service roads at the backs of the houses ; and the variety in the architecture due to the employment of several architects—a layout plan determined that this variety conformed to an urban landscape of a particular kind.

Orderly town development had been continuing as a matter of

*The Model Village of Port Sunlight : by Josephine Reynolds (Architect's Journal : May 27th, 1948)

course in other countries during the nineteenth century. Germany, in particular, made some progress in the search for a new environment under the influence of Camillo Sitte's studied informality. Many German town planners were also successful in achieving a logical informality by conforming to the contours of the site, although in some cases (such as the Plan for Pforzheim by Thomas Langenberger) to the exclusion of other important aspects of site planning like convenience and economy in road layout. Open development was also practised and tree planting introduced into the streets once again.

At the end of the nineteenth century, Ebenezer Howard published his proposal for a garden city. He did not profess any skill in the design of urban environment, and no more should be required of his diagrams than in illustration of the basic pattern for a new way of living. Howard's requirements for the residential environment had already been established in Bournville and Port Sunlight, and modifications and improvements were later made in Letchworth and Welwyn, the first garden cities.

The advantages that were claimed for the garden city—as realized in Letchworth in 1903—were first, the healthy living conditions for the working class section of its population ; second, the encouragement that a new local market would give to the existing farming population in the district ; third, the improvement that a new town would make in the social and service facilities of the district ; and fourth, the programme of town improvement effected by the profits arising from the increased value of the land as it changed from a rural to an urban use. The plan for Letchworth was prepared by Barry Parker and Raymond Unwin on the basis of a gross density of about 24 persons to the acre. The generous proportion of open space to building coverage provided another example of the new housing standards of the twentieth century. A more significant fact was the reservation of a rural belt around the town twice as large in area as the urban land. Here was the fulfilment of Buckingham's idea of a rural belt in his proposal for *Victoria*. Letchworth's success was marred by the uneven quality of its architecture, and by the reservation of a larger area of land for the central area than would give a busy social and business atmosphere.

The experience gained in the garden city of Letchworth was used to good advantage in Welwyn (1919), particularly in the site plan-

ning and architectural control. But Welwyn has not become the main focus of a rural area as Howard intended in the case of his theoretical garden city. Instead, the attractions of its pleasant streets and visual suavity acted as a magnet for middle class people who wanted a 'dormitory' away from London's congested areas. In addition, the physical division of the urban area by the railway, with the industries on one side, fostered the growth of a social division of the town. The lesson of Welwyn is that a pleasant residential environment does not make a town in every sense of the word ; there must also be physical outline planning of a kind that will foster the development of a balanced social structure.

Two main types of residential development followed the early examples of the garden city technique : the progressive, through planned settlements like Earswick (the Yorkshire garden village of the Joseph Rowntree Village Trust, 1904), Hampstead Garden Suburb (1905), Wythenshawe (near Manchester, 1927), and Radburn (U.S.A., 1924) ; the non-progressive, through the greater part of the municipal and private enterprise housing schemes of the twentieth century. In both cases, the private garden was generally the means of applying the principle of low density housing, and in the nineteenth and early twentieth centuries this was a suitable residential environment because the influence of the Machine had made little impression on domestic life away from the factory or office. The journey to work was still comparatively short, life was leisurely, and there were few outside attractions to compete with the maintenance of a private garden. All these are being changed, however, in the course of the twentieth century. There is by no means a universal requirement today for a private garden, and a section of the population is more agreeably housed in a closely built-up urban setting, with its complement of large areas of public open space conveniently near. Where the needs of children are paramount, the siting of houses and flats in communal open space is a compromise between the fully urban way of living and the garden city ideal.

Several interesting proposals have been made for meeting these last human requirements of the present century ; some were built and are still in their trial period, while others remain as ideals. Tony Garnier's new residential environment in his proposed 'Industrial City' was quite different in detail from that of the garden city advocates. He favoured the grouping of houses in small

communities segregated from the main traffic streams. The physical factors which Gamier introduced to foster community development were the quiet access road and communal open space. Gamier was ahead of his time, and only a few people understood the value of his ideas by the time Le Corbusier applied some of them on a different scale to a whole town in his *Contemporary City* of 1922.

Le Corbusier classified the population of his City into three groups : those who lived and worked in the central area ; those who lived in garden city fashion in the suburbs and worked in the outer industrial zone ; and those who lived in the suburbs and worked in the central area. His proposal for a central area with a considerable residential population was in direct contrast to the actual position in many central areas at the time ; people were moving out to the suburbs, and the dwellings were being replaced by commercial and administrative buildings. Le Corbusier had, therefore, to increase the total floor space in the central area if the latter was to serve a dual purpose. This, and the fact that he wanted the unifying element of the environment to be one great open space, were the reasons for the multi-storey buildings widely spared : " We must de-congest the centres of our cities. We must augment their density. We must increase the means for getting about. We must increase parks and open spaces."* The central area would be no dead city after the day's work had finished ; it would have the activity of a residential community as well as a casual evening population seeking entertainment.

A clearly defined type of residential environment became associated with the numerous co-operative settlements after 1920. The most progressive layouts were established in Palestine where the communal basis was paramount, and its physical expression was given by siting the community buildings, the school, the hospital, and the dairy in a central group as the focus of the community. The layout of the dwellings, on the other hand, was very open with detached houses in private gardens—an arrangement which contrasted strongly with the enclosed precinct and close juxtaposition of dwellings usually associated with well-knit communities. This more usual physical expression of a community was illustrated by the most progressive housing schemes in certain European towns about the same time, and usually in the form of flats. The social dangers inherent in great blocks of flats were to

*Urbanisme : **The City** of Tomorrow : by **Lc** Corbusier.

some extent mitigated in Sweden and Austria by providing communal open spaces, shops and other services. The attraction of flat development was its virtue of providing a quick and easy partial solution to the long-standing and long-term problem of housing great populations in compact towns. The heart of the matter—proper social, economic and physical planning at all levels—was too often overlooked.

The garden city idea was still a very popular one for experiment in the nineteen-thirties, although the only proposal which really carried Ebenezer Howard's principles a stage further was Frank Lloyd Wright's *Broadacre City*. This American architect published a plan in 1940 for a city in which each family was allotted a plot of land for a house, and large enough for the production of its food if the need arose. The area of each plot was based on a minimum of one acre for a childless family. *Broadacre City* was in truth a garden city compared to Letchworth and Welwyn, but such a wide dispersal at a minimum of one acre for each dwelling did not give short and convenient communications within the city, nor was it likely to produce a physical structure that would foster the growth of an urban community.

The United States and Italy built new towns during the nineteen-thirties in the Letchworth and Welwyn tradition. The Greenbelt Cities in the former country were founded in 1935 as part of an employment policy during the Slump. These were Greenbelt, near Washington, Greenhills near Cincinnati, and Greendale near Milwaukee, and it was claimed that many of the advantages of town and country life would be combined in them. As the name implies a green belt of rural land, protected from urban development, surrounded the cities and contained publicly-owned parks, farms and forest land. The layout was arranged so that a simple main road pattern and a central area with all the essential social and service buildings provided the physical framework for the growth of a community of all the people. Small and intimate sub-communities within the main community were also provided for by grouping the houses around small open spaces or *culs de sac* running from either side of the main road pattern. The sharp division of community interest which such a main road pattern would normally give was partly overcome by underpasses joining the residential and service areas. The lack of industry meant that the Greenbelt Cities were likely to become dormitories for those

who worked in the neighbouring larger urban centres.

The Pontine Marshes reclamation scheme produced two new Italian towns, Littoria and Sabaudia. Although the layout was different in each case, the physical environment was of the same kind, and was influenced by the Renaissance tradition, i.e. in policy by autocracy under the guise of the Fascist régime, and in design by the formal character of the grouping and the architecture. The influence of the garden city movement was present in many other countries, for example, the new Australian capital of Canberra, and in the United States of America, Wyomissing Park and Linda Vista at San Diego.

Town planning theory and practice had been gradually aligned during the Machine Age to give a better sense of community among town dwellers, such as had existed in varying degrees and ways in the past. The most recent proposals for urban development have shown a marked appreciation of this alignment, and it seems to have resulted from two quite different approaches which conveniently meet on common ground. First, the functional approach evident in Sir Alker Tripp's plea for the segregation of residential and other use areas from the main traffic arteries,* in the pedestrian distance-limits which prescribe a maximum radius for the area to be served by social services in the balancing of built-up urban areas with large wedges of open space, and in a school pattern based upon a certain size of community. Second, the sociological approach, which supports the theory of social well-being in a community of a certain size, and relates the physical pattern to the social pattern.

