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REVOLUTION
OF ENVIRONMENT

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REVOLUTION OF ENVIRONMENT

by

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These essays are a planner's assessment of the reactions to a mass of material which might have been supposed to lie outside his field of vision, but which Dr. Gutkind shows to be relevant to his purpose. They should stimulate the geographer to survey his material afresh, while making fellow planners aware that Geography and Economic History have something important to tell them. One of the book's central theses, the prevalence of what is termed atomization and the predominance of analysis to the neglect of synthesis, is a fundamental problem of our day.

The first part, "Towards Unification", is an exposition of this thesis in the sphere of town planning, education and international co-operation. The second part, "Growth and Planning", is a demand for the reconciliation of analysis and synthesis in the reshaping of our environment. China and Russia are selected as representative examples.

Printed in n

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PART ONE
TOWARDS UNIFICATION

My glory is to desire nothing from the greatness of my fathers. My name begins in myself. Be jealous of your honour and beware lest in your own self your name should end.

VOLTAIRE.

INTRODUCTION

At first glance the studies which follow may give an impression of incoherence. But the choice of subjects has been made deliberately in order to focus the full light from many sides on to the one problem : the revolution of environment.

In these pages we are concerned only with its physical reshaping. But this does not mean that the spiritual and intellectual forces which continually adapt men anew to changing conditions have not found an appropriate place. On the contrary, their recognition is an important feature of the book. Its scope does not permit of an exhaustive treatment of this interplay between causes and effects. But so far as possible I have tried to explain not only the visible facts but also the reasons for their origin ; not only the " What " but also the " Why ". To discard such an approach as " philosophical " and " theoretical ", as my more matter-of-fact critics have done, seems to me beside the point. Such a reproach leaves one in the company of such great men as, for instance, Leonardo da Vinci, formulated this problem in the words : " Those who take to practice without a scientific theory are like the pilot who boards a ship without a compass. Practice must always be based on a sound theory." Moreover, I am one of that minority of people who remain convinced that the matter-of-fact men were, in many cases, the foremost exponents of the development which led ultimately to the present catastrophe. No new and lasting values can be attained without insight into the deeper strata of the transformation through which we are passing. To believe is not sufficient ; it is essential to understand why something should be done, and how it can best be brought about. The " Why ", the " What ", and the " How " are interdependent. They constitute a magnetic field which attracts creative forces only if each plays its own proper part.

Mankind is facing a problem of paramount importance : how can real world unity be established ? It is not a question of altering frontiers or of extending the living space of one country or another. The world's open spaces have been taken up, and its raw materials have passed into the possession of individual states. Extension is an impossibility. The centre of gravity is

shifting from the area of Western civilisation to other parts of the world as a result of changes in the relative growth of population and of the extension of science, technology and industrialisation to countries which were hitherto mainly agricultural. Broadly speaking the peoples of the Western Civilisation seem to be in numerical decline, while those of Asia and South America are increasing. Moreover, we are moving out of the region of two-dimensional thought and action into the third dimension as a result of the conquest of the air and the consequent rapid shrinking of the world.

Are we drawing the relevant conclusions from these facts? If we are sincere, our answer will be a definite No. In spite of a spate of good intentions for the building of a better world, the forces of yesterday are again coming to the forefront. It is no mark of undue pessimism to assert that the first traces of future conflicts are already visible to-day. Should not this be an additional stimulus to concentrate with the utmost vigour on the realisation of far-reaching changes rather than to relapse into complacent modesty? But it is just such changes that those who cling to the past try to prevent by all means in their power. They believe that promises and a patchwork of minor reforms will be an adequate panacea. The treatment meted out by the American Congress to the National Resources Board is an almost symbolic warning: the Board was accused of sponsoring plans based on a philosophy "partly socialism and partly the product of a dangerous imagination". On this side of the Atlantic we have been assured by a responsible person speaking from the *sella curulis* of his high office that people want to come back to what they know and that they have no use for highbrow stuff. What *do* they know? Slums, suburban dulness, ribbon development, unemployment and insufficient social services? Is this the new world they have been fighting for? Do they really want to start again where they left off in 1939? During the "peace in our time" period it was proclaimed that appeasement would ultimately result in a world of plenty wherein, as the highest of all achievements, "trade will flow".

Even if we were to accept this over-simplification, should we really be justified in expecting that in the long run even the most elaborate trade agreements could alleviate international tensions and contribute towards a better balance of the social and economic structure of individual countries? Sooner or later all such

attempts are bound to break down, if only because of the discrepancy between social conditions and the economic and technological possibilities of the countries concerned. The visible expression of this state of affairs is the physical environment which men have to endure. Lasting international coöperation is feasible only if we reshape our environment so that it is flexible enough to absorb the impact of forces from outside. We must start at both ends, i.e. we must strike a sound balance between overcrowded districts, both in town and country, and thinly-populated regions ; we must follow up the Industrial Revolution with an agricultural revolution without repeating the disastrous mistakes of early and present-day industrialism. And we must integrate physical decentralisation with cultural, for without the latter the former will lead nowhere. An adjustment to new ways of life is inescapable ; and such a peaceful revolution is the only aim worth living for. The recent war was not fought for frontiers or for the preservation of traditional values. It calls us to the appreciation of new values, the moulding of new aspirations, the widening of loyalties and economic opportunities.

The following essays, besides being an investigation into the development of settlement in different countries, are meant to fulfil a twofold purpose. Their first object is to show the need for a flexible adaptation of environment all the world over to changing conditions, and for this end to take into account not only international links such as trade, transport and other forms of international exchange, but also the impact of these factors on the social and economic structure of individual countries and the correlation of their internal pattern of living. The second object is to demonstrate by historical surveys that we need not fear far-reaching changes, and that their pace should be deliberately and systematically quickened. Men are afraid because if the changes are too rapid they fear a disruption of social and economic activities. Such an attitude shows a lack of understanding of the true nature of the process. The question is not how to set a speed-limit to a social and economic transformation, but how to adapt all man's manifold activities simultaneously to new conditions. For instance, an even and coördinated advance in industry and agriculture is necessary in order to abolish overcrowded urban districts and thinly-populated and backward rural areas. Now economic progress without a corresponding social advance creates dangerous tensions which may eventually result

in the breakdown of human relationships. It is obviously impossible to expect that social conditions can remain static or can move at a slower pace while economic and technological changes proceed much more quickly. No one wants to preserve bad things, and everyone knows that these are bad. Yet they remain as they are. Why? Because we are too " realistic " ; instead of getting rid of our shallow belief in surface values we nurse them with an almost suicidal obstinacy. They have degenerated into empty conventions which cannot hold together the disintegrating structure of humanity. They divorce life from reality, and promote insincerity in human relationships.

The outstanding problem of the general tangle is to find a method of restoring human, that is, social values. The whole pattern of our environment needs to be reformed with this end in view. Leaving aside for the moment the advancement of intellectual and spiritual forces, there seems, in the field of physical planning, to be only one possible approach to this end : namely, to make the social units of our living and working as small as possible, to concentrate the interest of those who live and work together on a common task, and to develop their sense of quality as a counterpoise to the devastating effects of the worship of quantity. On the other hand the economic units, those for the supply of raw materials and for production, should be as large as possible. What we need is social associations on a small scale and economic integration on a large scale.

Consequently a fourfold approach is needed. Firstly, in order to promote interdependence and coöperation between the countries of the world, their internal structure should be made flexible by systematic planning, taking into account its repercussions in the social and economic fields. Secondly, the antagonism between town and country and the urban or rural crowding resulting from it should be abolished by a far-sighted adaptation of the environment. In this regard physical and cultural decentralisation and concentration are equally important. Neither should be attempted without the other, if we are to avoid degeneration of regionalism into provincialism and nationalistic narrow-mindedness. Thirdly, everything should be encouraged that helps to overcome the purely imaginary differences between races and countries and to abolish the superficial traditionalism which impedes a widening of loyalties and social and economic opportunities. Fourthly, social relationship and responsibility

should be organically developed by splitting up the shapeless agglomerations of people into small living and working units, while aiming at economic stability and efficiency by the formation of large territorial groups as component parts of an international system.

Humanity's state of mind cannot be transformed to order. But a peaceful and coördinated revolution of environment will pave the way for an independent appreciation of and sensibility to values and things in the complexity of their whole natural setting. It will help to undermine cut-to-pattern thinking and shallow conventions. It will remove the danger of believing without personal responsibility and of being lured by propaganda into allegiance to upstart dictators.

While in the dim past man perceived things without logical analysis but with emphasis on their symbolic values, as still happens to-day among peoples whose life is centred predominantly around magico-religious conceptions, we have gone to the other extreme. As the natural consequence of our own fractionalised state we see things and values first of all in isolation without appreciating their interplay. One of our most urgent needs is to develop, as it were, a human assembly-line where our divided personalities can be put together so that we are enabled to attain higher standards of appreciation and sensibility. What Hölderlin said of the Germans of one hundred and fifty years ago has an almost general significance to-day.

> It is a hard word, and yet I say it because it is the truth : I can think of no people more divided and torn than the Germans. You see artisans, but not human beings ; thinkers, but not human beings ; priests, but not human beings ; masters and servants, old and young people, but not human beings. . . . But your Germans like to stick to the most material and necessary tasks, and that is why there is amongst them so much bungling, and so little really free and joyful activity. But even that could be overlooked, if only such men were not so insensitive to all beautiful life, if only the curse of god-forsaken, unnatural life did not rest everywhere on such a people . . . Everything on earth is so imperfect, the Germans are ever complaining. If only someone would tell this god-forsaken people that things are so imperfect amongst them only because they do not leave purity uncorrupted and sacred things untouched by their coarse hands ; that nothing flourishes amongst them because they do not heed the roots of growth, of divine nature ; that amongst them life is empty and burdensome and too full of cold, mute conflict, because they scorn the spirit which infuses vigour and nobility into human activity

and serenity into suffering, and brings into cities and dwellings love and brotherhood.[1]

Man, values and things must be reintegrated, and man must reshape his environment in a spirit totally different from that of the past and present. He must do it himself: no one can relieve him of his task.

To make democracy a living reality, to make people think for themselves, to turn uniformity and mass living into stimulating diversity and individual adventure, is the essential prerequisite of a revolution of environment. Nothing less than the fulfilment of all these aspirations is enough. We must get rid of our survey-mania and of that perversion of the democratic spirit which contents itself with a self-denying reliance on " what people think " and " what people want ". They must know first of all what they can get.

In the essays which follow I am attacking, not tradition, but its abuse, and the slothfulness which lets us believe that the present and the future can be discovered in the past. I am attacking, not analysis, but its overvaluation as a panacea. I am attacking not existing " planners ", but their claim to continue their misleading work. I am attacking, not those who disagree with my ideas, but their falsification and suppression of real values, and especially their base and insincere attempts to denounce a systematic procedure, in other words planning as the curtailment of man's personal liberty. By talking of " planning man " they try to confuse the issues without admitting that man's liberty is seriously endangered by the " achievements " of a *laisser-faire* economy and " individual initiative " run amok.

The revolution of environment demands a crystal-clear formulation of our intentions. And like a crystal it has many facets which reflect in various ways and in varying degrees the spirit in which it should be carried through.

The essay on " Streets and Houses " sets forth the need for a new conception of the interrelationship of space and buildings. It tries to illustrate the permanent revolution of environment by the spirit of change and evolution striving to adapt man's living space to his aspirations as an individual and social being. In " Education for Planning " the spirit of intellectual adventure, of seeing things whole, is the guiding principle. The old type of education cannot fulfil this aim. In the essay on the " Inter-

[1] *Hyperion:* Translated by R. Peacock.

national Society" a spirit of international coöperation and understanding is the main postulate. A new environment, new men, and new ideas—these are the inseparable prerequisites of a revolution of environment.

Will our generation be far-sighted enough to usher in a new era—or will it succumb to spiritless indecision?

STREETS AND HOUSES

I

That a street should be a kind of canyon lined on both sides by uninterrupted rows of houses we take for granted. We are so used to this conception that we can think of no other possibility. But, as we are apt to forget, this has not always been so, and the great changes which are taking place in the sphere of town planning will fundamentally alter our ideas. During the last hundred and fifty years the pattern of the streets has been considered almost as the starting-point of the layout of a town. Houses were relegated to the space between the streets, which was a mere residue graciously left over by the surveyors and architects.

This development, gaining momentum from decade to decade, has led to a cult of the street as such and to utter neglect of a sensible housing policy. Yet this lop-sided valuation of the street did not produce an efficient network of traffic lanes. It was conceived and effected on a pedestrian's scale and in the spirit of the palaeotechnic age. The results are only too well known : congestion of traffic ; lost time ; road accidents ; air polluted by the smell of motor-cars ; noise ; and dull uniformity.

This primacy of streets over buildings is one of the most characteristic though detrimental features of modern town planning—if our towns can be said to have been systematically planned at all. Our fatal modesty and slothfulness has prevented a true understanding of the slow but irretrievable change in our attitude towards life, of the new requirements of housing and recreation, and of how far-reaching were the means at our disposal for the realisation of these long apparent trends. So long as houses are stuck on to a rigid pattern of streets unimaginatively designed on the drawing-board, it will be impossible to comply with even the most elementary principles which should govern the planning of our towns.

In this essay I propose to show that the revolution in town planning which we are witnessing to-day finds one of its most characteristic expressions in the changing relationship between streets and houses. This change leads away from a rigid agglutination towards a breaking up of the space walled in by the streets

and a loosening of the arrangement of houses. It will result in giving our towns an entirely different appearance. It will create in our living and working places a new and stimulating atmosphere. It will bring green life close to them both, and will free streets and houses alike from outworn methods of traffic organisation and town planning.

It is particularly necessary in our time, when streets and their relation to buildings have been so misunderstood, to reinstate both as efficient elements in the changing structure of our towns. Each serves a different purpose. The function of a street is to allow traffic to move along it : the function of a building is to provide a stationary home or working-place. Consequently, to achieve its maximum effect, each must follow different laws. The existing relationship between streets and houses must be replaced by another. Before we describe this new structure a survey will help to clarify the problem and to remove the misconceptions of the last century.

We will begin with the settlements of *African* tribes in their original form, uninfluenced by the impact of other civilisations. What principles underlie their layout? Magical and animistic forces are the framework within which their social and economic forms develop. The structure of the settlement is conditioned mainly by the ties of family, clan and tribe. It is a world where the place of technology is occupied by sorcery and magic, and "rational" explanations are found in the magical connection of the ego with the outer world. These forces produce a cultural structure of a denseness and complexity which we can hardly imagine. Change, in such a world, means the destruction of the interdependence of the individual and his surroundings, and the disintegration of the social and economic pattern which has developed out of that interdependence. Life is rooted in Nature in a direct and concrete way. Abstract speculations do not guide the thoughts and actions of the Negro—at any rate not in our sense. Reality is immediate and concrete. The scepticism which can rise from the mere perception of things to appreciation of their potentialities is lacking. The whole inorganic world remains a secret, whereas the organic forces of Nature are taken as unchangeable. Man can animate Nature; he cannot dominate and change it.

This attitude leads to rational achievements such as the functional and subtly constructed pile-dwellings and the villages of the Central Congo. It accepts Nature, as it were, as part of

itself. It is precisely this organic attachment to Nature which leaves its mark on all the works of the Negro and gives them the character of sculpture. It is not surprising, therefore, that his art finds its best expression in sculpture and that all his architectural works are conceived in the same spirit. A feeling of space as we understand it is lacking. It is for this reason that he has never made any attempt to use space itself as a " building material "—to create buildings in which the spatial relations seem almost to spiritualise the material shell as in a Gothic cathedral or the Piazza di San Pietro.

The feeling which determines the conception and the form of African buildings can better be compared to that of a cave-dweller seeking all-round security against the impact of the unknown forces of the outer world. In principle they are almost all one-roomed. The interior is compact, generally without any partitions, always one-storeyed, and with a low and narrow door as its only opening. It is a static space without dynamic space-relations. These tendencies are most clearly expressed in the beehive huts and in those with a conical roof on a cylindrical body. These round huts resemble natural landscape forms.

A comparison may show how strongly this feeling for form permeates the works of man. The Greek temple is also a sculpture without interior space in the architectural sense. It has been modelled from outside exactly like a sculpture, with some of its parts standing back and others projecting. A beehive hut is still nearer to the elementary type. The interior and exterior shape are the same ; nothing has been taken away or added. Both buildings are sculptures in the landscape, the one with a subtle and diversified relief, the other plain and even.

The Negro sense for plastic art also gives his settlements their outspoken character. Whether the huts are in a cluster or in one or several rows, the prevailing impression is that of a number of sculptures standing side by side without any such interrelationship as results among us in groupings, squares, streets or other spatial values. Even if there is a square in the centre, it is not so much an architectural space as a part of the soil left over between the huts. This holds good both for regular and for irregular settlements. The street is a mere inter-space ; the primary element is the houses, even if it is the streets that are traced first.

A few examples follow.

The Baluba inhabit an area in the Belgian Congo between the Kassai and Lualaba rivers. When a new village is laid out

the chief traces on the ground the plan of his house and its dependencies. Then he traces with his foot the lines of the principal street, perpendicular to the axis of his court. The other streets are then traced, parallel with the principal one. The arrangement of the houses, however, is rather unsystematic and independent of this clear street pattern. The natives are primarily interested in the general plan of their village and especially in

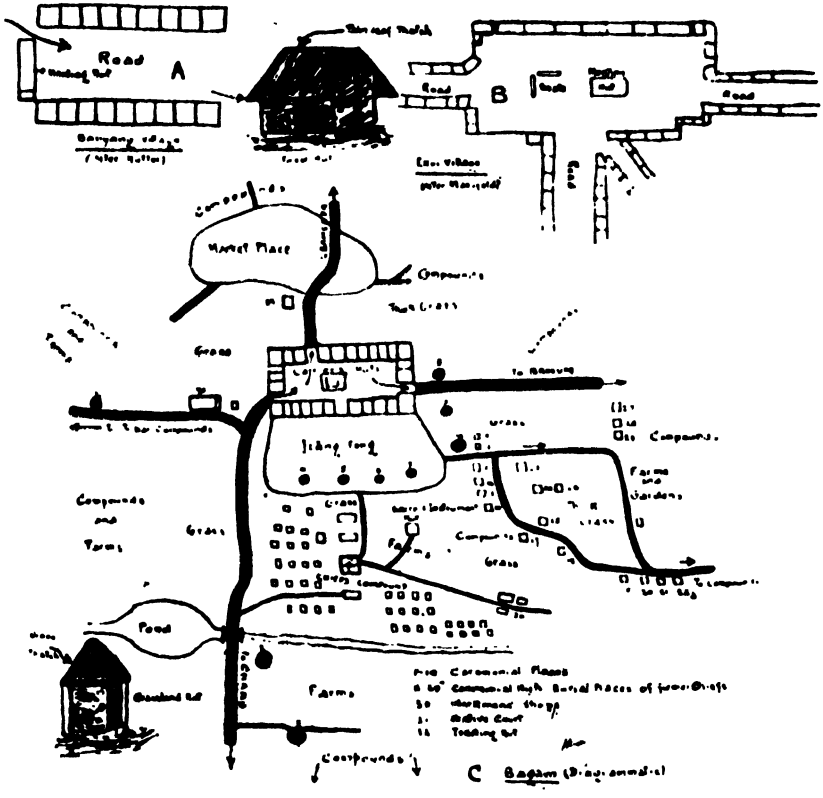


Fig. 1. Forest and Grassland Types of Village in the Cameroon

the relation of their own houses to the whole community.[1] The layout is the direct result of the social structure. The seat of the chief and his family occupies the end of the main street. Nearest to it are the huts of the elders who take part in the government. Then follow the houses of the lesser dignitaries, while the people and the village aristocracy inhabit both sides of the village street,

[1] R. P. Colle: *Les Baluba.*

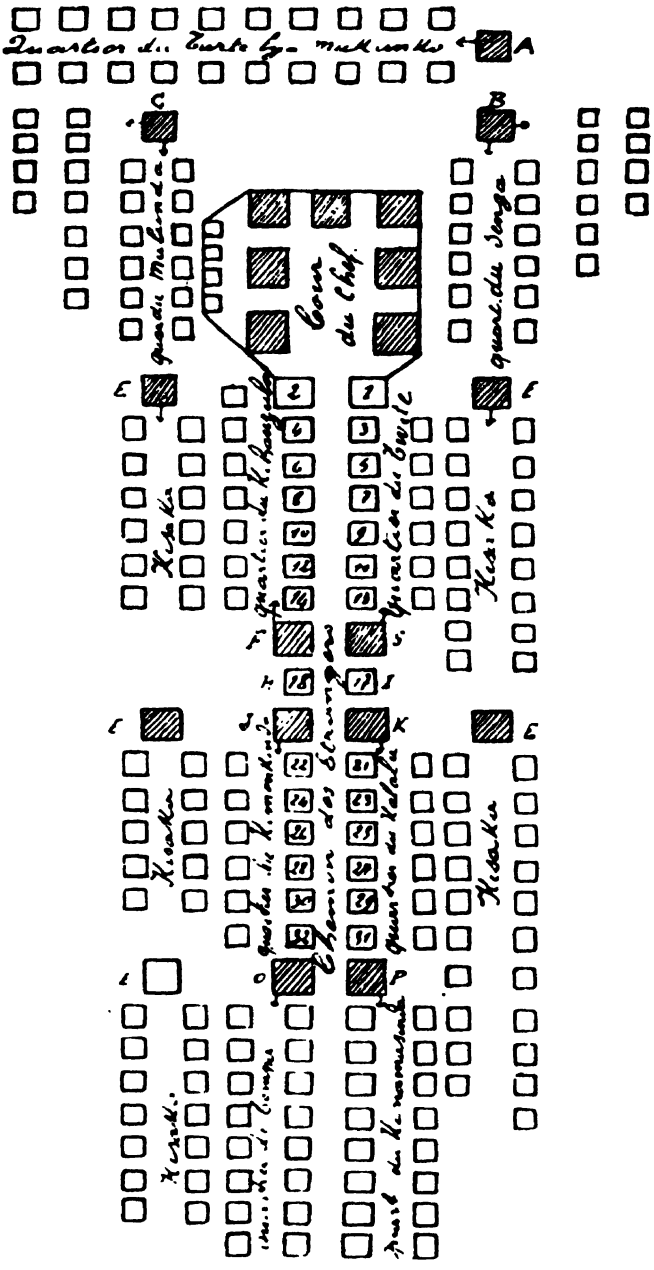


Fig. 2. A Village of the Baluba

grouped according to districts. The slaves live outside the village. Sociologically it is a feudal structure which is expressed in the plan of the settlement.

The villages of the Baholoholo on the western shore of Lake Tanganyika have also a very systematic plan. A double row of houses surrounds a rectangle in the centre of which stands the assembly hall and at one end the chief's compound. The huts run in rows from north to south in order to prevent the midday

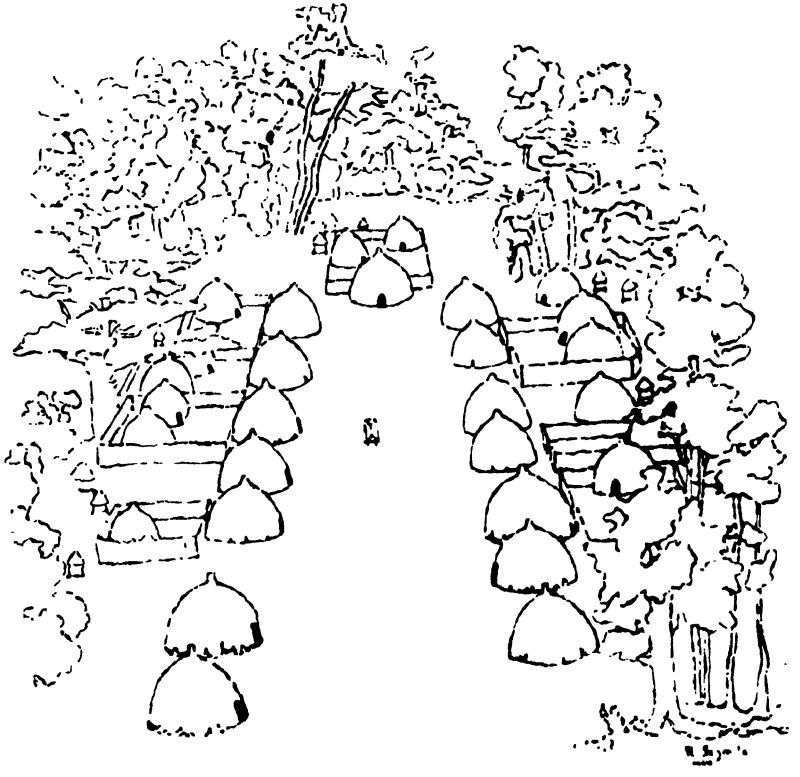


Fig. 3. A Village of the Baholoholo

sun from shining into their interiors. If the population of the village increases, one or two rows of houses are added parallel to those already existing. Behind the huts are the enclosures for the women.[1]

We will give yet another example : the town of Bida in the kingdom of Nupe in Nigeria.

[1] R. Schmitz : *Les Baholoholo.*

House follows house, as we walk along the road, side-streets branch off, winding between the compounds, a maze of small streets and paths, which are often just wide enough for a man on horseback to pass through. Here and there the walls recede and give room to an open square with a few trees, a little grass or a patch of cultivated ground where goats and sheep graze, children play, and a few men, sitting in the shade, enjoy the hours of leisure.[1]

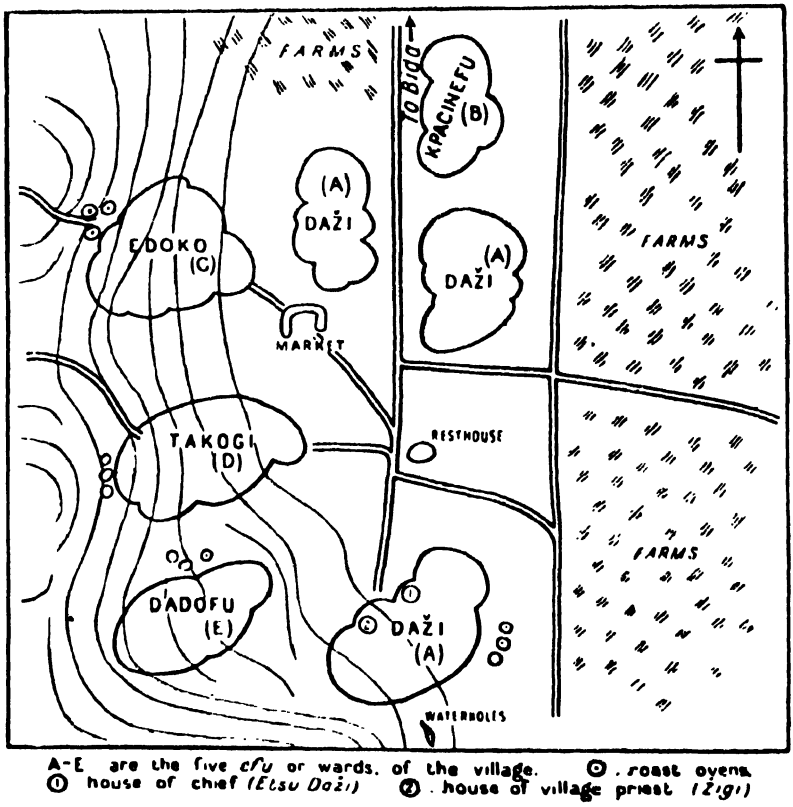


Fig. 4. Sketch-map of Doko

These few examples must suffice. They will help, however, to indicate the main principles which govern the relationship between houses and streets in the indigenous settlements of Africa. The fact that hut and room are identical—the hut has only one room—influences the layout of the whole settlement. The number of huts corresponds to the number of rooms, and the grouping together of these small elements—each serving a

[1] S. F. Nadel: *A Black Byzantium: The Kingdom of Nupe in Nigeria.*

different purpose, e.g. cooking, storage, the use of the male and female members—determines the functional structure of the village. The houses are the primary factor of the plan, and their arrangement is dictated by a strict social order and by the form of the economic activities of the community as a whole. The streets are mere intersections between the groups of houses, separating them rather than linking them together. They are a kind of no-man's-land.

In spite of the great differences, similarity of functions and of geographical conditions produces the same results in the type of the general layout as in Europe. Strong political organisation in areas where clearings are to be made leads to a rectangular type with parallel rows of houses and the seat of the leader in Europe and the chief in Africa at one end of the settlement (Congo villages and colonial settlements of the Franks in Central Europe). Pastoral activity results in a circular plan (cattle kraal and European ring fence village). Agriculture may lead either to isolated farmsteads situated in the middle of their fields (Azanda villages and Westphalian farms), or to loosely or compactly clustered villages (Angola and England), or to a layout focussed on a square (Tikar villages in the Cameroons and villages in France), or to settlements along a river (Congo and Holland), or to a hillside location where protection against attacks is the dominant factor (villages of the Nuba tribe and villages in the mountainous parts of Italy) and so on. The indigenous settlements of Africa are among the most outstanding examples of the primary importance of the dwellings and their decisive influence on the street plan.

Mohammedan towns developed mainly either through the influence of agriculture or as nodal points of lines of communication. In the former case they have all the main characteristics of an oasis town ; in the latter they are in the first instance market towns. However, there are many examples where both factors coincide. Oases are the natural place for the population to congregate and find protection against attacks from hostile neighbours and the inclemency of the desert. Nature and the need of protection combine to produce a concentration of population with all the consequent drawbacks. The towns are not communities in our sense, nor is there anything like an influential guild system as an administrative nucleus which would create a corporate unity. Islam never lost its characteristic social structure ; it remained for a long period the religion of a conquering

army organised in tribes and clans. The ties of these groups extend beyond the towns, and therefore do not contribute to their unification as communities. Rather is a tendency discernible towards the formation of groups such as are represented by the different quarters of the town or by unions of craftsmen.

The plan of the towns is not based on a systematically developed street pattern. In general they are divided into business and residential quarters, and others which have their origin in religious and family bonds. On the surface Islam is a common-sense religion, eminently in accordance with the demands of daily life, but in its deeper layers magical and fanciful

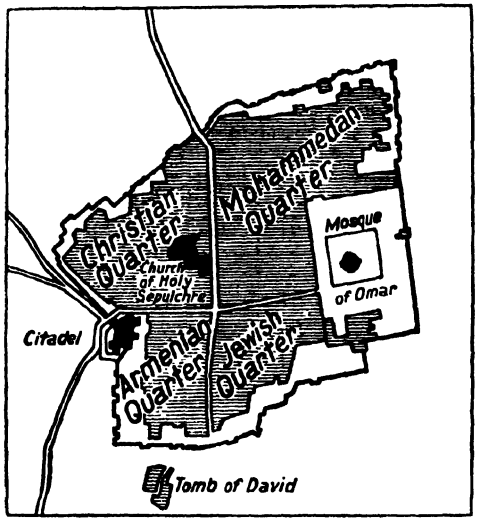


Fig. 5. Plan of Jerusalem

forces are active which only too often make its rational tendencies illusory. Islam rejects the representation of the human figure. Its artistic creativeness finds its most fruitful field in decorative ornament of an inextricably intertwined and ever-renewed multiplicity and in a literature of profuse fantasy and picturesque description of events. These same features also dominate the plan of the Islamic towns with their maze of narrow, winding lanes irregularly intersected by squares or square-like broadenings. Seen from the air, it would seem almost as though the web of streets had been embossed like an ornament in the coherent mass of the houses. Neither town nor houses are "extravert"; everything has an "introvert" character. Hence the beautiful

inner courtyards and the plain outer walls of the houses with only the most indispensable openings. The streets are of secondary importance. Their first function is to give access to the houses, and only then do they become lines of communication ; even the arterial streets are narrow and curved. An Islamic town is a

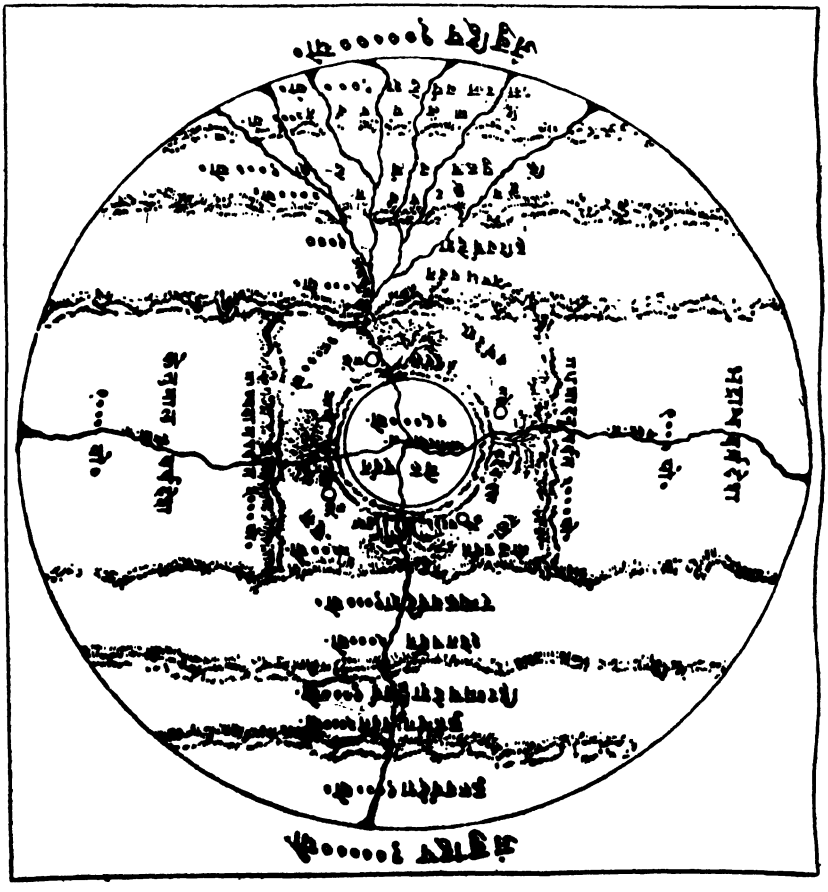


Fig. 6. The Jambudvipa

grandiose protest against the conditions imposed by nature, whether it be Toledo, which seems forcibly pressed down on the rocky hill around which the Tagus flows, or any oasis town. The general appearance of an Islamic town is always more or less aggressive, even ruthless. But it is these very features which give it also its vitality and its reality. The main elements are the cell of the house, the centre of the bazaar and the spiritual focus of the

mosque. This trinity determines the town's structure and plan. The streets are often directly orientated towards the bazaar ; even the blind alleys open only to this side, hardly ever in the opposite direction.

The old towns of *India* are deliberately limited in size. They reflect the ground-plan of the world as devised by the Jainas, a religious group of North India related to the Buddhists. The innermost circle is occupied by the Earth, which is surrounded

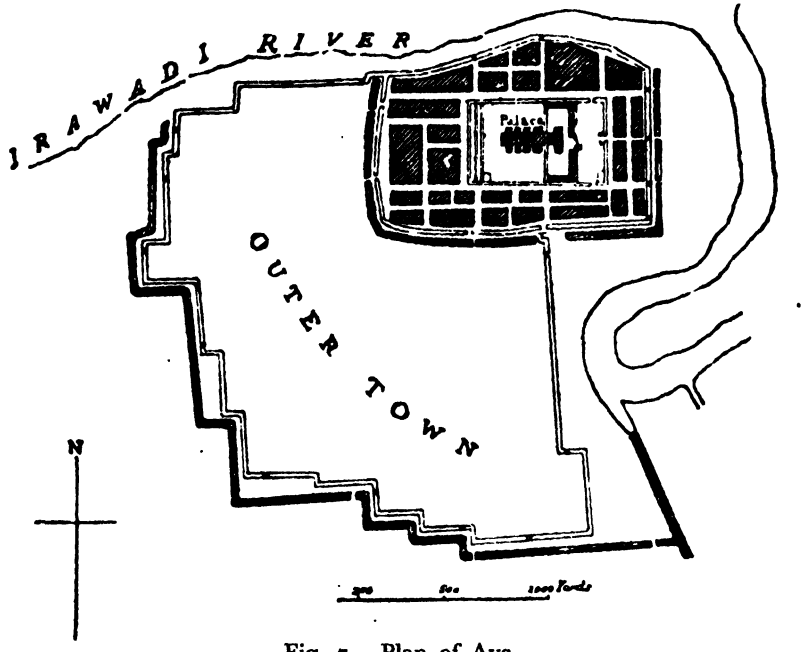


Fig. 7. Plan of Ava

by a circular ocean. In the centre rises Meru, the world mountain, from which issue four rivers separating four continents. Beyond the circular ocean is another circular continent with its mountain, followed by another ocean and another continent. The bounding of the town by a wall, the situation of the temple or the palace in the centre, the principle of walled-in quarters, the symbolism of figures, as seen for instance in the number of gates (twelve gates corresponding to the twelve signs of the Zodiac), the symbolism of colours—all these factors are a direct transposition of the world-concept into architecture even though the towns are mostly rectangular, and only very occasionally, as in the case of the old town of Crikshatra in Burma, circular.

According to old Indian ideas cosmic forces govern the life of every individual. Consequently towns and houses must be built in accordance with these influences. Religious, magical and geomantic considerations therefore play an important part. E. B. Havell gives us a translation of some relevant passages from the *Essay on the Architecture of the Hindus* by Ram Râz, published in 1834.

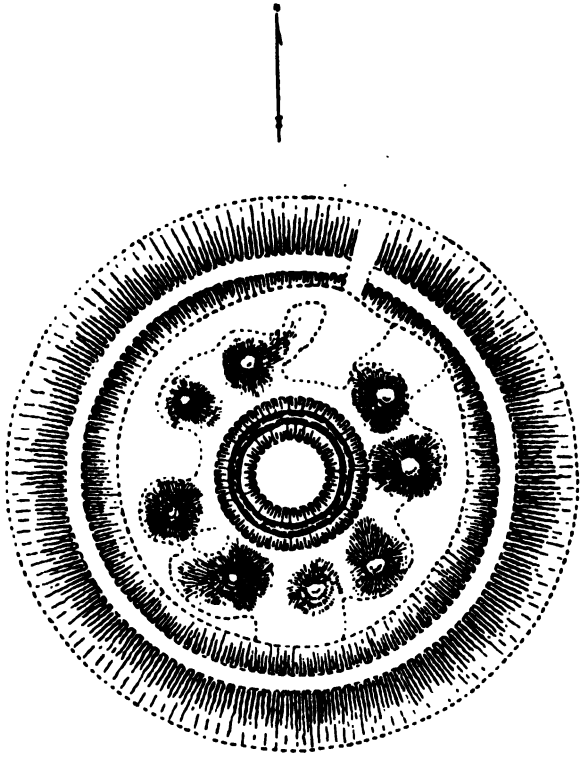


Fig. 8. Circular Site at Nuvarakale, Ceylon

The true position of the cardinal points having been carefully asserted by means of the shadow of a gnomon, rules for the construction of which are given in the Silpaśâstras, the alignment of the main street of the village was marked out. The general plan of the larger villages followed that of the cosmic cross and the so-called magic square representing the four quarters of the universe ; but the reader must not misunderstand this association of mysticism with the practical business of the Indian craftsman. All art in ancient India was held to be magic, and the magic virtues of these figures simply lay in the fact that the experience of many generations had proved that they were best for purposes of defence and gave the

most healthy, pleasant and practical layout for an Indian village or town. The easterly axis of the plan ensured that principal streets were purified by the rays of the sun sweeping through them from morning till evening; while the intersection of main streets by shorter ones running north and south provided a perfect circulation of air and the utmost benefit of the cool breezes. . . . In the case of a temple city there were four streets round the temple where the priests and other servants of the temple were accommodated. . . . In the case of a palace the ministers, the advisers, the soldiers guarding the palace, the rich merchants, and the Brahmins were housed in streets planned round the palace.

The layout of the streets especially was dictated by a magical symbolism which combined long experience with intuition, leading in the end to very practical results.

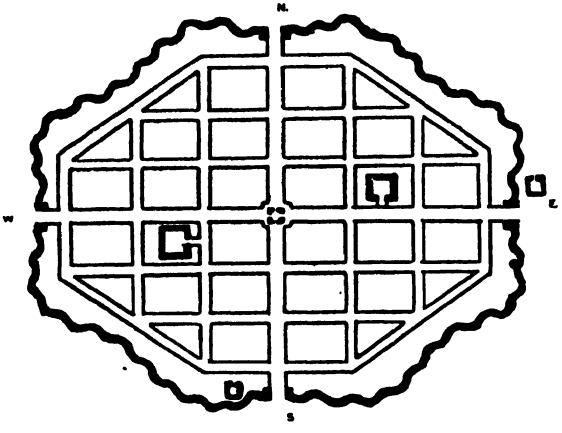


Fig. 9. Village after Ram Râz
The so-called Padmâka (like a lotus-leaf)

There should, according to Kautilya, be three ring streets running east and west, and three north and south, consequently twelve gates, three to each side. In Ceylon the streets run generally north and south, east and west, but not with anything like mathematical accuracy. Kurunagala in the fourteenth century had four main streets, according to the " Kurunagala Wistaraya ". Since the four streets of the city were made like a lotus flower taken in the hand it is evident those streets radiated from a centre; and since the Brahman's was to the west, Sand street to the east, the street of the Gods to the south, and the Great street to the north it is evident they were arms of a cross pointing to the four quarters. Corresponding to the four gates were four suburbs: the Indian term is " Gate Villages ".[1]

[1] *Ceylon Journal of Science*, 1924–8. Section G. Archæology.

On the other hand purely practical considerations are not neglected.

The plan called Padmâka, after the Lotus leaf, is interesting as showing how sedulously Indian town planners avoided the inauspicious layout in which the main streets run upon diagonal lines in the direction of the intermediate points of the compass, the objections to which are not merely sentimental. A plan with streets radiating in all directions from the centre of the village, like spokes of a wheel, would be the first to suggest itself to an Indian designer on account of its symbolism. He avoided it for practical reasons. First, that it was bad for purposes of defence as it gave an enemy many opportunities of establishing himself in the centre of the village by a sudden raid. Secondly, that it tended to the congestion of the traffic and an uncomfortable plan of house and garden especially in the middle of the village. Thirdly, that the streets would mostly run in the wrong direction for the sun.[1]

The orientation of the houses nevertheless exerts a decisive influence on the layout of the streets. Regarding the importance of the individual house and its place in the plan of the town Ram Râz states : "Just as the village cottage or village hut formed the unit of house-planning, so the village plan was the unit used to form the mahalla, or ward, in town planning." G. P. V. Ayyar [2] remarks on the symbolism of the houses :

The dwelling-house is constructed on the model of the human body. It must have a doorway and a trellis-work in the wall in the east, and corresponding to the eyes of man two niches in the wall . . . , the windows correspond to the nasal cavities . . . , the central courtyard is in the nature of a big lung for the house. It would appear that consciously or unconsciously the conception derived from an acquaintance with the fleshy frame which is the house of the embodied soul has been given a form and a visible representation in the construction of a house, a palace, a temple, and a city. Thus the art of constructing a house does no more than carry farther a process that Nature has already begun.

Geomanty and religion play also a very essential part in the foundation and building of the old towns of *China*. The walls are the most sacred part of the town. They are its cathedral, as it were, the pride of its inhabitants and the symbol of its importance and size. They are erected first and in many cases they also last longer than all other works, surviving generation after generation. Compared to them the other buildings are almost meaningless and are much more short-lived. The town is conceived as a whole from the very beginning, and the space

[1] Ram Râz : *Ibid.* [2] *Town Planning in Ancient Dekhan* (1916).

created by the enclosure of the walls is filled only gradually with the houses and official buildings. The walls indicate the standing of the overlord and his town. The Altar of the Earth stands on a small elevation and is square in form. The Earth itself is conceived as a square, so the town should have the same shape. As time goes by, the town, as distinct from the castle, the palace of the overlord of early times, gains a more pronounced character of its own. It ceases to be a mere appendix to the palace. Not unlike the army in its organisation, the town is divided into districts and quarters. The parallel to the Roman camp is evident—clear organisation, clear planning dominated by a single will—or to the fortress-town of the Renaissance with the *piazza d'armi* in the centre. This is especially prominent if a drum tower is erected where the four main streets meet, and if there is " a large fortified four-way gateway which is built over the cross roads so that in times of strife or disorder each street can be isolated from the others." [1]

In the ideal layout according to ritual laws the palace is situated right in the centre of the town. It is surrounded by walls, and forms a town within the town. Every building in the palace compound has its definite place. The residences of the nobles repeat in miniature the arrangement of the prince's palace, and are little towns each surrounded by its own walls. Within these little towns are the compounds of the individual families, each again surrounded by its wall, and repeating all the essential elements of the palace and the residences of the nobles. The whole forms a system consisting of numerous elements encompassed one by the other and all orientated towards the palace. It is perhaps the only architectural work whose actual execution corresponds almost entirely with the ideal conception in all its purity. This is a great contrast to the ideal cities of the Renaissance, which were merely designed on paper. The origin of the Chinese town goes back to a time when life, religion, building and housing still formed a single whole, and religious rites were a reality. The ideal city of the Renaissance, on the other hand, developed out of a programme consisting first of all of practical considerations and æsthetic theories of architecture incapable of standing up to the dynamics of life. Peking still stands as a symbol of the Chinese town *par excellence* ; Palma Nova and Gran Michele still stand also, but no one except a few art historians knows of them. And compared with the old towns of China the

[1] C. P. Fitzgerald : *China.*

towns of the European Middle Ages seem insignificant and small. Their walls are puny in contrast with those of China. Their layout, even if systematic in conception, cannot compete with the grander examples of China. The European town is the result of rational and economic forces and of a social structure which led in the end to a dividing-up of the community. That is why every European town has carried within it from its beginning the germ of disintegration which has ended to-day in a complete lack of order and unity. Out of the fraternities and guilds of Europe grows the spirit of the middle-class entrepreneur and the urban *community*. Out of the rites of common brotherhood in early China develops neither a feeling of community nor an autonomous local government. The towns of China are not homes of freedom like the urban communities of Europe. They are the seats of the representatives of the Central Government of the Emperor, and as such they remain non-autonomous. The welfare of a Chinese town depends less on the initiative of its inhabitants than on the efficiency of the imperial administration.

The layout of a Chinese town is developed from the periphery inwards : it does not grow outward from the inside. The gates, therefore, are important ; and all information about them is valuable, as it reveals the system of the main streets which lead from one gate to another. The south gate is regarded as especially sacred. The north gates usually remain closed, for the north is believed to be full of danger. The main streets form a clear pattern, while the secondary streets within this primary rectangular network are seemingly without system, although they also cross each other at right angles. The reason for their layout is not intelligible at the first glance. The houses are the primary element, and the streets are subordinated to their arrangement. Magical considerations play an important part in this respect also. The streets are not curved, but are if necessary bent at right angles. The lanes are often cul-de-sacs. The fact that the entrances to the houses face the south whenever possible is one of the reasons why the layout of the streets appears to be unsystematic and maze-like. In some cases the main streets are orientated in relation to the government building, the *yamen* ; they lead directly towards it or pass it on either side.

China is perhaps the only country which was capable of finding an almost final solution of the problem of the relation of house and street. The towns of China—the original, not the Europeanised ones—combine systematic planning in their main

principles with great variety of detail. The framework of the main streets and of the walls guarantees all the advantages which arise from conceiving the town as an integrated whole. It helps to avoid the mistake of laying too much emphasis on detail. The

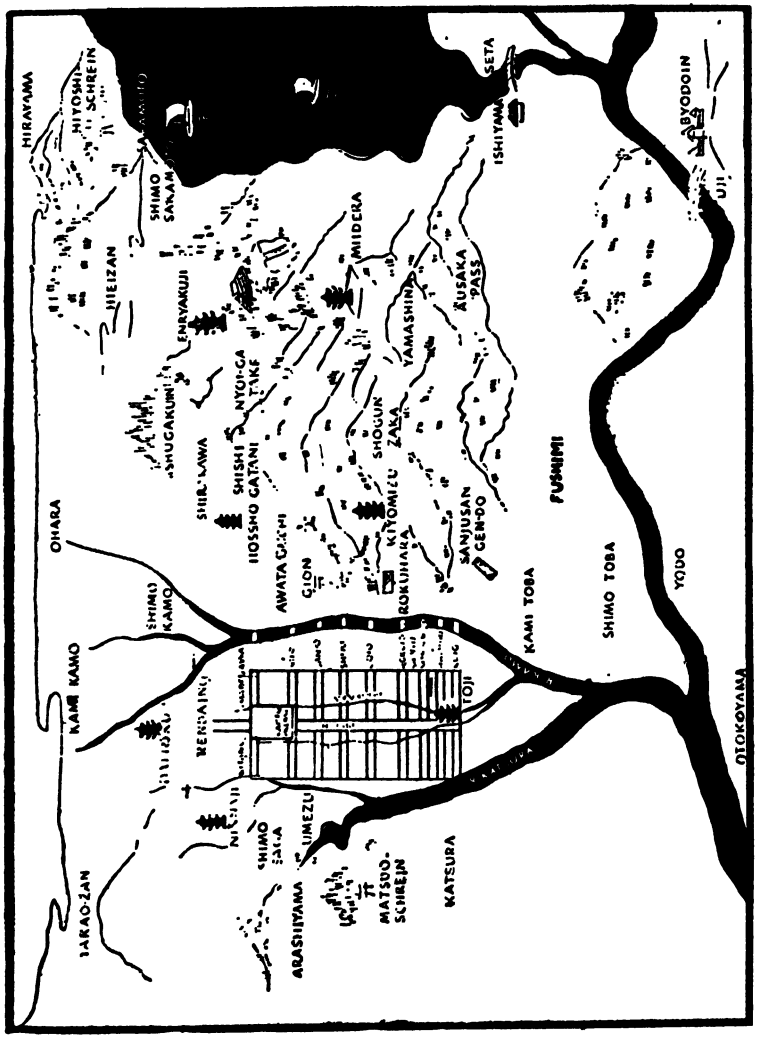


Fig. 10. Plan of Old Kyoto

houses are not a mere by-product of the street-pattern. They are more important than unimaginative adherence to a rigid plan.

Although China influenced the planning of *Japanese* towns—Nara and Old Kyoto are copies of towns of the T'ang dynasty—

there is one fundamental difference: Japanese towns have no walls. The foundation of numerous settlements of an urban character during the feudal period proceeded on different lines. Around the castles of the Daimyos developed open settlements of their retainers, the Samurai, professional soldiers. Their houses together with the castle were the nucleus around which the peasants erected their homesteads, forming a kind of living wall as a protection for their lord. These settlements were the origin of most Japanese towns. The tendency towards standardisation so characteristic of Japanese civilisation is expressed in the house and its standardised size and elements. This makes it possible to decide the size of a whole town from the number of its houses. As the one-family house is the most common type, the towns would be enormously large were not the houses small. An indirect consequence of this standardisation is that it is not the streets but the blocks of houses themselves or whole quarters which serve as means of orientation. The streets are more or less passive inter-spaces with no special significance. They cross each other almost always at right angles; they run mostly from north to south and from east to west, thus producing a chequer-board pattern. In general there is more rigidity in the street system of the Japanese than of the Chinese towns. The grandeur of China is missing and the greater standardisation of the house makes it more liable to a certain subordination to the street. But the house itself is one of the most beautiful products of domestic architecture. It is generally orientated towards the south, and house and garden are intimately related to each other. Many windows and doors open out on to even the smallest garden space. In spite of the not very imaginative general layout, the house remains the primary element in the planning of the town.

The Greek *polis* was limited both in size and character. It was the reflection of the tendency to develop a balanced social structure within definite boundaries and to fix its scale in general and in detail by man's own standards. Aristotle demands that the *polis* should house " the largest number which suffices for the purposes of life and can be taken in at a single view ". Hardly anything helps to clarify the true meaning of these ideas and to deepen the understanding of the forces underlying the architectural conception and execution more than the parallel which can be drawn from Greek music. This shows the same formal elements as the *polis*. The melodic movement goes from above

downwards, from tension to repose, is in contrast to our modern movements, which mostly follow the opposite principle, from below upwards. This means that a state of balance is aimed at—just as in the *polis*. And the same also holds good for the octave, which the Greeks regard as the most perfect consonance, although it is composed of two tetrachords, *i.e.* two groups of four notes. It is merely the internal arrangement of the tones and semitones within these tetrachords which gives Greek music its impressiveness. The scale is limited by a definite subdivision. This tension corresponds in detail to the inter-relationship of the public buildings and to the mass of the private houses ; and the feeling of repose produced by the melody and by the confines of the octave resembles the limited size of the *polis*. There is no polyphony, but only the simple melody, with its subtle rhythm and self-evolving tension. This is parallel with the focussing of the *polis* on *agora* and temple, which prevents a diffusion of the unity through too great a variety of architectural keynotes. It parallels also the integration of the individual and the community which prevents a disintegration of the social structure. In Greek music instruments are a mere accessory to the voice, as the concord of words and tones is its final aim. Each syllable corresponds to one note. In every sphere the same tendency towards simplicity and transparency, towards concreteness and directness, is apparent. It is like the *polis* ; it should " be taken in at a single view ", be immediately sensed and conform to the human scale. By restricted choice of instruments, of rhythm and of key the composer is confined to a limited number of definite effects ; personal emotion is thus restrained in favour of what is super-personal and generally acceptable.

The result is that the *polis* did not grow without restriction. If the population exceeded a certain number a new *polis* was founded. This idea of limitation dominates Greek town planning to such a degree that, to give only one example, Syracuse at the time of its greatest extension consisted of five different " towns " each surrounded by its own wall. Strabo calls it Pentapolis. A very sound idea lay at the root of this principle : that of decentralisation through the founding of new towns either near to the old site or as more distant colonies. This was especially evident in the colonial countries. First, for instance, Kyme was founded ; then when it reached what was considered an appropriate size, Puteoli was laid out a mile away ; then the first Neapolis in the same direction ; and when this also reached

its limit a new Neapolis sprang up in the immediate neighbourhood, so that the earlier Newtown became Palaeopolis.

The *polis* developed in opposition to the countryside, but unlike the mediæval town of Continental Europe this antagonism was not expressed in surrounding walls. Only later was such protection added. The *polis* was a kind of contraction of the State; the mediæval town, on the other hand, seems to be cut out of the surrounding country. In the *polis* life went on mostly outside the house. In the mediæval town the house is the home of the burgher; men gather there for special purposes. The houses of the *polis* jostled each other; there were no gardens, or only interior ones, within the precincts of the houses. The town of the early Middle Ages is a garden city; and the private garden is an effective instrument of segregation and a promoter of privacy. The continuous colonnades of the Greek *polis* were the embodiment of the community life. Originally "agora" means "assembly", and later "assembly-place", but not "market-place." The market-place of a mediæval town is first of all a space for a definite economic purpose which is in many cases the *raison d'être* of the town. Out of the club-life of the Greeks developed the spirit of the City-State; out of the narrow sphere of the guilds grows the spirit of the parochial burgher. Up to the time of Alexander the Great the *polis* was a coastal town, only one day's journey distant from the sea. Consequently the Mediterranean was the field of extension of the *polis*. The typical mediæval town is, except in a few cases, an inland town, and may expand either through its own enlargement or by gaining a territorial hegemony over its hinterland. It is for these reasons that the surrounding territory belonged to the *polis* as an integral part of it, whereas the mediæval town forms a kind of association with its hinterland within the territory of the State.

It is irrelevant to argue whether the regular preceded the irregular town plan or the reverse. As everywhere, we find both types side by side; but gradually the chequerboard layout gained the upper hand. It is especially connected with the name of Hippodamos; but it is very doubtful whether he was the first to apply this principle systematically. In contrast to the Roman town which is surrounded by walls from the very beginning—the sacred rite of marking out the area by outlining the circumvallation with a plough is well known—the walls were not the primary elements of the *polis*. The limitation of its size rested

on the idea that life itself should flow within a well-balanced orbit. For the Romans this idea was not sufficient as an integrating force. They organised this spiritual factor, as it were, in order to make it actually visible and to exert a concrete influence on the inhabitants. Therefore we find within the outer walls the distinct cross of the main streets. To the Romans

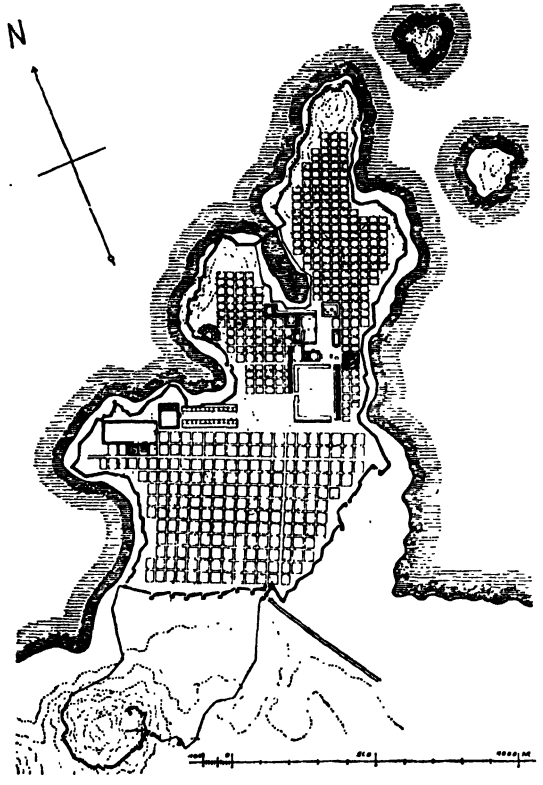


Fig. 11. Plan of Miletus. Reconstruction by Gerkan

organisation meant everything, while to the Greeks instinctive empathy was the driving power out of which their specific " realism " developed.

If we take this characteristic difference into account, it is easier to understand the principles underlying the Greek chequerboard plan. It is an assemblage of individual elements, of block units. The Greek chequerboard plan is essentially not a net of streets like that of the Romans, where the ground-pattern of streets crossing each other at right angles is the primary factor

and the built-up blocks may be compared to a mere residue whose shape and size are determined by the rigid layout of the street ribbons. Miletus, which is said to owe its layout to Hippodamos, had no main axis. The public buildings were not organically related to the plan as a whole. The number of block units could be increased *ad libitum* by external addition ; though this would not produce an organic growth of the town from within. However, this was not done ; the idea of the *polis* forbade it. When in the later periods a wall was built, it was a protection rather than a means of limitation. Just as expansion in general proceeded by the repetition of the " *polis* " leading to the foundation of new towns, so in detail the " block unit " was the element of planning. Repetition and imitation occurred because thinking in abstract space relations was not yet a matter of course. The mere addition of adjacent units was, therefore, the appropriate solution of architectural problems. The child puts his little bricks together to build a toy town without attaching any meaning to the space between them. The Greek temple stands in the landscape like a sculpture ; it is not the expression of a feeling of space. Likewise the situation of the block units is conceived in the spirit of a sculptor. The streets as space do not exist ; they are not a spatial element of any significance. Quite different is the Roman attitude, symbolised by the Pantheon. The interior surrounded by a shell is the essential ; and so it was with the streets of a Roman town. The first step in the development of a town was the layout of the streets, i.e. of the space between the built-up blocks. As Laotse said : It is on the spaces where there is nothing that the utility of the house depends. Thus Greek sculpture stands in contrast to Roman space. Sculpture needs no " limitation " ; it is limited in itself. Space needs limitation in order to be functionally effective. Sculptures can be put side by side. Space can be subdivided and limited.

After the steam-roller of the Great Migrations had laid the visible remnants of the civilisation of the Roman Empire in ruins and the development of agriculture had again reached a more complex stage, the first signs of urban life reappeared, and with them the burgher of the *Middle Ages*. His life was carried on within the limited living-space of his town, which he created in opposition to and with almost revolutionary determination against the peasants and feudal lords. He was able to achieve this end successfully because to his new creation, the town, he confined his spiritual and practical activities. He adapted its

social and economic structure to this limited sphere ; and out of this self-restraint grew the unerring conviction that his town was the centre on which everything was focussed. In this he was the direct successor of the inhabitant of the *polis*. His conception of the world hardly differed from that of Aristotle. For him too the Earth was the centre of the universe, which he conceived as a gigantic sphere enclosing it. Yet the self-reliance of the Greeks and their positive attitude towards life had given place to a profound diffidence. Mediæval man was faced with perplexities which threatened to undermine the unity of his religious faith with his practical life. These disruptive forces drove him into fraternal association with his fellow-citizens in the hope of finding mental and spiritual balance and a lessening of individual responsibility by allegiance to organised groups within the town. He needed the visible limitation of his community by a wall, which was above all the expression of this mental attitude. He needed the human scale as yardstick for the extension of his town —the mediaeval town is a town of pedestrians ; and within this external protecting shell he needed the internal shells of the guild and family. He needed the Church, but he placed beside it administrative buildings, the town hall and the guild halls.

For a considerable time within the towns north of the Alps numerous open spaces were left for agriculture and horticulture, and both here and in Italy the inhabitants owned land outside the walls. In the beginning the towns were to a certain degree self-supporting. However, this grew less true as time went by. The growing importance of the towns was the direct outcome of a well-balanced social structure which alone enabled them to fulfil their tasks efficiently. Not only was the population moderate but its composition corresponded most advantageously to their main purpose, that of being the active agents of a new economic order. While the inhabitant of the *polis* has been described as a *zoön politikon*, his mediæval successor may be called a *zoön oikonomikon*. The structure of the town eliminated all that did not belong to it ; it used everything that was needed ; and it was stratified within itself in such a way that it could live and let live, and its citizens could rely on a decent income. Social and economic differences were relatively small, as a result of the limited size of the towns and of the ties between the individual and his professional group. Like the *polis*, the mediæval town did not grow beyond a certain size, and extensions took place only in later periods and under strong pressure of population.

As in Greece this limitation often led to the foundation of new towns.

Man as an individual was more important in the town than in the country; he was a voluntary and free member of urban society. It is this freedom, which did not exist for the peasants, that made the towns at once powerful, rational and attractive. They were places where organised and skilled workmanship was carried on on a religious and ethical basis. The development of mediæval towns is part of the historic change which leads from time to time to a wide decentralisation of the population over a large area or to its concentration in a restricted number of places, depriving the countryside of many of its people and thus retarding its population growth.

Owing to inadequate communications the towns were somewhat isolated from each other. In most cases the distance between two neighbouring towns could be covered by foot in both directions in one day. This again gave each inhabitant a feeling of security within his own walls. The mediæval town was small. "It can be taken in in one view." The middle-sized town of Central Europe did not cover an average area of more than 125 acres, while small towns covered only 10 to 25 acres, though these were very densely built up. Within such small dimensions the wall was an ever-present reality.

The appearance of the town gradually changed. During the early period large spaces which were not built over were a characteristic feature, and the burghers were engaged, to some extent, in agricultural pursuits. There was at least a garden to the house, or some fields, lying sometimes outside the narrower sphere of the town, were cultivated. It is partly for these reasons that in many towns of the early period there was no market-place; it was absent also in those places which grew up out of older settlements. The industrial activities of the townspeople were still too rudimentary, and agriculturally the town was still more self-supporting than it became later. The need of exchanging goods between town and country was not yet great enough to justify the layout of a special market-place; if there was one at all, it was only small. By way of exception there were the large market-places east of the Elbe, sometimes up to five acres in extent; they served as cattle markets or as sites for the fairs. With the growth of urban industry and the decline of the cattle market, buildings or booths for the weekly market which later became permanent houses, and other edifices such as market-

scales and offices, were erected. If the space remaining became too small, a new market was developed. In general the mediæval town in accordance with its rational layout had no open spaces or pleasure-gardens, but only spaces for practical purposes. Growth of the town population through newcomers and of the industrial arts led to increased subdivision of the urban area. More and more craftsmen became owners of houses and land,

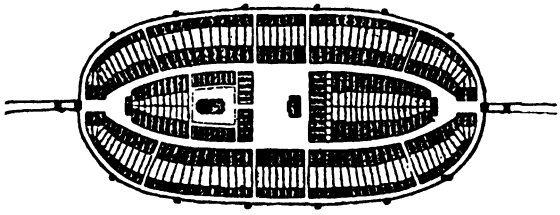


Fig. 12. Type of a Colonial Town in Eastern Germany

and in this way they became attached to the urban soil; a reversal of the all too common idea that the town "uproots" its inhabitants.

The urban society of the Middle Ages did not consist, as do our present urban masses, of human atoms held together primarily by economic, class and professional interests. It was built up of groups in which the individual was embedded both in general and in detail. Family, guilds, religious orders and confraternities

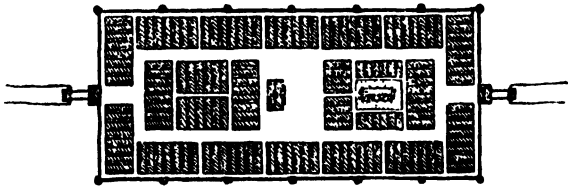


Fig. 13. Type of a Town in the Territory of the Teutonic Knights

enclosed him; ties of blood sheltered him, as well as those of work, class and religion. It was no single one of these attachments, but the complex of them all, which created both the order of life in the Mediæval town and its physical plan. A fully developed town was a union, in the sense of a brotherhood, not unlike the *polis*. The God of the town or its Saint in each case unites and protects the citizens. In contrast with all previous religions Christianity breaks up the magical and tabuist links on

which blood relationship largely rests in India, China, Japan, in the Islamic countries and partly in Russia also. Under the guidance of the Church " elective affinity " took the place of consanguineous relationship. It is this voluntary association which gave a new security and was primarily instrumental in the creation of an urban *community* which in countries such as those mentioned above exists not at all or only in a very modified form.

Musical structure reflects these manifold features in general and in detail. The simple choral melody set for one voice leads on to the majestic polyphony dominated by one tone and to greater manifoldness. The simplicity of the choral melody corresponds to the uncomplicated plan of the Romanesque town, not as yet a maze of crooked streets and houses, while polyphonic music resembles the Gothic period when the towns are filling up and their structure is becoming more complicated. The net of streets and small passages is growing closer ; all forms—the social and economic as well as those of the buildings and the relationship between town and country—take on a more complicated and interdependent character. The first stage of the slow development of polyphony is heterophony, resembling the early town which takes on more distinct features only gradually, after the walls and centre have been fixed and the main streets and blocks laid out. Around these primary elements centres the polyphony of the secondary components, the towers and gates, the side-streets and closes, and of the interior division of the blocks and the numerous outlying buildings. In every individual part of the music the same modes prevail, whether in the antiphony, the alternating chant of two choirs, or in the sequences and tropes of the hymns, or in the general structure, for in the Gregorian chant each melody has its fixed liturgical place so that the same part of the liturgy is always in the same mode. The parallel is obvious with the order of the guilds, the religious brotherhoods, the family—in brief the various shells which protect the individual and create the limited world of the mediæval town.

Yet internal tensions permeate the town and its inhabitants. And so the movement does not pass from above to below, as it does in Greece, but swells to a high note to drop again to a low. Within this arc of melody all tensions are mastered and the accents purposively distributed. The same tendency is apparent in the plan of the town, in its adaptation to surroundings and

site, and in the functional layout of the streets, all intended to produce the highest degree of efficiency of the environment in the interest of the urban community. The structure of society and of the town itself, and contemporary musical expression, develop in complexity side by side. In each case this development is focussed on a centre—the centre of the town and the *cantus firmus* respectively. The parallel movement of the melody gives place more and more to polyphonic composition. At first it is only as a variation of the organism that the new accompanying voice develops ; then it takes on its own melody, its own rhythm, and finally its own text. Just so does the picture of the mediæval town rise up before our eyes. It separates from the surrounding country ; it finds its own form and life ; it eventually assumes its complex structure within the walled-in space with its central square and its public buildings. Musical instruments are numerous and varied ; the individual voices will be distinct and colourful. This can be achieved only through a great number of instruments, for the individual instruments are not subtle enough and are not yet clearly distinct from each other. The timbre is like that of mediæval pictures : bright, clear, radiant and light. The same holds good for the town : there is a multitude of architectural components, of different motifs in sharp juxtaposition. The houses, in part brightly coloured, are not yet coördinated into an unbroken block front.

The typical mediæval dwelling was the small, narrow, house owned by those who lived in it. It also determined the general layout of the town and its subdivision. The rooms were arranged one behind the other ; they were not as yet lined up along a corridor. The windows were relatively small. Place of work and living-room were under the same roof. The whole was a perfect " dwelling machine ", functional, spacious and intimate. The house was the primary element in the plan of the town. This explains its seemingly unsystematic appearance. In reality the layout of a mediæval town is one of the most systematic achievements in the whole history of town planning. This very recognition of the primacy of the houses produced the distinctive functionalism which is one of the main characteristics of the towns of the Middle Ages, although it is not apparent to a superficial observer. There is a marked difference between the main streets and those which open up the remaining spaces between them. There are short blind alleys, closes, all kinds of streets and small squares serving most efficiently the community's

Fig. 14. Plan of Bruges

purposes. Traffic and residential streets are clearly distinguished as a result of this profoundly practical approach.

The mediæval town is the last example of a functional balance between houses and streets. After it sets in the beginning of the end. The cult of the street begins, though this also is not apparent at first glance. Yet it is a fact, in spite of all the grandiose performances of architects and town planners, especially during the *Renaissance* and *Baroque* periods. It is a sunset majestic in

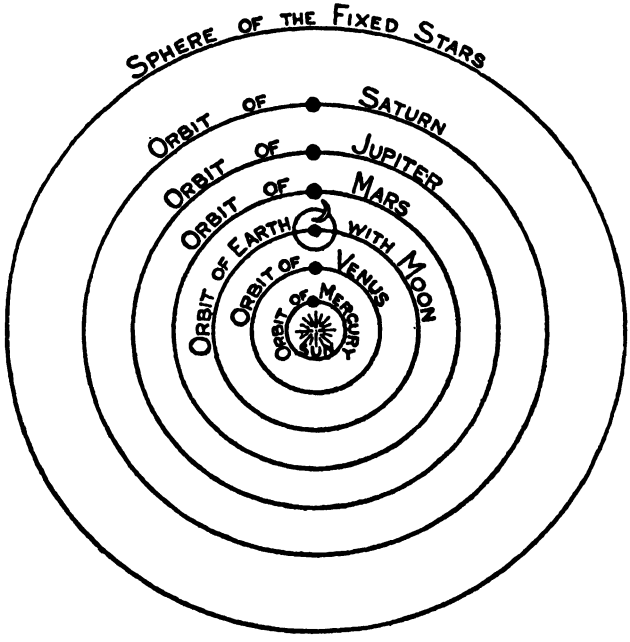


Fig. 15. The Copernican World-system

its beauty—but a sunset it is. In the end it leads to the completely empty plans of the vista-mongers of the present day, and to the inefficiency of streets and houses alike because of failure to recognise the fundamental principles governing their respective functions.

The year 1543 is a decisive turning-point. In this year Copernicus' treatise *De Revolutionibus* was published. It stated openly what many had already been feeling unconsciously for a long time. The Renaissance began. The Earth was removed from its central place in the system of the universe. The ancient conception of the world became meaningless. Man could no

longer see it as if from its centre ; he was moved, with the Earth itself, to the periphery. In 1610 Rome stated that : " to assert that the sun stands immovably in the centre of the universe is absurd, philosophically wrong, and a formal heresy, since it is in flagrant contradiction to the Holy Scriptures. To assert that the earth is not fixed in the centre of the universe, that it is not immovable but even revolves each day on its own axis, is absurd, philosophically wrong, and at least an incorrect belief." If the great ones of this world chose to adhere to this conviction it was hardly possible to expect the simple citizen to be less traditional. Small wonder then that the towns and their inhabitants changed but slowly, quite apart from the very slow development of the art of town planning itself.

Only on 17 February 1600, was the way towards the modern age entirely cleared. On this day Giordano Bruno was burnt at the stake in the Campo di Fiori. He was the first to assert that the sphere of the fixed stars is not the limit of the world ; that the world has no limits, but is infinite. He, too, only expressed the general feeling that life in a narrow sphere is unbearable and that a free and wider view is essential. The shell-like limitations were bursting ; the expanding influence of the towns and the breaking-up of the guilds and of their coercive unification were being as it were officially justified. Only now did the development of the mediæval town really come to an end ; only now were its burghers losing their revolutionary urge and exchanging it for an unproductive parochialism. At this hour modern man was born, and with him developed a new attitude towards life, that of the Renaissance and the Baroque. Yet with it spread the influence of the State, and the free burgher became an obedient subject. The simple limitation of the towns came to an end ; it gave way to a complicated system of defence which should withstand more efficiently the new technique of the far-reaching firearm. The perspective view, the outlook over a wide area, became the accepted principle of town planning.

In the musical field one voice amid the ever increasingly polyphonic melody dominates and determines the other accompanying voices on a homophonic basis, i.e. the leading melody in the high notes with accompanying chords. Palestrina brings the preceding period to an end : counterpoint, the horizontal composition, and the harmonic principle, the vertical, are in balance. The individual voices lose their instability ; they are subjected to a rhythm of great regularity. The main motifs are

repeated at the beginning of the more important parts and in most of them are also imitated in many variations. This, however, sometimes leads to a certain indistinctness, for minor parts of the composition gain an undue importance. The parallels to the town are evident : a more rigid composition of the layout and a coördination of details. One voice leads : this corresponds to the focussing of the plan on a centre ; the very theoretically conceived plan of Palma Nova comes to mind. The repetition of motifs : similar arrangements of the layout—squares, streets of the same character, street-crossings of the same type—are used repeatedly. Periphery and centre are balanced with each other in the same way as are the counterpoint and the harmonic principle. The main line of the composition remains essential : the general layout retains its overriding importance, but details such as the grouping of squares are adding distinct notes of their own. These details are analogous to the general scheme just in the same way as the musical details also are dependent elements. Limitation remains the characteristic feature both of the musical composition and of the plan of the town. But this limitation is more complicated ; it loses its spontaneous irregularity ; it becomes systematised. The town becomes more worldly : instead of the Cathedral the *palazzo* or the military barracks or the *piazza d'armi* forms its centre.

In the Middle Ages the ring of walls was laid out around the town while the latter was gradually taking shape. With the Renaissance a new development set in, characterised by a different procedure : the military engineer fixed the *enceinte* first, and only then did he design within it the plan of the town, adapting it to this surrounding belt. The beginning of this period coincided with a new theory of town-planning which demonstrated its main principles in the design of ideal towns. A new limitation now restricted the growth of many urban communities which had just begun to breathe more freely in spite of their walled-in existence. The extension of a town was not so easy and simple as before. The fortifications were too complicated and expensive. On the other hand a few places took over the protection of others, so that the walls of these latter became unnecessary.

Together with the wall the meaning and layout of the streets were changing. The streets assumed primary importance, and the blocks of houses were fitted in between them without much consideration for the basic requirements of the houses themselves. A perspective view was desired, and for this thoroughfares were

needed. The web of streets was the main characteristic of the plan. The old centre, the market-place, the church, the town hall and the guildhalls lost their importance and ceased to be essential elements of the layout. The periphery becomes more significant. But æsthetically everything was still at rest; it had not yet been drawn into the vortex so characteristic of the Baroque. Yet men felt that the old values were disintegrating and the old theories out of date. Only a few realised that man and the reality of life alone are the active instruments which change the conception and appearance of the town. G. Botero stated this clearly in his *Treatise Concerning the Causes of the Magnificence and Greatness of Cities* published in 1606:

> A city is said to be an assembly of people, a congregation drawn together, to the end they may thereby the better live at their ease in wealth and plenty. And the greatness of a city is said to be not the largeness of the site or the circuit of the walls, but the multitude and number of inhabitants and their power. Now men are drawn together upon sundry causes and occasions thereunto them moving, some by authority, some by force, some by pleasure and some by profit. Let no man think that a city may go on in increase without ceasing. Some answer, the cause hereof is the plagues, the wars, the dearths—some others say, it is because God the governor of all things does so dispose. I say that the augmentation of cities proceeds partly out of the virtues generative of men, and partly out of the virtues nutritive of the cities. The ordinary greatness of a city depends upon remote causes and cannot long endure. For every man will seek his commodities and ease where he may find it best.

The town burgher, the group-individual, changed into the loyal citizen of the state or the subject of a prince, the latter being especially characteristic of Central Europe and Italy. These new trends emerged only slowly and were seen in the beginning in a decay of the old ideas and institutions rather than in a determined acceptance of the new ones. The world of unquestioning and faithful reliance on the religious doctrines of the Church of Rome did not quickly fall to pieces; the anthropocentric conception of the universe had penetrated too deeply into the life and mind of humanity. To go on living within narrow limitations was so much more convenient than to face the problems of the newly-gained "infinity". At first only a few dared to think freely and to acknowledge the new reality. Others fell in with the altered course more instinctively, making use of the numerous possibilities that offered themselves. This vanguard consisted of the spiritual and social élite, of the great discoverers and inventors

and the princes. Prince and State were identical; *l'état c'est moi*. But the prince of the Baroque was not like the despot of ancient times; he was not prince and God in one. He was merely the apex of the social pyramid. The palace of the prince was not the centre of the town; it was the beginning and the end of the perspective view. Versailles and Karlsruhe are the best-known examples. In Karlsruhe the palace was planned and built first, and the town with its 32 radial streets converging on the palace was only later added as an appendix to the residence of the prince. The task of the town planners was to create not one centre but several "centres" in the form of *rond-points*, dominating buildings and monuments.

The essence of the towns of this time can be fully understood, however, only by taking into account the tensions which arose out of the new attitude to life during the Baroque period. These tensions resulted from a changed conception of space, that is to say from thinking and planning on a larger scale. They resulted from the growing knowledge that the world is so complex that its innumerable potentialities can be mastered and usefully employed only by combining on the same level the sense of reality and the sense of possibility, theory and practice, planning and execution, imagination and sobriety. The symbols of this combination are Don Quixote and Sancho Panza. The new idea of space was almost the reverse of that of the Gothic period. The interior of the cathedrals which seemed to lose all substantiality and to de-materialise the surrounding matter fundamentally changed. Now the limitless expanse of the sky was painted on the material shell of the domes of the churches. The mystical transcendence permeating the Gothic cathedrals was replaced by an ostentatious and festive atmosphere to the glory of God which gives the Baroque churches an unreal and yet earthly excitement. Men responded to the new spaciousness without desiring to be lost in it. Men wanted reality without giving up the new possibilities. Baroque works have something hollow and exaggerated about them. They are full of ambitious emotions which no one could endure in reality.

In place of the mendicant orders, the aristocratic Jesuits held the attention of urban society. They made faith "palatable", or in other words levelled it down. It is no mere chance that a number of the most famous artists such as Rubens, Van Dyck, Bernini were in close contact with the Jesuits. Art became a means of propaganda for the Society of Jesus. Bernini is the

prototype of the artist for whom the end justifies every means. There is the same pretentious *élan*, spaciousness, theatrical aplomb, propagandist allurement, and desire to fly away into the unlimited sky—but there the urge ends. Andrea del Pozzo, also associated with the Jesuits, was the founder of a systematic doctrine of perspective and of a fake-architecture, in brief of illusion, of the " as if ". The interior of the *Gesù* with its contrast between the dome concentrating the light and the obscure side-aisles is the perfect embodiment of these tendencies ; it is a magnificent theatre. Only an organisation which had developed so high a standard of theatre- and opera-performances as the Jesuits could have inspired the building of this church.

The decline of the Church meant the rise of the State, and with it of capitalism. The extraordinary and swift development of the mediæval towns had already come to an end long ago. The establishment of new towns was relatively rare. In most cases already existing places were merely extended. Some towns became centres of the new State administrations. The bond between the towns and their immediate hinterland grew laxer, not so much because direct exchange of goods between them ceased as because the influence of the towns was spreading over greater distances and improved communications made it possible to buy and sell in many different and more distant places. The centralising tendencies of the State were gradually replacing the equal status of numerous towns by a kind of hierarchy ; that is to say, a restricted number of towns became more important and took the lead. Their population increased at a quicker rate than that of the others. But in spite of the growing power of the State some towns embarked on an almost imperialistic policy of their own, suppressing their weaker neighbours in order to barter away their political privileges to the princes or the king. Together with this development a certain specialisation of the towns took place into fortress towns, commercial towns, industrial towns and so on.

Town-planning became an instrument of State policy, a tendency which was favoured by the actual situation : the theory of town-planning, widely discussed in speech and writing, demanded a systematic expression. This was perfectly natural in order to meet the requirements of the changing technique of defence, the desire for display and the idea of perspective. Pageantry is always connected with systematic preparation ; we may instance the rehearsal for the last coronation or the

" spontaneous " mass demonstrations in totalitarian states. An impressive perspective view can be achieved only through wide streets and correspondingly laid-out squares, and through viewpoints systematically distributed within them or at their ends, i.e. by methodical previous planning and not by unregulated growth. Special consideration was given to the layout of homogeneous squares surrounded on all sides by uniformly designed buildings, such as the Place de Vendôme or the Place des Vosges in Paris ; to wide and uninterrupted streets ; to the extension of towns under the supervision of the State in accordance with

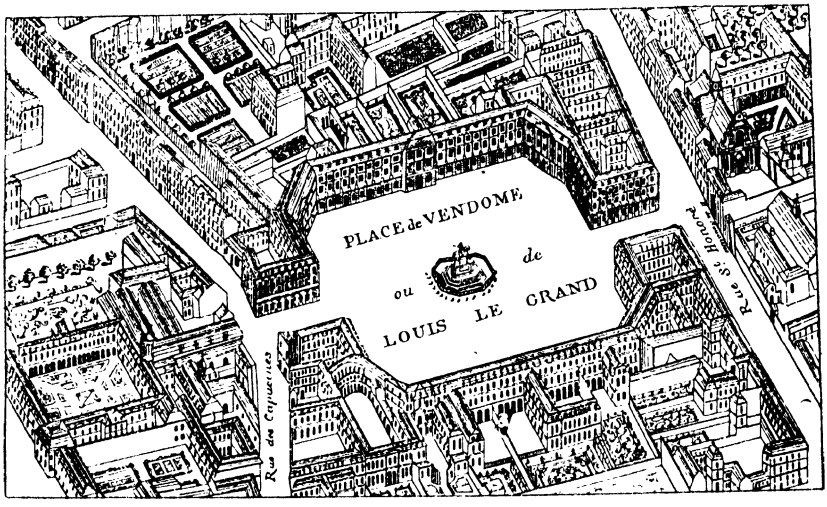


Fig. 16. Place de Vendôme by Mansard, 1708
(Section of the Plan Turgot.)

definite plans ; and to the erection of rows of private houses conforming to a single pattern. Everything was liable to regimentation. The by-laws of the time do not leave much liberty in general or in detail. The case of Mannheim at the beginning of the eighteenth century is typical : among other things we may note the fixed orientation and height of the buildings ; the height and number of storeys ; the depth of the buildings ; the shape of the roofs ; the situation and size of the front doors and windows ; the prohibition of all external decoration, etc., in order " to make the whole street appear one house ".

England occupied a somewhat different position. As compared with the achievements on the Continent during the Middle Ages she did not display the same greatness in her towns and

their arts and crafts. But the ideas of the new period were ably applied to the planning of the towns and were expounded in literary works. In the eighteenth century England's influence on town planning was on the upgrade, especially through two principles which are still manifest to-day: the interspersal of open spaces in the layout of the town and the unification of whole streets by homogeneous architecture of the private houses.

Abstract geometrical patterns were essential elements of the town-planning schemes. Whether the system of streets was a radial or a chequerboard one, both had in common the central

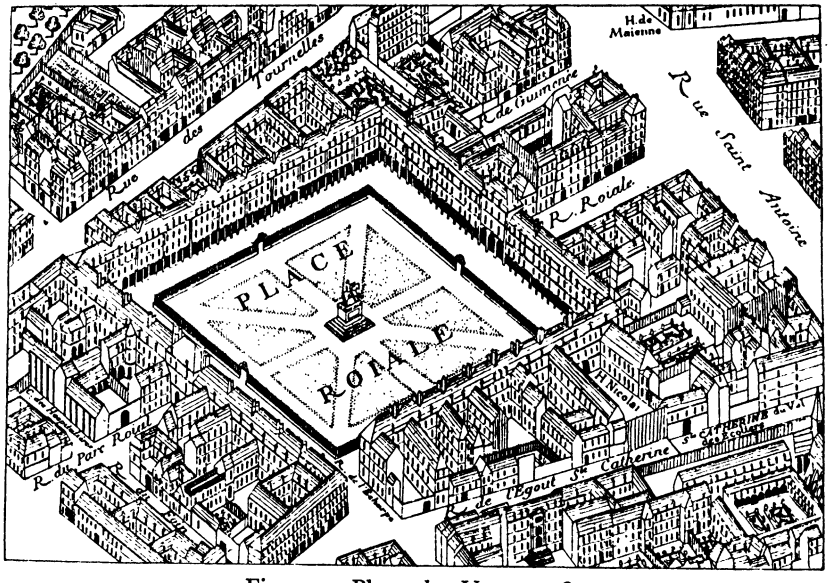


Fig. 17. Place des Vosges, 1605
(Section of the Plan Turgot.)

square, the *piazza d'armi*, on which the streets converged. Mediæval fortification did not, at least in principle, exert a decisive influence on the layout. Now the central square became fundamentally a mere meeting-point of a number of streets which ran to important parts of the circumvallation. The *piazza d'armi*, the rallying point for defence, was the town's centre because from it all parts of the fortification could be reached equally quickly through the streets leading in a straight line towards the periphery. The task of combining architectural beauty and the requirements of defence was described by Palladio:

The main traffic and commercial streets of the town should be wide and adorned with stately buildings ; for in this way the visitors will get a more impressive idea of the town and often think that the other parts of it are equally beautiful. The main streets, which we shall call military streets, should be laid out in such a way that they follow their course without any divergence, leading in a straight line from the gates to the central square, and if possible continue the straight line further to the opposite gate. In accordance with the size of the town several smaller squares should intersect these streets. Moreover, the important streets should be orientated not only in relation to the main square but also to the main buildings such as churches, palaces, arcades and other public buildings.

In the beginning of the eighteenth century France took the lead in the theoretical approach to town planning. Daviler writes :

From the architectural point of view a town is a complex of buildings arranged symmetrically and beautifully, and of streets and public squares laid out along a building line in an appealing and healthy arrangement and with the necessary incline for drainage. The most beautiful streets are those which are straightest and widest.

This last demand is quite in conformity with the ideas of the time, but it has exerted an almost devastating effect up to the present day. Germany followed the same line. I. F. Penther remarks laconically in his *Lexicon architectonicum* (1744) under the heading " Street " : " The wider and more straight a street, the more beautiful it is."

In the Middle Ages the pedestrian fixed the scale ; now it was the carriage, which although used only by the rich, was nevertheless a factor of importance, as the upper classes exerted a decisive influence upon the life of the town and its architecture. Everything seemed restless. The streets do not invite to a leisurely stroll ; the perspective view and the monotony of the long rows of more or less identical houses appear to possess a motive power which concentrates the attention almost exclusively on the view at the end of the streets and induce a steady forward movement. It was the beginning of that cult of the street which is still in full swing to-day. The streets were not interrupted by bends, breaks, or any other kind of diversion ; rather they are broken by architectural accents recurring at intervals, such as fountains, obelisks, *rond-points* and squares where they meet other streets ; but their straight lines are preserved. Such squares form a kind of catchment-basin for several streets.

The width of the streets is in many cases quite disproportionate

to their actual purpose. The demand was for spaciousness at any price. Sometimes this went so far that existing buildings were pulled down in order to gain more space or to open out the view of a more important building even at the cost of spoiling its architectural balance with its surroundings. Another characteristic feature was the erection of façades with the rooms behind arranged independently of the external appearance of the house and therefore without system; or an interspace between two houses was closed merely by a front wall crowned by the principal cornice in order to give the impression of an uninterrupted block front. The most outspoken example of this building from outside to inside is the Place de Vendôme. The façades surrounding it were built at the expense of Louis XIV, while the houses behind them were paid for by private persons who each bought "a length of façade" of from two to ten windows.

Streets and squares formed a geometrical pattern; small wonder in a time when mathematics began to mean so much. The step thence to a symbolism of numbers as an element of town planning is but a very small one. In conceiving and looking at the plan something of the æsthetic delight which the reality will arouse is already experienced. The military engineers in particular were devoted to this symbolism of numbers. Seven play a great part in Holland; it is the number of the United Provinces. Thus we find seven bastions in some of the fortress towns, e.g. Wilhelmstad, Coevorden, Deventer and Enkhuizen; and Groningen had 17 bastions corresponding to its 17 counties, influenced also by the sacred character attributed to this number. In Italy Alberti designed the town of Palma Nova with nine bastions in honour of the nine families of the Venetian hereditary nobility.

The drawing-board scheme dominated town planning. It was inelastic and stereotyped, less adaptable than the plan of the mediæval town with its engirdling walls. Uniformity was thought necessary for freedom of movement, and the adaptation to the site and to individual needs which gave the mediæval town such a direct immediateness and intimacy were not in accord with the spirit and temper of the new time. There was a gain in broadness of imagination and feeling, but it was felt of both that they were valuable only if they were disciplined.

The increasing concentration of capital and the greater mobility of money as a means of exchange led to speculation in urban sites. In consequence of this development the poorer

quarters began to separate from those of the rich ; the former were more densely built up than the latter. The poorer classes were restricted to the older and less healthy quarters, or housed in new dwellings erected as objects of speculation. However, there ran parallel with these trends, especially in Germany, a land policy systematically directed by the State and conducted with the aim of eliminating, as far as possible, the ill effects of *lassier-faire*. During the seventeenth and eighteenth centuries new towns, therefore, were built, and extensions of existing ones carried out on public land owned by the State or the Prince or by the towns themselves. The towns were empowered to acquire private land under favourable conditions, in many cases for not more than its agricultural value. The differentiation between residential and traffic streets disappeared ; it was superseded by a uniform pattern in which every street could serve as either or as both. A valuable element was thus lost for a long time to European town planning.

The new social and economic order had a far-reaching effect upon the relationship between the places in which men lived, worked, and sold. The market-place lost its importance : it was used principally for buying and selling food. Shops made their appearance. " Shops " had existed before this, but they were rather primitive and usually consisted of only one room adjoining the workshop in the craftsman's house, if there was even a separate room at all. The mediæval " shopkeeper " would keep some goods " in stock " or put a few of his products in the window. There were also market-halls for single commodities such as cloth, furs, shoes, bread, corn, etc. Now sale and production, home and workshop separated. These changes considerably influenced the structure of the town and the houses. Life was divided between the dwelling-place and the office or workshop ; and though the distances were still short, some time had to be spent on the daily journey to and from the place of work. Family life and business life fell apart. The need for communications grew. In general one walked for short distances. Only a small number of carriages were in use, and they were far beyond the means of the average tradespeople. Nevertheless, the restful and stationary life of the Middle Ages and its tranquil confinement within the circles of family, guild, Church and the walls of the town was broken up and its pace accelerated. Personal life and working life lost their mutual balance ; work became the centre around which everything else rotated, till it

swallowed up the whole of man's thinking and feeling, his loyalty and interests, and dictated the cycle of his daily life; till fragmentary man, the finished product of our own time, was the result, and functional life had gained an absolute ascendancy.

The new town home, especially on the Continent, was wider than the mediæval house, and turned its eaves instead of its gable to the street. Italian influences played their part; the castles of the feudal lords of the Middle Ages gave place to the palaces of the town. The windows were larger and the whole building more adapted to juxtaposition with other buildings. Houses of these types placed preferably in the main streets appear more imposing than they really are. The individual house was now a subordinate part of a complete block front. Just as it had changed its outside, so its interior took on a totally different structure. The Baroque prefers to arrange the rooms along a corridor and to specialise them for different purposes. Such houses were eminently suited for division into several units. They usher in the area of the flat. Living accommodation of this kind was needed especially for the growing number of officials and military personnel. Smaller and narrower houses were built for craftsmen and the lower middle class.