The physical aspect of town planning derived from these two approaches is the breaking-down of the urban pattern into a number of units. In some cases, it is thought that a small and intimate unit of about thirty to sixty families will meet the present circumstances, such as the *Reilly Green* where the units consist of groups of dwellings facing and around open space. In other cases, the larger Neighbourhood Unit—self-contained as to local function—is strongly advocated with populations varying from 2 or 3,000 to 15,000 persons. The possibility of considering both stages of the breaking-down process has also been put forward, and it may well be that a general and elastic application in this manner will produce the most suitable pattern for our time.

*Town Planning and Road Traffic : by H. Alker Tripp. (Edward Arnold & Co. London. 1942)

The physical division of large cities into these units produces a new environment for living, though it seeks to respect the 'human' scale, and is in that wise a revival of earlier forms of city development. The most progressive element is the open space pattern which may comprise any or all of the following : first, the wedges of open country brought into the heart of the city and dividing one major unit from another ; second, the communal open spaces of the individual housing groups, which serve as the foci of each little community group ; and third, the unbroken flow of a unified landscape treatment through the whole city, which may be attained when the buildings or building groups are sited * loosely ' and the roads fitted in to the landscape pattern. The underlying principle of the new environment accepts the large city as inevitable, and then proceeds to retain and encourage the social and economic advantages of the large city whilst limiting the residential environment in size by factors of social well-being and convenience.

Town Planning

Most of the official town planning schemes of the nineteenth century were concerned primarily with the improvement of the existing physical pattern of urban areas, or its extension, and only secondarily—if at all—with social and economic considerations. The example of the town planning theorists and of pioneer settlements such as Saltaire, Bournville and Port Sunlight, was not generally followed until the twentieth century when the understanding of town planning became wider under the influence of men like Patrick Geddes and Raymond Unwin.

The rapid expansion of old and new towns meant also a great increase in the traffic beyond the capacity of the main streets, the central areas of the towns becoming out-dated in a very short time. The main objective in the official town planning schemes was, therefore, the improvement of the traffic flow. Haussmann's redevelopment of Paris (1853-70) and the earlier Dobson-Grainger work at Newcastle upon Tyne (1834) made provision for the new scale of traffic, although in a setting that owed more to the eighteenth century than to the new Age of the Machine. Another early example of 'urban surgery' was the creation of a noble *Ringstrasse* on the site of the old fortifications of Vienna in 1858, which gave some relief to traffic congestion, and also served as an urban open space—though the underlying motive seems to have been a monu-

mental setting for public buildings rather than a recreational lung for the central area. Joseph Chamberlain's Corporation Street project in Birmingham, for which he obtained approval during his mayoralty (1873-76), was of a different character ; the primary motive was the demolition of slum property, and the success of the project largely depended upon sound leasehold proposals.

The construction of new road systems was not a complete solution of the internal transportation problem of the great cities of the nineteenth century, and in only a very few cases was anything like a complete new system built. The usual improvement was of a piecemeal nature, and solved only one immediate problem or one part of a problem. Nevertheless, some method of internal transportation had to be devised, and the railway was used for local as well as inter-town services—sometimes on or above the ground, and at other times beneath the built-up area. London's underground system dates from 1863, and in 1890 electricity replaced steam as the motive power. The relationship between underground railway systems and the disposition of the upper urban area was not the same as between one town and another. Thus, whilst the Paris Metro was constructed as an underground ' tramway ' with frequent stopping places just below the surface, the London Underground was taken deeper and provided swift transportation over greater distances.

Yet another attempt at solving the traffic problem of large cities was made by skyscraper development in the United States at the end of the nineteenth century, although the existence of physical limits to the expansion of a city like New York was the main reason for building ' vertically ', A very high residential or commercial density was possible with skyscraper development, and in consequence the customary distance between the various parts of cities was reduced, but at the cost of an increased traffic density. The mistake was also made of superimposing the skyscraper upon the earlier pattern of land use which did not include sufficient compensatory open space for a greatly increased density, or give enough space between tall buildings for adequate light and air. The need for urban open spaces was, however, realized by the pioneer, F. L. Olmsted, the landscape architect, who was appointed Superintendent of the Central Park in New York in 1857. The first schemes for urban park systems in the United States were planned for Minneapolis and St. Paul between 1872 and 1873.

During the nineteenth century, traffic in the towns was segregated into two groups only : first, the railways ; and second, every vehicle and person that used the road, and this despite the complexity of road traffic with its steam trams, horse buses, coaches, cabs, and pedestrians. Only in a very few cases, such as Haussmann's avenues in Paris, was any attempt made to provide a street plan that gave vehicular traffic an unofficial right of way over pedestrians on the carriageway, and adequate widths to the pavements and carriage-ways. In most new towns and town extensions, the grid street pattern gave excellent and equal accessibility to all the buildings, but at the same time indirect and lengthy routes between different parts of the towns. Another disadvantage was the great number of cross roads, all of them fraught with danger.

A physical expression of the influence of the Social Revolution in the nineteenth-century town was the new town hall, and its associated offices—the symbol of a local democratic government. This took the place of the palace in the Renaissance town—the symbol of autocratic government. In both cases, the traditional requirement of a focal point of interest in the town was fulfilled. The former was, however, only one of a number of public buildings, and it was too small and unimportant for the increased functions that local government acquired by the early years of the twentieth century. Now, a *group* of buildings was necessary, and in some towns vast sums of money were expended upon civic centres axially planned in the ' grand manner'.

There is no denying that the spacious quality of the civic centres at Cardiff (1898) in South Wales and in some American cities was an advance on the provision generally made for the local government services, but it was *civic improvement* rather than *town planning*, for a blind eye was turned upon the many shortcomings of the other parts of these towns. Some of the road improvement schemes can be placed in the same category, the Fairmount Parkway, Philadelphia, sanctioned in 1909, being an example. The official reason for this Parkway was the improvement of the communications between important parts of the city by the cutting of a new road diagonally through the grid street pattern. Yet the generous layout was a measure of civic pride, and it ignored the traffic and visual problems created at the junctions where the Parkway met the old streets. The importance of this Parkway to contemporary town planning was the fact that two important elements were

re-introduced : the major road link within urban areas, and the landscaped town street.

The year 1909 marked the beginning of a new era in town planning, for it was the year of the International Town Planning Exhibition in London (which included Geddes' *Living in Cities* Exhibition), the publication of Sir Raymond Unwin's book *Town Planning in Practice*, and the first *Housing and Town Planning Act*. Two years previously the first *Town Planning Act* had been introduced in Sweden, although that country possessed limited town planning powers as long ago as 1874. Before 1909 the occasions on which the town planning practice of the Machine Age related to an entire urban structure were restricted more or less to the new towns of colonization and the garden cities or villages.

The idea of producing a plan to guide the development of an entire town was quite new to most people in 1909, and the example of Renaissance town planning was generally followed, instead of a new approach through Survey and its synthesis. At first sight the example was a suitable one, for the visual side of Renaissance town planning was carefully considered, while the traffic and other aspects conveniently fell into line. But the scale of traffic, to give one example, had completely altered by the early years of the twentieth century, and yet Renaissance town planning remained as the model. In the case of capital or governmental cities like Canberra (1913) in Australia, and Delhi (1912) in India, there was a strong case for axial planning in the 'grand manner'. Even so, little consideration was given to the revolutionary social and economic changes that had taken place since the eighteenth century, or to the fact that the interests of the entire community had now to be taken into account. At Canberra and Delhi, then, a unique opportunity for testing a twentieth century planning theory by town building was cast aside in favour of 'urban scenery' for its own sake. Similar approaches were adopted when incendiary devastation in 1917 at Salonika in Greece, and an earthquake in 1923 at Tokyo in Japan, prepared the urban field for a new sowing and a new harvest. Again, the old clichés were introduced : the mannerisms of L'Enfant's Washington at Salonika, and a mere cleaning-up of the original urban structure at Tokyo with some improvement in the land distribution pattern.

Once town planning was accepted as a necessary activity and a statutory obligation at the end of the first decade of the twentieth

century, the progress made in method and technique was exceedingly rapid by contrast with that in earlier centuries. The Greater Amsterdam Plan of 1921 was perhaps the first example that accorded with the present meaning of town planning, and it included an extensive new harbour system connected to the existing railways by a ring line, and proposals for the improvement of the sewage system. Housing and public parks also figured prominently in the programme, and the importance of the city's unique character was acknowledged by the decision to avoid the mistakes of the previous generation in filling-in the canals and demolishing buildings of special interest.

A major obstacle in planning was removed in Russia by the abolition of private ownership of land after the Revolutions of 1917, although it can be argued that planning by direction, and not by imposition, is equally justified and can be achieved without confiscatory action. By 1925 the Plan for Moscow was nearly complete, and was notable for the careful attention given to the design of a comprehensive road system with circular and radial roads, and for the recognition of the concentric growth of the city as a basis for planning. Holland was again to the fore in 1930 with a plan for Eindhoven which included within its purview the surrounding villages and countryside, as well as a system of 'green wedges' of open space penetrating into the urban area.

The best town planners of the early twentieth century revival of planning practice reached maturity in their design of town structures during the nineteen thirties, but the importance of the social, economic and geographical factors was not always fully understood or given proper consideration. The new towns of that decade—Littoria and Sabaudia in Italy, Hermann-Göring-Werke in Germany, and the Greenbelt Cities in the United States—were well arranged in land use disposition and communications, and they provided a physical environment of a high order.

By far the greater proportion of town planning work in the nineteen-thirties was in statutory town planning for countless existing towns, rather than in designing spectacular new towns. In Britain, the *Town and Country Planning Act* of 1932 fostered town planning of a negative kind; vast areas of land were zoned or, as it happened, were sterilized for various urban uses in excess of all reasonable requirements. Site planning was unimaginative and uniform under the *Model Clauses* of the Act of 1932, because these

laboriously determined street lengths and widths, instead of expounding broad principles to be applied in accordance with local conditions. The same limited approach was evident in the Bressey-Lutyens Highway Development Survey for London in 1937 ; this attempted the solution of a problem which, in reality, was one small part of a much greater problem—the redevelopment of the London sprawl.

The period of the 1939-45 War and after is our own time, and has a present rather than an historical significance in town planning. Planning is today a major activity in its own right, and proper attention is being given to its practice by adequate preliminary survey and legislative backing. In time to come, the major and the pioneer achievements of today will become evident, and they may well be the County of London Plan of 1943 and its counterpart, the Greater London Plan of 1944. Other probable landmarks are the new socio-physical pattern of neighbourhood units and precincts which, in their purest form, will be seen in Britain's proposed New Towns, and the new concept of open space patterning in town and country.

Urban Fagades

There was little to question in the appearance of the main town streets up to the nineteenth century. The visual quality was derived either from the fact that the urban scene was an entity, and designed and built as such, or that it was made up of a number of separate units of design which, nevertheless, respected the neighbouring units. In the first place, the command of some autocrat or other dominating leader enabled complete towns or large areas of towns to be treated as a whole. In the second place, the slow development of culture and an inherent good taste seem to have given rise to a traditional way of building which allowed considerable variety when the responsibility for local government was distributed among the townsfolk. In both cases, these conditions still existed during the nineteenth century in the countries which had not been industrialized, and the appearance of their towns changed very little.

The position in the industrial countries was quite different. Men of all types and classes rose to power overnight ; the tempo of cultural and technical development was rapid, and social change was revolutionary. Small wonder, then, that the appearance of the

busy industrial towns was uneven in quality and no respecter of tradition or of good neighbourliness. Good precedents were followed, but they were twisted and divorced from their original purpose and function. For example, the continuous façades of the eighteenth century, and earlier, were still very much in evidence along the streets and around the squares in the older parts of the towns, and were still being constructed early in the nineteenth century with greater freedom in layout and a more liberal association with green open spaces. But the continuous façades of the industrial and bye-law housing were drab, endless, and often only two storeys high, whereas a correct proportioning of a long unbroken terrace required three and even four storeys. These 'Victorian' façades comprised the great residue of physical development after engineering and architecture diverged along their respective ways, and their elements were debased copies of numerous architectural traditions.

In complete contrast to the continuous façade was the suburban way of building independently of the urban scene—often an irresponsible growth of unrelated façades. Heights, fenestration and materials were decided in relation to each separate building or at some person's whim, instead of in relation to the street as a whole. Yet, apart from the purely residential areas, this elevational muddle was a true expression of the land use muddle along the streets, and for this very reason it was more honest than those 'Greek and Roman temples' of the retail trade that were erected in the present century.

The long and monotonous façades of the bye-law housing areas constituted the largest and most familiar part of the nineteenth century urban environment in England. This housing for the vast industrial population was a challenge to the architectural and engineering professions : a challenge that was ignored. Architects were too deeply involved reviving and arguing about the conventions of earlier civilizations and of different countries ; while engineers were too busy applying the new techniques to new systems of communication and the ancillary buildings. This division of interest among those concerned with the design of environment was a tragedy, and it meant that the great mass of physical development was left to unqualified persons. It was also a primary cause for the lack of a contemporary architecture, though the engineers came very near to it when the very size and nature of some project

brought to life a design which grew from construction and function. The extraordinary anomalies of the nineteenth century were demonstrated by the hotchpotch of architectural and industrial design in the 1851 Exhibition, all set in the Crystal Palace—that masterpiece of Paxton, the landscape designer.

Many of the factory buildings also came near to achieving a true architectural expression of the nineteenth century, perhaps for the very reason that they were considered to be outside the architectural pale and were, therefore, not bound by earnest loyalty to the past. But these buildings suffered by their location on restricted sites and in parts of the urban area which should have been given to other uses.

Experience proved in the nineteenth century that the housing requirements of the Machine Age could only be met by mass production in the building industry, but it was in the application of mass production that the appearance of the new physical environment failed. Craft-decoration was mass produced and applied at will along the facades of the streets, hence losing that essential quality of subtle variety which is typical of true craft-decoration. The old ways of building were being revived by mass production instead of the design of new ways expressive of it. In the twentieth century, the application of decoration to urban facades was carried out in a more restrained manner, but through a revival of traditional domestic architecture : the Neo-Georgian in the best private and local authority estates ; and the Mock-Elizabethan in the worst speculative estates. The Neo-Georgian manner was pleasant enough in scholarship, and was a contribution towards the evolution of a contemporary way of building.

In the central areas of towns the nineteenth century muddle of unrelated elevations remained and was added to in the twentieth century. There were no adequate planning powers to control elevational treatment ; individuality was strong in the social pattern and sought a corresponding visual expression ; and the growth of advertising extended to the street elevation—anything which had advertisement potentiality was hastily taken up, and usually debased or divorced from its true architectural context. The modern movement in architecture suffered through the spurious ' modern ' facades that often clothed conventional buildings.

There are now signs of a reasoned approach to the design of urban facades, wherein special uses will have buildings expressive

of these uses along the streets of the central areas, and carefully thought-out mass production methods will allow a flexible treatment along the streets of the residential areas. Even so, by its very nature, the contemporary way of building cannot alone give a satisfactory town scene. Rather do we hope to see a new urban landscape with green spaces penetrating into the town, and then filtering through the built-up areas to give that continuity which had once been achieved by the continuous facade in centuries past.

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The past is behind us, and yet the pattern of town and country that was built up over the centuries is present with us today. This pattern is the environment in which we live, and it was planned by our forefathers or was produced without conscious purpose under their influence. Planning, in this wise, is a projection into the future. Let us not forget that.

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ILLUSTRATIONS

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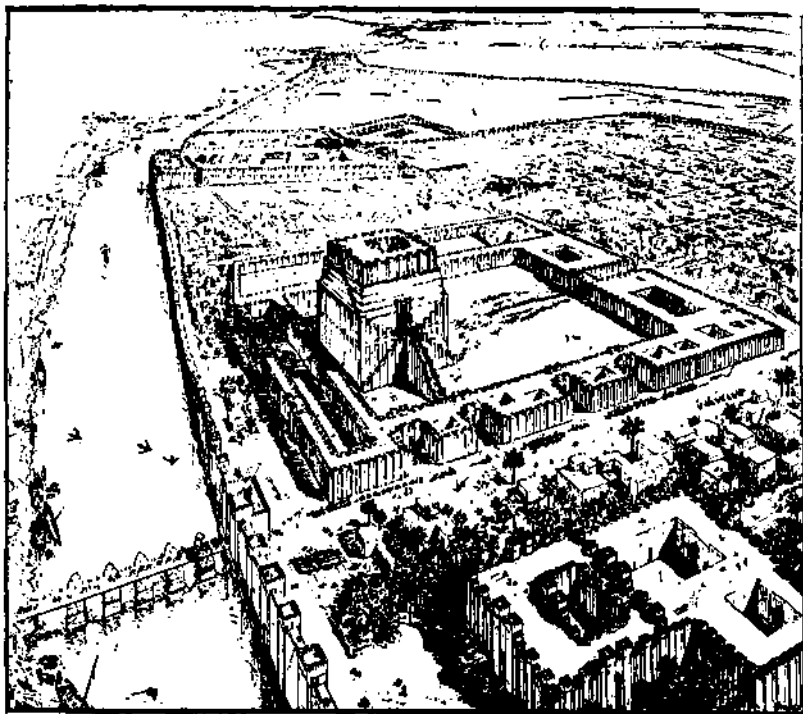