Another important feature of town planning also can be traced back to this period. Verdure penetrates the town. This development, at least in its more essential aspects, derived its main impetus from the palace gardens. In the seventeenth century the pleasure gardens were mostly situated outside the towns proper. Trees were not yet used in laying out the streets and squares. It was only in the eighteenth century that a change took place. The new ideas were applied even to so-called colonial towns such as the military settlements founded by Maria Theresa in the eastern frontier districts of her Empire, or Carouge near Geneva designed by Laurent Giardine in 1784. Instead of walls, double lines of trees surround the town, and in some parts penetrate even to the centre. At the same time interest in private gardens was re-awakening. The seventeenth century rationalised the natural surroundings. It imposed a geometrical pattern on Nature. This is evident, for instance, in Amsterdam, in the adaptation of the banks of the canals to the standardised pattern of the circular and radial streets. It can also be seen in the most representative example, the park of Versailles, laid out on a site only very poorly endowed by Nature. Nature is a stimulus to the creation of something new; therefore, we find

this forcible re-shaping of Nature if for no other reason than for the sake of a rigid layout ; therefore, also, the rational trimming of the hedges and trees. In the eighteenth century this picture changed under English influence. The garden was assimilated to Nature, who is " corrected " only in so far as seems essential in order to soften her wild and unmodified originality and to gain a perspective view. But this idea itself had changed : in Versailles broad vistas are dominating factors in the whole lay-out ; while the English landscape gardener—a very characteristic name found in England alone—utilised natural features to the utmost, preferring silhouettes of large groups of trees one behind the other and relating the distant views which open up between

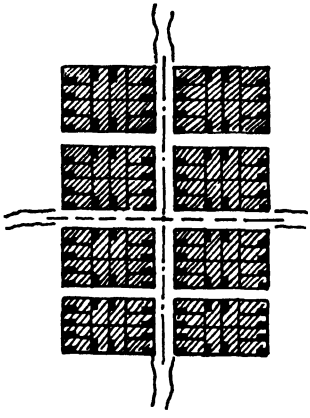


Fig. 18. Colonial Village in the Banat. 18th Century

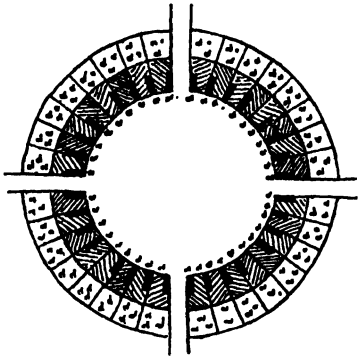


Fig. 19. Colonial Village in the Banat. 18th Century

these groups to his general scheme in such a way that they were merely one but not the dominating element. There the unbroken view ; here the subdivision of the distant view. There the impression of depth ; here the impression of coulisses arranged *en échelon*. But not only did the garden change ; the relationship between the general layout of the town and Nature underwent a far-reaching transformation. There was a revolt against rigidity, against monotonous standardisation. In contrast to Karlsruhe and Versailles, Bath was developed. Man utilised the natural features to enhance the effect of the buildings ; he lived closer to Nature. In a more liberated atmosphere the mediæval walls, the Renaissance *enceinte* of fortifications, the deadening rigidity of the stereotyped pattern of the Baroque, had now really and

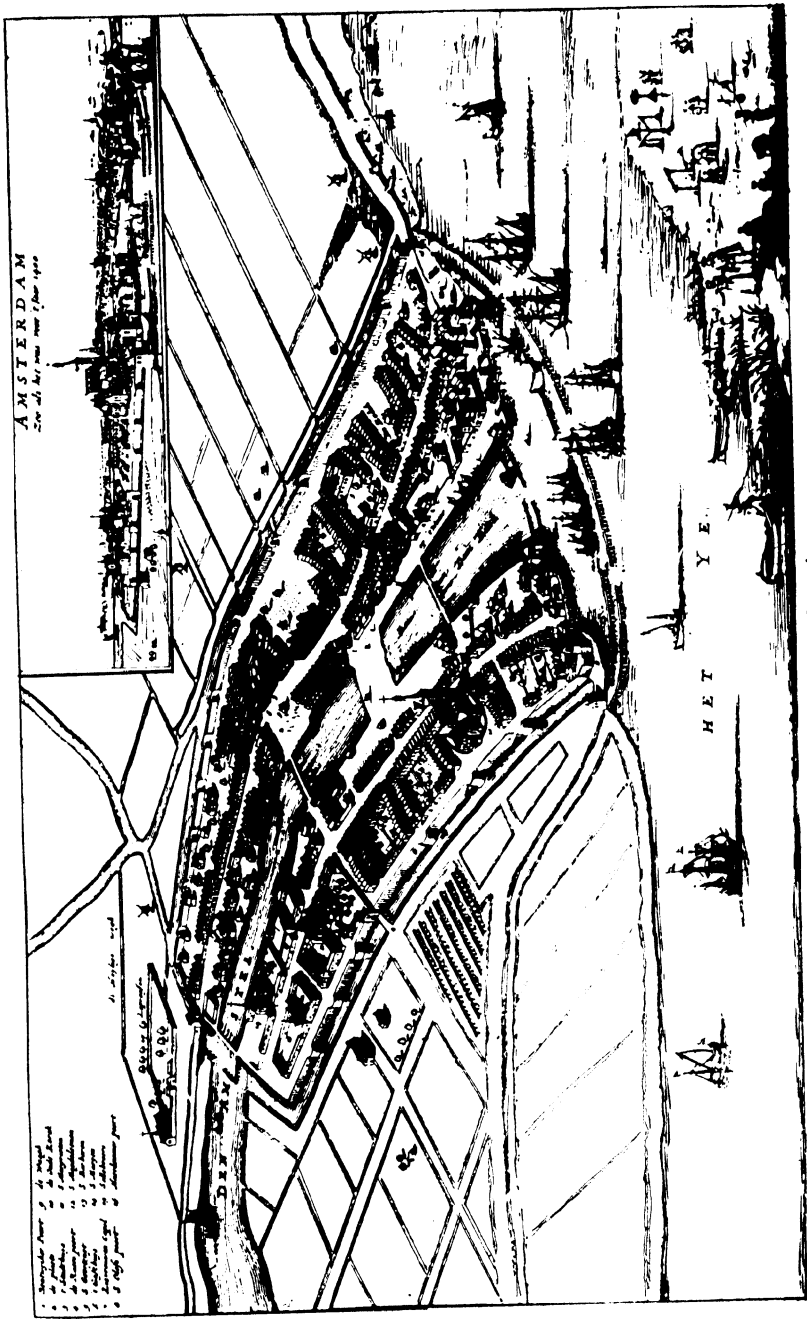


Fig. 20. Amsterdam in 1400

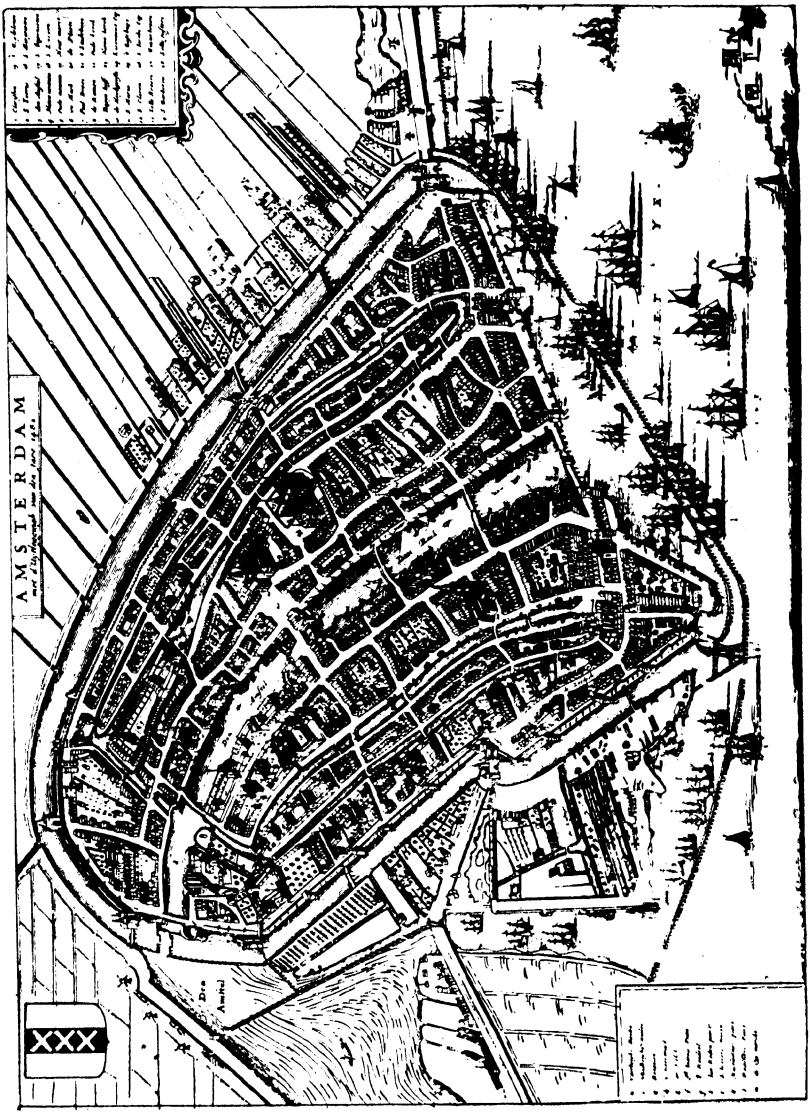


Fig. 21. Amsterdam in 1482

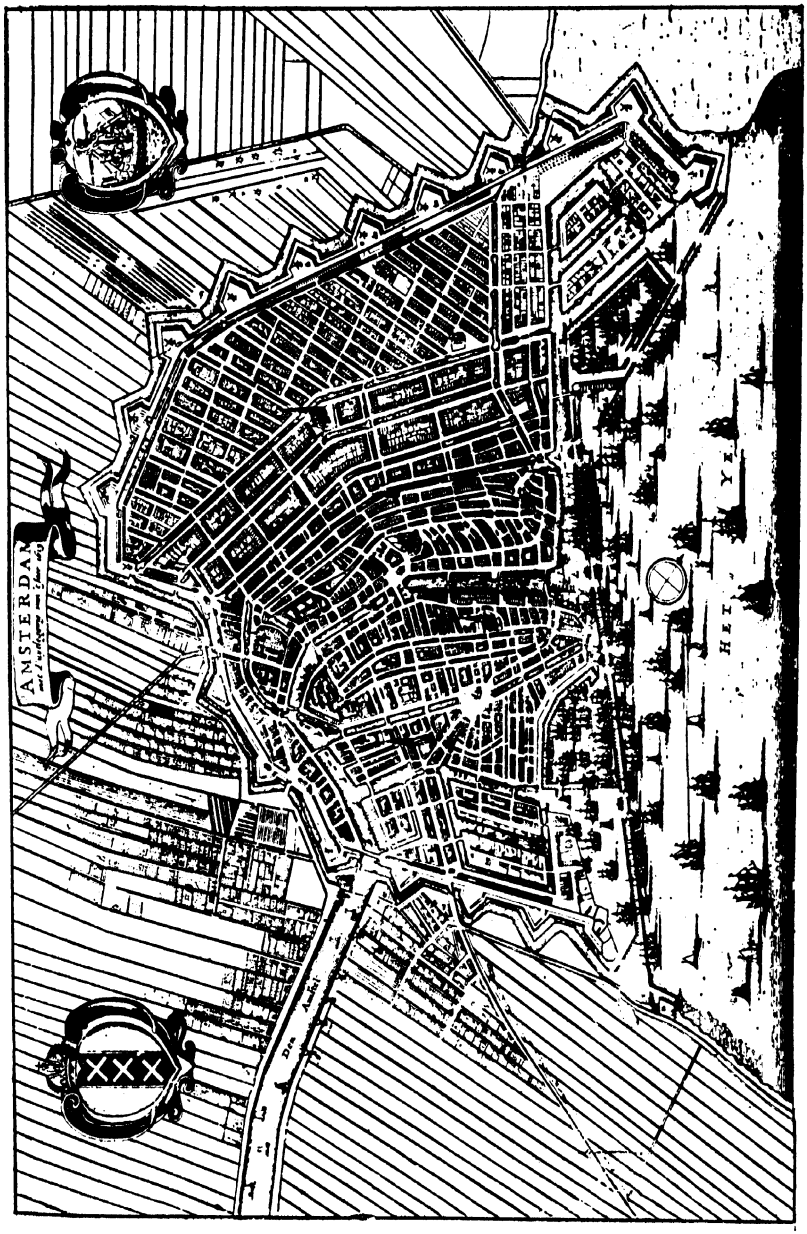


Fig. 22. Amsterdam in 1613

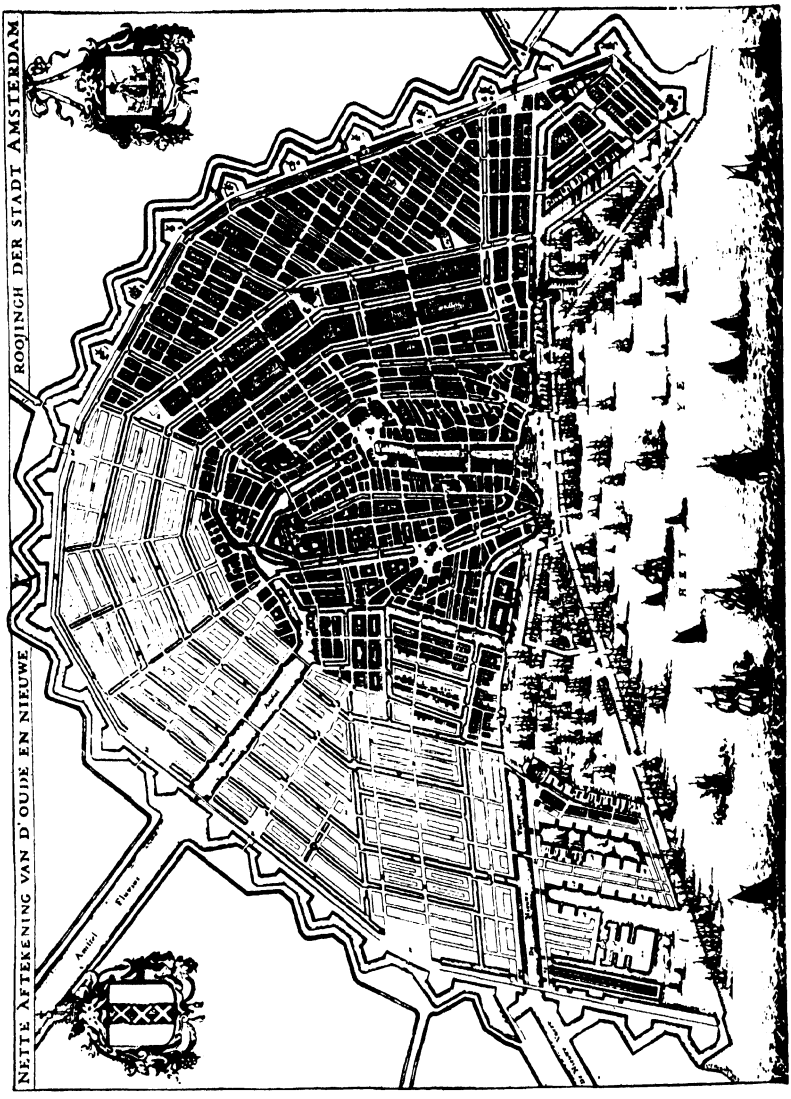


Fig. 23. Amsterdam at the end of the 17th century

definitely fallen. The spread of the modern towns over the countryside had begun.

The period of *laisser-faire* was approaching, though the State was still regarded as absolute. The scientific foundations of this new conception were the laws of Newton. They define the world as a harmonious entity all of whose parts are working systematically in a dynamic balance. God has created the world, but it runs smoothly and efficiently by its own power. The relationship between the State and society is viewed in the same way. The State has given birth to new economic activities. This is enough. Now it should resign and interfere no longer, in order to give free rein to a *laisser-faire* economy. Society is good enough as it is. It rests quite naturally on the principle of " the two nations ", the wealthy and the poor. Montesquieu is only expressing this general conviction when he says : *il faut bien qu'il y ait du luxe. Si les riches n'y dépensent pas beaucoup, les pauvres mourront de faim.* The passion for luxury was growing, especially in the large towns. The elements of the modern machinery of entertainment appeared, and with them the problem of leisure—in our sense. Theatres, music- and dance-halls, fashionable restaurants, elegant shops, hotels, and less expensive establishments of all kinds were springing up for the less favoured classes.

The later period of the Renaissance develops polychoral music, and the Baroque the still more colourful polyphony. In contrast to the leading or the solo voice the others keep in the background. Monody—the melody sustained by a single voice with several different accompanying voices—comes into being about 1600, and is followed by the new opera. Parallel with this we have the orientation of the town towards the palace of the prince and the perspective view, and the ever more complicated social and economic structure. The great number of the instruments is reduced owing to their increased individuality and expressiveness. The eighteenth century continues this development. The selection of the instruments becomes more refined and their number more restricted, in accordance with the contemporary desire for clarity and systematisation. The more the instruments approximate to the human voice, the more important do they become, and the greater is their appeal to the emotions. In town planning the same trends appear : appeal to emotion rather than to reason as expressed in the introduction of verdure to the towns ; the technique of instrumentation corresponding to the developing technique of administration ;

and the increasing contrast between the leading and the accompanying instruments, finding its parallel in the growing antagonism of the classes, while the individuality of the instruments is reflected in the specialisation of the professions and the classification of the towns.

One of the most decisive changes in the direction of the secularisation of music is the development of the opera. Both in music and in town planning the Church is gradually dethroned. Now music and plot both draw the spectator into their sphere. Symmetry of the musical form and beauty of melodic line reach their highest perfection in chamber music. Not without justification has this been called " the triumph of surface architecture in music ". It is a direct counterpart to the uninterrupted though systematically arranged block front with the sparsely decorated façades of the houses. The setting of chorus against chorus, of chorus against soli, of solo against solo, especially evident in the music of the Evangelical Church, resembles the antagonism of the rich and poor quarters, of the palaces and the simple houses, and the separation of living and working place. The relationship between the individual and society can hardly find a better illustration than in the chorus sung by the whole community and the solo cantata. The Roman Church develops as a special characteristic the antiphony sung alternately by several choirs placed in different parts of the church. In the second half of the seventeenth century this contrasting of voluminous effects of sound gives place to the more subtle alternation of solo and tutti, comparable to the prince in contrast to the mass of his subjects. The melodic movement also undergoes a corresponding change : the individual motif is less important than the melodic sequence as a whole. The wide avenues holding the whole plan of the town together, with their *points de vue* and their monuments, fountains etc., are the architectural parallel.

The period from the close of the Renaissance to the French Revolution laid the foundation for many problems of town planning which are facing us to-day. The originally beneficial legacies of the sixteenth, seventeenth and eighteenth centuries have changed into gifts from the Greeks because we are clinging to them too long and too persistently. The results are devastating. Never before have men's living and working places been more unsystematically lumped together ; never before have houses and streets so completely lost their functional significance. Never before has an uncultured atmosphere of such brute intensity

dominated the layout and architectural appearance of our towns. The fact that we have got so used to the monstrosities and discrepancies of our physical environment that we hardly realise them is no excuse, nor does it make a radical break with these conditions less urgent.

Many people will think that this is an overstatement, and that our towns are not so bad after all, especially if they are given a slight overhaul. But there are also many who will agree that this harsh judgment is justified. To-day we have arrived at a point where new and more creative forces are just beginning to emerge. This is a hopeful sign. But to all who are not biased it is evident beyond a doubt that town planning reached its lowest level during the last hundred years. The greatest compliment that could be paid to it would be silence. But this, unfortunately, is impossible, for the ill effects of a century's mismanagement and muddle exert a most deplorable influence on all plans for a new start. In this respect the war may save us, for it has exposed the impossibility of further drift so incontestably that all evasion is impossible.

However, the immense difficulties, which lie less in the thing itself than in the minds of many people, should not be underestimated. Two factors are preeminent in this respect : acquiescent modesty and deliberate following of tradition. The modesty is of two kinds : acceptance of bad material conditions and deficiency of spiritual aspiration. Neither has anything to do with that modesty which has positive value as the reverse of boastfulness and self-assertiveness. Rather they are the result either of lack of interest or of hopelessness or both. When one attends a meeting of social workers and realises how almost everyone ends his or her report with a strong condemnation of housing conditions and with a half admiring, half incredulous remark on the lenient attitude of the people towards them—when one listens to this confession of a failure of such magnitude, one wonders how long such accursed modesty will last. There is one excuse for it : the people do not know what they could get. But are those who are responsible for this state of affairs capable of steering the right course, and do they want to act boldly and on a large scale? One may be permitted to have some doubts. They too are modest, modest in their appreciation of the imperative necessity for acting with the utmost vigour and for using all the means which science and technique have put at our disposal. But we should not deceive ourselves. Either we

must have a revolution in our minds, to prepare the ground for fundamental changes, or we shall have a revolution in the streets. The revolution in our minds—more peaceful but more far-reaching—can take place only if we rid ourselves of complacency and traditional valuations and devote our whole energy and mental power to creating a new pattern of life out of the eternal values which are inherent in everyone.

Those who talk about reconstruction in terms of a renascence of " traditional Britain " are not on firm ground. What tradition do they mean ? At least in the field of architecture and town planning there is not very much during the last century to be proud of. We can hardly suppose that Victorian achievement will serve as an inspiring example ; or that even Georgian houses and layout, pleasant as they are, can satisfy the needs of our generation and those to follow.

Where, then, are the roots of a renascence of traditional values ? Can they be found in the human constitution as it has developed during the last century ? Is fragmentary man, the product of this process, really so admirable a type of our human species as to be worthy of perpetuation ? Can we deny that complete man has still to be born ? Specialisation of knowledge and disintegration of man's personality go together. Both have produced results impressive in detail, but these results await unification. They have been achieved at the cost of human and social values and of the personal life of man. If we are sincere and courageous, we must admit that we are standing before a gigantic heap of fragments which we cannot put together and restore to their old form. They never made a real unity—how then can this be restored ?

We should examine this problem with the greatest care, for this worship of a tradition of doubtful value is apt to bar the way towards the creation of an inspiring and diversified environment fitting for modern man who looks into the future and is less interested in the past. The worship of tradition and the use of traditional forms in reshaping our towns are no weapons for a militant democracy in its fight for freedom from want and fear. They are dangerously akin to a totalitarian state of mind and a hazy mysticism.

However, there should be no misunderstanding. We are talking here of the tradition of the surface, of the outer appearance, and of tradition as a refuge for evasion. The deeper strata of true tradition are embedded in the subconscious sphere of

man's mind. This tradition is never broken ; in fact it reacts most creatively to an adaptation to new forms and to new ways of life. Herbert Read, in his remarkable pamphlet, *To Hell with Culture*, says :

> As for the past, let the past take care of itself. I know that there is such a thing as tradition, but in so far as it is valuable it is a body of technical knowledge—the mysteries of the old guilds—and can safely be entrusted to the care of the new guilds. There is a traditional way of thatching haystacks and a traditional way of writing sonnets : they can be learnt by any apprentice. If I am told that this is not the profoundest meaning of the word tradition, I will not be obtuse ; but I will merely suggest that the state of the world to-day is a sufficient comment on those traditional embodiments of wisdom, ecclesiastical or academic, which we are expected to honour. The cultural problem, we are told by these traditionalists, is at bottom a spiritual, even a religious one. But this is not true. At least, it is no truer of the cultural problem than of the economic problem, or any of the other problems which await the solution of the Democratic Order.

And Walt Whitman :

> Pressing the pulse of the life that has seldom exhibited itself
> (the great pride of man in himself),
> Chanter of Personality, outlining what is yet to be,
> I project the history of the future.

We are fully justified in attaching great importance to a high standard of education for adults and children. But are we aware that no educational programme can ever be successfully carried through without a parallel effort to reshape our physical environment? Town planning and housing are the counterpart of education, and *vice versa*. How can we expect a mother to spend several hours weekly in attending lectures and other educational facilities when she has hardly enough time to cope with the burden of a household even under relatively normal conditions? Still less is this possible in a so-called home in a slum, a home that is insufficient, dirty, unhealthy, overcrowded and without even the most elementary amenities ; and there are thousands and thousands of such households in this country. Labour-saving devices are available which would reduce not only the burdensome work itself but also the time spent on it. Can healthy children, eager to learn and to perfect their education, grow up in surroundings which offer no inspiration or free movement in the open air, even though they are not actual slums? How can school life and home life be brought to the same level if one of them is in a state of disintegration? It is obviously useless to

expect that the ideas which are instilled into the child at school, and which should conform to ideal standards of behaviour and aspiration, can fall on fertile soil if a painful disparity between them and the reality of home life is experienced daily. Educationalists should do their utmost to improve this situation not merely by a few piecemeal reforms, however useful these may be, but by bringing about fundamental changes through coöperation with those architects and town-planners who are guided by a spirit of futurity and are free from a compromise-complex.

The age of *laisser-faire* was an interruption of the steady development of collective effort that had been taking place since the beginning of the Middle Ages. In this respect the nineteenth century may be compared to a pioneering enterprise on a gigantic scale. This may be a welcome explanation and excuse for many who are more benevolent. But the fact remains that this period possesses all the characteristics of such a pioneer undertaking: lack of foresight, of right judgement, and of objectives clearly defined and appreciated. In a society so complex as ours has become, the control of environment is conditioned by collective considerations which diminish the freedom of individual action. This means that a systematic coördination of the many forces which are shaping our environment is essential, and that all are interdependent.

Under these conditions it is only natural that to-day neither streets nor houses should fulfil their purpose. Some of the reasons for their decline in functional efficiency need explanation, at least in broad outline, if we are to discover the most useful starting-points for a new endeavour.

For the second time the townsman is the agent of a far-reaching revolutionary transformation. Just as in the Middle Ages the burgher created his town in opposition to the feudal lords and the peasants, alone and unaided by the State, so now the citizen builds the modern city. But there is this difference—nothing opposes him. The State assists his work, and he for his part uses the State in his own interests. Nineteenth-century man felt hardly any doubts of his mission, and his heir of the twentieth century feels still less. But to-day scepticism and diffidence are finding their way into the minds of many, and are making mankind ripe for great changes. In this process technique has played a prominent part. The town of the "practical" and "technically-minded" drawing-board architect and road builder has come into being. Streets and traffic, tenement-houses and

block-systems are presented as purely technical, not as social problems. Streets are built with all kinds of pipe-systems and other utility services ready-made, so that a sufficient number will be " in stock " when need arises. People speculate in suburban sites ; jerry-built houses are erected on the conveyor-belt. But we forget that human beings are not cattle, and that their social needs are not a mere by-product which can be thrust aside without detrimental effects. The inhabitants of the town and of the individual houses are not the primary concern of these town-planners and speculators, but are mere pawns in the game of *laisser-faire*. The contrast with the Greek *polis* is now enormous. The development of towns has passed far beyond the mediæval town with its narrow hinterland through the fortress town of the Renaissance and the residential town of the absolute prince, both of them clearly limited entities, till it has lost the last vestiges of any limitation and distinct shape and has spilt over into the countryside.

The modern town is not a social community. At best it is an association of different classes of society on an economic basis, at worst an agglomeration of human atoms. Under such conditions no clear conception can arise of what a town should be. In practice only a few details, such as the width of the streets, the nature of the sanitary installations, and the like are objects of administrative interest. The overvaluing of technical and economic problems entirely prohibits any right understanding of what our towns should be. Though they are the characteristic expression of our time, they have neither organic structure nor definite architectural form.

The improvement in means of communication has so far resulted in little more than an unsystematic increase of urban traffic and a dense concentration of population, each factor contributing towards the development of large blocks of flats and in the end of skyscrapers. But the fundamental cause of this process is the speculative exploitation of urban land and houses as objects of private profit. Both land and houses are primary requirements, that is, indispensable consumers' goods, and as such their price ought not to depend on the " law of supply and demand ". Moreover, one of the arguments in favour of this process is the assumption that a more intensive use of land, i.e. a more densely built-up area, reduces the share of the price of the land falling on each individual flat or house. This argument is false. On the contrary, the price rises in direct relation to the

increased use of the land. At the same time traffic improvement has produced a misconceived decentralisation. It has driven the population to the periphery of the towns, and is the direct cause of their sprawling tendencies, of ribbon development and suburbia. The essential place of traffic in relation to town planning has been misunderstood : traffic should not be increased *ad libitum*, but reduced by an intelligent layout of the town and a sound land policy.

In no other period has the price of land played so decisive a rôle. It influences the division of the land in general, the form of the built-up blocks, the layout of the streets, the type and quality of the houses, the use of the land—everything must " pay ". It also impedes the production of houses " in bulk " and in a technically rational way. A modern town plan is entirely irrelevant to the specific functions which each street, each ward, each district and the town as a whole has to fulfil. Any part of it can be used for any purpose, whether for residence or for business or industrial activities ; it can be extended indefinitely and arbitrarily. Such a general levelling down is after all not surprising in an age of massification.

There would seem to be four main principles in pre-war town planning. There is, first, the attempt to find some kind of balance between the circular and the radial tendencies which govern the extension of the towns. Then there is the changing relationship between centre and periphery. In the past the centre was favoured as the residential quarter, and the outskirts were regarded as less suitable for this purpose. This holds good for both the Middle Ages and the Renaissance. In the Baroque the better quarters were grouped around the palace, and were therefore situated away from the centre. In modern times the central part is only in a very small degree residential ; that function has been taken over by the outlying districts. The centripetal structure has given way to a centrifugal one. This is mainly a result of the third principle, the separation of home from place of work. The fourth factor is the preponderance of the small dwelling unit for the mass of the people. This very generalised classification will serve as framework for the discussion that follows.

1. *The General plan.* France provides diagonal streets and *rond-points*, but contributes hardly anything to the development of open spaces. Vienna inaugurates the *Ringstrasse*, the circular road. Germany and America produce the chequerboard pattern.

In addition to this the former introduces the romantic element of the curved street, while the latter's contribution to this international hotch-potch is the park system. England's share is the garden suburb and the garden city. All these together have produced the horrible higgledy-piggledy in which we live.

A good deal of the nineteenth century had still to pass before the old conception of the concentric development of a town lost its hold over the mind of the responsible authorities and of the man in the street. Both material and ideal forces were exerting their influence in favour of a circular restriction. Among the former were the use of the sites of former fortifications for open spaces or circular roads, for the building of circular railway lines or as a belt of open space outside the built-up area. To the latter belong the administrative boundaries of the community; the zone of the communal taxes and rates; investment, through the rising prices of the land in the outer districts as the result of speculation; and the profit-limit of the transport undertakings. How difficult it is to break through these multiple rings can still be seen in numerous towns and cities to-day, despite the fact that these various boundaries have long become obsolete.

The idea of the circular road—in its old significance—seemed specially useful to nineteenth-century town-planners because the railway stations could be placed on this peripheral line. But gradually the towns extended beyond this ring; the whole system became more or less meaningless, and in the end an obstacle to free development. That administrative boundaries can be a great hindrance is well known. Their problematic value has been sufficiently proved by the incorporation of numerous outer communities in the metropolitan areas of Greater London, Greater New York, Greater Paris, Greater Berlin, Greater Tokyo, and in many other cases. The consequence of delay in administrative unification almost everywhere was that speculators undertook their own private "extension of the town" beyond the area of the mother city and mostly under more favourable conditions of taxation. These new colonies and the people they attracted thus contributed not only to the growth of the conurbation, but also to its haphazard development. The radial lines of fast traffic pierce these various rings, but limits are imposed on them by traffic policy and by the time required for the journey. Thus the problem of space develops into a problem of time.

Town planning in the last decades before the War showed

more and more a preference for the radial scheme in order to bring some order into this concentric growth of the towns. The most important means for this were green wedges extending from the green belt into the town, and radial lines of communication. The extension of the built-up areas at first followed these traffic radii, and only later was the space between them filled with buildings. This is certainly a great step forward, but it does not get down to the root of the problem ; it does not suffice to bring order into the chaos of the urban structure. Into this general town plan secondary schemes are inserted for the layout of the different districts. Their main elements are rectangular blocks, diagonal and radial streets ; all of them are used in an unimaginative manner. Each suburb develops a " metropolitan " plan of its own.

2. *Centre and periphery.* Centrifugal forces break up the centre and strengthen the periphery. But at the same time they exert a similar influence on the separate districts. If we look at this development we see that ring-shaped zones are again spreading round the centre. Each zone tends to grow at the cost of the one next within it. And in each zone both centrifugal and centripetal forces are at work. The centre expands and takes over functions which were formerly fulfilled by other zones. The intermediate zones take over functions from the centre, and also fulfil new ones. The same process takes place in the outer ring. Functions of work—a shifting of industry to the outskirts and along the radial lines of traffic, and concentration of commerce in the centre—and functions of housing—mostly of a centrifugal nature—are the foremost influences which give each different zone its specific character. This general fluctuation and the dynamics of life make extraordinary demands on the town-planning scheme, the most essential of which is flexibility. But this is just what it hardly ever possesses. Rigidity dominates the whole plan, for it still belongs to the period when town planning was statically conceived. The multitude of divergent forces sets everything in motion and transforms the previously small central square of the town into a central zone. The more centralised the structure of society, the more full of meaning and the more perfect is the architectural appearance of the centre. If the social structure becomes more decentralised, the centre of the town also loses in powerful expression until the steam-roller of indifference and uncertainty which is to-day moving over our whole civilization levels it down into a confused central zone.

Within such a zone there is no longer one building or group of buildings which symbolises the central ideas of the time, but a multitude of buildings for very different purposes.

We are living to-day in towns which have neither centre nor limits, towns whose central zone symbolises the power of money. The town of the masses is just as amorphous as the masses themselves. The power of money is the fictitious centre—the City in London ; Wall Street in New York ; the *Banque de France* in Paris ; while the residential and industrial zones surrounding this centre house the modern " slaves " who are governed by this new despotic force. It is the old game of ruler and ruled, but with other symbols. In the course of thousands of years the old centres have disappeared—the centres represented by the palaces of the autocratic kings in Egypt and Babylon ; the agora and the temple of the democratic and self-governing citizen of the *polis* ; the forum and the Palatine, the twofold symbol of imperial Rome ; the cathedral, the castle, the guildhalls and the town hall, symbols of the authority of the mediæval towns and their craftsmen-burghers. The perspective " centre " of the palace of the deified king and of the pompous festival halls in honour of God, the churches of the Baroque, has also lost its dominating significance. With all these centres went the fixed city boundaries within which human beings lived as forced settlers under the Egyptian and Babylonian kings, as free members of a community in Greece, as citizens in the Roman Empire or as subjects under the *Roi Soleil.* All these have gone to-day, and with them all the symbols which dominated the town. The money power alone has outlasted palace, church, and town hall, and streams along even the narrowest channels through all the town. It is not a symbol which can be accepted as representative of a really creative society. Because all such idea is missing, because the two nations of the rich and the poor are standing in two camps in bitter opposition to each other—because of this vacuum and this dissonance, our towns are mere conglomerations of unrelated and mediocre details, not coherent wholes.

3. *Block, street and house.* The built-up block is in essence nothing but the land left between the streets, which many town planners still consider as the primary element of the layout. But all three elements, blocks, streets and houses, are equal in importance ; they form a coherent whole, and none of them can be reduced to a minor position without a detrimental effect on the others. It is obviously impossible to expect satisfactory results

if the idea prevails that putting together a large number of blocks of similar shape can produce a layout which will efficiently fulfil its purposes. The deplorable consequences of this misunderstanding are only too well known.

The model for many of the town-planning schemes of the second half of the nineteenth century was Haussmann's plan for Paris. This plan made no distinction between residential and traffic streets. It was a beautiful ornament consisting of straight lines converging on certain points. It was the prototype of a drawing-board pattern. The streets are everything, the houses mere by-products. Walking through the streets of Paris one gets the impression that everything—houses, cafés, shops, and people—exists only for the streets ; that everything is kept in uninterrupted motion. Movement is an end in itself. Squares are circular traffic roads. However, the wide, straight avenues are useful, not only as traffic arteries but also as target-lines if it should ever be necessary to hold the masses in check with guns. The *Place de la République*—from which radiate seven streets running through quarters with numerous small flats—is dominated by a barracks. The whole system is a kind of revival of the *piazza d'armi* of the Renaissance.

There is no reason to be still enthusiastic to-day about the " grandiose " performance of Haussmann, which, by the way, helped to replenish the coffers of Napoleon III. He not only put the Emperor's finances on a healthy basis, but provided ample opportunities of enrichment to a corrupt and parvenu society which did nothing to improve the housing standard of the masses. Their accommodation remained a negligible quantity. The far more valuable counterpart of this urban and financial " improvement " is Balzac's *Comédie Humaine*, which represents the period with much greater and deeper understanding. It is the senseless over-valuation and childish imitation of Haussmann's work to which we should object. For his own day, with its outspoken inclination for the pompous and its misunderstood rationalism, Haussmann's work was doubtless impressive enough. But we can hardly say that it had the qualities necessary to survive its time.

The separation of home from place of work influences not only the general structure of the town, but also the individual dwelling. In former periods the craftsman lived and worked in the same house, and the citizen also had his store or office attached to his private rooms. The floor-space could consequently be

reduced when the work-space had been separated off, all the more as the new household is run quite differently from the old. Home production has almost completely disappeared ; the storing of food and other necessities has been reduced to a minimum, as they can be bought from day to day. These factors have altered both town and house considerably, although not so much as they should have done.

To compare the housing conditions in our towns with those of Rome is almost a commonplace. However, it may be pertinent to quote a few sentences from Oswald Spengler.

> To me [he writes], it is a symbol of the first importance that in the Rome of Crassus—triumvir and all-powerful building-site speculator—the Roman people with its proud inscriptions . . . lived in appalling misery in the many-storied lodging-houses of dark suburbs ; —that, while along the Appian Way there arose the splendid and still wonderful tombs of the financial magnates, the corpses of the people were thrown along with animal carcases and town refuse into a monstrous common grave. In Rome and Byzantium, lodging houses of six to ten stories (with street-widths of ten feet at most !) were built without any sort of official supervision, and frequently collapsed with all their inmates. A great part of the *cives Romani*, for whom *panem et circenses* constituted all existence, possessed no more than a high-priced sleeping-berth in one of the swarming ant-hills called *insulæ*.[1]

4. *Open spaces.* The value of the open spaces in a town is determined by their distribution over it. Merely to intersperse them like oases does not enable them to fulfil the purpose of ventilating the town and serving as playing fields and recreation grounds for the population. These green islands must be interrelated so that they form a coherent park system. The path towards our present solution begins in the Middle Ages with the private gardens, fields, vineyards and the cultivated land of the monasteries within the walls of the town. It leads on to the palace gardens of the Baroque, and to the public parks of the nineteenth century.

The garden of the mediæval house was a kitchen garden rather than a place for pleasure and recreation. The Renaissance garden was laid out in a strictly geometrical relation to the house ; its arrangement was essentially a putting together of individual motifs. The Netherlands led the way to a more intimate adaptation between Nature and man's work. Amsterdam's tree-lined streets along the banks of the canals are the best-

[1] *The Decline of the West*, Eng. trans.

known example. The Baroque garden was an architectural landscape in clear contrast with surrounding nature. The English garden is a kind of domesticated Nature ; it is, as it were, Nature after she has been at a public school. The average European garden of to-day is a characterless thing. It may contain many varieties of beautiful plants and flowers and trees, but it cannot be compared to a Chinese or Japanese garden with its subtle selection of vegetation forming a little world of its own.

All these institutions conformed to the small scale of the

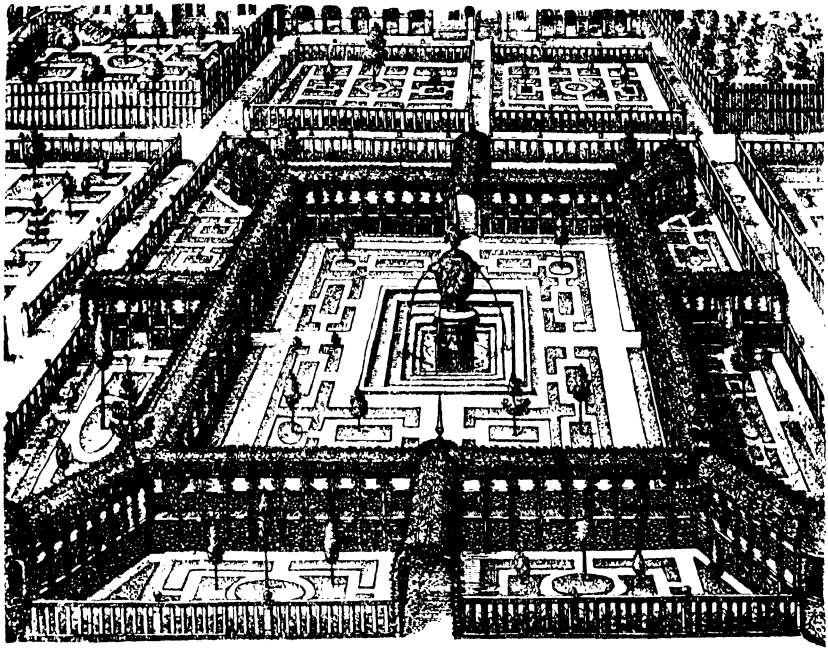


Fig. 24. Garden Design by de Vries, about 1585, with green arbours and parterre

towns. Large and metropolitan cities call for a different solution. The American park system, though a valuable contribution to town planning, cannot cope with the enormous extension of the modern town and the recreational needs of its population. But the importance of this problem seems to have been fully recognised. Even town-planning schemes which are still lacking in other respects exhibit a serious effort to provide open spaces in proper relation to the numbers, classes and age-groups of the population and to the types of houses. This is a hopeful sign,

for the introduction of natural vegetation on a large scale to the interior of towns has a very wholesome effect, not only spiritually but also very materially. It splits up the rigid conformation of houses to streets and the long and sterile rows of buildings. It brings life, change and vigour direct to the townsman. It is no overstatement to say that this " deurbanisation " of the town is the most potent instrument for turning its development into new channels and fundamentally altering its appearance.

The music of the nineteenth century again offers an excellent

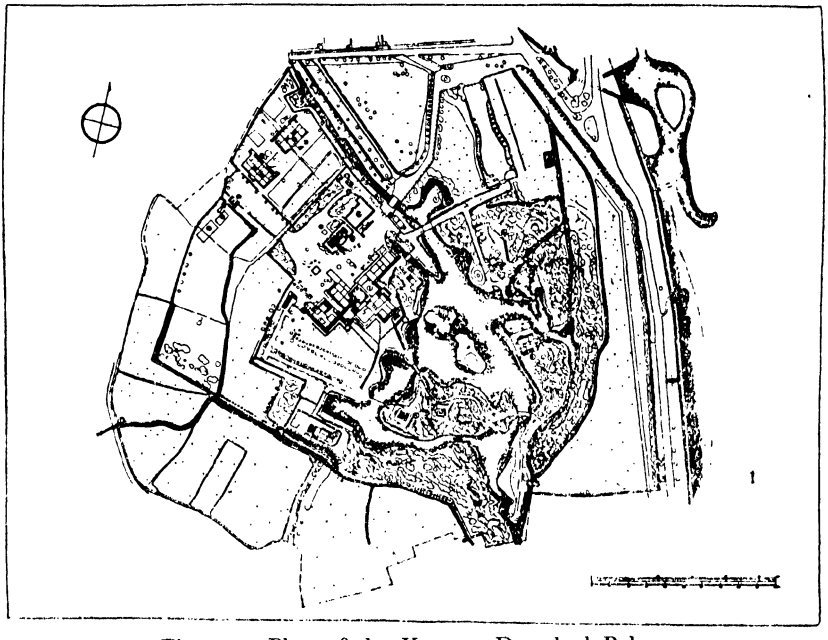


Fig. 25. Plan of the Katsura Detached Palace

means of understanding the close interdependence of town planning with the contemporary tendencies of cultural and social life. In the second half of the eighteenth century a musical development set in which has exerted its influence up to the present day. Like town planning, music for a long time remains metrically regular. Its main representatives are grouped around the prince just as the town is around the palace. Vienna is the music-town *par excellence.* Just as the limitations of the towns are breaking down under the impact of the new forces and their sphere of influence is extending, so music, now intimately interrelated with poetry, reflects a diversity of philosophical, religious and scientific

ideas. The general emancipation of the individual is echoed in the music of Haydn, Mozart and Beethoven. But they do not apply this new liberty in an unrestrained manner ; rather do they subordinate themselves to a self-imposed discipline. They use old elements if these can be adapted to their work. Town planning does the same : the old structure is preserved and adjusted to its new quarters. Humanitarian ideas and an optimistic attitude are outstanding characteristics of these great musicians. Humanitarian efforts are responsible for the building of the first workmen's settlements ; and philanthropy stirs up public opinion when the housing conditions of the poor become too unbearable. Mozart and Haydn are more compliant than Beethoven, quite apart from the fact that they belong to an earlier period. Their whole life through they stick to their wigs ; Beethoven lets his hair grow freely. In the earlier period the palace gardens with their trimmed hedges and their trees are the citizen's substitute for Nature. After 1800 the social structure changes more rapidly, and the towns with it. They begin to spread out into the open country. Beethoven is the musician of freedom and peace, of the forces which more than anything else gave rise to the great manifestations of civic pride of the nineteenth century. In the older Viennese style one voice still dominates—the dominant accent of the palace in the plan of the town is the obvious parallel. As time goes on this changes : the themes and accompanying voices coalesce. There is an uninterrupted floating of all the musical elements of preparation, suspension, retardation and resolution imitating the commotions of spirit and mind. The predominant feeling is expressed in the leading melody, while the accompanying voices illustrate the emotional process in detail. The towns begin to sprawl into the open country ; new districts develop around the central zone ; the ramifications of the traffic within and between the towns are increasing. The Romantics among the composers strive for a continuous flow of the musical movement and for a dissolution of the clear contours of the musical form and timbre. The precise clarity of the classical form is disintegrating. Wagner is the end of this development. For the contents of his music-dramas he looks backward like the traditional town planners. The text is almost submerged in the melody ; the orchestra resembles a choir which embraces the solo voice. Wagner's works extend from the romantic glorification of the *Meistersinger*, the peaceful burghers of a small town, to the mystic theatricality

of the Knights of the Graal. Architecture and town planning are, in the same way, at one time of a middle-class character, at another theatrical-aristocratic ; but in any case they are " second-hand ". The builders know how to build in any style.

At the turn of the century a more realistic attitude is adopted —at any rate, romanticism is believed to have been pushed into the background. The result, as in the case of Richard Strauss, is a merging of the romantic with the intellectual. In town-planning this means the widespread use of modern technique within the existing structure of the old plan. Music prefers horizontal to vertical relations. Before a concord can be appreciated in its full harmony the musical movement has flowed on. This is an especially important characteristic of music and town planning alike. In the latter it means that the outward expansion of the separate communities which surrounded the central town comes to an end ; the same change affects the uniformity of the streets, all of them being capable of serving both residential and traffic purposes. This system breaks up as the separate communities and districts coalesce more and more and arterial roads become the main connecting links. Like the big cities, music is inflated exorbitantly, and tonality is in many cases given up. Movement ! Movement at any price ! The tonic, the centre of the whole harmony, loses its clear and fundamental significance in the same way as does the centre of the town. The orchestration grows ever more complicated and technically refined ; the technical achievements of urban traffic threaten to burst asunder the structure of the towns. The harmonic relations relax into complete atonality ; polyphony turns into polyody, where no voice takes any notice of the others. Harmonies of the most different kinds are blended ; rhythm almost completely dissolves. The similarity with town planning is striking. Gradually interest in a more articulate form reawakens. A new and clear structure develops through the use of smaller and more distinct elements. Is not this an exact parallel to the present state of town planning ? The various zones are intermingled ; one zone grows at the expense of the others ; none has an outspoken character of its own. Streets and houses are without functional inter-relationship ; house follows house without a co-ordinating idea. Flats are piled on top of each other and their interior layout lacks all system. We feel that this general confusion cannot go on. So a beginning is made with details : one new district is built and planned as well as possible ; here and there a few good houses

are erected ; one traffic artery is cut through the mess of the streets. All this is the mere beginning of a new architectural rhythm. But an architectural " polytonality " has not yet been perfected except in a few theoretical schemes.

A regeneration of the towns on the old lines is impossible. We cannot go back. But neither can we go forward in the same direction, for the revaluation of all values is a fact. The rise of the masses may lead to an unprecedented advance of mankind. But it may also lead to a catastrophe. Success can be expected only if man's personal life gains the ascendency over the forces of his functional life. The worship of quantity and of old values must give place to the creative energies inherent in an appreciation of quality and of the future. History should teach us that only a freedom which grows within limitations is formative, and that *laisser-faire* leads merely to a shapeless muddle.

Under such conditions it is inevitable that the relationship between houses and streets as the main elements in the planning of our towns is almost the opposite of what it should be. Neither streets nor houses fulfil efficiently their specific purpose. The clear distinction between their different and even contrasting functions has been lost in a general vagueness. It is our task to plan systematically their purposive adaptation to the changing needs of the present and the future.

II

The foregoing survey does not pretend to give a complete picture, or even an outline of all the facts which have a bearing on the problem of the interdependence of houses and streets. Some only of the major aspects have been mentioned, but these may help us to assess the fundamentals in their true perspective. Three factors seem of special importance in regard to this question. They are : (1) the changing view of space ; (2) the changing view of living ; and (3) the changing demands of traffic.

The changing *view of space* in architecture is a reflection of the changing conception of the universe. Every epoch has created its own idea of how the universe works. This idea is conditioned—how could it be otherwise?—by the spiritual and intellectual attitude of the time and by its degree of readiness to embark on intellectual adventures and to transform their results into reality. We have already seen that with the conception of a stable and limited universe went the limited town focussed on

a centre or on a perspective view. This striking reciprocity is evident not only in the general layout of the towns but in their every detail, down to the relationship between the interior space of the buildings and their outer walls. This conception of a stable and limited universe was disintegrating before a new interpretation could emerge. It is very noteworthy that this period of enquiry and of diminishing belief in the old notions coincides with that of greatest confusion in architecture and town planning. The old space-relations have lost their meaning and their hold over the minds of men, whether they are actual builders or are mere onlookers. But just as astronomers and physicists have been at work thinking and experimenting, discarding old ideas and forming new ones, so also architects and town planners have been busy developing new ideas and suggesting practical schemes for a revolutionary reshaping of the physical environment. The work of the scientists has resulted in the Einstein universe which, though in equilibrium, is unstable and not limited. The work of the vanguard of architects and town planners also leads to a new equilibrium, that between town and country, and to the demand for a flexible framework covering the whole country, a framework which will not break down under the impact of the dynamics of life, and within which every town and village can fulfil its specific functions in the most efficient way. This implies that the town, and indeed every community, will be restricted in its growth. But this is quite another kind of limitation than the lifeless city wall. The modern " city wall "—the green belt surrounding the town—is an agent of revitalisation and the most important means of unifying town and country.

Let us imagine that we are flying over a country still in the mediæval state. We see a landscape covered with woods and fields and hedges. At certain intervals we notice the sharp contour of a town cut out of the surrounding land. The city wall seems like a dam holding back the countryside and preventing the town from being flooded by it. If we journey over the same area to-day we look down on a vast sea of houses flowing over into the country and splashing it indiscriminately with innumerable separate buildings. We cannot distinguish where the town ends and where the country begins. And if we could again take to the air, say thirty or fifty years hence, the picture would again have fundamentally changed. The countryside now extends into the towns in the form of green wedges. The higgledy-piggledy

confetti-houses have disappeared. A clear pattern of individual districts has been inserted between the spokes of the green grid. Country and town together form an integrated and systematic unity. The whole is in perfect equilibrium, radiating the vigour of a living organism without any rigid lines of demarcation.

The guiding principle of this new conception of space is the appreciation of all space-relations as an indivisible unity ; and consequently the need to see them whole, not isolated from one another and from their environment. And because such a unity in diversity can come about only through clarity of form and purpose, each unit of the whole configuration—be it town, village, stretch of country, street, building, or room—must express its functional significance in a distinct fashion. In other words, its functions must determine its structure and its shape not only in relation to its own organism but also to its interactions with all the other units. Now all these factors together—oneness, wholeness and purposefulness—work towards integration, towards abolishing the mere juxtaposition of isolated units. This transformation must obviously have a decisive effect upon the structure and shape of each unit, for to adapt each purposively to the whole setting in which it exists is quite a different thing from making them dependent on the one unit to which they originally belong. If this end is to be achieved no unit can remain self-contained ; and this can be brought about only if all are connected together by a dynamic and resilient space-relationship.

It may be objected that all this is nothing new, and that so simple a result does not call for such a spate of high-sounding and abstract considerations. But we must insist that our conception of space with all its implications is fundamentally different from everything that any previous period has produced. The change it involves can be compared only to the far-reaching effects of the Copernican system and to its repercussions on architecture and town planning. It is a very great demand which is being made on our generation, and it will not be easy to live up to the tremendous possibilities open to us. This principle of functional unification, as we may call it, is waiting to be accepted and realised in every sphere.

The obvious conclusion to be drawn from this principle is that planning and building are one. To place even good buildings in any single relation to the street and to other buildings is not enough ; they must be interrelated in one distinct fashion so that they form a functional unit. We must decide whether their

space-relation is to calm or to stimulate our mind, whether what we want is a sharp contrast or a gentle coalescence ; in general, whether a stationary or a mobile effect is to be achieved.

Is not all this rather vague, and is not the form of the material buildings the only determining factor ? What has space, apparently a mere abstraction, to do in this respect ? Is it not merely the vacuum between the buildings ? True, matter and space are elements of very different nature, but nevertheless both have equal significance in planning and building. Let us make this quite clear, for there are many people who do not see the space for the material, or rather do not feel it. Let us take a Gothic cathedral, one of the beautiful cathedrals of Northern France, say Chartres, as an example. The stained glass of the windows lets in only a very dim light, so that the interior is veiled in shadow, modified only here and there by a chiaroscuro in which parts of the massive structure become distinguishable. We are deeply impressed by this unreality, and for want of a better name we say that the " atmosphere " of the building exerts this influence, thus admitting that it is not the material form but what that material form enshrines that is the most important factor. " Atmosphere " is in this case identical with space, and our emotional reactions vary in accordance with the different kinds of " atmosphere " which the separate parts of the interior radiate. When we enter we hesitate to move forward ; we seem to be lifted up and lost in the mysterious shadows of the lofty vaults. Then the depth of the cathedral asserts its claim ; we are driven along the nave by an invisible force till we reach the centre and the high altar where the vertical and the horizontal movements seem to balance each other before they come to rest and die away in the circular repose of the apse. Each part of the cathedral has a specific atmosphere of its own, exerting its separate influence without destroying the unity of the interior as a whole. The primary cause of this effect is the space—that " where there is nothing ", as Laotse put it—not the matter enclosing the space, which is not so much directly visible as sensed indirectly, or is at least directly visible only in its parts, parts which can hardly ever all be taken in at a single view in their full extension. It is that " where there is nothing ", the space and the space-relations, which produces the variety of dynamic, balancing and quiescent effects. The function of matter is to give shape and tension to the separate parts of the interior space. Space is the positive, matter the negative

element in this interplay. In spite of all its beauty and elaborate workmanship—the walls reduced to a minimum, the pillars seeming not so much to support the weight of the walls as to glide along them till they meet in the keystone ; the ornaments and the sculptures—the matter serves to divide up the spatial elements and to separate the interior from the exterior space. We can look at these parts of the building, but we cannot move within them as we can move within its space. Space rather than matter is thus the more direct, the more active, and the more usable factor.

The contrast between space and matter—or rather the difference between their specific characteristics—may here have been somewhat exaggerated. But a clear understanding of its importance is essential if buildings and the space between them are to be interrelated in such a way as to sublimate their value and do away with indifference. Our works should reflect the conception of space which is peculiar to our own time and which we have tried to explain above. Functional unification is more than the arrangement of buildings and streets in a merely utilitarian fashion. They should be interrelated by the more potent means of that " where there is nothing ", of that within which we move and which cannot be looked at but which more than anything else permeates our feeling and our senses. Thus form, size, structure, the relation of the closed surfaces to the openings, of the projecting to the receding parts, colour and texture, every detail of a building assumes a definite significance in the whole configuration and in the interaction between the solid parts, the soft plasticity of the vegetation and the incorporeal tensions of the space between these material works of man and Nature. The cathedral was selected as an example because it seemed especially significant. But think also of the Square of St. Peter, of its embracing immediacy, of its tensions towards the massive body of the church and its relaxing softness under the shadows of the colonnades. Or ascend to the Capitol and experience the almost magnetic attraction which increases with each step till we reach the square and are reluctantly drawn forward by the diagonally arranged buildings on both sides, whose divergence from the straight is hardly visible. Or let us wander among the ruins of the Acropolis of Selinunte, where we can still feel the stable equilibrium with which the sculpture-like temples and other buildings invite us rather to look round in leisurely fashion than to move about in the space which seems to rest in motionless

tranquillity between them. Or let us look along the perspective down the avenue where the man-made melts into the natural landscape to the terraces of Versailles. We are torn between a mere visual appreciation of the distant building from where we stand and a desire—a strange mixture of curiosity and timidity—to walk on as quickly as possible. Every part of the open-air architecture into which Nature has been pressed is filled with motion, permitting no departure from the direct path till the crowning frontage of the palace has been reached. In each of these examples it is space which is the primary cause of our emotional and mental reactions. Its shape, its inherent tensions and its intimate interrelationship with the buildings and the natural surroundings are factors which should be looked upon as much more essential than we have hitherto considered them.

During the last century these principles have been forgotten. A purely utilitarian outlook, or rather an outlook which pretended to be utilitarian, was dominant. In reality neither streets nor houses fulfil their purpose usefully, to say nothing of the utter neglect of any attempt to interrelate them through the medium of space. True, streets lined by houses as we know them to-day are also spatial elements in the general layout of a town. But this "space" has degenerated into a canyon-like unimpressiveness. We shall see later why improved access of air, light and sun to the buildings has a breaking-up effect on the uninterrupted block front, and why bringing trees near to the town-dweller works in the same direction. These are the practical reasons. The ideal justification lies in the need for revitalising the stagnant space of the streets and re-establishing the buildings as clear and functional architectural creations. Unification should be achieved through the connecting link of impressive space-relations, not through a dull repetition of the same design. Modern architecture has already shown the way. It has abandoned the massive supporting walls which surround the interior of a house like a prison wall. The walls have become a mere membrane giving protection against the weather but throwing the building open to the outer space. The interior is widened out into the open and blended admirably with the surroundings. The supports have been reduced to a few pillars or columns, and glass, possibly the most important building material of the future, has replaced massive walls. It forms a skin stretched over the body of the house, and like a skin it covers but does not hide the interior. It is sensitive

to the outside, but does not cut the connection between outside and inside. It reveals structure and functions, but does not mislead by camouflaging the real construction and arrangement of the building. It is obvious that such architecture allows of a much more intimate interdependence between the buildings and the surrounding space. It is not as it were a dam from which the tensions of the outer space recoil. It can take them in, and it can also radiate energies to the outside. *Façade* means the outward appearance, the surface of a building : as such it is two-dimensional ; it has no depth. It is like a curtain let down to cover the human drama that is being acted behind. Fundamentally there is not much difference between these façades and those which, it is said, were erected by Prince Potemkin as " curtains " to cover the tumble-down houses in the villages when he conducted the Empress Catherine on a tour through his estates. They fulfilled their purpose : the Empress was suitably impressed and the human beings living behind them remained unsuitably depressed. The façades of our houses also are lifeless and theatrical surfaces. They cannot react in accordance with the changing ideas of our time to the diverse energies emanating from the outer space. It is, of course, quite another thing if a building appears as a three-dimensional body and not merely as a two-dimensional surface. In this case two important revaluations take place : all sides of the building are of equal value and the interaction between the outer and the inner space is direct and functional. A new dynamic fills the streets. The continuous rows of houses are replaced by a diversity of vigorously arranged elements consisting of small and large, low and high buildings, and of the living green of the natural architecture. The space of the streets expands to both sides. Its lop-sided longitudinal extension is balanced by this spreading out. Every section of a street has its own characteristic features in relation to the buildings and the space between them.

Considered as a traffic route the street is a mere two-dimensional ribbon, while the arrangement of the buildings is independent of the direction of the street.

The changing *view of living* demands housing conditions which are not only vastly improved, but are also completely different from those we have to-day. We may safely assume that such a transformation is impossible if the agglutination of houses and streets persists. Housing fulfils a stationary function as opposed to the function of the street which serves the mobile traffic.

Each function needs different and even contrasting prerequisites if the most effective results are to be produced.

The first steps towards accommodation to the changing view of living had already been taken before the war. But there should be no mistake. The problem cannot be reduced—as some people think—to one of building more small houses even if they are arranged more spaciously, or to the creation of a number of garden cities. All this is quite irrelevant. It is sheer propaganda by " small-town folk ", as these old-fashioned enthusiasts have been called. What are the really essential factors in this process of reshaping our environment?

We do not want—	*We want less—*	*We want more—*	*We do want—*
The house as a monument, because it is an anachronism and a sham.	Moonshine.	Sunshine.	The house as a functional organism, because life requires clarity, simplicity, brightness and sincerity.
The house as a dark room, because it gives a sense of being cloistered.	Walls.	Windows.	The house as a transparent protection, because life requires light, air, nature and openness.
The house as long-term producers' goods, because it is an object of speculation and unadaptable to changing needs.	Interest on capital investment.	Interest in capital needs.	The house as short-term consumers' goods, because life requires an up-to-date house for every generation.
The house as dictator, because it makes unjustified demands on the household budget and household work.	Traditional junk.	Labour-saving innovations.	The house as servant, because life requires money-saving rents and labour-saving devices.
The house as a sound-box, because it enenforces involuntary participation in the life of neighbours.	Noise.	Privacy.	The house in the neighbourhood unit, because life requires social intercourse and quiet.

We may quote the following sentences from a description of

the changing interrelation of houses and streets which was written in another connection : [1]

One of the most important results of this process is the improved access of natural light and fresh air. Another result which is often confused with these advantages is the introduction of the maximum amount of sunshine by an expedient orientation of the buildings. The former factors, light and air, primarily concern the fenestration while the latter, the access of sun, affects the placing of the whole building. If we draw the right conclusions from these facts two important changes should be made. First, the compact arrangement of buildings must give way to a wider spaced layout. Secondly, the orientation of the buildings must be made independent of the layout of the traffic streets, which is subject to different conditions. As lines of communication their direction will deviate in many cases from the front-line of the buildings. The first reaction to the predominance of the street and to the detrimental effects of overbuilding in order to extract higher rents from the estate, was the introduction of a building line for the rear of the houses. This principle has widely been used on the Continent and produced tangible results in its time. Buildings could be erected only along the street to a depth of about 45 feet. All this was certainly a great step forward, for the flats could be sufficiently ventilated from the front and from the back. The improvement of the lighting conditions was noticeable. But one disadvantage remained. Only a small part of the flats could get a moderate amount of sunshine because the whole layout was still fixed on the pattern of the streets. The arrangement of the dwellings at right angles to the lines of traffic fulfils some of these postulates. Houses and blocks of flats can be so arranged that their lines extend from north to south, thus avoiding the unfavourable north orientation. However, this system is still too rigid and does not permit the assignment of all those advantages to the flat or house which they need if they are to fulfil their specific functions within the organism of the community. It will be necessary, therefore, to break up the direct relationship between street and house. This means that the orientation of the houses must be independent of the direction of the street ; that houses can be put at any angle to the street, and that the rectangular principle should be abandoned. The size and shape of these units will differ considerably from the previous block unit. Forces from within are the determinants, and not the external circumscription.

This explanation gives only the main trends in broad outline, but may suffice to prove the tendency that exists towards a drastic transformation of the interrelation of houses and streets. If such a tendency does exist we should seek to further it, and to plan the next stage deliberately and carefully.

What should the new living space look like ? This depends

[1] E. A. Gutkind : *Creative Demobilisation.*

first of all on what we want to get out of life, what use we want to make of the possibilities which technology and science offer us in the practical field, and whether we understand how to free our personal life from the tangle in which it has been caught through the overvaluation of our functional life. Certain traits seem to have assumed a predominant significance in this process. Separation of the place of work from the home is a fact in a spatial sense. But it is not a fact in an ideal sense. The atmosphere of the place of work permeates our homes and sets the rhythm of our whole life. Our interests centre round our work; and this one-sidedness makes us narrow-minded and lop-sided. How few can claim that their actual work is really identical with their aspirations as human beings, so that their whole life is in harmony, in which the influences emanating from the outside world are suitably balanced with those from within themselves. Most of us do not even realise that we are fractional men and that we do not live a personal life at all. What we expect of life is in essence that it should resemble a smoothly running train stopping at the familiar stations where we can get out for work, for meals, for conferences, for sleep and for what we call leisure without bothering why it all goes on like this and why we are gentle robots.

One of the main reasons, I think, for this functionalised existence is our ever-growing insensibility to cultural values. But this statement will remain meaningless to many people because it is too much in the nature of a short cut. It needs elaboration. We know something of "higher ideals", of "beauty", and of "products of culture". But it is mere "knowledge about". We are not really sensible to these values. Dr. F. W. Jones gave a very sound explanation of this problem when he told students of Melbourne University something about the detrimental methods of university education.[1] He said:

> If a man is to be merely set on the road to earning his living it is essential that he should become thoroughly familiar with his elected subject. Familiarity with the matters with which he has to deal is the hall-mark of the man who is well equipped to earn his livelihood. If a man is to face his life with something more than a mere passport to making his living he must have more than mere familiarity. He must have appreciation and sensibility.

In this connection he quoted G. K. Chesterton's address on *Culture and the Coming Peril* where he says that "the Coming Peril

[1] F. W. Jones: *Life and Living.*

was the insensibility to real values, begot by the familiarity acquired by faulty education ". This Peril is for him " a certain familiarity with things that are the materials of Culture, and, at the same time, an insensibility to them ". It is the result of a general vulgarisation, a yielding to the many and to their likes and dislikes. It is the result of a herd-consciousness on a scale never before known. In another connection Dr. Jones says : " We are all sinking to the common level of a standardised loss of individuality. Few are prepared to let their fellows know that they are non-conformists, in a world that accepts commonplace mediocrity as the hall-mark of respectability." We all are bound hand and foot to the idea of our own closed group, but not to the reality of our own selves. We identify the habits and behaviour of this group with Habit and Behaviour ; and because we do so we are blind to all that lies beyond the scope of this narrow circle, assuming that everything outside it runs counter to our own interests. We may be inclined to compare this being enclosed in a group to the situation of mediæval man. But such a comparison is inappropriate. Mediæval man, with all his works, was embedded in his groups, spreading out from the family through the guilds and other fraternities to the invisible community of the Church. " The great difference which we must recognise between mediæval theology and modern science, is that an economic structure was directly and logically derivable from the former, and no clear system in such matters has as yet arisen from the latter." [1] On the contrary, science is one of the prime causes of our fragmentary outlook and broken state, not because it has so far produced too little but because it has overwhelmed us with too much. It has stimulated our reason to the highest degree of alertness and has narrowed it down until it is content with the discovery and knowledge of facts, but it has developed no irresistible urge to make use of this knowledge by means of actions directed exclusively to the good of humanity and rejecting anti-social ends of any kind.

This does not mean that we make too much use of our knowledge and should rather, therefore, follow our emotional motivations. The very opposite is true. Since both reason and emotions are realities, and since reason is apparently the more advanced, it is reason that should direct our emotional aspirations as well as our inhibitions. Until this creative balance has been achieved, we lack oneness and our life continues to be focussed

[1] J. Needham : *Time, The Refreshing River.*

on isolated issues. It remains insensible, and our sense of analysis is developed more strongly than our sense of synthesis.

To-day we are witnessing the first stages of a revolt against analysis. The battle between the " uniters " and the " dividers " has been joined and is spreading to every sphere of life. In the special field with which we are here dealing it finds its expression in a growing opposition to the production of surveys which in many cases repeat facts which are already known, and are at best only starting-points for a synthesizing application. It is not only that this collecting of unrelated facts is unproductive ; the real danger consists in the method by which these facts are arrived at. They are investigated not from the standpoint of their interplay with other factors, in other words within their environment, but separately from it. This is the natural consequence of our state of mind, which enables us to get a magnificent view of details and their value, but makes it very difficult to see things whole. Analysis without synthesis is a danger. It leads to the production of surveys which may be compared to the work on a conveyor-belt where the human robot is not interested in and does not see anything beyond his own small piece of the whole process. The difference is that this rationalised process, say the building of an aeroplane, has grown out of the conception of the plane as a whole. It is precisely this ability to see things as wholes, essential as it is, which is so far lacking in almost all such surveys. It is the same lack which has produced the unimaginative lumping together of building blocks and the endless repetition of identical houses. It is this unity through repetition which is the result of a fragmentary conception and which must be replaced by a unity in diversity. The revolt against analysis—our towns are the most telling examples of this analytical approach—will be successful if we place less trust in a superficial familiarity with things and more in a sensibility to human and ideal values ; if we join with the " uniters " against the " dividers " ; if we free ourselves from the split-complex which is latent in a traditional outlook, and strive to gain that breadth of understanding which enables us to see the configuration as a whole and to assess the separate purpose of each detail in an integrated environment.

What are the values which should be our guiding principles in this procedure ? It is not easy to explain them in concise terms without the risk of being accused of generalisation. The values we are dealing with here are of a somewhat different kind from those which are tangible and satisfy the material needs.

Both categories, however, are interdependent, and it would seem that the former conditions the latter rather than the reverse. Material values are embodied in things, while ideal values are the expression of unsubstantial and fleeting ideas and aspirations. The former belong to the category of familiarity, the latter to the category of sensibility. With this proviso we will try to diagnose the intangible values which are the very causes of the environmental atmosphere—in spite of its loose meaning no better word exists for this unsubstantiality—of this atmosphere as it should permeate our living space. To some this attempt may appear to have a purely theoretical and even philosophical significance leading us far away from our subject, the interrelationship of houses and streets ; but those who are interested in the " Why " and not only in the " What " may not consider it an unnecessary deviation.

The argument should start from the ideal needs of the *individual*, not from those of a group. This is not a discrimination, but rather a method by which to lay down a clear distinction between the two. It has already been explained that we shall never attain an undivided personality and live a full life if our functional life retains the primacy, submerging our personal life in a spate of meaningless activity. The old ideals have gone. They have degenerated into empty idols and conventions. We do many things because we are used to doing them, and because our fellow-men do the same. But if we asked ourselves searchingly and sincerely what these conventionalised ideas genuinely mean to us, or whether they mean anything at all, we should find ourselves in a rather embarrassing situation. Race, religion, nationality, State and many other such conceptions are losing their uniting influence. True, they still play their parts to-day, as the war shows ; but at the same time there is a strong undercurrent strengthening the belief—conscious in the conviction of the few and subconscious in the vague feelings of the many—that the only frontiers which really matter are those running through the minds of men. Hélan Jaworski, the eminent French philosopher and scientist, says in his book *La Découverte du Monde* :

In the early stages of humanity when the totemistic clan was the primary social form the function of man could be defined as : man in his totality is a member of the clan. The Totem is the ancestor of the group, its spirit of protection. In a tribe all members belonging to the same Totem are of the same kind and assume its name. Thus the Totem is embodied in the group as a whole in its essence and

not in the individual member as an isolated being. It is the substratum of the individuals who compose the group residing at the source of life, it is the generating energy and the collective name.

This early situation has been modified during the course of history. But has it been modified so much as we often suppose? In spite of their hollowness the idols to which we still adhere have a hold over our body and mind which is not so very different in the reactions to which it gives rise from the primitive stage, different though it is in its essential contents. Many will not like this comparison. They feel so superior that they refute it without further consideration. They are blind to the deeper causes of the present conflict, though they may be more inclined to agree with regard to the past. Bakunin observes:

> Until now all human history has been only a perpetual and bloody immolation of millions of poor human beings in honour of some pitiless abstraction—God, country, power of the state, national honour, historical rights, judicial rights, political liberty, public welfare. Such has been up to-day the natural, spontaneous and inevitable movement of human societies. We cannot undo it; we must submit to it so far as the past is concerned, as we submit to all natural fatalities. We must believe that that was the only possible way to educate the human race.

Although we still submit to such abstractions we seem to have become more ready to discard them, or at least to look at them in a more objective and detached way. Some will deny this, for are we not just now witnessing their greatest triumph? Our answer is No; what we are witnessing is only their desperate effort to retain their power, and as always the last flame is the highest.

If these idols are disintegrating, what is to be put in their place? Man cannot exist without spiritual values. Some will answer: This new ideal exists already, and has proved its all-embracing power. It is science, which has already taken the place of the old values. Again we answer, No; we do not want a new totem as the dominating power of our lives. We do not desire that any power, however great its importance to mankind, shall be our master. All must be our servants. Nothing is more sublime than man, and man alone. We desire to set man in the place of all these idols, for only then can we hope to create real and universal new values. The sceptic in us may revolt against this aspiration as impossible. But the realist—the creative realist who sees things and life whole and who is present in everyone—will make this his choice.

Even from the most irreconcilable quarters it is agreed that a new world is in the making, and thus the disintegration of old values and ideas is admitted. Our transitional age has often been compared with the early Renaissance, with its explosive disruption of the familiar, limited world and its expansion into new spaces and intellectual adventures. I doubt whether this comparison is really justified. So long as man's spirit of adventure finds an outlet in exploring and developing regions not yet opened up, it can range over wide spheres and find its satisfaction in the conquest of new lands, in the subjugation of other men, in the accumulation of riches, in the accumulation of knowledge and in the ostentatious display of these gains. It is as it were an extravert process. To-day the world is fully known, at any rate spatially. Conquest, subjugation, accumulation can take place only at the cost of other groups, and knowledge *per se* may lead not only to productive but also to destructive consequences for humanity ; while the grandiose ostentation of a Medici or a Louis XIV or a Philip II has degenerated into the fussiness of parvenus and snobs. All ways seem to be blocked, to be dead ends. Past generations have seen the birth of material wealth leading to the adventure of production, and the birth of knowledge leading to the adventure of science. The disturbances of the present are the throes heralding the birth of man and of wisdom, leading to the adventures of life in its reality, of creative self-expression and of social responsibility. To live in order to live is not enough. It is essential so to live as to bring out our own personality. Material wealth and knowledge, production and science, are nothing if they are not directed by wisdom towards social, never towards anti-social, ends. The process of evolution is being reversed. The extravert outburst is giving place to an introvert sublimation. Quality is more important than quantity ; internal regeneration outweighs external expansion. This development is logical, for before we can appreciate abstract values we must pass through the stage where we perceive and sense objects externally ; in other words, ideas follow sensations. We may say with Goethe : Man is outwardly limited, inwardly limitless. In the present connection this means that so long as man tries to expand his actual living-space he will always come up against a frontier ; but as soon as he sets out to remake himself and his surroundings, while moving in an outwardly limited sphere, no frontier will ever set bounds to his activity.

In the early stage blood relationships and predetermined

conditions placed man in a position where he had no free and personal choice as to the persons and institutions to which his loyalties were to be devoted. He is born into his family and adheres to its creed. He is by birth a member of the same state and belongs to the same nationality as his parents. He belongs to the same class and only rarely transfers to another. He is a group being, enclosed by the various shells of his predetermined loyalties. Medieval man also leads a shell-like existence, differing only in degree ; the compass of his various loyalties has widened, or one of them has gained more predominance over the others than before. Only now is something new emerging, though as yet very slowly and almost timidly. More and more people are breaking loose from these ties of blood and custom in search of a free and personal choice. This transformation expresses itself in a changing attitude towards our fellow-men and in a change within ourselves. The latter we have already explained. The former will take shape as a renunciation of the old social bonds in favour of social affinity. Such a choice cannot be made by a group, or else it would not be free. It must be made individually. Made by a group, it would smack either of compromise or convention. Social affinity is an elective process which leaves both sides free ; it is the opposite of coercion. It starts from the bottom and grows gradually, everyone being free to break away. It is the very constellation wherein the individual can grow in mind, character and intellect because he must ever prove anew his worth. There is no relationship other than that which he has chosen himself. These are the reasons which explain what was said in the beginning, namely, that the argument should be built up from the ideal needs of the individual.

If we want to have a community of human beings related by social affinity, we must replace the collection of material things and the totalitarian oppression by idols by a reinstatement of genuine values and of reality. If we want a worthy environment, the whole atmosphere must be filled with those radiations which stimulate the necessary changes. And if we are aiming at reality in the present, consolation in a beyond will not do. It is not enough to group cells of dwellings together and expect that a sense of community and new values will grow up as the result. We must re-create sensibility to values and make the environment an inspiring and integrated whole. But

Man [as Jaworski says], does not exist isolated from the universe. He is not merely an episode in an epoch and an environment, a fire

lighted at dawn only to die at dusk. He is a constituent part of a greater being through his unitedness with others. He is a cell, a thinking cell. Looking around us at the complexity of our organisation we feel that it is impossible to say any longer : *I think, therefore I am.* It is : *I think, therefore we are.* That he should proclaim.

This discussion should be considered as nothing more than a rather incomplete attempt to elucidate some of the problems which have a bearing on the reshaping of our environment in the broader sense. It is a " thinking aloud " which may induce others to take up the same line of thought and to elaborate more points of view. We should get absolutely clear in our mind how these spiritual and ideal values can be transformed into reality, i.e. into bricks, mortar, cement, glass, colour, and into an intimate interrelationship with Nature. Within this greater complex the interaction between the group and the individual is one of the foremost issues. It needs special attention ; it is very subtle, and its mismanagement is bound to reduce or even destroy the hopeful effects of the environmental atmosphere.

It would seem that an intensification of living demands as its prerequisite the destruction of routine and illusion ; routine in the sense of the thoughtless repetition of mere functional activities, and illusion as a blind adherence to conventionalised values and purposeless forms. Our environment should be direct in its honesty, clear in its purposefulness, impressive by its simplicity. Food, shelter, clothing, work, leisure and security can be provided even within a degrading environment. And even such an environment is permeated by a certain " spirit " —the spirit of a docile acceptance of so-called facts. The stimulating variety, the energising spirit, can be found only in a life of reality and adventure. Why should there be a contradiction between ideals and practical achievements, between high theoretical standards of ethics and an uncompromising attitude? We are taught that these higher values are to be our yardstick. Either the teaching is hypocritical or we must fight for its realisation here and now. To offer a splendid and exciting life on the screen is a poor substitute for the sad reality of a poor and empty home life. It is a depressing experience to live on the dole instead of on the fruits of productive work. To expect people to be filled with enthusiasm and a spirit of sacrifice when they are told about the glories of the past and its uniting power instead of achievements through common work for the present and the future is wishful thinking. An ethical code on paper or in the

mouth of benevolent hypocrites is more dangerous than outright brutality. Our whole civilisation is so permeated by dualism that we are not even satisfied with the unbridgeable gap between life in the present and the beyond, but have at hand a kind of secondary dualism which makes all of us first-class escapists. This escapist attitude must not pervade the atmosphere of our environment. The "as if" must not exist. Our houses and offices, our gardens and our streets, in brief everything that makes up our environment, must assert reality and truthfulness.

If we aim at such a state of affairs the scope for adventure seems almost limitless. It is not only the quest for physical adventure—a rather one-sided interpretation—which matters. It is intellectual and spiritual adventure that is open to everyone. I think that Dr. Wood Jones hits the nail right on the head when he says :

> It is obvious that if a man would undertake intellectual adventure he must have some leisure wherein he may quietly pursue his quest. It is easy to say that the general population is too occupied in its daily routine to attempt to form its own opinions, and that it must, therefore, take them, as it took its school teaching, ready-made. But it is unfortunately true that it is not so much because the leisure is lacking ; it is that the willingness to undertake the intellectual adventure is absent. A universally literate population is doubtless a triumph for universal free education. But a population that is prepared to accept its every opinion ready-made from the printed page is surely not a wholly desirable factor in democracy.

It is the same demand which Walt Whitman has expressed in the words : "Resist much ; obey little." Dr. Jones goes on to say that :

> No race, no people, no nation has ever become mature, let alone great, unless it has the hardihood of embarking upon intellectual adventures. Even this degree of greatness will never be achieved if the spirit of adventure is confined to the few and is not shared in by the common run of men.

If this goal can be reached, there is no danger of society's being able to develop to a higher state only by an increasing de-individualisation of its members, or in other words by their growing conversion into a mass. It is the thinking and adventurous individual that counts. He must find the right outlet for his creative faculties within a community of his choice, while fulfilling his functional activities within the stratification of society. It is for this reason that the environment within which we live our

personal life must offer to each man every possibility of choosing his style of living. If he wants seclusion, he should have it. If he wants social intercourse, he should have it. Whether he wants leisure, work, quietness or external impulsion, he should be able to make his own free choice. Consequently we should design neighbourhood units in such a way that the desire for association can be met, but without forcing men into association.

It is a widespread belief that man changes according to his environment. However, this is only one aspect of the problem ; it is, moreover, a rather doubtful assumption. We are nearer the truth if we hold that the adaptation is mutual, through reciprocal influences which so operate that the centre of gravity appears to lie more in man than in the environment. This statement, I know, is open to criticism. It may be a reaction to the over-estimation of outside factors and of man as a producer of things and to the underestimation of man as a creator of human values. The fact that we are thinking to-day in terms of a new environment is in itself already a creative though a restricted move towards this transformation. I said that *we* are thinking of a reshaping of environment. Who are We ? We are those who feel that the existing setting is no longer adequate to our aspirations ; but We are also those who have advanced beyond this negative appreciation and have formed a more or less clear idea of what this new environment should look like. Both groups are obviously the initiators of the coming changes, the one embarking actively upon the adventure of reshaping our surroundings in conformity with a new pattern of life, the other, though not inspired by this pioneer spirit, at least ready to accept it. The third group represents those who cling to the past, trying with all their might to find a new certainty in the preservation or the revival of old values and forms.

Home life should be kept apart as much as possible from work, not only physically but also mentally. Haste and restlessness should be avoided, and the clockwork robotism of man, the producer, should give way to creative leisure. To facilitate this transformation two prerequisites are essential. Time must be gained by reducing working hours in the factory or office ; distances between home and place of work must be reduced. Moreover, there should be no additional work at home as a result of bad house management. On the other hand every facility for satisfying the material needs and the cultural amenities of daily life should be within easy reach, the former comprising

such services as shops, the latter those such as libraries, communal centres, educational institutions. This side of the problem is too familiar to require further elaboration. We need only stress the absolute necessity of making *all* these conditions together —leaving out no one of them—integral elements of the general scheme.

[See page 90.

In relation to—	*The sensitive adventurers create—*	*The timid waverers are content with—*	*The romantic shirkers stick to—*
Culture.	Living ideals. Inspiring opportunities. Revolution of environment.	Good intentions. Conventions. Reforms.	Lifeless idols. Established facts. *Laisser-faire* "stability."
Community.	Association. Social affinity. Social programmes.	Aggregation. Social toleration. Play-producing societies.	Isolation. Social stratification. Commercialised entertainment.
Economics.	High initial costs. Coöperation. Life-relieving households.	Balance sheets. The monopolies of the local shops. Life-restricting households.	High running costs. Competition. Life-absorbing households.
Traffic.	Noiseless streets. Minimum conflict between pedestrians and vehicles. Maximum convenience for both.	Streets with less noise. Nondescript streets. Nearness to communications.	The cult of the street. Road accidents. Congestion of traffic.
Layout.	Mono-nucleated compound. Limited organism. Functional architecture.	"Beautiful" groupings of houses. "Open development." Cut-to-pattern houses.	The profit-focussed lot-system. Sprawling growth. Period houses.

We adhere to the principle of neighbourhood units for various reasons. It has been suggested above that the direct inter-dependence of houses and streets which results in the corridor-street should give way to a loosening up and a clear

differentiation between the stationary function of living and the moving function of traffic. That this assumption is more than a passing whim or a personal fad is proved by the structure of a neighbourhood unit, provided we draw the right conclusions from its essential characteristics. These characteristics can best be explained by a comparison of the attitude of the three social types. —See Table page 89.

Joseph Needham in his book *Time, the Refreshing River* says with regard to communal forms of living :

> There follows from the developmental nature of social organisation a conclusion which some thinkers, though otherwise clear-minded, have not been so ready to see, namely, that we have no reason to suppose that our present condition of civilisation is the last masterpiece of universal organisation, the highest form of order of which nature is capable. On the contrary, there are many grounds for seeing in collectivism a form of organisation as much above the *manière d'être* of middle-class nations as their form of order was superior to that of primitive tribes. It would hardly be going too far to say that the transition from economic individualism to the common ownership of the world's productive resources by humanity is a step similar in nature to the transition from lifeless proteins to the living cell, or from primitive savagery to the first community, so clear is the continuity between inorganic, biological, and social order.

Collectivism is a rather misused word ; it is generally applied in a political sense. In its original meaning, however, it has nothing to do with political doctrines. It expresses concerted action directed towards a definite goal. In our connection it means the deliberate attempt to provide the physical prerequisites, i.e. the physical environment of a neighbourhood unit in such a way that the interaction between the individual and this neighbourhood community can come into full play. It will not mean the suppression of individuality. On the contrary, it will cause it to develop by directing towards a set purpose the latent forces within those who take part in this experiment of living. It is a force of attraction which appeals to man as a social being. It calls the inhabitants of a neighbourhood unit to collective competition with other units in the ideal field, and repels encroachment by well-meaning " tutors " upon the self-regenerating community spirit. This kind of collectivism cannot be imposed from outside, either by authority, by philanthropy or by mere talking. It can best be described as mutual aid in the adventure of revolutionising our environment and in focussing common interests on to a common task. It is obvious that the alacrity

and awareness of such a group will depend first of all on these very forces, and that they must grow from inside. The neighbourhood unit is a mono-nucleated compound in a material and ideal sense. It is an organism, but not an organisation ; and as such it is outwardly limited but inwardly limitless.

The neighbourhood unit in its essence is a park interspersed with buildings. This is just the opposite of the present state of affairs. It means the definite end of the block system with its uninterrupted rows of houses and its canyon-like streets. The park, i.e. the neighbourhood unit, is a part of the green grid which stretches from the green belt surrounding the town into its interior, simultaneously separating and uniting the different districts and their subdivisions. This may seem to be a rather conventional description, and to repeat an acknowledged principle of modern town planning. Actually it deviates considerably from current ideas. It is certainly a very great achievement to drive green wedges into the amorphous mass of buildings and to provide open spaces in reasonable proximity to as many inhabitants as possible. But is this really the last word in the matter? So far no such system of continuous parks exists—except on paper. The plan of the London Regional Reconstruction Committee of the Royal Institute of British Architects is a serious attempt in this direction ; and the County of London Plan attempts something of the kind, although doubts may be permitted as to the eventual effectiveness of the suggestions put forward. In the accompanying text it is said : " It becomes possible for the town dwellers to get from doorstep to open country through an easy flow of open space from garden to park, from park to parkway, from parkway to green wedge, and from green wedge to green belt." I think it fortunate that we are still in the preparatory stage and that no continuous park system has as yet been laid out, for it gives us the chance of going still one step further and integrating the park of the neighbourhood unit with this system of public open spaces.

Our conception of an urban community, whatever its size may be, should be cleansed of all traditional ballast. I am fully aware that this will seem to many people to be going too far. But let us get the matter quite clear. When we speak of the conception of a modern town we mean the ideal town in its pure appearance and structure. This should be our ultimate goal. Nothing less will do. We cannot start off with a compromise if we want to be equal to the great promises which the future

holds in store for us. When Hippodamos conceived the plan of Miletus or another architect that of Priene they were bent on identifying their conception with the ideal solution of their task. The whole is moulded by one sovereign will. Jakob Burckardt says : " The *polis* is never thought of as a gradual development ; it is conceived as one single act of creation envisaged and realised by an initial impulse or a momentous decision." When Montpazier and Bram near Carcassonne were built they became the embodiment of clear-cut ideas and of an uncompromising attitude towards contemporary problems. Descartes writes in his *Discours de la Méthode* : " Ainsi voit-on que les bâtiments qu'un seul architecte a entrepris et achevés ont coutume d'être plus beaux et mieux ordonnés que ceux que plusieurs ont tâché de raccomoder en faisant servir de vieilles murailles qui avaient été bâties à d'autres fins." When Filarete designed his ideal town Sforzinda on the ground plan of an octagonal star, when Scamozzi laid the foundation stone of Palma Nova, when Prince Carlo Caraffa built Grammichele, each was making a determined break with the past. Every period must start anew, or it is not creative. And every time such a fresh start is made we find examples of an outspoken character as guides into the future. To-day also we are standing at such a turning-point where the old should be discarded and the new be clearly conceived as the ideal goal towards which our exertions should be directed. Only a fool would believe that this goal can be reached at once and in a straight line without any diversions. Yet this does not at all mean that the ideal solution, our determinate conception, should be watered down to a shilly-shally compromise. Compromises may come later in the course of the execution. Adaptations in detail are possible if they can be made to conform with the general idea. But that is something quite different from starting off with a diluted version of the original intention.

It is in this sense that we conceive the future towns as one coherent park within which the buildings are loosely grouped and surrounded by verdure, while the streets are mere ribbons independent of the arrangement of the houses. A continuous park system is not sufficient. In spite of its great advantages it cannot reach every house directly. It may be compared to one of those geometrical gardens which consist of a number of individual beds planted with beautiful flowers and trees, and surrounded by so much pavement that the latter seems to be the primary purpose of the whole layout, while Nature is only a by-

product. The opposite should be the case. There is no reason why a town should not be an immense garden stretching over its whole extent like a green carpet on which the buildings are so widely spaced that Nature is in direct contact with them everywhere. This is a transformation of the original park system going beyond a mere infiltration of open spaces between built-up blocks.

I believe that the most far-reaching integration of Nature with architecture in its broadest sense is one of the essential contributions of our age towards town and country planning. It is an explosive force of the first order and its consequences are almost limitless, but only if it is applied to the fullest degree. In fact it is the prime element in the complex problem of the regeneration of urban life. It forces us to view almost every aspect in a new light and to find new solutions for cultural and material issues. The mere fact that it takes up space hitherto used for built-up areas has a profound influence on the structure and atmosphere of the community.

It creates—

A unifying element.
A stimulus to the dramatisation of social and the revivification of individual life.

It generates—

A spill-over of the population into the region.
A direct interaction between the region and the urban area.
Intimate awareness by the townspeople of the cycle of Nature.

It produces—

A loosening up of the block system.
A splitting up of the block front.
A disintegration of the speculative lot system.

It provides—

A steady flow of fresh air.
Free access of sun and light.
An easy opportunity for recreation.

It enforces—

Diversity of layout and buildings.
Regeneration of architecture and space relations.
Reorganisation of traffic.

It rejects—

Piecemeal incoherence.
Self-centred insensibility.

It ends—

Overcrowding and high density.

Disfiguration and misuse of the country side by urban sprawl.
Antagonism between town and country.

It abolishes—

Rigidity.
Uniformity.
Cut-to-pattern buildings.

It prevents—

Stagnation and pollution of the air
Sunless and drab rooms.
Indoor rustiness.

It avoids—

Repetition.
Traditional humbug.

Stop-gap modifications.

To achieve these ends need not take longer than two gener-

ations if behind the plan and its implementation stands the indomitable will to carry it out with all its implications.

Every urban community should be developed as such a Park City. The general application of the plan would unite town and country in the most effective possible way. It would necessitate a regrouping of population and industry ; and it would fulfil a fundamental demand, i.e. the systematic limitation of every community within a diversified regional structure.