FIGURE 1

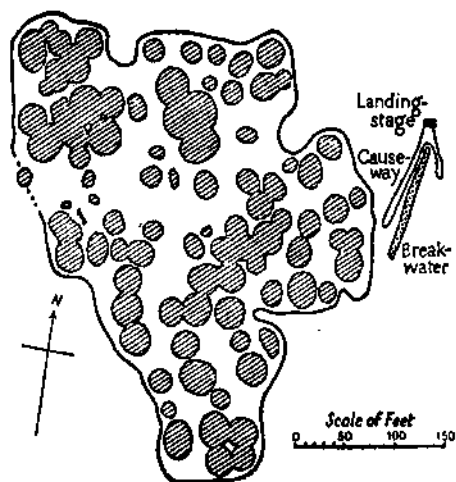


FIGURE 2

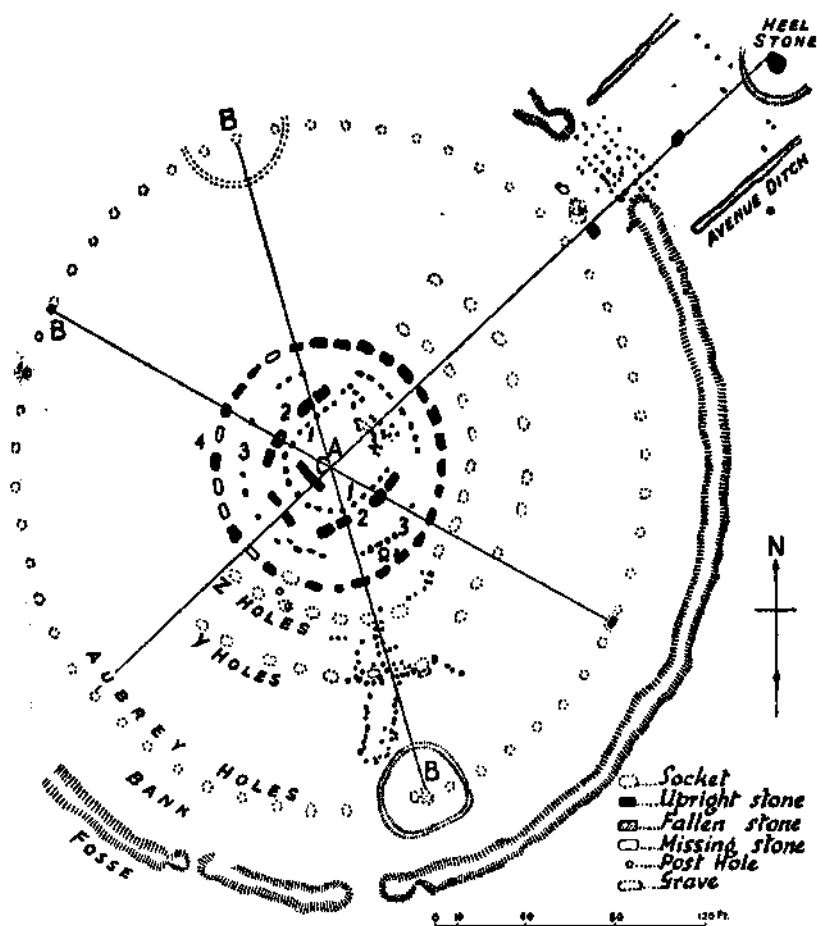


FIGURE 3

CHAPTER I.

Organized community life in towns and villages appeared at different times and attained varying levels of development over the world. In the 'Fertile Crescent' of the Middle East magnificent cities were built at an early date; the example in fig. 1, a restoration of Babylon in the time of Nebuchadnezzar (after Koldewey), illustrates the unity of design in the physical planning and appearance of these cities. The spacious quality of the planning is also noteworthy. The 'marginal lands' of the Ancient World, such as Northern Europe and Britain, were, however, a long way behind the lands around the Mediterranean, both in time and in the level of development. Fig. 2 shows the plan of an Iron Age lake village at Glastonbury, and fig. 3 the great Stonehenge monument on Salisbury Plain—both examples are in England.



FIGURE 4

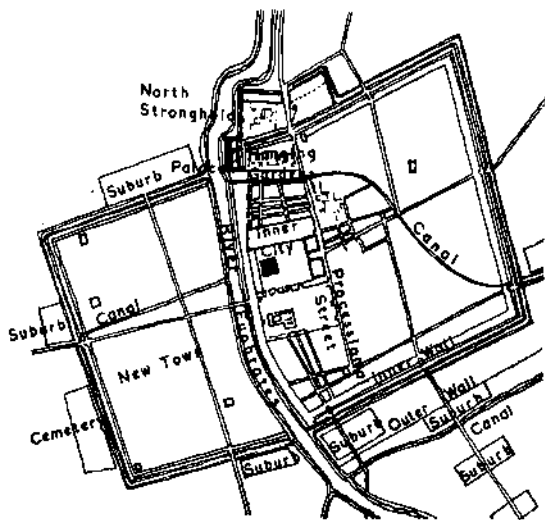


FIGURE 5

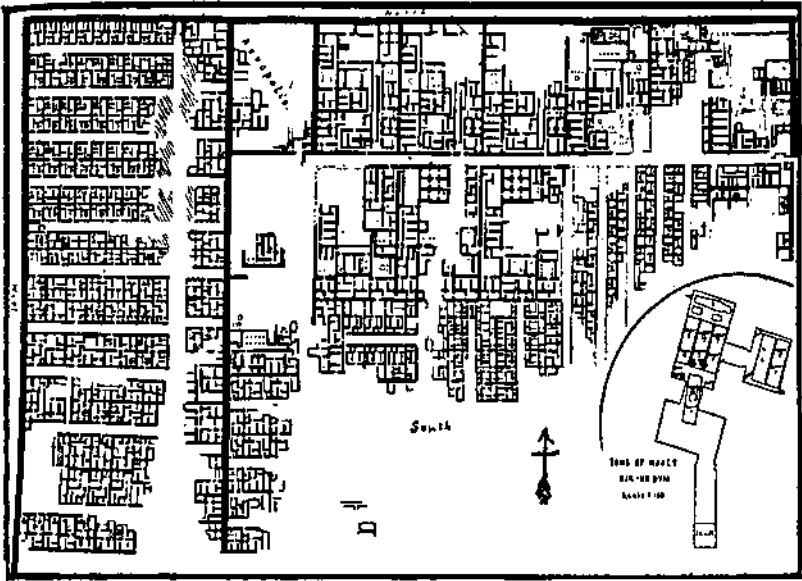


FIGURE 6

CHAPTER II.

The examples of urban development that have been discovered by archaeologists in the 'Fertile Crescent' of the Middle East reveal that some form of conscious planning took place. This was not necessarily 'drawing board' planning, but suggestive of a pre-determination in the layout of the main streets and land uses. In Egypt, a great deal of effort was concentrated upon building work for the glory of the Pharaoh during his earthly life and beyond. Fig. 4 shows the Avenue of the Sphinxes at Karnak in Egypt; this was a processional way leading from the temple at Luxor to the Great Temple of Ammon at Karnak. Luxor and Karnak are now separate villages one and a half miles apart, but in ancient times they were part of one urban group. Fig. 6 illustrates another example of conscious planning from Ancient Egypt—the Workers' Settlement at Kahun for housing the workmen employed in building the pyramid of Illahun. The plan of Babylon (fig. 5) also indicates that some degree of conscious planning took place there, and that it was a true city with clearly defined land uses and community units. A great deal of effort was, however, expended upon the palace and temple buildings of Babylon,