To consider thus the problem of restoring the lost beauty to every home on such a grand scale and of breaking with the disrupting influences of the past is justified not only on practical and ideal grounds but also because it is the true expression of our modern conception of space relations and of space as " finite but unbounded ". It means again looking at things in their totality and seeing the uniting factors before being absorbed by details. Is this also a revolt against analysis ? I think it is. Like our conception of the universe—now freed from the last remnants of Copernican limitations—we as town planners conceive our task as that of unifying and systematising the physical structure of the country as a whole. We recognise its finitude, and that of every community within it, but we do not recognise boundaries as separating elements in the process of planning. And because we have this conception we are bound to seek for an element which not only connects the individual places by a number of ribbons, the lines of communication, but holds them together in a much more elementary way.

Let us take again a bird's-eye view of this country after it has passed through its Revolution of Environment. We look down at a green surface dotted with buildings and larger groups of houses, between which the green of the vegetation resembles the fine ramifications of a delta, decreasing in width but never interrupted. Nature is everywhere dominant. The abruptness of the outlines has gone. Soft contours, with nevertheless a characteristic clarity, fill the picture. No pall of smoke overhangs the towns. The air is clear, so that the bright colours of the buildings can be easily distinguished. Thin ribbons traverse the landscape here and there, disappearing into woods or crossing each other on different levels. The railways, now completely electrified and running on a sound-absorbing substructure, speed along their silvery parallels. Motor-cars provide local transport and compete in speed with the trains owing to the elaborate system of motor roads. The densely built-up

urban areas have disappeared, giving way to a loose grouping embedded in the green of the parks, parkways, gardens and allotments. There are no factory chimneys, for the electrification of industry has been made compulsory. Indeed, it is difficult to distinguish industrial districts at the first glance. Only if we look more carefully do we notice a slight difference in the layout. It appears at one spot to be more compact, though even here the buildings are situated in green surroundings and near to playing fields and in direct connection with the open landscape. It is hard to imagine that these airy and pleasant places of work descend from the " satanic mills " which in Blake's time destroyed human happiness, health and dignity.

But what impresses us most is the omnipresence of Nature and the great diversity in the arrangement of the buildings. When we leave our plane we are told that the great improvement in speed of communication has brought about a perfect integration of cultural activities all over the country, the more so as reduced working hours leave ample time for them or for any other kind of recreation. We are taken by a guide to a memorial which has been preserved in its original state as an open-air museum. It is the last Garden City. Instead of these isolated attempts the whole country has been made one good dwelling and every community in it a Park City.

The reaching of such a goal would be the final fulfilment of the hopeful beginning inaugurated over two hundred years ago by John Wood's plan for Bath. This plan marks the end of the conception of a town rigidly excluding nature from the built-up area. In Bath this principle was abandoned. They went out into the open country ; they built the new quarters on the hilly slopes of the surroundings ; they made Nature an essential element of the whole. With this decision modern town planning was born. It is left to us to draw the ultimate conclusions from this sublime example—not only in theory but in practice.

Let us now examine in the light of these explanations the particular conditions which should govern the structure of a neighbourhood unit. It should be part and parcel of the park in which the community as a whole is situated. Consequently its configuration should not separate it from the neighbouring parts but unite it with them. That is to say that it must not consist of rows of houses which surround it on all sides and make the interior a kind of inner courtyard on a large scale. Not even

the fact that a neighbourhood unit was girdled by open spaces containing the traffic arteries would remove the negative effect of these house-façades cutting off the whole compound from the outside and in this way destroying the very idea of the Park City. A revival of the block frontage, a frontage of houses lined up parallel to and in consequence directly dependent on the street, in whatever form, should be excluded for still other reasons. It would make really thorough ventilation of the rooms at least problematic and would impede the access of sun and light to a considerable part of the buildings. As we have already pointed out, the neighbourhood unit is a park within which the buildings are loosely grouped. Their orientation, size, height, length and the form of the groups as well as the number of buildings making up each group-unit are determined exclusively by the internal structure of this small community. The layout is independent of the external streets. Its value is solely dependent on the maximum effect of the various factors which are instrumental in the development of a neighbourhood unit, as explained in the preceding paragraphs. The houses are standing in their own gardens which form as it were the first line of parks. In the case of small houses separate gardens can be provided, while in the case of blocks of flats common gardens will be preferred. These gardens coalesce with the park of the neighbourhood unit, though they may be enclosed by fences or hedges. The park as such is semi-public, belonging to the community of the neighbourhood unit, but open to the general public. It would strengthen the position of the community if this park-land were owned by all its members collectively, on the condition that they maintain it in a good state and make no alterations without the consent of the local authority.

Such a loose grouping needs a focus to hold it together in fact and in spirit ; otherwise it may lose its organic entity. Around what nucleus should the neighbourhood unit be grouped ? I have discussed this problem in detail in another connection. However, a few additional remarks may be appropriate. The nucleus of a neighbourhood unit should be the communal institutions, especially those for the child. This does not mean " that the child should be anything like a ' communalised ' child alienated from his family ". I am repeating these words because my suggestions have been deliberately distorted, although they have been made by almost all experts who have approached this problem in an unbiassed way and not in the hypocritical

spirit of those who want to restrict the mother of the family to the triangular competition between church, child, and kitchen. On the other hand we may be allowed to doubt the assumption that " the human personality is formed, primarily, through the family ". We cannot discuss the problem in this connection, but we should not forget that even Christ challenged this view as limiting the free development of man's personality. I am convinced that the solution lies in the integration of family life with social life, a process in which the child will serve as a promising medium if it is inspired from its early days with a sound communal feeling.

To enliven the spirit of the neighbourhood community and to give it a rallying point on which its interests may converge, an integration from within is essential. An external boundary resembling the wall of a mediaeval town would be destructive and not in consonance with our time.

The L.C.C. plan assumes for a neighbourhood unit a total population of between 6,000 and 10,000 with 240 to 400 pupils of from 7 to 11 years of age. If the term neighbourhood unit is to be more than a mere name this suggestion is untenable. The unit should be smaller. It should not greatly exceed 2,000 persons if community interest and a neighbourly spirit are to be developed. How is it possible to expect that 6,000 to 10,000 persons can ever establish anything like a common attitude towards common problems in a *personal* way and not merely through an impersonal organisation? The number of 6,000 to 10,000 persons has been worked out on the basis of utilitarian considerations, neglecting personal and social values. This high number has been arrived at because the school unit, even though it may vary throughout London, contains too many pupils. Whatever the final outcome of educational reforms, the tendency, as in every other field where human issues are at stake, is towards smaller units. A school population of 240 to 400 pupils cannot be regarded as desirable, either from the educational or the architectural point of view. The costs of administration may be cheaper, but to make such a school unit really productive it would almost certainly need some sub-divisions and several separate buildings. But is the financial point of view, or the coming generation, the main issue? We know the answer—we cannot afford it, and there are not enough teachers available. Well, we have got to afford it, and the teachers will be ready, as neighbourhood units will not spring up in every town over night.

The very idea of a neighbourhood unit would be undermined if it were to exceed in number 2,000 to 3,000 persons and if the number of pupils were not adapted to this size. Holland has gained excellent experience with small schools. In wandering through the numerous small squares of Amsterdam we are struck by finding sometimes two or even more schools in the same square. Whatever the reason, the results are what matter ; and the results here are outstanding. Dutch education can compete with that given in the best institutions of the most advanced countries.

I am fully aware that this attempt to explain the essential features of a neighbourhood unit and to prove their indispensability cannot be the last word, nor does it pretend to be proof against criticism. But until constructive criticism is forthcoming I believe that my suggestions are not too wide of the mark. This is why I feel that every practical problem must be subordinated to and take its direction from personal and human issues. I cannot persuade myself that this cannot be done, or that there is any other way out of the present impasse into which we have been driven by the overvaluation of questions of secondary importance and of details. We cannot avoid taking up a definite attitude to this vital problem. Either we plan our environment so that it helps man to regain his full personality and sensibility, and clarify first the fundamental problems and the possibility of their realisation, or we should not plan at all. It has been suggested that the neighbourhood unit is one starting-point from which we may set out on this adventure. But it can be expected to fulfil this purpose only if it is pure in spirit and in fact. This is the reason why it should be kept small and not exceed a size which allows personal contact and social affinity between adults and children alike.

There would seem to be a kind of law inherent in this changing attitude towards the appreciation of things and of values. If we start from the top, seeing things whole and values in their interaction with things and men, we are bound to use small and even the smallest elements in planning. We can do so because they are held together by our unifying approach. There is no danger of their falling apart. But this danger does exist if we start from the bottom, in other words with details. Then the uniting link is missing. We are inclined, therefore, to work in this case with larger units, hoping perhaps unconsciously that they provide at least a certain measure of internal coherence by the

mere fact of their larger size. This holds good also for the neighbourhood unit. If there exists a guiding principle of its internal structure, of its place within the community as a whole, and of the way in which it is to be integrated in this larger unit, we need not be afraid to work with small units and to draw the obvious conclusions from this fact in regard to every individual problem. I have tried to explain why within a large group there is hardly any chance of bringing out those qualities in man which make him aware of his individual potentialities and creativeness. A large group is more or less comparable to an organised and utilitarian association. A small group offers at least the possibility of developing an organic and human affinity.

Can the principle of the neighbourhood unit be applied also to other units? There is no reason why it should not, although with some modifications. There are the administrative, social service, recreational, shopping and industrial units. This of course is only a general classification. Each category consists of many different activities, but the activities in each group can be placed on a common denominator. This common factor is the frequency of their use by the public. We may distinguish between daily, frequent, and infrequent needs, relating this classification to the number of people using the different services. On this basis the following pattern of priority is suggested. Each of the three groups corresponds roughly to one priority; to daily, frequent and infrequent use respectively. It gives, of course, only a selection of the services which are needed and frequented by the users, but it indicates the general principle. The whole is a mesh-work where each knot is the equivalent of one or several functions satisfying the graded needs of the population (cf. table on next page).

This schedule of distance and functional values should suggest that the unit principle can be applied, with the appropriate modifications regarding situation, size and structure, to the various units. We may call this *expansion by units* as opposed to expansion by dissemination. It is obvious that it is useless to expect positive results if a community were to expand in the old way, that is to say either vertically " in areas already settled through the replacement of single-family by multi-family structures " or by filling in " the interstices in the existing area—i.e. building on vacant lots and blocks already partially developed with structures " ; or by extending " the existing settled area on the periphery of the city by the erection of new homes on

I		II	III
Public administration—	—	Post office, local offices, town hall.	Central offices of Government and local authorities. Law courts.
Private administration— Head offices, district offices, etc. of utility services, etc.	—	Gas and electricity companies. Banks.	Headquarters.
Social services and social activities. Education. Health services. Medical services, etc.	Institutions for children. Adult education. Social intercourse.	Evening classes. Community Centre. Library. Doctor. Dispensary.	Higher education, hospitals. Health Centres. Solicitor.
Business services—	Household shopping. Coöperatives.	Specialised and cheap goods. Hairdresser. Bookshop. Department store.	Specialised and expensive goods. Luxury shops.
Recreation—	Outdoor. Individual. Home. Garden. Park of neighbourhood unit.	Outdoor. Indoor. Collective. Cinema. Meetings. Concerts.	Outdoor. Theatre. Cinema. Museum. Concerts.

newly subdivided land ".[1] All these types of growth can take place simultaneously. " The lateral extension of the city has been diagnosed as a phenomenon which occurs by (*a*) axial growth—the extension of buildings in radial lines from the

[1] Federal Housing Administration. *The Structure and Growth of Residential Neighbourhoods in American Cities.*

main body of the city along fast transportation lines so that the city assumes a star-shaped appearance; (*b*) growth of isolated nuclei of houses beyond the periphery of the main urban area, and (*c*) growth of isolated nuclei until they coalesce with each other or the main body of the city." An expansion by units, on the other hand, is a systematic decentralisation, and its success depends exclusively on the right structure and location of each unit according to the special function it is to fulfil.

There is no need to repeat why the social institutions—those services which are likely to be used daily or almost daily—should be situated in the centre of the neighbourhood unit. The situation of the shopping district, which might be combined under certain conditions with some of the public and private administrative offices, is still a somewhat controversial question. Shall it be placed in the centre, on the edges, or scattered? These are the points usually discussed. They may be justified with regard to a community as a whole, and be applied to the disposition of the central business district and its interdependence with the sub-districts. But if we restrict the investigation to the neighbourhood unit this question cannot be asked, at least not in the sense indicated above. Any kind of centralisation produces a certain pressure, especially by attracting traffic. It therefore makes a number of thoroughfares necessary which would have the undesirable effect of splitting up the neighbourhood unit into several segments. It is hard to imagine what reasons could be suggested for locating the shopping district for the daily needs of a neighbourhood unit in its centre. It should be situated exclusively on the periphery. It may be so placed that it can easily be reached from several neighbourhood units, forming in this way a sub-central business district. But in any case it should be conceived and laid out as a compact unit by itself. Its area should be large enough for a sufficient number of shops to be located in it, thus preventing monopolistic tendencies on the part of the few shops which would otherwise be the only ones available for daily shopping. There should be no difficulty in allocating an appropriate area to each neighbourhood unit or to several such units, as the very idea of expansion by units implies fixed numbers of inhabitants, limitation of size, and stability of structure. An additional reason for placing the shopping unit at the periphery is the saving of valuable space in the interior for residential purposes and the resulting economies in street area through the combination of the business streets

with the main streets surrounding the residential unit. Further it may safely be assumed that more persons will pass through a peripherally situated shopping area on their way to and from work, although housewives who are not working outside the home are at a certain disadvantage. But as the extension of this small community is limited, this factor cannot be considered as unduly disadvantageous, the less so as the shopping unit is just as much an integral part of the park-like surroundings as the residential unit ; and in so far shopping should be a pleasant activity.

The same holds good for the central business district, which should also be conceived and laid out as one homogeneous unit. The park area does not stop outside this unit : it pervades it in the same way as all other parts of the community. It may even be more spacious owing to the greater height of the buildings and the possibility of spacing them further apart. In general it may be assumed that the central business districts as they exist to-day contain too many shops and offices. Their number could be easily reduced. Many of the activities could be carried out in the sub-centres. There is no reason why decentralisation should come to a halt before this rather casual agglomeration, which owes its existence, to a great degree, to prestige and tradition rather than to necessity and convenience.

If a whole community is composed of units clearly defined in size and structure and located in accordance with the maximum of functional efficiency, the problem of a linear extension of the business area or of its scattered distribution need not exist. These possibilities are irrelevant if the unit principle is carried through systematically.

There are certain " show pieces " found especially in large cities such as Government quarters, museums, university buildings, etc. These form units of a distinct character, and to them the principle of precinct planning should be applied, i.e. they should be kept free from through traffic but convenient of access by approach traffic. But once more it is appropriate to emphasise that they should be integrated in the park area and freed from all structures which are not essential to the purpose they serve. Such a unit is an entity of a very particular character, and in order to bring out that character in its full impressiveness and subtlety the greatest unity of purpose and form should be made the primary condition.

It should also be possible to group together a number of

establishments providing recreational and indoor amenities such as theatres, cinemas, restaurants, music halls, etc. This " after work unit " might be very attractive, especially as it is also embedded in the general park. If decentralisation is soundly carried through, it is certain that many more recreational activities will be available in the outlying units than hitherto. This possibility will be increased if decentralisation means not only a spatial but also a cultural dispersion. In other words cultural " goods " should be made movable. They should be brought to the consumer, and the consumer should provide merely the buildings where they can be purveyed.

In relation to recreational " units ", i.e. the open-air facilities, the unit principle does not exist. The open spaces are omnipresent, for they are the uniting element of the whole layout.

In this reshaping of our environment one important principle is involved which has not yet been sufficiently considered. This is the need for smaller units. The smaller unit is an essential element in the process of decentralisation. It makes the whole structure of a community more flexible ; it provides better access to and therefore better use of the various economic and social facilities ; and it is instrumental in promoting social interests and intercourse. In this short enumeration of the different units the industrial unit has not been dealt with, for two reasons. First, its structural conditions are different from those of all the others. Secondly, its location, i.e. its relationship first of all to the residential units, demands, in my view, a revision of our attitude towards the problem of district zoning. The following remarks are not meant to be more than a tentative objective approach to this subject, uninfluenced by current opinions which almost claim a dogmatic infallibility. My own attitude was also subject to the same ready acceptance of principles built up on facts derived from past experience. But I see no reason why we should not re-examine a problem in the light of changing conditions and adapt it to a new situation. Nothing is final, and the suggestions that follow are no exception.

The structural conditions of an industrial differ from those of a residential unit, but not so much as we commonly assume. The main difference lies in the introduction of traffic right into the interior of the industrial precincts and even into the buildings themselves. This difference, of course, is fundamental, all the more so as it concerns not only road but also rail traffic, and it has a decisive bearing on siting as well as on internal structure.

While the residential unit is focussed on a centre and consequently has a definite inward tendency, the industrial unit is directed outward, although it retains a not inconsiderable measure of concentration. Other points such as the fact that the industrial unit is not socially conditioned, or that it needs a high degree of rational planning, or that the individual buildings are sometimes very large, need not enter this argument as they are in accordance with the principles already laid down in connection with the neighbourhood unit.

District zoning arose out of the need for tidying up the shapelessness of our towns and assigning a definite area to each of the various functions which play an important part in our life. It aimed at clearly separating residential from industrial districts, and business from recreational districts. The former was considered the more important, since industry was the greatest intruder and troublemaker. This development is still going on. It has not yet anywhere produced outstanding achievements. Industry, especially in small workshops and the like, is still indiscriminately scattered through residential districts and *vice versa*. Noise, smoke, ugliness and heavy traffic combine to make industry an unwelcome neighbour. Let us dispassionately consider each of these disturbing factors. No doubt they are detrimental to the well-being not only of the population living nearby but also of the community as a whole. But is there any cogent reason for perpetuating them? Are they not attributes of the palæotechnical age which should long ago have been discarded? The noise of machines can be eliminated by proper sound-insulation, especially of their foundations, and by the introduction of air conditioning which would make it unnecessary for the windows to be made to open and to keep whatever noise there must be within the building. Smoke can be eliminated either by electrification—there are few industries which cannot be electrified—or by the use of smokeless fuel. Smoke abatement alone is not sufficient, especially as the introduction of verdure throughout the community would be rendered valueless if any pollution of the air persists. Ugliness is a purely architectural affair. It is entirely our own fault if industrial buildings have hardly ever reached the high standard of beauty and clarity which they could have if they were considered as important as other buildings. Disturbance from heavy traffic can be avoided by a systematic layout of the access streets. None of these transformations is impossible: indeed, their realisation

is long overdue. All of them have been tried out, e.g. in the U.S.A., though only in individual cases. There are, of course, some industries which are offensive and should be excluded from the community in any case. Others cannot be moved because their location depends on the existence of natural resources, as in the case of extractive industries. Others again are dependent on the existence of certain facilities, such as warehouses, fisheries, etc. But there remain a very great number of industrial establishments, especially in the light industries, which are free and capable of the improvements mentioned above. Moreover, it may be hoped that redistribution of industry during the next few decades will result in thinning out the urban industrial agglomerations by shifting suitable industries into the country. If this problem is approached in the spirit of the neo-technic age, and the best possible use is made of modern inventions, the old objections to industry as a harmful companion of urban life will disappear.

The results of such a change will be far-reaching. Only a relatively small proportion of industries need immediate proximity to the railway. Moreover, we may safely assume that road haulage will play an increasing part in the future. All industries with the exceptions mentioned above can be located and grouped much less rigidly than heretofore ; they need not be separated from the residential quarters by unduly long distances, and isolated as if they were carriers of infectious germs. The tendency both of the past and of the present, at least in theory, is to keep industry together in large districts. The unavoidable result is the separation of home from place of work by long distances. If the disadvantages of industrial production are eliminated the industrial groupings can be made smaller, and consequently located nearer to the homes of the workers. One difficulty, however, will remain. The working population is a shifting population ; it changes its dwelling place from time to time ; and it will never be possible to house every worker near his own place of work. This problem cannot be solved until a personal relationship between the worker and his work has been re-established. This is not likely to happen under present conditions. But some other modifications which would change the worker's attitude to his work are possible. In any case a great part of the workers can live reasonably near their places of work if the industrial areas are reduced in size and consequently increased in numbers.

It will be objected that some varieties of industry cannot be split up into small units. This is true, but there are many which do not require large buildings or much floor space. All this should be considered in relation to the general redistribution of industry, which means segregation and selection according to the best location.

Another important factor, scientific management, offers great possibilities in relation to a reduction of the size of individual plants. If this principle is fully employed in every industrial administration for every constituent plant " it follows that small easily adaptable units can be successfully developed and decentralised as parts of a unified organisation run on a scientifically managed basis ".[1] Apart from these considerations there seems to be a definite trend towards smaller units and a sharing of production among separate factories located in different places.

A further method of reducing the size of an industrial area is the use of many-storeyed buildings. This would have a threefold effect : it would create an opportunity of compactly housing numerous smaller units ; it would make available sites for open spaces surrounding the factory buildings ; and it would nevertheless make possible a reduction of the size of the industrial area.

If all these prerequisites are fulfilled, the appearance of an industrial compound fundamentally changes. It is moderate in extent and compact in shape. It is surrounded and traversed by the Park providing outdoor recreational facilities for the workers. It contains social institutions in the nature of a community centre combined with health and medical services. The buildings conform to the highest standard of architecture. Sun, light and air have ample access, so that the whole atmosphere of the working place is of an inspiring brightness and healthiness. High buildings alternate with lower ones. Functional efficiency is the characteristic feature of the buildings and the layout. The whole is loosely grouped and the larger buildings provide architectural accents dominating a wide area.

Such an industrial unit can hardly be considered as a nuisance to the neighbouring districts. In fact it does not differ very much from their own appearance, and its reduced size makes its alternation with the residential units easier, and permits, therefore, a greater variety in the layout of the community as a whole. In consequence of this transformation and especially of the smaller

[1] E. A. Gutkind : *Creative Demobilisation.*

size of all the various units we should replace the principle of district zoning by that of *unit zoning*. This may seem to be a mere difference of degree, since zoning as such is preserved, though on a smaller scale. This argument, I think, does not hold water. If we plan for human values and believe in the primacy of social over economic facts instead of giving them equal priority in the scale of human needs, there should be no doubt that the *smaller* element, the neighbourhood or the industrial unit, should be the constituent part of a system of functional allocation. It is here that life is real, that social interests are focussed on a common task, that a complex social organism can grow without degenerating into a dead organisation, that each individual can prove his worth, that every activity can have its personal touch. It is here that personal and functional life can coalesce and that ultimately the functional purpose of each unit is decided. As the *raison d'être* of zoning is the assignment of a distinct function to each distinct unit of space, it can be applied only to those units where each function is based on daily reality and unity of purpose if life is to have any meaning at all. This restoration of reality and purposiveness cannot take place within the larger and impersonal organisation of a district. It can take roots only where men's affairs are conducted on a personal basis. To begin zoning by attributing a single function to a whole district is like trying to go upstairs by starting on the first landing. It is unreal. A district should be nothing but a division for convenience of administration. It may be compared to the rôle of the State in relation to the individual citizen. Its influence should be confined to those framework-activities which are of a purely utilitarian character. The State as such is an abstration, and so is the district. If either means more than this to us we shall achieve totalitarian standardisation. A unit is like a *polis*, and Aristotle's definition again proves true: "The largest number which suffices for the purposes of life and can be taken in at a single view." This restriction expresses the very nature of the unit principle. Its insight into the essence of human interrelationship is profound. It reveals the unsurpassable instinct of the Greeks for unity in diversity and for intensification by restriction. If civic responsibility is to be more than a pretentious parochialism priding itself on the imaginary values of "ostentatious" buildings, on humbug about vistas, and on the size of the community and its districts, it must attach itself to men and things where the establishment of intimate contact means

an enrichment of personal life. Unit zoning gives every Park City that measure of flexibility which guarantees functional distinctness of the individual units within a diversified layout; a closer proximity between home and place of work than district zoning can provide; and an internal coherence of small and homogeneous organisms which form not a mere collocation of like parts but an integrated whole.

The foregoing considerations are submitted as a preliminary investigation into the possibilities of reinvigorating urban life and freeing town planners from the fetters of " recognised " ideas and a " utility mind ". They are not and cannot be final, but the need for a new adaptation of our life and work to changing conditions is urgent. The outlook is disturbing. The plans so far made public and the intentions hidden behind a smoke-screen of majestic orotundity and ambiguity do not inspire us with much confidence that the dangerous post-war situation will be dealt with in a bold and unorthodox way.

American town planners have devised a scheme which they have termed the *superblock*. Its main characteristics are as follows. The blocks are usually five or six times the size of an average ordinary block. Each superblock resembles a small park with about one hundred houses facing the lawn and the interior of the block. Much of the interior serves as a playground for the entire neighbourhood. A network of paths eliminates side-walks along the streets. Short cul-de-sacs give vehicles access to the dwellings within the blocks. Each dwelling has an entrance for pedestrians on the opposite side from the cul-de-sac lane. Around each cul-de-sac 10 to 18 dwellings are grouped so that the yard at the rear is practically abolished. The cul-de-sac may be replaced by garage compounds. Pedestrian subways lead under the main thoroughfares to the central area of each block. The size of a superblock varies between 35 and 40 acres. The central area of each superblock is devoted to business, a school, and a community centre. This system would appear to contain a number of features which show a certain similarity to a neighbourhood unit as we have described it. In any case it is the only scheme so far known that attempts deliberately to create small residential units focussed inwardly and eliminating any kind of through traffic. It is a valuable advance in the right direction, but it is only a beginning. It has been applied in the layout of Radburn, one of the Green Belt Towns, but it has not yet been tried out in a larger community. It still clings to the lot system

which prevents a generous use of the available land and makes the layout rigid in spite of the loose grouping of the houses.

Not much remains to be said about the streets in the layout of the Park City. This is not a treatise on traffic problems, and we shall therefore add only a few remarks on the appearance of the streets. It goes without saying that the fullest use of all modern principles of road design is a prerequisite of the successful application of the ideas we have set forth. To mention only a few : underground passages and underground fly-overs ; tunnels ; raised footways ; two-decker streets ; isolation of through from local traffic ; separation of opposing traffic streams ; rational introduction of approach roads and so on. The guiding principles are : steady flow of vehicular movement ; strict separation of the arterial grid from the secondary grid ; exclusion of through traffic from the interior of all units ; and integration of the Park and the streets combined with a reduction, not an increase, of traffic.

We cannot describe in detail the main differences of the street pattern of the different units. But it may be said that the street pattern of an industrial unit will differ more from those of all other units than these do from each other. With regard to the street pattern of the industrial unit, one, though not an exclusive, solution seems to commend itself. The buildings might be arranged at right angles to the main street, the through traffic road, with a secondary road running parallel to the former along the full length of the unit. From this secondary road access streets lead off to the various groups of buildings so that a comb-like pattern develops. This is also possible though with some modifications for railway sidings.

The demands of road traffic seem to be in harmony with the suggestions put forward in this essay. A well-known traffic expert has said : " On the main traffic arteries, where it has hitherto been assumed that there must be fine frontages, the traffic specialist must ask for ' backages ' instead. Buildings should not only turn their backs upon the traffic arteries but should be securely walled away from them without any direct access of any sort." [1] This is a very sound argument, and if systematically applied will produce just the effect which we have in mind. It will open up the street-corridor and transform the street into a two-dimensional ribbon running through the open spaces of the Park. Its " frontages " will consist of groups of

[1] H. A. Tripp : *Town Planning and Road Traffic.*

trees, hedges and lawn overlooked from time to time by buildings set back from the street and situated in the units. If the " green carpet " of the Park extends everywhere—as it should—every street can be attuned to this vigorous rhythm of massive buildings, soft vegetation and " that where there is nothing ", adding a syncopic accompaniment to the leitmotif of the traffic. There will be no difficulty in adapting the street pattern to every demand of high-speed traffic and in making every type of street a functional and streamlined model of efficiency.

The relationship between houses and streets will be in future the opposite of what it has been during recent centuries. To balance the four functions of housing, work, recreation and distribution ; to restore the primacy of personal over functional life ; to make our cities places of inspiration, beauty, and purposiveness ; to harmonise the works of nature and man ; this is the deeper meaning behind this transformation. The change must be drastic if our cities are to be life-centred and not traffic-centred. The way from the early beginnings of the building of urban communities is a long one. It leads, as far as European civilisation is concerned, from the *polis*, with its narrow streets resembling an inter-space cut out of the mass of the houses, to the military rigidity of the Roman layout ; to the functional clarity of the mediæval streets and their intimate adaptation to the houses. It leads in the Renaissance to the ruthless subordination of the houses to considerations of defence which are often hardly anything else than a toying with geometrical forms and numbers ; to the perspective view of the Baroque with the emerging cult of the street ; and to the feeble ostentatiousness of a Haussmann with his *points de vue* complex and his hypocritical façades hiding the ugliness of the houses behind them, till it ends in the chaotic mess of our present towns and the almost totalitarian primacy of nondescript streets over cut-to-pattern houses. Since the end of the Middle Ages there has been a steady decline, and since a further deterioration is hardly possible we may hope that the way will again turn upwards. It will be our foremost task to strike a sound balance between the functional requirements of streets and houses and to restore that clarity of purpose which is the essential forerunner of creative adaptations and readaptations and can grow up only in an atmosphere of bold adventure.

EDUCATION FOR PLANNING

I. The Problem

To discuss the education of planners is useless if we do not understand the general situation, at least in broad outline, especially insofar as its problems have a direct bearing on, and constitute an immediate challenge to, the social responsibility of those who have to educate and those who have to be educated.

We have to face the fact that education for planning is a new discipline and, unlike almost all other spheres of learning, it has to be built up from the start. If we appreciate the challenge of this fact we cannot hope—as many do—to create the means and methods which shall produce the planners by a mere mixture of existing curricula, by plucking branches of knowledge from various departments of teaching.

Why does our situation demand an entirely new approach? In every attempt to define this situation some factors seem to be predominant. These are the principle of *laisser-faire*, the competitive spirit and the profit motive. But what do these somewhat enigmatic and convertible terms really mean? Can they be reduced to a common denominator? For if they are really forces determining the main trends of our civilisation they must obviously have something in common. And, on the other hand, the task we have to perform can equally be defined in a general way: we must create order out of chaos if we want to master the situation. But generalities, however appealing they may sound, are inappropriate instruments for dealing with hard facts. Moreover, they speak rather to our emotions than to our reason, thus confusing our course of systematic action and obscuring our clear insight. They make us believe that the eventual result of a long series of actions and of a multitude of forces is more or less identical with the process and the functions which have brought the result about. In other words, we are satisfied with the statement of the facts, with the "what", but we neglect the understanding of the "why". Yet it is this "why" that alone can open the way towards the creation of a new order out of the present chaos.

We must, it seems to me, look for the common denominator

beneath the surface of our factual achievements. What after all are facts? They can be rightly assessed only if we relate them to human life and evaluate their significance in relation to the intricate pattern of human society. We are apt to forget too easily that they are the expression of man's will and of that supreme gift of mankind, its creative power and spontaneity. I believe, therefore, that the creation of new values must start within ourselves and with a clear distinction between our functional and our personal life. Each must be balanced against the other, but neither must dominate the other. Yet this domination did, and does, occur. And out of this unbalanced state developed the lop-sided individual in the lop-sided environment, a result which we know only too well.

Let me put this problem in other words. We are in the first place experts in some field—physicians, bankers, politicians, and so on—but we are not, and do not aim at being, undivided personalities. Great within our limitations and subject to our fragmentary outlook and interests, we are yet incapable of integrating the many functions of our practical life in a coherent entity. The only power that could achieve this end, namely, the balancing power of our human qualities, seems to be lost. We possess many gifts, but not the one gift which could combine all others. We know a great many details. We look at the state of the world around us in a fractional fashion. We act accordingly—and we are convinced that this is the right way. Such an approach constitutes the gravest danger. Belief in this dehumanised principle of life must be destroyed. We must discover once more the true human values, and out of them create a new fabric of society and a new tissue of our individual life which will ultimately produce social man and dethrone economic man.

We are standing at the end of an evolution that began with the splitting up of man's personality at the Renaissance after mediæval society and cosmology had disintegrated. This evolution gradually but irrevocably replaced the organic interdependence of community and individual which had grown up in the shelter of the unifying Church by an atomisation both of society and of man's individual self. It was accompanied, during its whole course, by a development of science, which led ultimately to our enslavement to the machine; and it resulted in an overvaluation of our practical achievements and of our self-esteem, which are the outcome of fear. We feel that past and present are losing their interconnection, and that tradition is not enough

as a guide into the future. We are alone in this world, deprived of the validity of old norms and established forms. We are terrified by this loneliness, and though we believe that our own time is the end of a period of overwhelming achievements, we do not dare to pass over the threshold into the future. We are proud of our own power, but we are also afraid of it.

An example will make this still clearer. When Giotto painted his first picture on a piece of wood instead of on the wall of a church he made the first step towards the disintegration of the unity of the arts. In the cathedrals of the Middle Ages architecture, sculpture and painting formed an indissoluble unity. Each of them had its definite place, from which it could not be removed without destroying not only the idea but also the actual structure of the cathedral. The Renaissance undermined this unity and replaced it with a side-by-side arrangement of the arts. It created the *objet d'art* instead of the object of reverence. Every connoisseur might have his own architectural masterpiece, his sculptures and his paintings. He could place his Donatello and his Raphael wherever he liked. This twilight of art, in all its beauty, lasted during the succeeding centuries until, in our own day, art has become the luxury of the happy few, an article of commerce, or is piled up and elaborately card-indexed in warehouses—museums—the necropolises of art; and the art which our own time has to offer bears the mark of uncertainty and disintegration or of a helpless eclecticism—the true symbol of our society and of its individual members.

We are living in an epoch whose social spirit is characterised by the fact that it can create associations but not communities. I use the terms in MacIver's sense: an association is "a group specifically organised for the purpose of an interest or group of interests which its members have in common"; a community is "a circle of people who live together, who belong together, so that they share, not this or that particular interest, but a whole set of interests, wide enough and comprehensive enough to include their lives".[1] Associations serve a detailed purpose. They are founded as *ad hoc* organisations. Communities, embracing the whole of life, are growing organisms. Does anyone really believe that any number of associations, however great, will ever build up a community? The whole is infinitely more than the sum-total of all its parts. It is the interwoven fabric which gives plastic coherence to the multitude of fragmentary parts that really

[1] R. M. MacIver: *Society, Its Structure and Changes*, 1931.

matters. What we have neglected to do—what we did not even contemplate—is to train ourselves to understand such an organism in its entirety. We have stopped at certain arbitrary points and piled up heaps of knowledge related merely to various separate problems but of no relevance to the configuration as a whole. Or we may put it in still another way : we have paid attention to things rather than to values. And thus we have dehumanised life and work and have left the apprehension of ultimate values to be preached on Sundays.

We have become used to speaking of a *laisser-faire* "economy", thus restricting this principle to the economic field. But it affects in reality the whole of our life ; and the same is true of the competitive spirit and the profit motive. They have all grown out of the same root, out of the belief that individual actions and individual valuations in separate fields will produce not only the results individually desired, but even the results best in the interest of the community. Yet this attitude, which developed most clearly in the wake of the Industrial Revolution and is still predominant, especially among those who can see no other way save to cast the future in the mould of the past—this attitude could inevitably lead only to the limited sphere of private experience and private morals. However anxious the individual person is to take account of other influences, he is not free to realise this intention. Under *laisser-faire* conditions individual competition in the widest sense is an iron law which must be obeyed if personal disaster is to be avoided. The competitive spirit and the profit motive are coalescing forces. They are even more, they are complementary to each other, and can be expressed in practical terms as the quest for individual power and the appreciation of quantity as a value in itself. This worship of brute strength—for it is nothing else, even though it may be hidden by politeness—is the antithesis of coöperation and integration ; it is antagonistic to social life, and it prevents the creation of an environment within which man's diverse gifts can fully and freely express themselves.

We must reverse this trend. We must reinstate personal and social values as the guiding forces of our life. We must not be content with re-shaping the physical conditions of our environment, but must also reconstruct its general atmosphere. And we must substitute a new cycle of life for the old one which is still dominant.

Hitherto our life has centred around our work, just as our

environment has been conditioned by the location and the importance of our place of work. This cycle must be broken. Work is only one expression of our functional life ; it is not the whole of it. Our goal should be the creation of environmental conditions where the personal life is the dominant factor. In brief, our aim should be the leisured community—not a leisured class—and an environment which offers ample scope for man's manifold gifts as an individual and as a social being. Leisure in this sense is identical with creativeness and self-development. It is not to be thought of as mere relaxation after work, nor as a kind of reward for having done the work properly. It should be the very opposite of this, and to those who affirm that this is impossible we answer that it is not only possible but imperative if we are ever to hope to rid ourselves of the disintegrating influences of economic dictatorship and professionalism. We must endeavour to gain an insight into the complex interaction between environment and every organism within it. And we must apprehend that we are the creators of our own environment, and that no other force outside ourselves can relieve us of this task. A diversified and stimulating environment providing for the full realisation of our aspirations plays a far greater rôle in a revaluation of our life than we commonly assume. Rightly carried through it is the weightiest factor in the painful process of developing fragmentary man into full man.

For professional man is fragmentary. He is a danger to our civilisation. He is a specialist in one narrow field, outside which he can perceive nothing else. The more highly trained he is, and the more effectively his knowledge can be applied, the more professionalised does he become. He works and lives in a watertight compartment, and whatever progress he makes, he makes within the limits of his own subject. These limits prevent him, in the present structure of society and work, from apprehending and appreciating the completeness of life and the interactions of the innumerable forces which make up our lives. Everywhere, except in his own sphere, he is a stranger, and he has to face the dynamic changes going on around him with a fixed pattern of thought, which cannot easily and readily be adapted to new sets of conditions. The result is twofold. Our civilisation produces many details, a fabulous sum of expert knowledge, but it does not produce the coördinator. This task is left to the political busybodies and to the unimaginative minds of financiers, industrialists and administrators. Even if some

people possess wisdom enough to perceive the whole and try to act accordingly, they cannot realise their intention because the basic principle, the fertile soil of an integrated community, is lacking.

We cannot create communities to order. A community must grow. It is a living organism, but it is not a rationalised organisation. What we can do is to educate for social partnership, for creative leisure and for insight into the whole pattern of life in all its variety and interplay of changing conditions. What we need in education is a guiding principle for the totality of subjects, and in so far as analytical spadework is essential, it must be subordinated to its relevance to the general outlook. If we can solve this problem—and there is no reason to doubt that we can—we need not fear that the whole gamut of diverse human gifts which will emerge will burst the framework of the new environment which we shall and can create out of the gigantic variety of resources at our disposal. And we shall discover that there is not only a sense of reality but also a sense of possibility, which will enable us to make full use of the potentialities latent in ourselves and in our environment ; we shall not be content any longer with fact-finding, that necessary but somewhat sterile and feeble activity. It is the domain of fragmentary man, who is content to know but does not dare to act and to co-ordinate. The vast province of creative expressiveness and of recognition of seemingly contradictory values will be conquered, but only by those who have the boldness to explore the still unknown lands of the future. We have to educate the type of man who trusts his imagination without losing sight of concrete facts ; who can act spontaneously and yet systematically ; who can see the interrelationship of functions and values without being overwhelmed by their multitude and diversity ; who strives for quality, integration and relativity, but does not stand for the worship of quantity, external expansion and absolute values. In brief, we must produce the all-round personality, the coördinator, the planner.

Some words of caution, however, are needed. The first danger of this educational enterprise is superficiality. But this need not be the case if we conceive the task as a new discipline, as indeed it is. This discipline has to deal with the interactions of the various subjects on each other. It opens up new ground which is not covered by any one of the subjects in which specialised knowledge could be acquired by a thorough analytical training.

The problem does not consist in a training of a slight and

general character, in other words, of a more superficial type, as opposed to detailed knowledge of a special subject; nor can it be solved by a mere adding together of different subjects. The man who builds the tracks over which the trains are to run need not necessarily have a thorough knowledge of how to build stations. He is primarily concerned with the connecting links, and so far as these links directly touch other parts of the railway system he must understand the interconnection between his own work and these other parts. His knowledge is not inferior to, nor more superficial than, that of the others; it is different.

The same holds true of education for planning. It is concerned with the hitherto missing links between the various subjects which have a bearing on planning. It aims therefore at the acquisition of a knowledge of the working of the organic linkages between the various functions within a particular environment. If the problem is approached in this way there is no danger of reducing the standard of learning. Another objection might be raised with regard to the preponderance of theoretical knowledge and the neglect of practical experience. As the main task of an education for planning is to bring out the creative initiative of the individual towards concrete facts and their interrelationship, action is the immediate result. Initiative, as a matter of fact, is identical with practical experience. It is an urge to get down to a practical job and to apply to it the knowledge theoretically gained. Otherwise we should stop half-way, for learning for the sake of mere knowledge without doing is a rather anæmic procedure. The realisation of what we have learned and what we know is the true expression of creativeness. Theory and practice belong together, especially in a sphere so new and of so highly formative a character as social planning. It is akin to artistic creation, much more so than to mechanical invention. For the main goal of an education for planning is to create a diversified and stimulating environment which releases man from his sterile routine work and comprises life in its totality. On the other hand, our environment is gradually changing, either through our own influence or through forces outside ourselves. Thus theoretical considerations as well as practical realisation need a permanent re-adaptation if the divergence between the organism—the community and the individual—and the environment within which it lives is not to result in a breaking apart. This is what has happened to-day; our social institutions no longer fit into the economic and technological pattern. It is the mission of the

artist to find the special conditions within the general problem and, having found them, to express them in their relevance to the whole. It is a qualitative selection, but not a quantitative accretion.

If we conceive the education of planners in this spirit there will be no danger of superficiality, dissipation or theoretical narrowness. Every subject of the curriculum should be taught from the aspect of its relatedness to the ultimate task, the creation of environment, and from the same point of view, that of its interdependence with other subjects, contributing towards the same end. We cannot provide the would-be planner with a rigid blue print for his future activities, nor can we tell him in detail what the changing conditions of the future will be. But we can develop those qualities which will equip him for coöperative working and coöperative adaptation, for appreciating the potentialities in every situation and for realising them in practice, for the recognition of diversity and of individual values, and for the understanding of the truth that man is more important than so-called established facts.

I repeat : education for planning must develop a new discipline and, consequently, must get rid of old and obsolete methods and means. It moves between the two poles of an approach from the top and an approach from the bottom, that is, it has both to work out and lay down principles of general relevance and to investigate in detail the fundamental needs of a community. It has to relate every work to a definite purpose and to rely to the same degree and at the same time on both theory and practice. Accordingly the curriculum must be adapted to both these principles. We will explain later how this is to be done. But the overriding principle is that the education must proceed against the background of the changing structure of society and of the general situation.

In this moving picture some features are of special significance as concerns our actual subject. The belief in science as an almost religious force can be a danger. I do not intend to minimise in the least the paramount importance of science. On the contrary I hope, as does every sensible person, that science will march on and be freed from the last fetters of prejudice, that it will conquer for us the vast realm of possiblities and enable us to build a world in which wisdom and insight will gain the upper hand over traditional inhibitions and fear. But the almost religious adoration of science may lead to a breakdown. Science

is no religion ; it is in itself no moral force. It cannot carry the whole weight of life, and it is not a law of living. Everything depends on how it is applied and what place it is given in our life. I can only hint at the problematic issues involved ; they cannot be dealt with in this connection in detail. But the wrong valuation of science would inevitably lead to the perpetuation of professional man, and as professional knowledge is identified with progress there is a definite danger that the whole complex may become rigid, however great may be the achievements in individual fields.

Alongside with the further development of science should be evolved a system of efficient interrelation of the results so far gained from it. This would take the form of a kind of inventory, an encyclopædia, and a survey of how to make use of the many scientific results which still await practical realisation. Such a work would make it clear that objective fact-finding is but one side of the problem, and that the way in which the functions of the facts discovered are to be mobilised for the living organism of our communities is the other. This is a parallel to the task of education for planning, and in so far it is of direct importance.

Another feature is the trend towards unification and the retreat from the dogma of uniformity as a consolidating force. Unification means the integration of a diversity of individual elements in an organic fabric. Uniformity means the levelling down of diverse forces. The one is antagonistic to the other. Uniformity is the suppression of individual creativeness, and is characteristic of a compromise-ridden attitude. Unification, on the other hand, demands a large-scale conception and the moral and intellectual strength not only to recognize the multitude of different values and factors as given, but also to accord them their appropriate place in the environment. While the one is the gospel of the weak and of inferior intellects—of the totalitarian mind which wants to reduce everything to its own level—the other leads us to a higher form of life and to an invigorated social partnership. To make this clear by an example that has a special relevance to planning : we can no longer think and scheme in terms of individual cities or counties. We must accept the fact that nothing exists in isolation, and that the unit of the planner is the country as a whole. Beyond this he has to take into account the actual structure of other countries. He has to create a plastic framework within which his plans for his particular subject must be conceived and realised, but which is moulded

by a unified outlook on the forces at large and on the great variety of diverse values and potentialities latent in every situation. This is a gift that must be brought out by an education for planning, which at the same time must disabuse the planners of the idea that too great a diversity is an intolerable explosive which must be rendered harmless by a compromise.

We hear a great deal to-day about freedom, freedom from want and freedom from fear, and about the coming age of the common man. But we hear nothing about those forces which shall make this desirable state a reality. The greatest want from which we have to free ourselves is the want of an integrated personality. We must start the coming age with the noblest of the formative tasks which lie ahead of us. We must re-educate ourselves in order to become full men. And we must educate those who have to carry through the reshaping of our environment as active and inspired agents. The new discipline of planning must, therefore, aim at educating individuals whose understanding and handling of things and of their fellow men embraces life as a whole in its scope and recognises the incontestable truth that the final end of all our activities is man himself, and not his occupation or the things he produces.

If education for planning is to be more than a preparation for getting a living or for becoming a member of a professional body, we must first know where we stand and what we want. We must respond to the challenge of our time, leave the past behind us and work for the future.

II. Scope and Method

I am of course aware that the foregoing attempt to analyse the present situation can provide only a very rough representation of the facts which have a direct bearing on the education of planners. It does not even include all of them. Nor does it deal with the main principles of the planning procedure itself. Such an exhaustive treatment would divert our attention from the main purpose of this essay, namely, to arrive at a workable scheme for an education for planning. However, I regard the negative as well as the positive factors inherent in our present situation as starting points from which any sensible scheme of education has to be developed. They determine, therefore, the scope and method of the curriculum and its place within the general pattern of education.

Education for planning on the one hand embraces physical and social planning *as subjects*, and on the other hand it includes the selection of the most suitable *persons* and their preparation for the various categories and levels of their future activities.

The *scope* of physical and social planning can easily be delimited if we keep it in mind that, while we have to plan the environment of man, it would be foolish to attempt to " plan " man himself. Yet it seems that nothing is too foolish to be thought possible. That is why I want to state most emphatically that the personal life of man cannot and must not be " planned " if we do not intend to set up a totalitarian prison. Moreover, nothing would more certainly lead to the breakdown of planning procedure and its falling into disrepute than such an excursion into that sphere which has suffered most from the chaotic interference of the *laisser-faire* and vested-interests schemers. It has been said that " the practice of stupidity is brutality ". There is much truth in this definition ; and we may add to it : "and dilettantism adorned with good intentions ". Planning is a systematic procedure ; it means anticipation and coördination ; it is an attack on certain strategic points in our social and economic structure ; it demands a certain amount of centralised direction in order to secure decentralised achievements. Still more characteristic features of planning might be enumerated, but its overriding principle remains the need of a *systematic* procedure dealing with the problems involved as an integrated *whole*. To be systematic means to be clear-sighted, and it means also—although this should be self-evident—to dispense with all those woolly generalities which lead only to self-deception and to the stupefaction of others. I will mention only two of them ; " To look and think ahead, that is planning " ; and the gospel of the " composite mind." Would it not be more appropriate first to know what to think about, and out of what a composite mind should be built up and for what purpose, before we embark on so vital and difficult a matter as planning ? We should beware of those who are themselves far from systematic in their thinking, yet who try to confuse the true issues.

The scope of physical and social planning conceived as the creation of a diversified and stimulating environment is determined by the four elements which make up the functional life of man. These are the functions of housing, working, distribution and recreation. Each is composed of a number of interrelated forces and activities, and all of them together form a coherent

whole. Their working must find its expression in the subjects to be taught and in the arrangement of the curriculum and its approach to them both in general and in detail. According to what was said in the first section the system of education has to be built up on a horizontal cross section rather than on a vertical departmentalisation. This should be one principle. The other should be that of functional approach, i.e. the understanding of the " why " and the " how " and not merely the apprehension of the " what ". The first principle is meant to establish the inter-relationship of the various subjects, the second to provide for flexibility and to evolve an elastic framework within which the changing conditions of life can find a dynamic equilibrium.

Further determinants of the scope of education for planning are the *scale* on which planning is to proceed and the subordination of every aspect of the work to the *social needs*. Omitting for the moment international planning, four main varieties have to be dealt with : national, regional, local and interregional planning. The many activities cutting across traditional responsibility have to be coördinated into a unified pattern of work, and public and private interests have to be balanced in order to achieve results which are of a higher significance than the sum-total of the same activities proceeding without relation to each other. The focussing of the work on social needs will develop insight into and the capability of dealing with the inter-dependence of the individual and the community, and, farther, it will strengthen the conviction that man, and not the things he produces, is the highest, nay, the sole end of all planning. Consequently the issue is not one of governmental or central action *versus* private and local enterprise. That is merely one more of the cryptic and falsified assumptions of those who cling to the past. The real issue is : Will a systematic short-term or long-term policy planned on a large scale create the conditions most favourable for the community as a whole without destroying individual initiative and freedom ? The answer is clear. New tasks cannot be mastered by men trained and methods developed in old views and surroundings.

It might appear a truism to say that social problems should be the very essence of planning, but we must not forget that we are still living in an age where economic values and the idols akin to them are the most highly valued. We may compare man and his social needs to the trunk of a tree from which numerous boughs branch out. They are indeed the only unifying

element which is capable of holding together the manifold ramifications of the economic network and serving as a basis on which the new discipline of planning can be built up. Social needs and aspirations are the meeting-place of all other human activities, and in nothing else can the interplay of those activities be better exemplified. But just as planning is itself a selective task, so the subjects in which the student has to be educated must be carefully selected, and their teaching must be restricted to their special connection with the planners' practical work, and to the functions which have significance in that work. The danger lies in having too many. That this danger exists is evident even to-day, if we look at a programme for a planning curriculum. It is a mere collocation of many subjects, and not an integrated whole.

On the other hand, planning is mostly identified with town and country planning, and consequently architects are the foremost pretenders to the realm of planning. While architecture certainly has a leading part to play as the physical embodiment of the many activities which create our environment, it is only one instrument in this process. We must be all the more reluctant to accept the primacy of architecture in planning since architecture itself is still too much guided by traditional ideas. The somewhat confused notions of " beauty " and " æstheticism " are still dominant in the minds of many architects, especially those who get the important jobs. The modern Renaissance architect still lives, and designs his vistas and squares and so on with a determination which only men who are not aware of the profound changes going on around us dare to possess. Yet he lives and works in a vacuum. Forward-looking architects are still in the minority, but they stand for the right issues. They know that nothing can exist in isolation, and that their work is but part of a social and economic structure which must be planned on a large scale. The existence of these social architects who discard traditional values or who labour to replace them by the clear organism of functional forms is a hopeful sign. Their ideas should be incorporated in an educational system of planning, and they themselves should take an active part in building it up.

The obvious difficulty in the working out of a curriculum is threefold. Not too many subjects ; selection of the right subjects ; and the finding of the right methods to broaden the range of knowledge and practice without sacrificing its depth.

Is it possible to find a common denominator to which these

three principles can be related? I think it is, and that it lies in the resolution with which the educational problems and methods are identified with the actual happenings and trends of the outside world.

It is obviously hopeless to expect the students to believe in what they are taught if they do not see some way in which the knowledge and the capabilities they acquire in the course of their training can be realised. Further, they will be aware of the discrepancy that exists between their educational aims and the state of affairs in the outside world; for instance, between the ideal towns which they design and which could be built if our society willed them, and the existing towns which are the very opposite of their aspirations. This cleavage can be avoided if the educational system is built around an appreciation of man's mastery over his environment; if it shows how he developed the methods and means by which he has learned to control and to reshape that environment; and if it demonstrates the intimate relationship between these changes and the social and economic institutions which grow out of them. The result will be to make the students aware that nothing is enduring, and that man himself is the prime mover in changing the conditions around him. The apprehension of this fact will bridge the gulf between the education for a new order and the visible deficiencies of the existing order. It will be of great help in developing the creative faculties in the pupils and emancipating them from the sterile and sectionalised attitude of mere administrators. If the education of the planners is directed by these tendencies, the danger of seeing first the details and the whole only afterwards, or sometimes not at all, is almost nil.

And something still more—by no means a mere by-product—will result from this process. Such an approach leads directly to the study of man, to social biology, as the focal subject around which the whole education for planning should be centred. Not only demographic problems, such as the structure of the family, the distribution of population, its growth, child welfare, and many others, are concerned, but all the sciences which bear upon the development of man as an individual and social being. Thus the circle closes. Man is the centre of all planning activities, and those activities form the framework within which education for planning proceeds or from which it derives its main directives. The curriculum should be planned, therefore, around the natural and social sciences and their inter-dependence. A scientific

attitude should be developed in the students which takes its stimulus, as well as its derivatives, from these guiding principles.

The scope of the curriculum would embrace, therefore, the following main groups :

1. Man as social being.
2. Man as scientific artificer.
3. Man as geographical agent.
4. Man as producer.
5. Man as consumer.
6. Man as planning coördinator.
7. Man as architect.

These main groups correspond to : Social biology.
Technology and science.
Human geography.
Economics.
Planning.
Building.

Each group consists of the subjects relevant to its connection with the discipline of planning. The various subjects have to be fitted into the curriculum according to educational methods and expediency. Consequently the main groups, as enumerated above, are, as it were, the *leitmotif* of the symphony of planning. The planner is the conductor on whose ability and sensitiveness the production of a perfect harmony among the different instruments depends.

Education for planning is a selective process, not only so far as its scope is concerned, but also in regard to the persons who study it. Selection in this sense means perfection of some distinct qualities. It has been suggested that the education of planners should provide for the development of the character, the general background and the intellectual approach. This is certainly true. We should add, however, that these three features are the desirable products of practically every kind of education. The planner is no exception in this respect. I think that there are some other qualities which narrow this rather general precept to the sphere of planning proper, although I am aware that an attempt to find characteristics peculiar to an education for planning can produce only relative results.

After what has been already said, we can summarise the position briefly. The planner must see the relationship of one problem to other problems within the configuration as a whole. He has to deal with matters which are mostly foreign to the

routine practice of the specialist. He must therefore have the ability to see the strategic points where the different functions interconnect, and to follow up their impact on each other until they can be incorporated in the actual plan. He must possess the faculty of working as one of a team or as its head, of coöperating with other planning agencies and government offices, as well as the public, of expounding his views in speech and writing and of condensing a multitude of details into an integrated and workable scheme. These are only a few generalised essentials of his activities and qualifications. A psychologist should be consulted to furnish an exact schedule of the special qualities which should be developed as fundamental prerequisites of planning, and we should not be content with such generalisations as creative ability, broadness of vision, imagination, thoroughness, sound judgement, competence, an analytic as well as a synthetic mind, personal integrity, energy, etc., useful and essential though these may be. One is tempted to say that science begins at home. The job of planning is eminently a systematic one. Why not a systematic analysis of the mentality of the planner himself as the starting-point of the whole educational enterprise?

Man's lack of character, of emotional development and of intellectual adaptability have brought us to the present impasse. If we want to find a way out, it must be our foremost task to readjust ourselves—and especially those of us who will be the active agents of this evolution—to new conditions. In other words, the deficiencies still apparent in ourselves have to be overcome by an intentional reversion towards the integration of emotions and reason. We behave like immature children, especially in the social field, i.e. towards our fellow-men and ourselves, and thus we are unable to solve the great formative problem of creating and living up to a positive purpose of life. The planner, as a general practitioner at the sickbed of our society, must never lose sight of the overwhelming influence of the emotional qualities of man on his behaviour as a member of a group. An education which neglects this side of the problem is no education at all. It will not be easy to adapt the curriculum and the practical training to these requirements, but a way to do so must and will be found. Nothing can be built up on an intellectual approach alone. All good educationalists know this, and endeavour to act accordingly, but while this principle is regarded as applicable in schools, the higher educational institutions seem to pay it only lip-service.

One reason for this lack of insight—or is it a lack of will-power ?—lies in the fact that the staff of most educational institutions is over-aged, not necessarily in years but in mind. How can we expect a man whose mental and emotional life, ideas and experiences, are rooted in the pre-war world to be an inspired and inspiring guide to the future ? How can he heal the breach between the emotionally conditioned inhibitions and the intellectual capacities within himself, let alone within others ? Those who are to plan a better environment in a peaceful post-war world cannot be recruited from these ranks. The need is for new men with new ideas striving towards new goals.

We may safely say that the intellectual side of an education for planning can be dealt with relatively easily. But planning is, in a wider though essential sense, a moral problem resting on a deep insight into man's needs and potentialities, and the educational approach must take this fact into account. The work of the planner aims at the reshaping of our physical environment. This is only the *visible* expression of his activities. The social conditions which will exist within this re-formed environment are actually his last and highest aim. And these are nothing more or less than freedom from want, freedom from insecurity, freedom from an unbalanced state of mind and body and freedom from frustration. These goals can be reached only by men who possess moral responsibility and who have been trained in the difficult task of recognising the relativity of human values and of handling that most difficult of all materials—man. The environment which the planners build must exert a unifying and convincing influence, a stimulating power and an all-pervading atmosphere of " togetherness " and purity. Only then can social relationship develop freely and totalitarian suppression be avoided. We should not belittle this danger. It is a real one, for we are living in an age of the masses and we must find ways and means of dealing with them, of satisfying their aspirations, and of integrating them in a community. Two ways are open to us : the raising of their educational standards and the provision of an environment in which social relationship can flourish. It is for these very reasons that education for planning is a moral problem.

The technique and methods of planning differ at the various levels of government, and they differ also according to the special work of the planner. He may be a planning officer or a research worker ; he may be occupied in the actual working out of a

scheme or as a planning specialist in one particular field. The basic training for planning cannot take these various possibilities into account. The qualification for any special branch will emerge only in the last stage of the education. But it would be useful to induce the students to make up their minds in time, so that their last terms and their final practical training can be directed in accordance with their special inclination.

From what sources can the students be drawn?

The range is very wide. Architects and town planners will probably be the first claimants. They have a certain birthright to "plannership", for they are nearest to the conception of planning—if they are not mere traditional imitators or wish-dreamers. Architecture is "creative workmanship", and an architect is by vocation and training a coördinator of the numerous details which create a building and of the numerous workmen who collaborate in its erection. Other potential sources are landscape architects, engineers, public officials, business men, sociologists, economists, lawyers, etc. It is the personal qualification that counts rather than the profession from which a man comes. But first of all there is the reservoir of young people who are not yet professionalised, and consequently without any fixed outlook. These are in all probability the most suitable and plastic material for an education for planning.

It may be asked how many planners will be needed, and how far students of other disciplines need a knowledge of planning. On the answer to this question depends to a large degree the justification for the setting up of a special institution for planning. We can safely assume—although there are still many people who oppose planning because they do not understand its true meaning—that our very complex social and economic structure cannot be systematically developed without planning. Planners will be needed, therefore, for every community, for every region, for inter-regional committees, for the central government, for the large national, regional and local institutions and for many other bodies. A wholesale infiltration of our socio-economic structure with persons who have learned to think systematically and to understand and handle the complicated interplay of the many functions in our society is needed. Hitherto these functions have worked in isolated compartments, and the machinists of these forces have known nothing other than their own machines. I am using the word "planner" because no other word exists. But it is meant to cover, not only the expert planner, but all those

who have to fulfil an official task. In this sense " infiltration " should be understood as the formation of a new spirit in our public life, as a re-training of those who direct and serve it, and as a powerful means to imbue the activities of local, regional and central bodies with the conviction that nothing can exist successfully in isolation and that the living organism of our society cannot be reshaped by looking to the past. The subtle interweaving of still unexplored potentialities cannot be appreciated in its full beauty and cultural relativity unless we believe in the imperative necessity of integration and systematic planning and in a realistic social partnership. Thus the answer to the question of how many planners are needed, is an emphatic : A great many, for a long time to come.

In order to achieve the desired results it is obviously impossible to apply methods which have failed already in the past. The existing pattern of departmental education is unsuitable ; the educational needs and methods of planning cannot be fitted into the curriculum of the different departments. The Committee set up by the Division for the Social and International Relations of Science of the British Association in 1942 has presented a report on Post-War University Education. They state that " the Committee have been impressed by the tendency of university studies to split up into a growing number of separate specialisms, more remarkable for their diversity than for any integrating principle other than ' simultaneity and juxtaposition.' Little is done to ensure that every undergraduate is faced by the need for working out a philosophy of life. Moreover, the separate specialisms tend to be increasingly divorced from the life of the community." We may therefore assume, on the authority of this Committee, which consisted of a number of outstanding experts, that neither the old organisation nor the old methods can provide a training appropriate to the needs of the planner, as those very tendencies which are most severely criticised and for which remedies are suggested are of special significance for an education for planning.

Thus three main principles emerge, which should determine the methods and the arrangement of the curriculum. They concern :

1. The setting up in general.
2. The organisation of the work in detail.
3. The combination of theory and practice.

1. Four possibilities seem open. All of them may be chosen

and realised side by side, of course in different places ; or only one of them may be selected in the initial stage and the others may follow later. Planning can be taught in a Planning Department ; in a College of Planning ; in a School of Planning ; in a new community whose centre is the Institute of Planning. The latter is the most complex and the ideal solution. We shall deal with it in a special section.

A Planning Department could be established relatively easily as part of a University College. It might be a useful starting-point around which other related institutions could be built up. A College of Planning is of a more comprehensive character. It could include several departments of its own, providing for those subjects which are directly related to planning, as well as for some border-line disciplines. The College as such would be part of a University. A School of Planning is an independent institution not attached to one of the universities, though it should work in connection with one or several of them. It could be run on the lines of a department, i.e. as it is defined in this case—on more restricted lines, or it could be developed on the more spacious scale of a college. It should be pointed out, however, that it would be wrong to start either a department or a school as a fragmentary enterprise with only a reduced number of selected subjects, hoping that the others could be added later. This would be contrary to the spirit of planning and, consequently, to an education for planning. Whatever is done it must provide for *all* the disciplines which are essential to planning and *all* of them must find their proper place in the curriculum from the very beginning. It must be a " combined operation ", and nothing must be left to chance or omitted. Even in its initial stage and on a small scale an education for planning must be conceived as a microcosm reflecting the whole configuration. It is most desirable that the planning students should not only form a community of work but also a community of living. A hostel should be provided in close proximity to the place of work. We cannot hope to achieve a thorough training in a short time. The educational programme would have to be extended, therefore, over a period of four to five years. This would correspond to what Harvard University and the Massachusetts Institute of Technology are doing, though both have courses for City Planning only.

A Planning Department will necessarily be situated in the same locality as the University to which it is attached. A College

of Planning, being a more self-contained body, may be near to the mother University, but need not be in its immediate neighbourhood. A School of Planning can be anywhere, providing some definite particular requisites exist, such as situation in an area that is not too remote and can be used as a ground for field work ; diversity of agriculture and industry as practical " training centres " ; different types of community life ; libraries and other public institutions, etc. The buildings themselves—as of all training institutions—should be of the highest architectural standard and reflect the spirit of vitality and futurity which is so essential to planning. They should express clarity of purpose, clarity of thought and clarity of form. In other words, they should be products of a functional architecture. Students whose whole training is directed towards creative initiative and towards the reshaping and enriching of our environment must themselves work in an environment that is equal to their task.

2. The training would consist of lectures and practical work, research in theory and practice, discussions arising out of test cases, the working out of planning schemes and reports, collective and individual recreation, coöperation in running the school and the hostel, and other occupations on similar lines. The curriculum, as explained in the next section, would provide a more detailed and systematic picture of the whole procedure.

Here we must stress the following as one of the essential methods of training. In order to discard the old concept of " school " and to make the community of working and living a real one, the work should be undertaken in small groups. This would counteract the unavoidable centralised direction from the top and would produce decentralised achievements in a far better way than by all or most of the students working together. It would strengthen the responsibility of the individual student and the sense of mutual aid ; it would develop from the very beginning the faculty of team work ; it would increase the student's activity and interest ; it would be an additional stimulus to " learn by doing " ; it would put the work into intimate relationship to the practical life ; and it would make the student aware that he is not only a producer but a creator. In brief, it would do away with the spirit of regimentation and frustration. Moreover, working in groups provides an excellent means of assessing the standard of achievement of each individual group member and of directing each student towards that particular field of work where his special qualifications will bear the best fruit.

That this splitting up into units must not lead to losing sight of the general principle and a disintegration of the entity of planning need hardly be mentioned.

We have thus a parallel to planning on a large scale. Central direction from above must be complemented by decentralised achievement at the bottom. This sound principle should pervade all stages of planning, and consequently also of an education for planning. If it is properly organised, both the student and the work will profit immensely from the procedure. And just as the size of each planning unit in practice—from a region to a neighbourhood unit or an industrial establishment—depends on its purpose and function, so the size of the study group would vary in accordance with its task, the extent of its work and the ability of its members.

Another aspect of group working is the composition of each unit. It should consist of students of different levels of training, so that the more advanced members can give a lead. And it would also be advisable that students of different callings and with different interests should collaborate in each unit.

Finally, the work on which each group is engaged must be part and parcel of the general scheme, but it must not be on so small a scale that it would not offer an opportunity of learning some of the guiding principles of planning, while not neglecting the acquisition of the knowledge of details. The coöperative work of a group should not be extended over a period of more than two terms. After that, the task and composition of the unit would have to be changed. This switch-over must proceed systematically ; the student must be enabled to pass through the various stages of training in such a way that not only the scope of his work but also its character offer an ever-widening opportunity of learning in general and in detail.

In general, the method of training must be free from rigidity and adaptable to the changing number of students and types of students. It must find ways and means of combining in a vivid manner the transmission of experience gained in the past with the explanation of the forces which are modifying the traditional influence in the present and of the trends which are likely to persist or are desirable in the future. And it must find a sound balance between the ideal goals which are to be reached as results of a long-term policy and the intermediate achievements which can be realised at the different stages.

3. The combination of theory and practice is a corner-stone

of the training for planning. No theoretical approach to any problem should be without its practical counterpart, and *vice versa*. This is the only way of relating every piece of work to a definite purpose, of putting human needs and aspirations in the forefront, and of selecting the most suitable tasks. And it will help to destroy that compromising spirit which contents itself with promoting what is " possible " but not what is imperative. " Possible " is in reality a very ambiguous catchword ; it belongs to the vocabulary of the weak and timid.

What does practice mean within the scope of an educational system, and especially of an education for planning? We have attempted above to give a general definition. This might usefully be supplemented by an explanation of what it is not. " Practice " is still considered in the sphere of building, as of many other occupations, at best as a knowledge of materials and of construction intermixed with some work in an office and on the building site. I am referring to architecture as a representative example for reasons already explained. But is this " practice " as it should be understood? It is a mere acquisition of factual knowledge in some sub-sectors of the actual work. But this knowledge does not produce an understanding of the work as a whole in its relation to human problems. Such " practice " is in fact only another side of the same method, namely, the mechanical learning of the so-called " golden rule " of a more or less traditional building process.

Practice, as we understand it, and as it is essential for our purpose, must be focussed on man, not on dead things. As far as these are concerned their appreciation must be related to the service which they render man. Everything, of course, depends on how the best use of practical opportunities of instruction is made. But the selection of the right opportunities is essential in itself, and is an important part of the task of the teachers. A list of institutions which can offer opportunities for practical planning instruction should be drawn up. It should contain only those agencies where the student can learn " planning in action ", from national planning to the planning of a household budget, from the planning of the electric grid to the lay-out of an industrial establishment, from the planning of large-scale agriculture to the siting of individual farms, from sociological field work to social institutions, etc. The danger lies rather in too many than in too few opportunities. Selection therefore is needed, according to the distribution of these agencies over the country and their

special qualifications for imparting exactly the desired knowledge to the students.

This is only one side of the problem. The students should also be given an opportunity to develop planning studies for particular localities and regions, as part of their regular programme of instruction. This procedure seems to have been successfully employed in the Massachusetts Institute of Technology. They state : " While these do not, of course, take the place of official plans and surveys, the procedure enables a student to carry through a planning project under conditions which approximate those of actual practice."

A certain difficulty exists in fusing the practical instruction with the theoretical part of the curriculum. So far as I am aware this has been done almost exclusively through office practice during vacations or through the working out of some test schemes. But this is not sufficient if we really seek to integrate theory and practice in such a way that neither can exist without the other. We know that older students at a university, after having gained practical experience in life, possess far greater receptiveness and ability of combination than students of the same intellectual standard but without this practical " training ". I suggest, therefore, that admission to courses in planning shall be granted only after some kind of practical work preceding the actual study. This work should, of course, have a direct relevance to the later training. It could be done, e.g. in an office of a planning agency, or in connection with sociological research or field work, or with one of the national public service companies, or with a rural or urban district council. There are a great many opportunities which can offer such a preliminary training. The time spent in such work would be recognised as part of the actual course in planning. The curriculum, as suggested in the next section, will show how this principle might be applied. It is not meant to be a rigid system, and I would stress the necessity of developing and adapting it in practice. It might be advisable in the case of some subjects to give no theoretical instruction, but to let the students do practical work only. It might also be possible to reserve one term entirely for practical instruction, or to arrange for theoretical lectures and practical work to alternate during the term. But " learning by doing " should be made the fundamental principle of the whole course. If we follow this out to its logical conclusion the fundamental significance of the right environment for the school becomes evident. If we can

make it the centre of a new settlement that grows up around the school as a kind of laboratory community, we have all the prerequisites of a sound and efficient integration of theoretical learning and practical experience and application. As already mentioned, I consider this solution as the ideal one and attach the greatest importance to it. I expect from its realisation the greatest results, not only for the students but also for the community. The last section is devoted, therefore, to the exposition of this idea.

The education moves in a cycle. It seeks to establish the unity of thought and action from the concrete to the abstract and back again to the concrete. It seeks to abolish the existence of two classes of men, the one which creates and produces without thinking and the other which thinks without creating and producing. The essential aim is to enable the student :

(1) To face his work without preconceived ideas.
(2) To develop the sense of possibility as a counterpart to the sense of reality.
(3) To believe in his own creative power.
(4) To realise that his individual work is part of a greater collective task and must be justified through it.
(5) To solve each task in the light of its particular purpose and function.
(6) To relate each task to its practical and theoretical fundamentals.
(7) To see the whole configuration in its relation to the individual problems.
(8) To be free from the fear of facing the problems of life in their diversity and relativity.
(9) To place man's needs and aspirations in the centre of his work.

III. The Curriculum

The following suggestions for a Course in Planning are meant to indicate the principles which should guide the general arrangement of the curriculum as to the subjects and their sequence. Thus far it is a definite scheme founded on and developed from the basic considerations and prerequisites put forward in the first two sections. So far as the implementation in detail is concerned, it is open to alterations and adaptations which will arise from practical experience. Within the general framework of the curriculum there is, therefore, ample scope for flexibility.

A few introductory remarks are still necessary.

1. While the school as such has, of course, its permanent seat in one particular locality, its activities branch out over a wider area. This implies a certain movability of teachers and students, and in addition to the core of educational instruction given at headquarters, there will be a number of mobile units and subsidiary training opportunities elsewhere.

2. Each year or term respectively is devoted to one particular topic, such as social biology, economic planning, national planning, etc., in order to avoid dissipation and to relate each of the sub-topics efficiently to the general problem.

3. One year of practical work precedes the actual course in planning. This preliminary training will take place either in a suitable office or " on the spot ", e.g. at a planning agency or in social field work or research.

4. Students must pass an entrance examination consisting of two parts, i.e. a test of general education and one of special knowledge.[1]

5. Entrance scholarships will be awarded, depending on the character, knowledge and intellectual qualities of the applicants.

6. Tutorial superintendence should form part of the educational system.

7. The full course includes an undergraduate and a graduate programme extending over a period of five years and consisting of three terms yearly. A considerable part of the vacations will be reserved for external practical work under the supervision of the school.

8. Students can start their training at the beginning of any training year, that is to say, they may enter the school at the first term of each year, provided they produce evidence that they possess the essential equivalent of knowledge in the subjects which have been taught in the terms preceding their entry.

[1] I follow in this respect, as also with regard to the two following points, the report of the Education Committee of the British Association.

FIRST YEAR

First Term

Topic: Social Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*[1]
1. Population Problems.	Distribution—sex—age—profession—family structure—influence on planning units.	Lectures—discussions—papers—case study.	Statistical Department of a Local Authority—Planning Agency—Population Investigation Committee.
2. Health and Medical Services.	Types and service area—housing and health—fixed and mobile institutions and the redistribution of population-industrial hygiene—diet.	Lectures—discussions—papers—exemplified by the health and medical system of a region.	Health Centre—Medical Department of a Local Authority—Planning Agency—Ministry of Health.
3. Education.	Types and service area—working hours and education—housing and education—fixed and mobile institutions and the redistribution of population—"learn by doing"	Lectures—discussions—papers—exemplified by the educational system of a county.	Educational Department of a Local Authority—Planning Agency—Rural Council.
4. Social Biology.	Group behaviour—social needs and social services—types and service area—community centre—neighbourhood facilities—housing and social intercourse.	Lectures—discussions—papers—exemplified by a neighbourhood social system.	Rural Club—County Centre—National Council of Social Services—Mass Observation.
5. Recreation.	Recreational needs and recreational resources and services—recreation, housing and work—economic aspects of recreation.	Lectures—discussions—papers—exemplified by a recreational system.	Forestry Commission—Parks Committee—Planning Agency—Joint Committee of Open Air Organisations.
6. Integration of the Different Systems.	The "grid" principle—national, regional, local responsibilities.	Lectures—discussions—case study of a county.	Field Work—County Planning Agency.

[1] The agencies enumerated under this heading are optional and indicate only the principle according to which opportunities of practical work would be provided.

FIRST YEAR

SECOND TERM

Topic : Economic Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Location of Industry.	Distribution of industry—unit size—space requirements—siting requirements—fixed and mobile industries—linkages—power supply—labour market—well-and ill-balanced communities.	Lectures—discussions—papers—exemplified by an industrial locality.	Planning Agency—Industrial Concern—Local Authority.
2. Public Utility Services.	Gas—water—electricity—sewerage system—district heating.	Lectures—discussions—papers—exemplified by a regional supply system.	Central Electricity Board—Metropolitan Water Board—Rural County Water Board—Power Station—Gas Light & Coke Company.
3. Agriculture and Fisheries.	Large-scale and small-scale farming—factory and service farms—the green belt—rural industries—fisheries—housing and working.	Lectures—discussions—papers—exemplified by a rural area.	Rural Council—Planning Agency—Rural Industries Bureau—National Farmers' Union.
4. Horticulture and Forestry.	Market gardening—service area—allotments—unit size and manpower—afforestation.	Lectures—discussions—papers—exemplified by a green belt.	A Marketing Board—Forestry Society—Forestry Commission—a fruit-growing firm.
5. Distribution.	Transport: air, rail, road, water—national, regional, local distribution—location and delivery—commercial requirements—consumption and local needs.	Lectures—discussions—papers—exemplified by a regional scheme of distribution.	Transport Agency—County Bus Company—Co-Operative Society—Ministry of Transport—a Multiple Store enterprise.
6. Interrelationship of the Different Activities.	Balance between town and country—national, regional, local aspects and their interdependence—socio-economic integration.	Lectures—discussions—case study of a county.	Field Work—County Planning Agency.

FIRST YEAR

THIRD TERM

Topic : Technological and Physical Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Technology and Science.	Existing structure and future possibilities re : housing working distribution recreation. Standardisation—scientific management—need of flexibility in planning—influence on social conditions.	Lectures—discussions—papers—case study of a rationalised household.	Industrial Research Station—Patent Office.
2. Natural Resources.	Historical geography—economic geography—land utilisation—water control—human influence on the changing environment.	Lectures—discussions—papers—exemplified by an area.	Land Utilisation Survey—Planning Agency—Field work.
3. Presentation.	Mapping and map reading—surveys—research—bibliography.	Lectures—case study.	Cartographical firm—Ordnance Survey—Planning Agency.
4. Summary.	Interrelationship and integration—approach from the top and approach from the bottom—theoretical and practical approach.	Lectures—discussions—case study of the social and economic development of an area.	

SECOND YEAR

First Term

Topic: Methods and Means of Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. International Influences on National Planning.	International interdependence—the general background—historical evolution—the need of flexibility.	Lectures—discussions—investigation of a general character in the structure of settlement of a foreign country.	Board of Trade—Colonial Office—High Commissioner of one of the Dominions.
2. Principles of Planning.	National, regional, local planning and their interdependence—coördination—anticipation and direction—interdependence of the various functions—interregional balance.	Lectures—discussions—papers.	Central Planning Authority—Regional Agency—Local Agency.
3. Methods of Planning.	Administration and finance—the planning personnel—the planning units—stages of planning in time and space.	Lectures—discussions—papers.	Local Authority—Planning Agency.
4. Public Relations.	Public speaking—team work—exhibitions—information for the press.		Corresponding Practical Work.

SECOND YEAR

SECOND TERM

Topic : National Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Redistribution of Population and Industry.	Existing and desirable trends—decentralisation and dispersal—evacuation and reception areas—social aims.	Lectures—discussions—papers.	Regional Planning Agency and Interregional Planning Agency—Ministry of Town and Country Planning.
2. Transport.	New communities and the transport grid—expansion of the rail and road system—thinly populated regions.	Lectures—discussions—papers.	Ministry of Transport—a Railway Company.
3. Recreation.	National parks and arterial parkways—the green grid.	Lectures—discussions—papers.	Committee on National Parks—County Council of a prospective National Park area.
4. Procedure.	The general framework of the national plan—scope of a long-term and a short-term policy.	Lectures—discussions—papers—case study of the interdependence of several regions.	An Interregional Planning Agency—Ministry of Town and Country Planning.

SECOND YEAR

THIRD TERM

Topic : Regional Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Regionalism.	The regional capital and the region—allocation of the different functions to the individual communities—the national capital and the region.	Lectures—discussions—papers—a complex regional scheme.	Regional Planning Agency.
2. Planning of a Region.	Administrative and private boundaries—spatial relations of the individual communities—the survey—the replanning of the social and economic structure and of the structure of settlement.		

THIRD YEAR

First Term

Topic: Local Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Types of Settlement.	Centrical and linear types—rural and urban interdependence—integration of the different functions—sub-centralisation.		Local Planning Agency.
2. Planning of Communities.	New settlements—development and redevelopment of existing settlements—green arteries and the green belt—periphery and centre - social pattern.	Lectures—discussions—case studies—diagrammatical schemes.	
3. Zoning.	The different districts, their requirements and their interdependence—density—open spaces and built-up areas.		
4. Civic Design.	Siting of buildings—architecture as related to planning.	Scheme of town planning elements.	

THIRD YEAR

SECOND TERM

Topic: Town Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. The Lay-out in General.	The secondary park and street system—buildings and streets—housing and traffic—urban land uses.	Lectures—discussions—local scheme.	Local Planning Agency.
2. The Lay-out in Detail.	The neighbourhood unit—light, air, sun orientation—communal buildings—space requirements. The industrial unit—situation and traffic—space requirements—the recreational unit—allotments—gardens—parks—the shopping unit—the commercial unit.	Scheme of one unit.	

THIRD YEAR

THIRD TERM

Topic : Rural Planning.

Subject.	*Scope.*	*Theory.*	*Practice.*
1. Rural spacing.	Siting and distribution of rural settlements—the road system—distribution and social services.	Lectures—discussions—case studies.	
2. The Rural Community.	Structures of rural communities—market towns—introduction of industries—different types of agriculture and their influence on the structure of rural communities—the lay-out.	Scheme of a rural community. Scheme of a rural district.	
3. The Green Belt.	Structure in relation to the rural settlements within it—the lay-out of central, factory and service farms.		

FOURTH YEAR

The curriculum of this year consists in practical work under the joint supervision of a member of the instructional staff and the planning agency with which the student works. A restricted number of lectures must be attended in order to maintain active contact with the school and to round off the training and knowledge of the student.

Lectures : History of Town and Country Planning.
History of Civic Design.
Planning Experience in other Countries.
Art and Society.
Guest Lectures on various Subjects.

Practical Work :
Students can work in the offices of :
A planning agency.
A local authority.
A recognised planner.
They should be employed not only as " indoor " planners, but also in connection with their particular work outside the office.

IV. The Ideal Solution

There is one solution that seems to commend itself as the natural consequence of integrating theory and practice and to settle this problem in the most efficient way. We should not stop half-way, however necessary it may be to proceed step by step. We should follow out our intentions to their logical conclusion and implement the education for planning by building a model town, with the School of Planning as its centre. We may safely assume that some new towns will be built after the war, and one of them should be set apart for this special purpose. It would be a kind of laboratory city. Its plan should be worked out now as one of the practical tasks of the Department of Planning. The setting up of a Department of Planning in connection with one of the Universities is the first step towards this goal. The next would be its transference to the new town, so that the ultimate aim can be realised, namely, the establishment not only of a working but also of a living community. When this idea was suggested to a leading official and town planner several years before the war, his answer was : " That is our second line

of defence." He was referring especially to the combined agricultural and industrial structure of the new settlement. Now we must look forward to the peaceful times to come and envisage such a community as the first line of attack that will win the peace. Defence alone will not do. We must attack personal and social disintegration, the danger of unsystematic reconstruction and lack of true understanding of the underlying forces by a frontal assault. The best weapon we can forge is a practical example in which the complicated fabric of a community can be demonstrated in its complexity and its gradual systematic growth. Propaganda by factual achievement is a thousandfold more convincing, nay, stimulating, than the best of reports and the best of intentions. Realisation is what matters most, and even the most excellent of schemes remains a feeble consolation if it is not carried out.

Man is not merely a producer: he is also a creator. He must endeavour to synthesise work and thoughts, living and learning. We cannot value too highly the mutual stimulus which such a community and such a school would exert. It would give all work an unmistakable meaning and purpose and would set up new standards of achievement. Moreover, the school might serve as a nucleus of still other branches of education. I am thinking foremost of architecture and design as the means of the physical realisation of all planning activities. Like planning they demand the collaboration of a great number of different workers for the fulfilment of a specific task. It is, therefore, essential to develop the sense and the faculty for such a collectivity, and this can be done successfully only if art is no longer regarded as a kind of isolated luxury product, but as an integral part of the whole pattern of life. It is, when rightly understood, the indispensable counterpart of planning. We cannot hope to reshape and revitalise our environment merely by drawing up plans; we must translate these plans into reality by giving them a physical embodiment in buildings and constructions of all kinds. Both building and planning—building understood in its widest sense, from the cushion to the house—should be conceived as a functional adaptation to the manifold needs of our time. Functionalism is the common denominator, and as such it is a firm basis on which a school of planning and architecture can be founded.

How have we to proceed? I do not intend to explain the scheme in detail. This would obviously go far beyond the scope of this book. Only the main features will be outlined. The

first step consists in selecting a suitable site. The essential determinants are :

Proximity to a large town and good communications.
Situation in the open country.
Beautiful surroundings.
Possibilities of large- and small-scale farming and horticulture.
Structural diversification of the region as a whole.

As the next stage, partly overlapping with the first, a survey must be prepared that provides the data relevant to the physical, social and economic conditions of the region, with special reference to the potential site of the new community. Its purpose is two-fold ; first, to reach a definite conclusion as regards the location of the community, and second, to provide the information on the basis of which a plan for the community itself can be worked out. It is evident that all these preparatory steps will constitute valuable teaching material for the students of the school. Their work gains in liveliness and purposefulness as they proceed with the task of shaping their own future environment.

Having finished this first stage, they can turn to the working out of the plan of the community and its centre, the school. I will restrict the description of this procedure to a short exposition of what can be demonstrated by developing such a model and laboratory town without explaining the reasons of the project and its detailed realisation.

Generally, as the town will be developed from the very start it will be possible to apply the most advanced principles of town and country planning without any compromise or levelling down, and to exhibit their practical results with crystal clearness. The new town is a unit of the whole region, and thus problems of *regionalism* can be studied. It involves a wide field of theoretical research and practical work. Regionalism can be defined as the result of functional spacing within a certain area and as an experimental adventure, namely, that of a gradual readaptation. These processes are interdependent. They assign certain functions to the individual community and they balance this distribution of functions among the individual settlements of the region. On the other hand, they help to destroy the confused notion of a self-contained community. It is obvious that many social and economic problems have to be investigated and practical solutions found if the new community is conceived and developed as an element in the wider unity of the region. Further, decentralisation and dispersal, their inter-dependence and their

special tasks, are other factors of importance ; the road system and communications in general open up another field of valuable study ; the highwayless town and the townless highway ; arterial parkways and the interconnection of regional and local parks and open spaces ; the provision of public utility services on a regional basis ; the interaction of regional and local administration—these are only a few of the numerous problems which offer themselves as practical teaching subjects.

The development of the new community will cover a period of ten to fifteen years. It provides, therefore, a useful scene of action for many terms and for numerous students. Long term, short term and yearly plans can be prepared and adapted to the changing conditions. General principles of planning can be taught and the four stages of planning can be demonstrated in practice : the preparation of an inventory ; the formulation of the principal issues and the working out of appropriate methods by which the social and economic needs can be fulfilled ; the practical preparation in the form of concrete plans ; and the execution of these plans. Another side of the picture is the need for hypothetical plans. They are a kind of retrospective affirmation that the original plan is flexible enough to withstand the impact of socio-economic and technological changes.

The fact that every part of the work of the students is applied to a specific task avoids the danger—hitherto only too general—of producing wish-dream plans. Building and planning is three-dimensional ; it extends in length and depth and height. Hitherto it has been conceived rather as two-dimensional, and this misunderstanding is the direct cause of the detrimental conditions of our towns. The architectural " view-finders " and modern Georgians lived—and are still living—in the pseudo-artistic fogginess of their drawing-rooms, and believe that they can do justice to real life by some meticulously worked out perspectives. We have to discover anew the third dimension—height. If we make the right use of it we can add an enormous amount of " new " space to our towns and to their individual buildings. And this has a direct bearing on the principle of density, the apportionment of a given number of people to a given space. If the students are trained to think in three dimensions from the very beginning, it will be of the greatest importance to themselves and it will considerably raise the quality of their future work.

The realistic approach which a practical scheme enforces upon

the whole work nips in the bud such stupid ideas as developing new settlements as " castle towns " around the still existing ruins of a castle, or of planning them around the shopping district as a centre, and other similar misconceptions. The former is an example of traditional arterio-sclerosis, and the latter belongs to the sphere of unimaginativeness, quite apart from the fact that a shopping centre should be situated where the largest number of people pass to and from their daily work and not where it would take up valuable residential space. These two examples are selected at random, but they illustrate the trend of thought in which self-styled planners sometimes indulge and which can best be eliminated by founding the training on factual experience and specific tasks.

The size of the new community is restricted. It must not grow beyond a limit fixed in advance. This complex provides a useful training-ground for another set of problems. It raises the question of how many people shall live in the new community and what special functions it shall fulfil. It is obviously useless to say that a town shall be built for, say, 50,000 or 70,000 people, an approach that is very common to-day. This juggling with meaningless numbers is not the right way to start. The size of a community is dictated by the extent and configuration of the site, and by the type and number of functions allocated to it within the structural pattern of the whole region. The number of the population follows from these considerations, and not *vice versa*.

An invisible wall surrounds the town. The *green belt* is the productive glacis outside this girdle, protecting the community from encroachment by undesirable influences, and itself permanently preserved for agricultural activities. Town and green belt together form an indivisible unit. The strength of the community is derived from restriction, not from expansion. These problems give ample scope for the study of many aspects of planning and need no further elaboration as to their value for the practical work of the students.

Structure. Under this heading the students have to deal first with the structure of the *land* ; the quality of the soil ; the various land uses ; the consequences of common ownership of the land—the ground on which the community stands is held in common by the inhabitants—and possibly also of all buildings on it.

Other headings are the structure of the work carried on, of the population, and of the community as a social entity. The

aim is to develop a well-balanced community in the social as well as in the economic sense. The structure of *work* must be diversified. It will include, therefore, industrial, agricultural and horticultural work. How can a sound balance between them be achieved as regards both time and category? Is part-time work in two of them advisable? What types of industry shall be introduced? What is the most suitable size for an industrial unit? Large-scale agriculture carried on in the green belt will have a different effect on the community from small-scale agriculture. Working hours and hours of recreation are dependent on each other. It is impossible to enumerate all the problems involved, but even this short list compiled at random shows sufficiently the great possibilities which the students can usefully exploit.

The structure of *population* is another component of the socio-economic problem. Investigation of its composition according to age, sex and profession must provide data for the type and the number of dwellings, for the educational and health services, for the social institutions, and all these have to be linked up with the economic factors. But, first of all, the child must find its rightful place in the new community, if it is to be an outstanding and stimulating example for our generation. I quote a few passages which I wrote in another book : [1]

The relationship between members of a family has been subject to great changes. The patrilinear has superseded the matrilinear structure of society and the " realm of motherhood ", the sphere of protection and maternal love and of the instinctive moulding of the family is disintegrating. This evolution has gained a strong impetus from the increasing equality of wife and husband. We are only at the beginning of this process, but it is already evident how greatly it will affect the position of the child. It might not be beyond the bounds of possibility that a filial-linear social structure emerges. The deeper sense of this revolution would be the substitution of an attitude towards life which takes its guidance and inspiration from the future, instead of listening predominantly to the past and present. We cannot tell what will happen, but we can draw our conclusions from latent and manifest trends. These trends seem to point to the direction of such a development. The future is gaining in momentum, and the importance of the present is viewed more and more in the light of the future. A common programme for the future can unite us whereas the all-too-often-misused evocation of the past invokes and treasures just those of our affections and traditional values which are a stumbling block in the way to the future. A life which accepts present reality and is animated by a programme for the future, will

[1] *Creative Demobilisation*, Vol. I, p. 264.

create dynamic tensions which are bound to revolutionise our society fundamentally. The child, as the vanguard of this evolution, will set new standards for our life. The fulfilment of his mental and material needs will profoundly change the structure of our settlements in general and in detail.

The *social* needs find their expression in the comprehensive provision of social services of all kinds and their effective integration. They constitute the backbone of the community structure. The creation of the framework for the social life of the community and the working out of its detailed implementation offer the most attractive task to the students. This task directly touches the human side of their work, and it is here that their character and their vision will find the best chance of creative development. They will have to deal with education, medical and health services, communal institutions, recreation, problems of social relationship, coördination of individual and collective needs and institutions, and with the means and methods of establishing and preserving the primacy of the social over the functional life of the community.

Lay-out. Here we move in the original sphere to which town planning has been restricted hitherto. But the principles have greatly changed, and have nothing whatever to do with those which dominated town planning in the past—or, rather, clear principles are only now evolving, while in the past none at all existed.

First it has to be decided whether a linear or a centrical type is to be preferred. The final choice is not free : it is not to be determined by our personal likings. Rather, it depends on the physical conditions of the site, on the communications, on the functional structure and on the surrounding area and its interdependence with the town. Secondly, the green wedges dissecting the districts of the town, the arterial parkways, the neighbourhood and the local parks—all these elements must be integrated in the green grid of the regional park system. Thirdly, the individual units must be zoned according to their functions as residential, industrial, business, agricultural or horticultural. And they must be so arranged that all of them together form an integrated whole, while each of them in itself is a homogeneous entity. The relation between houses and streets must be put on a new basis. The cult of the street must be brought to an end. The cañon-like street lined by monotonous rows of houses should disappear. A street serves the needs of moving traffic ; a

dwelling serves the needs of a stationary home. They are not mutually compatible, if each is to achieve its maximum effect. The orientation of the houses must be independent of the direction of the street. The only determinant should be the maximum access of *sunlight*, of *natural light* and of *fresh air* to every room of the buildings. This is the fourth factor that should determine the general principles of the lay-out. It is directly connected with the fifth, the problem of *density*, for it will lead to a wider spaced lay-out and in some places to higher buildings. The old principle of fixing a figure for the number of dwellings per space unit, such as twelve houses to the acre, should be discarded, for it neglects the fact that building is a three-dimensional affair. The new method must be flexible, and should be based on the relation between persons and outdoor and indoor requirements. Lastly, flats *and* houses, not flats *or* houses, are needed. It is of no avail to rekindle the old controversy of flats *versus* houses. The stubborn facts of life have decided this question. Since we do not want totalitarian methods, or to enforce one uniform pattern of life on the whole population, we must build houses *and* flats, but we must do it in such a way that each type develops its fullest efficiency and architectural expressiveness. Privacy, real privacy, not the fictitious privacy of the suburban agglutination of houses, must be guaranteed in flats and houses alike.

A rich field of theoretical and practical work is thus open to the students. The problems mentioned above touch, of course, only a fraction of the tasks involved in the general lay-out. But they will certainly be sufficient to clarify the scope and the character of the numerous possibilities of " planning in action " which are inherent in the planning of community life.

In detail : the *neighbourhood unit* is a microcosm reflecting features of the larger community. It is a community of its own focussed on the educational institutions for the child and on the community centre. It should be a park interspersed with buildings, thus reversing the previous development where the park was a more or less isolated area, introduced among the built-up block units. The houses, blocks of flats and the other buildings are not directly related to the streets surrounding the neighbourhood unit. Corresponding considerations have to be applied to the industrial, business and other units. Needless to say, all these tasks provide an excellent training-ground for planning as well as for civic design.

Surroundings. Under this head the students study the purpose

and structure of the *green belt* surrounding the community. They have to develop plans for its general use and to work out schemes for the villages and the central, service and factory farms within it, in connection with the classification of the soil and the various types of agricultulre, horticulture and forestry. Other problems are the road and rail system, airport zoning, recreational resources, land ownership, farm management, rural industries, water and electricity supply, sewerage systems, and many more features of rural life, especially in its interaction with urban life.

Open-air laboratory. It has been suggested above that the new community with its surroundings should be a kind of laboratory town. It would be most useful, not only in the interest of the school, but for the whole country, if this idea could be realised. We are at a stage where old building methods are breaking down and new ones have not yet taken clear shape. An open-air laboratory is urgently needed. The opportunity would be unique : as it is intended to build such a community by large-scale operations, rationalisation of the building process would result in a reduction of costs and time. New materials, new constructions, new lay-out in general and in detail, new arrangement of the individual rooms, new principles of density, etc., could be tried out in practice. Although the process of rebuilding Britain is an experimental adventure, it is not possible to experiment in every case. One place should be selected for this purpose ; and what place could be more suitable than this community with its School for Planning? We can likewise extend the experimental research to the field of social biology. All these problems are so intimately interconnected that their investigation can only gain by a systematic coördination of the many activities leading to the same end.

What I sought to show by this enumeration of the many factors involved in planning one single community—and it is hardly more than an enumeration in broad outlines—is the fact that it is possible to provide in this way almost all, or at least all the essential, prerequisites of an education for planning in theory and practice. The whole range of planning can be covered, from the individual household and the individual house to the community, the farm and village, the open country and the region, although the actual starting-point and working ground is one individual community. Even if we follow the course suggested as a beginning, namely, to set up a Department of Planning in a University, and even if we integrate to the best of our ability

theoretical instruction through lectures and practical training through work on the spot, this can never equal the dynamic immediacy and unity of life and work that exists in a new building and living community which grows and changes through the work of its own members. The last remnants of stuffiness would disappear and the life of the students and the inhabitants would acquire a new sense, a new value, a new outlook ; in short, it would be dominated by a creative vitality.

In order to show the interrelatedness of local, regional and national planning—the actual subjects of training—I cannot do better than conclude this part with the Statement of Principles which I have already formulated elsewhere : [1]

Statement of Principles

The first and foremost objective of town and country planning is the creation of an inspiring and diversified environment. Man's personal life is the axis around which the activities of his functional life revolve. Hence, the very essence of the work of architects and planners is the establishment of such a balance between personal and functional values and aspirations that neither of them can be undermined and ultimately destroyed.

The second objective of town and country planning is the creation of the actual framework within which the various activities can best be performed. The daily cycle of home life, work, recreation and of the intermediate journeys linking them in time and space must move smoothly and rationally. Thus, town and country planning is a problem of time and space.

The age of the machine has offered an overwhelming though uncoördinated number of technical possibilities to an eclectic and moribund architecture, town planning being still in its infancy. Our towns grew into joyless and shapeless monstrosities. The forgotten men of the countryside were mere bystanders of this process.

The age of science offers a systematised and coördinated knowledge to the maturing art of town and country planning. It brings order into the chaos. It stops the ambitious and confused growth of the towns by the invisible wall of reorganisation and differentiation. It qualifies them as clearly defined elements of a nationally conceived structure of settlement in which a revivified countryside can play its full part.

Like science, town and country planning knows no rigid boundaries. The country as a whole is its planning unit, and regions and communities are but individual though essential parts of this planning organism. The replanning of Britain is a readjustment to new ideas, to new experiences and to new ways of living, towards which all communities are contributing. The uniting power of speed nullifies distances. New inventions and discoveries brush aside difficulties which seemed to be unsurmountable. Neglect of these forces means

[1] *op. cit.*, Vol. I, p. 283.

stagnation. Only the Fellowship of Architects, Planners and Scientists is able to fructify the vast amount of scientific and technological knowledge and to embody it in plans for the rebuilding of Britain.

This Fellowship does not assume the continuation of forces which were operative during the pre-war period. Fully aware of its own responsibility and the newness of its task, it demands the courage of a new conception and of a re-invigorated attitude towards life from all who are devoted to the future. The Community Great Britain, with the manifold aspirations and interests of modern life, must be planned with a clear vision and a bold facing of facts.

In consequence, the following principles are considered as the essential factors of town and country planning.

1. National, regional and local planning must be integrated. They must proceed simultaneously and according to similar principles in urban and rural areas.

2. Re-development, further development and development of existing and new communities respectively must be conceived and executed as one coherent whole and as a matter of regional concern.

3. Urgent reforms and short-term plans must be carried out as the initial stage of a long-term policy. They are means to this end but not ends in themselves.

4. The interests of the community must govern every scheme in general and in detail. Private interests must be subordinated to this principle without impeding personal freedom and without undue hardship.

5. Town and country planning is a three-dimensional art. Full recognition must be given to this fact in regard to the lay-out, in general and in detail, to the architectural form of the buildings and to the inter-relationship between built-up and open spaces.

6. The method of linear articulation, spatial zoning and functional spotting must be applied to national, regional and local planning alike. It creates and preserves a dynamic homogeneity of the country, of the regions and of the communities ; and it evolves a diversified structure of the individual units.

7. The grid of the park and transport system links community to community. It frames the residential and non-residential zones and units. The park grid extends into the neighbourhood unit. The transport grid stops at its boundaries.

8. Within this framework the spreading of decentralisation and dispersal can proceed systematically, resulting in the functional inter-relationship of villages, towns, cities and regions.

9. Decentralisation loosens up congested areas within their immediate sphere of influence, while dispersal stretches out over the whole region and even beyond it. Both are complementary to each other,

10. The neighbourhood unit, a community within the community, is centred on the school and communal institutions. It is essentially part of a continuous belt of open spaces. It is a park of its own interspersed with public and private buildings divorced from the traffic and noise of the streets.

11. The lay-out must conform, in general and in detail, to the

highest standards of lighting, air and sunlight conditions. The rational application of this principle makes a loose grouping of buildings possible. It departs from the cañon street lined with houses, thus establishing a flexible inter-dependence of the street pattern and the arrangement of the houses.

12. In accordance with these principles apparently incompatible requirements can be fulfilled. The lay-out can combine—

compactness and openness ;
order and flexibility ;
differentiation and homogeneity ;
privacy and social intercourse.

Principles similar to those applied in the School of Planning should regulate the training in the workshops which would form a part of the whole school. I hesitate to call this division an art department, though it has many features in common with a school of art. Yet its basic approach is different. Liberty of artistic production is not the arbitrary application of forms, but the far more complicated task of expressing creative ability within the limits set by specific materials and functions. I suggest the name *Department of Design*, which might be more in line with the principles and intentions of the School, and conveys a more modest meaning than the pretentious label " School of Art ". Practical training for design develops the instinct for working with the material and with the machine, thereby abolishing the absurd situation that the student knows, as it were, the theory practically and the practice theoretically. The workshops or studios make mere routine work impossible. In the elementary course the students learn the handling of materials and their specific qualities, the elementary principles of form and colour, the interdependence of space and matter and of function, form and material. More advanced students would work in other studios comparable to laboratories. Here models would be worked out, to serve as patterns for industrial mass production. I believe that there is a great need for such work, and I have definite reason to assume that many industrialists would welcome such a step. The good design and the actual working out of such models in the workshops and their later use for industrial production would ensure that everyday objects would be functional and attractive. This branch of the work has great possibilities and should be made remunerative. We might even envisage that some of the industries which will be located in the new town would work in close collaboration with the model workshops and would take over mass production on their behalf.

The main workshops would provide training in woodwork, ceramics, glasswork, metalwork, weaving, colour, plastics, modelling, bookbinding, leatherwork, publicity, typography. All of them would also serve as studios for model design.

A very useful addition would be studios where the students could be trained in stage design, display of various kinds, and exhibition work. Out of these classes theatrical performances and, eventually, a theatre for the community, might develop.

This sketch of the Department of Design gives, of course, only a rough outline of its purpose and structure, but it will be sufficient to show the desirability of combining this branch of training with the actual education for planning.

There are three main reasons why the Ideal Solution as suggested above should be made the final goal of all education for planning.

(1) If we really want to synthesise theory and practice, we must do it in the most efficient way. We must not be content to use methods which, though not bad in themselves, are derived from the past and cannot therefore produce the desired results in their full clarity. They must grow out of the values and concrete appreciations of the present, if they are to create works for generations to come.

(2) Those who will be actively engaged in the reshaping of our environment ardently desire the unification of learning and living. They know, and they want to act and to live accordingly, that full man can be born only if his personal and his functional life, his life as a learner and as a creator, are indissolubly integrated. It is beyond any doubt that the new generation of planners will respond enthusiastically to the existence of a School of Planning as a dynamic community within a community.

(3) The new community is a living example of a new type of settlement. If it is to fulfil its purpose of stimulating the population through the energising spirit which alone can win the peace, and if it is to be an inspiring source where those who stand in the forefront of the rebuilding of Britain shall receive their education for life and work—then this community must occupy a special place in this great task. The very essence of its life is a dynamic equilibrium which is kept in motion by the ever renewed and renewing power of its centre—the School of Planning.

AN INTERNATIONAL SOCIETY

This essay is an attempt to give a general outline of a society for the promotion of those tendencies which will advance the world's present trend towards unification. In our day, for the first time in mankind's history, all parts of the globe are equally important in reshaping man's individual and social destiny. We have accumulated an extensive body of social, economic and scientific facts on the intellectual and spiritual tendencies and of the structural conditions of every country. Although these achievements command the highest respect, they still await coördination and practical application.

Many institutions for international collaboration already exist, and the value of their work can hardly be overestimated. But their scope and outlook are governed by the state of mind and the actualities which have been prevalent hitherto. Their activities could hardly extend beyond exchange of ideas and experiences, for their efficiency has of necessity been impeded by spiritual and national frontiers. In these conditions their foremost concern has been to take stock of events and tendencies in individual countries, with occasional endeavours to adjust minor discrepancies in one field or another of international contacts. No scope was left for extending this perforce theoretical approach to international problems to the sphere of practical action. The war is the crucial demonstration of this failure, a failure which is not restricted to a few countries only, and which is not the fault of any country in particular. Mankind as a whole has reached the frontier behind which lies the Commonwealth of Nations. This frontier must be crossed by all peoples at the same time, or it will not be crossed at all.

It is no paradox that the war has proved not only the need for collaboration but also that collaboration can operate efficiently. On the contrary the main lesson of our present trials is the need for coördination on a large scale. Both camps have organised their resources over vast areas, the one over the whole of Europe, the other in the rest of the world. But this procedure is conditioned by extraordinary circumstances, and is consequently confined, in the main, to exploiting the material—including the human—resources of every country. A considerate and wise attention to the *interplay* of the forces emanating from the various

countries, and a sound and reciprocal adaptation of their reactions on the social and economic structure of each individual country, seems at present impossible. But it is precisely this interplay and this structural interdependence which need to be studied promoted and brought to maturity. They alone are creative, powers ; they alone represent lasting values. Just as " phony " consultation has been superseded by the factual results of lend-lease collaboration, so this must be followed by the integration of spiritual lend-lease all the world over.

No one can truthfully say that the approach of the various nations to post-war collaboration, in which each must lay aside some aspirations for the sake of the long-range gain of international achievements, is not highly artificial and therefore unreliable. This unfortunate situation can be overcome only if every country knows that it is not merely called upon to give and that its value is not assessed purely according to its capacity to deliver the wanted goods. Every country should be convinced that its rightful interests are given the most serious consideration in the sphere of international inter-dependence, and that it is a receiver as well as a giver, so that it can develop its own social and economic structure within an elastic framework of international collectivity.

Although there are still many people who shudder to hear the word " planning " because they fear that it means the suppression of their alleged freedom, there should no longer be any doubt that a systematic procedure is the only way out of the present chaos. The pioneer in us must give way to the farsighted coördinator. With him must go the heedless independence of *laisser-faire* " initiative " and the industrial empires of the few directed against the interests of the many. Pioneering is after all the characteristic expression of an age of wide and empty space where man, the individual, can give rein to his physical energies and emotional desires. It is not the appropriate expression of an age of plenty, wherein the whole of mankind is to participate as equally as possible in the distribution of the common wealth.

But this is not the place to discuss the imperative need for a systematic procedure, in other words for planning. We shall take it as a self-evident truth, which the unteachables must learn by bitter experience—if the war has not taught it them. If, however, we are sincerely convinced that ours is the right way, we are faced with the obligation of building a reliable substructure on which a meaningful and efficacious plan can be based. In

short, we need a philosophy of planning; we need, too, to examine, to evaluate and to further the trends, whether latent or apparent, which are originating and pointing towards a concerted effort in the sphere of planning. The building of such a substructure is an elementary necessity if we are aiming at more tangible results than a lifeless blueprint of a "better world", and if we are resolved to discard the spate of political platitudes and ready-made formulas which can be at best mere short-term stopgaps.

I

It is not the purpose of this essay to hammer out such a philosophy or to embark on an investigation of the trends hinted at above. It is restricted to suggesting the setting up of an International Society as an instrument for evoking and canalising those intellectual and spiritual forces which are the main agents of international inter-dependence, stress being laid on *inter*-action as opposed to mere co-existence. The implications of this difference are discussed in the following paragraphs.

The foundation of an International Society can be justified both on negative and on positive grounds. Let us deal first with a few of the negative problems. Of these only the following shall be mentioned: the general fragmentation; the passion for organisation; irresponsible responsibility.

Fragmentation is apparent in the state of mankind, of nations and of the world. It finds its expression both in thought and in action. Man thinks in water-tight compartments and acts in details. Details are regarded as true realities. But are they more real than the configuration as a whole? What we may say is that it is easier to perceive them and to make decisions on details the basis of our actions. This overvaluation results quite naturally in our repudiating the opposite attitude, that of seeing and appreciating things and our fellow-men in their wholeness. Moreover, fragmentation is also produced by the discrepancy between age groups. The young tend to live on the credit of future events; the old are inclined to live on the reputation of past achievements; while the middle-aged are either torn between these two extremes or else do not make full use of their opportunity for any one of many reasons. All this, of course, should be taken *cum grano salis*, but the fact remains that these tendencies prevent man from rightly assessing the interplay of

the forces which have been formed by nature or re-formed by man himself.

Nations are in a similar state, with the main difference that in their case the fragmentation is proceeding on a larger scale. Nations think and feel in terms of national loyalties ; they pride themselves on the uniqueness of their own institutions and achievements, and not at all on those of the world at large. It is still the tribal instinct, though immensely expanded, which makes nations aware first of all of the *differences* between their own group and outsiders rather than to have regard to what they have in common with others. Accordingly, they react to these emotional valuations by erecting national and spiritual frontiers which are expected, consciously or unconsciously, to enhance the feeling of " togetherness " and security. But in reality neither expectation has ever been fulfilled, unless wishful thinking is the equivalent of realisation. These narrow loyalties, restricted to a rigidly circumscribed area, have a disintegrating effect as regards world unity, however valuable they may be in their own sphere. There should be no higher aim for any nation on earth than to fight for international unity and to develop those qualities which are the most precious contributions towards this goal. Such a widening of loyalties will bring out new national characteristics of generosity, of creativeness, of intellectual and spiritual strength. It will supplant all tendencies to isolation and will end the fractional state of society by giving it a new and common task over and above its activities within and on behalf of its own living-space.

Present-day politics are out of touch with the deeper meaning of this world-wide transformation. Aspirations on paper and high-sounding declarations in favour of a Commonwealth of Nations are losing their hold on the minds of thinking people. Our speeches and writings follow a stereotyped pattern which cannot arouse any enthusiasm. Nor can they convey the true meaning of what we think and feel, for both our thinking and our feeling suffer from one and the same disease, a lack of coherent clarity and too great a readiness to conform to " recognised standards ". Our so-called conformity in social and other matters is a superficial by-product of the general levelling down. It is not the result of a deep-rooted agreement, but is the outcome of slothfulness and the fractional state of our mind and understanding. Small wonder, therefore, that almost all the utterances of those who should be responsible for the conduct of public affairs are

appeals to a dead emotionalism, in flagrant contrast to their deeds, which are determined by a so-called expediency, not by moral standards.

The fractional state of the world is the inevitable result of the fractional fabric of the substructure. So far as there is thinking in universal terms at all, it is mainly restricted to economic problems. It leaves out social problems entirely; and fails completely in the political field. The consequence is that all attempts, if any there are of a serious nature, are confined to the economic sphere, and as such are yet another confession of our fractional way of thinking. How can we expect economic improvements of lasting value, if social and spiritual problems are not tackled at the same time and on an international scale? Our political aspirations are constantly confined to fragmentary "solutions". They centre on the one hand around the pacification of the world by a powerful group of states, on the other, around its criminal domination by a master race. To expect that the successful handling of even one problem—in this case economic collaboration—can serve as a panacea that will solve all other problems almost automatically is pathetically modest, to say the least. The world is in a broken state; but it is also in a state of expectancy. The undercurrents are gradually coming to the surface. It is the strength of these undercurrents which will drive us towards a deeper understanding of the problems which mankind must inevitably face. This confrontation has been expressed by a great philosopher in the words: "Irresistibly, slowly, terrifyingly, like destiny, the great problem and question is approaching: how can the world be administered as a whole?"

How far the de-idolification of the sovereign state has already gone is difficult to say. But that a general disillusionment has set in is certain. What kind of political organisation will follow is not for us to decide, although everything seems to point to a closer integration of the separate states into a world-wide system. We should not be deceived by the fact that a war always promotes nationalistic outbursts. Nor does the deification of the State in totalitarian countries prove anything save that the whole development of Stateism has reached its end. It is at an impasse, and its last convulsions are the most violent. But let there be no mistake: the sovereignty of the State must be followed by an authoritative system covering all the world. This is the only reasonable consequence of the shrinkage of the world. The sovereignty which the State has exercised hitherto must not be

invested in *laisser-faire* individualists, or in any individual or group of individuals. That would but put back the clock, and lead ultimately to another kind of totalitarianism.

In international affairs we have reached a stage which corresponds exactly to the original sense of the Latin prefix " inter ", meaning *between* or *among*. It means more than " side by side ", but less than " together ", in Latin, " cum ", this latter being the expression of joint action and completeness. It is this reciprocity and union which should be made the standard of relationship of nations. It is unfortunate that there seems to be no word other than " international " which might be used in this connection, for that word does not convey the right idea, and is by now a rather misused and empty term. A new word expressing more distinctly a state of integration would be a useful addition to our vocabulary.

Many so-called international conferences are symptomatic illustrations of this " inter "- spirit. In the first place, practically everyone attends as the representative of something, be it a national institution or a national government. Secondly : this being so, he reports on the affairs of his own country or institution, thus actually widening the gulf between the nations instead of bringing them together—except perhaps at a tea party—and discussing some concerted effort which would work to the benefit of all of them. Thirdly : since not many of those present listen attentively to the speakers, being either too much preoccupied with their own ideas or too accustomed to meetings of this kind, the whole affair falls flat and produces no practical results. Yet we may be reasonably sure that there are people capable of putting all this detailed information together and of raising such discussions above the level of national monologues. But since everyone happens to belong to one particular country, he is immediately looked upon as an intruder upon other people's interests or is suspected of ambitious schemes as soon as he attempts to steer clear of a fractional approach to problems which should be dealt with in a more broad-minded way.

A preliminary sounding of a few internationally-known figures as to whether they would welcome the foundation of an International Society such as is here suggested produced affirmative answers so far as the idea in itself was concerned. But it was also pointed out that an International Society should be formed by starting from the bottom, i.e. by bringing the national academies or societies of the various countries together in a kind of Inter-

national Union. I fear that this would not lead to the results desired. Quite apart from the fact that many national institutions have an official or semi-official flavour, they are bound to instruct their representatives, in one way or another, to act at international meetings in accordance with the policy which has been laid down by the body they represent. While there seems to be general agreement as to the former point, the exclusion of any kind of government-influenced tendencies, the attitude towards the latter is less outspoken. This is symptomatic. The members of an International Society constituted in the way here suggested would be barred from taking part in the work in their individual capacity. They would sit at the conference with an eye to their own organisation and would possibly become involved in embarrassing conflicts between the claims of the International Society and their own national body. To compose an International Society of bodies formed on a national basis would be tantamount to starting with details in the hope that they will produce the desired effect if they are put together. The result might well be an exchange of views and even valuable work in other directions, but such an International Union would not differ very much from other similar institutions. We should recognise the fact that a society for the promotion of international integration should be composed of persons loyal to *this* task above all else. What follows will show more clearly the reasons for this demand and its implications.

The next reason of a negative kind is the passion for *organisation*, which is concerned with the creation and management of a framework but not with its contents. The contents ought to exist before the framework. But we have a hankering to proceed the other way round, and to expect that the framework, once it exists, will be a kind of parthenogenetic breeding-place of useful ideas, in other words of the contents. In the political field the most famous example is the League of Nations. It broke down because its organisation, i.e. its framework, was not filled in with a spirit of mutual aid and self-sacrifice in the interest of the universal community, and because the representatives of most of the member states acted like managers of national companies, the liability of whose shareholders—their governments—is limited to a very modest amount of international interest. Attempts in the social and economic field to develop an efficient working organisation spread over large parts of the world have met with the same fate, and for similar reasons. Generally speaking these failures

are natural, for it is impossible to organise or to manage a vacuum or a mess. What does not exist obviously cannot be organised. It is possible to organise the production of material things, but not that of functions and values.

This brings us to the other aspect of the problem, which may appear paradoxical after what has been said above with regard to the relationship of framework and contents. All attempts at creating an organisation even for contents which actually exist, and to make those contents practically usable, has so far resulted likewise in misuse or failure. In the international sphere, so long as science remains detached from life as " pure " science, international recognition and collaboration are a matter of course. But as soon as scientific inventions are applied in practice, the antagonistic self-interest of the individual nations gains the upper hand, or the base perversity of individuals or groups turns them into anti-human forces, as with gunpowder, originally an invention of the Chinese for peaceful purposes ; or the distorted business interests of the uncultured debase them to a level of vulgarity, as with films, wireless, and colour photography. Why is this so ? The answer is clear : because we have not been able to develop the one science which would prevent all this, namely the science of life. In the spiritual sphere, so long as religion remains the sacred possession of individuals or small communities, friction between those holding different religious opinions need not arise. But as soon as the Church organises religious values and seeks to apply them to society, antagonistic claims develop and grow to such an extent that genuine religion is almost buried under them. Once more the reason is the missing philosophy of life. In the emotional sphere, so long as art is the expression of spontaneity and the outlet of individual creativeness, it is genuine and direct. But as soon as it is subjected to State control, and potential " artists " are bred in art schools on the conveyor belt, art degenerates at its best to mannerism and at its worst to commercialism ; and the artist becomes a mere turn-coat who can work in any style, listening attentively and timidly to " what the public want ".

The reason, once again, is the lack of a life-centred pattern of living. In all these cases the contents did exist, but the framework of organisation destroys them. Why should this be ? The main reason, I think, is that too much value is placed on familiarity with routine and too little on intellectual adventure and the appreciation of the deeper meaning of the potentialities inherent

in every genuine human activity. Another reason has already been mentioned : the non-existence of a science of life. Yet another is misunderstanding of the position and scope of organising activities : as we have said above, functions and values cannot be *organised*, but an environment can be *planned* within which they can develop freely and fully—quite a different thing. The difference between organising and planning is the same as between a mechanism and an organism, or—underlining the meaning of these words—between an organised *modus operandi* and organic growth. The former is a method applied from outside ; the latter a force growing from within. In the one case we work with known factors ; in the other we cannot predict the quantity and quality of the development. In other words, we are forced to look at an organism as a whole, while organisation is a method which can be applied to details. Once more the problem seems to boil down to the difference between seeing things whole and seeing details first.

The International Society would have to deal with the contents, and to promote everything that puts these contents in a position of absolute primacy over any kind of organisation. It is not only the overvaluation of organising activities which should be counteracted especially in the international field, but also the danger of their deceitful effects on those who take them as factual achievements and mistake them for the contents.

The third negative reason is the need to rid ourselves of what we have termed *irresponsible responsibility*. An example will make clear what is meant by this apparently incompatible juxtaposition. When attending a meeting addressed by a person in an official position one is sometimes baffled by such remarks as " I am speaking in a semi-official capacity," or " I am speaking as a private person ". A statement of this kind always makes so profound an impression on my mind that for a considerable time my attention is distracted from what the speaker actually has to say. I find myself looking enquiringly at his head as if the different compartments of his brain, each shaped by and adapted to the respective capacity in which the speech was to be delivered, were outwardly visible there. The most astonishing thing is that such statements are made and accepted in all sincerity. It would seem that the brain of such a person consists of three compartments—an official, a semi-official, and a private section—and that these three parts are never allowed to merge into one. How this can be so, unless one is a mental rope-dancer, will I suppose

remain the secret of those directly concerned. In any case it means that responsibility can easily be switched over from one compartment to another, with the result that in the end there is no responsibility at all. Our de-individualisation has gone so far that responsibility appears to lie less in persons than in things and functions. This does not mean that we should not be aware of our responsibility for something, be it an idea, a state of affairs, or simply the working of a piece of machinery. Such responsibility, on the contrary, is essential to a disentanglement of the forces which are degrading us to the level of fractional man. But it must be a personal responsibility, not one that shields itself behind mental acrobatics or impersonal committees. The restoration and the discharge of this personal responsibility are the prerequisites for widening one's loyalties and using them to promote those forces which are instrumental in the unification of the world and the common good of humanity.

Perhaps the restoration of personal responsibility might prove to be one of the most efficient means to bridge the gap between the many and the few, that gap which has been widened to such a degree that millions are readily giving up to small groups of people their own personal responsibility, their duty to think for themselves and their power of making their own decisions. Among the records of the present age which were buried in the grounds of the World's Fair in New York is a letter from Professor Einstein to the people of the year 6939, that is, 5,000 years hence. This letter is a formidable accusation of the mass psychology of our time. It runs as follows :

Our time is rich in inventive minds the inventions of which could facilitate our lives considerably. We are crossing the seas by power and use power also to relieve humanity from all tiring muscular work. We have learned to fly, and we are able to send messages and news without any difficulty over the entire world through electric waves. However the production and distribution of commodities is entirely unorganised, so that everybody must live in fear of being eliminated from the economic cycle in this way, suffering from the want of everything. Furthermore people living in different countries kill each other at irregular time intervals, so that also for this reason anyone who thinks about the future must live in fear and terror. This is due to the fact that the intelligence and character of the masses are incomparably lower than the intelligence and character of the few who produce something valuable for the community. I trust that posterity will read these statements with a feeling of proud and justified superiority.

To bridge this gap is impossible. But it should be possible

to narrow it—not by a further levelling down, but by a reinstatement of true life-values centred on man himself. To counteract the evils of an increasing massification, to give every human being ample opportunity of self-realisation, to instil social awareness into everyone will be the direct result of restoring personal responsibility in all spheres of life ; and anything less than the complete fulfilment of *all* these aspirations is not enough.

The antagonism between the many and the few is one of the most serious problems of the coming generations. It would be presumptuous to claim that an International Society, or any kind of society, could do more than help in a modest way in stimulating and canalising the right forces. These few negative reasons may suffice to indicate the direction the work of an International Society should take. Its members should be entirely independent of official or non-official influences. They should also be free from any partisan outlook which might induce them to give preferential consideration to any particular country. They should act exclusively in their personal capacity ; and the suggestions they put forward should be " ideal " suggestions, which may or may not be accepted, but which will not be watered down for reasons of expediency.

Let us now turn to some positive reasons. As always happens when a subject is discussed first from a negative angle, many positive arguments have already been anticipated. We can, therefore, restrict what follows to a still more condensed summary. Again three reasons will be mentioned. They are : integration and organism ; the common forces and the world as a unit ; the approach from the top.

Integration and *organism* are one. In this contracting world organic growth of individual countries—a process not to be confused with external expansion—can take place only within a world-wide framework which derives its main coherence from the full recognition of the fact that the socio-economic structure of every country is very sensitive to and is transformed by forces from outside, that is, forces emanating from other countries ; and that for these reasons considerably greater importance than heretofore should be attached to the investigation, promotion and promulgation of the interacting forces which bring about changes in the structural conditions. We know a great deal about the causes and effects of the continuous adaptation and readaptation of the socio-economic structure to new conditions in individual countries. But we are rather in the dark as to the ways in which

these transformations are transmitted, received and absorbed in other countries. For instance, we know that South America will be developing its own industries at an accelerated pace in the future. But we do not know, or know only very vaguely, what reactions this will have on, say, South Africa and Australia. We know, again, that international coöperation is essential to the execution of large schemes such as the development of under-developed areas, but we do not know as yet on what lines this should be done, how the coöperation should be organised, how the provision of labour and materials and manufactured goods should be distributed among the nations, how each country's internal structure would be influenced. Again, what are the reactions of the development of aviation on the structure of settlement? What are the reactions of technological trends on social problems and how do they affect the inter-dependence of the national social structures? What are the best ways and means for making people understand the paramount importance of their inter-dependence in accordance with their different attitudes towards life and their different standards of living? These examples are a mere random selection, but they indicate the scope of the interests of the International Society and what is meant by integration and organism. To win the fight against Fascism is one thing, but to win the peace for friends and enemies alike is another—and by no means a lesser—issue of the twin problem of integration and organism. Its solution opens the way to the generation, growth, and preservation of a creative diversity of all the nations, a diversity which alone can counteract uniformity and massification.

The common forces and the world as a unit. In its declaration of Scientific Principles the British Association states: "While only a century ago the village was an almost self-sufficient unit, to-day the world is our unit." This implies—as we have already said—that the International Society cannot be composed of national representatives. To some people this demand may seem somewhat airy. They are perturbed at the thought that any body should be superior to their own national groups, that a selection of persons should like a *deus ex machina* be able to usher in a higher stage of contact between nations. Their fears are unfounded. The International Society, having no authority other than what is based on potential performance and no prestige save what gradually arises from helpful collaboration, can never aspire to a position superior to the constituent parts of the world;

nor can its members be more than faithful and indefatigable workers in the common interest. Their ambitions are entirely restricted to the quality of their work. They are completely outside any active interference with national interests.

The sceptics may be inclined to look at these problems more favourably if they are reminded of the position of, for instance, the Royal Society. It does not itself conduct scientific work, but is a meeting-place for scientists ; a generating station, as it were, of scientific investigations and their coördination. The same holds good for the International Society. Or to meet the other objection : the central Government of this country is composed of persons whose primary loyalty and work are devoted to the country as a whole and not to the parish pump of their respective birthplaces. The Government is not a flock of local representatives but a body of " de-localised " citizens of Britain. Their unit is the country as a whole, and their concern the common forces working in the interest of all its inhabitants. Before a central government emerged, an attitude as to its desirability and possibility existed similar to that which now exists to the setting up of a far less authoritative body, the International Society. Consequently, the members of this Society, standing for the interests of the Invisible Community that is gradually evolving all the world over, can act in no other capacity than their own. Their qualification depends exclusively on their personal value ; it does not depend on the importance of the country from which they come.

Their work should go beyond the investigation of existing conditions. It should be focussed first of all on bringing out potentialities and showing how they can be realised fruitfully to the advantage of all nations. The distribution of food and clothing to the impoverished peoples after the war by an international organisation such as U.N.R.R.A. is most desirable. But it would be fatal if international coördination in the same field were not carried further. The redistribution of population and industry, the development of new industries, the reorganisation of agriculture, the making available of scientific inventions and technological methods in individual countries, all these and many more problems need some sort of concerted treatment if the first step—the distribution of the immediate necessities of life—is to be a productive beginning of international reconstruction on a large scale. Strategical victories are needed ; tactical successes in a number of local sectors are not enough. For

instance, it will depend on the kind and efficiency of reconstruction, say, in the Balkans, when the provision of food from outside can be stopped. The establishment of new industries will reduce the number of people engaged in agriculture. This may call for a far-reaching mechanisation of cultivation ; and this in its turn will influence the structure of settlement, the supply of building material, and so on. Nobody will suggest that these works should be carried through under the guidance of foreigners. But it will be essential to adapt the scope and character of reconstruction in one country to those in others, if the serious drawbacks which would inevitably turn up after some time are to be avoided. Information, advice, objective research and uninfluenced suggestions from a body which is trustworthy, independent, and can command the united efforts of experienced men should be a valuable help in bringing about a balanced and flexible inter-dependence between the various national structures.

I do not want to give the impression that the activities of the International Society should be restricted to post-war reconstruction or to social and economic problems. The scope of interest of the International Society comprises all trends which are working towards the unification of the world ; and this implies that intellectual and spiritual problems shall not be excluded. This might appear a very pretentious claim, but a natural process of selection will almost certainly create something like a hierarchy of priorities. The programme of work should be without any restrictions, or even better, there should be no rigid programme at all. Here again the only " programme " should be " seeing things whole ", or in other words the approach from the top.

The approach from the top is the logical consequence of the negative and positive reasons which have been discussed on the previous pages. Only a few words shall be added. The ultimate goal of the process of world-wide integration is the restoration of those values which make up the personal life of man, and the development of social awareness as the basis of a rising standard of social conditions in every country. The implications of these demands within the sphere of international contacts are far-reaching. But once more it should be emphasized that unrest in the world will not diminish until the ideal and material standards of all peoples in all lands are raised and harmonised on an international scale. These aspirations form the framework within which takes place the interplay of the intellectual, spiritual, social and economic forces. To view this changing

picture, to disentangle the complicated interweaving of the innumerable threads, to draw the right conclusions, and to impart them objectively to all, needs a detailed and unhindered approach, an approach which is possible only from above and could never be successful if it were dependent on an accumulation of more or less unrelated facts—unrelated in an international sense—as they are provided by individual countries.

The two sets of reasons for the foundation of an International Society reflect a mere fraction of the problems involved. The intention of this essay is to show the need for an instrument which can serve as a storehouse of information, as a laboratory for research, and at the same time as an arsenal which will furnish peaceful weapons to the brotherly competitors in the fight for a world-wide community.

One point however needs to be mentioned. There are already institutions working in the international field with a programme that would appear to make unnecessary the foundation of the International Society. These institutions might aspire to fill the place of such a Society, but they could hardly hope to be successful. Almost all of them—so far as their financial position is sound—are dependent on government grants, which are not always entirely free from secondary aims. That this is not desirable in the case of the International Society need not be repeated after all we have said. Others which can rely on non-governmental assistance have a different scope of work. A careful survey of existing institutions seems to justify the assumption that there is an empty place for the International Society to fill.

II

The scope of the activities of the International Society cannot be defined by a programme of work on the usual lines. On the contrary, there should be no programme at all. A mere statement of principles is needed. Every kind of rigidity should be avoided, and all ways should be kept open to preserve and bring into play spontaneity, flexibility and imaginative stimulus. It is not the task of such an institution to accumulate material within the narrow framework of a programme, but rather to sort out relevant facts and to adapt itself productively to the movement of ideas. To some people ideas seem the dangerous, unpractical and vague expressions of dreamers, while principles

are regarded as moralistic, embarrassing and intolerant restrictions. None of these assumptions is correct, but they are commonly used to discredit something new as incapable of realisation. In fact, both principles and ideas are eminently practical, and are most potent forces especially when we are embarking on a task which cannot be based—or only to a small degree—on past experience. Goethe points out the danger of this attitude in the words : He who is afraid of the Idea has in the end lost its significance. Generally speaking the work of the International Society moves, as it were, between the two parallels of ideas and principles : the clarification and association of ideas as the causes and not the effects of changes makes it necessary to get down to the roots of the problems, while the adherence to and consummation of principles warrant an objective and comprehensive approach to them. Between these parallels there is ample scope for investigating and promulgating laws and suggestions which are instrumental in making the interplay of international forces a workable reality, and for relating them to definite tasks.

Three lines of action are open, and all of them should be made use of to the fullest extent. They may be defined as static, dynamic and probative.

The *static* method is implied in the mere fact that a body such as the International Society exists. Every possible care should be taken, therefore, to heighten its standing by the qualifications of its members and by the quality of its work. While the International Society should be in itself an exclusive institution, it should nevertheless be approachable by all who seek independent advice, be they governments or private bodies.

The *dynamic* method consists in spreading ideas which will give birth to a positive and constructive attitude towards international inter-dependence. This can be done by the written and spoken word, by visual enlightenment and by research. As to the first method there are many possibilities : among others the publication of special periodicals in different languages ; the dissemination of information through the press ; the preparation and publication of an Encyclopædia of International Affairs under the auspices of the Society ; the propagation of the ideas and of the purpose of the Society through pamphlets, broadsheets and reports ; the publication of books and articles by individual members under the auspices of the Society. As to the second method, conferences, lectures, discussions, personal contacts and

the inclusion of the relevant problems in the curricula of as many universities as possible are the obvious means of propagating by the spoken word the principles for which the International Society stands. An especially useful medium would be an International University devoted exclusively to the teaching of subjects relevant to international inter-dependence and supervised by the Society. Visual enlightenment can be provided by exhibitions—no such exhibition has ever been suggested—and films. The promotion of research by individuals and groups into the interactions between different countries is another and by no means lesser activity of the International Society. It will be especially important to direct and coördinate the various investigations in such a way that their sum total results in a systematic appraisement of all relevant trends, on the one hand, and on the other in methodical proposals as to the configuration in its entirety. All these activities have been summarised under the heading of dynamic methods. They are dynamic in so far as they are intended to stir up interest and active participation as the prerequisites of action.

The *probative* methods are correlated with definite problems and test cases, excluding any kind of assistance other than advice, given either in its general advisory capacity by the International Society as an institution, or by its individual members, or by suggesting special schemes and proving them desirable and possible of realisation. To this group would belong—to give a single example—the development of underdeveloped areas.

In general, all these activities have the double purpose of promoting positive trends of a world-wide character and of disintegrating nationalist narrowness—but not those aspirations of a nation which aim at making it a valuable member of the Commonwealth of Nations.

A few words on the structure of the International Society conclude this plea for its foundation.

Membership should be restricted to about one hundred Fellows. Whether it will be advisable to enlarge this number by admitting other persons as associate members or in a similar capacity, is not a question of importance in the first stage. Five to ten people would form the nucleus of the invisible community of like-minded persons all the world over, and would meet as a constituent body. The Fellowships of the International Society should be awarded not merely in recognition of an academic past—although this may coincide in many cases with the quali-

fications needed for membership—but on the strength of eminent achievements and clear proposals which can stand the most careful and objective scrutiny, as well as on account of qualities of character and mind. It will be a formidable task to select the right people, the more so as the work of the Society is concerned in the first instance with the fructification of new ideas and the formation of new methods of approach and realisation. In so far the selection is somewhat of an antedated cheque, and as such it contains an element of uncertainty. But we cannot justifiably say that a choice made on the basis of a man's past work is a hundred per cent safeguard against errors. It means only too often conferring a consolation prize of honour on a few old gentlemen ; to follow up the simile, it is like drawing a cheque on the past in the hope that it will help to cover the difficulties of the present. But there can be no doubt whatever that this small number of about one hundred suitable persons are to be found among the two thousand millions of the world's population. The fact that a thing is not easy cannot and must not be allowed to prevent its efficient execution.

We need not repeat that all members of the International Society are to be elected in their personal capacity and not as representatives of their countries. Later on it may be expedient to set up regional groups similar in composition and function to the mother institution. But here again it will be appropriate not to confine their activities to individual countries, but to extend them over an area which comprises several states and forms a suitable unit for large-scale planning.

As regards funds—and this problem is not the crucial test, but one which can be solved if we are really determined to set up the International Society—it will be essential to strike a sound balance between official and non-official contributions. In any case it should be a *sine qua non* that no outside influences shall creep in by attaching any kind of condition whether directly or indirectly to the grants made to the Society. On the other hand there are foundations which have always considered it as their privilege to serve exclusively objective research and independent work. *Ce n'est que le premier pas quie coûte ;* the seriousness and value of the intentions of the International Society will be the measure of the readiness to provide funds on the part of those who are in a position to do so.

It is impossible to say as yet what further institutions may be added to the original nucleus of the International Society as it

develops. But it might well be useful to have a club, or several clubs in different countries, at the disposal of the members, and to provide accommodation where scholars from other countries can work.

I have no doubt that the plan which has been discussed on the foregoing pages will be considered by all internationally-minded people so important that its realisation will be possible. General consent is neither possible nor necessary. But preliminary exploration of the reactions to the foundation of an International Society seems to point not only to a more or less favourable but even to an actively positive attitude on the part of those who might form the constituent body of this institution. It is devoutly to be desired that this project will be taken up now so that the International Society can play its full part in reshaping international interrelationships when the peoples of the world are mobilising their spiritual and natural resources for a peaceful victory.

PART TWO
GROWTH AND PLANNING

From henceforth space by itself and time by itself are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality.

MINKOWSKI
(*Physicist and Nobel Prize Winner*).

INTRODUCTION

The *leitmotif* of this part is the conquest of space, a conquest in its early phase coinciding with the search for food. Both form a single entity. But the methods of achieving the former end are various. They range from an apparently unsystematic procedure to systematic planning, from a gradual and plant-like growth to a rational application of science and technology. But whatever their characteristic features are in detail, they are all influenced by man's habit of striving for changes in the existing order if and when the inter-dependent social and economic forces are out of gear. This leads either to readaptations on a smaller scale and within a limited space or to large and revolutionary changes embracing a whole country. We are apt to believe that planning is something new and that in the past reshaping of environment always took place in a haphazard and piecemeal fashion. Although this may have been so in many cases, the need for an orderly procedure was never entirely absent from man's mind. It would be wrong to assume that even in early periods man always followed the line of least resistance or that he was not anxious even under primitive conditions, just as he is to-day, to adapt his works to Nature in a systematic way. Many Negro settlements in Central Africa are laid out so methodically that they are in no way inferior to planned villages in Europe.

The following studies deal with the progress and procedure of settlement in Paraguay, China and Russia. These countries have been selected because they provide an excellent groundwork on which we can build up a systematic knowledge and amplify our experience of physical resettlement and reconstruction. In each country the conquest of space has proceeded differently.

The State of the Jesuits in Paraguay is possibly the earliest example of an almost totalitarian planning procedure. Everything is subordinated to one idea. It is a planning not only of the physical environment but also of man. It is a gentle and benevolent dictatorship in the interest of those for whom the planning is undertaken. It proceeds within a definite space. It comes very close to planning on a national scale, although it

relies first and foremost on the development of more or less self-contained communities. It is the opposite of *laisser-faire*, and time and space are still two entirely separate factors.

This holds good also for China and Tsarist Russia. China's conquest of space is comparable with the growth of a tree. A general framework gradually embracing the whole area develops in the form of the Imperial Administration. But this centralisation of power does not lead to anything like planning. It produces coöperation for specific tasks, especially in connection with irrigation and flood prevention. The villages—the mainstay of the social and economic structure—remain self-governing entities almost totally independent of the Central Administration. They are socially conditioned neighbourhood units and their *raison d'être* is, in the first instance, the biological family, and beyond this the joint family and the clan. These millions of families give to the structure of the State a stability which can hardly be surpassed, in spite of political, social and economic disturbances.

Russia's conquest of space—before the Communist Revolution—can be compared to an explosion, and as such it bears all the marks of an inefficient procedure. It is without any system. The State provides the dynamite in the form of human material and weapons. In contrast to China the village " community ", the *mir*, is imposed from above as an association. It is not a biological entity. It is firstly an instrument of the financial policy of the State. The reaction to this lack of foresight is, just as it will be in China, revolutionary. The pendulum swings to the other extreme, to systematic planning on a grand scale over the whole country. It is a planning from the bottom upwards within a framework that has been devised from the top. This framework is adapted and readapted to changing needs and potentialities.

In the State of the Jesuits and in that of the Soviets material conditions are transformed in accordance with new ideas, and a new pattern of life is the result. In the State of the Son of Heaven and in that of the Tsars nothing of this kind takes place. The existing order of things and values is stretched to the utmost—till it breaks. New Ideas are staved off in order to preserve the *status quo*. We have witnessed the same thing in Nazi Germany, where the frantic efforts of the ruling clique were devoted to preserving the existing material structure while giving it the outward appearance of something new by covering it with a thin veneer of hollow ideology and a travesty of planning which

is really nothing but the lifeless order of a parade ground. This experiment also was doomed to disaster.

These essays should not be read as economic geography or economic history. I have no qualifications to approach this subject as a geographer or historian, but I feel that a planner's assessment of the relevant material is lacking and that my fellow-planners and all those who are interested in these problems should be made aware of the forces instrumental in shaping man's environment. Our specialisation in academic learning is a serious drawback and a deterrent from embarking on a work which would appear to lie outside the author's actual sphere of study. I trust, however, that the feeling of superiority which experts in the different fields might experience will induce them to regard my presentation of the problems as an approach which has not so far found the attention it deserves.

We are standing at the crossroads of a development which may lead to a new and reinvigorated vision and a creative reshaping of our life and environment; but it may also lead to a desperate effort to preserve the old and to discard new goals and methods as the passing whim of a few nonconformists. However, in this respect the issues are clear-cut: whatever our personal attitude may be, a new pattern of life is emerging, and with it a reassessment of social and economic values has become imperative. If we delay our decision and try to adapt old ideas and habits to changing conditions, a peaceful evolution will be impossible.

New ends demand new means. These means are available in the form of systematic planning, that is to say of planning which is functional and restricted to the reshaping of our environment but which has nothing to do with the totalitarian type of planning which submerges man's personality in infamous and degrading servility.

AN EARLY EXPERIMENT IN PLANNING

The activities of the Jesuits in South America constitute one of the most interesting chapters in the whole history of colonial settlement. Their work is especially significant to-day because it has much in common, though in a modified form, with the trends which are characteristic of the organisation of settlements on a collective basis.

After its administrative separation from La Plata in 1620 Paraguay as the result of its colonisation by the Jesuits entered on a period of steady progress which Voltaire described as " a triumph of humanity ". The Archbishop of La Plata reported in 1690 on this progress to the King of Spain : " What could not be achieved in a long succession of years by large armies and the expenditure of large sums is now being done by the Jesuits in a short time without any other help than their ardent zeal. They have turned foes into friends and the most independent and uncivilised peoples into loyal subjects of your Majesty." The Spanish colonists, driven on by their hunger for gold, stopped mostly near the mouth of the rivers and did not penetrate into the interior of the Continent. Not even their advance from the West, from Peru, towards the East altered this tendency in principle : they were content with founding a few " towns " as halting-places and as an outward demonstration of their domination, but not as nuclei of settlement. The Jesuits on the other hand took advantage of the natural conditions of the country. They felt that a kind of no-man's land between the colonists and their protégés, the Indians, would be an invaluable help to the realisation of their plans. They retired, therefore, beyond the great cataract of the Parana towards the interior which had never before been reached by the Spanish galleons. Padre Sepp of the Tyrol, who visited the country after the establishment of the Jesuit State, recorded that " our missionaries believe that God made this cataract and these rapids for the benefit of our poor Indians, for the Spaniards in their insatiable greediness for money penetrated into the interior up to this point, but never beyond. Up to the present day they could not establish any contact with our Indians nor could they barter with them."

The colonisation began in the eastern part of Paraguay in several places at almost the same time. In 1609 Loreto was

founded on the Guayra Falls of the upper Parana. This was the oldest settlement. It was followed in 1610 by Parana, and in 1620 by the *Misiones Occidentales* between the Parana and Uruguay rivers, and in 1627 by the *Misiones Orientales* east of the Uruguay river. Save for a very moderate number of Jesuits, no other whites lived in these regions. They expanded the area of their State in all directions, especially towards the East in order to establish a connection between the interior and the coast. During the last decade of the seventeenth century the Uruguay river was crossed once more. In 1692 S. Xavier in the northern part of the Chaco was laid out as the first station in the north-west on the route from Paraguay to Peru, corresponding to S. Ignacio de Zamucos in the south-east. The Chaco includes the important places of Rosario, S. Fernando, S. Jeronimo west of the Parana, and Concepcion, all founded by the Jesuits. In the course of time the eastward movement of the Jesuits encountered the westward drive of the *Paulistas*. These Brazilian adventurers from São Paulo pushed the frontier forward into the interior with physical energy equal to the Jesuits' spiritual determination. The *Paulistas* were the representatives of the harsh realities of life. To them the Indians of the Missions were nothing but beasts of burden and a welcome source of forced labour. They arranged regular hunts for these unhappy beings. Under this pressure the area of the *reducciones* was narrowed. They were withdrawn to both banks of the middle Parana. Gradually the *reducciones* crumbled under the impact of the slave traders and the opportunistic "realists"; and the Rights of Indian Man were trampled underfoot. But a large area of the interior had been conquered and brought in contact with European culture—and vulgarity.

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. In any case christianised Indians were more pliable material than nomadic heathens. But the ultimate purpose which each group hoped to achieve soon divided their spheres of interest. The colonists, being parvenus and lazy brutes, wanted slaves; otherwise they would have been obliged to work themselves—a horrifying thought for professional heroes. The Jesuits as representatives

of the old and refined culture of the Church wanted new adherents. But beyond that their aim was to isolate the Indians from the Whites ; to create an Indian State loyal to the Crown of Spain, and to give this State the ideal form of a Kingdom of Christ on earth. " The Spaniards," they said, " not only degrade the Indians into serfs ; they also debase them physically and mentally, for they themselves are devoted to many vices which are unknown to our simple-minded children of nature." The sons of the *conquistadores* fought for the preservation and augmentation of their personal prestige and wealth. They fought for the labourers whom they needed for the *encomiendas* and *mercedes reales* bestowed upon them by their king. It is they who must be satisfied before anybody else, for, as the Grand Inquisitor says to Christ in Dostoevsky's *The Brothers Karamazov* :

> There is no crime and therefore no sin ; there is only hunger. Feed men, and then ask of them virtue. They will understand themselves, at last, that freedom and bread enough for all are inconceivably together, for never, never will they be able to share between them ! Look round and judge ; fifteen centuries have passed, look upon them. Whom hast Thou raised up to thyself ? I swear, man is weaker and baser by nature than Thou hast believed him ! Go and come no more . . . come not at all, never, never !

Church over against Religion ! And so it is with the Jesuits and the colonists. The Jesuits, those outstanding representatives of the Church, were almost forcibly elevated into fighters for a genuine religious cause, while the colonists remained what they were before—opportunists and profiteers of a secularized religiosity which even in spite of its readiness to compromise had got to end where it was in opposition to the demands of the ruling class. So long as the Jesuits restricted themselves to christianising the Indians, to making them obedient servants and to conquering vast territories in a peaceful way, everything was all right. But as soon as they set out to treat the Indians as human beings rather than mere objects of exploitation, differences between the two camps developed till they grew into a fierce antagonism.

The Jesuits acted in accordance with the law if they closed the *reducciones* to their white compatriots. In this respect they could rely on the *Recopilacion de Leyes de los Reynos de las Indias* which decreed that " Indians shall be evacuated from their dispersed settlements and concentrated in places previously prepared ". Moreover, there was in force an explicit order that

" no foreigner shall enter the *reducciones* or the whole area of the Mission-State ".

Four Jesuit States developed in South America : in the eastern lowland of Ecuador the Mission-State of Maynas ; in north-eastern Bolivia the Mission-State of Majos ; on the lower Orinoco river the Mission-State of the Catalan Capuchins between the confluence of the Orinoco and Caroni rivers. In this area there were 31 *reducciones*. The clearing of the forest was begun as early as 1687, but the first settlement, that of Concepción de Suay, was only laid out in 1724. In 1789 there were living in these 31 *reducciones* about 25,000 Indians. Finally near the border of Brazil the Mission-State of Chiquitos was founded with the direct object of preventing hunts for Indians. These States are situated in the borderlands and the lowlands, i.e. in areas which the Spaniards were not inclined to colonise. They were willing, therefore, to leave the settlement of these difficult parts to the Church. In all 1,500 to 2,000 *reducciones* grew up according to a uniform principle during about 170 years, from 1609 to 1775, in the lowlands of the Orinoco, the upper Amazon, the Parana and the Paraguay rivers. It has been estimated that about 150,000 persons lived in these *reducciones*, roughly 3,000 to 6,000 in each place. These achievements are the more admirable as they were brought about under exceedingly difficult conditions and in a very difficult country.

Within the framework of the laws which were repeatedly confirmed by the Kings of Spain the Jesuits developed their " State of God ". It is possible, although not certain, that the example of Campanella's *City of the Sun* occupied their minds in planning their own State. This monk from the South of Italy advocated an Ideal State where everything was to be planned beforehand so that a balanced order was the natural result. But the impression remains that the Jesuits adapted Campanella's scheme to the requirements of their *reducciones*, one of the main differences being the square form of the *reducciones* as compared with the round one of the *City*. The *City of the Sun* is described as follows :

The greater part of the City is built upon a high hill which rises from an extensive plain, but several of its circles extend some distance beyond the base of the hill, which is of such a size that the diameter of the City is upwards of two miles, so that its circumference becomes about seven. It is divided into seven rings or huge circles, and the way from one to the other of these is by four streets and through

four gates. They have dwellings in common and dormitories and couches and other necessaries. . . . Each one receives what he is in need of.

Most *reducciones* were situated on healthy and fertile rising ground near the rivers Parana and Uruguay and their tributaries. An elevated situation was also chosen because it offered a better possibility of protection and active defence. The river system served as the net of communication between the *reducciones* and between them and the towns. Especially in the beginning the *reducciones* were often relocated if the first site proved to be unfavourable. The initial layout of such a place was described by Dobritzhofer in the second half of the eighteenth century in *An Account of the Abipones* :

A small chapel, a little hut for the fathers and another for the chief cacique, were hastily constructed by the soldiers of wood and covered with hay. The Abipones made use of their tents till after some years' discipline they constructed handsomer edifices for sacred purposes, for the fathers and themselves. The courtyard of our house was surrounded with stakes to guard against the invasions of savage enemies. The first colony scarcely consisted of 300 people.

Father Peramas provides us with a more detailed description :

The centre of the whole regular layout is always the church ; it was spacious, erected in solid material and in most cases beautifully decorated. On the one side of the church there was the cemetery and on the other side the college with the school. Beside it there was the public building with the warehouse for the commonly owned goods and the workshops for the artisans. On the other side of the cemetery a house for the widows was built, one part of which served as a hospital. In front of the church a large square with a statue was laid out. The houses of the Indians were arranged around this square, mostly in a rectangular pattern. They had projecting roofs as protection against rain or galleries.

The square was somewhat over 120 sq. yards in area. Six to seven houses formed one group, which was separated from the next one by a side street. Extension of the *reducciones* took place by erecting new buildings along the streets leading to the main square. The houses consisted of reeds covered with a coat of loam. They resembled those of the colonial towns, which were also not built in stone. It was only towards the end of the seventeenth century that better building material was used.

The means of production were owned collectively ; and

there was a kind of coöperative organisation of the consumers. Money economy was abolished. All inhabitants were equal, and work for eight hours was a duty of all. Education of the children and care of the old and infirm were seen to by the State. Choice of profession was free. So far as private property existed at all, the possibility of using it to the disadvantage of the community was eliminated. In the immediate neighbourhood of the *reducciones* and on the banks of the rivers and streams were tanneries, lime-kilns and brick-kilns and other industries near the fields and pastures. The economic structure, consisting of agriculture and industry, was soundly balanced. Alongside the larger enterprises, which were situated outside the *reducciones* proper, a number of smaller industries were housed near the headquarters of the Mission. A great diversity of workshops provided for the requirements of daily life ; there were carpenters, blacksmiths, tailors, shoemakers, builders, stone-masons, bakers, cooks, butchers, potters, turners, sculptors, makers of musical instruments, and many others. Sometimes a *reducción* specialised in a particular trade. Loreto produced small scale sculptures ; S. Juan Bautista instruments ; other leather work, and so on.

The agrarian structure was based on the dual principle of collectivism and individualism. Every Indian was free to plant what he liked on his private plot, the so-called *abamba* or " man's acre ", while work on " God's acres " was done collectively under the supervision of the Fathers. The individual land and the houses were inalienable ; and as there was no right of inheritance, children were cared for by the community till their coming of age, when they received a plot of their own. The missionaries themselves had no share in the profits which accrued from the common land ; these were exclusively reserved for the building of the church and the houses, for the social services of the community and the payment of the taxes to the Crown of Spain. The missionaries were officials of the King, and as such they received their salaries from the Royal Exchequer.

As production and work were systematically planned, the Fathers succeeded in establishing a perfect balance between purchasing power and consumption, so that economic security was guaranteed to everybody. Consequently trade with Santa Fé and Buenos Aires was monopolised. The Spanish merchants who came to buy the products of the State of the Jesuits were received hospitably, but were asked to stay outside the *reducciones*.

M. Bach, who studied the structure and institutions of the Missions on the spot in the forties of the last century, so far as this was still possible, reports :

> In some of the villages, e.g. S. Xavier, S. José and Santa Corazón there existed outside their boundaries so-called *ramadas* which were fully equipped with everything that was needed by travellers and where the foreign merchants had to put up their temporary lodgings. They received good food and drink and a comfortable bed, and enjoyed all the amenities they could possibly wish for without paying anything ; but they were treated in the manner of State prisoners. As soon as they had arrived all exits of the *ramada* were guarded by soldiers who were under strict orders not to exchange a single word with them. The foreign merchants were allowed to stay for three days in the *ramada.*

When in 1609 the first *reducción* was founded, the Fathers could hardly have foreseen to what a great extent their plans would be realised, and that well over one hundred thousand Indians would live in the *reducciones* of Paraguay proper. Only 400 Jesuits were in charge of the whole organisation.

This State, which was no Utopia but a reality, and an ideal reality at that, was destroyed by the slave-hunting *Paulistas.* The Jesuits were accused of building up a state without a secular authority and, consequently, of revolutionary tendencies. Revolutionaries they certainly were, although everything depends on the side from which such a statement is made. But because slave-hunting was not a revolutionary pursuit and because it was considered as a normal and justifiable expression of the time the *Paulistas* were right in the end, and might be praised as the upholders of the State, of morals and of propriety. The past was triumphant over the future, and the existence of the Mission State came to an end. It was a civil war after all which the *Paulistas* waged against this State, and although there is no direct resemblance, this victory of brute force over progressive tendencies has something in common with what has been termed in the case of the Nazis *la victoire des Boches sur les Allemands.* It is very significant that the fathers used in defence of their State the modern weapons of strike and propaganda : strike inasmuch as they stopped the cultivation of the land and the sale of their products to the whites ; propaganda in that they tried to undermine the morale of the officers of the enemy. The final end of the State came when the Jesuits were expelled in 1759 from Portugal and in 1766 from Spain. But it was only in 1848, in the year of

the middle-class revolutions of Europe, that the organisation of the Indian collectives, by then already rather shadowy, was definitely dissolved, and a situation restored which was more in conformity with the doctrine of common sense than this " triumph of humanity ".

CHINA

I. Rural Settlement

Crime begins with poverty.
Poverty begins with want of food.
Want of food is the result of neglected cultivation.
Without good cultivation man has no bond
That connects him with his soil.
Without this bond he abandons only too readily his place of birth and his home,
Resembling the birds in the air and the animals in the fields.
Neither walled cities nor moats nor severe loss
Nor cruel punishment
Can suppress this vagrant spirit
Which is powerfully alive in him.

—Ch'ao Tso.

China is a continent in itself. It is, therefore, not justifiable to speak of *the* Chinese village. Just as there are differences between the villages of England, Hungary, Spain and Italy, so there are differences between the rural settlements of China. They have distinct features of their own in the north and in the south, in the west and in the east. But just as the common European mentality dictates the appearance, layout and functional structure of the European villages in spite of their variety of form, so the Chinese villages are rooted in the common spirit of China. As yet we have only a rather incomplete knowledge of the regional characteristics of the Chinese villages; and such knowledge as we possess we owe not so much to sinologists as to geographers, anthropologists and sociologists. A regional history of the Chinese village and of its field systems has still to be written, and needs still considerable spadework. The following study should be considered, therefore, as no more than an attempt to outline the main problems of the rural structure of China and to link them with those of the outside world.

The doctrine of the internationality of the peasantry does not exclude the Chinese peasant, in spite of all his typically Chinese qualities and habits. He differs from the European peasant only as a European cart differs from a Chinese cart. Both are means of transport; their forms vary only in detail. They differ because the attitude towards the things of daily life and their functional form are different. Every people passes through the same stages of mental clarification, and each has to find its own

solution of the eternal problem with which Nature confronts man, namely, to find its own response to the challenge of Nature. Every people seeks this end by a way of its own, and thus are developed the " great " differences which are in reality only relative.

It is part of Europe's general self-glorification that it looks down on China as a land with an " antiquated " civilisation. China is different ; but her " otherness " touches a section of conscious and subconscious thinking and feeling which is present in ourselves, being only inadequately developed. The rational super-activity of Europe is a creative factor of the highest order, but it is creative at the cost of disintegration and destruction. And China ?

> I know only that one must let the world live and grow ; but I do not know that the world must still be put in order. Only by doing nothing does one provide quietness for the development of the true nature of man. Even if such a man conceals his innermost soul and does not direct his energies towards things that are outside himself . . . it is yet as if lightning and thunder emanate from him. How could the thought of putting the world in order occur to such a man ?

says Chuang-tze. This is an activity of another kind, and by no means passivity, as we are only too readily inclined to assume. Is it not just this restrained activity after which Europe is yearning, and which lies dormant in the depth of its spirit ? From this misunderstanding, or rather not-understanding, arose the conception that the history of China is more or less static and that in reality nothing changes there. What a profound lack of imagination ! Only an age with a superficial passion for record-breaking could so misrepresent the truth. Chinese history, and especially the history of the Chinese peasant, is marked by a tremendous dynamic, and its successive stages are not very dissimilar from those of Europe. Such philosophical utterances as those quoted above have not only a theoretical value. They are a seismograph of spiritual and intellectual oscillations and reflect in an unsurpassable way the spirit of a country. For the average European Kant and Einstein are also only " theory ". He does not realise that his own conscious and subconscious action and thought have found their deepest expressions in their " theories ", and that these " theories " are the true image of his conception of the world. In China, as elsewhere, it is the same. To formulate theories is not to squander one's time in purposeless intellectual

acrobatics. Rather it is the expression of the will to measure the subtlest oscillations of a period, especially its characteristic trends of group behaviour. It is in this sense that the sayings of the philosophers quoted later in this essay should be valued.

The attitude of the Chinese towards the outer world cannot be judged by the usual European standards. It is not their aim to conquer the outer world, but to understand it and to adapt themselves to its order and working. But is this really a fundamental difference? The goal of conquest is, in the last resort, order, and the goal of appreciative non-interference is also order. Both are creative media. The Chinese way is not a fancied re-creation of the outer world through man's activities. Rather it is a re-modelling of man through the forces of Nature. This attitude produces one of the main characteristics of Chinese thinking and acting: the symbolic meaning of an action or a thing gives it reality, while the European attitude tends towards seeing symbolic values behind reality. This specific Chinese mentality is especially evident in the early periods. The belief that realities are created by symbols and symbolic actions permeates the whole life of ancient China. Early modes of thinking are deeply rooted in the irrational. This irrational, however, produces a high degree of immutability. Its effects are profound even though they gradually lose their lucidity in the course of time. To-day the irrational, the subconscious, operates more indirectly, but not more inefficiently. But if a symbolic attitude be considered in itself as reality, an impression of inaction and non-interference obviously results. It is just this subtle difference which the European fails to understand. He can only cut the Gordian knot. A Chinese would disentangle it.

The material achievements of the Chinese in the transformation of their environment are extraordinary, and in no wise inferior to those of Europe, except during the last hundred years. But what is a century to the whole of known history? Let us recall the admirable systems of irrigation and reclamation which have been carried out over several thousands of years, and on which Chinese civilisation so largely depends. They are comparable with the greatest European performances. Let us think of the extensive migrations of the Chinese within their own territory and the opening-up of ever new parts of their country. The Chinese are a people of land-dwellers, and their living space is so vast that there was no need to expand it beyond the seas. In this respect the Chinese resembles the Russian. Let us remember the

numerous inventions which China has made independently of Europe. Let us think of the great achievements of Chinese agriculture in continually wresting ever renewed yields from the same soil. It is indeed a wrestling-match, a persistent struggle in which the Chinese peasant engages with the Earth. This struggle has continued for thousands of years. The peasantry are the axis around which all China's history revolves. Waves of events roll over the peasant, but he remains the same poor sweated devil he has always been. He remains the foundation of Chinese society on which new burdens are ever being piled, but which does not give way. He is not only the foundation, but the true and the actual representative of China. Like his fellow peasants in all parts of the world he lives first of all in the present ; but he also looks to the past to which his ancestor cult devoutly links him. For him, though he does not reason about it, the older peasant is the more experienced man. An old Chinese proverb says : To be an efficient peasant you need only look at your neighbour and see how he does his work. The Chinese peasant knows that he is retrospective and he makes a cult of the fact. The European peasant is much less conscious of his traditional inhibitions, but he is nevertheless conservative.

What distinguishes the Chinese from the European village in the Middle Ages and modern times ? First, we should ask why it is that the towns do not get the upper hand in an industrialised economy and in spite of the ever increasing numbers of the population. Secondly, what functional relationship exists between the village and the field system ? And why is the interdependence of village and town in China different from that in Europe ? Only after settling these preliminary problems can the place of the village itself in the social and economic structure of China be properly defined.

China's provincial boundaries are not so essential for a systematic differentiation of the economic structure as the distinction between the main regions of cultivation, the wheat and the rice region.[1] The wheat region extends roughly between latitudes 32° and 40° N. ; the rice region between latitudes 23° and 32° N. The main characteristics of the former are the great plains 50 to 100 feet above sea level and the extensive mountainous plateaux rising from east to west to about 10,000 feet near the Tibetan frontier. The south, the rice region, is a country of hills, small mountains and valleys. In the south-west the three

[1] Cf. Maps.

principal platcaux of Yunnan, Kweichou and Kwangsi are the dominant features. Man's influence on the natural landscape increases from the west to east, and reaches its culminating point in the delta regions of the great rivers which likewise run from west to east. The original homeland of the Chinese may be assumed to be the region around the middle course of the Hwang-ho, the north-west of China. This part is covered up to the Ts'ing-ling-shan by great masses of loess probably derived from the Gobi. The loess can easily be worked and is very fertile if enough humidity is available. On the other hand its structure is highly permeable, so that rains immediately drain off. The fertility of these areas, therefore, depends directly on the rainfall during the growing season. Moreover, winter and spring rainfall frequently fail. All this leads to repeated bad harvests and to a distressed condition of the rural population, often resulting in the depopulation of large tracts. The peasants then have to resort to the most primitive method of water supply, by pumping. Only recently has the Government provided better facilities in this respect by damming the rivers, as in the valley of the Wei-ho, whereby an area of 132,000 hectares can be irrigated. The loess is not favourable to the growth of trees, which do not find enough water. The region is therefore lacking in timber for fuel and other purposes. Here a peasant civilisation has grown up in spite of the mountainous nature of the country, favoured by easy cultivation and great possibilities of settlement. On the other hand many ravines and clefts offered considerable obstacles to the invasion of the country by nomads from the west and north-west, although they could not prevent their penetration. Thus the people became sedentary in spite of all these difficulties and brought more and more land under cultivation.

It is probable that the land was partially covered with scrub and copse which early settlers had cleared by burning them down in order to gain more space for cultivation. The Divine Farmer, the founder of Chinese agriculture, is also Lord of the Fire. "The land near the rivers and lakes was cleared of weeds by fire and ploughed with water." The great plains of Northern China called for the solution of still another problem which was destined to have a decisive influence upon the trend of her civilisation. The comprehensive works necessary for the regulation of the rivers—the dams, the dykes, the irrigation schemes—became the nucleus of the administrative organisation of the Chinese State. The soil of this region consists of sediment deposited by

the rivers, especially the Hwang-ho and its tributaries. The raising of the river beds produces floods which spread not only the lighter sediment but also considerable masses of the heavier sands over the surrounding country. The result of this process is a rather unequal quality of the soil of the North China plain. In general, however, the area covered with cultivable soil is large in this part, which comprises the provinces of South Honan, Hopei, Hupei, Shantung, Kiangsu and Anhwei. The dykes can hardly keep pace with the raising of the river beds. It is a race between man and Nature in which man is very often the loser and many lives are destroyed. In the regions south of the loess zone, and in general south of the Yangtsekiang, the main part of the cultivable area consists of a substratum of laterite.

South China is a land of rivers. It is predestined for the cultivation of rice. The most important means of communication are the rivers. A writer of the second century B.C. describes the southern part of China as follows :

> The land of Ch'u and Yueh (the regions south of the Yangtsekiang) is spacious and thinly populated. The people eat rice and drink it with a fish soup. They prepare the soil by burning down (trees and bushes) and make it fertile by irrigation . . . The nature of the country offers plenty of food so that there is no danger of famines. People are therefore lazy and not industrious. They live from hand to mouth ; they do not lay in stores and are mostly poor. . . . In the regions north of the rivers I and Ssŭ (in south Shantung), on the other hand, are cultivated five crops and mulberry trees and hemp and six different kinds of domestic animals are kept. The land is densely populated. People suffer from the horror of floods and droughts and are used to laying in stores.

The impact of man's activities on Nature is greater in the rice region, especially through irrigation, than in the wheat region ; and agriculture is more extensive in the North than in the South. This explains why the plots of land are larger in the North ; to-day, they are about three times as large as in the South. The density of population is lower in the wheat region, but as productivity and standards of living are also lower than in the rice region we may assume, with Buck, that as such it is even more densely populated. But this of course should be understood only *cum grano salis,* even taking into account the migrations from North to South. Other causes, such as political unrest, climate, etc., may have exerted a far stronger effect. The fact should not be overlooked that about 300 million people

live in the rice region, i.e. the whole land south of the Yangtsekiang, including the Yangtse valley and Yunnan.

The South, the rice region, is a country of irrigation, of irrigated terraces and canals, with a climate favourable for cultivation during nine months. The North is a country of floods and droughts, of dry terraces and with a growing season lasting only four to six months. In the South the houses are in general more spacious but the courtyards are smaller and are often covered by the projecting roofs of the surrounding buildings. In the North the courtyards are larger but the houses smaller. Most of these differences can be traced back to the climate and the difference in methods of cultivation ; in the North there are, for instance, more stables. Similar differences are evident in the towns, which in the North are spread over larger areas in relation to the number of inhabitants than in the South. They have also wider streets for vehicles, which are almost non-existent in the South with its water traffic.

These are only a few preliminary remarks which will help to explain the main characteristics of the agricultural structure. It is, in addition, appropriate to enumerate some historical and technical data in order to avoid repeated explanations later on.

2200	B.C.–	1766	B.C.	Hsia Dynasty.
1766	,, –	1122	,,	Shang Dynasty.
				Historic Periods.
1122	,, –	249	,,	Chou Dynasty. (Period of fully developed patriarchy and feudalism.)
552	,, –	479	,,	Confucius.
350	,,			(Abolition of the old agrarian system in Ch'in, roughly the present province of Shensi.)
372	,, –	289	,,	Mencius.
206	,, –	A.D.	25	Western Han Dynasty.
A.D.	25–	A.D.	220	Eastern Han Dynasty.
,,	9–	,,	25	Wang Mang. (Prohibition of trade in land, houses and slaves.
,,	220–	,,	589	The six dynasties. (Separation of North and South.)
,,	589–	,,	618	Sui Dynasty. (Building of the Imperial Canal.)
,,	618–	,,	907	T'ang Dynasty.
,,	907–	,,	959	The Five Dynasties.
,,	959–	,,	1279	Sung Dynasty.
,,	1072			Wang An-shih. (Financial reform. Abolition of compulsory services. Land survey. Collective responsibility of families living in the same district.)
,,	1276–	,,	1368	Yüan Dynasty.
,,	1368–	,,	1644	Ming Dynasty.
,,	1644–	,,	1911	Manchu Dynasty.
,,	1911–			Republic.

MEASURES.

Measures differ in different periods. The following are average values only :—

1 tsi (Chinese foot)	= 14·1 inches or 0·5581 metres.
1 mow (Chinese acre)	= 733·5 square yards.
6·6 mows = 1 acre = 569 square metres	
1 li (Chinese mile)	= 1,894·12 feet.
20 li = 6 English miles	
100 mows	= 16·47 acres = 5·4 hectares = 1 K'ing.

[1] K'ing is a measure that corresponds roughly to the European hide—*Hufe*. It meant in the early periods " one man ", i.e. human labour sufficient to cultivate this extent of land and the amount of land which can support a family.

1 acre	= 6 mow.
1 hectare	= 15 mow.
1 square mile	= 3,840 mow.
1 square kilometre	= 1,483 mow.

We may assume that matriarchy existed in the earliest periods of Chinese history. Although we do not know much about it, certain conclusions can be drawn from the fact that totemism and ignorance of fatherhood are mostly connected with a matriarchal system ; and the existence of totemism in early China has been established with certainty. But however this may be, China is " a realm of motherhood " in spite of the patriarchy evident during the historic periods. It is the mother who creates and embodies the family, and is the truest symbol of the social structure of China. We should not be deceived by the position of the husband as *pater familias*. He is first of all the organiser of the family as an economic unit of which he is the representative and for which he works. But the wife, the mother, is the real centre ; from her emanate the forces which link all members of the family together. Subconscious affection for the mother is a stronger tie than the more rational powers of the father. The relationship of the mother to her family is based on love, while that of the father rests on confidence and respect. A father can keep a family together by economic bonds, but he cannot create those emotional radiations with which a mother permeates her family. In the father the members of the family see the future ancestor before whom they will lay their ancestral offerings ; and this means the erection of a barrier. It creates a greater

distance and a special kind of veneration which prevents intimacy. For the Chinese the father is *tsuen*, he must be respected ; he is *yen*, he is distant, he is " the heaven ". " Le fils se tient auprès du père comme le vassal auprès du seigneur," says Marcel Granet in *La Civilisation Chinoise*. It is not going too far to say that the family structure is only in theory based on patriarchy. In reality the mother is the centre of home life. She looks after the work and the education of the children and cares for the household. The earnings are mostly given to the mother to meet the expenses of the daily life of the family.[1] China is a land of families ; and her social structure, especially in the countryside, is determined by the millions of families living on her soil. Although this social fabric is disintegrating to-day, the integration of the individual and the family is still an essential factor. It heightens the importance of the group, of the family. It influences the division of the land and its cultivation. It gives to life in the villages those characteristic features which seem to us " undeveloped " and " without initiative ".

Upon the cells of the family rests the State and the conception of a world state as the ideal form of the organisation of humanity. The early Chou period had already developed those features which were destined to shape, up to our own time, the thoughts, feelings and life of the Chinese, even though the realities of life did not always correspond to this ideal. The Chinese idea of the State originates from the threefold interrelationship of the Chinese and the outer world. It finds its expression in the ancestor cult, in agriculture and in the observation of the sky. The Earth produces the food, Heaven enriches the Earth and the spirits of the ancestors influence the working of the mysterious forces of Nature. In such a cosmic order the individual feels strongly that he is only a tiny element of a greater entity, and even the people, nay, the whole of mankind, are only insignificant parts of the universe. It is a universal idea which dominates this conception and which is latent even where it seems not to be intelligible at the first glance. Thus Confucius advises immigration : " By inducing all classes of artisans to come in, wealth is made sufficient. By indulgent treatment of foreigners, the people of all quarters will come." In spite of all his State theories he thinks internationally and regards such measures as advantageous not only for his own country, but also for the whole of mankind. In this connection he is not alluding to agriculture,

[1] Y. K. Leong and L. K. Tao : *Village and Town Life in China*, 1915.

because he does not consider it an international force. The State will reflect the celestial order on Earth ; and just as there is only one Sun there can be only one Emperor. Only He, the Son of Heaven, the *t'ien tsĕ*, is privileged to present sacrifices to Heaven and Earth, just as the eldest son honours the ancestors of his family, which is, in a way, a State on a small scale. The Chinese State is a secular-religious Empire in the same sense as the family is a socio-economic and, at the same time, a religious group.

The wide extent of China is a factor of considerable importance in promoting in the individual a feeling of insignificance, almost of nothingness, which enhanced the prominence of the group and its ever-present existence. The early Chinese conquerors advancing from the region of the middle Hwang-ho subjugated peoples of a lower culture. They assimilated them gradually and imbued them with their own religious and ethical ideas. Out of these struggles and from this expansion developed the Chinese State and the ideal of a community united under a secular-religious ruler. The individual lives within this community only by right of his or her relationship to the family and of the relationship of the family to the greater community of the State. Not that the masses were aware of these underlying forces or that the upper classes acted consciously in accordance with them, but this conception, which was formulated in a precise form only by a few philosophers, was indeed the expression of the most substantial and deepest emotions of the Chinese soul.

For the Chinese the universe is an existing and finite entity brought to perfection. Such a world cannot be transformed by man ; but man can adapt himself to such a cosmic order. The European, on the other hand, is faced every day with the task of creating his world anew and of living in the face of facts. Chinese thinking is fundamentally magical, especially in the early periods. Every action is dependent on a definite constellation which decides success or failure. These interrelations are linked up with problems of space : the forces of magic oppose a change of the existing space-relations. The cosmic order must not be disturbed or transformed. The *Tao*, the Way, is the eternal law of the cosmos. It is cause and effect in one.

This is not the place to explain the different interpretations of *Tao*. All agree that *Tao* is all-embracing, that it comprises insight into and cognition of everything, and that empathy in and homogeneity with this system is not only a profound necessity

but is the proof of its actual existence. The consequence of this conception is the abnegation of science and technique as methodically developed technology and as a system of thinking, and as a subsequent result an inhibition against industrialising the economic structure. This, however, did not exclude important inventions. These inventions—or shall we rather say discoveries—did not change the social structure. The system of magical dependence was, as it were, the substitute for scientific knowledge and, at the same time, the buffer which absorbed the dynamic of the subconscious forces of man ; in other words it prevented their transformation into instruments of aggression against Nature. The *Tao* is not dynamic ; it is the sum-total of all creating and being, and also its systematic sequence. Therefore the best ruler is he who strikes instinctively the right balance between acting and not-acting and whose person reflects the order of the universe. Taoism appeals to the subconscious, to the emotions, and to the mystic and magical in human nature. Confucianism, on the other hand, leads to a more sober and rational traditionalism.

The tendency to identify symbol and reality seems a contradiction to the sense of reality of the Chinese. But this symbolism is not a primitive and rigid adherence to a traditional ritual or a shallow imagery ; it is something immeasurably deeper. We may be nearer the truth if we explain it by a comparison : speculative abstract thinking enables us Europeans to see symbolic values behind real facts and even to negate, in a philosophical sense, the reality of our perception of the external world. This means that we introduce a dynamic and transforming power into our relationship to the external world, a relationship which is tantamount to a continuous revolution of environment leading us to such bold adventures as the smashing of atoms. Ultimately we do not accept anything as definite. For the Chinese the external world is fixed. It is not to be changed by the efforts of man. He imbues it with a deeper sense, making it significant and meaningful beyond its actual appearance. For him the symbolic meaning of all forces and appearances is the elemental and primary factor, and only behind this symbolic foreground does he construe Reality. This demands the preservation of the outer form, of the outer appearance which is much more deeply related to the subconscious in human nature and consequently more static just because it represents in the first place a symbolic value.

The creative powers of the Chinese are apparent in his capacity for integration and balanced coördination; those of the European find their greatest triumph in subordination and domination. Collective order and individual order; harmony with Nature and conquest of Nature; these are the contrasting issues of East and West. Now let us try to explain how these spiritual forces influence the social, economic and administrative form of the agrarian structure of China and why the Chinese village differs from that of Europe.

From time immemorial agriculture has been the basis of the Chinese State. In the *Book of Changes* it is said: ". . . the Divine Farmer cut wood into a ploughshare and bent it into a ploughbeam. He taught men to make the soil fertile by breaking it up with the plough. When the sun was at its highest he held market. He called people together and collected goods from all parts of the world. And people exchanged their goods and returned home." Agriculture has remained a sacred occupation up to our own time: the Emperor, in a solemn ritual, personally ploughs the sacred field in the Temple of Agriculture. The God, or in early times probably the Goddess, of the Soil is one of the oldest deities, to whom even human sacrifices were offered in prehistoric times. It seems that the God of the Soil was gradually identified with the land of the family, so that the Temple of the Ancestors and the God of the Soil ultimately assumed identity with the territory of a prince.

Two conclusions can be drawn from this development: first that ancestor worship favours a sedentary mode of life; secondly that this, in its turn, implies that agriculture is the main occupation. Under the Chou the investment of a feudal lord with a fief was performed by the Emperor, who presented to him a clod from the altar of the God of the Soil. This clod was deposited on the altar of the feudal lord. The idea of this investment is based on moral and religious principles, not on legal principles laid down in a constitution or a contract. The ritual sacrifices offered immediately outside the gates of the town were up to the eleventh century the exclusive privilege of the central ruler. They were a ceremony of the highest importance and were also dedicated to the God of the Soil. The fight against floods was a struggle for life and death to the early generations. Yueh is the mystical Chinese figure who successfully combats the spreading waters, who regulates the rivers by diverting them and constructing dams, who orders the clearing of woods and the

building of roads, and divides the area of the State into nine large provinces. In the *Book of History* this is described as follows :

> The inundating waters seemed to assail the heavens,
> With roar and rush they embraced the mountains
> And overtopped the hills ;
> So that the multitudes in the hollows
> Were bewildered and overwhelmed.
> But I forced ways through for myself
> And hewed down the woods all along the hills ;
> I showed the people how to get flesh to eat.
> I opened passages for the nine streams,
> And conducted them to the four seas ;
> I deepened the channels and led them to the streams ;
> I showed the people how to procure
> In addition to meat the food of the soil.
> I urged them to make an exchange of goods ;
> Deficiency and excess were remedied.

In this description not only the origin of Chinese agriculture but also that of the organisation of the Chinese State in its close connection with the great works of irrigation and flood prevention are already visible. The organisation of the State as created by Yueh consists of concentric squares. The Earth and the divisions into which the Earth is to be divided are not circular but are bounded by four equal sides ; they are squares. This conception corresponds with the layout and the subdivision of Chinese towns and many villages and their field systems either in squares or in forms that resemble closely a square. All occidental peoples of ancient times conceived the world and the universe as being circular and flat, and this cosmogony dominated directly or indirectly their life and their work. The question why the square plays so important a part among the Chinese, both in their cosmic conceptions and in many other respects, must remain unanswered ; it would lead us too far afield to attempt a detailed explanation. The picture of an agricultural landscape in China is mainly composed of squares, the use of which cannot be explained by practical considerations alone.

The organisation of the State as described by Yueh refers to this fact. " In the Middle State he distribu' s land and names to the clans. He decrees that a square of 500 li with the .sidence of the Son of Heaven in the centre shall form the imperial district proper." Then follow the territories of the feudal princes and the zones for the settlement of barbarians and exiles. The figure

9 is important in accordance with the cosmic division into five parts: the four zones surrounding the middle zone are subdivided each in two halves. An image of this organisation of the State, a central square with eight surrounding squares, is the so-called "Well System" of the Chou period. There we find also the central field which was worked collectively and might be the property of the prince, to whom its yield had to be delivered.

Three spheres of influence develop from the three roots of early Chinese agriculture, that is, from the collective work on irrigation and flood prevention; from the observation of celestial bodies and cosmic forces; and from the religious-magical ritual which is reflected in the structure of the State. From the early preponderance of agriculture evolves the *economic* significance of the agrarian structure. From the common fight against floods some of the main features of the *social* structure are derived. From the observation of the cosmic order evolve many important characteristics of the *political* structure. The following discussion of the economic, social and political problems will explain why no industrialised urban economy exists, how town and village are integrated, and what functions determine the form and layout of the villages.

The Economic Structure.

The earliest period up to the Chou dynasty is that of the self-supporting household. Then up to the period of the *Spring and Autumn Annals* follows the village economy, and finally the national economy.[1] Though this classification is very rough, it nevertheless gives a fairly good idea of the main stages and their order of succession. It should be added, however, that economic unification on a rational scale is still in its earliest stages and that, on the other hand, a not inconsiderable exchange of goods over wide areas took place even in early times. The *Book of History*, the *Shu King*, enumerates the goods which were sent as taxes to the capital from the various districts. Among them are fur coats, lacquer goods, silks, damasks, salt, sea products, hemp, lead and other metals, hides, feathers, timber, linen, animals, etc. We may assume that China passed through the pastoral stage rather early. Since then she has remained for a very long time, indeed up to the present day, predominantly an agricultural country. Chinese literature reveals that the knowledge of

[1] Chen Huang-Chang: *The Economic Principles of Confucius and his School.*

agricultural methods, water regulations, etc., was already well advanced in early times, i.e. between 2357 and 1122 B.C. This continuity of the predominance of agriculture in China is the central problem with which we have to deal.

In the *Great Learning* it is said : " The superior man must first be careful about his virtue. Having virtue, there will be the man. Having the man, there will be the land. Having the land, there will be the wealth." This statement means that human problems are paramount in the scale of valuations. This does not in the least contradict the Chinese conception of oneness with Nature. If man takes the first place, if man's capacities are of primary value for production, and if land and capital are, and rightly, of secondary significance, it follows inevitably that the noblest " production " of all is man himself. And it follows further that Nature can be transformed according to man's needs, that is to say that the productive capacity of the soil must be adapted to the number of people living on it and not *vice versa*. This principle means in essence nothing else than that the number of the population and its increase determine the quantity and quality of production.

The basic human needs are food and shelter. In the *Book of History* eight concerns of a government are distinguished : first, food ; second, commodities ; third, sacrifices ; fourth, the provision of work ; fifth, the provision of education ; sixth, the punishment of crime ; seventh, guests ; eighth, the army. " The greatest business of the people is agriculture " is a statement of the year 827 B.C. The underlying meaning of the ritual ceremony of ploughing is that the Emperor has no time to finish his work, but that he " borrows " for this work the labour of the people. This is the old idea of the ' borrowing field '. Agriculture is the more important as new territories could only be developed by the settlement of peasants, and not by industrial activities. As the expansion of the State was thus identical with extensive colonisation, the government pursued a systematic policy of settlement. A census was therefore considered an essential administrative measure which should be undertaken every three years. In A.D. 217 Hsue Kan states : " Indeed, the number of the population is the source of everything and everything takes it as a standard. Distributing the land, imposing the taxes, producing the goods . . . all these are the results of a careful study of the number of the population."

Consequently a twofold need arises. On the one hand, the

population and its specific qualities should conform to the natural conditions, and on the other a sound balance should exist between density of population and the available and cultivable land. To the first point the commentator remarks that " the inhabitants of the hills are interested in the animals, those of the islands in the fishes and salt ; and those of the plains in the different kinds of grain ". In the *Royal Regulations* it is stated : " In all the settlements the physical capacities of the people are sure to be according to the sky and earthly influences . . . Where the wide valleys and the large rivers are different in shape, people born in them have different customs." To the second point : " In settling the people the land is measured for the formation of cities, and then measured again in smaller portions for the allotments of the people. The land and the population must agree with each other. There is no land left out of use, and none of the people are left to wander about idle." This means in fact an administrative control of the distribution of population. For instance when the district of the capital of the Southern Sung Dynasty, Hangchow in Chekiang, became overpopulated, a redistribution of population was carried out. The commentator Yen Shih records :

. . . when there are people, they must be directed to the development of the land. They are caused to live in poverty and suffering because they have no land to establish their own occupation . . . They can roughly get food for the morning and evening, but cannot make a house . . . The landowners do not till the land themselves, and the tillers own no land. Therefore, although the population multiplies and prospers, it cannot be of any use to the State.

And he concludes that a resettlement in less densely populated provinces would be justified.

As already mentioned, agriculture is regarded as a better means of colonisation than industry. Chao Tso describes a resettlement in an old report of the year 169 B.C. :

I have heard that in ancient times the moving of population from a distance to the empty land was like this : in the first place the temperature and the climate are examined, the taste of the water tested, the fitness of the soil judged, and the richness of the plants looked into. Then the city is established and the walls are built, the streets fixed and the houses separated, the roads of the farms connected and the boundaries of the fields divided. The houses are first built. Each house has one hall, two chambers, and various doors. Within the house the articles and instruments are laid down. The people may have residence when they come and have something

for use when they work. Therefore the people are encouraged to move to the new city, and do not mind leaving their old homes. This implies a rather detailed preparation.

A decree by Ming T'ai Tsu in A.D. 1370 orders :

The five prefectures Suchow, Sung Kiang, Kiahting, Huchow and Hangchow are overpopulated. The people cannot have land for cultivation, and usually pursue the secondary occupations without getting sufficient food. In Linhao, my native prefecture, the land is not developed, and there is unworked wealth in the ground. The people of those five prefectures who own no land should be directed to go there to cultivate land. The land which they cultivate will be given to them as their private property. They will be supplied with money, food, oxen and seed, and they will be exempted from taxation for three years. The distribution of land will be according to the number of men and their physical sufficiency, but none will be allowed to own too much land.

This shows that full consideration was given to an efficient balance between the quality of the soil and the number of settlers. We know for instance that in the Chou period " one hundred acres of superior land can support a family of seven persons, of ordinary land . . . one of six persons, the same amount of inferior land only one of five persons ".

In general nine classes of land were distinguished ; the best land could support eight to ten, and the most unsuitable land only two to four persons. The situation and lie of the land were also taken into account. According to this old principle of land classification the best land is the standard : 1 *fu* (= 100 acres) is the unit ; 9 *fu* are 1 *tsing* ; this is the best class. Then follow the classes of low-lying wet land, of land situated between dykes, of low-lying and boggy land, of sandy and stony land, of poor and salty, hilly, marshy and wooded mountainous land. All this presupposes a considerable height of empirical knowledge and also a fair degree of cultivation. Already of the later feudal period, 1122 to 221 B.C., it is reported that " hills and mountains, forests and thickets, rivers and marshes, ditches and canals, city walls and suburbs, houses, roads and lanes took up one-third of the whole country, the rest being cultivable fields ".

Extensive and intensive cultivation are carried on side by side, high quality land and intensive cultivation thus coinciding with a high density of population. In the South-East, for instance, where the population density was still very low during the Han period, trees were felled, but the stumps were left untouched, and burnt down only after having decayed completely.