FIGURE 7

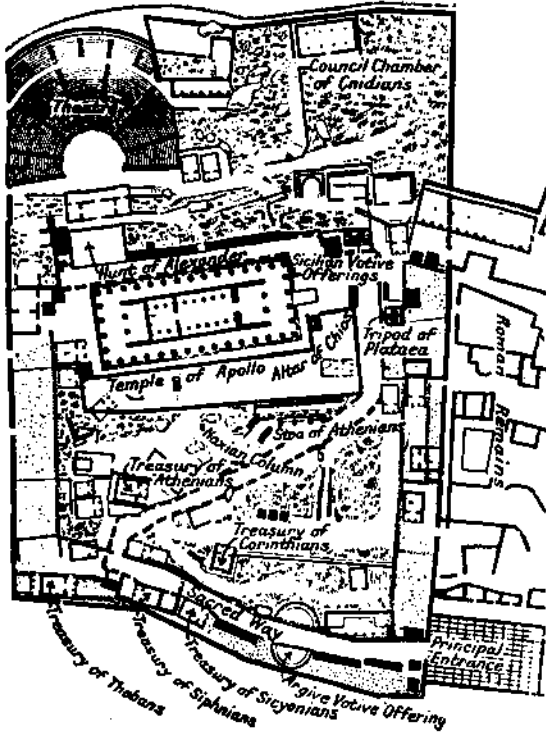


FIGURE 8

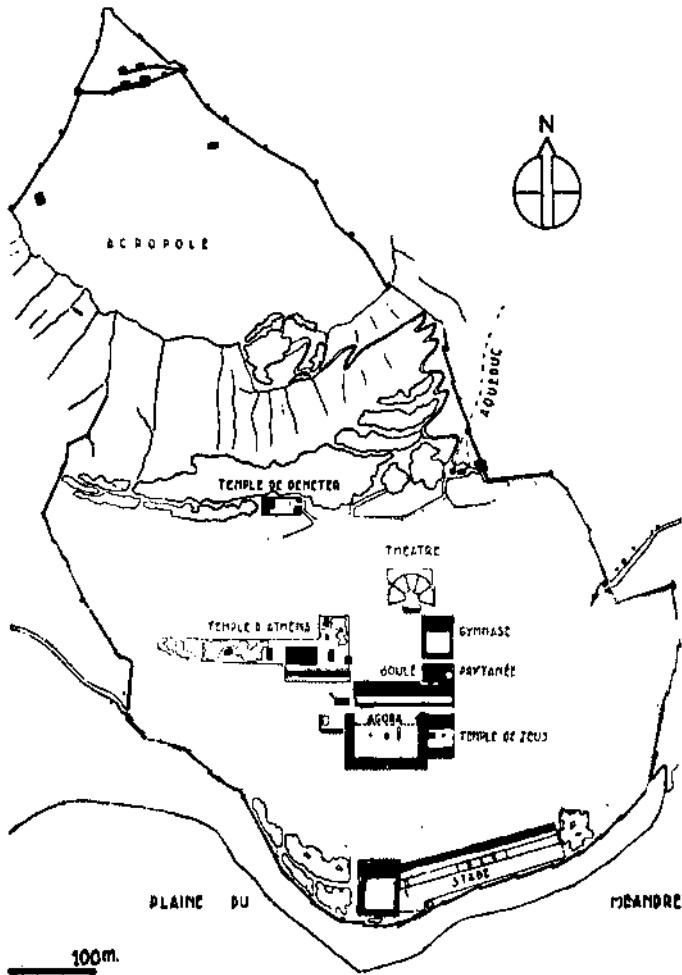


FIGURE 9

CHAPTER III.

The Greeks concentrated upon the civic aspect of their way of life and urban environment. The central area of the cities, comprising the acropolis and the agora, was the nursery and home of Greek culture and of the particular form of democracy. It was also the most worthy part of the physical environment, contrasting with the mean streets and houses around. Fig. 7 shows a reconstruction by Buhlmann of the Agora and Acropolis at Athens. Fig. 8 shows the Temple Area at Delphi. Fig. 9 shows the plan of the colonial city of Prime in Asia Minor; the city was built in the days of the Macedonian Empire and indicates a more even expenditure of money and effort upon the city as a whole than occurred in the earlier examples in Greece itself,



FIGURE 10

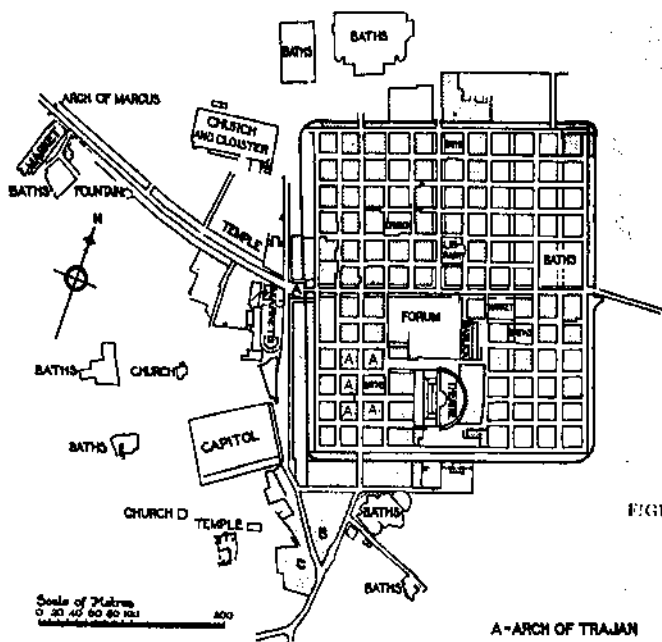


FIGURE 11

A-ARCH OF TRAJAN

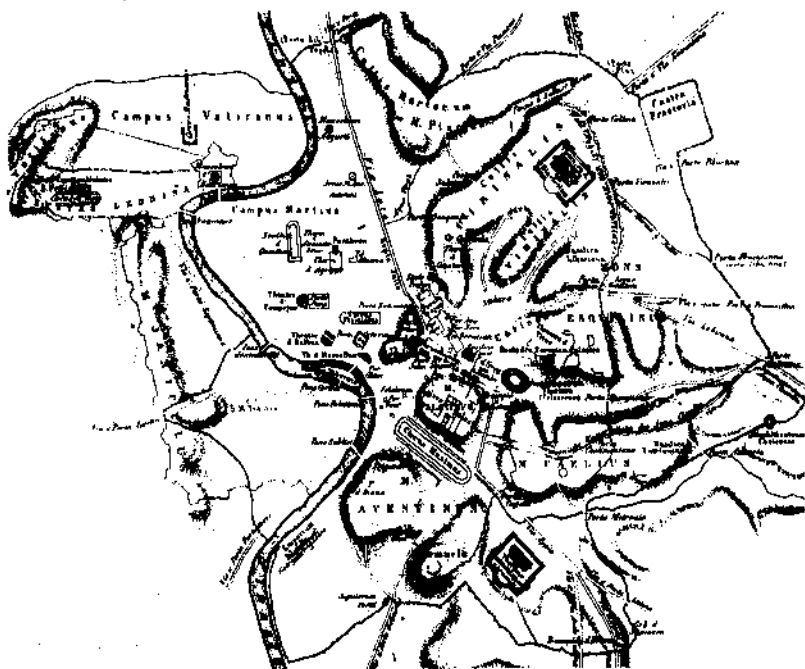


FIGURE 12

CHAPTER IV.

Throughout the history of the Roman World the unique, and significant factor was the City of Rome in its role as the locus of all activity. This was present from the early struggles to unify Italy, through Republican rule, to the great Empire, and under the different forms of government in those times. Rome was, at first, a strictly utilitarian city, but later it reflected the wealth and luxury of its leaders in the magnificent Fora, and the decadence of its people in cheap and ill-constructed residential areas and in the gladiatorial arenas. Fig. 10 is a conjectural restoration by C. R. Cockerell of the Temple of Jupiter Capitolinus in Rome, and well illustrates the scale of its urban landscape. But, despite these anomalies in the city, the urban development was skilfully fitted-in to the topography of the site, as indicated in the plan (fig. 12). The towns built as an essential part of Roman colonial policy were of a different order, with a clearly defined street pattern based on the grid, as in fig. 11—Timgad in North Africa, established in A.D. 100 as a 'colonia' on virgin ground by the Emperor Trajan.



FIGURE 13

CHAPTER V.

Upon the fall of Rome in 493 A.D. the vast territory of the Roman World, once dominated by imperialism, was divided up and ravaged by barbaric hordes. The European part of the Empire quickly returned to its earlier primitive state until the rise of the Middle Ages. In certain parts of the territory of the old Roman Empire, however, the ancient culture was not lost ; many new cultural developments were made by the Byzantines and the Muslims. Constantinople today (fig. 13) retains something of the Byzantine urban scene, particularly the Early Christian churches (now converted into mosques). Granada, in Spain, was one of the well developed cities of the Moors and a visual expression of their culture. Over the city of Granada the palace-town of the Alhambra (fig. 14) stood high on an eminence—a symbol of Moorish luxury and autocratic rule. Also during this period of general cultural decline in the Old World, China continued to progress in geographical isolation. The plan of Peking (fig. 15) illustrates the typical Chinese town with its orderly arrangement of the major land uses and social divisions, but the detail layout of the housing was still crowded and primitive.