This is a typical sign of extensive cultivation. On the other hand we know of intensive cultivation during this period in connection with irrigation. In general it seems that according to old sources the area of extensive cultivation was not much larger than to-day.[1] In the years A.D. 2 and A.D. 146, 13·87 mow and 14·56 mow respectively are available per head of the population. These figures should be fairly correct. They correspond to the calculations of E. Biot.[2] He assumes for the year A.D. 2 that out of a total of 145 million k'ing about 100 million are occupied by inhabited localities, mountains, and rivers, whereas the rest of 32 million k'ing goes to " terres de culture irrégulière " and 8 million k'ing to " terres cultivées régulièrement ", a result that means obviously that extensive and intensive cultivation exist side by side. He arrives on this basis at a figure of 12 mow = about 3·75 hectares per head of a population of about 68 million inhabitants. The cultivated land increased so much that under the Sung in A.D. 975 it covered an area of about 16 million k'ing, and it reached 27 million k'ing in A.D. 1084.

Before Mencius intensive and extensive cultivation were defined as follows :

> The margin of extensive cultivation is determined by the imaginary boundary beyond which the land is not fit to be used at all. The margin of intensive cultivation is determined by the law of diminishing returns. In a static condition the productivity of labour and capital at these two margins will be equal.

And Mencius himself explains this :

> Intensive cultivation is this : when a farmer cultivates one hundred acres of land, together with some capital such as manure, he gets different amounts of return from the land according to the intensity of his cultivation. If he is the best farmer, the return can support nine persons ; next to the best, eight persons, etc. . . . Why cannot the best farmer get more return than support for nine persons by putting more labour and capital into one hundred acres of land ? Because land is subject to the law of diminishing returns. Therefore, support for nine persons is the intensive margin for cultivation.

There was full awareness of the limits of the productive capacity of the soil. Under the T'ang for instance a distinction

[1] W. Eberhard : " Zur Landwirtschaft der Han Zeit ". *Mitteilungen des Seminars für Orientalische Sprachen.* Berlin, 1932.

[2] E. Biot : " Sur les recensements des terres consignés dans l'histoire chinoise et l'usage qu'on en peut faire pour évaluer la population totale de la Chine." *Journal Asiatique,* 1838.

was made between a ' thinly populated town ', meaning one with a normal density of population, and a ' thickly populated town '. " Town " in this sense corresponds rather to township or district. From these considerations are drawn conclusions relevant to the agrarian policy in general and to the structure of settlement and population in detail, i.e. to the distribution of the land and the redistribution of population. They well knew that, as the *Canon of Poetry* says, " the produce of the land cannot be increased, and the yielding of the mountains and marshes can be exhausted ".

But the guiding principle of all these changes remains the conviction that man is the greatest productive power, and that these human resources are inexhaustible, for his reproductive capacity is also inexhaustible. Yen Shih (A.D. 1150–1223) says : " In the overpopulated land the people dig the mountains and dam the sea, picking out any profit which is left. While the productivity of the land is limited, the cultivation of the people is endless. Hence it hurts the natural phenomena and injures the five elements." This cycle of human and natural productivity proceeds within the framework of the conception of the universe and is focussed on agriculture, to which other economic activities are added like concentric circles only when agriculture has reached a sufficiently high standard.

Urban crafts and industries develop only when a division of labour between town and country is possible, or in other words when the productivity of agriculture is high and the rural population must rely on the craftsmen and workers of the towns for the supply of at least a great part of their commodities. When this stage is reached the towns or some more developed rural communities take over these functions ; they provide the countryside with the necessities of daily life and the implements for agricultural work. Marx defines this as follows :

> The basis of every division of labour in its developed stage and as a result of the exchange of goods is the separation of town and country. . . . The town is in itself the factual expression of the concentration of population, of the means of production, of capital, of amenities, of needs, whereas the countryside represents exactly the opposite, namely isolation and dispersal.

Does this hold good for China in this form and to the same extent ? Compared with European standards this is not the case. There were already a considerable number of market centres before the Han period. They are the nodal points in the net of the agricultural structure.

Consequently we should differentiate between urbanised communities of a definitely agrarian character, the market centres, and those of a non-agrarian character, the towns of the feudal lords and of the administration. The Chinese are not a people of town-dwellers, yet urban civilisation has played an important rôle in China for thousands of years. How is it that in spite of the great and continuous increase of population the dwellers in the country do not migrate to the towns but remain predominantly agricultural?

A short reference to Japan with her contrasting conditions may help to clarify this problem. The evolution of Japan was essentially different from that of China. There were no towns in early times. They developed only later, mostly in connection with the castles of the feudal lords. Everything possible was done to prevent the migration of the peasants to the towns. As late as A.D. 1643 peasants were punished for leaving the countryside; and in 1754 it is reproachfully recorded: "Of every hundred farmers there are about fifty who follow trades and handicrafts, leaving farm work to their wives and children. As regards the remaining fifty, they do farmwork along with trade of various kinds. There are scarcely any who attend to farmwork as the sole occupation." [1] The conviction is that the "farmer should by no means imitate the mode of living of townsmen." And yet the Japanese towns grew as a result of migration from the countryside. They are the nuclei of the present Japanese industrialisation. Their functions are distinctly different from those of the country, and the rural communities which grew up around the castles became commercial centres. One of the reasons for this development was the official recognition of the guilds. The towns of Japan originate and grow up in strong antagonism to the countryside; the towns of China originate and grow in conformity with the increasing density of agricultural settlement. The Japanese town has no walls, while the Chinese town is walled and seems to separate itself from the surrounding country. The reason is that in Japan the castle served as a refuge where people could shelter. The farmers and artisans dwelling outside the castle formed a living wall against attacks. In China, on the other hand, the town served as a protection and refuge; it received the population of the surrounding country if they had to flee from attacks.

[1] M. Ramming: "Die Bodenreform der ersten Meiji-Jahre." *Mitteilungen des Seminars für orientalische Sprachen.* Berlin, 1933.

This is a much closer and more reciprocal relation between town and country. The Chinese character for " town " means " fortress " or " fortified place ". In China the town exists for the sake of the surrounding country, while in Japan the country seems to exist for the sake of the town.

Is there a direct relation between the number of towns in China and the density of population, i.e. the density of the agricultural settlement, and the fact that a great number of towns have an excellent nodality ? Protection seems not to be of the same importance for the location of towns as in Europe. The tendency is rather to consider the whole surrounding district as a single unit of defence, of which the town is merely the centre. Thus for instance Honan-fu, for a time the capital of China, lies in the interior of a loess basin surrounded by mountains, and Suchou is protected by lakes and marshes. Such features underline the principle that the Chinese town is an integral part of the surrounding country and that no antagonism between town and country develops as in Europe. The towns of China do not attract the rural population to the same degree..

But these, of course, are not the only reasons. Up to 1911 the characteristic of a town in the administrative sense was that it was the seat of an official. It was a political centre. This single function takes on predominant significance. Further, all towns are walled, and this is an additional feature of their urban character. The towns are nodal points in the net of the centralised administration, and also places of protection and military power for the surrounding district. The former function could develop only with the growing power of the Central Administration which superseded the individual feudal territories. The latter already existed before the feudal lords and princes used the towns as fortified places for the domination of the surrounding country. The towns of the centralised Empire were the seats of the scholar-officials, the Mandarins ; they gained in importance with the growth in influence of these local administrators. The European towns were the creation of their burghers ; they were not the seats of officials representing a central government. When their influence was at its highest, their inhabitants watched zealously over their privileges. They considered themselves as a defensive brotherhood and were often in open opposition to the central and territorial authorities. The European towns were antagonistic to the countryside especially in their character as seats of a developing industry and commerce on the basis of an

emergent capitalistic economy. In consequence of these tendencies they attracted as labour markets the surplus of the rural population. Nothing of this kind happened in China: there were no political privileges for the towns, no defensive brotherhood of a united community; only a limited development of commerce and industry, without a rational money economy to increase systematically the exchange of goods and production; no draining of the people from the countryside, at least not to any considerable degree; merely a certain number of trades and crafts sometimes exclusively based on the raw materials of the immediate hinterland. This state of affairs can still be found to-day.

Finally, in its architectural conception the European town resembled a growing organism. How different in China! The architectural form was clearly outlined from the very beginning by the rectangular enclosure of the wall. Only seldom was this rectangular form abandoned, and the straight line of the wall broken. The conception out of which a Chinese town grows limits its size; it is a static conception, and there is no tendency for the town to spread beyond its fixed boundaries. If an extension takes place it is the result of modern influences. So far as the literary evidence on Chinese towns can be traced, there is no passage referring to an extension of the town in the European sense. If work on the fortifications of a town is mentioned it concerns either the replacement of the old wooden palisades by a stone wall or their reinforcement.

One of the reasons for this conservative attitude is the general layout of the town, which does not permit of any changes or additions. The town is limited in size and character, and as such it is the true expression of Chinese mentality. But the layout of a town is not only an act based on utilitarian and rational considerations; it is deeply embedded in geomancy. *Fêng-shui*, the influences of wind and water, is a part of the magical ideas which have dominated Chinese thinking since early times. An essential point is *wu wei*, "not doing", the "not changing" of man-made things and of Nature. "The *Tao* is eternal without doing, and yet everything is done by it" says the *Tao-tê King*. Geomancy is but a part of these ideas.

Geomancy is the expression of the cosmic ideas of the Chinese; the cosmic forces of *yin* and *yang*, the constellation of the heavenly bodies, the configuration of the surface of the Earth in a given place as it has been shaped by water and mountains, the access of favourable

or unfavourable winds, all the active forces of the air and the earth, and finally the well-being of the souls of those who have passed away and of living human beings, all these are inseparably interrelated. It is necessary, therefore, to pay attention to this interrelationship when tombs or houses are built where man is to live and work. The geomancer must find places where the conditions exist for the right working of *all* these forces or where they can be created artificially.[1]

If, therefore, geomantic magic has once determined the situation of a town and of its walls and gates, nothing must be changed, lest great danger to the inhabitants result from such interference. Consequently the town must remain as it was originally laid out.

It is quite possible that in recognition of these geomantic principles the walls were built first, or at least that the circumvallation was traced as in early Etruscan and Italian towns. This is another explanation of the static relationship between town and countryside. The urban functions which remain unchanged over long periods do not exert a disintegrating influence on the country. The immediate neighbourhood of a town is in most cases settled particularly densely. Even in early times the proximity of a town had a considerable bearing on the distribution of the land. Thus for instance the families in the immediate neighbourhood received only 100 acres of good or 200 acres of second-class land, while at a greater distance larger allocations were made. It was assumed that less land was needed as a basis of subsistence near a town, because still other advantages would be available. On the other hand, the larger size of the plots lying farther away was considered as an inducement to the people to leave the urbanised zone. Moreover, it was imperative to reduce congestion in this zone, for the smaller plots and the fact that no land in the town remained unused greatly increased the density of settlement in the urban district. Finally those inhabitants of the town who held land outside the walls had a different economic outlook and different interests from the peasants living in the country.

Like the European towns of the early Middle Ages, the towns of China include large open spaces within their walls. These open spaces served a double purpose ; they were reception areas for the fleeing rural population when their homes were threatened, and they might also be used for cultivation. A contemporary record of the T'ang period mentions this : " If there is no land

[1] O. Franke : *Geschichte des Chinesischen Reiches.*

within the walls available for cultivation, the inhabitants of the town receive land in the neighbourhood." It seems that in this case the recorder is speaking of a market town or a district centre.[1]

The *hsien*, or district centres, still show to-day the characteristic features of the old towns. Their inhabitants are either directly engaged in agriculture or are intimately related to the surrounding country by their family ties. The ancestor cult did much to keep these bonds alive; the town-dweller who has left the country never loses consanguineous contact with his clan, to which he can always return. It is somewhat similar to the Russian *mir*. Such a town is self-supporting as regards food; it is the market centre for the surplus production and home industry of the agricultural hinterland. On the other hand it supplies the village-dwellers with those products which they cannot produce in their own homes; and it is the entrepôt where stocks of grain are stored for times of emergency, especially famine. If such a town is not the residence of an official and is not surrounded by a wall, it is little different from a large village.

The case of the capital is a special one. We will deal with it later; here the following remarks may suffice. China has changed its capital very often during the course of history. In early times the residences of the rulers were only poorly fortified. They resembled encampments with an earthen rampart and a moat. Later, when conditions became more stable, massive stone walls were erected. In this connection the capital is of interest only in so far as it is the centre of the administrative organisation, many of whose functions, however, were delegated to the provincial and district towns. According to the Confucian theory the capital is situated in the centre of the State. It is surrounded by five zones in the form of concentric squares: the capital, the suburban zone, the rural zone, the forest zone, and the frontier zone. This proves once more, at least in theory, the systematic interrelation of town and country. The whole scheme reminds us of the so-called "circles of Thuenen". J. H. von Thuenen demonstrated the structure of a mainly agricultural country with insufficient means of communication by picturing an Isolated State.[2] In his scheme also the capital is situated in the centre; here all activities not connected with agriculture are carried on. In the next ring—he envisages cir-

[1] S. Balázs: "Beiträge zur Wirtschaftsgeschichte der T'ang Zeit (618–906)." *Mitteilungen des Seminars für Orientalische Sprachen.* Berlin, 1931.

[2] J. H. von Thuenen: *Der isolierte Staat*, 1826.

cular zones—all those goods are produced which are unsuitable for long transport. This zone is intensively cultivated. Then follows the zone of forestry, after that the agricultural zone with rotation of crops, i.e. intensive agriculture, and further out the zone of extensive cultivation. Then follows another zone of intensive agriculture with the three-field system, and the pastoral zone ; and finally the forests. Although the scheme differs in detail, the principle of a systematic sequence of zones each reserved for a definite purpose and each related to all others is very similar to the Confucian plan.

The idea that the capital should be the centre was very much in the minds of the Emperors during the whole of Chinese history. To give only one example : in the year 604 B.C. the Emperor decided to move his capital : " The town on the Lo river in the centre of the imperial territory has been the capital from ancient times. It is the place where Heaven and Earth meet and where *yin* and *yang* are in harmony with each other. I cannot restore the world on the ruins of Ch'êng-chou, but I can build the Eastern Capital on the I and Lo rivers, so that the centre of the peoples arises there." So runs a quotation from the *Chou-li*, the history of the Chou period.

In the early period of expansion the settlers spread out over the country individually and as groups of families or clans. They settled in villages surrounded by their fields and built fortified places. Gradually the density of the agricultural settlement increased and a central town with the administrative centre, the market and the temple grew up in the district. But most of the members of such a locality lived outside its walls in the countryside. This holds good for the early Chou period. Then follows the stage when a certain number of the towns fulfil military functions either as points of support for colonial expansion or as local centres of the growing power of the feudal lords who rivalled each other in the splendour of their courts. When feudalism had declined, the functions of the towns become more rationalised. Their importance as centres of individual rulers disappeared. They developed into instruments of the rational organisation of administration. In connection with the further expansion of the State fortified settlements in the frontier districts grew up and the number of agricultural market centres increased.

The cities and larger towns, the seats of the more important officials, housed first of all those people who lived on incomes from investments in land or on their salaries received either in

kind or in cash. The rank of the town depended on the rank of the highest mandarin residing in it. It was expressed by the attribute added to the name of the town. Besides officials and those directly or indirectly dependent on them, people engaged in commerce and arts and crafts lived in the towns. Their activities made the towns centres of distribution for internal trade. Only a few large towns and cities traded with oversea countries or other parts of Asia. Some of them were so populous that it was almost incomprehensible to contemporary Europeans. But other towns which took part only to a minor degree in international trade had likewise a considerable number of inhabitants; though this number should not be over-estimated in comparison with the great masses of the rural population. The urban settlements were merely complementary to the rural districts and did not deprive rural home industry of its possibility of development. The towns were not the only seats of trade and industry. Official traditionalism prevented the upsetting of the social balance by an industrial production greater than was required for immediate needs. None of the four classes, *literati*, peasants, craftsmen and merchants, should encroach upon the sphere of the others, thus destroying the static condition of the social structure. The fundamental character of Chinese economy and economic aspirations did not change, even after the disintegration of the barter and home economy. It could not change, since the social and economic fabric remained the same; the overwhelming importance of the small peasant and the principle of self-supporting small communities continued to be the cornerstone of Chinese life right up to modern times. Consequently the agricultural population could not absorb an increased industrial production, and the incentive to an extensive international trade was missing. China's own living space was too enormous, her thoughts were too much occupied with her own affairs and too conservative to stimulate her into building a sea-going merchant fleet. On the contrary China retired as it were into the interior of the continent. The Imperial Canal, running as an inland waterway parallel to the coast, is the best proof of this. For all these reasons there was no considerable migration of the rural population to the towns, nor was there any special justification for granting to urban communities civic privileges, such as special municipal laws or the right of holding a market. The villages had the same right; they held their market under the protection of the village shrine.

At certain times, however, there was a great movement of population. But this cannot be described as a flight from the country to the towns; it was rather a flight from particular districts. The reasons were mostly desire to evade the heavy taxes and compulsory services, expulsion of the peasants owing to indebtedness or alienation of the land or wars and upheavals, floods, droughts, overpopulation and insufficient prices for their produce. These are negative reasons; it was not the attraction of the towns which set these migrations in motion, especially as the towns, being the seats of garrisons, were not considered inviting places. How different from Europe, where the peasants were also fleeing from oppression by the landlords, from compulsory labour and from the restriction of their freedom of movement! They migrated to the towns as places of freedom. Their numbers swelled the population of the towns and thus helped to widen the gulf between town and country. They became acclimatised in the town and gradually lost contact with the country. The Chinese peasantry moved to other districts where the laws were applied less rigidly, or they returned to their old homes after a certain time. They remained peasants, and did not change their occupation or their ideas.

The Government were fully aware of the causes of these migrations. A decree of the year A.D. 762 states:

> Recently so many people have fled that not even half the population remains. To-day there are many compulsory services; they have not been reduced in comparison with previous times. If the right person is not available the neighbours are called up. Lately the land of the people has been often taken over by the well-to-do families and the officials. This is the main, and almost the only reason why the people flee and run away.

Efforts were made to direct these migrations, to remove their causes and to keep the population away from the towns by bringing more land under cultivation and at the same time broadening the basis of agriculture. An imperial order of the year A.D. 728 decrees: "Families receiving hospitality, i.e. the non-residents of all prefectures who desire to settle in the frontier districts shall be given the best and most fertile land on their arrival and shall be peacefully settled. Moreover, they shall be granted exemption from taxation for a number of years." The following maxim of the Han period is a mixture of very rational interests of the state machinery and of economic con-

siderations : " If we want the people to go to farm the method lies in making the grains valuable. The grains will become valuable when they may be used as a standard upon which we can give reward or punishment." [1] This policy was supported by the establishment of protective military colonies on the frontiers. They were organised on an agricultural basis, thus relieving the military budget. This principle rested on long experience and had been brought to perfection in a very rational manner.[2] Under the supervision of an officer or military official the land was surveyed, irrigation channels were built and cultivation proceeded. We know that, for example, in the first century A.D., of about 50,000 soldiers in such colonies 10,000 worked on the land. Under the T'ang " chaque colonie fut composée de 5,000 *meon* (environ 300 hectares) et dans chacune 300 *meon* (près de 17 hectares) furent attribués au pavillon du chef de culture . . . les 992 colonies (des T'ang) répresentaient une surface de 4,960,000 *meon* (297,600 hectares) ". Such measures helped to divert the peasants from the towns. On the other hand only a very few cases are known where a town was systematically settled. Even the enforced resettlement of several hundred thousand families from Shensi in A.D. 691 in order to fill Lo-yang is doubtful : it is more likely that a large area between two fortified towns was the object of this migration. The interest probably centred much more around the peopling of the surroundings of the new town as " the great traffic centre of the Empire ".

If the tendency prevails to concede only a clearly defined sphere of interest to the towns they need no special privileges. People living in the towns are not citizens, not burghers in the European sense ; the conception of a " community " does not enter the minds of the Chinese. This is not comparable with the feudal period of Japan, where the legislation stopped before the " towns ", the seats of the feudal oligarchy. The towns of China did not receive civic privileges because they were and ought to remain nothing else than organs of the central administration. Even a slight strengthening of their powers and independence would mean a weakening of the administrative organisation. Local government, therefore, was ruled out. The professional guilds representing the narrow circle of their members

[1] Yü Tseh-t'ang : " Systems of Land Tenure in China." *Chinese Social and Political Science Review*, 1928.

[2] E. Biot : " Mémoire sur les colonies militaires et agricoles des Chinois." *Journal Asiatique*, 1850.

could not—even collectively—speak and act in the name of the whole population of the town, all the less as they were not officially recognised. On the other hand, the villages were dominated and represented by the homogeneous group of the clan. This explains why the villages were self-governing bodies, but not the towns. The villagers formed an integrated group, a community, whereas the population of a town is merely a sum-total of individuals, who were, moreover, linked to the country by many ties. Division of labour between town and country developed up to a certain degree. But we know only very little about it because the *literati* who compiled and wrote the records took no genuine interest, at least officially, in industrial or commercial activities. It was beneath their dignity to deal with people who were motivated by profit. We can therefore draw only indirect conclusions from their reports. The internal trade was carried on first of all in staple goods such as grain, salt, sugar, silk, tea, porcelain, hides, animals, all these being raw materials or needing only little processing. Other goods needing more elaborate treatment would be produced in the towns, such as all luxury goods, *objets d'art*, drugs, weapons. But this division of labour between town and country came to a standstill in its early stage and did not lead to a capitalistic urban civilisation as the basis for an industrialised economy. The guilds could not fill this place. They were fully occupied with their own internal affairs. In fact, they prevented rather than assisted industrial development. Moreover cheap labour, which was abundantly available, retarded rationalisation and technical progress.

A capitalistic money economy is the necessary prerequisite of urban industrialisation and of an influx of people into the towns as potential labour markets. The acquisitiveness of the Chinese has not produced a rational capitalism. During the whole of Chinese history the monetary system has been in an almost chaotic state. Metal coins of the most various currencies, gold, silver, copper, were in circulation at the same time. Government efforts to monopolise the issue of coinage led only to attempts by local " dignitaries " to enrich themselves from this central source and to a dwindling of the central funds. Efforts to fix a definite relation between gold, silver and copper in the beginning of the thirteenth century were also without success. Besides this the issue of notes with insufficient security or with none produced enormous inflation, first under the T'ang. Taxation in kind was the obvious remedy ; but this meant in

fact that an ever-renewed burden was laid on the agricultural population.

The items of taxation in kind played an important part in the State budgets. For instance in A.D. 997 the amount of the value of grain, silk, tea, coal, iron was far greater than that of copper coins. Of a different kind was the first budget of the Ming Dynasty in the year A.D. 1360. It consisted of only three items, namely grain, money, silk. It is noteworthy that grain was not only a consumers' good but served also as capital; an amount was to be stored over three years so that the demand of one year could be met from these reserves. But if capital is accumulated only to a limited degree, as for example, under the Han, and too much is spent, the normal result is exhaustion of the capital. If as a consequence of this procedure people leave the countryside which produces this capital, namely grain, and move to the towns which cannot produce it, the number of consumers increases and an accumulation of capital in the hands of a few is the result. This is an additional reason for the Government to keep people working on the land in order to produce the necessary capital there. The accumulation of this grain-capital in public granaries led to a primitive kind of credit organisation, as for instance under the T'ang.

If the financial situation deteriorated greatly reforms were introduced to secure new sources of taxation, mostly on the basis of a redivision of the land. One of the best known reforms was carried through by Wang An-shi between A.D. 1069 and 1076. He attempted to balance public expenditure and public revenue, but failed, like other Chinese reformers before and after him. He was regarded as an innovator because he offended the principles of the sacred traditionalism which worked against the accumulation of capital and a rational financial economy. The officials who had by far the best chance of enrichment invested their money mostly in landed property. The same spirit was characterised by an agrarian teacher, Hsu Hsing, a contemporary of Mencius: "Wise and able rulers should cultivate the land equally and along with their people. A ruler should not have granaries, treasuries and arsenals. If he has such things he is oppressing the people for his own support." Among other factors which prevented a capitalistic economy and an urban industrialisation were for instance the frequent interruptions of work in the silver mines. Their output might have been much higher than it actually was, because of inferior

technique. Such interruptions occurred especially after earthquakes, because they were considered an outcome of geomantic influences.

The safest basis for the state budget continued to be agriculture. The various governments certainly made greater efforts and spent more time in regulating, in subsidising and in monopolising the agricultural market than in assisting any other branch of economy. The Chinese did not underrate the profit that could be derived from commerce and industry, nor was the sense of acquisitiveness lacking. But the essential prerequisites of a rational capitalism could not develop, and consequently no urban civilisation based on the agglomerating power of industry could grow up.

The Social Structure.

Wars, internal strife, floods, droughts and famines could retard only temporarily the continuous growth of the population. This increase faced the Government and the people over and over again with the problem of finding a balance between the changing social structure and the division of the land and the State budget. All data on China's increasing population are somewhat problematic, not only for the earlier periods but also for modern times. The old returns are not exact as regards their figures; moreover their interpretation meets with great difficulties, for the census unit was the family or the front door of the house. Thus the size of the family or the number of persons living together in one house remain uncertain, especially as the latter principle made evasion easy and attractive in order to reduce the burden of the taxes. The following figures should

A.D.	*Families, about—*	*Persons, about—*
2	12,200,000	59,600,000
57	4,200,000	21,000,000
105	9,200,000	53,000,000
146	9,300,000	47,000,000
609	8,900,000	46,000,000
726	7,000,000	41,000,000
839	4,900,000	—
1014	9,900,000	21,000,000
1122	20,800,000	46,000,000
1290	13,000,000	58,000,000
1650	—	150,000,000
1750	—	180,000,000
1801	—	297,000,000
1885	—	370,000,000
1910	—	410,000,000
1935	—	450,000,000

therefore be accepted with great caution ; but they may serve as a general indication of the growth of Chinese population. They are based on comparative calculations derived from various reports and publications.

There are considerable discrepancies between these figures. These can be explained by general inaccuracy, by the varying extent of the territorial areas which served as bases in the various censuses, by political and economic disadvantages, and by the changing mortality rate which affected the size of families. The size of the family varies not only from one period to another, but also locally. It corresponds on the whole to the general density of population in the respective provinces, i.e. in the more densely settled provinces the family consists on an average of six members, a number which decreases to about three members in the more thinly settled parts. But however this may be, the figures show the enormous problems which had to be solved. The social structure changes in accordance with the increase or decrease of the size of the family ; the form of land ownership changes with the political tendencies of the government and with modifications of the financial obligation of the individual towards the State—factors dependent in their turn on the increase or decrease of the population.

The joint family and the division of land are two of the most salient problems in the social evolution of China. The joint family is the working unit in which the collective ownership of land and other property is invested. The allocation of land, i.e. the amount of land assigned to every working unit, is the basis of production for the subsistence of the individual groups as well as of the community, the latter being represented either by local rulers or by the organs of the Imperial Central Administration.

The joint family and the next unit, the clan, comprising a number of joint families, are the foundation of China's social structure. These units are held together first of all by the ancestor cult, which makes the head of the family or of the clan the most influential person of the group. Every clan has its ancestor temple in the village where the moral code of the clan is kept. For centuries many clans were held together especially through this bond, and grew to considerable size, sometimes consisting of as many as a thousand members. The attitude of the Government towards this coherent group was changing, though it was always one of careful vigilance, because the influence of the clans was too great to be disregarded. The close

personal contact between the members of the clan, reinforced by weighty economic interests, the blood relationship and the common bond between the living and the deceased always proved stronger than all Government action. 'I work at sunrise, I work at sundown : what is the power of the Emperor to me ? ' runs an old Chinese poem. For the peasant so intimately related to his family and his clan the power of the Central Authority could not indeed mean very much. The officer of the Imperial Administration preferred to remain in his *yamen*. If he wanted something he sent for the headman of the village. Thus the district town was for the peasant principally a place in which the forces which oppressed him took their rise. Thus the Government had to compromise. They used the clan as the unit which was to be collectively responsible for the obligations towards the State ; or they tried to split it up because more family units promised more and higher taxes. The situation of the Government was not easy, for the position of the head of the clan resembled in many ways that of the Emperor. The *pater familias* was priest and secular ruler in his social and economic sphere just as was the Emperor for the whole Empire. Outside the family group or the clan there was no community with joint liability. In many cases village and clan were identical. Many villages are named after the clan which either occupies the whole village or has the greatest influence in it ; e.g. *Chang Wang Chuang* means village of the families *Chang* and *Wang*.

The family is the nucleus of village self-government.

The village self-government was altogether an informal affair. No election in the Western sense of the word ever took place nor was there any casting of votes. Business was transacted over a cup of tea. It is probably owing to this tradition of self-management that the life of China goes on in spite of the ups and downs of dynasties, in spite of civil wars. The village carries on ; it has been able to carry on because of this tradition of self-government which is in turn based on the immense strength of the family as an institution. The village, in fact, is nothing more than an extension of the family. Not infrequently all members of a village bear the same surname. But the village self-government is only possible under very simple conditions of life, and only workable so long as the institution in its traditional form remains intact. With the impact of Western ideals and ideas the family begins to show signs of strain and disintegration. The family in rural China is still a power to reckon with, but that power is only a shadow of its former self.[1]

[1] C. M. Chang : "A New Government for Rural China. The Social Aspect of Rural Reconstruction." *Nankai Social and Economic Quarterly*, 1936.

The clan holds joint property. The returns from it are used for the upkeep of the ancestral hall and the tombs, for the support of the individual members and for concerns common to all. The property consists mainly of land which is leased to tenants. In this way the clan achieved a kind of social and economic autarky. It defrayed the expenses of the most important ceremonies for the ancestors ; it lent the capital necessary to establish its members in trade or industry ; it took care of the training of its young people and paid the costs of examinations for and purchase of offices. All this, together with the home industry, which produced principally homespun material and clothing, resulted in a check on an expanding market and on large-scale industrialisation. Work was done not for one's own sake but for the family. From birth to death the individual was imbued with this atmosphere of group feeling and group work. The focal point round which everything revolves is the land, to which every member of the group is deeply attached.

On the other hand the preponderant influence of the head of the clan endangered the sound balance of the social structure of the clan and the family. He had an easy chance of accumulating property for himself, for it was his business to assign their obligations to the individual members of his group and to fix the amount of financial contributions which should be made by the group collectively. In pursuance of these duties he could manœuvre himself without much difficulty into the position of a wealthy landlord and make his fellow-members dependent tenants or landless workers. There are many parallels to this development, all too human because it appeals to the primitive instincts of enrichment and domination. For instance in Japan we find the same group based on blood relationship with the head of the clan who ruled over his community more like a chieftain than a *primus inter pares*. Gradually he and a few especially favoured families became landowners. In this way developed private property, and with it social stratification. The older and wealthier families opposed the younger and poorer ones which could not obtain sufficient food.[1] It is a similar transformation in the course of which a group on a broader basis grows out of the early house and economic community, the *ko*. Where the members of such a group became too numerous to live together in one house, outhouses were built as in the case of the *zadruga* of the Southern Slavs. This new and enlarged group was called

[1] Y. Takekoshi : *The Economic Aspects of the History of the Civilisation of Japan.*

a *mura*. The village community of Japan may probably have developed from a principal family dwelling with its land by the erection of additional houses.[1] As in China the name of the main family and that of the village were often identical. The village headman was generally the oldest member of the family or the clan. He exercised inferior jurisdiction and collected the taxes for the Daimyos or the Shogun. Within this community were smaller groups consisting of five houses, the so-called *goho* ; they served as units of taxation and military cadres. They were based on the principle of a neighbourhood unit with mutual obligations, responsibility and help. This latter form belongs, however, to a later period, that of the absolute police state from 1600 to 1867. The early social structure was a community of members of the same family and sometimes also of related branches of the family. From this structure developed the expansion into a community, the so-called *uji*, which extended beyond the range of the common worship of a single ancestor and led to a synœcism of families with the same religious creed. When this *shizoku* system became antiquated it was replaced during the *Taika* reform by the more individual *gunken* system which corresponded better to the centralisation of the imperial administration by officials. The individual member of the family received no property rights in the land ; only the household, the family in the narrower sense, owned the land. But the general tendency, even in its earlier stage, nevertheless paved the way for individual ownership, a possibility which was explicitly allowed for by law as early as A.D. 743. The land was to be the permanent and private property of those who cultivate it.[2] In actual fact the development that followed led, however, to feudalism, and the Japanese farmers remained oppressed and landless. In spite of many differences the similarity with China is considerable. The result, however, was the same : the outlawed and exploited peasant carried the heaviest burden in the social pyramid.

The division of land in China is the most visible expression of changing social and economic conditions. Redivisions took place mostly at the beginning and at the end of the dynasties. In these cases they may have assumed an almost revolutionary character. Moreover, their own followers had to be satisfied, and this created still more difficulties. Besides, evolutionary factors

[1] T. Fukuda : " Die gesellschaftliche und wirtschaftliche Entwicklung in Japan." *Münchener volkswirtschaftliche Studien*, 1900.

[2] E. Honjo : " A Short History of Social Problems in Japan before the Restoration." *Kyoto University Economic Review*, 1928.

such as decrease or increase of population, migrations, etc., made a redivision of the land necessary. In general a certain tendency towards an equalisation of the size of plots is evident.

We may assume that in ancient times the land was held and cultivated by the clan in common. Such divisions of land are described in the part of the *Shu King* which deals with the Chou dynasty.[1] The crown land was situated in the centre; then came the land of the vassals, which might later be extended. Next came the land of the original inhabitants and that of those exiled for minor misdemeanours, then that for the more serious offenders. By the end of the Chou period ownership and cultivation of the land by the individual family was gaining the upper hand. Development proceeded, therefore, from the larger to the smaller working unit; but the earlier "large-scale" enterprise was productively weaker and more primitive.

Remnants of the old collective working unit, larger than that of the family, still persisted for some time, as in the collective cultivation of the middle field under the *tsing tien* or Well System. The original idea of this may have been that the land was only leased to the families by the lord, and that they paid for it by the common cultivation of the ninth field for the lord's benefit, and that all families should have an equal share. By the formation of such groups the habits and standards of living of the families would be coördinated, their craftsmanship and agricultural work improved, and a sense of mutual aid developed; in brief the intention was to create a social community on the basis of an economic coöperative and a neighbourhood unit. There are certain evident similarities with the old Germanic *Markgenossenschaft*, or mark community. It seems as if this system was expected to be a kind of panacea for almost every difficulty. Its effects were to be visible within three years, and it was to have become perfected and stabilised in thirty years, so that the social structure of the whole country would rest on firm and stable foundations. The *tsing tien* system was to result in the following improvements: the abolition of war; technical invention; the control of Nature; an equal share for everybody in the most important part of the means of production; universal and free education; the system of election; the abolition of such great social institutions as the State, the family and private property; and the change of human nature.[2]

[1] O. Franke: *Die Rechtsverhältnisse am Grundeigentum in China.*
[2] According to Chen Huang-Chang. *Ibid.*

The *tsing tien* system was based on an ethnical group independent of kinship. It created an economic, social, political and military community. But it is somewhat doubtful whether this system was employed on a large scale, in spite of all the eulogies of later writers. Even a far-reaching system of political division was built up, it is said, on this arrangement. One *tsing* was called a " neighbourhood "— one group of houses ; three *tsing* one " friendship "—a hamlet, in Chinese a *ping* ; three friendships one ward or parish, a *li* ; five wards one town or township, a *yi* ; ten towns a centre or small town, a *tu* ; ten centres one multitude or city, a *shi* ; ten multitudes one province. But all this bears the mark of theoretical speculation, a feature especially characteristic of the Han scholars who based their ideas on the description by *Mencius*.

The *Annals of the Early Han Dynasty* describe the system in detail :

> One square *tsing* is a village, a *li*. 900 *mow* were occupied by 8 families each cultivating 100 *mow* as private property and 10 *mow* as common land. This amounts altogether to 880 *mow* ; the remaining 20 *mow* were reserved for the dwellings. There were compulsory services and taxes. The taxes consisted of one-tenth of the yield of the common land and of a certain proportion of the earnings of the craftsmen and merchants. The compulsory services consisted in the provision of vehicles and horses and of military service.

This system was applied, though only to a limited extent, during the Hsia, Shang and Chou Dynasties, i.e. from about 2000 to 250 B.C. Gradually it disintegrated as the result of migrations and the growth of population and the changing social and economic structure. The land could not remain for ever the only source of wealth and production. Arts and crafts and commerce became additional activities. This transformation went on, although efforts were made to improve the system itself by creating an appropriate balance between the quantity and the quality of the land. Consequently, the size of the allotments was fixed in accordance with their quality and situation, especially as regards their smaller or greater distance from the towns.

With the growing consolidation of the State an increasing individualisation set in. The direct influence of the State on the division of the land decreased, although efforts were made to counteract the accumulation of private landed property in the hands of a few. From the end of the Chou to the beginning of the Han dynasty the economic life of the country underwent great

changes. The position of the farmer was especially precarious, because he relied too much on his conservative traditionalism and had nothing to set against the increasing power of capital. Collective ownership of the land disintegrated in so far as personal ownership of land by the male members of the family developed side by side with the family-owned land. The former was taken over by the State after the death of the owner, while the latter remained untouched (Wei Dynasty, A.D. 386–532). This development gained momentum as a result of the devastation of the country by wars which deprived agriculture of many peasants and reduced the population. Upstarts and adventurers enriched themselves ; they appropriated the land which formerly belonged to the peasants, a development similar to that of the time after the Thirty Years' War in Germany, when a great concentration of landed property in the hands of a minority also took place. Land became an article of commerce. Under the Han many large estates grew up. The rich became richer and the poor poorer.

During the later Han period the impoverishment of the peasants considerably increased. A classification of the land in accordance with the size of the family was adopted. This is described by Ch'ao Ts'o : " In a peasant family of five not less than two persons have to work on the land. They cannot cultivate more than 100 *mow*." Yet such insufficient and unsystematic measures could help but little. They paved the way for more far-reaching reforms under Wang Mang. These represented a kind of palace revolt in the economic field, directed against the abuses which were spreading all over the country, especially against mismanagement by the " dignitaries " of the realm.

The character of Wang Mang is open to dispute ; some regard him as a communist revolutionary, others as a forerunner of totalitarian rule, still others as a primitive traditionalist. In the year A.D. 9 he issued a decree prohibiting the sale and purchase of land and slaves. He incorporated some of the features of the old *tsing tien* system in his new order. He confiscated all land as belonging to the Emperor and monopolised the production of raw materials, in other words he nationalised the land and the natural resources of the country.

Ever since the decay of that land system under the misrule of the Ch'in Dynasty there has been much encroachment of land by rich and greedy people. The strong possess land by thousands of

mow, while the weak have nowhere to place a needle. Before I ascended the throne I had ordered all land to be nationalised and divided into equal lots of 900 *mow* each. I hereby decree that all land in the Empire shall be henceforth known as " the Emperor's land " ; that all male and female slaves shall be called " private retainers " and that neither land nor retainers shall be bought and sold by the people.[1]

All this should be considered as a serious attempt in the social and economic field which failed, not because it was a " utopia ", but because it was sabotaged by the big landlords. After several years the sale of land and slaves had to be permitted once more. Wang Mang was entirely unselfish so far as he himself was concerned ; he refused the land which the people offered to him in recognition of his merits. But we should read such reports with caution. The methods of his time differed little from those adopted to-day by a ruler or leader striving for popularity. A clever agent of propaganda can do a great deal. It is interesting to know that Wang Mang adopted almost wholesale the edicts of the Chou Dynasty. His reason for this may have been a desire to attract in a magical way the good fortune connected with this former period—as he understood it. But such revivals are welcome to traditionalists only if they themselves can profit by them. Nevertheless something remained ; to a certain degree the peasantry was regenerated, but the tendency towards the strengthening of the private and especially of the larger owners was not abolished.

The agrarian reforms which are characteristic features of the whole history of China always aim at a more even division of the land, and differ among themselves mostly in applying different standards to the size of the holdings. Either the number of members in the family is used as a unit, or, as for example at the end of the fifth century, the ox or the cow serves as a working unit. Under the T'ang ownership of land was made conditional on its efficient cultivation ; it must be neither leased nor mortgaged. But there were loopholes for officials and even for peasants. In theory this arrangement secured an almost complete protection of the peasantry based on an inalienable minimum of subsistence. It achieved some success because the population was still relatively small in proportion to the great amount of new land still available and of waste land not yet

[1] Hu Shih : " Wang Mang. The Socialist Emperor of Nineteen Centuries Ago." *North China Branch of the Royal Asiatic Society*, 1928.

cultivated. It was certainly no humanitarian interest that led to this policy, but very definite financial considerations. Good cultivation meant more lucrative taxation. The Sung tried to relieve the peasants by redistributing parts of the agricultural population and developing new land. Enclosure of fields by the rich landowners was forbidden in the interests of systematic irrigation.[1] Further, in A.D. 990 the Sung decreed that everyone in the region north of the middle and lower Yangtse might apply for waste land for cultivation which should become his private property and remain tax-free for three years. Three classes of land were distinguished : in the first class only 100 *mow* were allotted, in the other classes 150 and 200 *mow* respectively. Families with more than three adult male members received additional land.

In A.D. 1069 Wang An-shi embarked on far-reaching reforms. His starting-point was a reconstruction of the army, for which the necessary means had to be found. He attempted to obtain them by an improvement in agricultural methods and a State monopoly of the sale of grain. Advance grants were made in cash and in kind on the basis of the grain sown. The whole land was surveyed in order to fix the exact amount of the taxes. All families living in the same district were under a joint liability. The monopoly of the grain trade was the main point of this programme, the intention being to buy and store grain and to grant advance payments and loans out of this capital. This latter was considered " usury ". Great opposition developed not only to this part of the reform programme but especially to the abolition of compulsory services and their replacement by cash payments. The opposition was too great ; only a minor degree of success resulted from all these efforts. The condition of the peasants remained fundamentally unchanged.

The tendency to form groups with joint liability runs through the whole of Chinese history. For instance, about A.D. 1300 units of 50 families were organised. These groups received instructions by an agricultural expert who was at the same time the leader of such a group ; the experience of the members was to be increased and the methods of cultivation were to be improved. Every farmer had, as a duty, to plant twenty mulberry trees yearly.[2] In general the formation of large estates was discouraged and the

[1] Mabel Ping-Hua Lee : *Economic History of China.*

[2] Yü Tseh-t'ang : " Systems of Land Tenure in China." *Chinese Social and Political Science Review,* 1928.

protection of the peasants encouraged. But these intentions did not lead to tangible results. Finally under the Manchus, who gave large estates to their followers after the conquest of A.D. 1644, it became quite usual for those who had received such land grants not to live on their estates but to be satisfied with collecting taxes from the peasants. In this way the direct payment of taxes to the Government was cut off.[1]

The attitude of the owners of large estates was repeatedly condemned by contemporary writers. They attacked the accumulation of land and the consequent impoverishment of the peasants. But these protests were mostly on paper and remained mere humanitarian demonstrations. The idea that the Emperor was the owner of all the land remained only an ideal conception ; it never crystallised into a social and legal principle. The Emperor was ruler of the land but not the actual owner of it.

The Manchus classified the land as follows :

(*a*) Land of the people—*min ti*—is the land owned by almost the whole urban and rural population. In earlier periods the censors registered merely the owner, the taxes he had to pay and the services he must render to the lord ; later the quality, situation, area, etc., of the land were recorded.

(*b*) Land of the banners—*ki ti*. In and around Peking garrisons were stationed on the land of the Manchu families. In the middle of the seventeenth century, after the Manchu conquest, the land was redistributed among private persons, feudal lords, military leaders and military groups—the so-called banners, *ki*. This land was exempt from taxation as these groups were liable for military service. Up to 1853 they were not allowed to engage in commercial activities or to visit their land. If they had complied with these restrictions, Peking would soon have been deserted. But in actual fact this land was sold to the peasants, or so far as it was ownerless was leased to the peasants by the State.

(*c*) Land of the Government—*kuan ti*—served for the direct use of the State and for such purposes as the building of temples, bridges, and roads.

(*d*) Land of the crown—*yue ti*—was the private property of the imperial family.

[1] G. Jamieson : "Tenure of Land in China and the Condition of the Rural Population." *North China Branch of the Royal Asiatic Society*, 1888.

(*e*) Public land—*kung li*. The State merely forbade the private occupation and use of this land. It was open to all but not for building purposes.

(*f*) Military colonies—*tun t'ien*. This land was allotted to military groups who were also engaged in agriculture. It was exempt from taxation.

The good side of the various agricultural reforms was that the peasants reacted strongly against any kind of governmental regimentation. On the other hand they destroyed every possibility of creating large-scale farming on a more rational basis. The root of this problem was the incapacity of the Central Government to impose its will on local rulers and influential persons. The country was too vast for a successful working of the administration in view of the insufficiently developed means of communication and transport. In order to retain its hold over the country the Central Administration strengthened the position of its followers by land grants. Thus the Government itself destroyed the foundation of its reforms in favour of the peasants by creating private landed property on a large scale. The prohibition of selling and buying land which we find so frequently in Chinese history was meant to prevent the investment of accumulated capital in land. The efforts of the clans to oppose this development were not very successful. In the end they became mere onlookers at this growing disintegration, the more so that modern capitalism, though in a rather primitive form, was gradually breaking up their organisation and making assistance to their economically weak members almost impossible. The Chinese peasant remained poor, very poor, in spite of pious promises to help him. All his skill, all his experience, all his persevering toil, and even very high yields could not improve his standard of living. He remained embedded in his traditionalism, and his conservative attitude towards life and work changed hardly at all. He is the victim of speculators and the leaseholders ; he is the victim of his tiny plot of land ; and it is almost a mystery why he remains so deeply attached to it. The answer is : he is the slave of influences partly self-created, foremost among them his traditionalism and his ancestor cult ; of a technique of cultivation which has remained unchanged for thousands of years, and of exploitation by the State and society. To-day these forces are declining ; the present problem is, therefore, how the freed energies can be absorbed and made productive.

On the basis of the allocation of the land the duties of the

peasants were fixed. The land remained the basis of assessment although the amount of the payment and the services varied. In addition to their compulsory services to their own landlord, the peasants were often mobilised for extensive public works.

It is China's good fortune that her feudalism belongs to an early period. It ended with the rise of the imperial power, i.e. in 221 B.C. though its influences still persisted for some time in certain respects. Families which are politically powerful merely because they are old are unknown. Writers of the year A.D. 1586 report : " During the Han period the order of the old feudalism gradually became inconsistent with that of former times. The greater the distance from ancient times the greater the transformation of the system." Titles and honours did not count for very much unless they were given in recognition of personal merits.

The end of feudalism was one of the most momentous events in China's history. Its importance was similar to that of the infiltration of modern capitalism and of Western ideas. This was all the more significant as China was not so much a geographical and administrative as a social entity. She was the land of families, and of social interrelationship based on the family unit. Only to-day is China on the way to national unity. Whether this will be fortunate or unfortunate for her civilisation and culture remains to be seen. The early disappearance of the feudal lords contributed a good deal to prevent a flight from the land. The Chinese peasant remained more or less voluntarily a rural dweller. In spite of the widespread favouritism and partisanship which existed in China, it was a State which, at least in principle, distributed the land to the peasants and not to the feudal lords, unlike Europe, where the land, with a few exceptions, was handed over to potentates great or small, and where the peasant benefited only indirectly. And, what is still more important, European feudalism lay at the root of the disintegration of large geographical units into small and even dwarf principalities which undermined the unifying power of the Emperor. In China the imperial power destroyed the influence of the feudal lords and centralised the State administration. In Europe the ideal of the " warrior hero " was revered, and a military-minded bureaucracy dominated the administrative machinery. In China the feudal lords were succeeded by the imperial officials, the *literati*, the gentlemen, the non-experts. The Emperor was regarded as the protector of the peasants. To the masses he was not the " supreme war lord ", even though

he understood quite well how to make energetic use of his military power. These *literati* governed China from about 200 B.C. for over two thousand years. We Europeans should be careful not to underrate the full significance of this fact. The mandarins were certainly far from being ideal human beings, yet for all that they administered a gigantic empire with a minimum exertion of power, without a smoothly working administrative machinery and without good communications. In this respect Chinese evolution is unique. It does not resemble that of Europe or Japan, where the Imperial power grew out of the feudal structure. China's feudalism was parochial and incapable of coping with the pressing tasks of water regulation and other public works. Only a centralised administration could carry through these enormous works, which increased in proportion to the increase of the population. The Chinese peasant, his endurance, his toil, his intensive agriculture—these are the powers which were decisive in the breaking-up of feudalism.

In ancient times there was slavery in China. But in agriculture slaves played hardly any rôle. Slavery as a general institution, as in the early periods of European history probably did not exist. However, as late as 120 B.C. we find a remark "We ought to abolish slavery"; and in A.D. 9 the famous decree of Wang Mang states that "All slaves should be called private dependents". The Emperor Kuang-wu (A.D. 25–57) stipulates: "If anyone kills a slave, his crime can only be that of ordinary murder." This is at least a pleasing contrast to the valuation of the serfs in Russia, where the killing of a serf was "punished" by a fine of a mere 15 francs.

Chinese slaves were recruited from prisoners of war, who had previously been used as human sacrifices in religious rites. Later they were employed more economically, especially as servants of the upper classes. On the other hand there were people who sold themselves or were sold when conditions became too distressed. Finally, there were the children of slaves and those who placed themselves under the "protection" of powerful lords. But these latter belong rather to the category of villeins. "Aux époques des grands troubles intérieurs l'histoire chinoise nous montre les pauvres cultivateurs se groupant autour des individus puissants ou riches, et se mettant, eux et leurs terres, dans leurs dépendences." [1] Later the Government turned against these

[1] E. Biot: "Sur la condition des esclaves et des serviteurs gagés en Chine." *Journal Asiatique*, 1837.

so-called protectors whose patronage was often of doubtful benefit.

The *tsing tien* system has already been mentioned. The principle was that eight families cultivated the middle field for the lord. But this service was abolished when early agrarian communism came to an end. On the whole we may say that the people were not enslaved and that their personal life was not restricted to the same degree as in Europe. However, the many wars, the long periods of unrest and the almost unbearable taxes made the peasants insolvent and drove them from their land. The part of the agrarian population which remained sedentary was therefore strengthened in its desire for a new social order and especially for a better agricultural structure. It opposed the existing forms of personal services and payments in kind. During this period it was not uncommon for the actual power of the feudal lords to be almost entirely dependent on the fortified towns. This increased hate of and opposition to these places.

From early times taxes and personal services existed side by side. The requirements of the imperial court in particular were met by deliveries of the goods it needed. A part of the salaries, especially those of the local officials, was paid in the same way if they were not covered by the returns from the land attached to the office. For this purpose a distinction was made between land set apart to meet the personal expenses of an official and land for the expenses connected with his office. Both categories of land were leased to tenants and the incoming money was used for these respective purposes. Under the T'ang for instance every adult had to deliver yearly two *shih*—about 15 bushels—of corn as a land tax, called *tsu*, and 20 feet of silk yarn, raw silk or coarse silk cloth according to the local production, as a further duty, called *tiao* ; if it was in linen, one-fifth more. Every adult had to perform yearly 20 days of service or in default thereof to pay a corresponding amount of money. This was the theory ; the practice was quite different. The 20 days were increased to 50, and even to two months. Most of the work consisted in the building of city walls, dams, roads, etc. It was, therefore, at least to a considerable degree, in the public interest.

In the course of time cash payment became the main and later the only form of taxation. But whatever kind of taxes had to be paid the peasant bore by far the greater part of the burden of the public revenue. The maximum amount was squeezed out of the land and the peasants. Sometimes this was a stimulus

to an intensification of cultivation, but more often it produced despair and an exodus from the land. The official standpoint was that people should work and produce for themselves if they wanted to harvest the crop and to buy manufactured goods. The principle was right, but the application wrong. It is impossible to put almost the entire social burden on a single class. The peasantry had been awarded a high rank in the social structure ; farming followed immediately after scholarship and came before trade and commerce. But this hypocritical assessment did not prevent the social pyramid weighing heavily in reality on the large masses of the peasants.

The Political Structure.

The minor services were of a local character and served exclusively as payment to the landlord. The major services consisted in public works, especially those which extended over large areas. These latter were activities of the State in pursuance of its general policy. They were closely related to the development of the centralised administration. To go so far as to say that the extensive works—regulation of the rivers, flood prevention and irrigation schemes—were the direct and primary cause of the formation of the State is untrue. The Chinese State developed from origins which were primarily spiritual and social and secondarily political influences and purely practical requirements.

The Emperor personified a dual conception. He was *Cæsar* and *Pontifex maximus* in one. These two qualifications are fundamentally incompatible with each other ; and the two can be effectively exercised only so long as the Emperor is successful, i.e. as long as his vocation, his determination and his spiritual and religious guidance—in a word his *charisma*—enable him to perform actions which promote the welfare of his country and his people. This discrepancy between the secular and the divine *charismata* led to the result that the Emperor, as a person and as the embodiment of an originally magical-ritualistic conception, was rather a Prince of Peace than a Lord of War. His vassals, especially those who ruled over the frontier districts, were the actual military rulers. The Emperor was largely restricted to the rôle of Son of Heaven and to a moral-religious position ; he had to be ever proving afresh that his *charisma* protected his people from evil. Consequently his was the responsibility that the harvest was good, that the rivers did not devastate the country, that the dams withstood the floods, that an efficient

irrigation made the fields fruitful. These peaceful tasks needed a staff of officials to supervise their execution. These officials, the Emperor's direct representatives, participated, therefore, to a certain degree in the imperial *charisma*. One of the most significant ceremonies which the Emperor had to perform was the ritual of ploughing, an eminently peaceful and traditional activity. Thus the regulation of the rivers and the irrigation of the fields were a magical as well as a rational necessity. Success or failure were considered as judgment upon the charismatic qualities of the Emperor and his officials. In the last resort the grandiose dams, canals and other works as well as the whole administration were the result of this charismatic qualification. This helps also to explain the anti-militaristic and even anti-capitalistic attitude of the officials, who had a certain bias in favour of the peasants against the merchants and the craftsmen, even though their personal acquisitiveness only too often gained the upper hand.

The power of the State and the conception of the State as such were not ends in themselves. Their importance was reduced to a minimum. The people saw in them nothing else than forces serving the welfare of the country and existing for the benefit of the people but not the reverse. This attitude on the part of the people—and in China the people means first of all the peasants—helps to explain why the villages were self-administered units, why the villages and not the towns housed the greater portion of the population, and why agriculture, the most traditional of Chinese activities, occupied the first place. The peasant lives within the narrow world of his own ideas. He stands in the way of the disintegration of his sphere by too much administrative interference. He accommodates himself to such a measure of official intrusion only as is indispensable for his daily work. If floods, famines, or insufficient irrigation prevent him from working, it is the fault of the Government, which exists for his sake and for the fulfilment of these tasks. If the Government fails, it is bad, but he can see no reason why the organisation of the central administration should permeate his private atmosphere and upset the time-honoured rhythm which dominates it. Peasant and scholar-official meet in their spiritual outlook : nothing should be done that is not absolutely essential. But the peasant expects from the official that everything should work smoothly in spite of this attitude ; and the official expects from the cosmic order that he need not overwork himself.

The Government often had to resort to very energetic measures in order to mobilise the great numbers of workers necessary for these public tasks. The areas which had to be protected or irrigated were very large. The duties of the people were two-fold : work on their own land and on public schemes. The eighth-century T'ang commentator Kia Kong Yen remarks : " The major services consist in the building of dykes, the erection of city walls and other works of this kind." And the Ming commentator Wang Yung Tien states that similar works if they are on a smaller scale are executed by the local inhabitants, but that the building of canals and roads made " a concentration of forces " necessary, because such works far exceed the capacity of individual districts. The development is obvious. In the beginning local works were the main problem. Gradually more comprehensive work on dams and dykes gained preponderance especially in the North, while the population of the South had rather to face the problem of irrigation and drainage. Great numbers were employed on these works. It is reported for instance that at the beginning of the seventh century A.D. there were at times up to 100,000 persons engaged in dredging and damming in connection with the canal system that linked the North to the South ; or in A.D. 1352 that there were about 70,000 persons working on the diversion of the Yellow River ; or in A.D. 1375 that there were about 300,000 persons preparing the connection of the Yen river with the Grand Canal. In this way great masses were withdrawn from regular work on the land ; but on the other hand great achievements were accomplished in the interest of agriculture, which were made possible only by the functioning of an inter-local administration. Marx formulates this as follows : " Here the harvest depends on a good or bad government just in the same way as in Europe it depends on good or bad weather." However the government seems to have been fairly inefficient, for between 620 and 1619 no less than 1,000 droughts occurred in the provinces of China proper.[1]

The improvement of irrigation and the protection against floods complicated the working process but increased the yield ; and both influenced the division of the land and consequently the taxation. Peasant and government were dependent on each other more than any other groups. Nothing perhaps is more significant than a conflict between the peasants and the millers

[1] A. Hosie : " Droughts in China." *North China Branch of the Royal Asiatic Society*, 1878.

of the same district. Both wanted to profit from the available water supply. The peasants needed the water for their irrigation channels, the millers needed it as power for their mills, which were very numerous at this time. Both could not be satisfied, for the water supply of one party would have been too small. Thus we read in an application to the officials : " The channels of the district of the capital are insufficient in their water power because the mills use too much. I ask that all mills be destroyed." And in another application : " In previous times the Chêng-Po canal irrigated over 40,000 *k'ing*. To-day it irrigates only slightly more than 10,000 *k'ing* (about 54,000 hectares) because the rich traders and the great merchants compete in building mills, in damming and using the water, thus trying to block the course of the canal." The mills were destroyed. The official decided against the " capitalistic " millers who were less important to them as sources of taxation than the peasants, and whose production, in spite of its necessity, was more alien to their minds than the simple process of cultivation. This happened under the T'ang. The T'ang had reclaimed a large amount of land by their clear-sighted agrarian policy, and especially by the extension and improvement of irrigation.

China remained sociologically stationary—in spite of great political fluctuations and in spite of the great expansion of the State after the end of the feudal period. Her social structure did not change because the peasant, his clan and his family are unalterably inter-dependent, and because he did not change his time-honoured methods of cultivation. He could not change them without destroying his own world and without shaking the whole pyramid of Chinese society.

What does this narrow world of the peasant, the village, look like ?

The Village.

The layout of the village is dependent, in China as elsewhere, on the relationship between home and place of work. The house serves several functions ; first of all it is the dwelling-place of the family ; besides this, it is the place where home industry and the processing of agricultural products is carried on. Cultivation consists of many different activities, and a far-reaching division of labour and specialisation of work are the result.

The villages are mostly situated in the middle of their fields. The most prominent feature of the landscape is its subdivision

into squares and rectangles. The plots belonging to one peasant are not arranged in one continuous tract. There is to-day a great difference between the rice and the wheat regions as regards the number of plots which belong to one household. In the average there are, in the wheat region, about five plots in a distance of about half a mile. The smaller the plots the greater their number, and the greater also the loss on account of the strips separating the individual plots. Enclosed fields are very rare. Only the few outlying farms and their fields and the smaller villages and hamlets are fenced in.

The far-reaching subdivision is one of the main obstacles to technical progress, and explains many difficulties of irrigation. Its advantage for the individual farmer lies in its procuring balance between the different types of soil, and between the quality and the lie of the land. Almost everywhere the typical open-field system of unfenced scattered plots prevails, resembling those of Japan and Europe, where also it is the result of frequent subdivision. As compared with the rice region the North is much less irrigated, only 18 per cent. of the land against 62 per cent. Another important difference is the more extensive cultivation in the North. The individual plots and fields are, therefore, about three times as large as in the South. Besides the loss through the separation-lines between the fields, the graves, often situated in the very middle of the fields, make about 1·9 per cent. of farm land unusable. Not only is cultivable space lost, but the process of cultivation itself suffers considerably through the existence of these graves which are erected without regard to the work, but solely on geomantic principles. By the levelling of these tumuli about 2·5 million acres could be gained, an amount of land sufficient as a basis of subsistence for about 400,000 families.[1] The situation is somewhat better in the rice region, where hills and mountainous parts are preferred for the erection of graves.

Technical methods are in general not too different from those of Europe ; but the use to which the land is put and the yields differ considerably. The structure of agriculture, of course, is not uniform over this vast country. Independently of the major difference, that is, the cultivation of wheat and rice respectively, other factors produce a considerable variety. The tribes of Mongolia and Tibet are engaged mainly in pastoral activities. In the South-West tribes which were pushed back by the Chinese into the mountains prefer to cultivate corn, while the Chinese

[1] I. L. Buck : *Land Utilisation in China.*

cultivate rice in the valleys. Further the type of production is dependent on the system of communications, especially communication with the markets. An investigation covering 15 districts by I. L. Buck showed that the distance from the *hsien*, the market town, to the more distant and important markets is between 44 miles by cart and 313 miles by steamboat, and that the average distance of transport with a pole is about 79 miles. Almost the whole overland traffic in Northern China is carried by carts drawn by cattle or mules or other beasts of burden. Districts of surplus and districts of scarcity often adjoin each other because transport is not sufficiently developed for an exchange even between areas in close proximity. In South and Central China the boat is the main means of transport, and the coolie replaces the beast of burden.

The keeping of cattle plays only an unimportant part. This, together with the almost exclusive raising of vegetable products, accounts for the great density of population and settlement and for the absence of common pastures. It is possible, however, that common pasture land belonging to the village existed in early periods. To-day common pastures or common land for the collection of firewood are found only in rare cases on hillsides and mountain slopes which cannot be used otherwise. The following report on the North-West has been published by I. L. Buck :

> The pasture land in Kansu and the agricultural part of Tsinghai is mostly the hill land far away from the cultivated fields and villages. It is not owned by farmers individually or collectively. It is public land. The right to graze these pastures is determined by the natural location of the villages in relation to these hills rather than by the land. The nearest villages have more chance to use it. Sometimes one finds several villages grazing their sheep on the same hills without trouble. But if too many villagers use the same pasture a definite agreement is made between the villages to limit certain villages to particular pastures. The pasture of nomadic Tsinghai (formerly a part of Tibet) is also public land, but different tribes and clans have the exclusive right to use only such land as has been allotted to them by the government or by tradition. Within the boundaries of a certain tribe the pasture is open to all its member families, but no family owns any particular lot. There is no fencing or walls.

This absence of common land exerts a great influence on the general structure of settlement, and on that of the village and the parish in particular. The keeping of cattle means first of all for the Chinese the possession of animals for working, although

in this respect man himself competes with the animals. The reservoir of human labour is almost inexhaustible. The live-stock used for working purposes decreases from North to South. It has been estimated that there are about 220 head of cattle to every 100 farms in the outlying provinces of the North ; 104 in the northern agricultural districts ; and only 90 in Central and South China.[1] Pigs and poultry are the domestic animals ; they are, therefore, most densely distributed in the most populous districts, while sheep and goats, which are used for the production of wool and hides, prevail in the outlying provinces of the North.

Combination of crops, fertilisation and irrigation are the main characteristics of Chinese cultivation from early times. The general traditionalism is a great drawback, since it impedes innovations, but on the other hand it is also helpful, because it makes possible the accumulation of a great amount of experience. The yield of the land is very high in spite of methods which are uneconomical as compared with European standards ; the implements are out of date, and human labour seems to be wasted on an almost incredible scale. But these very primitive methods have produced a very subtle kind of cultivation, and have contributed considerably towards keeping great numbers of the rural population in the villages. Moreover, the families grow to the very limit of the capacity of the cultivated soil, that is to say, they have as many members as the farm can support. Investigations by Buck have shown that the smallest of the farms investigated had an average of 3·96 family members and the largest 7·31. An old Shansi proverb says :

> To feed a family of five
> A farmer must work like an animal,
> But to feed a family of six
> Even a flogged animal will not work.

In most districts two or even three harvests are possible. The cultivation of fodder crops is of slight importance in comparison with that of crops for food and clothing. Grass, which is used for fodder, grows on the small ridges between the fields. Sometimes wheat or rice is grown for several years in succession. If fertility decreases, rotation of crops is introduced or the fields are left fallow, a system which has also been known for a long time. Whereas at the best only two harvests are possible in the North, work on the land in South China never ceases. Consequently, additional work is more common in the North than in the South ;

[1] W. Wilmanns : *Die Landwirtschaft Chinas.*

about 15 per cent. of the rural population of the North are engaged in such extra work against 9 per cent. in the South. Moreover, the families of the North are larger—possibly because the patriarchal tradition is stronger ; the average is 5·5 members to just 5 in the South. In the South the land never remains unused. Buck gives the following data from which certain conclusions can be drawn : in the wheat region the number of farm households is approximately 21 millions, corresponding roughly to 123 millions of rural dwellers as against 34 millions corresponding to 176 millions in the rice region. Of the entire rural population 41 per cent. live in the North and 59 per cent. in the South, although about 172,000 square miles are cultivated in the former and only 166,000 square miles in the latter. The density of the North in relation to the cultivated land only is 940 per square mile, in the South 2,000 per square mile ; the figures for the crop area are 0·32 hectare and 0·19 hectare per person respectively. Although these figures are only approximate, they show that the condition of the soil has a definite influence on the density of population and settlement.

The uninterrupted rotation of the South not only supports but also occupies a greater number of people. The first crop, from May to the beginning of July, is rice for human consumption. Then follows as second crop rice for the distillation of alcohol from July to October ; as third crops follow beans, cabbage, turnips and rape-seed which are sown and harvested in different fields ; the fourth crop is clover, which is used as manure after the vegetables have been gathered in the beginning of February ; the fifth crop is grain, which is harvested in April. Then follows an intensive fertilisation of the soil and the new rotation begins.

The yields are very high, as a result of most attentive and intensive cultivation, which needs a great amount of human labour. The rice seedlings are sown not directly in the fields but in special beds, a procedure which increases the productivity of the individual plant. Every plant receives special attention. The fertilisation of the soil is of the utmost importance. Animal manure is available only in small quantity ; and an extension of the cultivated area by the development of new land is an impossibility, just as much as leaving a part of the land to lie fallow in these thickly populated regions. But despite its intensive use the soil has remained fertile for hundreds and hundreds of years. It is obvious, therefore, that human manure is a very

precious substance. F. von Richthofen states in his *Diaries from China* that density of population and intensity of production are directly dependent upon the amount of human manure available.

The necessary supplement to fertilisation is irrigation. Innumerable canals and irrigation channels traverse the country; in all possible ways the water is conducted over the fields. As every farm should have an equal share in these collective institutions a certain amount of central direction and control is needed. The water supply is allocated with great care and exactitude; and this demands in its turn a corresponding influence on the process of cultivation, i.e. on the time of sowing, harvesting, etc. The individual farmer must not encroach upon the rights of his fellow farmers by using water for his fields at unsuitable times or in too great a quantity. Irrigation produces in China something similar to the coöperation of the European peasants (*Flurzwang*) as the result of the intermixture of strips belonging to one holding. This kind of cultivation needs an elaborate system of collaboration, especially in a country where millions of people live close together. It can succeed only if every stage fits systematically into the whole cycle of management and work. From the canals a network of irrigation channels spreads over the fields, which are lower, and are bordered by small ridges heaped up from the soil dug out from the ditches. In the mountains the channels are arranged one above the other; the water is raised from the lowest channel by primitive though ingenious appliances, and distributed from the highest channel. This sytem of terraces is very widespread, and is estimated to occupy about one-quarter of the cultivated land. In the North, however, terraces are used as protection against erosion. All this demands a maximum of work and makes a rational use of the available land imperative. The villages occupy only a limited space. The plots of the individual family are small, on the average 3·5 hectares in the North and only 0·88 hectares in the South.

Long dams, mostly following the course of the rivers and about 9 to 12 feet high, serve not only as protection against floods but also for heaping up the top layers in order to get at the good soil underneath. Occasionally the villages are situated on such embankments. Around the villages vegetables, cabbage, beans and fruit are grown. In his book *Im Innersten China*, G. Wegener the geographer gives the following description:

The settlement of the rice region is extremely dense. Along the roads, to the right and to the left villages and hamlets follow each

other, mostly separated by only a few minutes' travelling. These settlements are not large ; they consist of a cluster of a few dozens of houses. They are mostly situated very attractively in a little wood of poplars, willows, tamarinds, maples and camphor trees. If we pass a larger place which is the market centre of the district it usually develops along both sides of the main road. The newcomers simply add their houses at both ends of the already existing row of buildings. Only a few side lanes branch off on either side. If these places are situated on a river they extend as one long and narrow strip along the bank. A larger settlement which is at the same time a market centre has in China an urban atmosphere, though differing from the real towns only in size but not so much in character.

And he describes also the cultivation of rice in a mountainous region :

The view grew ever more grandiose. The terraces followed the bend of the valleys in never ending isohypso-lines, manifesting an indefatigable work of many centuries. The stone terraces rose so steeply one above the other with such an unheard-of boldness that the uppermost field surrounded by a small stone wall was only a few feet, nay here and there merely a few hands, wide. It offered just enough space for one or two rows of rice plants. In the proximity of the villages vegetables were grown on the terraces.

For thousands of years nothing seems to have changed. The fields were squares or rectangles and irrigation was available where needed. The supply of water was provided and regulated by the Government or by groups of peasants, while the scooping and conducting of the water over the fields were left to the individual farmer and his own implements. Under the Chou agriculture was already a scientific business. Nine different types of soil were distinguished, and seeds specially suited to the particular soil were selected. Each type was treated individually and fertilised with powdered bones and liquid manure.[1] The two-crop system was known, and there were two harvests a year so far as the climate permitted. Oxen were used for ploughing, and the peasants had separate access to their fields. Two peasants worked together ; they formed a working unit, a " pair ". " In thousands of pairs they removed the roots." We may assume that the first ploughing of the year was undertaken collectively by the peasants.[2]

The *tsing tien* system has already been mentioned as a socio-economic unit. We have also information on the work in detail.[1]

[1] Chen Huang-Chang : *Op. cit.*
[2] R. S. Britton : " Census in Ancient China." *Population Journal*, 1934.

The reports, however, should not be taken too literally as they are rather stereotyped. The well was situated in the central field. Each of the nine squares was one hundred acres in size and was called a *fu*.

In one square of land the one hundred acres contained ten thousand paces. According to the ancient measures six feet was one pace, and one hundred paces was one acre. Therefore, one acre was six feet wide and six hundred feet long. Between two acres there was a small ditch. If there were one hundred acres, there were one hundred small ditches. The acre was higher, and the ditch was lower. Since one ploughshare was five inches wide, and two men using two ploughshares were called a pair, the cultivation of a pair was a foot wide and deep, and this was the form of a small ditch. In cultivation the farmer first used the plough to turn over the grass, and then formed lines such as the acres and ditches. This was the plan of one square of land, and the small ditch was the basis of the measure of all the water-channels.

The channels marked the field boundaries. There were so-called "southern acres" and "eastern acres"; the small ditches and the acres ran from east to west in the southern acres and from north to south in the eastern acres. These names are connected with the course of the rivers which flow mostly from west to east. It is for this reason that the "eastern acres" are more numerous.

If the river was in the latitudinal line, the largest ditch should be in the longitudinal line, then the next smaller ditch was latitudinal and the four-foot ditch longitudinal; then the two-foot ditch was latitudinal and the smallest ditch longitudinal. Hence the acres were arranged in the east. The southern acres were arranged in the reverse way.

Further, in order to prevent the exhaustion of the soil and to increase the yield, the system of so-called "alternative fields" was applied.

As the acre was six feet wide and six hundred feet long, the system of alternative fields was to make three low lines within one acre. The low line was made by two ploughshares and was a foot wide and deep and as long as the acre. The seed was sown into the low line and the blade sprang up. When the grass of the high line was weeded out, the soil of the high line was put down to the low one in order to protect the root of the blade. Such a process was repeated again and again; hence the low line gradually became higher and the high line lower. By summer the high line had disappeared, and the root was very deep. Therefore, the grain was able to stand against the wind and the drought.

A report by Mencius describes the situation of the village and the system in more detail :

The central square is the public field. The surrounding eight squares are private fields for the eight families. In the centre of the public field twenty acres are taken out for the cottages of the eight families, each having a share of two acres and a half. The remaining eighty acres of the public field are cultivated in common by the eight families, each really cultivating ten acres. Within the field no tree is allowed to be planted. Round their cottages which are in the centre of the public field they plant mulberry trees, in their small gardens various vegetables and on the boundaries of their cottages various fruits. Besides the cottages in the fields the people have homes in the town. A town covers several villages, and a village is made up of eighty families ; while eight families occupy one street together. Around their homes each occupying five acres the space beneath the walls is planted with mulberry trees. Within the limits of one *tsing* four roads were opened, the eight houses were separated and a *tsing* (well) was dug in the centre.

In every *tsing* there was a market where the inhabitants could buy goods for their daily needs—so at least Confucius tells us. He also says that the families had to exchange their land and their houses every three years. This is a kind of substitute for the system of the scattered plots, which was also intended to guarantee an equal distribution of the different categories of the soil. It is said that after the harvest the peasants moved to the town in order to save light and fuel and to work together so that the unity of the group would be preserved. This may have been a reminiscence of the old custom of having a summer and a winter abode. The seventh point of the *Book of Changes* written by the disciples of Confucius states : " They changed the form of shelter " and the Appendix says :

In the highest antiquity they made their homes in winter in caves and in summer dwelt in the open country. In subsequent ages for these the sages substituted houses with the ridge beam above and the projecting roof below as a provision against wind and rain.

Another description quoted by Legge in the fourth volume of his *Chinese Classics* runs as follows :

Only huts were in the midst of the territories assigned to the different families—mere temporary erections occupied by the labourers at the busiest time of the year. They were in a space of two acres and a half and, no doubt, they cultivated vegetables about them. The proper dwellings were away from the fields in a space for each family of another two acres and a half, and about the houses they cultivated especially mulberry trees.

Finally the early attention given to irrigation deserves to be noted :

A *mow* of land is 75 feet wide and 80 feet long. The short side is divided in 50 parts, the long side in 54 parts. The opposite points of division are connected by vertical lines so that the distance between two parallel lines is roughly one foot and a half. The 2,700 rectangles created in this way are called *k'ue*. Of the 50 rows of rectangles, viewed from the smaller side, 25 are alternatively left free and 25 are planted, these latter however only in such a way that in each row one planted and one free rectangle alternate, so that of the 54 rectangles of each of the 25 rows only 27 are planted, i.e. out of 2,700 rectangles 25 times 27 × 675. This system, which is said to have originated already in a remote period, was thought out first of all in the interest of irrigation.[1]

These descriptions make it obvious that many essential features of the present system of cultivation have been known from early times. They may help us to understand more easily why China is a country of small farmers and why large estates have not left their mark on the agricultural structure in spite of repeated efforts and partial success. The unbroken tradition has accumulated a maximum of experience, a kind of rationalisation of tradition as a result of which not only did cultivation and field systems reach a very high degree of functionalism but also the villages and their dwellings were systematically integrated in the structure.

The self-centred, almost magical attachment to the soil was strengthened by the home industries. The countryside satisfied its needs locally and as far as possible without making use of the town and its more diversified and ample resources. This, of course, fostered traditionalism and prevented technical progress. But the introduction of mechanisation even in a small degree in any case encountered great difficulties. It displaced human labour without offering other opportunities of work to the large numbers of country dwellers. On the other hand the town helps to consume the produce of the rural home industries, as production far exceeded home consumption. Even to-day about 70 per cent. of the whole production is based on home industries. It is the smallness of the farms which makes extra work imperative in spite of the many hands needed in the agricultural work proper. While the male members try to earn some extra money by seasonal or hired labour, the women are the actual mainstay

[1] O. Franke : *Kêng Tschi T'u. Ackerbau und Seidengewinnung in China.*

of the home industries. They are engaged principally in the processing of home-produced raw materials, especially such as wool, cotton and silk. The very ancient cultivation of mulberry trees brought this last activity to a very high degree of perfection. Everywhere along the dams or in the immediate neighbourhood of the houses there are rows of mulberry trees. The products were sold directly in the market town, as no marketing organistion existed. Sometimes the market was held in the village itself in front of and under the protection of the village temple. The market fees were paid to the temple as the centre for organising certain tasks of village administration, e.g. street lighting, the upkeep of streets and their safety, the care of the canals and channels.

As already mentioned, a Chinese village is a fairly autonomous entity. It is administered by self-elected representatives, and the Government has hardly any voice. "The organisation of a Chinese parish which consists either of one larger or several smaller neighbouring villages or hamlets has in many respects a private rather than an official character." [1] The fact that many villages are walled in may be partly explained by a tendency to isolation. An old Chinese proverb says: Village shall not know of village. However reasons connected with protection were probably more decisive; they made a wall or a fence advisable. The village of the North, where invasions were more frequent, generally had a stone wall, while those of the South were often surrounded by a bamboo hedge. Richthofen especially stresses this point. He says that every 20 *li* there is a market place which is in fact nothing but a village consisting of a conglomerate of dirty houses. It is likely that such places developed around roadside inns in connection with the old relay system for couriers and travellers. The same holds good for most of the important highways, e.g. the roads from China to Tibet, where the distance between the stages was conditioned first of all by the needs of traffic. In Yunnan, for instance, these settlements are small; they housed about five to fifty families. The market towns were hardly any larger. Other villages stretched in long rows up the hills accompanied by the irrigation terraces. A string-like layout of the villages was very frequent. A description of the Ming period mentions this especially: "The roads and waterways are lined with great numbers of villages and little hamlets of two or

[1] S. Syrski: *Fachmännische Berichte über die österreichisch-ungarische Expedition nach Siam, China und Japan*, 1872.

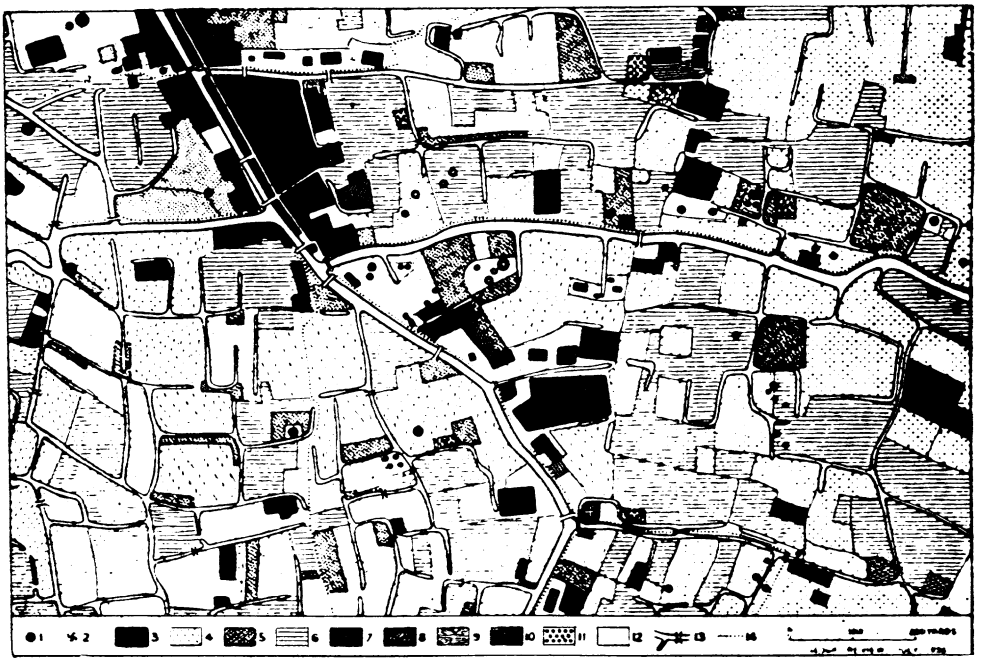


Fig. 26. Land utilization near Kaochiao, a small village one mile west of Fenghsien city. The map covers nearly half a square mile. The main canals lead north to Chachiang on the Whangpoo, west to Chingtsunchiang, and south to the main dike. Key: 1, grave mound; 2, temple; 3, building; 4, cotton; 5, beans; 6, rice; 7, sweet potatoes; 8, corn; 9, bamboo; 10, vegetables; 11, melons; 12, farmyards; 13, canal, with bridge; 14, path. Canals are mapped at water level. Their banks are 8 to 10 feet high and several feet wide, covered with reeds, so that there is actually less cultivated land than appears.

three hundred fires apiece." [1] A large number of the villages develop as roadside villages.

Marco Polo reports on this development :

From the city of Kanbalu there are many roads leading to the different provinces, and upon each of these, that is to say upon every great high road, at the distance of twenty-five or thirty miles, accordingly as the towns happen to be situated, there are stations, with houses of accommodation for travellers, called *yamb* or post-houses. These are large and handsome buildings, having several well-furnished apartments, hung with silk, and provided with everything suitable to persons of rank. . . . His Majesty sends people to dwell upon the spot, in order to cultivate the land, and attend to the service

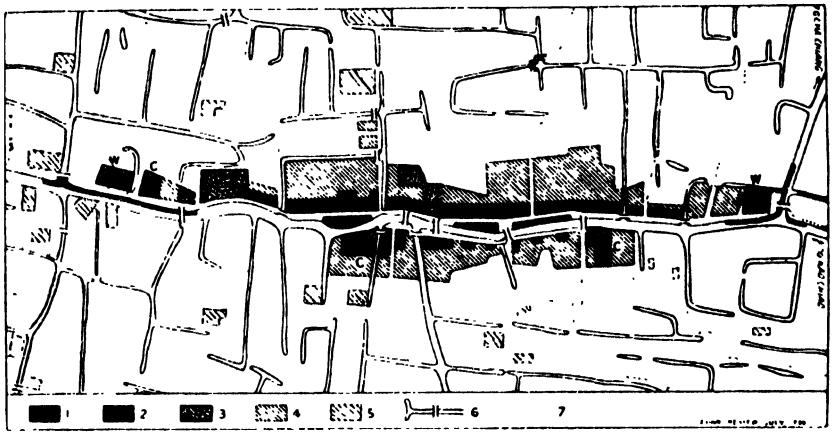


Fig. 27. Urban land utilization in Chingtsungchiang. Key : 1, retail business ; 2, wholesale business, C = cotton, W = wood ; 3, public use, i.e. school, temple, church ; 4, urban residential ; 5, rural residential ; 6, canal, with bridge ; 7, path. Scale : 1 inch to 350 yards.

of the post ; by which means large villages are formed. . . . With regard to food, there is no deficiency of it, for these people, especially the Tartars, Cathaians, and inhabitants of the province of Manji (or Southern China) subsist, for the most part, upon rice, panicum, and millet ; which three grains yield, in their soil, an hundred measures for one. . . . With them no spot of earth is suffered to lie idle that can be cultivated. . . . In the intermediate space between the post-houses, there are small villages settled at the distance of every three miles, which may contain, one with another, about forty cottages. In these are stationed the foot messengers, likewise employed in the service of His Majesty.[2]

One type of village might be predominant in one district,

[1] Werner : *Descriptive Sociology.*
[2] *The Travels of Marco Polo.* Reprint of the Marsden Wright Edition, 1930.

introducing a characteristic note, but fundamentally there were no great differences. For instance this was the case in Shantung, where compact and small hamlets prevailed and larger villages were rare : or in Shansi, where the population dwelt in loess caves carved out of the rocks and consisting of small separate rooms, a type of rural housing that preceded the larger villages. Richthofen takes it as a sign of wealth if the villages spread out to both sides from the main street, as e.g. in Shensi, where the main street of many villages is crossed by several traffic streets. In Szechwan compact villages alternate with single homesteads. In Shensi hamlets dominate the picture ; they consist mostly of a number of small enclosed groups of houses, as in the valley of the Wei-ho. Richthofen remarks : " The small village has an urban character. The houses are close together and line the narrow traffic street. There are bakers, eating-houses, shops of various kinds. In brief every village is like a piece cut out of a small town." It is not possible to deal in detail with the different provinces ; no sufficient material is so far available. " The picture is the same from one end of the country to the other. Innumerable cities and villages taking their toll of the land, hamlets huddling even closer in valleys where every field already supports more lives than would be possible in any other country except India." [1] No household can enlarge its area without reducing that of others.

Chinese villages are not " planned ". They are the result of a grouping which must be described not so much as casual as the result of indifference ; that is to say, each selected according to his own taste the best and most suitable place available. Families arrived and settled, and soon a homogeneous social and economic structure developed. Material for house-building was taken wherever it could be found. No one bothered about the future development of the village. The fields were scattered without any regard to the situation of the houses. The Chinese have no inherent feeling for the function of the street or for the necessity of a systematic net of communications. In spite of many grandiose schemes high roads never assumed the same importance as in Europe. Existing roads fell into decay and new ones were seldom built. The attitude of the villagers does not differ from this general frame of mind : the street is private property. Individual owners have to give up a part of their

[1] Chi-Ming Chiao : " A Study of the Chinese Population." *Milbank Memorial Fund Quarterly*, 1934.

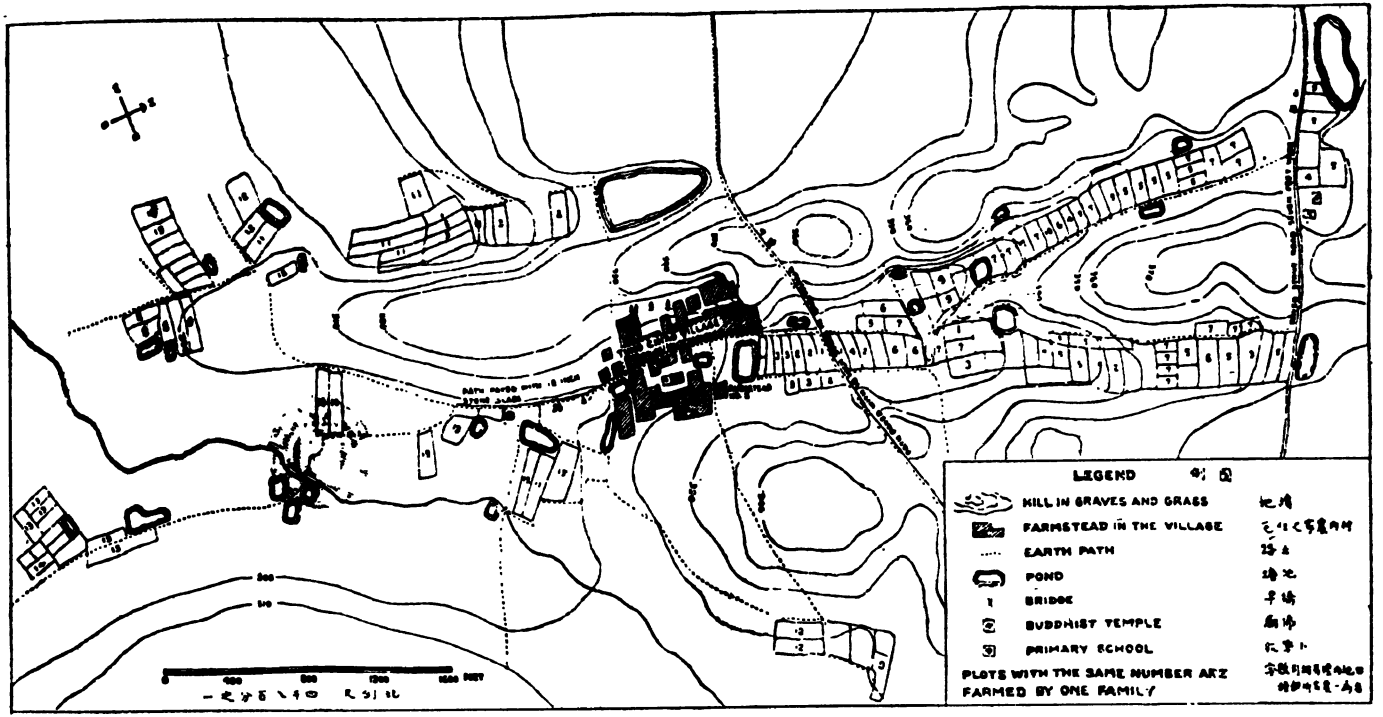


Fig. 28. Plan of a Village

land if it abuts on the street. It has been said of the Chinese that they are a people of families but not a nation ; and they are indeed a people of private individuals. They are ready for co-ördination, but they do understand the value of integration and are not inclined to subordinate themselves to interests which they consider unessential. This explains why the Chinese conceives his village not so much as a constituent part of the organism of the State as a kind of family compound. The Government and the officials who might interfere are far away, in the next town, and moreover are not especially interested in village problems. Small wonder, therefore, that the village resembles a spontaneous

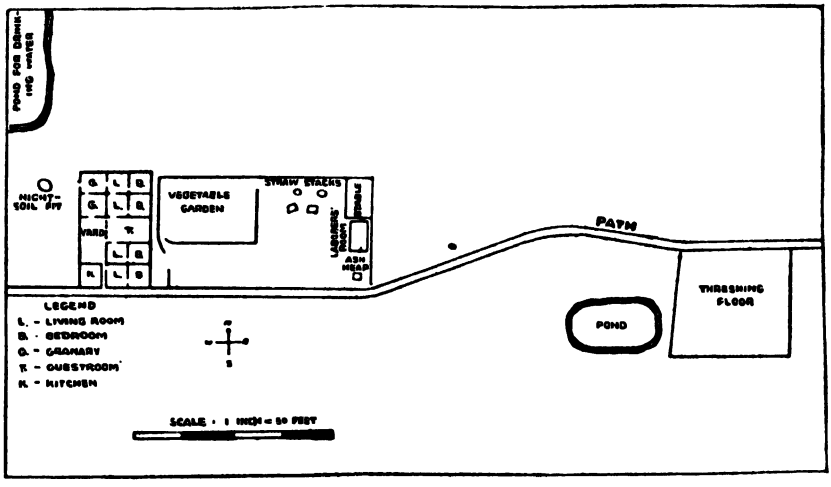


Fig. 29. A typical farmstead near Chunhwachen, Kiangning Hsien (S), Kiangsu (1928)

agglomeration. The houses are the primary factors, not the streets ; still less is there a preconceived plan. The typical Chinese village has one street, and crossroads only seldom, so that considerable détours are necessary. The small streets branching off at right angles from the main streets are often culs-de-sac, merely giving access to the yards and courts of the houses. Quite different is the layout of the town with its clear street pattern. The town is the result of a rational conception, while the village is comparable to a plant-like organism. It is a component part of the surrounding country.

The old coherence of the village is gradually disintegrating. China is in the melting pot. It is, therefore, interesting to know

something of the social and economic structure of a village whose life proceeds on the borderline between yesterday and to-day. A village in Kwantung, near Canton, may serve as an example [1]: it is called the Phenix village. Its site was chosen in the sixteenth century under the Ming, and a whole kinship was resettled there.

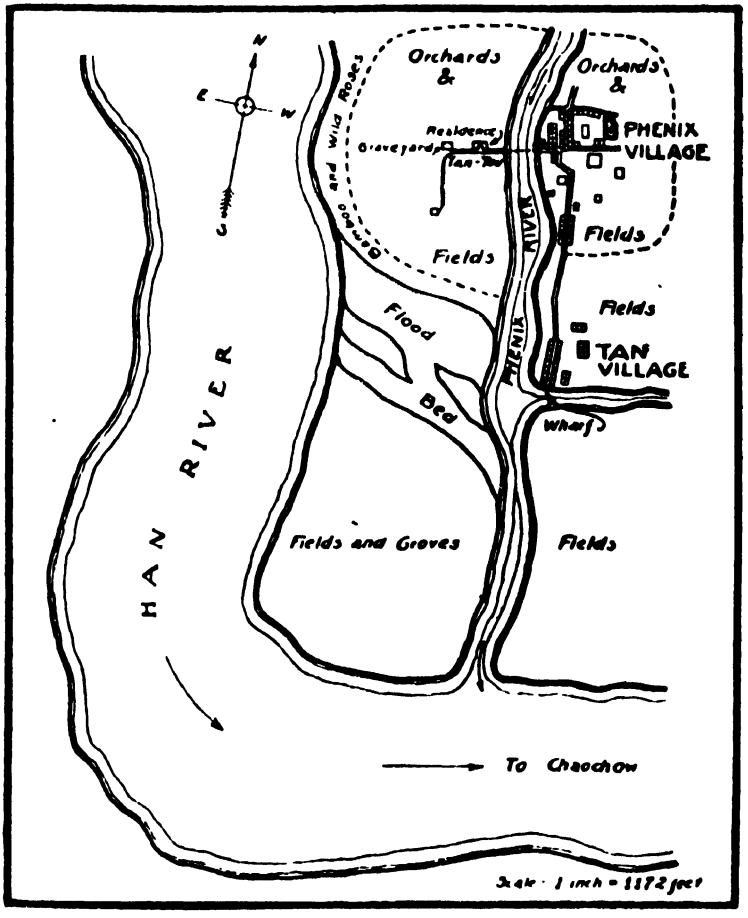


Fig. 30. Regional Map of Phenix Village

The village extends for about a quarter of a mile along the river. Behind the houses stretch several hundreds of *mows* of cultivated land. The village proper, i.e. the space used by the farm premises, is very small, only about 700 by 2,000 feet; and even this space is not entirely built over. It is partly covered

[1] D. H. Kulp: *Country Life in China.*

with orchards, pastures, and places for various agricultural activities. Formerly large fields were subdivided as new generations grew up and more members asked for their share in the

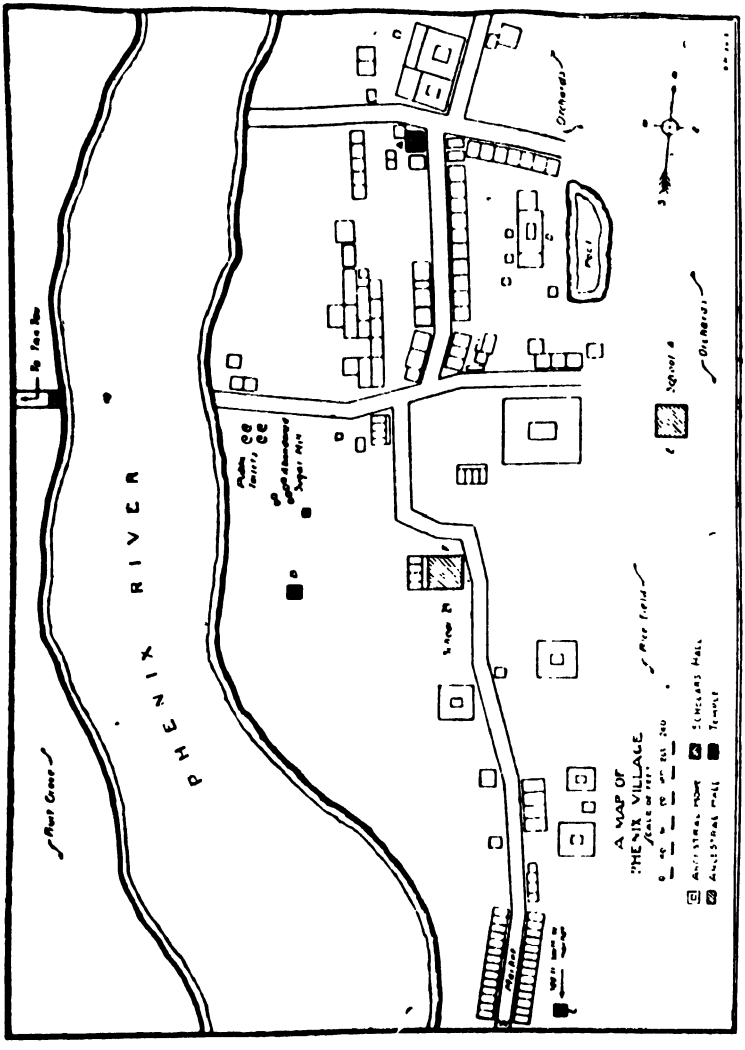


Fig. 31. Local Map of Phenix Village

family property. Several smaller plots of neighbours living outside the village are interspersed between the fields of the inhabitants. The fields on the other side of the river are larger. Some of them which are too far away for the inhabitants are cultivated

by their former owners. In this case the yield is divided between the former and the present owners as payment for the use of the land and for the work respectively. The village consists of 110 houses ; 30 of them are shops forming a shopping centre which was laid out in 1904. Of public buildings there are the village temple, the ancestor hall and the scholars' school.

The village developed along one street as the natural result of its situation on the river. The river is the actual traffic artery. Carriage traffic does not exist, hence interest in good roads is lacking. Footpaths alone serve the internal traffic. Numerous other villages are situated nearby. Business, transport, newspapers are the channels of communication with the outer world. The majority of the inhabitants are peasants and craftsmen at the same time. They make bamboo work, baskets and wooden goods, or are fishermen, and so on. The men work in the fields, the women in the house, and most of them are also engaged in some kind of home industry. There are coöperatives for the production of sugar and for the boat traffic. The population consists of 13 farmers and 44 gardeners. Other members of the village are engaged in agricultural work only from time to time, as the woodworkers, dyers, carpenters, cooks, butchers, masons, painters. There are further 11 merchants, 10 fruiterers, 2 teachers, 3 officials, 39 employees, 1 tax collector, 1 fortune teller, 2 owners of gambling houses, and some other professions, altogether 55 male professionals. There are 10 acres of public land, which yield $2,000 to $3,000 in a year without floods. The private land is administered by the head of the family, the *Chia Chang*, who however is under the strict control of his group.

The structure of the village rests on this family system. It is not a village community in the usual sense, nor is it based on socialistic or private principles. The families living together consist of those who are related by blood and those who have married into the family. Of the 133 families 24 are economically well off, i.e. they have more rice than they can consume themselves and some money ; 41 can just manage without putting something aside ; 68 families, i.e. 51 per cent. of the village are poor. " The economic family is the working unit of the village community, the religious family is primarily responsible for the stability of the community." The latter consists of a number of sex and economic groups ; as ancestral group it controls the social side of village life.

Some other data follow. They concern another village and

illustrate several more general aspects of village life. They are collected from Hsiao-Tung Fei's *Peasant Life in China.*

The total area of cultivated land is 3,065 *mow* or 461 acres. If this area were equally allotted to 360 households, it would mean that each household could only occupy a piece of land about 9·5 *mow* or 1·2 acres in size. Each *mow* of land can produce in a normal year six bushels of rice. About twenty-seven bushels of rice is needed

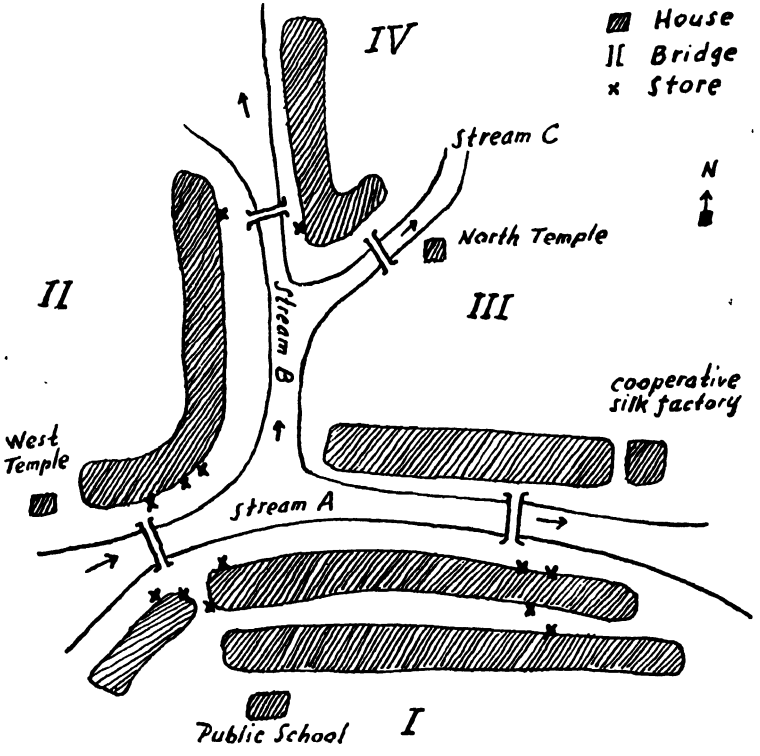


Fig. 32. The Village Plan.

for the consumption of one man, one woman, and one child. In other words, to obtain sufficient food, a family group needs a piece of land of about five *mow*. The present size of land holdings is hardly sufficient to provide an average household with a normal livelihood which requires sufficient food and other necessities. The pressure of population on the land is thus a strong limiting factor on the number of children. For example, a family, with a small holding of nine *mow*, will face a serious problem if a second boy is born. According to a local custom, the children when grown up will divide the estate. This will mean poverty for both sons. The usual solution is infanticide or abortion. The people do not attempt to justify

these practices and admit they are bad. But there is no alternative except poverty and " crime ".

The size of a marketing area is determined by the system of transport—the cost and time involved in the movement of persons and goods. The primary market, in which the consumers buy their goods directly, is limited to an area in which the buyer can get his goods without spending so much time as to hamper his other activities. . . . At the centre of each marketing area is a town, the essential difference of which from the village lies in the fact that the population in the town is mainly occupied in non-agricultural work. The town

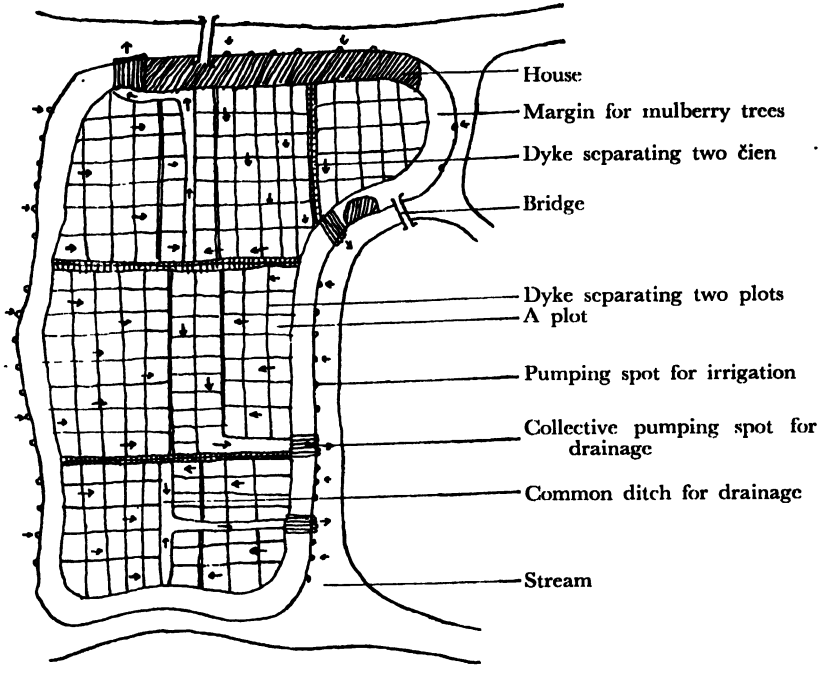


Fig. 33. System of Dykes and Ditches in the Farm.

is for villagers the centre of exchange with the outside world. The villagers buy most of their manufactured goods from the middlemen in the town and supply their produce to the collector there. The development of the town depends on the number of customers that can be attracted to it. The institution of the agent boat enables the town in this region to concentrate the primary purchase from its tributary villages and thus reduce the function of the village traders. The size of the marketing area of this type is much larger than that found in North China, where land transport is predominant and the agent system is not developed. A study by C. K. Yang showed that the marketing area, above that of the primary village market, typical

in North China, is about 1½ miles to 3 miles in diameter. The marketing area of a higher order, consisting of six basic marketing areas, is about 8 to 12 miles in diameter. The latter type is comparable in size to the town market in the region we are investigating. The town on which the village depends—that is, the town to which the agent boats go daily—is called Chên Tsê, about 4 miles south of the village. It is true that the town does not monopolize all the marketing activities of the village. There is another town in the north, called Tai Miao Chiung, about 1½ miles from the village on the bank of the Lake Tai. This is a small town specializing in trade with the islands in the lake. Near the town is a temple of the God of Lake Tai from which the name of the town is derived. When the people visit the temple they usually do some shopping in the town. To walk there takes about 1½ hours. But trade between the village and Tai Maio Chiung is insignificant as compared with that

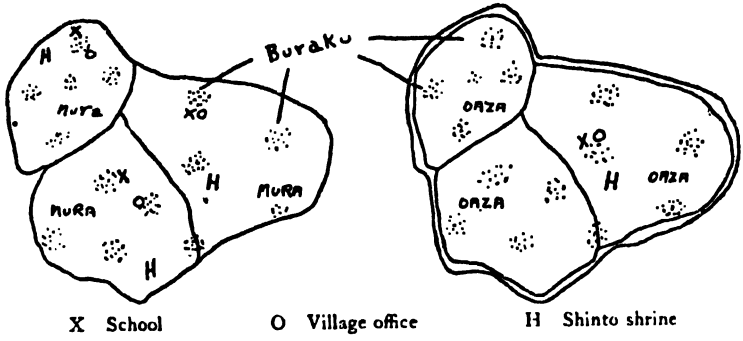


Fig. 34. Mura and Aza

with Chên Tsê. In the process of collecting rural produce, Chên Tsê monopolises nearly all the rice trade of the village. But it has never completely monopolised the silk produce, and since the establishment of the silk factory in the village, manufactured silk has been directly transported to Shanghai. Even in former times, when the village supplied a large quantity of raw silk for the weaving industry in Sheng Tsê, a town about 12 miles east of the village, there was a boat which plied direct to that town. It was too far for a daily return trip, and the service was irregular so the boat was only engaged in selling.

A comparison with a Japanese village may be of interest.[1]

Hitoyoshi, the capital of old Kuma, is located on the Kuma River, and, before the advent of the railroad fifteen years ago, its chief means of transportation of rice to the nation's great cities was *via* this river north to Yatsushiro and thence to Kumamoto and other centres north and east.

[1] J. F. Embree: *Suye Mura. A Japanese Village.*

Suye Mura is one of the nineteen *mura* of Kuma, and is located in the eastern part of the country. The southern part of the *mura* lies in flat paddy fields by the Kuma River, the northern on the mountainous border of the next county. Similar communities border it to the east and west. Its area is 1·1 square *ri* or 2·8 square miles, much of which is mountain and forest land. The population is 1,663 people, or 285 houses, the number of houses being the more important count, as nearly all civic duties are by households rather than by individuals. This is especially true of local *buraku* affairs.

Near Suye are two small towns—Taragi Machi (population of 5,000 plus about 2,000 in rural *buraku*) and Menda Mura, with a population of about 5,000. They have increased markedly in population since the building of the railroad. These are the immediate shopping-centres for Suye men to buy farming tools and for their wives in need of manufactured cloth, kitchenware, fancy footgear, and gifts ; the towns also serve as a market for firewood and vegetables. Here, also, are the geisha restaurants, a form of small-town prostitution. These small towns buy their food from the surrounding *mura* and in return sell dry goods, tools, and hardware, making a nice profit in the process.

I. Social and Political Divisions :

1 *mura.*	The rural administrative unit of the prefectural government in contrast to *machi* (towns) and *shi* (cities). Its unity comes from a common headman, administrative office, school, and Shinto shrine.
8 *ku.*	The political subdivisions of the *mura*, with village-office-appointed heads (*kucho*) whose chief function is to collect taxes. *Ku* contain from one to four *buraku.* Officially known by number but popularly called after one of their constituent *buraku.*
17 *buraku.*	The natural communities of about twenty households each. Historically the social and economic unit is this *buraku.* It is significant that it is referred to as *mura* by its inhabitants. It has its own head (*nushi-dōri*) and takes care of its own affairs, such as funerals, festivals, roads, and bridges, on a coöperative basis.
Many *kumi.*	Groups of three to five houses.

II. Geographical

Aza.	Geographical units. Used as a basis of landownership. Often uninhabited, but in each many people from various *buraku* own land.
Shikona.	Small roughly defined regions with names known to the local people but not written in any official records.

Three important types of *buraku*—the paddy, the shopkeeper, and the upland. It will be noted that in the paddy type, the houses are close together and in blocks, the whole surrounded by rice paddies. Everyone is a farmer, most families being native. Through the shop-

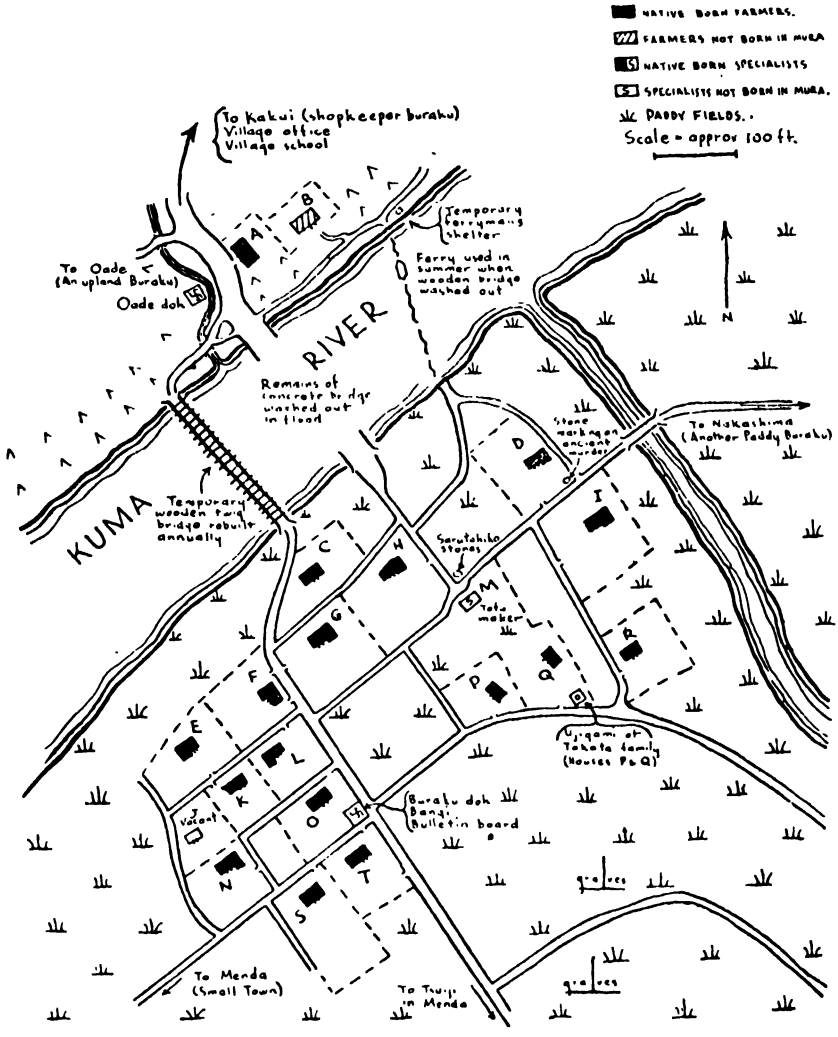


Fig. 35. Paddy Type Buraku (Kawaze), 19 Households

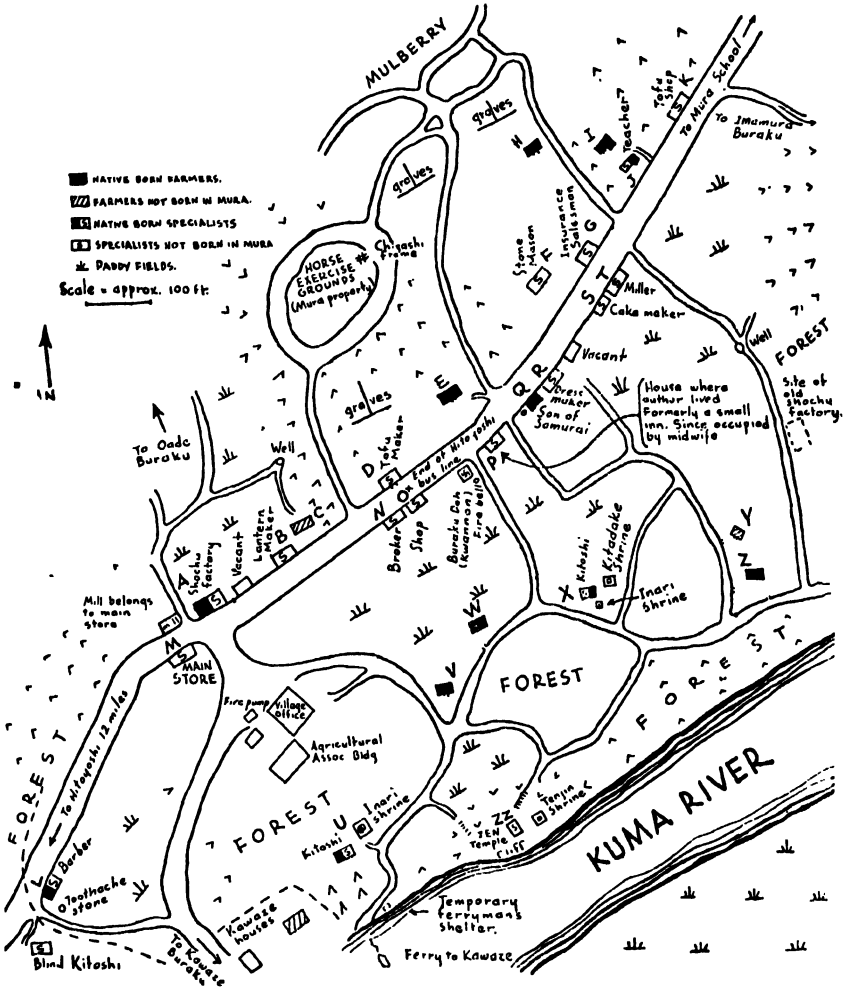


Fig. 36. (Kakui) Shopkeeper Type Buraku, 27 Households

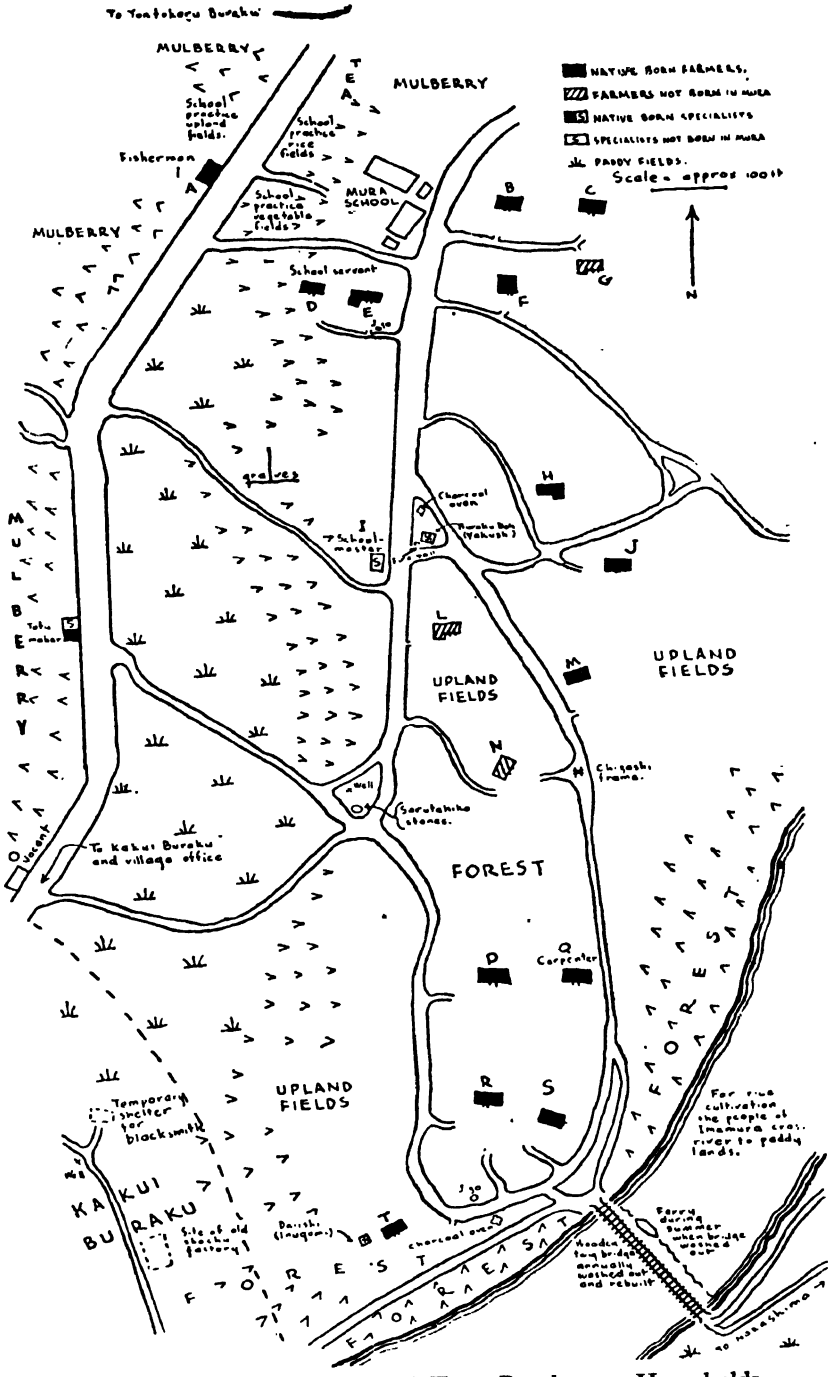


Fig. 37. (Imamura) Upland Type Buraku, 19 Households

keeper type runs the prefectural road, lined on both sides with small shops of various kinds. Scattered houses not on the road are mostly farmers'. The upland type, owing partly to the rougher nature of the land, is characterized by scattered houses and winding pathways, but, like the paddy type, most of the inhabitants are farmers.

. . . . Very little money for it, and what money it does receive goes out of the *mura* again to purchase sugar, salt, fertiliser, and manufactured articles. Increased production in recent years through improved agricultural techniques has been more than taken up by the increased population of the nation, especially in the nonproducing cities.

Through the silk industry almost every little village in Japan is tied to the world-market. Thus, while rice is the staple crop and chief means of subsistence in Suye, it is the price of silk that determines whether the village is prosperous or not. It is the cash paid for cocoons, through the big silk companies, that has much to do with the encroachment of a money economy into the countryside. The silk company representatives are the intermediaries in silk between the village and the world, just as the grain broker is in the field of rice.

The primary social unit in *buraku* life is the household. This household includes the small family, perhaps a retired grandfather or grandmother, and one or two servants to help in the household and farm labour. The size of a *buraku* is reckoned by the number of households, not by the number of people, and participation in *buraku* coöperative affairs such as funerals or bridge-building is per household, not *per capita.*

Land

Area of village	1,134 square *ri.*
Government forest land	3,620 *tan.*
Village government land (forest)	645 „
Village government land (other)	42 „

Farmhouses

Landowners	32
Landowner and tenant at once	112
Tenants	71
Total	215

(One *ri* = 2·4 square miles ; 1 *cho* = 10 *tan* = 2·5 acres.)

The greatest part of China's cultivable soil has been won by irrigation and flood protection ; the greatest part of Europe's cultivable soil has been won by clearing of the woods. Clearing isolates the villages ; irrigation and flood protection connects them. Clearing in Europe was organised to a considerable degree by feudal lords who planned their settlements systematically. Work on the rivers of China was organised by the Government, increasing in this way its administrative and

centralising influence while the peasants developed their villages and field systems within this wide net of the imperial administration. The towns of Europe are anti-feudal; they are the seats of trade and industry and the cradle of the capitalistic spirit. The towns of China were, in the early period, fortified places of the feudal lords, and later the seats of imperial officials and of trade and industry. But the capitalistic spirit does not find in them a fertile soil. The towns of Europe extend their sway over the countryside. The towns of China are far from any such supremacy. The growing individualism of Europe disintegrates the family; China preserves the family. In China the family tries to live up to certain principles of piety and solidarity uniting its members who have more duties than rights. The moral code is not mere window-dressing but a serious experiment in communal living. In Europe lip-service is faithfully paid to these principles but the rights of the individual clash with his duties towards the family. In Europe the towns as seats of capital and industry create the unity of the State on the basis of a national economy. In China the towns are local centres. Only a few big coastal cities through which the capitalistic spirit is beginning to infiltrate have a wider range of influence. In Europe home industry has practically ceased; in China it persists and is even undergoing an adaptation to modern production.

About 380 millions of peasants have roughly only 22 per cent. of the whole area of China as cultivable land at their disposal. Not only is the amount of land which can be allotted to the individual peasant much too small, but the graver problem has to be faced how this multitude of persons can successfully be absorbed into a modern economy. In spite of primitive means of production a high standard of intensive cultivation has been reached. But this result has to be paid for by human drudgery, by human poverty, by a check to technical progress and a retarding traditionalism. Chinese agriculture makes use of many hands just because they are available; and the people adhere so stubbornly to the old methods of work that they do not even think of changing them.

The problem "Man" remains a very acute danger for China. The yearly increase is about 10·9 per thousand of the living population, i.e. four to five millions if the increase were to persist at the same level. This would mean a doubling of the population every 65 years. Will it continue? To-day we are

witnessing one of those events which have only too often been the regulator in China's history—the senseless and brutal massacre of thousands and thousands of people, first of all of men but also of women and children as the last achievement of a " humane " warfare and of an imperialistic policy. Young Chinese suggest that the increase of population should be stopped by birth control. It is very doubtful if this would be justifiable even under normal conditions. To-day Japan has undertaken the task of reducing China's population. The problem is not one of reducing but of gradually redistributing the population. Is enough land available for this purpose? Are those forces strong enough which can change the social structure as an essential prerequisite of a redistribution on a large scale? It may well be that, for the time being, not very much land is ready for this purpose. But if modern science were applied to the fullest extent, it is almost certain that great areas of new land could be regained. It seems that efforts in this direction have been made. Yet this needs education and time. But China's past has proved that she is capable of a far-reaching transformation of her natural landscape and of changing it into a fertile man-made landscape. And it also needs time to remodel the social structure, all the more as even to-day, especially in the interior, the old family ties are very strong and foster conservatism. The disintegration of the old family linked together by the ancestor cult is one of the most momentous prerequisites of a redistribution of the population, for only then would the people be free to move to other places and only then could the graves of the ancestors be removed.

One of the difficulties in the process of resettlement is the great importance of the rural industries. One example may suffice to explain their significance; in 1930 machine-driven looms produced 207 millions pounds of yarn; hand looms, on the other hand, produced 754 million pounds. The country cannot live without rural industries, which are an essential complement of agriculture. There are two categories engaged in these activities: the family as part-time workers and the craftsmen as full-time workers. The discontinuance or even only a considerable decline of these rural industries would be dangerous apart from a preceding redivision of the land and a redistribution of the population in connection with a modernisation of agriculture in general. In such a case the exploitation of local natural resources and the improvement of the income

would cease before an appropriate substitute had been found. Moreover, the rural industries are a reinvigorating element ; in spite of their primitive methods they introduce a new spirit into the village, the spirit of the machine, of modern commerce and coöperation on a broad basis. These small-scale industries are powerful agents in detaching the peasant from his traditional attitude, for he himself has hardly a right judgement of the home market, and still less of the economic inter-dependence in the world market.

Besides a number of less important trades the chief industries produce textiles, food and chemical products. For instance, of 4 million households in Chekiang in 1933 950,000 were engaged in the production of cocoons, 24,000 with about 126,000 workers in paper making, 254,000 with 286,000 workers in straw hat manufacture, etc. The basis of these industries is nearness to raw materials, to a local market and to a sufficient labour supply. Or another case : the rapid development of hand-loom weaving in Kaoyang has three causes. The first set comprises poor soil, dense population, insufficient irrigation and small plots. The second consists of relatively good access to the raw materials and to the supply of machines ; Tientsin is 300 *li* distant, about 3 to 4 days. And finally, the demand is great. The weavers live scattered over the district. The dyers and calenderers who play only a minor part are concentrated in the workshops, 11 of which are situated in the town and 19 are dispersed over the district. The work proceeds under the supervision either of the head of the family or of former foremen who have established themselves, or in the form of workers' coöperatives. This latter category however is not important. In 1933 about 110,000 people worked on 27,600 looms in one part only of the district.

Old and new methods of work are coalescing. The old methods are being gradually adapted to the modern system of wages, of coöperative marketing, of the supply of machines, of increasing specialisation and to the formation of groups of skilled workers. The next step should obviously be to organise this decentralisation of industries systematically. It will be necessary to put the training and the actual work on a more rational basis by the establishment of training centres and laboratories in the district towns. Coöperatives for marketing activities and the supply of raw material as well as working coöperatives should be set up. The number of such coöperative societies is not yet great, but they were fairly successful before the war. The

following can be taken as the considered opinion of an experienced observer :

Machines should be used to increase human happiness. Unfortunately they have been used for the contrary purpose. But I still believe that it is the duty of the reformer who is trying to introduce these types of tool into China to find a way of using them properly. To me the most important thing is that men should not be slaves of machines, in other words, they should be owned by those who use them as a means of production. That is why I insist on the principle of coöperation. My other conviction is that the silk industry has been, and should remain, a rural industry. My reason is that if we attract the industry away from the village, as has been done by many industrialists and is so easy to accomplish, the villagers will in fact starve. On the other hand, I know very well how the workers are living in the cities. Village girls have been attracted by the opportunity to work in the city factories for a small wage on which they can hardly support themselves. They have left their homes. This process has ruined both the city workers and the village families. If Chinese industry can only develop at the expense of the poor villagers, I personally think we have paid too much for it. The aim of my work is to rehabilitate the rural economy through the introduction of scientific methods of production and the organisation of the new industry on the principle of coöperation.[1]

The Chinese Industrial Coöperative Movement has played a considerable part during the war, especially in connection with the migration of millions to the West. The scheme was the building up of a native Chinese industry as a counterblow against the Japanese economic offensive. Use was to be made of the many as yet unexploited raw materials in the interior.

A system of small industrial units was to be set up that would make use of handicrafts and at the same time standardise method and teach such semi-mechanical techniques as could be adapted from the West or be devised by Western-trained engineers on the spot. This system was to have its base in the small shop, democratically run and maintaining its own discipline ; but at the same time it would be linked by joint planning, joint marketing and supply, and joint social services into a large-scale industrial enterprise.[2]

Even to-day there are nearly 2,000 industrial coöperative societies in 15 out of China's 18 provinces.

Hsiao-Tung Fei remarks in this connection :

If we can produce with lower labour costs silk equal in quality to that of the larger factories, we can extend this system without fearing competition from factories in the cities. Through this small-

[1] Hsiao-Tung Fei : *op. cit.*
[2] A. Hogg : In the *Manchester Guardian*, No. 29543.

scale factory, rural industry can get a firm basis and the rural economy can be rehabilitated. We started the experiment in 1929.

Taxes and surplus taxes have been abolished; landowners are asked to provide agricultural work for all persons living in their districts; land exceeding a certain standard amount falls under a system of a progressively increasing taxation, the proceeds of which are reserved for institutions promoting agricultural pursuits. Some interesting and independent testimony concerning the development of coöperative societies was given by C. F. Strickland, who was sent out to China at the end of 1934 to engage in educational work in various universities in Nanking, Shanghai and elsewhere. He is an authority on coöperative work. As a result of his observations in China he said that he found the field particularly hopeful as the Chinese farmer offers fine material for organisation into small groups to circumvent the money-lender and to improve marketing. The groups already in operation were mostly small, with a membership numbering from 20 to 30 farmers in one village, who have subscribed a few dollars of their own and borrowed from the bank for agricultural and other purposes. It was his opinion that in course of time there would be from 200,000 to 300,000 such groups in China, and all that was needed was coördination between the various groups working in different parts of the country. There are two remarkably good factors in China—firstly, the farmer seems able to manage his own affairs very capably, having his own primitive but strong organs of village life into which coöperative societies fit very well; secondly, Chinese banks are more willing to lend money to coöperative societies of farmers, if properly organised, than had been his experience anywhere else in the world.

Rural industry is of special importance because it is a focal point in the process of the changing structure of settlement. Yet this problem can be solved only within the larger framework of the rebirth of the whole of China. It is especially closely linked up with the rejuvenation of agriculture and village life, so much so that a separate development is not feasible. It should be borne in mind that about one-fifth of all work done in the village is other than purely agricultural work, and that only about one-third of all able-bodied men are employed in agriculture. The winter months alone account for roughly four-fifths of the involuntary leisure. Further it has been asserted that the farmer tenants, whose property in land is on the average

smaller than that of the farmer owners, are in general more often engaged in home industry than the owner-occupiers and the half-tenants. As a reorganisation of the whole system of tenure is one of the crucial problems of China, considerable difficulties are still to be overcome in this respect also. It is likewise with the redistribution of the land, which encounters great complications because the collective property of the clans cannot easily be alienated. This would not be a disadvantage in itself if these " collective landlords " did not prevent the rationalisation of agriculture. Their influence should not be underrated ; for instance in Kwantung almost half of the cultivated land is clan-land. The poor farmers suffer because a mere lucky few own or control practically everything.[1]

To these more or less man-created complications must be added the natural difficulties produced by geophysical factors.[2] The natural disadvantages are first of all the danger of the exhaustion of the soil, the far advanced devastation of the forests, soil erosion, the lack or abundance of rain, floods, and the limited possibilities of extending the cultivable area. The flooding of the Yangtse valley in 1931 is a graphic example of the destructive power of such natural catastrophes. The already high waters of the Yangtse rose through heavy rains to such a level that they flooded an area of about 14·5 millions of acres of cultivated land. About 4·2 millions of peasant households, i.e. about 25·2 million persons, were directly affected ; a number which corresponds almost to the whole farm population of U.S.A. 40 per cent. of all families had to leave their homes. 45 per cent. of all farms were destroyed.[3] On the other hand there are economic and social disadvantages of a general character such as the great density of population, insufficient communications, exploitation of the farmers, out-of-date methods of cultivation, political unrest, an increase of population which means a lowering of the standard of living. Buck makes concrete suggestions in his *Land Utilisation in China* for remedial measures, the most important of which will be mentioned because they go to the root of the problem and because the Government had already embarked on them before the war. They are : conservancy projects to prevent or minimise floods ; reclamation projects such as irrigation of good land not now cultivated and drainage of lands which should be brought

[1] Chen Han-Seng : *Agrarian Problems in Southernmost China.*
[2] R. H. Tawney : *Land and Labour in China.*
[3] University of Nanking. Department of Agricultural Economics : *The 1931 Flood in China.*

into cultivation ; soil conservancy projects to prevent erosion of good soils ; forestry projects ; a land programme of keeping or restoring the land in the hands of those who work it, of consolidation of holdings and an accurate survey and registration of all land ; the creation of special project areas where the area is taken as a unit of improvement ; a system of agricultural experimental stations and agricultural educational institutions ; technical agricultural improvements ; a system of agricultural credit ; a system of agricultural coöperation ; the development of highways and railroads ; farm management projects where the best combination of factors of production is utilised for the most profitable type of farming.

The two most salient points of the Kuomintang programme are that landowners must give to all persons in the village capable of tilling the soil an opportunity to work on their farms, and that maximum size of land holdings must be limited. This sounds well enough, but it is insufficient. According to unpublished statistics of 1926 about 10 per cent. of the rural population owned about 70 per cent. of the cultivated land. The situation of the rural population has grown increasingly worse during the last decade, quite independently of wars and other catastrophes. Szechwan for instance is one of the provinces where taxes have been collected sixty years or more in advance, and thousands of acres of land have been abandoned by farmers unable to pay rents and outrageous interest on loans. On May 15, 1937 *Democracy* reports :

Famine conditions continue to be reported in Honan, Anhui, Shensi, Kansu, Szechwan and Kweichow. Quite evidently the country faces one of the most severe famines of many years, and thousands have already died. A recent survey by the Szechwan Famine Relief Commission discovered that 30 million people are now in the famine belt of that province where bark and " Goddess-of-Mercy " earth are being consumed by tens of thousands. There are said to be over 400,000 famine refugees in Shensi, over a million in Kansu, some 7 million in Honan, and 3 million in Kweichow. The famine in Kweichow is admitted by the Official Central News to be the most serious in 100 years, affecting 60 districts of the province.

And an illuminating conversation with a farmer near Kansu border :

I asked this old man how much land he had. " Land ? " he croaked. " There is my land " and he pointed to a hilltop patched with corn and millet and vegetables. It lay just across the stream from our courtyard. " How much is it worth ? " " Land here isn't

worth anything unless it's valley land," he said. " We can buy a mountain like that for $25. What costs money are mules, goats, pigs, chickens, houses and tools."—" Well, how much is your farm worth, for example ? "—" You can have the house, my animals and tools for $100—with the mountain thrown in."—" And on that you had to pay how much in taxes and rent ? "—" Forty dollars a year."

On the one hand impoverishment is spreading and increasing, and on the other the concentration of the land in the hands of a few is growing. This antagonism of the very poor and the very rich is the great danger of the future. No wonder, therefore, that great numbers of the rural population are discontented and attracted by the Chinese Soviet Government.[1] President Mao Tse-liung reports on the agrarian programme in 1934 :

The principle of Soviet land policy is completely to wipe out feudalistic oppression and exploitation. In all villages under Kuomintang rule there are appalling rents for land, extortionate usury and oppressive taxation. . . . Consequently the ownership of the land is concentrated in the hands of landlords and rich peasants. The overwhelming majority of the peasants have lost their land, and are forced to live in extreme misery. The whole country is therefore exposed to the danger of flood and drought without adequate means of protection. In the Soviet districts this revolution has wiped out all the remnants of feudalism. . . . As to the methods of partition of land in relation to the questions of distance from the dwelling, fertility, timber, water supply etc. it is now urgently needed to work out a definite resolution based on experience in all districts. (1) A complete mobilisation of land workers, poor and middle-class peasants for struggle against the landlords and the rich peasants is necessary for the partition of the land. The partition of land and the inspection must be done with the consent and coöperation of the masses of the peasants. (2) When property other than land and the surplus draught cattle and farm instruments are confiscated, the greater part of them must be shared by the poor peasants. (3) The partition of the land should be completed in the shortest possible time. The aim of the agrarian revolution is not only to solve the land problem for the peasants but also to stimulate them to increase the productivity of their land. In many places coöperative organisations for ploughing and land work have been organised. Large numbers of women have taken part in " shock work " in agricultural production. Such things as these have never been known under the rule of the Kuomintang. Under the present conditions agricultural production is the primary task in the economic reconstruction. Not only does it solve the food problem but it provides raw materials for articles of everyday consumption. Included in its scope are afforestation and the increase in the amount of livestock. It is not at present necessary to set up

[1] *Red China :* President Mao Tse-liung reports on the Progress of the Chinese Soviet Republic.

collective farms and Soviet farms, but we have to set up experimental stations in each district and to establish agricultural research institutes and exhibitions of agricultural products in order to teach the peasantry how to improve the quality of their crops.

Under the pressure of events these plans had to be reduced and finally abandoned. If the Government understand how to make the right use of the energies of the farmers after the end of the war and to pursue a bold agricultural policy the dangerous antagonism between the poor and the rich can at least be lessened.

"The land belongs to those who till it" was the doctrine of Sun Yat-sen. But he states also that it is just the smallness of the plots which compels the landlord to extract the highest rents from his tenants. Although it is not quite correct that 90 per cent. of all peasants do not live on their own land—the figure given by Sun Yat-sen—tenancy is extremely widespread and detrimental. Altogether about 46 per cent. of the peasants are owners of their land; 25 per cent. are partly owners and partly leaseholders; and 29 per cent. are tenants proper. South of the Yangtse about 40 per cent. of all peasants are tenants and 20 per cent. to 35 per cent. may be owners. In the northern provinces the situation is different: about 50 per cent. are owners and less than 20 per cent. are tenants. In Honan, for instance, only 20 per cent. are tenants, and it is similar in Shantung, while in Chihli, Shansi, Shensi, and Kansu only 10 per cent. are tenants. It is different in the coastal province of Kiangsu, where about 67·4 per cent. of the land is leased and where even small peasants are sub-landlords. The population increases and crowds together in an unbelievable way. About 70 per cent. of the rural population is in dire need of land. Investigations brought to light that in some districts 3 per cent. of the rural population own 80 per cent. of the land. This very unfavourable distribution complicates the problem still more. To-day the standpoint of the Government is—according to the *Chinese Year Book*: "China abolished the feudal system of land tenure centuries ago. Private ownership of farm land is the rule and inheritance is the chief method of getting ownership."

Emigration helps but little to relieve these conglomerations in spite of the great emigrations to Manchuria. The main stream of emigrants to Northern Asia and Mongolia comes from the interior and the North. To-day about 30 million Chinese are living in Manchuria as compared with only half a million Japanese. The net profit of the South Manchurian Railway

between 1906 and 1931 reached the amount of 900 million yen for an invested capital of 800 millions. In the future emigration and uncontrolled internal migration as consequences of floods, bad harvests and famine can be eliminated if a systematic redistribution of population coupled with a rationalisation of agriculture and industry is carried through on a large scale.

A certain amount of land is still available for new settlement within China's own boundaries. The Government assumes that about 47,000 square miles are available as a cultivable reserve which could be settled at a ratio of 300 to 400 per square mile, so that roughly 14 to 19 millions could be settled on this area. This is one of the possibilities. The essential point of the Government's reconstruction programme as it was envisaged before the war consisted in a redistribution of the population in order to relieve the pressure on the more densely inhabited parts of the country, and at the same time to increase the output of agricultural products and to make the country less dependent on imports.

The economic pressure of the agricultural population is, over wide areas, appalling. China's population of 450,000,000, if distributed equally over her whole area, would give an average density of 105 persons to the square mile ; but the distribution is not equal. The people are concentrated in five thickly populated areas, 83 per cent. occupying only 17 per cent. of the land where the average density is over 500 to the square mile, rising in some places as high as 1,000. 65 per cent. of the rural population is in dire need of land. The cultivable land averages out at 15 to 20 *mow* per family of 5 to 6 persons. From such a condition of overpopulation there are only two ways of escape : the historical way of destruction by calamities such as famine, civil war, pestilence, earthquake, flood ; or emigration either within China herself or overseas. It is in this latter connection that the North-West is so important, especially now that Manchuria is lost as an outlet. Settlement is governed by climatic conditions, soil and topography. Most of the land which is suitable by the nature of the soil suffers from lack of water. Irrigation schemes, therefore, must be an essential complement of any plans of settlement. When this is taken into consideration, there are six areas which lend themselves to such development :

(1) the Weiho Plain in Central Shensi, 4,500 square miles in extent.

(2) the Suiyuan-Patow Plain. Area 3,000 square miles.

(3) the Hotao Plain, north of the great bend of the Yellow River. Area 4,000 square miles.

(4) the Ninghsia Plain between the Alashan Mountains and the Yellow River. Area somewhat under 4,000 square miles.

(5) The West Kansu Plain around Liangchow, Kinchow and Suchow. Area 12,000 square miles.

(6) Sinkiang. The area of this province (700,000 square miles) is five times that of Chekiang, but extensive deserts and mountains reduce very considerably the area for cultivation.

There are thus in all some 47,000 square miles available for settlement, which at 300 or at the most 400 persons to the square mile would support a population of from 14 to 19 million. Allowing for the people there already the total possible increase cannot be more than 10 million, which is not really a great number in comparison with the need. Commercial and industrial developments may, of course, enable this figure of 10 million to be increased, but even at that it seems as if the high hopes entertained of the North-West as a solution to China's agricultural problems have been somewhat too optimistic.[1]

Another possibility which could absorb considerable parts of the population is a gradual industrialisation if it were carried out systematically and on progressive principles. The industrialisation of China is a problem of settlement, and means in fact a redistribution of the population and the abolition of the antagonism between town and country. The prospects are not unfavourable, since the vast extent of China offers a multiplicity of possibilities of settlement and an almost complete self-sufficiency in foodstuffs and in industrial raw materials. G. B. Cressey says in *China's Geographical Foundations* : " China probably leads the world in total agricultural production. Despite the importance of agriculture China fails to produce enough food to feed her own population, and each year imports large quantities of sugar, rice and wheat." There is a Chinese saying : To learn to be a farmer one need not study, one need only do as one's neighbour does. Everything is built on human labour which is available in abundance. In general the Chinese family unit is larger than the European, not only because there are more children but also because it comprises also grand-parents and other relations. Buck states in *Chinese Farm Economy* : " Other occupations in which farmers can engage are so limited that the farm land has to be divided according to the farm population. Each succeeding generation of sons, upon inheriting land from their fathers, can testify to a size of holding diminishing with each redivision. The result is a farm smaller than the best economic unit for profits." To this joint family must still be added the " economic family " which consists of persons who are economically dependent on the farmer and live on the farm. Because of the great difficulties of a change of occupation the smallness

[1] T'ang Leang-li : *Reconstruction in China.*

of his plot forces the farmer to try everything possible to find extra work. The University of Nanking found that in some districts over 15 per cent. of the net income arose not from agriculture but from other sources, such as weaving, milling, oil pressing, manufacture of silk, tea, sugar, paper, utensils of wood, bamboo and straw. During winter the peasants try to find work at least temporarily in the neighbouring towns.

The attachment to the soil and to the ancestor cult is still great, and is an additional reason why migration to less densely populated parts is not too attractive. Thus it is not astonishing that even the small farms are over-populated. The income decreases still more and the level of bare existence is hardly ever reached. The China International Famine Relief Commission's investigation of 204 villages with 7,097 families in Chihli, Kiangsu, Anhui, Shekiang showed that the minimum of existence was not reached by a fifth in the eastern provinces and a half in the northern provinces. This means that 17·6 per cent. and 62·2 per cent. respectively live on less than 50 Chinese dollars for a whole year. An interesting comparison is the development in France where the inter-dependence between the division of land and the growth of population is also evident, though in another way. After the abolition of feudal rights individual ownership of the land was proclaimed as one of the main doctrines of the French Revolution. The small farmers managed to keep their property intact throughout all the political troubles of the following century.

> The slow growth of population and its actual decline on the land have prevented any conspicuous increase in the subdivision of the holdings. It could in fact be said with almost absolute truth that the population has not grown in order that holdings might not be subdivided ; some of the districts where the fairly prosperous peasant owner or the comfortable farmer predominates being those in which the birth rate is lowest. Such are the Garonne valley, Burgundy and Normandy.[1]

The Rural Rehabilitation Commission of China stated in 1933 that the surplus taxes surpassed the original taxes twenty-five times. As over 80 per cent. of the Chinese population are peasants, by far the greater part of the public revenue depends on the financial position of the peasantry.

A Chinese press on Haimen on the north bank of the Yangtse in Kiangsu has said :

[1] Clapham : *Economic Development of France and Germany.*

It was settled from the island of Chungming which at this time was already overpopulated. To-day there are 600,000 farms on 965 square miles. So long as there were not very many farms and the soil was not exhausted the farmers produced good harvests. Now all this is changing. The soil is becoming more and more exhausted but the population is rapidly increasing. . . . In the mountainous parts of northern Szechwan also the farms are small, but the population is growing without a corresponding development of commerce and industry. The number of tenants increases, while that of owner-farmers decreases.

There are large estates but, as already mentioned, they are the exception. Besides private land, clan and temple land are leased, especially in the Southern provinces.

Including the outer parts, Sinkiang, Mongolia, Tibet, the total area of cultivated land rises to something near 1,250,000,000 *mow*. Cressey remarks in this connection that " China does not possess vast areas of good unused agricultural land. Six-sevenths of the population are concentrated in one-third of the area. The great mass of the population is restricted to the eastern half, which may be termed the agricultural China. The mean density is there 326 per square mile."

It has been suggested that a further intensification of cultivation is possible only to a limited degree. China's problem may be stated as follows : either the population must be reduced or production must be substantially increased. " The best future solution of the problem seems to be in some method of population control, and the best immediate solution more intensive methods of raising crops and the growing of crops that produce more food per unit of land. Such productivity, however, will also be useless if the population continues to grow." [1]

What matters is not the total amount of the yield of the land, but how much can be apportioned to the individual person. In earlier periods very definite views in this respect were held, but they were abandoned in the course of time. Thus Mencius remarked as early as the fourth century B.C. : " An increasing population over a long period of time brings about strife and disorder." And Han Fei-tzu, a contemporary of Mencius, said : " In ancient times people were few, but wealthy and without strife ; the Government gave no rewards or punishments, because people were self-controlled. People at present think five sons are not too much, and each son has five sons. Therefore, people are

[1] I. L. Buck : *op. cit.*

more and wealth is less ; they work hard and receive little. The wealth of a nation depends upon people having enough food, not upon the number of people." The industrial development of China is closely linked with the system of land tenure, because the farmers' purchasing power is too small for them to buy manufactured goods, and because the profit of the landlord flows back into agriculture and is not invested in industry.

Probably the reshaping of the agrarian structure is the factor most important for China's reconstruction. The Chinese village is in the melting-pot. Its stability has been shaken, and the exorbitant burdens imposed on the farmer demand drastic measures. The agricultural concentrations are first of all the consequence of social conditions, and only thereafter the result of geophysical factors. Following the investigation of Messrs. La Fleur and Foscue quoted by L. D. Stamp in *Asia,* only a quarter of the cultivable land is cultivated :

> They point out that, if one takes the whole of Chinese territory (China Proper, Manchuria, Mongolia and Sinkiang, but excluding Tibet), the total area is 2,440 million acres. Half is too arid (1,146 million acres) or too cold (64 million acres) ; mountains cover a fifth (488 million acres) and infertile soil 36 million acres, leaving 29 per cent. of the whole (706 million acres) suitable for cultivation. Out of the latter it is estimated that only about a quarter (176 million acres) is actually cultivated. Why should China cultivate only one-fourth of her cultivable land when she is in constant need of food for her teeming millions ? The answer may only be suggested here ; and that is, China lacks machinery and its corollary—power, and cannot afford to farm the marginal lands.

It should be mentioned, however, that according to American estimates the Chinese have completely taken up the land capable of yielding a good supply. Opinions differ, but the extension of settlement to land hitherto used little or not at all is so essential that the divergent use should be taken into account. The more attachment to the ancestral home disintegrates, the more will the possibility of a redistribution increase. O. E. Baker estimates " the ultimate area suitable for cultivation on the basis of climate, land forms and soils at 700 million acres ". He compares the Chinese conditions with those of the U.S.A., but this comparison does not seem quite appropriate. They are, nevertheless quoted with the following reservation, according to Cressey :

> The Chinese Republic has, therefore, about 29 per cent. of its land area physically available for crops. In the United States the corresponding proportion is 51 per cent. But as the Chinese Republic

has a population of about 440 millions and the U.S. less than 120 millions, the area of land on which it is physically possible to grow crops is at present 1·6 acres per person in the Chinese Republic and 8·1 acres in the U.S. In other words the U.S. now has five times as much potential crop land *per capita* as the Chinese Republic.

The cultivated land has not essentially increased during recent decades. This is confirmed by the National Agricultural Research Bureau : " The area of farm land in China—taken as a whole—has remained very much the same as before." For instance, during the last sixty years the population of Kiangsi and Fukien has increased by 31 per cent., the farm land only by 1 per cent. While the population as a whole has multiplied about 10 times since the Han period, the cultivated land has only doubled. Cressey gives the following table :

Year.	*Cultivated Land in* mow.	*Population.*	*Cultivated Land* per capita *in* mow.
145	695,767,000	49,524,000	14·04
1490	423,805,000	53,281,000	7·95
1578	397,000	60,692,000	11·55
1661	549,357,000	104,707,000	5·24
1766	740,449,000	182,076,000	4·07
1872	819,453,000	329,536,000	2·49
1916	1,384,937,000	409,500,000	3·38

The development will lead to a more even distribution, which will, however, be possible only after a thorough reorganisation of agricultural and social conditions, and only in connection with a rational mechanisation which replaces human labour by the work of machines. These needs have been recognised in China, but the political situation has made their realisation impossible. Attempts to alter the agrarian structure have repeatedly been made in the past. In the earliest periods the land was collectively owned and was redistributed yearly under the *tsing tien* system. After the abolition of this system individual ownership began to develop. This was the basis of all future difficulties, for during the following millennia the pendulum swung between individual ownership and attempts to introduce a certain measure of collectivisation. Wang An-shi tried to revive the old institutions in the eleventh century, and to restore collective ownership. He failed because the big estate owners obstructed reform—as they have done everywhere and at all times. Later a partial reform was undertaken under the Ming Dynasty, which produced certain results. The modest achievements secured by these measures were that the crown land was not to be sold

but leased, and that all privately-owned land over 1,000 *mow* was to be handed over to the State. Although the development of large estates was checked, the result was merely that a system of land tenure was put in its place which decidedly contributed towards the deterioration of social conditions and checked the distribution of population and settlement in the future.

The intensification of Chinese agriculture and the circumstances mentioned above produced the result that the average amount of land per head of the population is less than 0·4 acres,

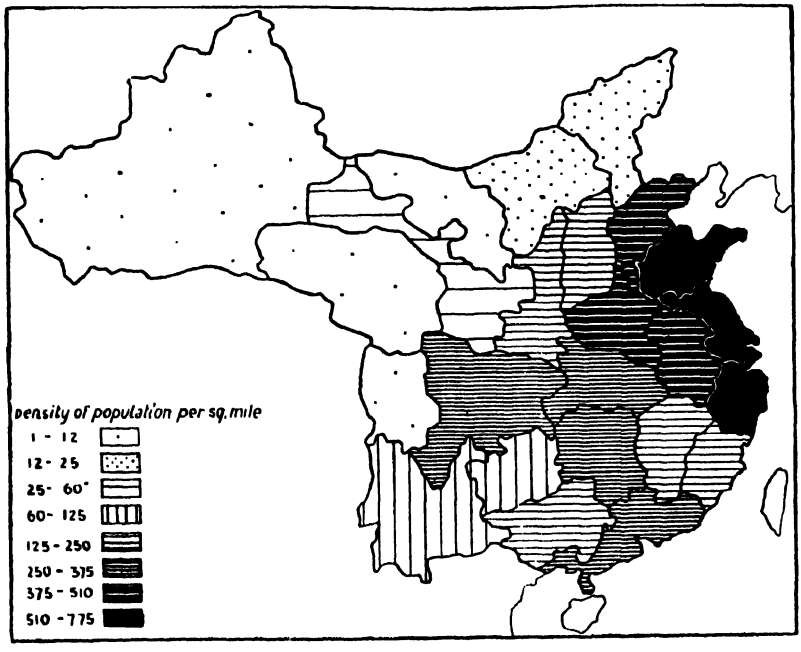


Fig. 38. Density of Population

and in many cases little over 0·2 acres. These little plots resemble gardens cultivated with an almost incredible care. The fields are scattered, and are on the average about a third of a mile distant from the home. Yet the subsistence of whole families depends on these tiny plots. Roughly 80 per cent. of the whole population is engaged in agriculture, an enormous number of human beings who are forced to live under miserable conditions.

The density of population in relation to the whole country is not high ; it is 238 per square mile. But this proves only that the general distribution of population is unbalanced. In some

districts the density rises to 3,000 persons with 1,000 domestic animals, and in others even to 4,000 and more per square mile. Moreover, we should not forget that all these people do not receive additional supplies of imported food.

Whole provinces, as large as European states, [writes R. H. Tawney], may properly be described as congested districts. The struggle of a swarm of human beings for a bare physical existence is an ever-present reality. All the phenomena of rural distress,—minute holdings, tiny incomes, female infanticide, starvation—are the unavoidable result of it. The catastrophes which shook the West are merely the sensational revelations of a process of readjustments which is continuous and inevitable. They are the occasions, so to say, on which Nature shows her hand. Famine is the economic, civil war the political expression of the pressure of population on the means of subsistence.

A brief comparison with the agricultural structure of Japan may help to bring the problem into still greater relief. In general the Japanese situation resembles that of China, although it differs in detail. The impoverishment of the peasant, the smallness of the plots, the high intensification of cultivation and the great density of population and settlement are parallel. About half the population is engaged in agriculture. The absolute density of population is very high because the cultivable land is considerably restricted by geophysical factors. Nevertheless possibilities of a better distribution of population exist. M. Yamamoto states in an article on " The Question of Population in Japan " published in the *Economic Review of the University of Kyoto* :

The following are the four means of securing enough food for a larger population :

(1) expanding the area of arable land by reclaiming marshes and cultivating waste lands ;
(2) expanding the area of the rice land by readjustment or rearrangement of the paddy fields so as to have fewer divisions or paths between them ;
(3) more intensive farming ;
(4) to carry out the above mentioned methods in the colonial possessions as well as in the mother country. There is in Japan's mainland and in Hokkaido approximately two million *chobu* of uncultivated land, and this area constitutes one-third of the total area of the cultivated land in Japan. Of the former area about 700,000 *chobu* can be turned into rice fields. This certainly shows that there is much room for an increase in the amount of food products.

The fact that these postulates have not been fulfilled hitherto merely proves that the peasants could not cope with them by their own efforts. But the State gives assistance first of all to industry, for industry is a political instrument of expansion. An efficient internal colonisation, on the other hand, would counteract these tendencies. A further intensification of agriculture is possible only if the farmer receives active help and systematic advice which can free him from his traditional methods. Yamamoto says: "True, our farming has a long history, but our farmers have notoriously neglected the studies into the adaptability of seeds to different soils." From the point of view of food supply alone the yield of the soils should be increased. To-day the yearly increase in the rice cultivation can feed only one-quarter of the yearly increase of population. On the other hand the occupation of the agricultural population is a very acute problem, as agriculture cannot absorb the available labour and industry can offer openings only to a limited extent. A redistribution of the Japanese population is the only reasonable solution in the interest of home and foreign politics. A peaceful emigration to the outlying parts of the Japanese Empire would considerably relieve the situation. For two centuries Japan was secluded from the outer world. Emigration was a capital offence. Although there were ample opportunities of emigration before the war the Japanese Government did not encourage any emigrations but those which were directed by the State and served political purposes. Let us assume that the official figures are correct, and that only 17 per cent. of Japan's soil, i.e. 147,500 square miles, is cultivable. In this case about 70 million Japanese would live so closely together that a density of about 2,500 persons to every cultivable square mile would be the result. Moreover, the increase of population and the decrease of the agriculturally used area respectively are evidence of an unfavourable trend, for we can hardly speak of an increase of the agricultural area if, for the period 1919 to 1930, the relation is such that the agricultural area has increased only to 107·6 while the population has grown to 138·2.

In spite of Japan's extremely long coast line, Japanese expansion is a phenomenon of recent times. Up to 1867 the population was relatively stationary. Between 1726 and 1846 it was about 25 millions. After the enforced opening of the ports it soon doubled, and the density per square mile increased correspondingly.

In the thirties of this century only about 900,000 Japanese were living abroad. This means that there was practically no emigration. In Korea for instance about 200,000 of the 500,000 Japanese live in the larger towns. Together with those living in the smaller towns about 50 per cent. are engaged in non-agricultural activities. The same holds good for Formosa. Manchukuo seems to be an unsuitable territory, as even the climate of Korea is regarded as unfavourable. The Japanese Ministry of Foreign Affairs remarks in this connection that Manchukuo and Mongolia are the most favourable sources for the supply of raw materials because their nearness facilitates transport and because longer routes were vitally dangerous in times of war! This proves that raw materials are the actual stimulus to their occupation, not land for migration from the "overpopulated" mother country.

One explanation of the inconsiderable emigration may be found in the specific structure of Japan's industrial capitalism, which is dependent on the reservoir of the masses of unfree workers who cannot move of their own free will. Such a system needs more than others to keep down the wages of the masses, to produce cheap goods, and to expand exports at dumping prices, even at the cost of a low standard of living for workers and peasants alike.

Japan's rural population is gradually declining. In 1898 it was 82 per cent.; in 1930 it had fallen to 49 per cent. But in spite of this fact rural concentrations exist, as for instance in Kagawa in the north of Shikoku with 1,024 per square mile. Such conditions are entirely the result of the lack of balance between town and country. Japan has repeated, on an intensified scale and in a shorter period, the mistakes made by Western Europe and the East of the U.S.A. Between 1898 and 1925 her total population increased by 16 million. The number of persons living in towns with over 10,000 inhabitants rose during the same period from 8 million to 21·8 million, i.e. 85 per cent. are absorbed by the towns. On the other hand, the wages of agricultural workers are 30 to 40 per cent. lower than in 1930. But in spite of this the percentage of taxes paid by the farmer is higher than that paid by the employer. All this produces a pressure upon the population, but this pressure does not lead to a comprehensive emigration.

If only the cultivated land of Japan proper is taken into account, the density of population is 2,913 per square mile.

For the agricultural population alone it is 1,369 per square mile. According to these figures each family would own less than half an acre of land. 14,613,905 acres of cultivated land are available; 5,633,800 farmer families have to share in this amount. The *Japan-Manchukuo Year Book* gives the following figures for 1934:

	Number of Families.	*Per cent. of total number of Families.*	*Area per household in Hectares.*
Japan proper . .	5,633,800		1·05
Chosen . . .	2,881,689	79·8	1·54
Taiwan . . .	414,860	48·7	1·95

The small Japanese farms consist of a number of scattered plots. "This open field system," says G. T. Trewartha in *A Reconnaissance Geography of Japan* "has resulted from centuries of renting, buying, bartering and inheriting. Each of the individual parcels of land is further subdivided into little fields of various sizes, shapes and dimensions." About one-fifth of the irrigated land is insufficiently supplied with water and another fifth is insufficiently drained. If technically improved many fields could yield two harvests instead of only one under the existing conditions. But it is difficult to increase the size of the fields as such and in this way to reduce the density of settlement. During fifty years the increase of the cultivated land was roughly 4 million acres. This was achieved not so much by the reclamation of waste land as by the reconditioning of existing and neglected fields. Moreover much of the land thus regained has been used for industrial crops such as sugar, mulberry trees, etc.

Mechanisation of Japanese agriculture is difficult not only because of geophysical factors but also because the existing social structure is a great handicap. The use of machines would demand larger units of cultivation and create a surplus of agricultural labour. How and where can the displaced workers be absorbed?

"Farms on the levels and valley floors at least must be combined and cultivated as larger units. Machinery can then be used for much of the work. For this no less than for satisfying the conflicting demands of tenant and owner, the land will before the end probably have to be nationalised or semi-nationalised in some form or other and then a redistribution effected." [1] This is, of course, a problem of great political significance and its solution would inevitably raise rather delicate issues of home

[1] W. R. Crocker: *The Japanese Population Problem.*

policy. Large-scale agriculture does not exist in Japan; but there are large estates with tenant farms, foremost among them those of the Crown. In 1932 the distribution was as follows: [1]

Number of families owning farm land:	
Less than 0·5 hectares	2,546,089
,, ,, 0·99 ,, ...	1,286,050
,, ,, 2·98 ,, ...	903,415
,, ,, 4·96 ,, ...	222,327
,, ,, 9·92 ,, ...	112,449
,, ,, 49·59 ,, ...	46,270
More than 49·59 ,, ...	3,738
Total	5,120,338

Kawada remarks: "The so-called wealthy farmers and big landlords are very few in our agriculture, the majority being small land-owners and independent or semi-independent peasant farmers." But under what conditions! In another connection Kawada explains the situation as follows:

In the first place, although the concentration of land ownership did not take place extensively in our country, overpopulation in agricultural communities had a disastrous effect upon the tenant farmers inasmuch as demand for rice fields exceeded supply. The laws of supply and demand operated in favour of the landlord. In the second place the social position of the landed proprietors and their powers which are the remnants of the feudal system had the same effect against the interests of tenants.[2]

And further:

The wages of agricultural workers will not be raised unless their standard of living is raised and they are enabled to get the benefits of cultural life. Unless their wages are raised to the same level as those of city workers, they will leave the farms for city life and thereby strain the labour shortage on the farms and add to the list of unemployed in the city. . . . The decline of small landlords has been going on with increasing rapidity in our country. The only remedy seems to be a drastic revision of the existing tenant system itself. As long as someone must till the soil belonging to some other private person on some contract evils will persist and remain. There are two effective proposals: let all tenants own the land they now cultivate—or nationalise the entire arable land and let the tenants rent it from the State. If our country should go back to the Era of Taikwa (middle of the seventh century) and carry out the policy of the nationalisation of land, there would be no landlord to whom

[1] S. Kawada: "The Japanese Agricultural Community and the Composition of its Population." *Journal of the Osaka University of Commerce*, 1935.

[2] *Idem*: "Tenant systems in Japan and Korea." *Kyoto University Economic Review*, 1926.

a tenant must pay rent and all tenants would have no trouble over the land with private landlords. In old times an extensive coöperative enterprise was found in agriculture. The history of economy shows that in ancient times land was owned in common by the clans and villages and its cultivation was also carried out in common. A long period has elapsed since individual ownership and cultivation of soil became universal, and in modern times in particular agriculture has become individualised. The individualisation of agriculture in our country the population of which is very dense has tended to decrease the area of individual holdings; intensive cultivation has also tended to make the area smaller and smaller. This tendency is in direct opposition to the ever increasing expansion of industry. However, the superiority of large-scale industry over small-scale industry is becoming more and more pronounced, placing agriculture in a more and more disadvantageous position in its competition against other industries. In order to enable our agriculture to compete against other industries it will be necessary to make it a large-scale industry. Efforts should also be directed towards a breakdown of the present condition in which the city and the country have distinct culture so that there exist two societies within the same society.[1]

Fundamentally the fate of Japanese peasants has not changed since time immemorial. It is different to-day only in so far as in early times neither density of population nor density of settlement were so high as they are at present. They have increased to an almost unbearable point as the result not only of an increase in the population but also of the unsatisfactory social structure of the country.

Under the *shizoku* system the Emperor was merely the head of the Imperial family proper, while the other clans were ruled by their own chieftains. There were only two classes of land, namely imperial property and land belonging to these influential persons, who in the course of time annexed more and more land, sometimes up to 500 or 1,000 acres. A stratification of society developed when slaves of the nobility together with the common people had to cultivate the land. The *handen* system introduced some reforms; it permitted only the usufruct of those lands which were regarded as public property under this system. Every household received a certain amount of such land, but it was not allocated to individual persons. Gradually, about A.D. 720, this principle disappeared again, because the fields were neglected the nearer the date of their return to the State approached. Besides this procedure land gained by reclamation or clearance was allotted as private property to individuals who had done the work either themselves or with the help

[1] S. Kawada: *Agricultural problems and their solution in Japan.*

of others. Thus the private property of the rich and influential increased while the area of Crown land so far as it was cultivated decreased and the old inequality began again.

In the eighth century land was the sole source of economic power. Private property and tenancy existed side by side, and slave labour was extensively used. At the end of the eighth century under the *shoen* system the increasing population made the cultivation of more land necessary. Later, in the eleventh century, new attempts were made to remedy the bad conditions which had developed in the intermediate period by setting up a special office. But over and over again these efforts were frustrated, as for instance by the Emperor Shirakawa, who, being a Buddhist, allocated large areas of land to the temples. Under the decentralised feudal system of the thirteenth century the feudal lords owned much private property. However, they were forced to sell large tracts of their land to meet the expenses of their luxurious life. During the period of the centralised feudal system in the middle of the seventeenth century, i.e. during the Tokugawa period, the sale of land was forbidden. The idea was that this would prevent the rich from becoming richer and the poor poorer, and the land from being still more subdivided. But as usual most of these laws remained mere good intentions. The impoverishment grew ; financial assistance was given only to the rich, who derived increasing profits from the growing poverty of the peasants. E. Honjo remarks in *The Agrarian Problem in the Tokugawa Period* : [1]

It was laid down that unless they owned land covering over 1 *cho* (2·45 acres) which yielded rice amounting to over 10 *koku* (some 50 bushels) farmers should not divide their land among their children, because it was feared that if the division of land were allowed unrestrictedly, there would be created numberless poor farmers. According to the *Seji Kemmonroko*, all good farms fell into the possession of the rich, the poor owning only such farms as could produce but little. If the lot of common farmers was a very hard one, the life of tenant farmers was positively wretched. In a book entitled the *Minkan Seiyo* we find the following : Landowners know perfectly well that tenant farmers can hardly find their account in farming and wonder how they can manage to pay their landowners their rents in rice as stipulated. Yet landowners think it politic not to betray what is in their minds.

The more the large estates increased in numbers and in area the more did the number of tenants increase also. This is a

[1] *Kyoto University Economic Review*, 1927.

natural process ; work has to be provided for the peasants as a basis of living and the land has to be cultivated in the interest of the community. During this period, in the years 1783 to 1787, a great famine caused much suffering and disturbance, from which the country recovered even more slowly than from epidemics and other catastrophes. The population sharply decreased. Oppression was unbearable and the peasants were mere objects of taxation. They were kept away from all influences which might bring about change or enlightenment. Statements like the following are not unusual : " Farmers should by no means imitate the mode of living of townspeople." And the book *Hyakusho Bukuto* says : " He is a good farmer who does not know the prices of cereals." Or the *Miukan Seiyo* : " A class of people known as farmers are groaning under maladministration, heavy taxes and exacting service, and yet they have no means of airing their grievances. However cruelly they may be treated they cannot protest against their treatment." Or the *Seji Kemmonroko* : " The disparity between rich and poor has grown very marked, and for one man who makes a fortune there are twenty or thirty farmers who are reduced to penury."

During this period the population remained almost stationary. Infanticide was very widespread. The rural population decreased because the peasants were anxious to escape the miserable conditions prevailing in the countryside and migrated to the towns, especially to Edo-Tokyo. Restrictions on freedom to move to another place had existed in earlier periods ; they were intended to secure a sufficient number of military followers to the feudal lords and also to keep their income at an adequate level. In A.D. 1643 it was decreed for instance that all who neglected their work on the land or who left it should be punished. These restrictions were still further aggravated at the end of the eighteenth century after the famine which seriously reduced the rural population. However, cultivation was endangered not only by an exodus of people from the countryside but also by the withdrawal of workers and horses for public works, especially for the building of roads. In order not to let the land deteriorate it had to be leased out ; and thus the tenant system gained in importance. In the *Seji Kemmonroko* for instance it is reported : " In the provinces the population falls off but hardships remain ; while in the prosperous cities new hardships are created by the increase of their inhabitants." And Dazai Shunti, a scholar of the later Tokugawa period, remarks : " There has been a

steady increase in the number of farmers who originally came into town to secure temporary employment but decided to take up permanent residence in Edo, with the result that the city has now extended itself to a distance of five *ri* with a great density of houses." In 1843 the settlement of farmers in Edo was explicitly forbidden. It was even attempted to resettle those who were already in the town. This latter intention failed entirely, because it did not remove the actual causes of the trend from the countryside to the town. One remedy was tried at this time in the form of the *yiwari* system : this is an allotment principle according to which the land had to be given back after a certain period. At long last the nobility placed all their land at the disposal of the Emperor Meiji. The centralisation of power in the hands of the head of the State brought the feudal period to its close. From now on the distressed conditions of the peasantry are the outcome of other forces ; entanglement in the world market, the social and economic policy of Japan and her expansive imperialism are the new enemies of the farmers. Density of population and settlement are increasing on an unprecedented scale.

The greater part of the agrarian population lives in communities of up to 5,000 inhabitants. The peasant families live mostly in villages, and only very seldom on single farmsteads. Between 1898 and 1930 the population living in communities of up to 5,000 inhabitants decreased by 15 per cent., i.e. 4·8 million ; in the five years between 1930 and 1935 it fell by a further 2·7 per cent. The urban population, i.e. in this case people living in settlements of over 5,000 inhabitants, increased between 1898 and 1930 by 14 per cent. Rural towns with less than 2,000 inhabitants decreased between 1925 and 1930 by 10 per cent. both in number of inhabitants and places. Towns of over 100,000 people increased during the same period from 21 to 32, and their population grew from 8·7 million to 11·5 million, i.e. by 17·8 per cent. of the total population. Thus the problem of town versus country faces Japan just as seriously as other countries, although due regard should be had to the fact that Japanese villages have a more urbanised character, and on the other hand urban communities house a considerable number of people who are engaged in agriculture, fishery and similar activities. In this way urban and industrialised concentrations have developed in the Kwanto plain with about 12 millions and in the Osaka plain with about 5 millions, comprising almost a quarter of the whole population.

The growth of the towns proceeds in Japan also at the cost of the countryside. The same thing happens as elsewhere: although agriculture is a basic industry, private capital is not attracted to a degree that can stand comparison with industry. Thus Kawada rightly says: "Agriculture has not yet lost its characteristic as natural economy. It is in the nature of handicraft industry, specially in our country, and technical and economic reasons do not allow it to become a modernised form of industry whose production is based upon capital and whose distribution on markets."

The unfavourable condition of Japanese agriculture as well as the unsystematic concentration of industry raises, therefore, the urgent problem of a redistribution of population. It is very instructive that the same solutions are envisaged in Japan as in Europe. The tiny plots of the farmers prevent a rational use of labour. One case, which should, however, not be generalised, is characteristic of the dimensions of the fields. In the Yamato basin the standard size of a plot of land is 6 by 6 feet; this corresponds to the amount of rice needed per day for an adult. It is called "the mouth share system". Consequently for one year 360 such plots are required. This is the normal area in this part of the country. The eldest son inherits this property. The others must find land elsewhere.[1] The consequence of such conditions is that about 88 per cent. of all farmers are engaged in home industry as a part-time occupation and that about 41 per cent. of the farmers' domestic consumption consists of materials supplied by themselves. This is a considerable amount, and correspondingly reduces the industrial market of the country. The observations of Kawada are so significant that it is appropriate to quote them:

> Farmers are intensively busy during certain seasons and are idle in other seasons. One way of relieving this state of affairs in the past was to provide farmers with by-industries. The small industries which once existed in the country should be revived. The work of the rural district will be a mixture of agriculture and industry and the wealth of the rural people will be greatly increased. In old times there were many rural industries but they were all taken over into the cities with the growth of modern large-scale industry. But the revival of small-scale industries in the country must mean the industrialisation of the country which in turn must mean, in the final analysis, the extension of large-scale industries into the country. At present commerce and industry are undertaken for lucrative

[1] R. B. Hall: "Some Rural Settlement Forms in Japan." *Geographical Review*, 1931.

purposes. For this reason commerce inevitably is concentrated in cities, and industries also centre around cities chiefly because they can offer convenience for the sale of products. All this has the effect of transferring all industries except agriculture from the country to the cities. If industries can be extended into the country it will have the effect of relieving the farmers and of dealing a blow to the commercialism of the present economy. If large-scale industry is extended into the country farmers will receive numerous economic benefits therefrom. At present capital, men, the convenience of communication and transportation, and the opportunity of deriving profits are all concentrated in cities ; and this makes the concentration of industries in and near cities inevitable. If all these factors are altered, the necessity of concentrating industries in and near cities will largely disappear. Thus the extension of large-scale industry into the country will prove beneficial both to agriculture and to industry ; and at the same time will decrease the difference between cities and the country with regard to matters of productive economy as well as the difference of opportunity.

This condensed survey of the development of social and economic trends in Japanese agriculture will help to clarify the conditions in China. In many respects the problems in both countries and their solutions are similar in spite of great differences in their practical execution.

II. Urban Settlement

In a periodical, *Renaissance*, published in the twenties of this century as the organ of the intellectual youth of China, the following programmatic statement appeared : " The cause of all evil is the force which destroys our personality. This force is our family. The family ties, like ties of every kind, must be destroyed in order to free the individual for the fight for the general welfare." This meant not only the living but also the dead family which by the ancestor cult deprived the living generation of its vigour and enthusiasm.

This statement is very much to the point. Yet we should not forget that these forces of tradition were the most important agencies in the development of Chinese civilisation. They originated in the earliest periods of Chinese history, when magic, symbolism and animism exerted a decisive influence on Chinese mentality.

Before the influx of the semi-nomadic Chou some tribes had already attained a certain degree of sedentary life. It appears that this early sedentary stage was accompanied by matriarchy and that in its wake a worship of the dead developed. This

cult was fixed to the place where the dead man had lived as a member of his kinsfolk. It was, therefore, a cult which was restricted to the living space of the family. Limitation is thus the essence of the cult. But limitation in this stage meant sedentariness and life within the circle of the family whose existence and spirit are in the first place the creation of the mother. The mother represents the life-giving and the life-preserving principle. She is opposed, by nature, to war. She is a realist. She does not think in abstract ideologies ; she experiences her immediate surroundings, i.e. her family, in actual reality. For her the family consists of those who are and were living with her. Hence in Chinese antiquity the worship of the dead whom one had personally known developed together with the matriarchal attitude. The ancestor cult in its more extended and elaborated form obtained ascendency only with the conquest of the Chou. With them the patriarchal principle gained momentum till it entirely superseded the matriarchal structure.

To the Chou the family was not the primary essence of life. Their feeling and thinking and their mode of action went beyond these confines. They introduced an abstract principle which led beyond locally limited and materially perceptible experience. In their conception the family did not end with the last deceased member, nor with the last preceding generation. They imbued the ancestor cult with a more abstract meaning which was based not alone on what was perceived in reality. They extended it to a magic symbolism, and thus the long line of the ancestors, not one ancestor alone, became the object of worship. The attachment to the past was deepened. A sense of time developed in addition to the already clearly manifest sense of space. With it the patriarchal principle gained in importance while matriarchal influences persisted. This was decisive for the whole of Chinese history, for it explains the close attachment of the individual members to the family and the great stability of the life of the rural masses of China. The power of the ancestor binds the peasant to his land and makes China a gigantic land of peasants.

The stabilising principle of matriarchal-patriarchal interdependence produces yet another result. The female principle, *yin*, is complementary to the male principle, *yang*, and both are kept in balance by the *Tao*. They are not antipodal. In such a conception of the universe thinking occupies a very high rank. But it is a kind of thinking different from that of the European which leads to an exploitation of the cosmic forces by a rational

technique. To the Chinese preservation of and non-interference with the forces of Nature are of paramount importance. The forces of Nature may be regulated for man's benefit; their working may be assisted in his interest; but Nature should not be regarded as the laboratory of mankind, or as the playing-field of a rational speculation which only leads—for the Chinese—to a forcible disruption and to a disturbance of its ingenious and creative working. Thus, one dams the waters and directs them over the fields; one sows and reaps; one observes the wind, the weather and the heavenly bodies. One has a sense of reality, but not the European sense of possibility; and because one is, in this way, realistic, one is also positive towards life. Positiveness is the essential quality of the mother and wife who lives for her children and her family. The innate attitude of a woman, especially of a mother and wife, is her awareness of Nature's growing and passing away and her acceptance of the natural order. She does not live against Nature. On this soil no industrial state could grow up and no urbanisation could develop to debase the rural population into a mere appendix of the towns.

We may assume that the towns of China originated as centres of districts with a highly developed agriculture. As in Europe the Chinese town was often a foundation of the overlords or the feudal chiefs. But no civic community in the sense of a self-administering body developed. In the following period the town was an organ of the Imperial Administration and as such could not be an autonomous body. From the very beginning a contrast existed between the townspeople and the peasants, between the nobles and rustics.[1] The former lived "according to the rites which do not descend to the common people"; and on the other hand the rural population declined to take any active part in public affairs. They said: "It is the meat-eaters' business to discuss them." The nobles grouped around the lord of the town and despised the country people, "the people of the field, the clownish people who live for nothing but to eat and drink."

As already mentioned, there seems sufficient evidence for us to assume that most towns were founded by an overlord. Correspondingly we may also assume that there was no overlord without a town, or at least a fortified place. The power of these overlords was based on religious rites which had grown up in the sacred places of the peasant communities. The overlord

[1] M. Granet: *Chinese Civilisation.*

diverted these affections to his town, which was soon regarded as the central seat of the ancestors. At these original sacred places festivals and fairs were arranged, and ceremonies were performed symbolising the attachment to the native soil; the ancestors were invoked and their rebirth was implored. The same three elements existed also in the town of the overlord: the market, the altar of the soil, and the temple of the ancestors. The word *tsong*, the term for the town of a founder of a feudal dynasty, means also a group of persons united by the worship of a common ancestor. A phrase such as *Chou tsong* would mean 'the ancestral centre of the Chou'. The town of an overlord was the successor of the sacred places in the countryside; and the overlord himself was, in the beginning, the impersonal embodiment of a venerable power. Later he became a personal object of reverence within the social hierarchy and in connection with the ancestor cult. It is obvious that a kind of religious community was the nucleus of these early non-agrarian places. In the towns of Europe a community on a religious basis developed—in fact it was rather an association than a community—while a Chinese community is bound together by the common ancestors, by consanguinity. This is one of the reasons why the towns of China are substantially elements of the rural structure. The family ties are rooted in the village; and the individual remains a member of his group not only formally but in fact; his group supports him economically even though he leaves his birthplace and migrates to the town.

The *Shu King* reports in the eighth century B.C. on the foundation of the old fortified residences of the overlords that the founder, adorned with all his jewels and girded with his sword, inspects the place. "To ascertain the points of the compass, he studies the shadows. He examines the declivities in sun and shade, the *yang* and the *yin* of the country, to know how the chief constituencies of the world are divided." Finally he takes account of the direction of the running water. It is his duty to recognise the religious value of the site—what will be called later the *fong-shui*—the geomantic influences. When the site had been definitely chosen, the founder ordered the work to begin; but he waited till the moment of good augury had arrived, i.e. the culmination of the constellation *Ting*, that is to say the tenth month of the year, for the work of the peasants in the fields must be finished before building could start. The walls of the town were erected first. They were the most sacred part of the town.

They were in many cases the only building which would outlast generation after generation. Compared with them the other buildings were insignificant and had a much shorter life. This procedure was of the greatest importance: from the very beginning the town was conceived as one coherent whole and as a single entity. Only after the completion of the walls was the space marked out by them filled with the separate buildings. By the walls the importance of the overlord and of his town could be judged. If the town did not contain a temple to the ancestors of the dynasty of the overlord, it was fortified only by mud walls and was called a "small town"—*yi*. A larger town was surrounded by stone walls and was called a "capital"—*tu*.

The walls were built by the peasants who, during this time, were under strict supervision in order to guarantee the good quality of the work and to prevent the singing of songs of bad omen. Special care was given to the building of the gates; together with the erection of the ancestral temple trees were planted and their fruits offered to the ancestors. "In ancient times when the plan of the capital was traced, they did not fail to choose the most fertile ground in the kingdom and constitute it the ancestral temple, nor to select trees of the finest groves to make the sacred forests." (*Mei ti.*) The walls, the altar and the planting of trees gave the town its religious consecration. The Altar of the Earth stood on a slight elevation of beaten earth and had the form of a square. The Earth itself was conceived as a square, and so at least in principle was the town. A clod was laid on the altar as a sign that the overlord had been invested with the place as a fief. The palace is described as a large and impressive building: "As the successor of ancestors and ancestresses—I have a palace five thousand feet long—windows to the south—to the setting sun! There I live, there I dwell—there I make merry and there I hold council." (*Tso chuan.*) The Prince was alone in possessing "a piece of ground which is well lighted, high and dry". The ministers and other court-officials lived in a quarter situated on lower ground, "a low and narrow house exposed to the dust". The residence of the lord had the appearance of a fortified village dominating the lower outskirts of a market.

In the beginning these towns were amorphous agglomerations of houses closely crowded together. It was difficult to find room for the tradesmen's shops and for the public buildings such as archives, arsenals, stables, etc. Although in some cases the

urban population was brought together by force, the Chinese town is generally the result of a voluntary agreement confirmed by oath in a ritual ceremony : a red bull was sacrificed and the heads of families declared their willingness to submit to the rule of the overlord. This bears a close resemblance to the ceremony of the foundation of Etruscan and early Roman towns.

Gradually the town developed distinct features of its own, losing its character of an appendix of the castle. In accordance with the organisation of the army it was divided up into quarters and districts. The parallel to the layout of the Roman camp is obvious. The fortress towns of the Renaissance with the *piazza d'armi* as centre provide still another comparison. This is especially clear if a drum tower stood in the middle at the crossing of the four main streets, and if there existed " a large fortified four-way gateway which is built over the crossroads so that in times of strife or disorder each street can be isolated from the others ".[1] But this is not the only origin of the systematic layout. Another prototype consisted in the chequer-board division of the fields. But first of all the rectangular form in general and the internal division by the main streets connecting the gates were conditioned by the conception of the Earth as a square and by the symbolism attached to the idea of a town and to its foundation.

Towns were laid out in connection with the conquest of a new territory or the settlement of people who had migrated from other parts. Military considerations and cultivation of the region in question are closely inter-related. When the Wei Emperor ordered in A.D. 243 the cultivation of more land, " il s'occupa à rendre fertiles les campagnes pour procurer au peuple une nourriture abondante . . . il nous fait assainir les campagnes situées au Sud du Hoai-Ho et les principautés de T'schen et de Tsai. Vingt mille ouvriers travailleront au nord du fleuve et trente mille au midi. Puis quand nos terres seront en bon état, une partie des hommes les cultiveront et l'autre les défendra."[2] Such places were mostly located on level ground. The early towns, say of the seventh century B.C., were garrisoned as protection against the Barbarians and served at the same time as places of refuge for the rural population of the district. Double walls surrounded the towns. The outer wall enclosed the whole area, the inner wall the actual town. These places had their own

[1] C. P. Fitzgerald : *China.*
[2] S. J. Gandar : " Le canal impérial." *Variétés sinologiques*, No. 4, 1894.

agricultural basis ; they contained large stretches of cultivated land within their walls to feed the population in case of siege. Such an urban organism consisted of a nucleus around which the other districts grew up in accordance with the increase of the functions of the place. In this way just as at first a small " commercial town " clustered around the castle, new quarters of merchants and craftsmen developed along the crossroads leading from the gates of the square town. Sometimes the overlord took part in the commercial activities ; political and commercial powers joined hands.

In the ideal town laid out in accordance with the ritual prescriptions the palace was situated right in the centre of the whole site. It was enclosed by walls and formed a town of its own within the larger town. Every building of the palace town had its assigned place. The residences of the nobles repeated in miniature the arrangement and form of the palace. They were, as it were, small towns each surrounded by a wall. The centre was always the *Hall of Reception,* and there was always an *Altar of the Ancestors* and of the *God of the Soil.* The gate which led to a *court d'honneur* in even the smallest of such compounds was sacred, just as the gates of the town were endowed with mystical virtues. The whole town, especially in early times, was ideally and in fact a coherent system consisting of a large number of similar elements encased one in the other and all orientated in relation to the palace. It was a highly integrated entity, and possibly the only one which represented in reality the ideal conception in almost complete purity. The Chinese town came into being at a time when life, religion and architecture were still genuinely one and when the religious rites were still directly translated into reality. The ideal town of the Renaissance, on the other hand, was conceived on the basis of a programme of practical considerations and aesthetic-architectural reflections which could not endure the reality of life. The lord of an old Chinese town called the heads of the families together after the more important work had been finished and gave a great banquet. " He had a pig chosen for the sacrifice—he poured wine into the calabashes—he made them eat and he made them drink :—Lord of Vassals, Chief of the Family ! And all bore themselves with deference and gravity." (*She King.*) The general classification of the towns became, in the course of time, so rigid and meaningless that their attributes remained unchanged up to the Revolution of 1911. *Fu* means town of a prefect ; *chou,* town

of a sub-prefect ; *hsien*, town of a district. This hierarchy did not attach any significance to the number of inhabitants or the economic importance of the place. Wu-ch'ang-fu, the capital of the province of Hupei, for instance was a town of the first class while the neighbouring Hankow, a place of great importance, was only a *hsien*.

The development of the towns and of urban industry depends on the production of a surplus food supply. This was already the case in the early periods of China's history. Marx says in the introduction to *A Criticism of Political Economy* :

> In all forms of society there is one specific type of production which dominates all other ones and the conditions of which determine also the rank and influence of all the rest. Where agriculture is the predominant type of production, even industry and its organisation and the forms of property corresponding to them have more or less the character of landed property . . . or they imitate, as in the Middle Ages, the structure of rural society in the towns.