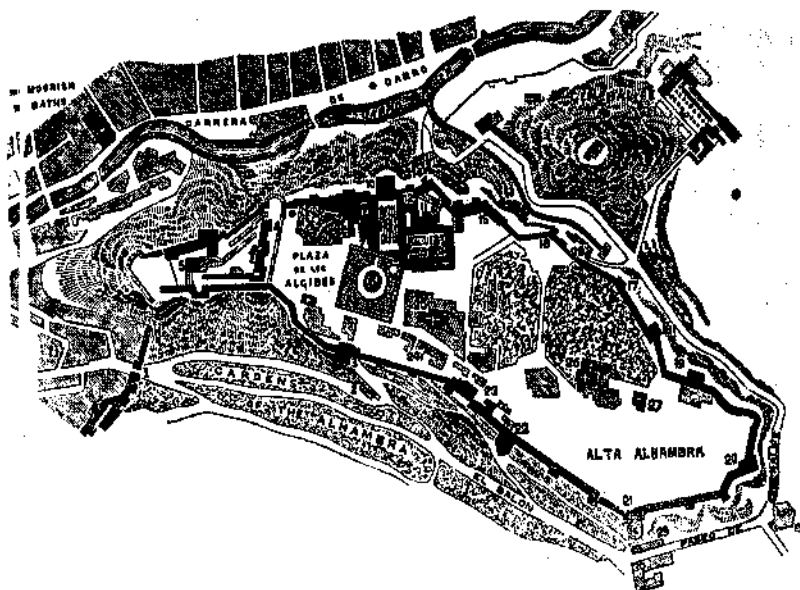


FIGURE 14

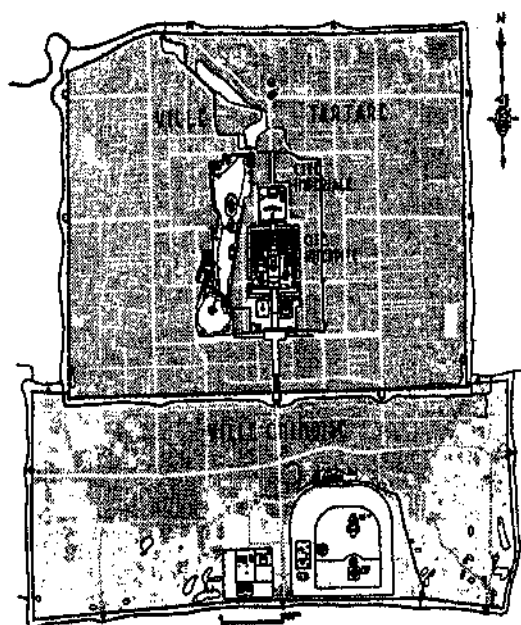


FIGURE 15

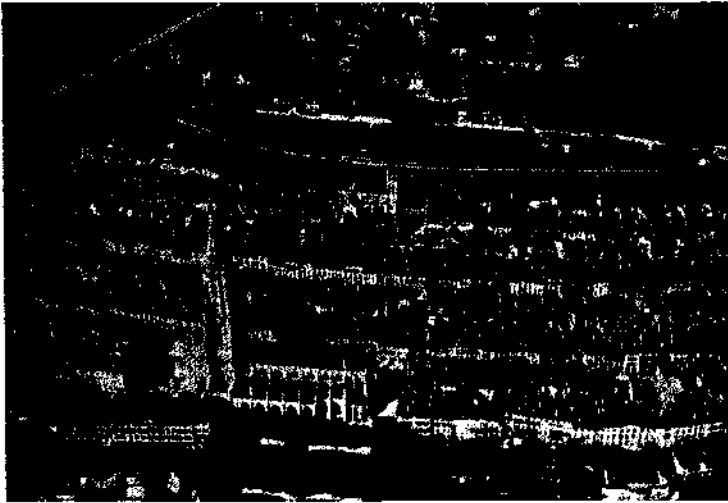


FIGURE 16

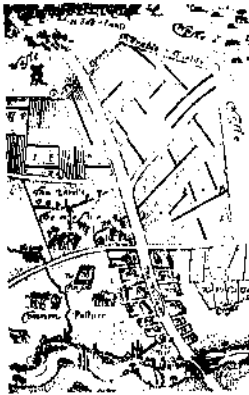


FIGURE 17

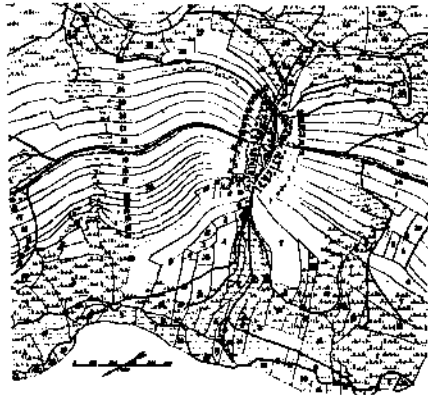


FIGURE 18

CHAPTER VI.

The medieval village (fig. 17) was the basic unit of the feudal pattern. The lord of the Manor and the priest dominated the village community, and the physical expression of this was the siting of the manor house and church on the edge of the village. The village in Franconia (fig. 18, from *The Cambridge Economic History*) differs from this traditional type ; the scattered holdings of the 'open field' pattern were replaced by single holdings stretching out behind the cottages. In the medieval town the Church had not the same temporal authority ; although the major edifice dominated the scene, it was centrally-placed among the town buildings (fig. 16, Berne).



FIGURE 19

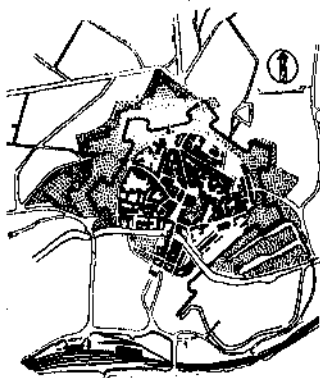


FIGURE 20



FIGURE 21

CHAPTER VII.

The defensive wall, as at Carcassonne in France (fig. 19), was an important element in medieval towns. As a physical boundary, the wall kept the development closely and evenly disposed. Only after the urban area had been fully developed to a reasonable density was expansion allowed to take place outside. The arrangement of land uses, streets, and buildings within the walls was usually the result of slow 'organic' growth, as at Maubeuge in France (fig. 20). When medieval towns were built quickly or for a specific purpose, as at Kalisch in Poland (fig. 21), the streets were usually arranged as a grid—suggestive of conscious planning.

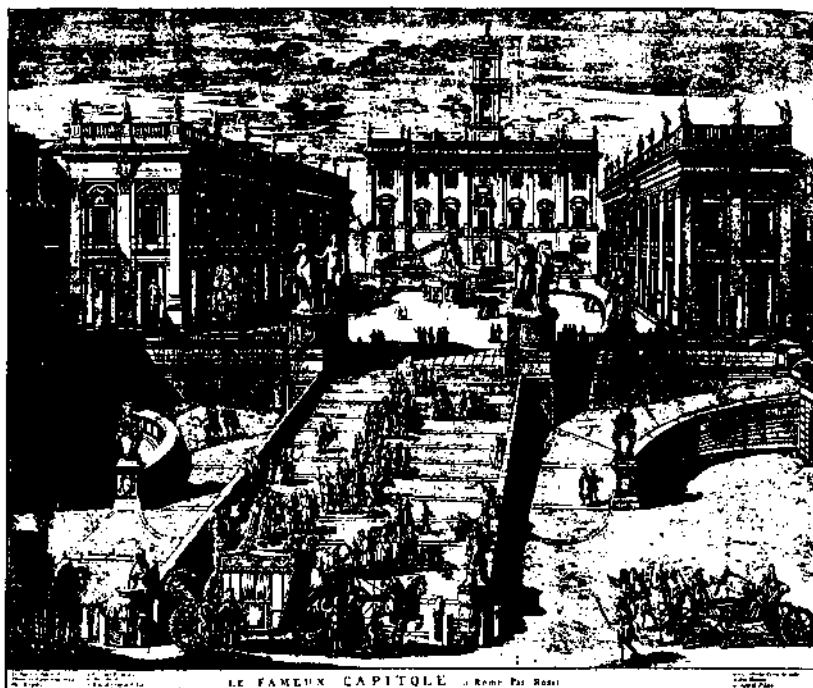


FIGURE 22

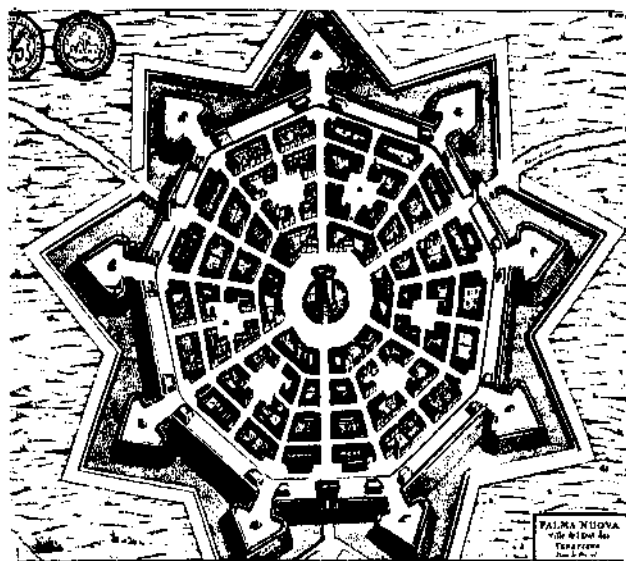
FIGURE
23



FIGURE 24

CHAPTER VIII.

During the Early Renaissance there were few major developments in the technique of physical planning, but there were many cultural and scientific developments which later brought about an improved agriculture, a world flow of trade, a revolution in industrial methods, and many other striking changes in town and country. In the field of town planning, the characteristic features of the Early Renaissance were first, the new artillery fortification systems built around the old towns and later around new towns like Palma Nuova, the satellite of Venice (fig. 23), and second, the new approach to civic design in the concept of the enclosure of space by a series of buildings forming one unified design, as in the Piazza before the Capitol, Rome (fig. 22). Later, in the Renaissance, the town planner's skill was directed upon the town as a whole, so that it could fulfil adequately some particular purpose or purposes. Thus, at Versailles (fig. 24), a new physical environment for the pleasure, the business, and the habitation of the French court was created, the emphasis being upon the palace of the king—the great autocrat.



FIGURE 25

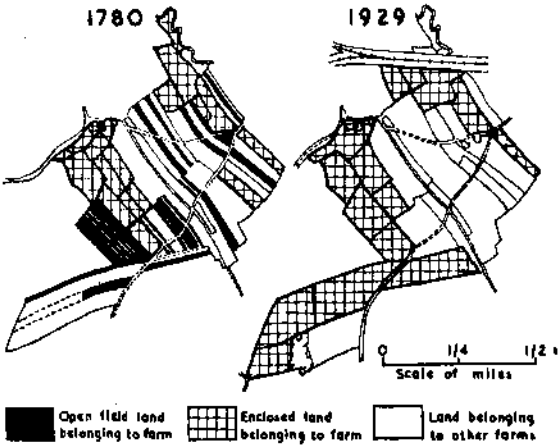


FIGURE 26

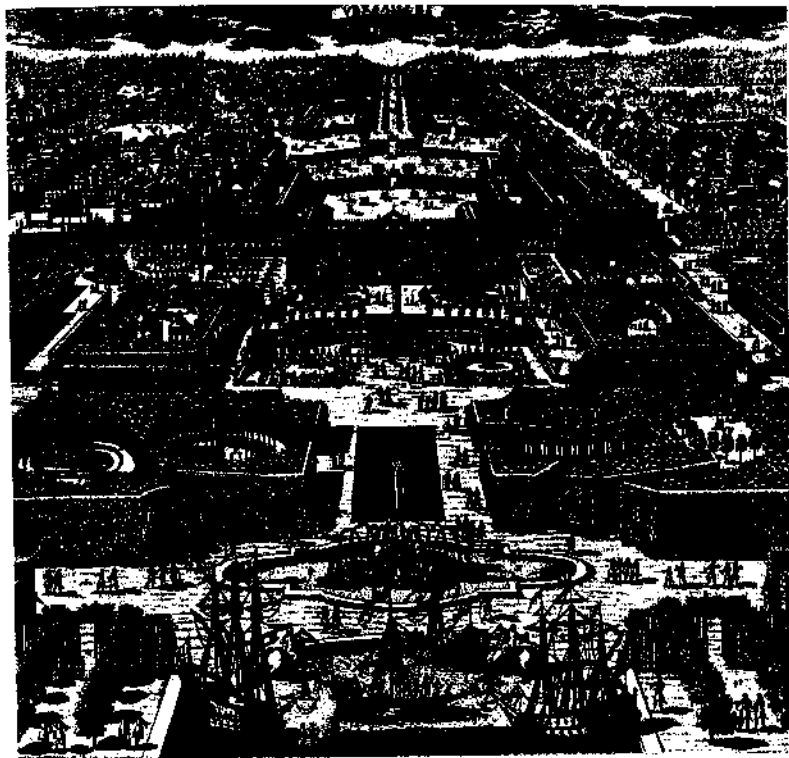


FIGURE 27

CHAPTER IX.

In the eighteenth century the signs of a new economy were becoming clear. The machine and the factory were making their appearance in industry, though the social structure was still that of the autocrat on the one hand, and the common man on the other. The palace-town of Versailles was a typical expression of the old social order, and this is suggested by the imaginative, but inaccurate, engraving of the garden, palace, and town (fig. 27). This social order was soon to be broken down in the Machine Age. The new factory of the eighteenth century was often built in the countryside on a swift river which gave power to drive the machines and water for the industrial processes. The first buildings of the Deanston Mill on the River Teith in Scotland (fig. 25) were erected in 1785, and further development, including the houses of the village, was continued up to 1825. In the eighteenth century rural development of Britain a slower, but no less revolutionary, change was taking place in a great enclosure movement of the open fields and the common and waste lands to give larger and more efficient farming units. The effect of this is illustrated by the two plans of farmland in Yorkshire (fig. 26) in 1780 and 1929 respectively.

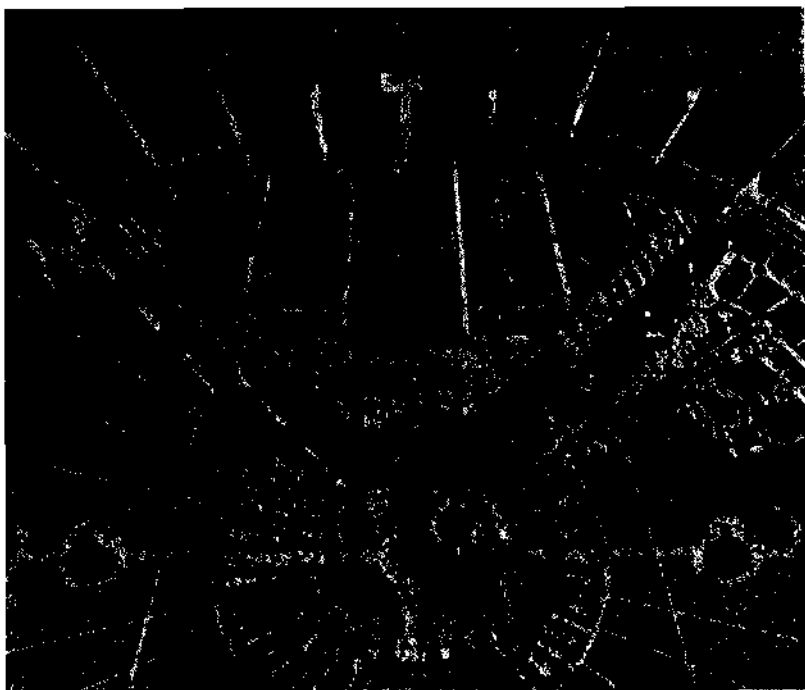
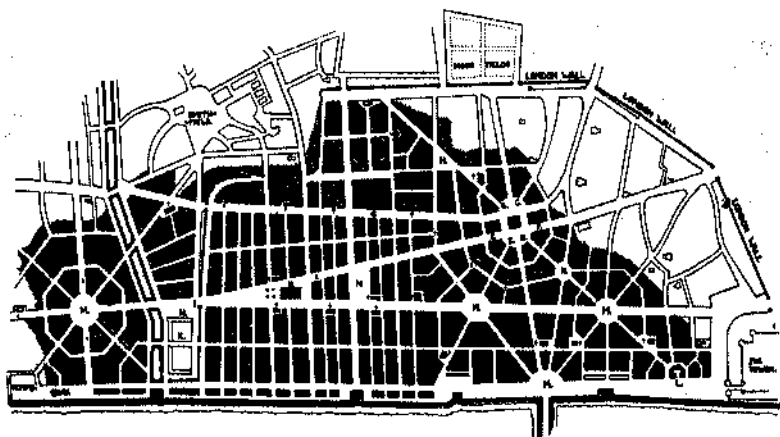


FIGURE 28

CHAPTER X.