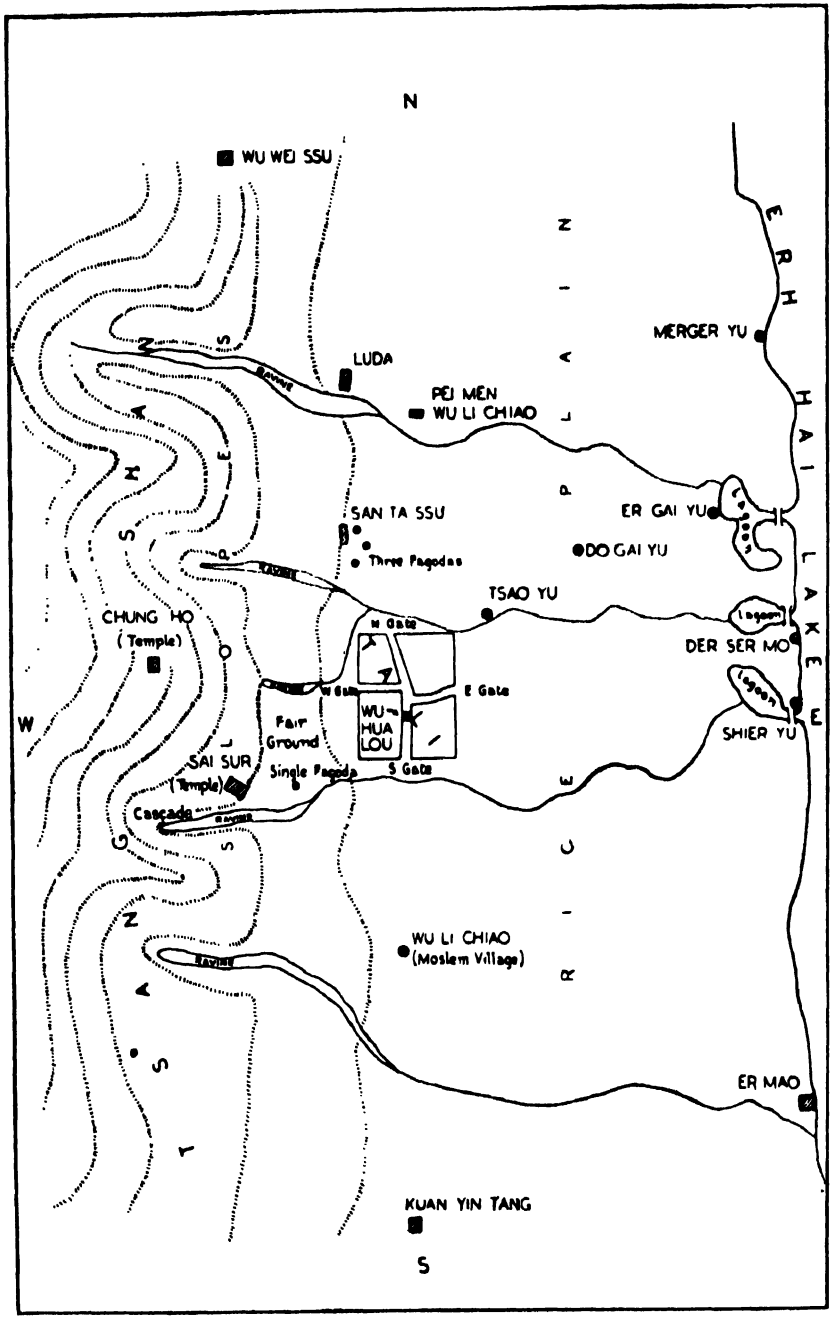
This holds good to a marked degree of China and of Chinese agriculture ; agriculture determines the socio-economic structure of the towns. The means of production are far inferior to the skill and the number of hands available : man himself is the cheapest and best means of production. This prevents the development of a large-scale industry and in general of a technically advanced production. The methods of work employed in agriculture are transferred to the towns, and with them the ways of living and working, i.e. place of work and dwelling place, are not separated. Further, China has long been a self-sufficient country.

> The Celestial Empire possesses all things in prolific abundance and lacks no product within its borders. There is therefore no need to import the manufactures of outside barbarians in exchange for our own products. This self-sufficiency, which Ch'ien Lung regarded as a virtue, was also a necessity. Before the invention of railways and steamships which were independent of wind and weather the importation of large quantities of foodstuffs was a matter of great difficulty and could be effected only by an elaborate and very costly organisation. The grain ships which fed the Roman proletariat and the tribute rice upon which the Peking banner-men lived are rare examples of ancient food imports on the grand scale. The fame of these two organisations and the importance the respective governments attached to their smooth working and maintenance testify alike to the difficulties and to the exceptional character of these enterprises. In a self-contained agrarian country such as old China cities were bound to the country by strict economic ties. They could

exist only where the rural population was dense enough to supply the citizens with food from their surplus harvest, and in return the city fulfilled three functions. It supplied the farmers with manufactured goods ; it formed a place of residence for the richer landowners and of refuge for all classes in time of war ; and it was a centre of government for the district. Where there was no farming population dense enough to support a non-producing town population, or rich enough not to need protection or to attract a tax-hungry government, there was no city. Under these conditions very few cities grew too big to live on the produce of the adjoining country, and these exceptions were only found along the great rivers or on the sea-coast. These riparian cities were the only places where industries with a wider market than the neighbouring countryside could flourish. Elsewhere transport was too difficult and too expensive. Even these semi-industrial cities sold their products only to other parts of China and consumed food brought from adjoining provinces. There were no cities of the modern Western type manufacturing for world markets and living on food imported from distant countries. The walled city was thus a standard Chinese urban type. Unwalled towns were not accounted as cities. But in old China unwalled towns were rarely if ever large or important, a city was *ipso facto* a walled city.[1]

To the sphere of influence of every town belong a number of villages. Such units were sometimes specialised, e.g. in metalwork, jewellery, agricultural implements, silk, cloth, etc. In the average *hsien* towns the influence of the clans is considerably greater than in the larger towns. The coherence of the clans is less in the North than in the South. Invasions have contributed a great deal towards their disintegration and the greater influence of individual families. Most of the towns are dependent on the food production of their immediate hinterland and are engaged only in local trade and manufacture. They are points of concentration of the agricultural districts : for instance the loess basins of North China are often surrounded by unfavourable tracts of land from which the population withdrew in the course of time to the more fertile parts. In this way developed such towns as Taiyuan fu = Yang-ch'uc, the capital of Shansi, or Singan fu = Shing-an fu in Shensi, or near natural resources not far from the Lake of Poyang the town of Ching-te-chen, the seat of the old Imperial Porcelain Manufacture. The towns are centres where agricultural products are exchanged for manufactured goods and *vice versa*. For instance : " Tsingchow fu is the centre of the largest silk producing district in the province.

[1] C. P. Fitzgerald : "A new estimate of the Chinese Population under the T'ang Dynasty in A.D. 1618." *China Journal*, Vol. XVI, No. 1, 1932.



. Fig. 39. Environment of Ta Li City

At Linkin, a village 40 *li* from the city, a very large quantity of silk is made ; it is all brought into Tsingchow fu, and exported thence to the capitals of the adjoining provinces of Shansi, Shensi and Chihli. In Tsingchow fu more than one thousand families are employed in manufacturing silk piece goods." [1]

Such a rural-urban inter-dependence has been excellently described by C. P. Fitzgerald in *The Tower of Five Glories*. A brief extract from his book follows :

The city of Ta Li is the capital of the *Hsien*, the country, of the same name. It is situated on a plain of about 100 square miles, which is nowhere more than three miles wide. It lies to the west of Yunnan fu near Lake Erh Hai and to the north of the Mekong river near the Burma Road. It is an old city. Its origin goes back to the seventh and eighth century A.D. It has been the capital of the Kingdom of Nan Chao. To-day it has about 20,000 inhabitants.

Ta Li is a walled city, rectangular in shape. It covers an area of one mile by half a mile. It has been formerly enlarged. The South Gate is called the Tower of Five Glories ; it has been left standing as a bell tower inside the city.

There are three classes of families with rural and urban connections :

(1) the small farmer with insufficient land for supporting the whole family and with little shops to supplement their income ;
(2) the wealthy farmers living in the city for comfort ;
(3) the city families with investment in land.

The remainder consists of artisans.

There are 697 shops. Among them we find 101 shops for tobacco, straw sandals, etc. ; 73 shoe-, 64 wine-shops, 64 restaurants and tea-houses, 55 medicine shops, 42 tailors, 42 silk shops, 39 hatters, 31 shops for mixed imported goods, and 13 shops for coffins. There are further barbers, saddlers, silver-smiths, bookshops, shops for bedding, etc. Only hatters and shoemakers cater for a wider market than the immediate locality of Ta Li itself.

Fortnightly markets are held inside the walls. They are " essentially a means of exchanging local products and not an occasion on which imported manufactured goods are sold in any quantity ". In addition there are two great annual fairs outside the walls for merchants from distant places and for country people.

" To be landless is regarded as a grave misfortune." Everything is centred on rice. There is an " exclusive preference for rice land ". Large holdings are unknown, but many families have more than the minimum ten *mow*. Forty *mow* is the average of the most wealthy. Small holdings are the consequence of subdivision and of the high price of the land.

Every lake village is a fishing village as well as a farming centre. It is essentially a cluster of farms. There are no shops and no trades carried on there except boat building.

[1] I. Markham : " Notes on the Shantung Province." *North China Branch Royal Asiatic Society*, 1869.

Now follow a few quotations which give a good picture of the city and its surroundings :

Although the area thus enclosed by walls is large, very little of it is now occupied with buildings. The long main street connecting the north and south gates, and the less busy east and west gate streets, are flanked by quiet residential lanes, which, long before the walls are reached, tail off into market gardens and fields. Almost every house has its ample garden, and wide areas of vacant land are used as parade grounds and fair grounds for the fortnightly market.

In the eastern half of the enclosure where streams wind along among groves of willows, and farm houses lie hidden among large shady trees and clumps of bamboo, the visitor is surprised, on seeing the city wall, to find that among these rural surroundings he is still within the city itself. Indeed, seen from a high point on the mountain, Ta Li with its creeper-clad walls and the dense groves of trees in the gardens looks more like a wood than a city, a huge walled garden set in the wide spaces of green, watery rice fields. The rural character is well suited to a town which is in fact entirely dependent on agriculture for its commerce and industries. The primary function of a small city such as Ta Li is to provide a market for the peasants and to act as a distributing point for the goods which the farming population need. It is also a centre where the richer families can live in a security which the open country did not always afford ; where there are schools, law courts, government offices and the headquarters of an important command. But though this apparatus of government gives an urban air to the town and nourishes a small trade in books, and the other articles used by the educated minority, the rice standard really rules the city just as surely as it does the country village. The commerce of Ta Li depends on the price of rice and the industries cater for the needs of the peasants. The inter-dependence between town and country is not confined to trade, for the inhabitants of the town itself are largely farmers who also have homes in the country villages.

Stage points are either small cities or villages which in wild country may be only a few houses. The administrative walled cities, *hsien*, are often not situated on the main roads, or do not form stage points if they are, but only midday halts. This may be because the muleteers prefer to avoid the seats of authority. The administrative cities are generally up to three days' journey apart, and the intermediate stage points are villages, some of which are only collections of inns living entirely on the transit trade.

Apart from a narrow belt of willow growth along the lake shore, where flooding is usual, the entire surface of the plain is under cultivation. The villages as far as possible are built on the shore itself, or on the lowest slopes of the mountain, to free as much land as possible for the cultivation of rice. Even the main caravan road, a stone-paved path about six feet wide, skirts the slopes of the mountain, and the paths leading to villages and fields are narrow and follow the dykes along irrigation channels. Very little land is devoted

to market gardening, usually only such patches by the lake shore as, having recently been reclaimed from the water, are raised too high to be reached by the irrigation channels. Rice is the main crop, the crop to which all other cultivation is subordinated.

Most of the rice land is privately owned, but every village has some public land usually attached to a temple, which is rented out at the usual rate of half the crop to the tenant and half to the public. The proceeds are used to maintain the village school, which is held in the temple itself, and any surplus may be applied either to some public work such as repairs to the temple, or for the expenses of a festival.

When the villager wishes to make purchases he either goes into the city or waits for a market day when the traders come out to an open air market held on fixed days at one or other of a few large villages. Equally, all produce is sold either daily on the streets of Ta Li, or at the large fortnightly fairs in the city and the smaller markets held every six days in one of these market villages. Commerce is thus not part of the activity of the village as such.

The Chinese towns originated in the North-West. In the course of history they spread to the East and to the South. Hence most of the older towns can be found in the North. It has been suggested that there were 783 towns in the six northern provinces, 174 in the six provinces of Central China, and 34 in the six southern provinces before 206 B.C. i.e. before the Han Dynasty.[1] The further development can be seen from the following table.[2]

Scales showing percentages of survival of cities of various ages.

(A) Northern Provinces :

Time built.	*Number.*	*Age in* 1644.	*Number occupied in* 1644.	*Percentage occupied.*
Before A.D. 264	1,468	Over 1,340 years	130	8·8
A.D. 264 to 790	545	Over 820 years	116	21·3
A.D. 960 to 1280	250	Over 350 years	107	42·8
A.D. 1280 to 1644	351	Under 350 years.	310	88·3
(B) Southern Provinces :				
Before A.D. 264	190	Over 1,340 years	50	26·3
A.D. 264 to 790	160	Over 820 years	53	33·1
A.D. 960 to 1280	125	Over 350 years	92	73·6
A.D. 1280 to 1644	472	Under 350 years	447	94·7

[1] C. P. Fitzgerald : " Historical Evidence for the Growth of the Chinese Population." *Sociological Review*, 1936.

[2] *Idem* : " A new estimate of the Chinese population under the T'ang Dynasty in A.D. 618." *China Journal*, 1932.

The decline or the abandonment of towns has the same causes in China as elsewhere, save that floods played a greater part. Capitals frequently changed their sites. Loyang, for instance, was abandoned because it was too far distant from the frontier and was therefore not a suitable basis of defence. Dynastic considerations were likewise of importance. Singan fu, for instance, had a favourable situation as regards local surroundings but it was unfavourably placed in relation to the area of the State as a whole. Similar considerations held good for the situation of Nanking, Suchow, Hangchow, all of them having been residences for a time. The moving of the capital to a place near the frontier where it was protected by mountains was dictated partly by reasons of defence and partly by dynastic interests, while the move back to Nanking put the capital in a central position far away from the danger zone.

Towns were already in existence before the imperial administration came into being. As everywhere, they are the product of a developed agriculture, of man's gregarious instinct and of his interest in activities other than agriculture. Geophysical conditions also played a part in this development in so far as in the North-West, on the marginal lands of the arid parts of central Asia, irrigation concentrated the population on a relatively small area where parts of it could not be absorbed by agriculture. Thus a division of labour was the result. A part of the population took up work in a number of compact and non-agricultural settlements. The fact that these places became focal points of religious-feudal influences does not exclude their dependence on geophysical factors. By far the greater number of the towns are nodal points in the system of communication. In the North they are situated on the roads, in the South and in the centre they stand preferably on rivers and canals. The important rôle of the Yangtse as a traffic artery is too well known to need detailed description. In contrast with the estuary of the Yangtse there are hardly any towns of importance on the lower course of the Hoang-ho. The only exception is Tsinan, the capital of Shantung.

A great number of towns are situated on the roads to inner Asia, e.g. Pingliang in Kansu, Lanchow, Liangchow, Kanchow, Suchow. In spite of her long coast-line, China is a continental country. The Chinese town developed as an inland town, and it is characteristic that inland towns were founded as places of defence, while not a single coastal town owed its origin to this

purpose. This corresponds to the general attitude of the Chinese, which was not favourable to oversea expansion, so that overseas trade as an agent of urban development hardly existed. On the contrary everything possible was done to avoid the sea route and to preserve an inland character. The Imperial Canal among others was built especially for these reasons ; it promoted the development of the inland towns and reduced the importance of the coastal towns. Its history reaches far back ; work continued on it for centuries till its present extension from Hangchow in the South to Tientsin in the North was completed. The first part of its history ends in A.D. 1078. At this time it was about 435 miles long and joined up 14 towns, of which seven were provincial capitals or district centres.

De plus il était bordé d'un grand nombre de bourgs considérables, très peuplés et très commerçants. L'an 1280 le Mongol Koublai Kan venait de s'emparer de l'Empire des Song et avait transporté la capitale de Hang-tscheou à Péking, cour du Nord. Il s'agissait de faire vivre sa cour ; or les régions septentrionales sont peu fertiles. Il fallait donc faire venir les provisions des provinces du midi. Le cabotage, le long des côtes, n'était rien moins que certain : les pirates et les tempêtes étaient également à craindre. L'empereur songea à compléter les canaux de ses prédécesseurs pour en tirer un plus grand avantage . . . il la continue jusqu'auprès de sa capitale. Les travaux commencèrent a 1280 et trois ans après on en faisait l'ouverture. C'était un ruban de plus de 1,000 kilomètres.[1]

The topographical situation of the towns differs of course according to local conditions. Level sites, however, prevail, and so far as there is danger of floods a safe site is preferred. The coastal towns are mostly situated at a distance from the coast, at the head of the bays or further inland. In the drier West the existence of water has an influence in the opposite direction. In Kansu, for instance, there are oasis towns within large areas of irrigation. On the other hand water hardly affects the location of towns in the loess basins and in the plains of North China, as it can easily be found everywhere. In the South-West springs were sometimes the reason for the situation of a town, as in the case of Tsinan-fu and Yunnan-fu. Rarely is a town sited on the slope of a mountain or a hill in the South, and hardly ever in the North. Military considerations that would lead to choosing a site on a mountain ridge or hilltop hardly exist in China. The whole area round a town is considered as a defensive unit, and the protecting positions are on the margins of this area ;

[1] Gandar : *op. cit.*

in the case of Honan-fu, for example, in the interior of a loess basin surrounded by mountains, or at Suchow between marshes and lakes. The old capital, Loyang, was situated in the centre of a mountainous countryside difficult of access, so that the whole neighbourhood formed a natural protected zone. The preference for a level site may have been influenced by the tendency to plan

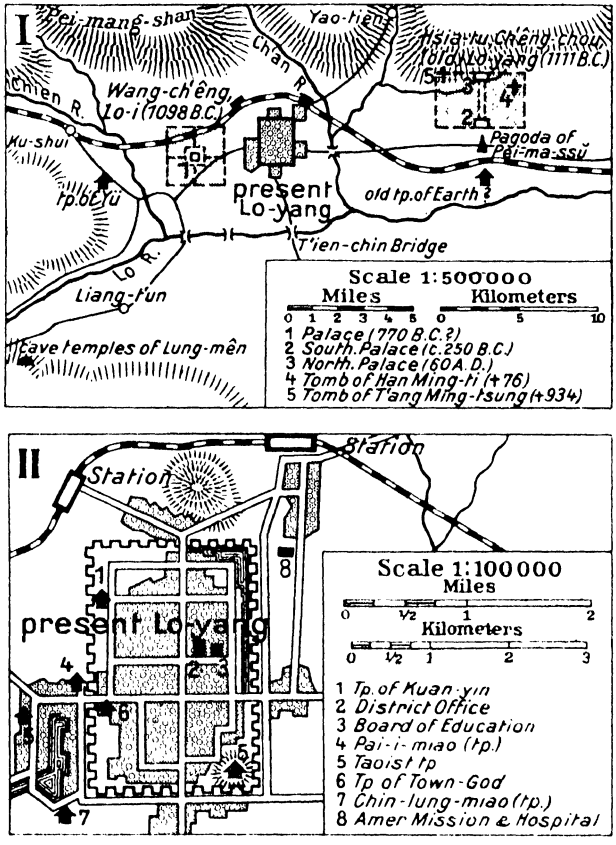


Fig. 40. Ancient and Modern Loyang

the town in accordance with the recognised layout, in squares and rectangles, so that the street system needed a more or less level terrain. But exceptions of course exist; they are conditioned by the natural configuration, as for instance at Nanking. In such cases the walls were built independently of the plan of the actual town. The importance of geomancy has already been stressed. It reveals the extraordinary flair of the Chinese

for adapting their works to their surroundings. Magic thus becomes a very effective agent in town planning. It helps to harmonise the rational layout with the environment in a perfect way.

Although the growth of the towns influenced their general structure, it left the central part of the town almost untouched. The centre retained its distinct form and character, and remained an organic part of the whole plan if new rectangular units were added to the existing pattern of squares and rectangles. Extensions have been carried out systematically, however, only in a few cases. The suburbs surrounding the old districts mostly follow the favourable conditions of the terrain and the communications. If the original town stands on elevated ground near a river, the suburbs often extend down to the banks, so that they are frequently in danger of being flooded. In many cases they were laid out as bazaar towns. Sometimes places originally separate coalesce. Hankow is the best-known example: it consists of Hankow proper, of Hanyang on the other bank of the Han River, and Wuchang on the other bank of the Yangtse. Sometimes we meet with such peculiar cases as that of old Chengchow, which is an empty square of walls containing a few vacant houses of officials and religious buildings while a new town has grown up near the station; or two towns are situated side by side, the old semi-rural and the new larger town. However, the usual case is a rather unsystematic spreading of the suburbs around the old nucleus. Let us take Shanghai as an example: in the third millennium B.C. the plain was still covered by the sea [1]. Gradually the cultivation of rice developed. In 573 B.C. it is said, Suchow was founded as the regional centre. The small town of Tsung-ling, 22 miles upstream, served as a port for Suchow. The creeks or the canal silted up and shipping moved to the mouth of the Huang-pu. There about A.D. 1100 Shanghai was laid out. The walls have the unusual form of an ellipse about three miles in circumference. It is said that the place had 300,000 inhabitants in 1600. Around this inner wall the town has grown unsystematically; and what has been added under European influence has certainly not helped to produce an organic whole. To-day Shanghai has roughly three and a half million inhabitants. For some years it attracted approximately 100,000 people each year by the establishment of new

[1] E. Oberhummer: "Schanghai." *Mitteilungen der geographischen Gesellschaft Wien*, 1932.

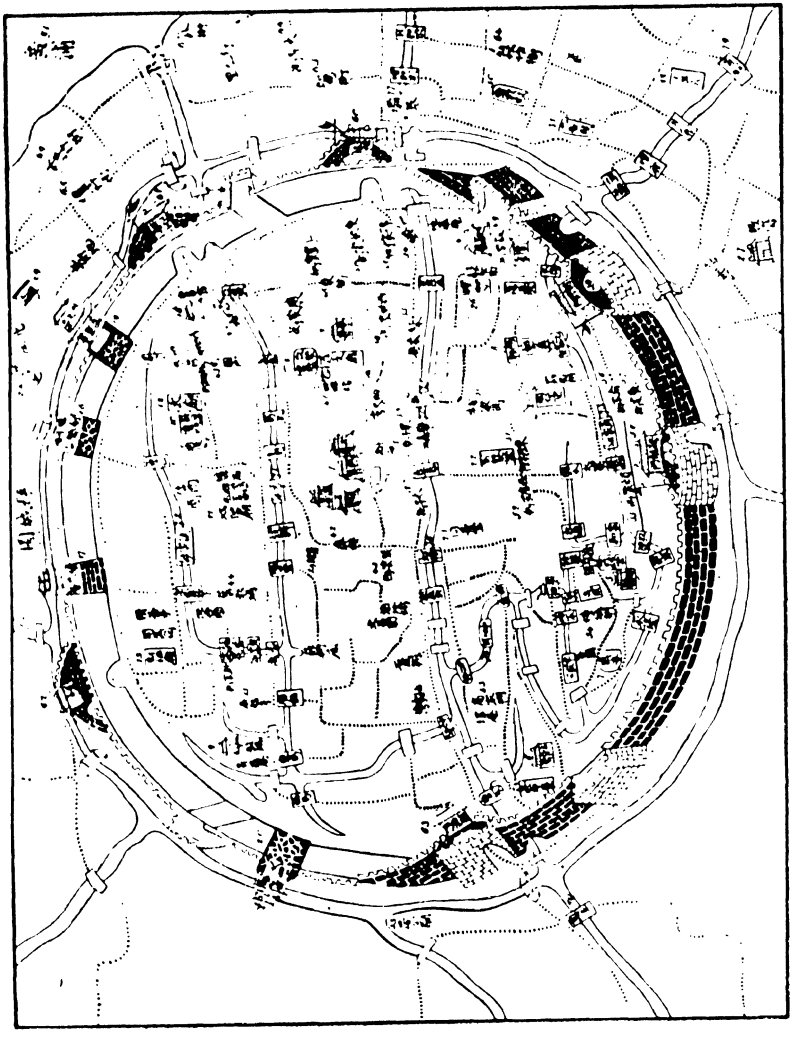


Fig. 41. Plan of Old Shanghai

industries.[1] Along the river-front factories and shipbuilding yards grew up ; in the east and along the Suchow creek area the industrial district developed ; the commercial district spread out well beyond Hongkew Park as well as in the centre and the

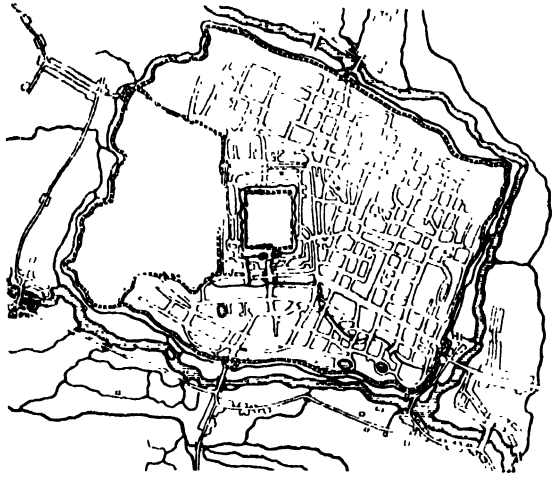


Fig. 42. Chengtu in Szechwan

west where the better residential quarters are situated. The density of population is extraordinary and the housing conditions are correspondingly very bad. Shanghai is a representative example of how a town should not develop.

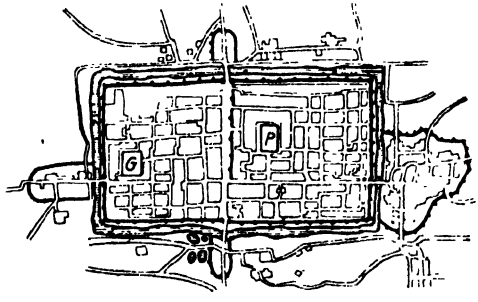


Fig. 43. Hsien-Yang in Shensi on the Wei River

Certain fundamental principles are common to most of the towns.

Within the town area there are generally large uncultivated spaces. These are either used as dumping grounds or they may

[1] I. S. Potter : " Shanghai's spreading acres." *China Journal*, 1932.

be cultivated as fields or gardens. As already mentioned, they also serve as reception areas for the rural population in times of unrest. Of the many examples the following may suffice:

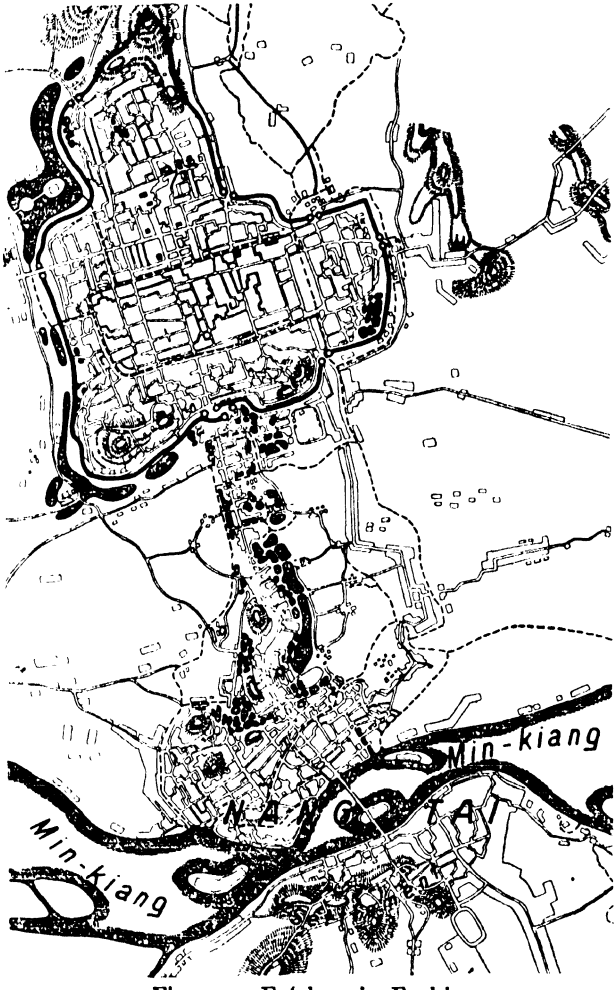


Fig. 44. Fu'chou in Fuchien

"Tsingchow, the ancient capital of Shantung, and now the centre of the largest silk producing district of the province . . . a great deal of land is cultivated within the city walls, particularly where the land rises to a level with the top of the wall"; and "Tsinan fu, the capital of Shantung . . . the intervening space

between the walls of the suburbs and the outer mud wall is highly cultivated ".[1]

The walls of the towns in South China are generally not so massive as in the North, which is more exposed to invasion.

There is no real city in Northern China without a surrounding wall, a condition which, indeed, is expressed by the fact that the Chinese use the same word, *ch'eng*, for a city and a city-wall : for there is no such thing as a city without a wall. It is just as inconceivable as a house without a roof. . . . No matter how poor and inconspicuous the place, however miserable the mud-houses, however useless the ruined temples, however dirty and ditch-like the sunken roads, the walls are still there and, as a rule, kept in better condition than any other buildings of the town or village.[2]

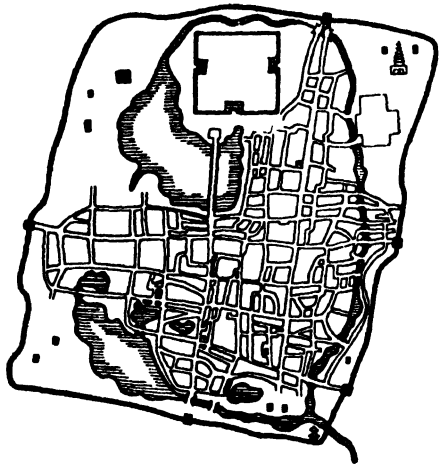


Fig. 45. Kaifeng near the Huangho in Honan

The walls are narrower at the top than at the base, only little of the buildings of the town can be seen from outside. A few roofs of temples and a few pagodas would project, but the sharp silhouette of the wall dominates everything.

Tsingchow fu in Shantung lies in the midst of a fertile valley among rice, grain-fields and orchards ; there are plenty of trees to shade the walls and to break the monotony of their drab surface. A small river with remarkably clear water takes the place of the moat on two sides of the city. . . . Following the windings of the river the city-wall is broken up into a succession of angles and the river-bank is cut into irregular terraces. . . . The wall rises to an imposing height, strengthened by massive buttresses ; the top of it

[1] I. Markham : *op. cit.*

[2] O. Sirén : *The Walls and Gates of Peking.*

is thickly clad with shrubs and trees which stretch their branches over the crenellated parapet. There is a touch of romantic beauty about this place which reminds us of certain walled cities in northern Italy rather than of a Chinese town. The western and southern portion of Tsingchow fu is largely utilised for grain-fields and vegetable gardens, in spite of the fact that people who have lately moved into the city can hardly find a room or a shed to sleep in.

And another impression, also by Sirén :

The present walls of Sian fu were built at the end of the fourteenth century by the first Ming emperor. They enclose an almost square city which is visible in its completeness from far away, as the surrounding country is simply an open loess plateau. Approaching it from the north or from the west one sees the walls as long unbroken lines stretching for miles and miles. Coming a little nearer the double gate-towers, the square bastions, and the monumental round corner-towers begin to appear, the rhythm of the lines and of the masses becomes evident—a remarkably slow, heavy and forceful rhythm. The city dominates the high loess plateau, rising over it like a huge fortress and at the same time blending with it by its own long horizontal lines. There are large stretches of empty ground inside the walls and ponds of considerable size.

How different is the approach to a European town ! We sense its spatial extension ; the buildings are much more visible and their contours and arrangement are essential elements of the whole picture. The mostly broken course of the wall itself adds still another feature reflecting the three-dimensional extent of the town. If we approach a Chinese town we run up against an unbroken surface. The few visible roofs of the buildings do not help us to realise the spatial extension of the town. There is nothing like a three-dimensional appearance. This is in accord with the fundamental principle of Chinese architecture, which makes no use of perspective effects in our sense. It operates rather through a juxtaposition and a succession of surface effects which introduce something like the impression of coulisses in a theatre. The walls of a Chinese town are *the* important buildings ; they are as it were the " cathedral " of the town , the pride of its inhabitants and the symbol of its size and greatness. Even towns which are hardly larger than the Colosseum in Rome lay the greatest stress on an impressive wall. " Looking at such a city from some high point, there is often nothing to be seen but roofs, long rows of grey-tiled roofs, one behind another. In the warm season the drab monotony of the view is modified in places by the green trees that rise above the roofs, sometimes even piercing through them. The Chinese

protect the trees even at the expense of the buildings inside the cities, but exterminate them in the country." [1] The European town grows up around a centre—the cathedral, the guildhalls, the town hall and the market place. The Chinese town is conceived from the very beginning as a coherent organism within the wall. It develops from without inwards. Thus the description of the gates is of special significance, because from it the system of the main streets connecting the gates can be deduced. If we read that there is such and such a number of gates in each of the walls—except in big cities there is only one gate in the middle of each of the four walls—this indicates directly the number and layout of the main streets. The south gate is especially sacred. The north gates usually remain closed because it is through the north that dangerous influences enter.

Climbing the Terrace of Kuan-Yin and Looking at the City.

Hundreds of houses, thousands of houses—like a chessboard.
The twelve streets like a field planted with rows of cabbages.
In the distance perceptible, dim, dim—the fire of approaching dawn;
And a single row of stars lying to the west of the Five Gates.

The Chinese town is limited and systematic. The great importance of the walls and the clear street system are sufficient proof of this. In general a tendency to work with individual elements and as it were to encompass one in the other—districts, compounds, houses—is conspicuous. As it may not be easy to understand what is meant by this, a comparison will be useful. It is the same spirit which drives the Chinese artisans to chisel out laboriously the famous ivory balls where likewise one fits into the other and yet each is a separate body that can revolve independently. The systematic layout of the towns is the true expression of the Chinese gift for organisation which is apparent in the building-up of the administration and in the conception of the State, while limitation and "encompassment" reflect the Chinese conception of the universe.

Yet this systematisation only reaches a certain point. The main streets form a clear pattern; but the secondary streets within this network, though they also cross each other at right angles, are unsystematically laid out; or rather the reason for their arrangement is not apparent at the first glance. Here the houses are the primary elements and the layout of the streets is dependent on them. The pattern of the secondary streets is not free from magical considerations. The streets are broken at

[1] O. Sirén: *op. cit.*

right angles ; there are no curves. The narrow lanes often end in a cul-de-sac. The entrances of the houses are orientated to the south, so far as possible ; this partly explains the maze of the streets. Open squares are generally absent in the inner parts of the towns. Streets serve as market-places. In the North the streets are wider than in the South. The difference in means of communication explains this : in the North the two-wheeled horse-drawn cart is general, in the South the boat and the coolie replace the beast of burden.

The fact that the towns of South China usually cover a smaller area than those of the North, though their number of inhabitants may be equal, is partly due to the different type of the houses. In general they have only one storey, but the dwelling units are larger in the North and are surrounded by an enclosure within which the various buildings and yards are systematically grouped. In the South not only the streets but also the inner yards of the buildings are narrower and the houses are higher.

Especially in the main streets the living quarters are situated behind the shops and workplaces.

> The majority of the town population live by their handicraft, working in small shops . . . open on the narrow alleys of the native cities. A tremendous amount of work is done in these front shops. In the small industries there may be a certain number of hired persons . . . the best of such industries are like large families. It has been estimated that no more than 5 per cent. to 10 per cent. of the population are families engaged in handicrafts, some eight million persons being actually so employed.[1]

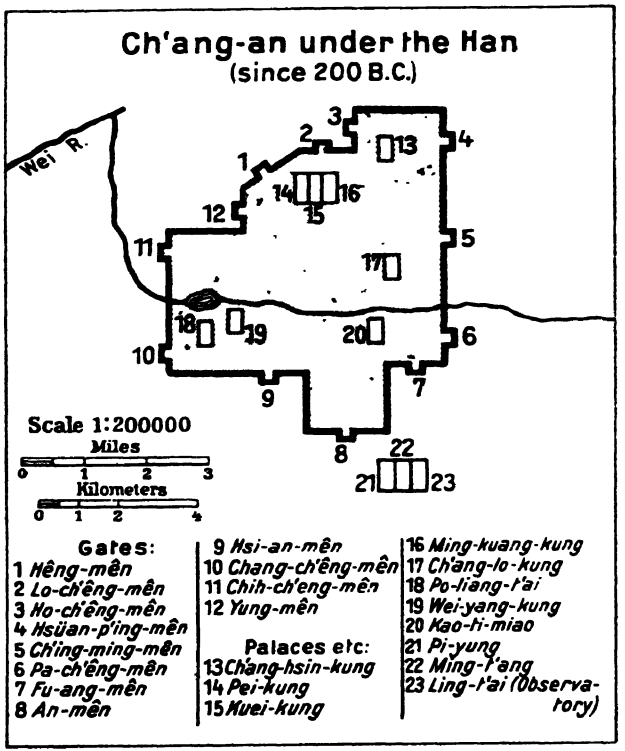
In the smaller towns the commercial life is restricted to a few streets or even to one street only. This of course, does not hold good for the larger towns and cities ; there whole districts are pulsating with intense commercial activity. The different categories of craftsmen and shops are housed in different streets. There are provisioners' streets which are specialised still further for the different categories such as bakers, butchers, etc. ; streets of silk merchants, goldsmiths, bootmakers, tailors, booksellers, and so on. Sometimes the shopkeepers of a street form a kind of guild, with a leader who represents their common interests, so that local and professional groups are identical. It should not be overlooked, however, that trades are carried on in the villages as well as in the towns.

There are four main types of industrial work, but in each

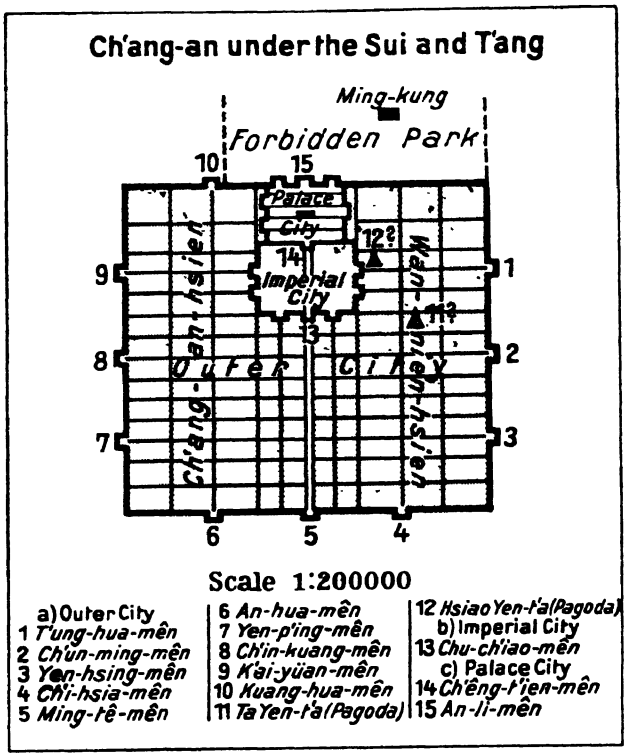
[1] C. L. Malone : *New China.*

case the work is done at home. First, work for the simple purpose of earning one's living. Secondly, craftsmen are engaged and paid daily on a piecework basis, partly in cash and partly in kind, i.e. in board and lodging. This category comprises mostly craftsmen who are still connected in one way or another with agriculture. At sowing and harvest time they work in the fields ; if this work ends or slackens, they take on industrial work. They have their own tools, and sometimes provide even their own raw materials and some capital. The third type consists of craftsmen who worked for the Court before the Revolution. As regards material and execution they had to conform strictly with the regulations laid down by the various dynasties. Tools and materials were provided by the Court. There were yet other highly skilled craftsmen who worked not for the Court but for the public ; they relied upon themselves, had their own workshops, and sold their products in the market. Finally, the last group consists of those craftsmen who are employed by a merchant outside his own manufacturing establishment, and who work at home. This type represents an intermediate stage between the old handicrafts and factory production. Only very rarely is a greater number of workers employed together in a single establishment. The craftsmen are organised in groups, the so-called *gung-so*, meaning common house or common chamber. These guilds consist only of members of the same profession. In contrast with the old guilds of Europe they do not guarantee something like a subsistence level to their members, but they seek to prevent underselling, to regulate weights and measures, to smooth out internal differences, to protect members who are in difficulties, to arrange festivities, etc. These guilds are more like a modern trust, which likewise is concerned first of all with keeping up prices, standardising products and arranging banquets.

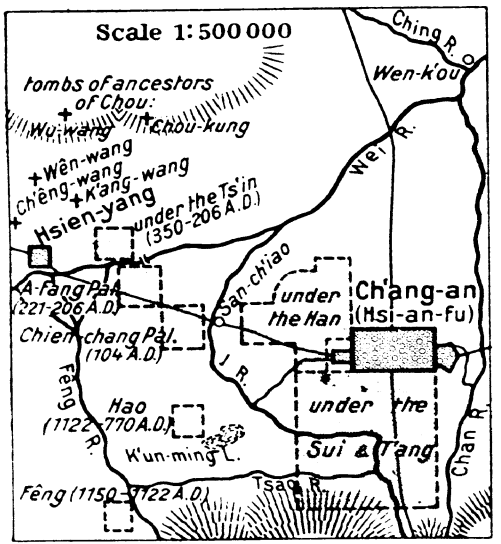
The presence of officials was an important factor in the development of urban civilisation. They attracted not only all kinds of producers, but also other consumers. The classification of the towns according to the rank of the highest official residing in them came to an end in 1911. In big cities such as Nanking or Hankow the officials had not the same importance, because other, especially economic, factors were predominant. In spite of all its deficiencies the great achievements of the old bureaucracy should not be minimised ;' and it should not be forgotten that in China the scholar had a higher standing than the soldier.


Ch'ang-an under the Han
(since 200 B.C.)
Wei R.
Scale 1:200000
Miles
0 1 2 3
Kilometers
0 1 2 4
Gates:
1 Hêng-mên
2 Lo-ch'êng-mên
3 Ho-ch'êng-mên
4 Hsüan-p'ing-mên
5 Ch'ing-ming-mên
6 Pa-ch'êng-mên
7 Fu-ang-mên
8 An-mên
9 Hsi-an-mên
10 Chang-ch'êng-mên
11 Chih-ch'eng-mên
12 Yung-mên
Palaces etc:
13 Chang-hsin-kung
14 Pei-kung
15 Kuei-kung
16 Ming-kuang-kung
17 Ch'ang-lo-kung
18 Po-liang-t'ai
19 Wei-yang-kung
20 Kao-ti-miao
21 Pi-yung
22 Ming-t'ang
23 Ling-t'ai (observatory)

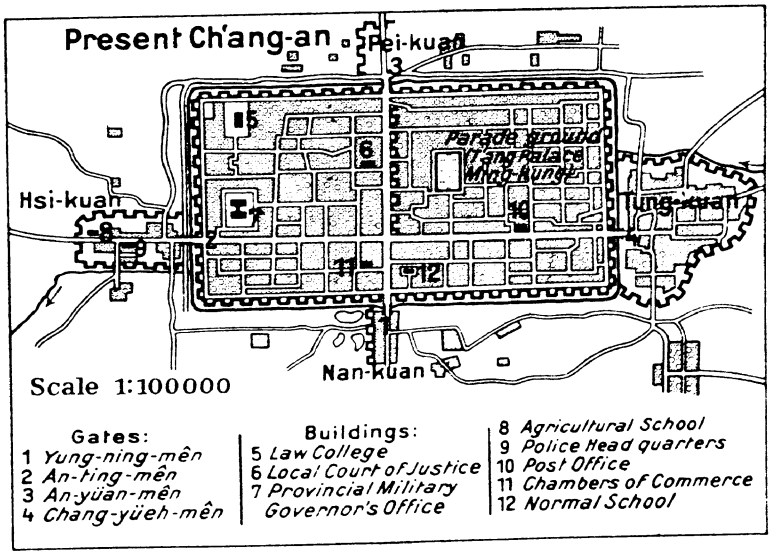
(a)


Ch'ang-an under the Sui and T'ang
Ming-kung
Forbidden Park
Palace City
Imperial City
Outer City
Wei-shui
Chang-hsien
Wen-ang-hsien
Scale 1:200000
a) Outer City
1 T'ung-hua-mên
2 Ch'un-ming-mên
3 Yen-hsing-mên
4 Ch'i-hsia-mên
5 Ming-tê-mên
6 An-hua-mên
7 Yen-p'ing-mên
8 Ch'in-kuang-mên
9 K'ai-yüan-mên
10 Kuang-hua-mên
11 Ta Yen-t'a (Pagoda)
12 Hsiao Yen-t'a (Pagoda)
b) Imperial City
13 Chu-ch'iao-mên
c) Palace City
14 Ch'êng-t'ien-mên
15 An-li-mên

(b)



(c)



(d)

Fig. 46 Ch'ang-an

Ch'ang-an, Quinsay and Peking-Peiping will serve as examples of non-europeanised Chinese towns.

Ch'ang-an on the Wei river, in the Shensi of to-day, near the later Hsian-fu, was founded as early as 1327 B.C., with 3,000 families. In 1122 B.C. a more suitable place was chosen ; the residence was moved to Hao-ch'ing, about 30 *li* from Ch'ang-an. There the capital remained until 770 B.C. It had twelve gates and a corresponding street system. This narrower district between several rivers was obviously regarded as a very favourable site for a capital, for in 200 B.C. a palace was built on the site of the old Ch'ang-an. This is the actual reason of the successful development of the town, which in the beginning was laid out only on a small scale as a compact settlement. However, it is said to have had 146,000 inhabitants by 192 B.C. This great and speedy increase seems to have been the result of a forced settlement, for it is said that a decree ordered all persons living within a radius of 600 *li* to move to the town. It is further recorded that another 145,000 arrived in 190 B.C., possibly also as the result of government action.

At this time the circumference of the town was about 65 *li*. The wall was 35 feet in height and had twelve gates. The interior was divided up by eight main and nine more principal streets. There were nine market places and sixteen bridges. The line of the wall was irregularly broken for magical reasons. We possess an old description of the town which shows the great significance attached to magical influences. The *Wên Hsüan* gives Chang Hêng's *Poetical Description of the Western Capital* (Ch'ang-an) : [1]

The inhabitants are cheerful in the spring and summer but melancholy in the autumn and winter. This is dependent on the sky. He who has settled on rich soil has leisure ; he who lives on stony soil has to toil ; this depends on the earth. Originally doctrine and habits varied in relation to the soil. How can this be proved ? The Ch'in Dynasty ruled over Yung (Shensi and Kansu) and became powerful ; the Chou Dynasty ruled over Yueh (between the Rivers Hoang-ho and Han) and became weak. The Emperor Kao-tsu had his residence in the West and was generous ; the Emperor Kwang-wu ruled in the East and was thrifty. Rise and decay of a government were always related to this. . . . The Han Dynasty originally built its capital on the banks of the Wei river. Ch'in had its seat to the north of it ; this was Hsien-yang. In the East there is the double defile of the passes Yao and Han, and the narrows of T'aolin are continued by the two Hwa mountains. The river god of the Hoang-ho

[1] According to Zach : *Deutsche Wacht.* Batavia, 1933.

raised his hand high and split the mountains through his miraculous power. He trod the mountains down over a wide expanse to open a straight passage to the meandering river. The traces of this action still exist to-day. Here (in the land of Ch'in) the fertile land extends towards all directions and the fields belong to the very best category. Indeed, this region may be called a mystical centre where all good spirits meet. . . . At the time when Kao-tsu first entered Shensi the five planets assembled in mutual harmony and simultaneously in the constellation of Tung-ching. Lou Ching left his chariot and opposed the plan to move the capital to Loyang. Heaven manifested its intentions (by the simultaneous appearance of the five planets) and a man instructed Kao-tsu on the plans which should be worked out. While the Emperor was considering the matter he was influenced by the spirits of Heaven and Earth, so that in the end he regarded the moving of the capital to Ch'ang-an as justified. After that Kao-tsu decided on the diameter and circumference of the new capital and fixed its extension in all directions. He built a moat and suburbs outside the gates. In doing so he used as models the large towns in all the eight zones of the world. Did he intend to comply only with the rules of the past? Then he investigated the regulations of the Ch'in Dynasty (concerning the dimensions of the capital) and amended those of the Chou Dynasty. He considered the restriction of the length of the wall to 3,500 yards as too narrow, and he widened the too narrow nine-yard widths of the wall. Opposite the Wei-yang Palace he erected the Tzu-wei Palace, and in front of the latter he built high towers as distinctive marks. The Lung-shou mountain was levelled and throne-halls were built on it. Dams are heightened, hollows are filled up, roads are widened, steep walls of fortification are erected, the number of gates is increased as a precautionary measure, everything is done as protection against robbers and rebels. The patrols make their rounds around the outside of the walls; a thousand watch-houses are built inside. . . . If I look at a plan of this town with its suburbs, on each side three gates open from which three straight and level streets go off. They are so wide that twelve carriages can drive one beside the other. These streets cross each other. The rows of houses are straight; the gables and the projecting roofs of all houses are of the same height. To the north of the Imperial Palace there are the first-class houses (of the officials); they stand directly on the street and their fronts open directly to it. . . . We proceed now to the nine large market places which adjoin each other, separated only by their walls; their outer gates are arranged in a circle. In the centre of these market places there is the five-storied Flag Tower from which one can look down on the hundreds of lanes within the markets and can control them. The salesmen have a profit of 100 per cent.; and yet the number of buyers does not decrease. There are a hundred different kinds of merchants. Good and bad merchandise is mixed and sold together; in this way silly provincials are cheated. . . . Within the imperial domain there are villages and towns of great wealth, for the products of the five capitals are transported hither,

to be re-exported to other places. The heavy carriages of the travelling merchants follow each other without interruption and produce a great noise. The officials who meet here are numerous and their coaches drive side by side or follow each other. The imperial domain is 1,000 square miles in area and is administered by a prefect. The palaces and the imperial lodgings of this region number up to 415.

The importance of Ch'ang-an decreased with time. In the second century A.D. it had only about 240,000 inhabitants, while the neighbouring town, the residence of the prefect, Ching Chao-yin, had at that time about 680,000 inhabitants. This latter grew considerably and is said to have reached almost two millions in A.D. 742, while Ch'ang-an was also increasing to between 600,000 and 700,000 inhabitants and a circumference of five to six miles. After the T'ang period the place was abandoned, especially because difficulties of corn supply arose by reason of the economically unfavourable situation. Under the T'ang the town had finally assumed the form of a regular square with a corresponding layout. This plan and especially the chequer-board system of streets became the model for the Japanese capital of Kyoto, at that time Yamashiro, in the year A.D. 794; Nara was abandoned in the Heian period, the castle was dismantled, and the old material brought to the new town, Kyoto, for the rebuilding of the castle.

On the appearance of *Quinsay* = Kin-sai = Lin-an-fu = Hang-chou-fu in the present Chekiang, the capital of the Southern Sung at that time, Marco Polo reports in A.D. 1270:

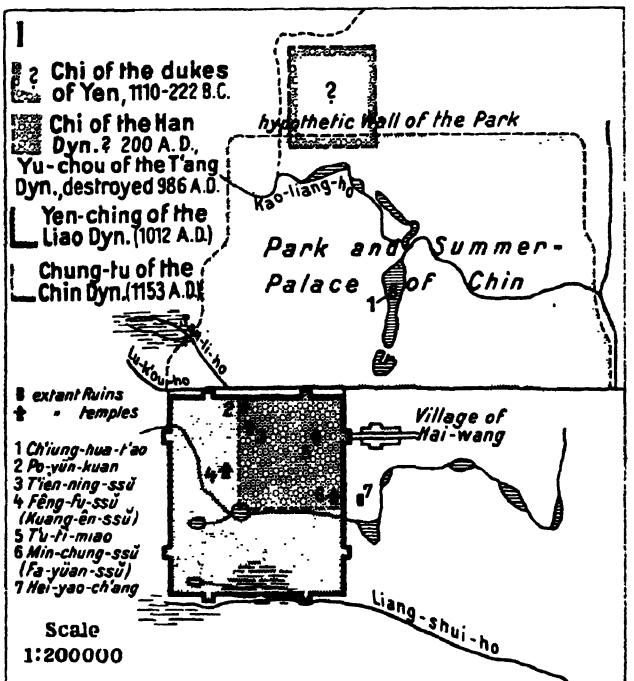
This city is an hundred miles in circuit. Its streets and canals are extensive, and there are squares, or market-places, which, being necessarily proportioned in size to the prodigious concourse of people by whom they are frequented, are exceedingly spacious. It is situated between a lake of fresh and clear water on the one side, and a river of great magnitude on the other, the waters of which, by a number of canals, large and small, are made to run through every quarter of the city, carrying with them all the filth into the lake, and ultimately to the sea. This, whilst it contributes much to the purity of the air, furnishes a communication by water, in addition to that by land, to all parts of the town; the canals and the streets being of sufficient width to allow of boats on the one, and carriages in the other, conveniently passing, with articles necessary for the consumption of the inhabitants. . . . There are within the city ten principal squares or market-places, besides innumerable shops along the streets. Each side of these squares is half a mile in length, and in front of them is the main street, forty paces in width, and running in a direct line from one extremity of the city to the other. It is crossed by many low and convenient bridges. These market-places (two miles in

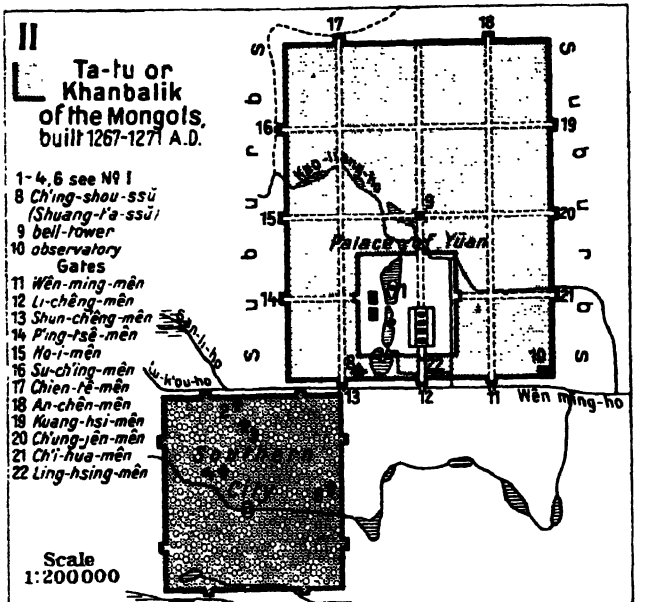
their whole dimension) are at the distance of four miles from each other. In a direction parallel to that of the main street, but on the opposite side of the squares, runs a very large canal, on the nearer bank of which capacious warehouses are built of stone, for the accommodation of the merchants who arrive from India and other parts, together with their goods and effects, in order that they may be conveniently situated with respect to the market-places. . . . Each of the ten market-squares is surrounded with high dwelling-houses, in the lower part of which are shops, where every kind of manufacture is carried on, and every article of trade is sold. . . . In other streets are the dwellings of the physicians and the astrologers, who also give instruction in reading and writing as well as in many other arts. . . . On each side of the principal street, already mentioned as extending from one end of the city to the other, there are houses and mansions of great size, with their gardens, and near to these, the dwellings of the artisans, who work in shops, at their several trades. . . . Amongst the handicraft trades exercised in the place, there are twelve considered to be superior to the rest, as being more generally useful; for each of which there are a thousand workshops, and each shop furnishes employment for ten, fifteen, or twenty workmen, and in a few instances as many as forty, under their respective masters. . . . It must be observed, in the first place, that the streets of Kin-sai are all paved with stones and bricks, and so likewise are all the principal roads extending from thence through the province of Manji, by means of which passengers can travel to every part without soiling their feet; but as the couriers of His Majesty, who go on horseback with great speed, cannot make use of the pavement, a part of the road, on one side, is on their account left unpaved. . . . In every street of this city there are stone buildings or towers, to which, in case of a fire breaking out in any quarter (an accident by no means unusual, as the houses are mostly constructed of wood), the inhabitants may remove their effects for security.[1]

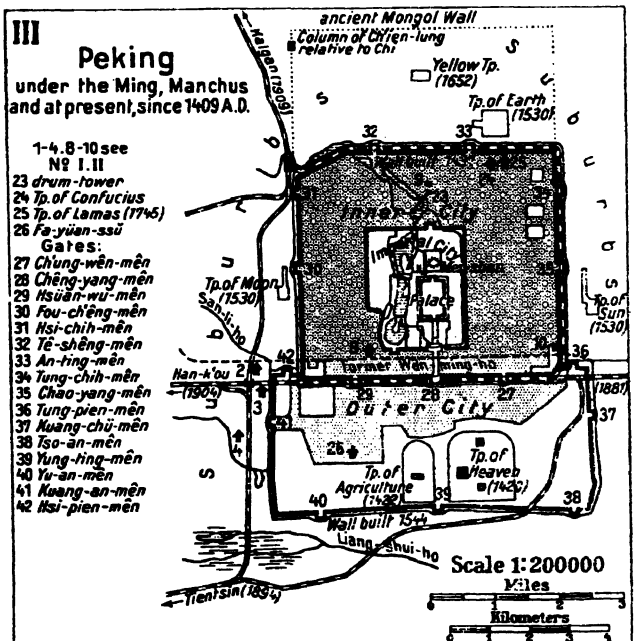
Peking shows all the pure characteristics of a Chinese town, from magical symbolism to the bustling economic life of modern China. "The *Purple City* may indeed be called an apotheosis of a consecration to that harmony, that coördination of thought and action, which brings peace and happiness to the world."[2] The colours of the buildings are symbolical. The walls are red as a symbol of the South, of the *yang* principle, the Sun of Supreme Happiness. The roofs are bright yellow, the symbol of the Earth, of the *yin* principle. The access which is "forbidden", is through the Gate of Heaven's Peace. There are four gates to the Forbidden City. A paved way leads from outside to the wall. Each of the four gates is open only to certain

[1] *The Travels of Marco Polo, op. cit.*

[2] F. Ayscough: "Notes on the symbolism of the Purple Forbidden City." *North China Branch. Royal Asiatic Society*, 1920.


I
? Chi of the dukes of Yen, 1110-222 B.C.
Chi of the Han Dyn.? 200 A.D., Yu-chou of the T'ang Dyn., destroyed 986 A.D.
Yen-ching of the Liao Dyn. (1012 A.D.)
Chung-tu of the Chin Dyn. (1153 A.D.)
hypothetic Wall of the Park
Kao-liang-ho
Park and Summer-Palace of Chin
Lu-k'ou-ho
Village of Hai-wang
Liang-shui-ho
8 extant Ruins
temples
1 Ch'iung-hua-t'ao
2 Po-yün-kuan
3 T'ien-ning-ssŭ
4 Fêng-fu-ssŭ (Kuang-ên-ssŭ)
5 Tu-ti-miao
6 Min-chung-ssŭ (Fa-yüan-ssŭ)
7 Hei-yao-ch'ang
Scale 1:200000


II
Ta-tu or Khanbalik of the Mongols, built 1267-1271 A.D.
1-4, 6 see № I
8 Ch'ing-shou-ssŭ (Shuang-t'a-ssŭ)
9 bell-tower
10 observatory
Gates
11 Wên-ming-mên
12 Li-chêng-mên
13 Shun-chêng-mên
14 P'ing-tsê-mên
15 Ho-i-mên
16 Su-ch'ing-mên
17 Chien-tê-mên
18 An-chên-mên
19 Kuang-hsi-mên
20 Ch'ung-jên-mên
21 Ch'i-hua-mên
22 Ling-hsing-mên
Kao-liang-ho
Palace of Yüan
Shun-li-ho
Lu-k'ou-ho
Wên ming-ho
Scale 1:200000



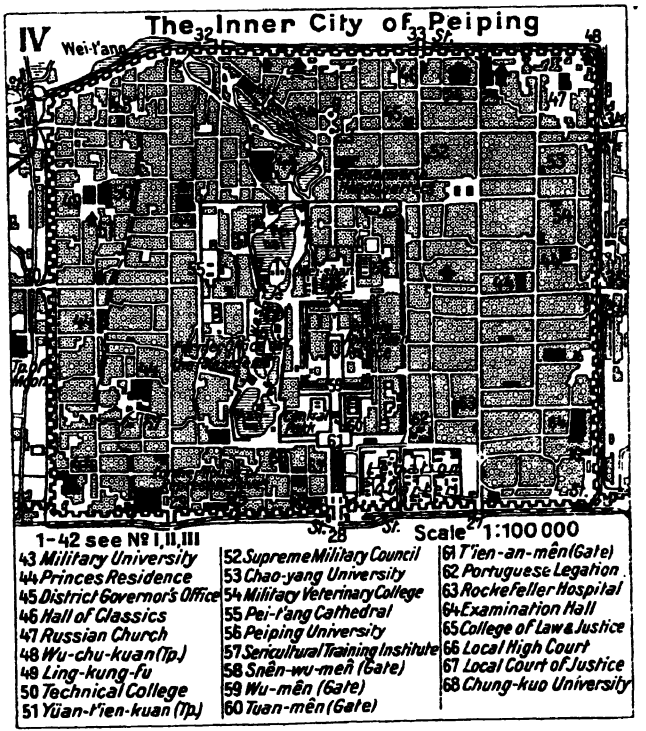


Fig. 47. Peiping

groups of persons : the South Gate to the Emperor, the East Gate to the civil servants, the West Gate to the military. Through the vast courtyard runs a stream, the symbol of *yin*, the River of Golden Water. It is spanned by five bridges of white marble, symbols of the Five Virtues. It follows the Gateway of Supreme Harmony where the Emperor was welcomed by his officials and his soldiers who had entered the Forbidden City from east and west. The whole assembly then proceeded together to the Great Hall of Ceremony. This hall stands on the highest of the three marble terraces. The central ceremonial part of the city and the living quarters consist of three halls. The building of the Emperor, the Palace of the Cloudless Heaven, is situated to the south, that of the Empress, the Palace of Earthly Tranquillity, is situated to the north, and between them stands the smaller hall, the Hall of Fusion and Permeation—Heaven and Earth vigorous and productive. The North Gate, symbolising the Spirit of Bravery, closes this imposing axis. Between this gate and the imperial buildings the flower gardens are laid out. In this city lived the representative of a people which elevated not the soldier but the man of peace to the position of national hero. Confucius said : " People despotically governed and kept in order by punishment may avoid infraction of the law, but they will lose their moral sense. People virtuously governed and kept in order by the inner law of self-control will retain their moral sense, and moreover become good."

Peking consists of five walled-in districts, three of which are enclosed concentrically one within the other.[1] The innermost part, the Forbidden City, is surrounded by a wall and a moat. Surrounding it as the next zone is the Imperial City, the old home of the lesser members of the Court ; then follows the Tartar City with its lakes. The Chinese City adjoins in the south. In 1121 B.C. the first city, the City of Ch'i, was built on the site of the present Peking. The mere fact is known ; no details are available. In A.D. 70, under the Han, the place was rebuilt. About the intermediate period we know nothing. At this time the place was called You Chou. In A.D. 937 it was renamed Nan Ching, or South Capital. In A.D. 986 it was rebuilt on a larger scale and more beautifully to the west and south of the old city of You Chou after its destruction. This new city had two gates in each wall and a three-branched canal. The towers above the gates were 99 Chinese feet high, not one foot higher, for at a height

[1] S. D. Gamble : *Peking. A Social Survey.*

of 100 feet demons were believed to fly. The Palace of the Emperor stood in the south-west corner of the city, which enclosed 910 houses. In A.D. 1122 the city was enlarged towards the east to almost double its former size. It is said that 800,000 coolies and 400,000 soldiers were employed in this work. The city was now called Chung Tu or Middle Capital. In A.D. 1215 Jenghis Khan made it the capital of his new Mongolian province. The Khans undertook large extensions to the north of the existing city.

To the north of Peking the Summer Capital of Kublai Khan, Shangtu, at the northern margin of the Province of Chihli, was built. 200,000 persons are said to have lived there.[1] Within a distance of one to two days' journey three other towns were laid out, two of them on the route Peking—Shangtu. They were protected by mud-walls which were partly reinforced by stones. We may assume that they served as military posts for the defence of Shangtu. They were situated in a plain surrounded by beacon-crowned hills. It is probable that the supply of grain was secured by the cultivation of the immediate hinterland.

Peking's influence promoted the development not only of other towns but also of other kinds of work. Between 1280 and 1283 the Grand Canal was extended up to Tientsin, and Peking was connected with this important waterway. By this route the rice tribute of the provinces could reach the capital and goods from Peking could be shipped 900 miles down to the south, to the end of the canal, into the province of Chekiang or up the Yangtse.

We are in possession of a description by Marco Polo. He calls Peking Cambaluc, the City of the Ruler.

> 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 court-yards 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 caravanserais. 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. A fair number of fortified and other towns of the neighbourhood live entirely

[1] L. Impey: "Shangtu. The Summer Capital of Kublai Khan." *Geographical Review*, 1925.

on the trade with the capital from which they import, in their turn, goods for their own needs. From Cambaluc many roads lead to the various provinces; and on each of the high roads rest-houses at a distance of 25 to 30 miles are built. Provisions are supplied by the neighbourhood or by the Court. In these places peasants are settled by the Emperor so that large villages grow up. Between the main stations small villages have been laid out every three miles with 40 houses on the average.

To-day, 13 national highways radiate from Peking to the provincial capitals. They have been built in the course of a thousand years during which Peking was the capital of the Empire. The longest route leads to Kashgar in Chinese Turkestan, over 3,400 miles distant; others to Lhasa, Yunnan-fu, Canton, Foochow, Hangchow, Hankow. It has been said that the Chinese were incapable of building good roads, and that for this reason they built indestructible vehicles.

The throne room of the Emperor was in fact the centre of the city. The Palace had to serve for three purposes, religious ceremonies, feudal audiences and private life.

The walls of the Tartar City were especially strong, for they served as the actual protection against attacks. The whole area between these outer walls and the Imperial City was allocated exclusively to the Manchu bannermen when they conquered the capital in A.D. 1644. But the military element did not dominate the city, and in course of time it was almost completely eclipsed. Van Braam, who led an embassy of the Dutch East India Company to the Imperial Court in Peking in the years 1794 and 1795, reports: "There is not even a guard's house at the gates of the Palace. Anyone would naturally expect to find a small army in the Imperial Residence, but he will see nothing like it. Perhaps it is requisite to go into Tartary to see them. In the cities of the first and second order we found as many as two hundred and fifty soldiers, and in those of the third order seldom more than half the number." When the Manchus settled in the Tartar City the Chinese population moved to the south into the Chinese town, where it engaged in commerce and industry while the Manchus lived on the booty which they had collected during the wars. Moreover, they were not allowed to engage in any business activity. Even to-day most of the business is carried on in the south of the city.

The Forbidden City encloses 0·64 square miles. Its walls are two miles and a quarter long, 22 feet high and 30 feet thick.

The walls are red ; hence the name " Purple " Forbidden City. The moat is 200 feet wide. The Imperial City, built between 1406 and A.D. 1437, covers 1·93 square miles ; its walls are 6·44 miles long. It had at first only four gates. The Tartar City covers 11·68 square miles ; its walls are 14·73 miles long, 41 feet high and 62 feet thick. It has 9 gates, three in the south to the Chinese City, and two in each of the other walls. Each gate was protected by a semicircular counterscarp. The South City, built in A.D. 1545, was at first only a suburb, possibly something like the city of booths outside a Roman camp. In 1564 it was walled in ; the walls were 14 miles long. It covered an area of 10·55 square miles and had ten gates, five in the north, three in the south and one each in the west and the east. The area of the whole city is 24·75 square miles, and it is almost entirely level. The main streets are 100 feet wide.

The density of population of modern Peking is extraordinarily high. In 1919 it was 33,626 per square mile. In the twenties it had about one million inhabitants. The different " cities " are very dissimilar in character. Thus, three large districts of the South City are almost wholly agricultural ; there the density is about 6,000 to 18,000 per square mile, but in the north of the South City it rises to 72,000 to 83,000 per square mile. Here most of the shops and workshops are situated. The streets are narrow ; the courtyards are narrower still. The houses are overcrowded. Living and working place are mostly under the same roof, and the workshop is not seldom also the sleeping room. In those districts which are primarily residential the density is 22,000 to 55,000 per square mile. The average number of people living in one house is 4·9. This seems low, but it must be remembered that most of the houses have only a ground floor and that the word " house " has not been clearly defined. " House " may sometimes mean only one room. The percentage of 63·5 for the male population is extremely high. This can be explained by the fact that many students, unmarried officials and politicians live in Peking, not to mention the many male workers and employees who also live single.

Peking was a political rather than an economic centre. Business serves foremost, therefore, the supply of daily needs. Small shops are the rule. Thousands of shops have only 15 square feet or even less. In 1917 there were 25,000 shops and stores employing 87,000 persons. There were 75 markets for food and all kinds of other goods. The guilds dominated business

life almost completely.[1] According to Korean records the Chinese guilds date back about a thousand years. For Peking, during the Ming period, only three guilds are known, those of the tailors, the confectioners and the leather box makers. In 1928 there were 110 guilds; 40 craft, 11 professional, and 60 commercial. The guilds sometimes had a great number of members, as the tailors with 21,000, the paper-hangers with 9,000, the masons with 7,000, the cooks with 6,000. Craft guilds are sometimes organised for individual districts or for Peking City only, that is to say they are locally based as everywhere in China.

Most of the entertainment was "commercialised". The majority of the recreational institutions are to be found in the South City. Formerly theatres, feasting, story-tellers, horse-racing, singing girls, to-day pool, billiards, cinemas, public amusement parks are the attractions. Public parks as we know them did not exist. There were palace gardens, but these were open only to the higher class of the nobility. The wealthier people had their own large court-yards and gardens. To-day there are three parks, the Central Park of about half a square mile situated in the Imperial City; the grounds of the Temple of Agriculture in the South with about 2 square miles; and about two-thirds of a mile outside the Agricultural Experimental Station, a park of about half a square mile.

The lowest density and the greatest poverty can be found side by side in the same district. Poverty is most pronounced in the north-eastern and north-western corners of the South City, and in the north of the Tartar City. One district may serve as an example of the social and economic structure. This district covers about one-eighth of a square mile, and is surrounded by four main streets each one hundred feet wide. Houses and shops rich and poor form an inextricable mixture. The shops are situated mainly in these streets and also along the two secondary streets of the interior of the district. The shops for the passers-by are preferably in the primary streets, while those serving the daily needs of the inhabitants of the district are located in the secondary streets. In the north-eastern corner there is a group of streets where the makers of bows and arrows live. There are also shops for gold and silver ware, for copper kettles, for wooden vessels, antique dealers, cloth and tea shops. Between these shops dwelling-houses are everywhere interspersed. The residential streets are narrow. Long walls are their characteristic

[1] I. S. Burgess: *The Guilds of Peking.*

features, only interrupted by a few gateways. Sirén describes this :

> The residential sections usually turn the most blank and empty faces towards the passer-by. Here for the most part only roofs are to be seen, curved roofs of various height and size, and between them tree-tops ; hardly anything of the houses. The architectural monotony could hardly be more complete. It is sometimes like passing a street of prisons or monasteries. . . . There are no indications of the life and the beauty that may be hidden behind the walls. The home of the Chinaman is an extremely well-guarded place. Every family forms a little community by itself and the walls that enclose it are often just as effective for confining the inmates as for protecting them against intruders. The houses of the business section are not hidden between uniformly closed walls but open into the street with latticed doors and windows. The roofs are just as high and far-extending as on the dwelling-houses, but there are usually no wooden pillars in front of the shop. Sometimes the street in front of the shop becomes a veritable market. The inner shop is, indeed, in many small old-fashioned houses, less of a business-place than a living-room where the proprietor and his assistants eat and sleep and smoke and sip their tea.

The district contains 1509 different houses of which 493 are shops, 925 residences, 69 temples, schools, yamens and other official buildings, i.e. 61·3 per cent. residences and 32·7 per cent. places of business. There are 93 different kinds of shops and stores, mostly very small. There are also about 100 soldiers and 69 officials living in the district. Altogether there are 163 different professions among the 7,900 persons constituting its whole population.

Many Chinese towns, so far as they are not disintegrating under the impact of European influences, have preserved their old character and appearance. The survival of the old structure can be explained by various causes. There is foremost the deep-rooted feeling of oneness with the cosmic order. It would be wrong to discard belief in the magical powers of Nature as out-of-date. It is a kind of counterpart operating in the sphere of the subconscious to a rational, scientific knowledge of Nature. Attachment to the family and to the ancestors is another retarding and therefore stabilising factor. This attitude supports, quite naturally, the maintenance of an economic structure which is in general free from rational-capitalistic methods. Business is still predominantly conducted directly between seller and buyer and by direct handling of commodities. Abstract transactions are

far less usual, especially in the interior, than in Europe. Personal relationship between product and producer still prevails. The direct contact between product and producer is one of the main reasons for having the living and working place under the same roof. Chinese *laisser-faire* cannot be compared with its European edition : in China it is rather a doing-not-too-much while in Europe it is an over-indulgence in an unrestricted individual activity.

This European activity is now infiltrating through thousands of channels into the old China. It is disintegrating her rural and urban structure. It is an inevitable clash of two civilisations. For China the recent war is the forerunner of her industrial revolution. Only the future will tell whether she can steer clear of the immense danger of a nationalistic interlude in the wake of her unification as a nation or will succumb to it. However this may be, the China of the future will be a different China. Her influence will make itself felt in the world market and will bear upon the economic structure and the pattern of settlement of other countries. Her vast expanse prevents a senseless and precipitate penetration by European methods and may help her to avoid the mistakes which Japan repeated by her ape-like and unimaginative imitation. In a semi-official publication, *Reconstruction in China*, by T'ang Leang-li it is proudly announced : " In city planning the most important project is the communication system, and public streets and roads undoubtedly occupy front place." This is a symbol. The most dubious conceptions of town planning are being imported into China in their pure form. The cult of the street was the starting-point of the " modernisation " of the new capital of Nanking. Let us hope that another spirit will guide the reconstruction of China's towns after the war and that the advanced ideas of town and country planning which are now taking shape in Europe and America will dominate this work.

Not only the planning of towns but the replanning of town and country embracing the whole State as the planning unit should be the final goal. As everywhere else, a balance between town and country should emerge, and the centuries-old contrast between them should be brought to an end. It will be a hard struggle, especially in China with her overwhelmingly agricultural population and her deep-rooted traditionalism. But the village in its present form is not fit for living in. New forces are at work entangling the farmer in the complicated fabric of the inter-

national market. Gradually his attitude towards life will change and make him ready to absorb modernising influences more readily than in the past. Rural and urban life will proceed on the same level of civilisation, in unity but not in uniformity.

A systematic redistribution of population and industry is imperative. In its course a soundly balanced regionalism should be developed on the basis of the old regional structure of China. But only within the framework of a national plan can regional and local planning be operated efficiently. The whole country should be conceived and planned as a complex organism, and the final goal should be the creation of an environment within which the Chinese masses can live a life worthy of human beings, and where the four functions of housing, working, distribution and recreation can play their full part. We should never forget that Man is the centre of every creative activity, and that everything that happens on earth is the creation of Man for his own sake.

With these general remarks we must stop. It is not possible to go into detail and to suggest more definite solutions at the present moment. China's physical assets are impressive. She will not hesitate to develop them, and it seems that she will adopt the methods which have proved successful in the U.S.S.R. —as Government spokesmen have pointed out. This would indicate that China intends to introduce a considerable measure of systematic planning; an intention which can only be welcomed. But it should be a planning of the right kind, free from rigidity, proceeding on a large scale and applying the most advanced principles of science and technology, of sociology and town and country planning.

Hsui sze chao means "the flood of new thinking". This is the name of the movement which stirred up the aspirations and the energy of the youth of China in the twenties of this century. It was characterised by the philosopher Hu Shih as essentially a new and critical form of appreciation and sensibility. It questions everything. "All our old ideas and customs and the old teachings of the masters, are they still of any value to us? The youth asks if they have really to accept the traditional forms of believing and acting merely because they were those of the many. Are there not others, better and more reasonable ways than the old ones?" An old Chinese proverb says: Be old while you are young. We Europeans think the other way round: Remain young when you are getting old. This is a fundamental

difference. It explains most of the struggle which lies ahead and which will be hard in spite of the absorption of European influences. Although the missions flatter themselves that Christianity will play a decisive part in the future development of China and although the present head of the State is Christian, the

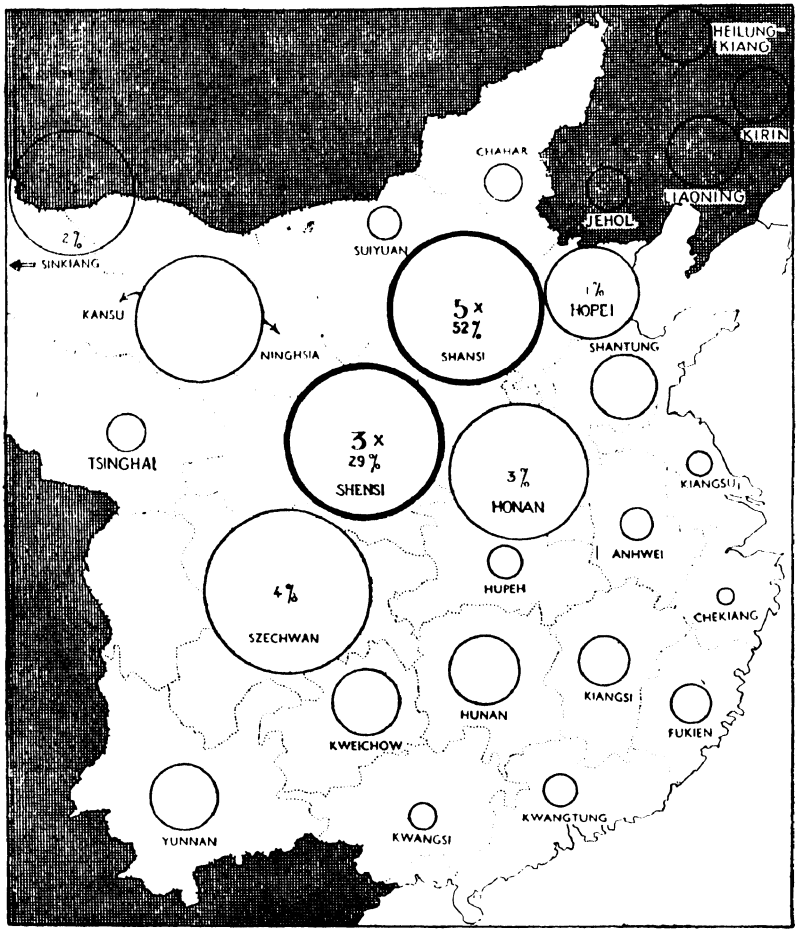


Fig. 48. Estimated Coal Resources of China

Chinese are under no illusion in this respect: "Christianity is the vanguard of imperialism; it is a means of enslaving China." This is another side of the new critical attitude. After all it is not too long ago that the Spaniards and the Portugese colonised their new acquisitions with the cross in one hand and with the

sword in the other. Our methods may be more " gentle ", but the fact remains that China will go her own way and will take over from the West only those achievements which are suited to her. We read in the periodical *Hsing Ching Nien* :

If we want real democracy we are bound to clash with Confucianism, the old forms of philosophy and the old forms of government. If we want genuine science we must get rid of the old forms of learning and of religion. If we want democracy and science we must clash with our old culture. Democracy, i.e. independence, equality, freedom is in contrast to the teachings of Confucius. Confucianism admits social stratification and inequality. Confucian loyalty means loyalty of the subjects to their ruler. The principle of filial piety contains a double moral. According to Confucius a woman must be the servant of her husband, of her father, of her father-in-law, even of her sons. To the liberation of the women Confucianism is openly opposed. What is the essence of Confucianism? The negation of independent acting. As long as Confucianism has any say China remains an autocracy.

However this somewhat one-sided exuberance is gradually beginning to recede before a deeper insight.

Not long before his death Sun Yat-sen exclaimed :

The fight which is going on in the Far East, and which will be long and hard, is fundamentally not a clash between two hostile interests but between two basically different and opposing civilisations. It is the struggle between the Kingly Way that is humanity and moral, and brutality that is power and force. We want to win over the hearts. They want to kill the bodies.

RUSSIA

I. Progress and Procedure of Settlement.

The settlement of the vast spaces of the U.S.S.R. is comparable with the penetration of the North American continent from ocean to ocean. Yet in method and result the differences are enormous. The settlement of Russian territory was not a peaceful conquest : it was a very spasmodic process of development. Neither want of space nor over-population were the primary causes of this expansion. It was mere lust of conquest which incited the Russians to undertake expeditions into unknown lands and to subjugate other peoples. As soon as the Russians reached a standard of civilisation higher than that of the neighbouring tribes they forced these back as they did in the East ; and as soon as they had consolidated their own political structure they subdued the politically weaker peoples as they did in the West and to a certain degree in the South. Against the Finns only was the expansion more peaceful and followed the procedure of an ordinary settlement. How different was the penetration of the American continent ; colonisation with the help of foreign immigrants and development of the land they occupied. In Russia on the other hand the pioneers belonged to the people themselves. They absorbed the subjugated tribes as far as possible into their own expanding state and settled among them. But the original inhabitants were not uprooted, and did not disappear as peoples to the same degree as did the American Indians. In this respect the penetration of Asia by the Russians resembles the political conquests of the Mohammedans ; they also use only members of their own group.

The Russians pushed forward across Asia with enormous rapidity. They reached the Pacific Ocean in little more than a century. In 1581 the colonisation of Siberia began. The Yenisei was reached in 1610 ; the Lena in 1628 ; the Sea of Okhotsk in 1639 ; the Arctic Ocean between 1630 and 1640 ; the Gulf of Anadyr in 1648. In 1644 the mouth of the Kolyma river was discovered and a winter camp established where later the town of Nizhne Kolymsk developed on the shores of the Arctic Ocean. Khabarov, a trader of Olekminsk, equipped and despatched an expedition to the Amur region. It was a race through these vast expanses, a demonstration rather than an

actual occupation, although a number of fortified points were secured. At the beginning of the seventeenth century there were only a few Russians in Siberia; they were mainly traders, soldiers, priests and postillions for the post from Moscow to Transbaikalia. The wave of the Great Migrations recoiled, though with far less vehemence. This expansion coincided with the beginning of the European colonisation of America, but whereas the American settlement proceeded more or less continuously, nothing decisive took place in Asia after the first dash across the continent. Neither agriculture nor industry developed. True, the early stage of the American penetration was also one of conquest and of trade in furs and other articles regarded as valuable; and the American forts fulfilled the same functions as the fortified posts of the Russian frontier. But in America the basis of a social and economic structure developed directly from these origins. How little the Russians thought of such possibilities and how much militaristic points of view were paramount up to the last decades of Tsarism is proved by an official Government statement in 1907 according to which the Trans-Siberian Railway was not at all intended to relieve the pressure on the agrarian population, but was built entirely "for the protection of the border districts through colonisation against their Eastern neighbours". The real agent of colonisation was the army. The pioneer settlers were soldiers. How could it be otherwise in a country where serfdom prevented any kind of free settlement as the expression of a popular movement? "The serfs of the nobles are mere chattels, and, like their ploughs and herds, are the property of these tyrannical Boyars who treat them despotically like Egyptian Beys and fix their value in cash. They are the property of these men, and as such they are attached to the soil, and the value of their estate depends more on the number of peasants than on the number of acres." [1]

These facts are more generally known than are their consequences, for they not only explain the absence of any pressure of population during the whole course of the settlement of the conquered territories, but they also determine the specific structure of the towns and the industrial development. The towns originated as fortified places, and as such they were of more importance to the Government than their population. The final element of many place-names indicates this origin; *gorod*

[1] I. C. Petri: *Neue Pittorescen aus dem Norden oder historisch-statistische Darstellungen aus Lief-Ehst-und Russland*, 1809.

means fence, wall; and up to the eighteenth century *gorod* implies that the place is a settlement surrounded by a wooden palisade. The towns were, therefore, not the seats of commerce and industry as they were in Western Europe, and were not integral parts of the agricultural structure. They were not the natural products of a sound social and economic development.

One of the fundamental problems of every civilisation is the interaction between nature and man. The Russian way of responding to the ever-recurring challenge of nature is so foreign to most Europeans and seems to them so " primitive " that they lose sight of the fact that Russia's spiritual and material centre of gravity rests in Asia. Under this aspect the penetration of the Asiatic continent by the Russians assumes a different significance. The Russian, the active agent of this gigantic process of settlement, is embedded in a social collectivity, and his actions bear the mark of a mysticism which is most unlike European speculation and not akin to Asiatic contemplation. This fact explains the trend of settlement and its structural results up to 1914.

The continental character of the country is decisive both in general and in detail : the extreme range of climate, the insignificant relief of the land, the meagre coastline, and the relative uniformity of this vast space. Uniformity promotes migration and expansion, especially under insufficiently developed technical conditions. It does not produce the tensions which are indispensable for more diversified and more elaborate achievements. Adaptation to the newly-conquered regions is relatively easy, but the existing dissimilarities, e.g. the varieties of soil, take on a greater importance, while the immense river-systems form the connecting links so far as water transport is possible. The forest lands favour a more sedentary way of life, whereas, especially in the early period, the steppes promoted migration and nomadism. The south coast of the Crimea, for instance, has always been a zone of sedentary settlement; but where the steppes border the sea the population is confined to a narrow coastal strip. In spite of her enormous extension, the whole history of Russia is overshadowed by the quest for the open sea and the establishment of unhampered contact with the outer world.

Europeanisation begins with the conquest of Novgorod, which had long established trade relations with the Hanseatic League, extended its influence up to the Urals and founded Pskov as a trading centre with the Finns. In 1553 English traders had

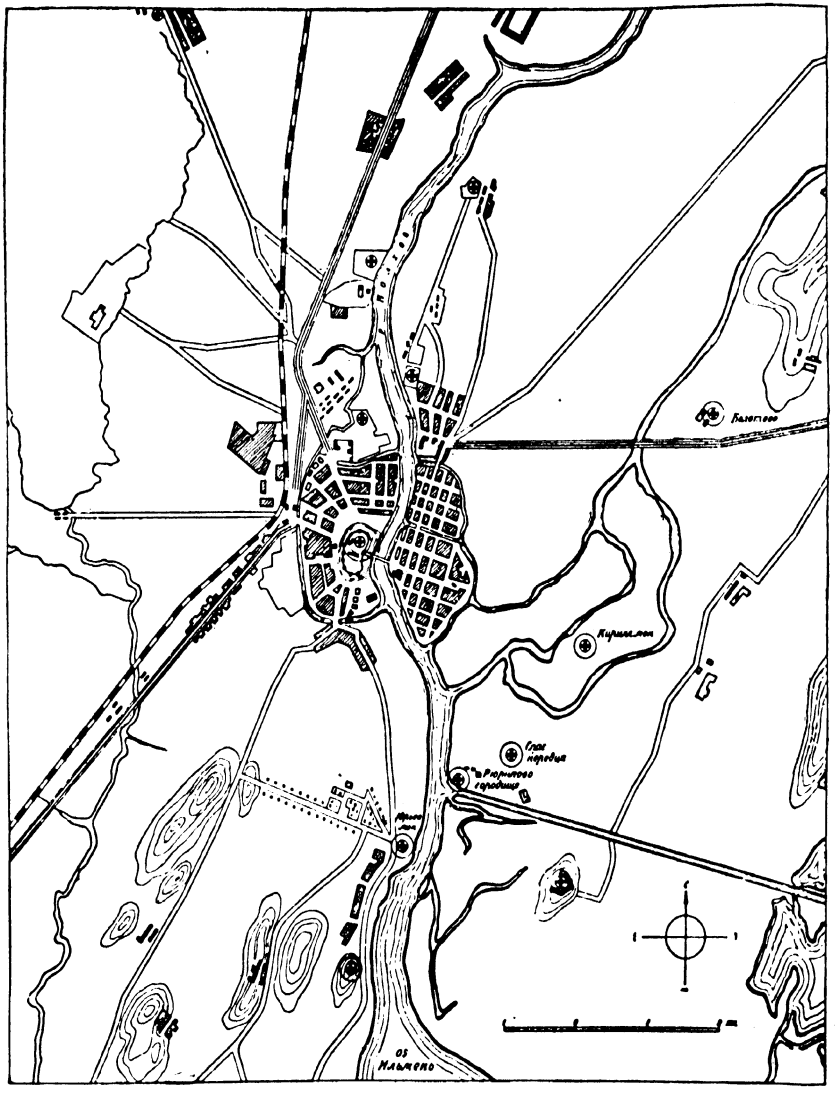


Fig. 49. Novgorod and Surroundings

already penetrated round the North Cape into the White Sea. The conquest of Little Russia towards the West and the acquisitions of Peter the Great are expressions of this drive for the open sea.

The penetration of the European part proceeded in three stages. The first peaceful expansion was a colonial advance against the Finns after internal consolidation had taken place, Christianity had been accepted and Byzantine civilisation had infiltrated. In Russia, unlike other countries, monasteries were not the pioneers of colonisation and settlement. We know of only two monasteries which took part in the colonisation of the North during the fourteenth century. Traders and agriculturists were the main agents of expansion towards the North and East. In the middle of the sixteenth century the advance towards the steppes began, to come to an end only in the nineteenth century. The tribes of the steppes offered a determined resistance, which died down very gradually. Here the State was the promoter and active agent. It was an aggressive expansion, and the forces emanating from the forest land proved superior to those of the steppes, which were peopled partly with settlers from Western Europe. In the course of this conquest a fortified frontier developed, the characteristic expression of a militarist colonisation like the Roman *Limes*, the early American frontier, and the Great Walls of China and Peru. The origin of many towns can be traced back to this period. The third stage was directed against the Baltic countries, i.e. Lithuania and Poland. Their peoples were subdued but not absorbed by the Russians, as their civilisation was in many respects more advanced than that of their new masters. These centrifugal forces radiated from a central area, the Dukedom of Muscovy, as a nucleus, whereas in the American development the nucleus lay in the coastal belt of the East. The settlement of Russia developed outwards from the centre through the expansion of her own population. The settlement of America spread from the marginal zone through immigrants from other countries.

Up to 1914, except in some special cases, neither commerce nor industry exerted an essential influence on the structure of settlement. Agriculture remained almost the only factor of real importance in drawing the map of Russia. As production and distribution in Tsarist Russia were more or less passive forces, it was agriculture that penetrated into the nomadic zones of the North and South-East and pushed back the nomadic tribes.