The 'Grand Manner' is a familiar term for the kind of town planning associated with the great building schemes of the Renaissance autocrats. But within this general term it is possible to distinguish several different approaches in the town planning; three of them are illustrated on these pages. The building of the palace-town of Karlsruhe (in the province of Bade, Germany) was commenced in 1715 to a design in the tradition of Versailles, that is by the focalization of the social and visual interest of the town upon the palace through the particular radial arrangement of the streets and buildings. By way of contrast, Sir Christopher Wren's plan for the rebuilding of the City of London (fig. 29) after the Great Fire of 1666 was a communications plan with the important buildings of a city, governed by representation rather than by domination, distributed over the urban area. Haussmann's redevelopment of Paris (fig. 30) 'opened up' the congested city for the new scale of traffic—the coach and horse in place of the pedestrian; his plan also made provision for a setting worthy of the revival of autocracy after the French Revolution and for adequate space to manoeuvre the troops who were to control the mob,



▲ The Royal Exchange
 ■ Post Office
 c Excise Office
 D Mint
 k Insurance Office

F Goldsmiths' Hall
 G Guildhall
 H St. Paul's
 I Doctors' Commons
 K Wood Market

M Piazzas
 N Market
 I Churches
 I Continuation of London Wall

FIGURE 29

FIGURE
30



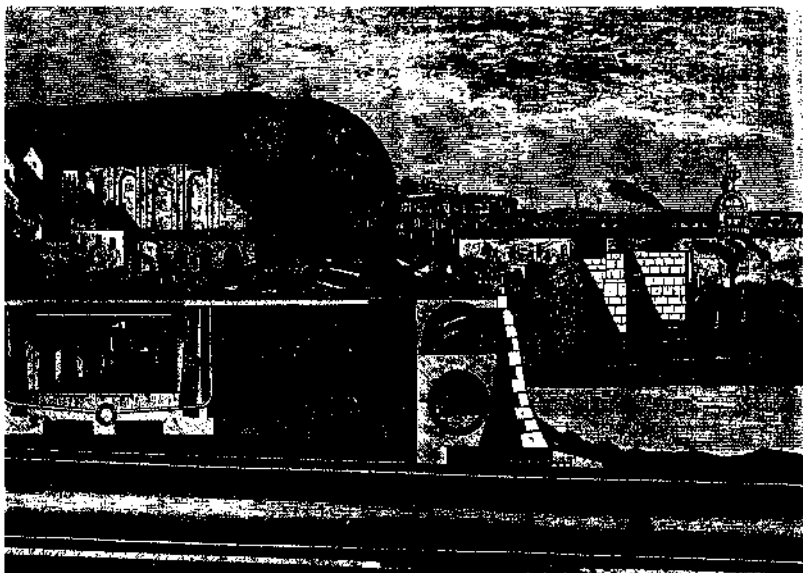


FIGURE 31

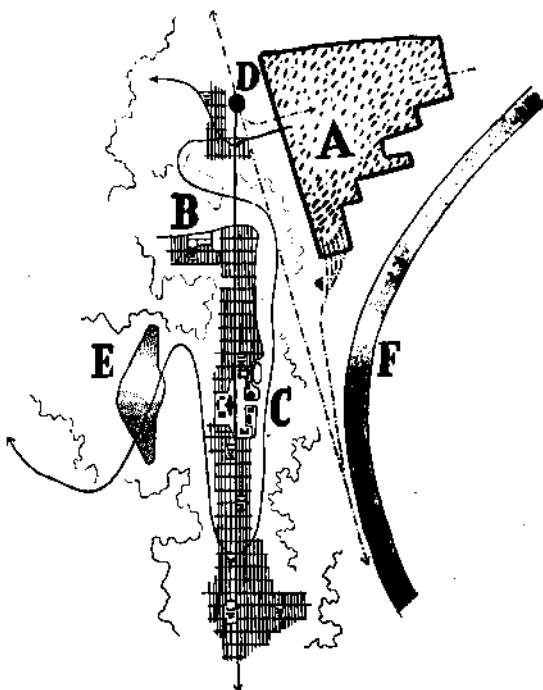


FIGURE 32

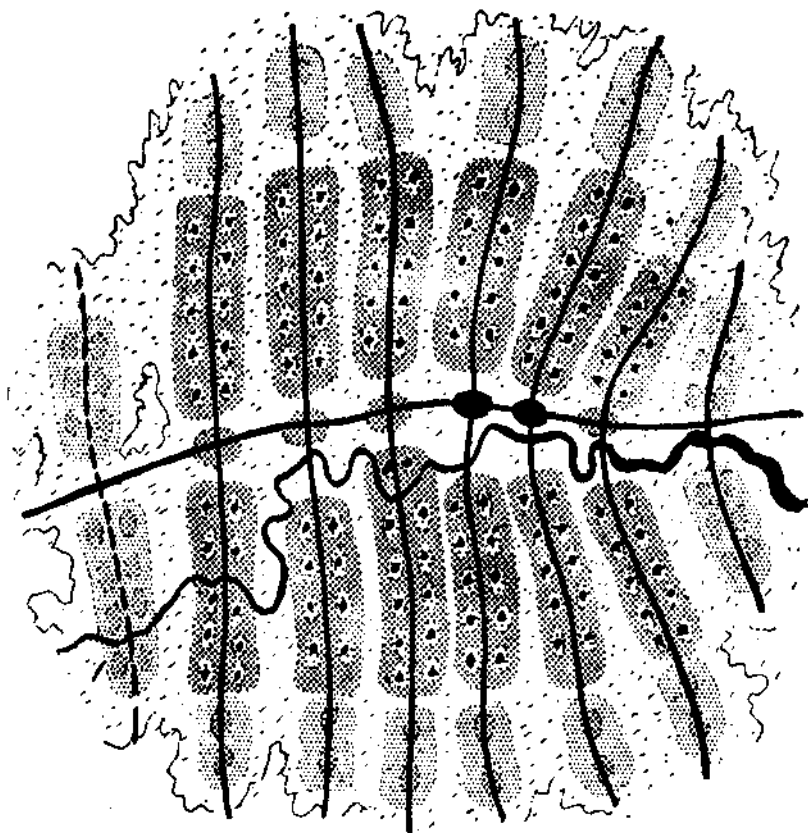


FIGURE 33

CHAPTER XI

The new scale of communications and of town engineering in the latter half of the eighteenth and in the nineteenth centuries was an essential development for the economy of the Machine Age. This is illustrated in the section of the Thames Embankment, London, as reconstructed in 1867 (fig. 31) and includes (1) the Subway, (2) the Low-level sewer, (3) the Metropolitan District Railway, (4) the Pneumatic Railway, also the Embankment carriageway, the steamboat on the river, and the surface railway. The problem was to find ways and means of introducing this new scale into earlier urban structures. From time to time ideal plans for cities meeting the requirements of the Machine Age economy were put forward. Tony Garnier's 'Industrial City' (fig. 32) was to be built on virgin ground, and comprised (A) industrial area, (B) technical and special schools, (C) civic centre, (D) main station, (E) sanatoria, and (F) river. The MARS plan for London (fig. 33) used the linear form of urban development to achieve definition and convenience in the existing urban sprawl.



FIGURE 34



FIGURE 35



FIGURE 36

CHAPTER XII. *

The great expansion of industry and population in the nineteenth Century led to congestion in the old centres, as well as in the new industrial towns, thus often creating unhealthy and anti-social conditions in them. In the countryside, land use exploitation and agricultural neglect were becoming evident. Even the ancient social and cultural centres, such as Worcester (fig. 34), were built-over and partly industrialized. Today, by far the greater part of planning consists in the remodelling of nineteenth century developments in town and country, and in Britain this work is carried out under the comprehensive organization demanded by the Town and Country Planning Act of 1947. In a few cases, planners have been able to work on virgin territory and to introduce the most up to date ideas on the creation of environment. Two examples of twentieth century new towns are illustrated on these pages. In Welwyn Garden City, England, (fig. 35), the ideals of those concerned with the Garden City movement were partly realised in a new town and, moreover, in a new urban landscape. Later, in the nineteen thirties the growing need for some kind of physical framework that would assist the development of a good community spirit was realised in the Greenbelt Cities of the United States of America (fig. 36, Greenbelt, Maryland) ; the community and shopping centres and the schools are there the focus of the city.

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