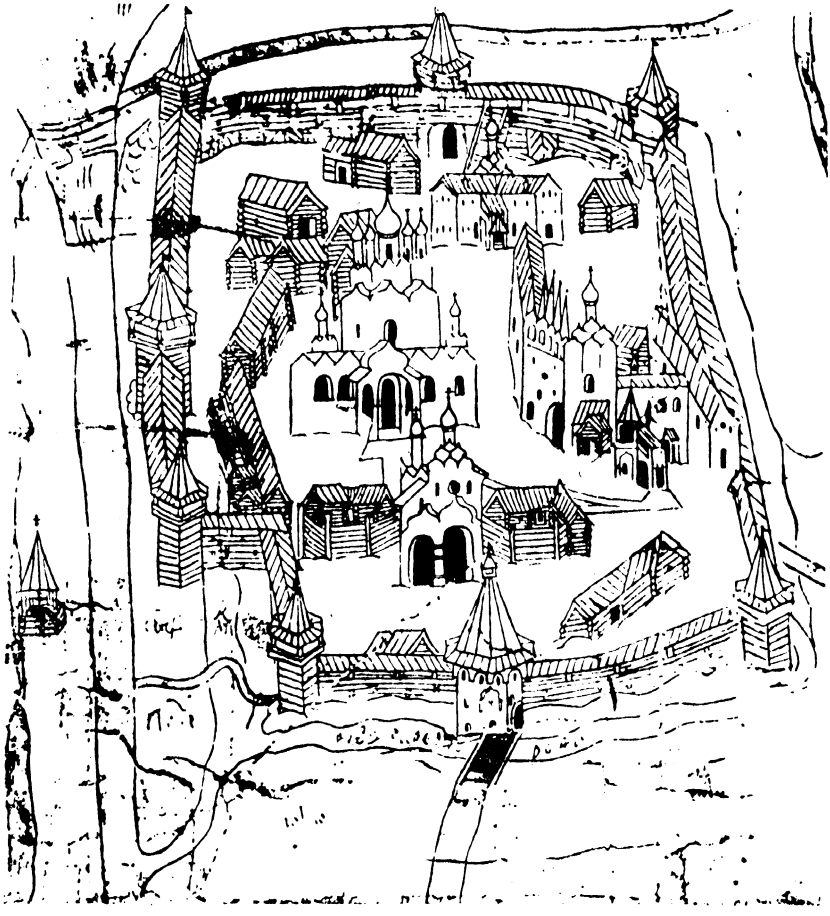


Fig. 50. Fortified Monastery of Borodzrowo Tuchwinskowo in 1679

The area of their pastoral land was reduced, a development of great significance to them when it is considered that about one hundred reindeer are needed to secure the livelihood of one family. The Western part of the forest land had already, in an early period, been settled by Russians and Lithuanians. Clearing of the woods created the necessary space for settlements. The zone of settlement in the northern forest land extended roughly to 60° of latitude, i.e. to the modern Leningrad. The number of inhabited places was small and agriculture rather primitive. The settlements followed the rivers ; thus certain lines of settlement grew up between which the land remained undeveloped. In the southern zone of the forest land agriculture came into its own only after the first and very primitive state had been abandoned. But here the expansion proceeded mainly in the form of larger islands where it could easily take root. In this respect it followed a trend which is characteristic of the initial stage of every settlement ; the pioneer does not select the most fertile soils, but prefers those best suited to his implements. This holds good also for Russia, for the density of settlement, at least in the early period, was highest not in the Black Soil country, but on the less fertile clay soils near the northern border of this zone. Only after these soils had been exhausted did a more definite trend towards the Black Soil region of the South set in. The structure of settlement in the intermediate zone between the forest and the steppes is very similar to that of the forest region.

The agricultural penetration of the steppes began in the fourteenth and fifteenth centuries with an influx of settlers from the North ; it assumed larger proportions only after the conquest of Kazan and Astrakhan in the sixteenth century. The first settlements of the Cossacks, the so-called *poroges*, grew up at the rapids of the Dnieper ; later, on the Don, and in the sixteenth century on the Volga and the Terek near the foothills of the Caucasus. At first this was not a systematic procedure directed by the State, but an uncoördinated pioneer undertaking of adventurers and fugitives. Against the Tartars a military organisation became necessary. The Cossacks formed a living frontier against them. Their ways of life were akin to those of the Tartars. Hunting and marauding expeditions were undertaken on a coöperative basis, while agriculture remained an individual enterprise. A stronger influence was exerted over these hordes by the State when they became too unruly and dangerous in the time of Catherine II. A number of the Cossacks

therefore migrated to the lower Volga, the Terek and the Kuban, or to Siberia, where they were organised as frontier guards and partly took to agriculture, while the peasants betook themselves to the old regions which were made available for new settlers. Thus in the seventeenth century the Governments of Orel, Kursk, Kharkov, and in the eighteenth century the regions round the Black Sea and the Sea of Azov and beyond the Volga were settled, though only spasmodically.

The Cossacks played a very important part in the moving of the frontier as well as in the establishment of settlements. Among others, Kharkov was founded in 1653 as a Cossack village and Ust-Kamenogorsk in Siberia was laid out in 1720 as a nucleus from which the sphere of settlement spread to other places. A non-urban Cossack settlement was called *staniza*, and consisted of several villages. On the basis of this early organisation of the Cossacks, a social and economic structure developed which has been preserved in some cases up to recent times.[1] Three categories of land were distinguished; land at the disposal of the Army as a whole; land belonging to the individual *staniza*, and land owned by private persons. Agriculture was the main occupation. But in addition certain home industries were carried on—the reasons being the Russian tendency to foster industrial self-sufficiency as a substitute for the inadequate industrialisation of the country in general, and to keep away the impact on the Cossacks of outside and "undesirable" influences. In 1879 there were in all the Cossack armies about twelve hundred such establishments with a productive value of about 5·2 million roubles. After 1835 a class of Cossack traders had come into being which grew during the seventies of the nineteenth century to over 4,500 persons. The whole organisation had a definite collective tendency. In 1876 there were 3,500 Cossack settlements, of which 2,800 were situated in the European part, and in the Caucasus, and the rest in Asia. Including the territory of the Kirghiz, this number increased to 5,800. Most of the settlements had between 200 and 500 inhabitants; over a thousand had a population of 2,000 to 3,000; and fourteen had a population of over 5,000. In the whole there were about 250,000 homesteads.

During the sixties of the last century agriculture became a profitable undertaking owing to the railways which also accelerated

[1] F. von Stein: *Die Russischen Kosackenheere.* Petermanns Mitteilungen, 1883. Ergänzungsheft 71.

the settlement of the Steppes. At that time agriculture received a considerable impetus ; hitherto only about half the land was under cultivation, the other half being left to pasture. In the arid steppes and semi-deserts the settlements followed the railway lines, gradually reducing the pasture area and forcing the nomads to a sedentary life. Settlements of agriculturists sprang up in the Crimea. In spite of the steepness of the coast they developed favourably. Here it was mainly for commercial reasons that settlements were created and kept alive.

The expansion into Asia proceeded at a very rapid pace, since it was concerned, at first, only with the establishment of fortified places. This is a third type of settlement ; it was linear in the northern forest land, but in the southern part it flowed into islands of population, while in Asia it developed as isolated settlements. In 1717, during the reign of Peter the Great, attempts were made to find a sea route from Okhotsk to Kamchatka. A further 150 years elapsed without any fundamental changes.

But in spite of its possessing relatively few inhabited places thinly dotted over the enormous stretches of land, Asia is of the highest importance to Russia, and the Pacific Coast, which was reached about half a century earlier than the Baltic and the Black Sea, possesses an ever-increasing significance in Russian history. It is no proof to the contrary that fur hunting and the search for gold were the earliest and chief stimuli for the Cossacks, and that agriculture and settlement followed only very slowly.

During the Russian advance into Asia, three new frontiers took shape in Europe, where conquest and pacification had not yet produced lasting results. Between 1636 and 1656 a new frontier with new towns was set up against the Tartars ; the frontier of Byelgorod against the Ukraine ; the frontier of Simbirsk in the east ; and the Transcaucasian frontier. In the seventeenth and eighteenth centuries the movement of population from one place to another was especially great. A guard line of more than 1,863 miles was drawn up stretching from the Desna, a tributary of the Dnieper, to the Altai mountains. It consisted of wooden forts at fixed intervals as a protection against the advance of the attacking nomads. Behind this line a certain concentration of population developed. Similar measures were applied to the colonisation of Siberia. The geographical centre of the country shifted considerably as a result of these acquisi-

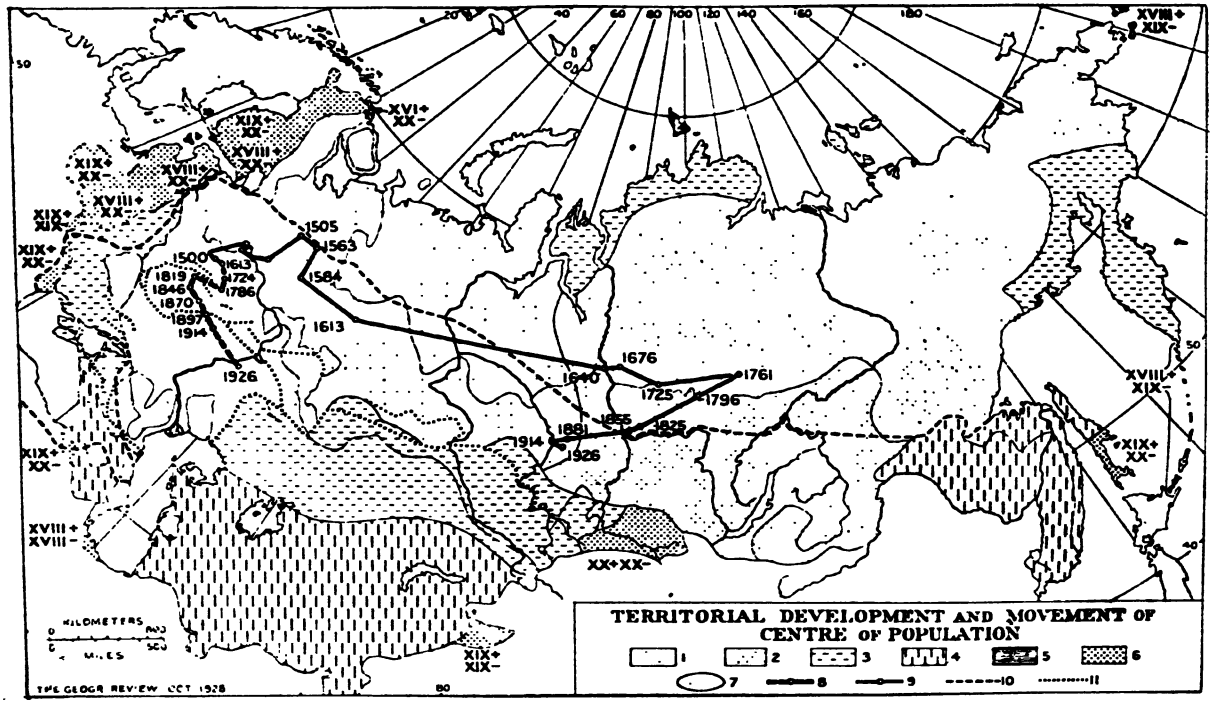


Fig. 51. Historical development, compiled by B. Semenov-Tian-Shansky. Territory acquired by Russia in: 1, sixteenth-century; 2, seventeenth century; 3, eighteenth century; 4, nineteenth century; 5, twentieth century; 6, lost territories; 7, over 50 per cent. Slavs in the population (twentieth century); 8, movement of centre of territory from 1500 to 1926; 9, movement of centre of population; 10, northern and western boundaries of the Mongolian-Tatar dominion of about 1300; 11, defensive lines against nomads and Caucasian mountaineers in sixteenth to eighteenth century

tions. The old historical centre lay to the south-west of Moscow. During the eighteenth century it moved to the basin of the Yenesei and the Lena. It moved again during the sixties of the nineteenth century to the south-west. In 1914 it lay in Tomsk, and after the loss of territories in 1918 near the Tom between the Ob and the Yenesei. From the beginning of the fourteenth to the twentieth century the centre of population on the other hand moved only about 248 miles from the Moscow region southwards, together with the trend towards the fertile soils. Its distance from the geographical centre of the country is about 1860 miles. In the United States the difference is only about 62 miles. One of the foremost tasks of Russia's population and settlement policy will be to reduce this great divergence. The internal migrations of Russia originate partly from this extraordinary unevenness in the structure of settlement; areas with maxima and minima of population and settlement adjoin each other, sometimes very abruptly.

The advance towards the Caucasian regions during the seventeenth and eighteenth centuries was pure conquest. The original population remained in its old places. As early as 1731 the Little Horde of the Kirghiz was incorporated. After the twenties of the nineteenth century the occupation of the Kirghizian Steppe proceeded from Orenburg and partly from Siberia. In 1847 the Great Horde of the Kirghiz was subjugated. After that, settlements in the steppes developed; among others the town of Kopal and in 1854 Alma-Ata (Verny) on the edge of the steppe at the foot of the mountains. Before this time the trend of settlement had already turned slowly more towards Trans-Siberia. Turkestan was subdued from the North relatively late (1867 to 1883). The Amur region had been reached in 1643, but the Russians were driven out again by the Chinese in 1869. They re-occupied it during the period 1850 to 1858. The Ussuri region was occupied in 1860. In the Coastal Province Chinese immigration was almost outstripping the influx of Russians. This dash to the frontier was possible only because the Russians did not encounter any serious resistance.

Many factors contributed towards the tremendous dynamic of the procedure and progress of Russia's expansion; prestige, lust for power, the stimulus of new possessions and precious materials, the necessity for stemming the advance of the Nomads, and the general tendency to stop only at a natural frontier, in this case the sea. In this way Siberia, like Canada, assumes the

importance of a colonial outlet while Transcaucasia and Turkestan have the character of colonial dominions comparable to India or Tunis. The southern part of Siberia is the favoured zone of settlement for the Russians, whereas the North is left to the indigenous peoples with only a slight interspersal of Russians.

The expansion to the East and the protection of conquered regions which could not be united efficiently with Russia proper by a systematic policy of settlement because the influx of Russian settlers was insufficient were the primary reasons for the construction of a railway connection. By the beginning of the nineteenth century about six hundred thousand people had already settled in Siberia by their own choice, but they were almost entirely confined to the Western part. Not even the influx of many of the liberated peasants after the Emancipation of the Peasants in 1861 changed this situation fundamentally. Siberia's spaces are too vast to permit of a marked effect upon the structure of settlement by such infiltrations, even though they were not inconsiderable in numbers. This holds good also for the later stage when a shortage of land developed in some villages and districts. Between 1860 and 1880 about 110,000 settlers, and between 1880 and 1892 another 440,000, arrived. The first zone of settlement in Siberia developed in the Black Soil region; the second along the railway line. Gradually the extension and density of the settlement belt on both sides of the railway increased. In 1857 an Englishman had the fantastic idea of building a railway worked by horses from Nizhni Novgorod via Kazan and Perm to the Siberian ports on the Pacific Coast; a project that merely proved him incapable of appreciating time and space in their real significance. At the end of the last century three lines of communication to the East were working; the Ural railway up to Tyumen; the Samara (Kuibyshev)—Zlatoust railway to Miyass; the Samara–Orenburg railway to Orenburg. The second line was extended in 1891 to Chelyabinsk and further on via Kurgan, Petropavlovsk, Omsk, Kainsk, Novosibirsk, Tomsk, Krasnoyarsk, Irkutsk, Kumarskaya, Khabarovsk to Vladivostok. The whole length from Leningrad is more than 5,400 miles; the cost was more than £200 millions. The merchants, more than the Government, recognised that the Trans-Siberian railway would solve not only strategical and administrative but other problems also. A memorandum of the "Representatives of the Russian Merchants at the Fair of Nizhni Novgorod in 1889" states:

This steam railway will be of extraordinary importance to Russia and will stimulate her industry to a high degree. Through Russia it links the four hundred millions of China and the thirty-five millions of Japan with Europe. The persistent attempts of Germany to seize the markets of the Pacific and the efforts to build the Panama Canal demonstrate clearly that in a short time an economic struggle will develop round the Pacific Ocean. Already the Trans-Canadian railway has seized part of the merchandise (silk, tea, hides) which hitherto were shipped via Suez to Europe. There is no doubt that a part of these goods will be transported through Russia if the transport from Europe via Vladivostok to Shanghai needs only eighteen to twenty days instead of forty-five days via Suez or thirty-five days on the Canadian railway.[1]

However, the attitude of the big landowners was quite different; they opposed the Trans-Siberian railway in the sessions of the Duma; and they obstructed especially the settlement in the belt stretching on both sides of the railway which gradually became the main zone of residence for Russian immigrants.

Many towns and villages are situated on the rivers, although these are frozen for a considerable part of the year over long distances, during which time they cannot serve as lines of communication. Inland navigation played an important part, because overland transport was bad, and thus the neglect of the road system worked in favour of the inland waterways. Russia did not experience the stage of extensive road building which was an essential factor in the rise of the national States and their consolidation. In 1857 the first railway between Petersburg and Moscow was built. But as late as in 1826 an *Ukase* forbade the building of new roads, and allowed only the repair of those already existing. It is obvious that this must have exerted a decisive influence on the structure of settlement both in general and in detail.

The rivers offered the best opportunities for the location of settlements before the railway age and even afterwards played an important rôle. If the Black Soil region of Siberia was the first and the Trans-Siberian Railway the second line of settlement, the rivers were the third. Along their course the settlements penetrated the interior, vertically and laterally, to the railway zone, along the existing roads from which they spread further into the interior. In the European part of Russia four main lines of communication determined the structure of settlement

[1] Krahmer: *Russland in Asien, Sibirien und die Grosse Sibirische Eisenbahn*, 1897.

in many respects ; Volga–Caspian Sea ; Dnieper–Black Sea ; Volga, north-west of Bulgary–Lake Onega ; and the line towards the Baltic Sea. But these are only the early and the main lines from which the structure of settlement spread out. The development of the railway and canal systems added new lines.

The development of towns in Russia was not accompanied by a corresponding concentration of industry in the towns. On the other hand industry and agriculture remained for long interdependent. In the villages of the Tsars and of the Boyars, which consisted on an average of one hundred to one hundred and fifty homesteads, there were sometimes more people employed in industry than in agriculture. On the other hand townsmen were engaged in agriculture and horticulture apart from their commercial and industrial activities, as for instance in Nizhni Novgorod, Pskov, Tver (Kalinin) ; fields and meadows belonging to the Church were also cultivated by the townspeople. The suburbs, *posad*, often had an economic structure similar to that of the countryside. In 1649 a strict segregation of town from village took place. The population of the *posad* was forbidden to move to the country, while commerce and industry were declared the monopoly of the towns, and persons not belonging to the *posad* were not allowed to own shops or industrial establishments. The reasons for this differentiation were not economic but purely fiscal, i.e. it was expected to produce a higher taxation. Though certain prerequisites did exist, neither home industry nor, later, manufacturing industry was decisive in shaping the structure of settlement, as they were in Middle and Western Europe. The main industry during the sixteenth century was the provision and processing of agricultural products. Then followed clothing, textile and metal establishments. A small part of the population engaged in industry migrated to Moscow, although the craftsmen of Moscow were very poor and lived on the outskirts of the city under miserable conditions. As early as the seventeenth century some places specialised in particular trades, for instance, Novgorod in pottery, Kaluga in felt products. The manors as well as the monasteries produced as many of their own requirements and implements as possible. This kind of self-sufficiency continued for a considerable time. No large-scale national industries which could supply more than the immediate hinterland developed ; the growth of the towns was not stimulated by an exodus of workers from the countryside. Certain starting-points, however, became visible. For instance

it is reported that in the time of Catherine the Great two hundred and fifty new " towns " were founded as potential industrial localities. And Ruban's *Moskowitischer Kalender* of the year 1776 tells us that there were 478 " factories " under the supervision of the Board of Manufacturers. But what kind of establishments were these " factories ? " They belonged to those categories which were most similar to the home industries and their related branches ; and they were all concerned with light industries. To mention only a few of those represented in greater numbers ; there were 64 cloth, 47 silk, 70 linen, 15 hat, 23 paper, 23 leather, 13 colour, 10 cards, 36 crystal and glass, and 13 porcelain factories. Powerful obstacles to the development of commerce and traffic at the end of the eighteenth century were lack of educational and training institutions, and of an efficient peasantry, the large estates and their inefficient management by the aristocracy, the bad communications of the interior, bribery and non-observance of the law.[1] All these reasons also militated against urban development and a sound structure of settlement.

The new acquisitions under Alexander I and the expansion of the Russian Empire to about 360,000 square miles were a stimulus to commerce, production and traffic. Around Moscow an " industrial " zone gradually took shape. This concentration of industries placed the centre of population in a lopsided position in relation to the whole area of the State. Only under the first Five Years Plan of the Soviets did a redistribution of population in connection with a relocation of industry set in. A report of the year 1841 states :

> Moscow is situated almost in the centre of the plateau which is bordered on the north by the range of hills from which the rivers flow to the White Sea, and on the south by those which are the northernmost of the southern part of the State. But Moscow is also the centre of an industrial region with thirteen to fourteen million inhabitants, and contains the five thousand to seven thousand factories of the State. Here the entire weaving and metal industries are concentrated. Moscow is the great focus of these trades, and Nizhni Novgorod is the fair for them. The identity between the frontiers of this industrial activity and the edges of the plateau deserves to be mentioned. Its consequences are remarkable. Once the plateau has been left behind one passes in the north only through forest and in the south only through fields and agricultural regions without any signs of industrial activity. The southern edge or that of the central range which links the Volga heights to those near Smolensk forms

[1] F. W. von Reden : *Das Kaiserreich Russland. Statistisch-geschichtliche Darstellung seiner Cultur-Verhältnisse*, 1843.

the boundary of the soil rich in humus ; a district of more than eighty million hectares and of the most fertile land, the wealth and the vegetable garden of Russia with more than twenty millions of inhabitants.[1]

When the Minister of the Interior reported in 1839 that one-eleventh of the Russian population, at this time about sixty-two millions, were living in towns, it does not mean that this proportion was an industrial population not engaged in agriculture. The towns did not possess much land and did not therefore send many of their townsfolk to work in the surrounding country ; most of the inhabitants were occupied in commerce and trade of various kinds if they were not officials, scientists or well-to-do people. Moreover guilds did not exist and could not therefore confine industry to the towns as they did in central and western Europe. Consequently industry could develop in the towns as well as in the country. Although this greater freedom might have created a better balance between town and country, great numbers of people remained tied to agriculture and were therefore not available for industrial work in the towns. Of the three main categories of workers the farmers, who were also part-time workers, especially in the textile trade, were the most numerous ; the craftsmen were much less numerous, and the industrial workers proper were insignificant as compared to each of the former categories.

Only very slowly does the *structure of population* change ; and just as slowly did the industrial districts of Tsarist Russia develop. They should not be judged by the standard of the industrial agglomerations of Western Europe or the United States, for neither their productive capacity nor their density of settlement or population are on a comparable scale. In general the following four districts can be distinguished ; the Baltic Ports ; the Ports of the Black Sea ; the Central District, as a result of the concentration of the home industries ; and the Urals. These four industrial districts have their roots in the structure of population as it has developed during the centuries, and in the habits of consumption. In 1630 the urban population was about 2·5 millions out of a total population of nearly 12·5 millions ; but it should not be forgotten that a great number of " towns " were hardly distinguishable from large villages. In 1725 the population as a whole had increased to twenty millions with 8 per cent. of urban dwellers. The corresponding figures for

[1] F. W. von Reden : *op. cit.*

1830 are fifty millions and 5·5 per cent., and at the end of the nineteenth century the urban population was about 10 per cent. of the whole.

In 1806 about forty-five millions lived in a territory of roughly 345,000 square miles; two-thirds of these were serfs. There were at this time twelve hundred "towns" between the fortieth and twentieth degrees of longitude and the fiftieth and seventy-seventh degrees of latitude. Five hundred of these "towns" were mere villages or hamlets in which one-ninth of the population lived and where on an average there was only one stone house

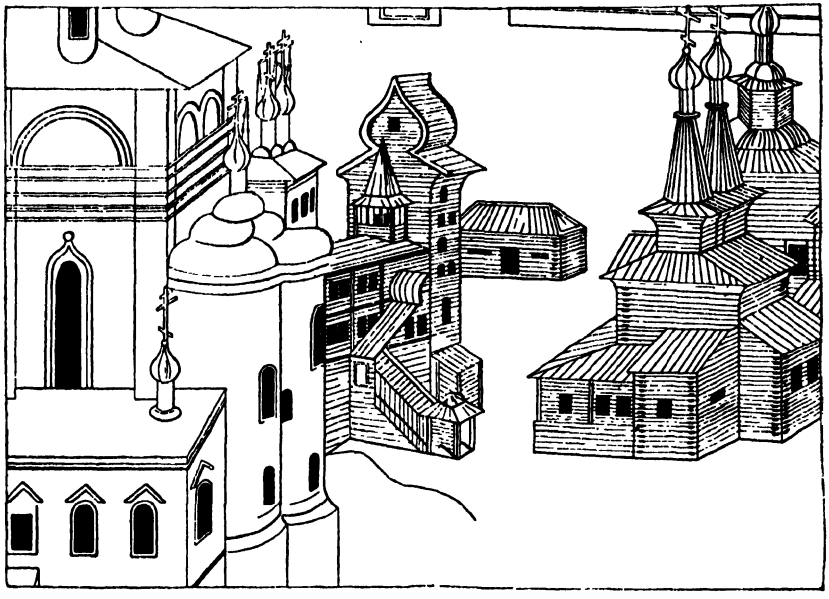


Fig. 52. Town of Soluudzegodsh

to twenty-two wooden houses. This large number of "towns" resulted from the administrative reform under Catherine II in 1775. Including the territories of the Cossacks fifty Governments were set up, each with 300,000 to 400,000 taxable male subjects. Each of these Governments was subdivided into twelve districts, each with 20,000 to 30,000 taxable persons. This led to great inequality in the extent of the various divisions. Moreover, neither social, economic nor geographical considerations were taken into account, but it was deemed necessary to create a "town" for each Government and for each district. If no real town already existed, market centres, villages or even hamlets

were " elevated " to " towns ". Thus more than three hundred new " towns " came into being. The same process was repeated in 1796 in the then new Polish Provinces, in Courland and Georgia. In 1784 three major zones of administration were established : sixteen Governments for the North, twenty-six Governments for the central part, and eight Governments for the South. In 1839–1840 the picture changed as follows : of 689 " towns " 536 were seats of Governments, Provinces and Districts ; 135 were seats of the Territorial Administration ; eleven were Military " towns "—six in the Military Colonies and five in the Cossack region—and five were larger market towns (outside Poland and Finland). 622 were situated in Europe. In fifty " towns " of the Asiatic province there were only 220,000 inhabitants. Only seven " towns " had a population of more than 50,000, among them Petersburg with 476,000 and Moscow with 348,000 ; Riga with 71,000, Odessa 70,000, Vilna 53,000, Kronstadt 53,000, Tula 51,000. Between forty and fifty thousand were living in Astrakhan, Kazan, Kiev, Vorony, Saratov, Kishinev. But by far the greater number of " towns " had only between two thousand and three thousand inhabitants. There were 102 such " towns ". Eighty-two had 5,000 to 7,000 ; sixty-eight between 7,000 and 10,000 ; and one hundred had under 1,000 inhabitants. All the towns together housed 4·7 million inhabitants of whom 1·8 millions were citizens. In 1850 out of 1,000 towns there were 878 with a population of less than 10,000, thirty-two with more than 20,000 and two with more than 150,000. The towns were artificial creations of the Government from the very beginning : they were not products of a natural development.

Several types of *rural* settlement can be distinguished. The villages of the northern forest land were relatively small. On the other hand the area needed for food production was large, and this led to a more decentralised structure of settlement in order to avoid long distances between homes and places of work. Besides agriculture the people were engaged in hunting, fishing, and woodwork. The villages were situated in valleys or on the shores of lakes, whereas watersheds with peat bogs were uninhabited (the basins of the Northern Dvina, of the Onega and of the other northern rivers).[1] In the southern forest land small villages and single hamlets were dominant in the early period. Homes and places of work were near together. This structure

[1] B. Semenov : " Russia." *Geographical Review*, 1928.

persisted, to some degree, for a longer period in the Baltic region and in Finland. At the end of the fifteenth century, after the introduction of the three-field system and of commons, and after the population began to increase, larger villages developed, of fifty to one hundred inhabitants, and up to one hundred and sixty in the Moscow region. They were not situated along the rivers, whose valleys were damp and exposed to frost for long periods, but preferably on the clay morainic hills and plateaux which are warmer and drier and where subsoil water is easily to be found.

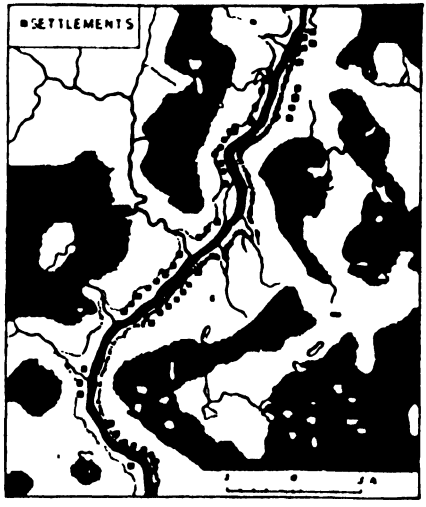


Fig. 53. Type of settlement in the north, i.e. in the valleys and along the waterways. This is a part of the valley of the Northern Dvina with a population density of 70 per square kilometre in the inhabited area

(North-west of the Russian plain and centre, especially between the Volga and Oka.)

The villages of the Black Soil region and the steppes were considerably larger. They were situated mostly on the rivers, partly on high and steep banks secure from inundation at the time of the thaw. In many cases the villages followed each other almost without interruption. These villages came into being in connection with the advance against the nomads, whose herds grazed on the fertile land of the watersheds, whereas the settlers turned to the wooded valleys. The distance of these places from the fields is considerable. This may be explained on the one hand by the greater size of the villages and on the other by the scarcity of water. Almost everywhere the houses

were lined up in two rows separated by a broad street or a river.

The number of villages increased from the north-west to the south-east. In the glaciated districts of the north-west the average was thirty to a hundred inhabitants to one village; on the clay tract bordering the Black Soil region it increased to one hundred to two hundred; on the Black Soil region itself there were two hundred to six hundred, sometimes even a thou-

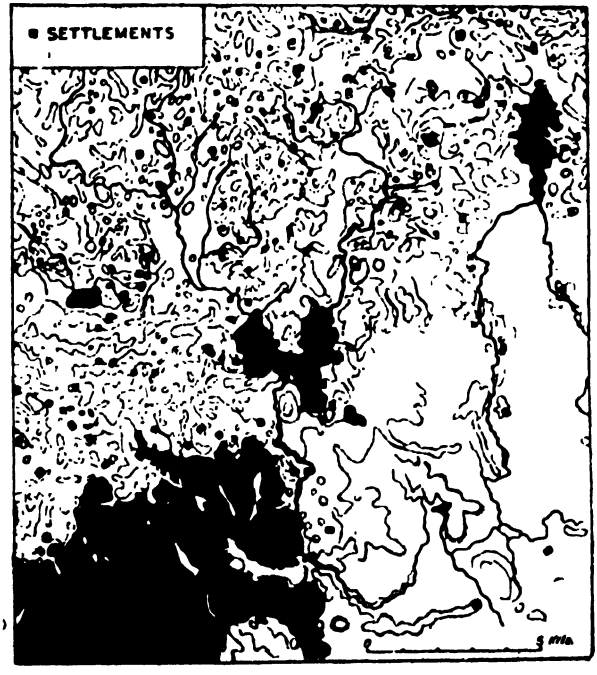


Fig. 54. Type of settlement in the north-west of the Russian plain, on morainic hillocks. In the inhabited area the population density is 22 per square kilometre

sand. "The limit of the black earth is at the same time that of large settlements *en masse*. The largest settlements of this zone, though numbering more than ten thousand inhabitants in individual cases, nevertheless often retain a purely rural character and cannot be ranked as towns".[1] The greater concentration of people in the villages of the southern part of the Russian plain is the consequence partly of the difficulty of water supply already mentioned and partly of the long periods of frost which

[1] B. Semenov: *op. cit.*

rendered the population more gregarious. Moreover considerations of defence and the tendency of the village communities to discourage isolated settlement prevented decentralisation. " The northern limit of the black earth zone generally forms the boundary between the watershed type of settlement and the ribbon-like type of the valleys ; and about the boundary is the zone of densest village population on the Russian plain from Podolia to the estuary of the Kama—the principal axis of colonisation because it yields the greatest number of emigrants to the Asiatic part of the Union and to the Northern Caucasus."

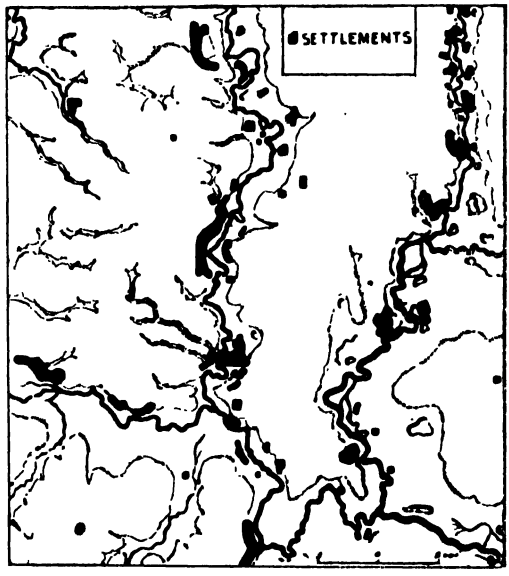


Fig. 55. Type of settlement in the steppes, on the stream banks. Density of population in the western valley 300, in the eastern 500, per square kilometre

The conquest of new territories made fortified frontiers necessary. In connection with these frontier zones *towns* developed, either as fortresses or only as fortified places, as for instance Samara (Kuibyshev), Saratov, Ufa in the sixteenth century. Between 1650 and 1680 the White Russians founded new places as military posts, e.g. Volchansk ; and on the southern frontier, Tula, Kaluga, Putivl ; and later Voronezh, Byelev, Oskol, Byelgorod, Valuiki, Kursk. The number of military personnel amounted to about one-third of the total population ; they were engaged in commerce and industry apart from their

actual profession. The Ukrainian frontier gradually became so densely settled as to be strategically useless. A member of the Commission for Military Colonisation, the engineer Beauplant, reported : " In the course of seventeen years which I spent in the service of the Polish Kings (1630 to 1647) I founded more than fifty new *slobods* or colonies which in their turn gave rise in a few years to about one thousand villages by the addition of new settlements." The significance of military colonisation should be put into its right perspective ; towns did not necessarily develop, but colonies might lead to the development of towns. Sometimes it so happened that towns were redeveloped to villages because they fulfilled their allotted functions insufficiently or because they had been " promoted " to towns only by reason of the lack of other suitable places. This held good for Europe as well as Asia. Towards the end of the sixteenth century the following places were founded in Siberia for the protection of the conquered regions : Tobolsk, Tyumen, Verkhoturye ; they were called *ostrogi*, i.e. wooden forts. Then followed in the seventeenth century Tomsk, Turukhansk, Kuznetsk, Yeniseisk, Kansk, Krasnoyarsk, Yakutsk, Olekminsk, Achinsk, Barguzinsk, Irkutsk, Balagansk, Nerchinsk, Kirensk, along the lines of the Ob, Yenisei and Lena. These are but a few illustrations of the principles of military conquest and colonisation.

The fortified centre of these settlements was of special importance. It was surrounded by a wooden wall with towers and moats ; stone walls and stone buildings were erected only in rare cases, as for instance the Kremlin in Moscow, Smolensk and Nizhni Novgorod. This centre was the seat of administration and the nucleus of defence. Along the roads radiating from it the settlements of the soldiers were laid out. In this way a system of radial and concentric roads developed round the centre. It provided quick access to the centre and interconnection between the radial streets. Originally, only this fortified part was called " town " ; exterior settlements were called *sloboda* and a group of these units was called *posad*. They were suburbs with certain prerogatives reserved sometimes for a special class of the population such as soldiers, craftsmen and Cossacks. This social structure and spatial segregation of centre and outskirts led to a specific kind of urban development. At first it was characterised by a combination of rural and urban functions. This was especially the case in the central forest region. During the next period, at the time of the annexation

of Poland and Lithuania, many institutions of their westernised towns were adopted by the urban communities of Russia proper, especially with regard to some principles of commerce and industry. For the first time in the history of Russia the " chartered town " appears, but this principle was not applied to the towns of the East. At the beginning of the eighteenth century the importance of towns as administrative centres increased with the growth of internal security ; the need of military posts correspondingly grew less. The wooden fortifications and the concentric layout more or less disappeared. They were now replaced by rectangular plans with a central market-place surrounded by public buildings. This type can be found principally in the marginal districts of the forest region and in the east. The older towns of the north-west had been mostly destroyed during the conquest by the Tsars. This explains why the West possesses old towns such as Grodno, Vilna, Smolensk, while eastern Russia has none.

Finally, industrial and commercial towns along the railway lines developed in the second half of the nineteenth century. Almost every main station of the Petersburg-Moscow line grew into a town during the eighties and gave birth to other small towns in the neighbourhood.

In Siberia military reasons were the main factors in urbanisation. As time went on commerce exerted a steadily growing influence on the Siberian towns. In western Siberia the main trade was in cheap and bulky products, such as timber and farm produce, and in eastern Siberia in more expensive goods of smaller bulk such as gold, furs, tea, etc. Before the opening of the Trans-Siberian railway the merchants of Western Siberia confined their visits to the fairs of Irbit and other towns of the Urals, while traders from Eastern Siberia preferred more civilised centres such as Petersburg, Moscow and Nizhni Novgorod. These different habits led sometimes to a higher standard of living in the towns of eastern Siberia than in those of the west.

There are numerous health resorts in the Crimea and the Caucasus. The rural character is predominant even among the urban population of central Armenia, Azerbaijan and the regions around the Black Sea. In Turkestan new Russian towns are laid out in immediate proximity to the old towns which can trace their origin back to ancient and very highly developed civilisations as, for instance, Samarkand, Tashkent, Bokhara, Khiva ; or entirely new administrative centres are founded

such as Ashkhabad, Krasnovodsk. Irrigation and railway are both important agencies of the settlement of these parts.

To-day every place with industrial activities is urbanised, quite independently of the number of its inhabitants. It is classified as either " town " or " settlement of the town type ".

In addition to defence and administration, *commerce* contributes towards the development of towns. Just as handicrafts are superseded by home industries, so the travelling merchant and the fairs follow the sedentary trade. At first commerce was almost exclusively concentrated in the north-west and created in this region towns such as Novgorod, Pskov, Tver (Kalinin), and others with a legal status resembling that of the Hansa towns. The main places of commercial intercourse with western and northern Europe up to the end of the eighteenth century were Archangel, Riga and Petersburg. The number of ships arriving in Petersburg increased rapidly ; in 1714 there were only sixteen ; in 1722 the number was 119 and in 1724 there were 180. Though the growth of Petersburg can be attributed chiefly to its rank as capital, commerce also played an important part. It had about 80,000 inhabitants in 1750, 271,000 in 1804, and over 425,000 in 1825.

The main trading centres on the Black Sea were Odessa on the site of the old Tartar village of Kadshibei, Taganrog, Eupatoria, Kherson, and Oshakov. Before the railway age, commerce followed first of all the course of the rivers. Commercial towns grew up at the mouths of the Don, Dnieper and Danube ; Taganrog, Rostov, Khichevan on the Don ; Odessa, Kherson, Nikolayev on the Dnieper ; Reni and Ismail (Rumania) on the Danube. Similarly on the Caspian Sea, Astrakhan, at the mouth of the Volga, an important entrepôt between Europe and Asia for the silk and cotton trade ; and Baku, situated on a projection of land, is the corresponding port for Iran.

But the places farther inland on the rivers also profited from the growth of trade. Bolgary at the confluence of the Volga and the Kama was already an early trading centre for the exchange of goods between the North-West and the Caspian Sea. Kiev on the Dnieper was the entrepôt for goods destined for the Black Sea ; they arrived from Novgorod via Smolensk and Chernigov and were transported from Kiev either by a flotilla to the Bulgarian coast and farther on by land to Constantinople or to the Black Sea.

The deeper penetration of Russia into Asia and the improved

communications with Iran and China increased the importance of favourably situated places as trading centres. The merchants of Semipalatinsk traded with China. The towns of Chugutschak and Kulja gained importance as stations on the routes to Peking via Kyakhta and via Nerchinsk–Tsitsihar. Semipalatinsk is situated on the border between the steppe and the mountains ; it is a nodal point of the caravan routes to the South and South-East.

In the early period the interior markets were isolated owing to the lack of adequate intercommunication. This difficulty was gradually overcome by the necessity not only of trade with foreign countries but also within Russia itself. The needs were imperative ; the North was short of cereals and fruit but had sufficient fish and livestock ; the central zone had an abundance of cereals, timber and metal. The south had fish, fruit and cereals. This distribution demanded interchange and balance. Thus the fairs gained in importance as focal points of internal communication. In the sixteenth century Kazan was a centre of the trade with Asia. In 1817 the fair was transferred to Nizhni Novgorod at the confluence of the Oka and the Volga and on the route to Moscow-Siberia. Moscow itself was also an important trading centre. Kharkov was the corn market for the Black Soil region. Samara and Saratov were nodal points in especially good situations on rivers and confluences and were favourable for defence.

In the choice of the capital *political* influences were predominant. A change of capital depends on external politics. Under the Varangians Novgorod in the North-West was the most suitable site. Byzantine influences put Kiev in the first place. The Mongols chose Suzdal-Vladimir. Then with the advance of the frontier to the South followed the choice of Moscow. Western influences made Petersburg the capital. International and All-Russian considerations shifted the political centre once again to Moscow.

In order not to overlook the negative side of political influences on the settlement of Siberia the part played by political exiles must be mentioned. After 1754 they were deported to Siberia and settled either among the original inhabitants or in new places. This procedure, however, was abandoned in 1822. Up to 1818 about 2,500 people were sent out yearly especially to the Governments of Tomsk, Yenisei and Tobolsk. This number increased later.

The main factors of urban development in Tsarist Russia were defence, administration, traffic, commerce and politics. Industry and natural resources played only an insignificant part.

The *distance* between towns is, on the average, ten to twenty times greater in Russia than in Western Europe. The reasons are obvious; the population is too thin for the vast spaces of the Russian Empire to produce numerous concentrations. In addition the long maintenance of serfdom also acted against a redistribution of population; for a long time the towns did not fulfil those economic functions which cannot be performed to the same degree in the countryside. Insufficient communications and their prolonged dependence on the old lines of traffic, the rivers, confined the settlements in many cases to places which had originated in early periods and where a class of burghers or citizens in the Western sense did not arise. There was, therefore, no section of the population which could take over specific urban functions and be considered as the guardian of a prosperous community life. Even Moscow remained for a very long time merely a Tsarist estate with the Tsars' retainers, lifeguards and servants, but without independent citizens attending to their own businesses. In 1701 " citizens " and craftsmen occupied only seven thousand out of sixteen thousand houses, i.e. 44 per cent., and these worked mostly for the Court; the rest of the nine thousand belonged to the clergy and the administration. In the case of Moscow and Petersburg it is especially evident that the Government was the urbanising factor.

Longer and more obviously than elsewhere the *location and situation* of the Russian towns have depended on the natural conditions of the country. Social, economic and other influences have been less important. The deeper reasons lie in the spiritual and mental attitude of the Russian. Before the socialist era he did not respond to the challenge of nature by a deliberate attempt to adapt his environment to his own needs. In fairness, however, it should be admitted that these needs unfortunately did not change to the same extent under the Tsars as under the progressive civilisation of other countries. The Russian did not endeavour to reshape the natural landscape into a man-made one, and to systematise and concentrate his powers on this great task. Hence the characteristic Russian attitude which is neither directed against nature nor entirely dictated by it. Only to-day does the Russian appreciate this problem and the creativeness of the tensions which are inherent in the interaction of natural environ-

ment and civilisation. The changes are enormous and have already produced convincing and grand results.

The survey of the settlement of this immense space stretching from the Baltic to the Black Sea and to the Pacific Ocean would be incomplete without at least some general data on the *location* of the more important towns, and their *origin.*

Towns of the North.

Archangel is built on piles in the marshy soil at the mouth of the Dvina and is a typical wooden town surrounded by a thinly settled hinterland. It is a summer port for grain and timber.

Murmansk is the ice-free port for the industries of Leningrad and the Central region. Its hinterland is thinly populated.

Onega, Mezen, Kem—these places are situated either on the coast or the river.

Veliki-Ustyug, Cholmogory—these are old trading settlements on the Dvina and Sukhona respectively.

Petrozavodsk stands on Lake Onega and is the capital of the Karelian Republic.

Vologda lies not far from the Sukhona river and is an early foundation and a trading centre.

Leningrad is a delta settlement founded in 1703 and is the natural entry to a great part of European Russia and to the river systems of the Volga and Dvina.

Towns of the Central Forest Region.

Nizhni Novgorod (Gorky) stands on the confluence of the Oka and Volga and on important trade routes.

Pskov, Vladimir, Suzdal, Rostov (Ivanov Region to the east of Kalinin) these are foundations of the twelfth century ; Pskov of the ninth. They all stand on rivers or are not far from them.

Moscow stands on the unimportant Moskva. This choice may have resulted from the need of a good protecting site on a hill and from the favourable central location between several important rivers. It is a centre of old trade routes.

Yaroslavl, Rzhev, Kolomna, Tutayev near Yaroslavl, Volokolamsk, Staritsa, Svenigorod, Serpukhov, and farther to the south Kaluga and Kursk—all of these are situated on rivers.

Kasimov, Kostroma, Tver, Vyatka, Tula, Ryazan are all of early origin.

Towns of the East.

Ufa stands on the high bank of the Byelaya and is a trading

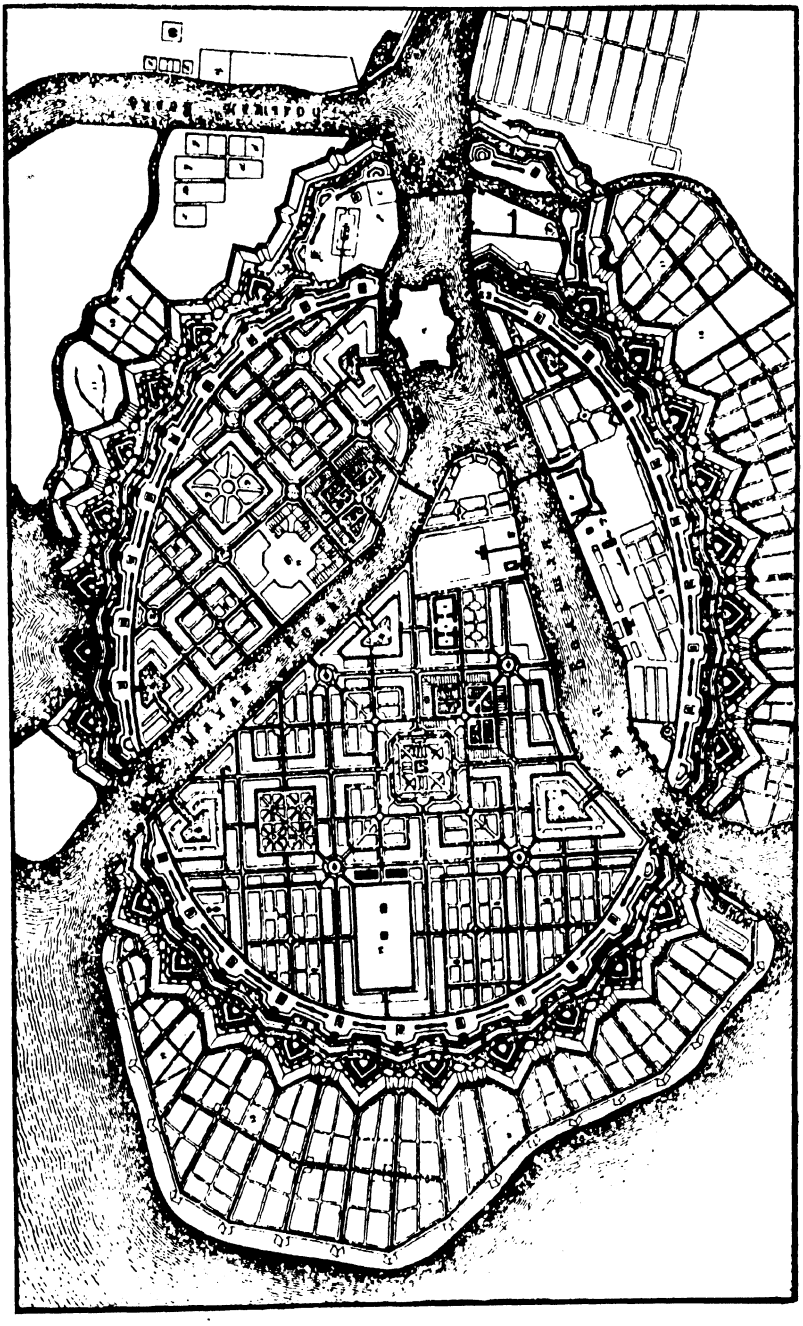


Fig. 56. Petersburg (1717)

centre connecting the agricultural zone of the West and the mining and timber districts of the East.

Perm also stands on the high bank of a river, the Kama.

Kazan, on the river Kazanka, lies seven versts distant from the Volga on a hill. It is a foundation of the Tartars. Defensive reasons, not trade, decided its location. In 1552 the Russians built the Kremlin on the hilltop and the Tartars were forced to the low-lying parts of the town to which the streets lead down on all sides of the hill.

Sverdlovsk (Ekaterinburg) developed as a mining town in the Urals in the eighteenth century.

Towns of the West.

Polotsk, Smolensk are early political centres of the eleventh to the thirteenth century, situated on rivers.

Vitebsk, Minsk, Bobruisk, Mogilev, Gomel are situated on rivers; the last two are old trading towns.

Towns of the Steppes.

Chernigov, Pereyaslavl, Poltava are the first fortified places of this region.

Kiev is a foundation of the eighth century and stands on the high bank of the Dnieper. As a fair and trading centre its sphere of influence is considerable.

Odessa was founded in the fourteenth century. It lies on a plateau of over 150 feet high above the sea. This north-western inlet of the Black Sea was very important for the expanding State, so that the place developed favourably as a port and industrial centre.

Kharkov was founded as a fortified stronghold of the Moscow Principality against the Tartars. To-day it is the most important industrial centre of the Ukraine, especially because of its favourable situation in regard to the coal and iron ores and the grain-producing area.

Voronezh is a fortified place of the sixteenth century. It stands on the high bank of the Voronezh river near its confluence with the Don.

Ulyanovsk (Simbirsk), Samara (Kuibyshev)—the first founded in the seventeenth and the latter in the sixteenth century as Russian frontier settlements situated on the low bank of the Volga because the river is not deep enough at the other side. It served as protection against the Mongol horsemen and especi-

ally of the routes Nizhni Novgorod–Astrakhan, Samara–Moscow, Samara–Siberia, and Samara–Turkestan.

Astrakhan is a port at the delta of the Volga, especially important because of its fishing industry. It was founded in the sixteenth century.

Rostov is a port at the mouth of the Don and was founded, as were also the following four towns of the North Caucasian Steppe, in the eighteenth century.

Taganrog is a fishing and agricultural place.

Novocherkask is a foundation of the Cossacks and was for some time the capital of the Don Cossacks.

Stavropol, Krasnodar are situated on the northern approaches to the Caucasus. The first was the main strong point in the conquest of the Caucasus; the latter, on the Kuban, is the capital of the Adigei Province.

Caucasian Region.

After the Russian conquest in the nineteenth century Russian towns of the usual colonial style with a rectangular street system grew up in the immediate neighbourhood of the old indigenous settlements.

Maikop, Grozny, are situated in the foothills of the Caucasus. From old forts they developed into considerable economic centres in connection with the oil resources.

Vladikavkaz, Ordzhonikidze—"Ruler of the Caucasus"—is the most important town north of the mountains. It was already a Russian fortress in the eighteenth century.

Makhach-Kala (Petrovsk) is the greatest trading port on the Caspian Sea and the capital of the Daghestan Republic. It is situated on terraces surrounding the bay. It was a station on the East Caucasian route and an important trading centre.

Derbent, "the Gate", was already known as a Persian fortress in the sixth century. It is situated on the narrowest part of the passage between the Caucasus and the Caspian Sea on the important trading route from North to South.

Baku is the capital of the Azerbaijan Republic and is situated on the desert-like peninsular of Apcheron. The town consists of the modern industrial part and the old Tartar settlement. It is the most important centre of the oil industry.

Tiflis (Tbilisi) was the capital of Georgia as early as the fifth century. It is a typical fortress settlement barring the passage where the Kura river cuts through the last narrow part of the

mountains and is situated on the old trading route from Europe to India. There is a railway to Erivan and Kars. Numerous hot sulphur springs may have influenced its development.

Turkestan.

Three regions of different density of settlement can be distinguished. The most densely settled part is in the Ferghana basin and in the foothills around Samarkand; the area of medium density is around Bokhara and Khiva. About 10 per cent. of the population live in the towns of the irrigated oases. Especially in the eastern part their origin goes back to the most ancient times. In the north Russian towns of the second half of the nineteenth century have greatly added to the number of the urban population. These towns follow the main routes; and their location depends on their usefulness for Russian colonisation. They are situated in the oases at the foot of the mountains. There are therefore Russian colonial towns or indigenous towns, or a mixed type, with separate quarters for the Russians and the natives. After the foundation of Vyernyi (Alma-Ata) in 1854 as a fortress situated 2,200 feet above sea level the region was settled with Siberian Cossacks. The dispersed settlements of the natives in the oases remained unchanged at the outset because Tsarism did nothing efficiently and systematically in spite of its outward demonstration of power. The oasis of Merv is one of the most ancient places in the world. It is said that it played an important rôle under the successors of Alexander the Great, as a Nestorian centre, and as a residence of the Seljuks, with a population of 700,000 inhabitants. It is situated on both sides of the Murg-Hab river and is a nodal point of the routes to Afghanistan, India, Iran, Bokhara and the Caspian Sea.

The semi-nomads of Turkestan lived during the winter in their villages where a part of the population remained in the summer. The villages in the foothills are mostly situated on the river or the irrigation canals. In the mountains they are laid out either on one or both sides of the roads and are situated on terraces, or as nucleated settlements on the top of the hills. The settlements of the plain are mostly situated not on the main river but on smaller streams flowing down from the mountains and watering the fields and the gardens.

Tashkent is situated in the valley of the Chirchik on several large canals. It is the capital of the Uzbek Republic. It covers a relatively large area with its 300,000 inhabitants (1937). It

was already known as an important Arab town in the seventh century. It is possible that it did not occupy exactly the same site in earlier periods as it does to-day. The Russian and the native parts are interconnected by more recent quarters. It is a commercial and industrial centre.

Samarkand is situated on the site of Marakanda, which was conquered by Alexander the Great in the fourth century B.C. At the time of Chinese domination it was called Hsoen-Ssu-Kan. The Russian part was laid out in 1870.

Khojent is an entrepôt and one of the oldest towns of Turkestan on the important route to Kashgar, Tashkent, Samarkand.

Namangan is situated in the oasis which stretches along the Syr Darya.

Ashkhabad (Poltoratski) is the capital of the Turkmen Republic and is situated near the Iranian frontier on the railway from Tashkent–Bokhara to Krasnovodsk on the Caspian Sea.

Bokhara is a famous bazaar town.

Khiva is situated in an oasis on the Amu Darya, whose powerful current moved it far out to the north-west of the desert.

Kashgar.[1] Although the oasis of Kashgar does not belong to the U.S.S.R., it is of great importance to Russian Turkestan. It is a nodal point of the first order. The route Orenburg–Tashkent penetrates via Khokand to Kashgar. The highest mountains of the world surround this region like a horseshoe. It is open to the East but isolated from Eastern Asia by the desert. Kashgar (Su-Fu) belongs to Sinkiang, one of the outlying territories of China. It is situated in a central position where the roads to India, Western Asia, Europe and Siberia meet. But in spite of these obvious advantages the possibility of irrigation and agricultural activities may have been the primary factors in the choice of its location. Kashgar is relatively favoured as compared to the east and the south of the Tarim Basin; it receives a larger amount of rainfall. The rivers have only a slight incline with numerous rivulets branching off from them. Oasis follows oasis with numerous settlements wherever enough water can be found. To-day about 300,000 people are living in this district. Many of the smaller settlements are situated at the crossings of the roads with the streams. Single farms do not exist. The town of Kashgar has about 70,000 inhabitants. The localities of the Kashgar district number about two hundred,

[1] A. Schultz: *Kaschgar. Beiheft zum Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, 1921.

with one village to every 3·9 square miles. Sometimes up to a dozen villages crowd together in one oasis. A village, as for instance Chan-aryk, with about one thousand houses fulfils important commercial functions with its bazaar for its hinterland, as also do other villages with their weekly markets.

Siberia.

The settlement of Siberia is primarily agricultural in character. It developed under the protection of fortified places. Thus grew Omsk, Takmytskaya, Petropavlovsk, Biysk, Semipalatinsk, Ust Kamenogorsk, etc. At the end of the seventeenth century agriculturists from the Perm district were ordered by the Tsar to settle in Siberia. The first settlements developed on the rivers Tula, Tavda, Tobol, Irtysh, Ob. These pioneers settled among the native tribes. They engaged in agriculture and, to a minor degree, in fishing, hunting, horticulture in the neighbourhood of the towns, and in home industry. The industries of Siberia are worked only for local supply in spite of the great wealth of natural resources, which remained unknown for a long time. There are food, tobacco, sugar, leather, metal, timber, candle, textile industries and potteries. Settlement is decentralised and thin. During the second half of the last century there were only twenty-eight towns with more than five thousand inhabitants in this vast territory. Tomsk with 52,000 inhabitants is the largest place; then follow Irkutsk, Omsk, Vladivostok, Krasnoyarsk, Semipalatinsk, Vyernyi, Tobolsk. In these towns the trade with the natives is concentrated. Trading is by barter as well as by cash. Vladivostok and Krasnoyarsk are exceptions; they are engaged in foreign trade. Trade connections with China are established through the trading centres of Urga and Miamachin—situated on non Russian territory—and the Russian towns of Kyakhta and Irkutsk. The numerous navigable rivers fulfil the functions of the absent roads. Thus a waterway of about 2,000 miles leads from Nikolayevsk at the mouth of the Amur in the Gulf of Sakhalin to the interior of the country. The fairs are of great importance; the oldest of them is Irbit in the Government of Perm on the confluence of the Irbit and the Niza, a tributary of the Dura; there are also Krestovsko-Ivanovsk and others. In some Siberian districts there were up to thirty annual fairs in the early periods; the people still come to the products and not *vice versa*. Industrial activities began to a limited degree in the eighteenth century with mining in the

Altai mountains. In 1726 the Kolyvanski Smelting Works were founded as the first of their kind. In connection with mining in the Urals and in the Altai mountains the population increased and a number of settlements developed. In the second half of the eighteenth century several tracts lying between the coal mines were settled and roads laid out.

In the early period the banks of the rivers, the presence of natural resources and the protection by forests were preferred as favourable sites for the location of settlements; or existing settlements of the natives mostly on similar sites were further developed.

There are more towns in Western Siberia than in the Eastern part as a consequence of the more numerous population in this region. Omsk, Novo-Sibirsk, Tomsk, Tyumen, Tobolsk, Biysk, Barnaul, Marinsk, Kolyvan, are all situated on rivers and lines of communication. More to the south Semipalatinsk and Petropavlovsk are similarly located. Whereas the western towns are spread over a large area, those of the centre and the east are concentrated within a narrow belt along the Trans-Siberian railway. All the following stand on the banks of rivers: Krasnoyarsk on the Yenesei, Irkutsk on Lake Baikal, Verkhne Udinsk, Khita, further to the north Yakutsk on the Lena. All other towns of the Yakutsk Republic were only small administrative or military posts of the Government. In the forest region the Russians were engaged in agriculture and cattle breeding; in the northern region they adapted themselves to the native ways of life.

Blagoveshchensk and Khabarovsk were founded as *staniza* of the Cossacks in the fifties of the nineteenth century. They are situated at the confluence of the Zeya and the Ussuri rivers with the Amur respectively.

Vladivostok was founded only in 1860. In 1868 it had five hundred inhabitants; in 1914 twenty thousand; in 1917 it passed the one hundred thousand mark; in 1933 it reached two hundred thousand. It is the most important port of Russia on the Pacific Coast. It stands on a peninsula and has been laid out as one long street of about 5 miles along the Bay with a number of side streets.

Nikolsk-Ussurisk, founded in 1858, is situated in the wide plain of the Suifen river on important lines of communication.

The *Ussuri* territory had already been conquered by the Cossacks in 1650, and on the natural roads permanent settle-

ments inhabitable also during the winter months were established. These places were destroyed by the Chinese during the eighth decade of the seventeenth century. It was only in 1883 that the Russians began to resettle the region, but Chinese and Koreans were the main settlers. The settlement proceeded mainly along the valleys of the Ussuri and its right-bank tributaries and soon extended to the area between the Bikin and the Imam. Of about three quarters of a million people distributed over an area of about 67,600 square miles in 1,050 localities and three towns, about 500,000 live in the Vladivostok district proper. The three towns are Vladivostok, Nikolsk-Ussurisk and Spassk, the latter in the centre of the cultivated land of the plain around the Khanka Lake.

The settlement of the *Amur Territory* began also in the second half of the nineteenth century. The pioneer settlers came mainly from the Governments of Irkutsk and Transbaikalia. The Cossack settlers were distributed in about sixty *staniza*. The Russian population lived in the larger places along the Amur but at a distance from the river because of the danger of flooding.

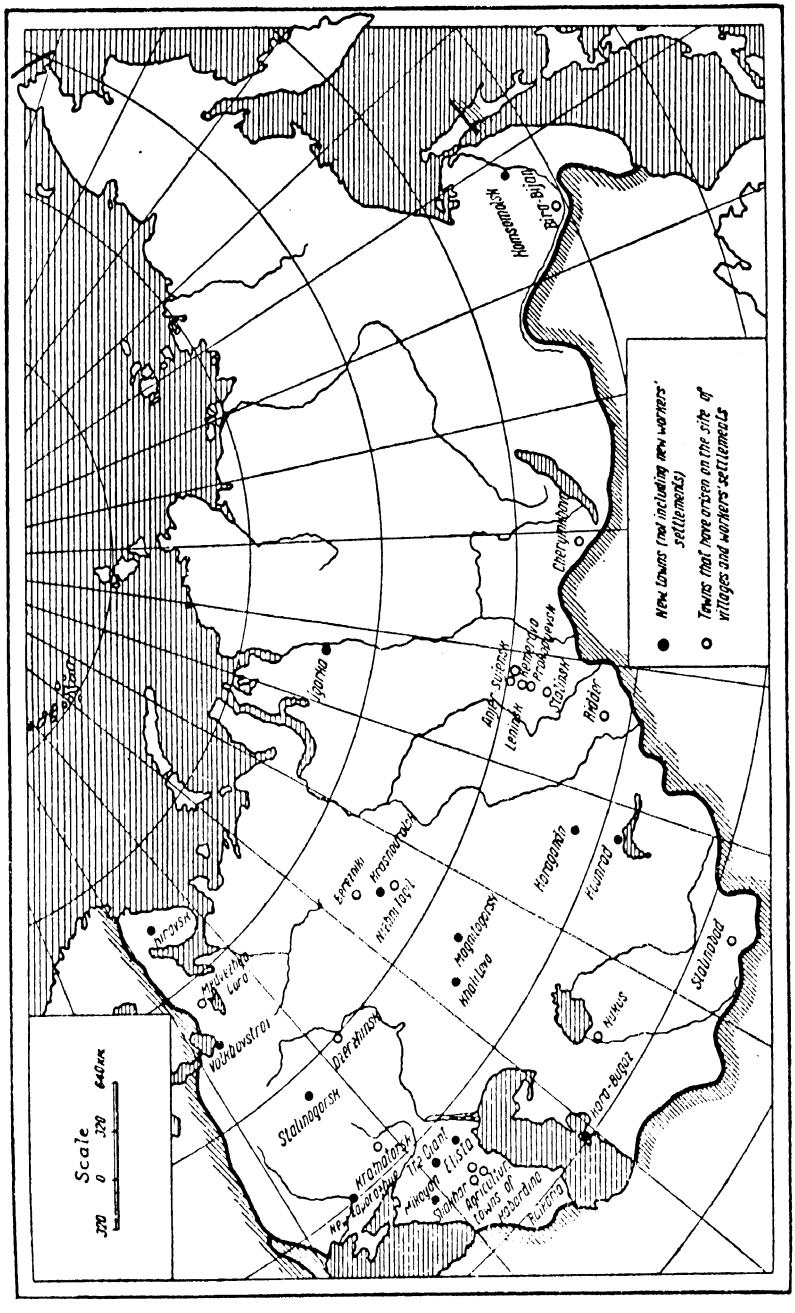
The advance of Tsarist Russia into the Eurasiatic spaces was extraordinarily dynamic—a series of forward bounds. It was an occupation of isolated spots, fostered and influenced by a government which could conquer, but was incapable of building up a sound structure of population and settlement, and of using its gains in the real interest of its own population so that the seeds of a new world might be sown.

This new world was not born until Tsarist Russia died and the new State of the U.S.S.R. emerged out of the chaos after the year 1917. Industrialisation became one of the most urgent tasks, and in its wake a redistribution of industry and population took place. A new structure of settlement developed. The Government of the Tsars needed the towns as military stations. The Government of the U.S.S.R. needs them as industrial centres for the development of the country and its natural resources. The Black Soil region shares its overwhelming power of attraction with the growing importance of the mineral deposits. This is one factor of urbanisation. Another is the new administrative organisation of the country as a federation of states. Each of the new autonomous regions wants its own towns and its own industries. A certain parallel is apparent to the Tsarist division of the country, which also produced a great number of " towns ", but this process was based on the number of taxable persons and

drew frontiers which destroyed national and economic units for the sake of an easier rule over the subjugated peoples. The U.S.S.R. bases its administrative organisation on nationalities and on the mobilisation of national skill and talent. Thus a new dynamic bursts forth and creates tensions which promote redistribution and exchange, affecting every part of the country. During the first Five Years Plan the total population of the U.S.S.R. increased by 12 per cent. ; in the eastern regions by 24 per cent. ; and in the northernmost parts it doubled in a period of six years.

An especially urgent problem is the settlement of the nomads. About 100,000 families were settled during the first Five Years Plan and distributed over a hitherto uncultivated area in collective farms. A process such as that envisaged by the Soviet Government needs a long time for its realisation. Only the very first beginnings of a more even distribution of population are visible to-day. But the establishment of new industries, the incorporation of previously more or less functionless groups, such as the nomads, in the agricultural production, the reintegration of agriculture in the systematically planned national economy by means of collective organisation and mechanisation, all these factors will fundamentally change the structure of settlement. The antagonism between town and country will be abolished, not by ruralising the towns, but by industrialising agriculture and " urbanising " the villages. New industries are developed not only in the cities and bigger towns but also in the medium and small towns as well as in the Taiga and the desert regions. The population of the medium and small towns has increased by about 60 per cent. ; and over two million people are living in new towns.

The location of these new towns is dependent on the new social order and on the development of the natural resources in connection with the further discovery and the growing knowledge of the country. A sound balance between the centre, Moscow, and the other parts is the declared aim of the Government. It is impossible to give more than a very rough outline of the new development. Everything was in a state of flux and reflux, especially during the War. But the few examples which follow may indicate the general trend. Stalinogorsk (Bobriki) to the south-east of Moscow has received a fresh impetus through the rational exploitation of the deposits of lignite. Kramatorsk and New Zaporozhye are developing on the basis of the new industries of the Dnieper Region. Berezniki, Krasnuralsk, Nijni-Tagilsk, are towns of the Urals growing up around processing


Scale
320 0 320 640 KM
New towns (not including new workers' settlements)
Towns that have arisen on the site of villages and workers' settlements
Murmansk
Kirovsk
Apatity
Kandalaksha
Kem
Belomorsk
Medvezhya Gora
Petrozavodsk
Kondopoga
Kalinin
Volkhovstroi
Leningrad
Pushkin
Kolpino
Sestroretsk
Lomonosov
Peterhof
Kronstadt
Sestroretsk
Stalinogorsk
Novomoskovsk
Kuibyshev
Stalinsk
Magnitogorsk
Kamensk-Uralski
Kamensk-Uralski
Kamensk-Uralski

industries in contrast with the old places which were mainly based on mining. Magnitogorsk with about 200,000 inhabitants is the centre of a great combine in the southern Urals. To the south-east of Magnitogorsk more industry and more settlements are developing. Karaganda in the semi-desert of Kazakhstan has about 100,000 inhabitants. Kunrad on Lake Balkash on the basis of copper deposits has been planned for a population of about 50,000 inhabitants. Stalinsk (200,000), Prokopyevsk (100,000), Kemerovo (100,000), Anzhero-Souzhensk (100,000), are developing in the coal basin south of Tomsk. Komsomolsk is a river port on the Amur, a centre for shipbuilding and a machine tool factory town on the site of a fishing village. Stalinabad, capital of the Tadzhik Republic, a mountain town on the fringes of the desert, has about 80,000 inhabitants and a tropical institute. Frunze, on the site of the old town of Pishpek, the capital of the Kirghiz Republic, has been planned for about 100,000 inhabitants and for industries of various kinds. Noukouss is the capital of the Kara-Kalpaks. Elista in the desert is the capital of the Kalmuk Region. Mikoyan-Shakhar is the capital of the Karacheyev Autonomous Region in the mountain valley of the Khuban. Igarka is a new town on the lower Yenisei far beyond the Arctic Circle. After five years it had a population of 20,000 people and is one of the largest sawmill centres of Siberia.

Kirovsk (Khibinogorsk) is situated in the mountains of the Kola peninsula and has about 40,000 inhabitants. Its industries are based on the natural mineral resources of the hinterland.

This enumeration is far from complete, but it may give a picture of the main tendencies which determine the redistribution of population and industry.

The Soviets want to reshape the structure of their country in accordance with definite principles and on the largest scale. Instead of following the line of least resistance they follow that of greatest productivity. Russian mentality is undergoing great changes towards an unrelenting and aggressive struggle with nature. It begins with a new discovery of the country and it is firmly resolved to carry its plans through to completion and to apply new principles in spite of all difficulties.

The redistribution of population, though still in its very beginning, has already shown that it is possible to abolish the old unevenness and to instil a spirit of fresh activity even into very remote regions. The general trend of this distribution is

towards the east and to the north. " Industrialisation did not stop at the small towns. It went where there are no towns at all—to the Taiga and the desert. It was not only that old towns were reconstructed. Nearly one hundred new towns have already been built. Over two million people inhabit them. Their growth cannot be reckoned in percentages because they have grown out of nothing." [1]

In this process one of the strongest agents is the changed attitude of the Government towards the problem of nationalities. The old ideas of inferior races have gone. All nationalities are equal and must therefore take part in the achievements on an equal footing. This fact accounts for many far-reaching changes which are finding their visible expression in a new structure of settlement and industry. Stalin delivered a Political Report to the Sixteenth Congress of the Communist Party in 1930 in which he stated : " The national civilisations must be enabled to develop and demonstrate their own faculties in order to create the pre-requisites of an integrated common culture and of a common language." The aim is the raising of the standard of living in *all* parts of the Soviet Union. It is evident that this can be achieved only by a policy of settlement conceived and executed on a national scale and by a systematic rediscovery of the *whole* country.

The pilot was flying over a foreign land. A map, drawn up only three or four years before, lay on his plane-table, but the pilot had lost the way. Settlements and factories, railway and motor-roads, none of which were marked on the map, were rising unexpectedly before his eyes. The pilot had lost his bearings ; for the map on his plane-table was a map of the U.S.S.R.—the Union of Soviet Socialist Republics—a country whose contours have been transformed. Industry is being distributed anew. Industrial centres of world-wide importance have sprung up in the deserts of yesterday. Agriculture has penetrated into territories in which it never existed before and where it was considered impossible. The country is cut across by new railways and motor-roads. Human masses are moving. Scores of towns have been built. Knowledge of the underground world of the country has been so enriched that it may well be considered newly discovered. The mighty process of harnessing natural forces has begun. The transformation of physical features is taking place on a huge scale over vast areas. With an area of 21,267,714 square kilometres, the Soviet Union possesses the largest continuous territory in the world—nearly three U.S.A., ninety Englands, seven hundred Belgiums. The distance from its western to its eastern frontier is not much shorter than that from the Pole to the Equator. It covers a

[1] N. Mikhaylov : *Soviet Geography.*

seventh part of the earth's surface, has 168,000,000 inhabitants, 185 nationalities.[1]

II. Rural Settlement

Russian agriculture is very old ; it goes back to a time when the early Slavs were still partly hunters and shifting cultivation was predominant. They left their dwelling-places when the soil became exhausted and wandered to more favourable districts. It may have been similar to the description of the Tartars by a traveller of the eighteenth century : " When fertility declines definitely and there is no steppe land suitable for cultivation in the neighbourhood, it not seldom happens that a whole village community dismantles its houses and transfers them to another place. Partly for this reason their homesteads are not fenced in ; during the winter they keep their cattle in enclosures near the village where they sow hemp in the summer while the herds are driven to the pasture land." [2] The stationary settlements were also mainly agricultural. The most ancient Russian Chronicle of the year 946 reports that " all towns cultivated their fields and domains ". The beginning and development of the agricultural structure of Russia are very similar to those of other countries, and yet great differences do exist. The original liberty of the peasants was reduced to serfdom, which reached an especially devilish degree in Russia. A French philosopher of the eighteenth century writes : " It is only with horror that I mention the law which imposes a fine of only fifteen francs on a nobleman who kills a peasant." [3] The free family group was transformed into the *Mir* which is enforced from above as a useful means of taxation. Field system and cultivation preserved their outworn structure in spite of all reforms up to the second half of the nineteenth century. The peasants are the essential basis of the State, but they were the most suppressed and most impoverished members of its society. The feudal lords were the main colonisers, but they extracted a high price for their " services ". The functional correlation between the field system and the village was gradually losing its significance, enormous areas were opened up by internal colonisation. The similarity with the agricultural development

[1] N. Mikhaylov : *Op. cit.*

[2] P. S. Pallas : *Reise durch verschiedene Provinzen des Russischen Reiches*, 1771.

[3] A. I. F. C. Graf von Rostworowski : *Die Entwicklung der bäuerlichen Verhältnisse im Königreich Polen im 19. Jahrhundert.* Sammlung nationalöconomischer und statistischer Abhandlungen des staatswissenschaftlichen Seminars Halle a.S., 1896.

of other countries might be illustrated by many more examples, but in this connection those mentioned above will suffice.

The unique combination of dynamic and demonic passions drove the Russian into periods of extreme energy only to be followed by spells of prostration and inactivity. It enabled him to embark on adventures and experiments in life which appear to the European self-tormenting and self-destructive ; but it produced also a capability of self-criticism which can hardly be surpassed. Embedded in these emotions a succession of social, economic and political events was rolling on which produced ever-renewed breaks, abrupt ends and fresh beginnings. This lack of continuity is one of the most characteristic trends in Russian history. These forces, powerful in their positive as well as their negative effects, have moulded the Russian peasant, tossing him about between slavish submissiveness and violent rebellion against his oppressors. This spiritual and moral substance creates a peasant type which, as Prince Kropotkin has characterised it, is not servile despite its slavish obedience and has a strong though repressed feeling for human equality. As late as 1850 the peasant's marriage was arranged by his squire, who selected the couples. But the same type of peasant also does not hesitate to massacre his oppressors, as happened on several occasions in the course of Russian history. Could such a peasantry contribute anything towards a progressive and productive agriculture so long as it was relentlessly suppressed ? Under these conditions, must not the inevitable break with the past be much greater and more painful than in countries with a steadier development ?

The Chronicle of Nestor reports : " They lived by themselves and ruled over their kinsfolk and they lived with them in their own places." This means that the early Russian settlements consisted of individual homesteads which were regarded as family property. On the basis of existing research it is almost certain that individual homesteads existed *before* the village and that a net of dispersed family republics of a rural character was spread over the European part of Russia. Two different nuclei developed, one in the north and the other in the north-east ; they were the cradles of the future State : Novgorod and Moscow—the City State of the merchants and the Rural State of the landed aristocracy. Merchants and fur traders colonised the North from Novgorod to the Northern Dvina, Pinega and Onega. Landed *boyars* formed the government of this republic together with traders and free peasants, the so-called " black people ". They

lived outside the town of Novgorod in homesteads, i.e. " a self-contained unit with fields and meadows, woods and water and other appurtenances and with the house as its centre ".[1] The first stage was the house community organised on similar lines to the *Zadruga* of the southern Slavs and sometimes also very large. We know for instance of communities which consisted of twelve brothers all enjoying the same rights. The Russian *Zadruga* was a patriarchal institution based on authoritarian principles, while the *Zadruga* of the southern Slavs was led by the *starost* as a *primus inter pares*. The disintegration of the family and the subsequent sub-division of its property led to the development of new homesteads and groups of hamlets. The community based on ties of blood was gradually transformed into a neighbourhood community : the original rights of the relations were acquired by neighbours. Pastures, meadows, woods, etc., remained mostly undivided. The starting-point is therefore not the field-and-village community composed of people drawn together by social affinity or for a special and practical purpose, but the property of the family. In the course of time private property developed. In such a case the plots of land were widely scattered ; twenty to thirty parts might be grouped in two to three fields. In addition there were isolated meadows, pastures and woods and sometimes especially fertile plots for the cultivation of vegetables. If the growth of the family made an extension of the land necessary this was effected by bringing more soil under the plough on the boundaries of the existing property. Two-field and three-field systems were usual ; the latter especially after the fifteenth century when the primitive stage had been abandoned. The traveller Pallas, already mentioned, describes these methods : " The Tartars of the Ufa region arrange their fields near to their villages in three tracts which lie fallow alternately for a year. They hold the land in common and enclose the tracts by ordinary fences." The fallow fields were used as pastures. Before this time, in the earliest period, a primitive method of clearing was usual ; the trees were cut or burnt down, and the soil was then covered with ashes and soot and manure. Two to three homesteads formed a " village ". Increase of the population led to a concentration of the peasants in the growing villages and to a change of the political structure. The parish community, similar to the old Germanic *mark*, was the actual nucleus of the State. It was an association of several villages and a number of

[1] W. G. Simkhowitsch : *Die Feldgemeinschaft in Russland.*

individual homesteads. The free peasants under their *starosti* were organised in groups of a hundred, the so-called *solskie* with their head-men, the *golovi*. With the growing importance of the village the influence of the parish community decreased. The development of compact units disintegrated the more loosely knit organisations which grew up for administrative and political reasons. The centre gained in importance and the surrounding country became dependent on it.[1] In the course of this development the rights of the individual farms were curtailed and a re-allocation of the land took place ; common methods of cultivation were introduced and new clearings were undertaken in connection with the growth of the villages.

After the conquest of Novgorod by Moscow the whole land fell to the Moscow State. The *boyars* and the owners of large estates were expelled, whereas the peasants remained under new lords. At the same time far-reaching external and internal political changes opened the country to new ideas and new forces. The influence of Byzantine ideas decreased. Novgorod and the West of Russia were saved, but the invading nomads destroyed Kiev in 1214 and conquered Central Russia. Under their yoke the fate of the peasants was especially hard ; according to the old custom of these hordes the whole land was the property of the Prince. This amounted to a catastrophe for the peasants, for it offered a splendid opportunity to the Princes and boyars to destroy their liberty. Moscow's importance as State and as City grew under a Grand Prince who transformed the old feudal nobility into a dependent class of nobles under his overlordship. In 1497 flogging and the knout were introduced by law ; in other countries this year is the beginning of the new era and of the discovery of a new world.

In 1462 the area of the Moscow State covered about 18,000 square miles and in 1584 72,000 square miles with nearly 7,000,000 inhabitants. The more the power of the State increased the more the importance of the rural communities declined, a development hastened by the simultaneous growth of the large estates. As in the west the feudal lords, the Church and the monasteries sometimes owned hundreds of farms and villages. Former retainers who had previously received land grants in the frontier zone of the Moscow State became either small peasants or nobles when their task as frontier guards lost its importance. The owners of

[1] I. Keussler : *Zur Geschichte des bäuerlichen Gemeindebesitzes in Russland.* Baltische Monatshefte, 1875.

large estates were anxious to gain privileges and managed eventually to get a Charter of Immunity. But in spite of these tendencies the peasants remained at first relatively mobile. A distinction was made between White and Black Land, the former belonging to the Princes and to the Church, the latter to the peasants, who were the only taxpayers, at least during the rule of the Mongols. Although the Black Peasants were nominally free, they were nevertheless under the rule of a lord, namely the Grand Prince of Moscow. Soon, however, in order to increase taxation, the sale of the Black Land was restricted. On the other hand the services of the owners of the White Land were just as important to the State as the taxes from the Black Land. Consequently the Black Land of the peasants passed gradually into the hands of the owners of the White Land. Except in a few frontier districts this process was completed during the sixteenth century. During the fourteenth and fifteenth centuries the peasant was still free to cultivate his land according to his own wishes and needs. But the increasing concentration of the land in the hands of a minority changed the situation and, consequently, the fundamental structure of settlement. Vast stretches of new land need labour, i.e. men, and this means colonisation and a denser settlement of the country with more villages and more urban places. From the outlying districts of the State towards the centre the size of the villages increased. In 1500 only one or two farms formed a " village " in the frontier regions, whereas this number rose to seven nearer the centre. But the pressure of taxation, growing with the consolidation of the State, led to an exodus of the peasants. It is said that at the end of the sixteenth century only one hundred and twenty-three villages were inhabited, and 977 deserted. The peasants fled to the Volga, to the Don and the Urals, to Lithuania and Siberia.

Four categories of land were now distinguished, each being assessed at a different rate of taxation : the land of the monasteries, of the princes, of the officials and vassals, and the family estates. Before still more drastic regulations came into force, the peasant was often the holder of the land on conditions which resemble the share crop system, i.e. the landlord received a certain portion of the harvest, between one-fifth and one-half, as payment for the use of the land by the peasant. In the central area of the State a system of land tenure developed in the sixteenth century on the estates of the monasteries by which this payment in kind was replaced by compulsory services which consisted mainly in

the cultivation of the land. The general pressure and the bestial enslavement of the peasants attained still more brutal forms under Ivan the Terrible. Russia was one great prison. A Russian General writes to the Tsar : " You have built a wall around the Russian State and immured the natural liberty of man in an infernal fortress." But his madness and fury also led to the suppression of the feudal lords, to a strengthening of the central authority, and to the prevention of the rise of a middle class. For a short time the peasant preserved his freedom of movement, thanks to the competition of the landlords who were not only anxious to detain their own peasants but also to get new ones, especially because they were responsible for the collection of the taxes. Their interest in settling their domains more densely is therefore readily understandable. In 1597 the decisive step was taken : an *Ukase* by the Government abolished freedom of movement with retrospective validity. As an individual the peasant ceased to exist.

At the same time the *Mir*, the village community, came into existence. It did not grow organically from the bottom, but was imposed from above, exclusively as an organisation of taxpayers. It was " in the first instance a fiscal unit—and an administrative and economic unit only so far as the fiscal needs made it necessary and as was compatible with the rights of the individual members ".[1] The *Mir* was not a voluntary unit of coöperation ; the individual person was of little or no importance. The fact that the *Mir* was enforced upon the peasants as an *ad hoc* organisation deserves special attention, because it has come to be regarded as a characteristic expression of the collective spirit of the Russians. Nothing is more incorrect than this assumption. It was a downright administrative measure enforced against the will of the peasants. The taxes which the individual peasant had to pay decreased correspondingly with the growth of the village community, for the village as a whole was the taxable unit. The increase of the village population was therefore in the direct interest of the peasants. Under these conditions they were often only too glad to get rid of their land. In such cases the *Mir*, being responsible for the taxes collectively, took over the land and tried to attract new peasants. These fiscal measures exerted considerable influence on the structure of settlement. The individual homestead and the hamlet disappeared almost completely. In their place compact villages became predominant.

[1] Milyukow : *Finanzpolitische Streitfragen des Moskauer Staates.*

The landed gentry considered colonisation an appropriate means to satisfy taxation by the Grand Prince and acted accordingly. New villages came into being, in most cases laid out as two rows of houses on both sides of the road.

Yet this colonisation was not accompanied by a more equal division of land between the members of the village community. The *Mir* was first of all a legal institution with a joint ownership of the land ; it was not an association for the common management of the general affairs of the village or the distribution of the produce. There is no sound functional relationship between the layout of the village and the field system, the less so as the field community is independent of the village community proper. For a certain time the unequal distribution of the land persisted ; but the Government was anxious to introduce a greater equity of holdings among the peasants. This was an additional reason for abolishing freedom of movement ; for if not the land but the individual, the peasant, is taxed he must have a sufficient amount of land to earn the tax ; and the more equal the distribution the better for taxation.

Two subsequent stages can be distinguished. The former period was characterised by the private occupation of the land and a dispersed structure of settlement, the latter by the colonisation of the landed gentry and the compact village laid out as described above. The transformation from one stage to the other was almost exclusively the result of Government pressure in the interest of taxation. It was accompanied by land grants to the vassals and the humiliation of the peasants as *adscripti glebae.* The individual property of the early period was abolished and replaced by the collective ownership of the *Mir.* The transformation from the individual homestead to the hamlet and the village can be clearly traced especially in the north of Russia. Hamlets consisting of five to eight homesteads developed by subdivision of the individual homestead. As late as the fifteenth century such loose agglomerations of one to three homesteads could be found in the region of Novgorod ; or of three homesteads in the Government of Tver ; or of ten in the eastern bend of the Oka.[1] Such subdivisions applied sometimes to one-sixteenth of the original area while the cultivation of the fields remained a communal task ; the land was not subdivided. The original homestead was gradually surrounded by new and additional family houses. The early layout was spacious and irregular.

[1] R. Mielke : *Die altslavische Siedlung.* Zeitschrift für Ethnologie, 1923.

This spaciousness can still be felt in the later layout of the compact village with its two rows of houses. The road is wide and is used for the cattle and sometimes as a market place. The arrangement of the houses and the yards is also spacious, though not everywhere. In the south of Russia the layout was more compact. In the Government of Kharkov, for instance, spacious nucleated villages can be found at a greater distance from Kiev, while the roadside village dominates the picture nearer to it. Urban influences produced quicker and greater changes, whereas the more distant regions remained untouched over a longer period. The origin of the village with its two rows of houses lined up on both sides of the road from the irregular and nucleated settlements is easily recognisable in Poland where the former is more loosely grouped. Gradually it was adopted as almost the only form of rural settlement, and especially as the most suitable type for colonial expansion ; and eventually under Catherine II it was generally accepted as a stereotyped principle of settlement. Its development was therefore conditioned by two factors : the need of compact villages for administrative purposes and its special suitability for colonisation.

The attachment of the peasants to the soil and their subjection to the landlords was at last sanctioned by the State in 1649, by the introduction of serfdom. This was merely the official legalisation of an institution which had existed in reality for a long time. The field community was now enforced on the estates of the landlords as well as on the domains of the State. It was more suitable as an organisation for the control of the peasants.

This surrender of the peasants to the nobles reduced their difficulties as to a sufficient labour supply. Masses of the peasants preferred to leave their land and their homes rather than lose their liberty entirely and live under conditions unworthy of human beings. This meant an enormous sacrifice to the Russian peasant, who said of himself, as a proverb put it, " My land belongs to myself, but my back to my master." The peasants wandered to Siberia and to the South-East which had been conquered from the Tartars. They became semi-nomadic Cossacks and earned their living in the Don region. At first they were forbidden to engage in agriculture on pain of death, in order to keep their energy as frontier guards alive. This reminds us of the Rechabites who migrated to Palestine and observed a paternal order not to build houses but to live in tents, not to cultivate the soil, not to sow seeds, and not to plant wine. Under Peter I this restriction

was repealed ; the whole territory was surveyed and allocated to the individual Cossack communities according to regiments. The principle was that every Cossack was to receive thirty *desyatins*, consisting of fields, woods, meadows, steppe and fishing ground, etc.[1] The Church *staniza* received three hundred *desyatins* in addition. No part of the territory was ever to become private property. But the more the leaders of the Cossacks bowed to the Russian administration from sheer selfishness, the more did the situation of the Cossack peasants deteriorate. In 1835 land was given for the first time in the Don district to " officials ". The development was then running parallel to that in other parts of Russia. A field community was formed especially under the pressure of the poorer peasants in those villages where they were in a majority as they were directly interested in a more equal distribution of the land.

State and nobility are closely interrelated. Among other privileges the nobles possessed the exclusive prerogative of owning land peopled with serfs. This fact consolidated the power of the landed gentry still more, for with a few exceptions and apart from the estates of the nobles there were only domains and *apanage* estates, i.e. estates attached to an office, or estates of the Church and the monasteries. The power of the landlord over his peasants was absolute ; and this is of fundamental importance, because urban development is insignificant in Russia. In face of these facts the value of the famous and overestimated orientation of Peter I towards the West is nothing more than a shallow demonstration affecting only a small clique of courtiers and of persons who had a direct interest in it. Peter the Great was " a King, and a badly instructed King " as Voltaire puts it, although " he did what perhaps a thousand sovereigns in his place would not have done " when he " was determined to people a country which, apparently, was not meant for men ". What did he do to open up the immense territory with a population of twelve to fourteen millions, mostly peasants, to the new ideas of Europe ? The peasants were nothing ; they were merely objects of the brutality of a small privileged class which identified itself with the State.

The tendency of new instructions issued by the State in 1759 and 1766 was : the land of the Church, the monasteries and individual persons was to be given to the peasants without

[1] 1 Desyatin = 2·7 acres = 1·09 hectares.
1 Verst = 0·1433 miles.

compensation and to be treated as directly taxable peasant land. The State turned again to the *Mir* as the unit of taxation. Authority went even so far as to decree that newly-cleared land which had been sold by the peasants as if it were their own property should be taken away from the new owners and be treated as crown land. Merchants and peasants were forbidden to sell land. Hereditary rights were curtailed ; the land was to fall to the villages, i.e. the peasants were deprived of the free disposal of the land and a kind of nominal ownership by the State was substituted in its place. The consequence of these manœuvres was that the landless peasants were in favour of these changes, while the land-owning peasants opposed them. The leading agricultural official in Archangel reports in 1786 :

> Justice demands that the peasants must have an equal share in the land if they are to pay equal taxes. It is therefore an imperative necessity to equalise the plots of land, especially in those districts where the peasants are dependent only on agriculture. In this way the peasants will be able to pay their taxes without arrears and, on the other hand, those with less land will be reconciled. The land of the whole country should be redistributed on a just basis, and where not enough land is available the *Mir* should clear new land by collective effort.

Thus against great opposition the land was redistributed among the peasants. Every peasant was to have fifteen *desyatins*—such was the intention. Charity for the purpose of taxation !

In 1725 Russia had about twenty million inhabitants and by 1795 about thirty-three million. This increase of population and the growing needs of the State and the upper class led to the employment of the serfs not only in agriculture but also in the mines.

Under Catherine II the peasants of the Urals were forced to pay their taxes in kind, i.e. by compulsory labour in the mines. They had to work there for 120 days of the year, but they had in addition to spend 96 days on their journeys to and from their places of work, the whole amounting to 216 days. The conditions were horrible. The peasant workers died *en masse* and whole villages became depopulated. Some owners had as many as 25,000 such slaves in their establishments, a figure which appears to be quite " adequate " if we remember that the well-known family of Stroganov, for instance, ruled over 83,000 souls and set up many industries. But it was difficult to spare too many peasants for these purposes without disadvantage to agriculture.

During this period the inter-dependence between agriculture and industry is already evident. When prices are falling and the owner is not interested in the cultivation of his land and the sale of his produce, he is anxious to get rid of his peasants and to employ them as industrial workers. But when prices are rising they are indispensable on the land. Weak attempts by the Government to bring about even modest changes were soon abandoned. The peasants remained, as they had been before—a herd of cattle. The attitude of the Government was merely a hypocritical farce, although Catherine II emphasises: "It is against Christian belief and justice to degrade human beings to slaves. All men are born free." But this outburst of humanity does not prevent the brothers Orlov, the lovers of Catherine, from wheedling out of the Tsarina 45,000 peasants, while Prince Kropotkin obtained 37,000 souls.

1861—1906—1917 were three years of the greatest importance to the Russian peasant. 1861 was the year of the Emancipation of the Peasants; 1906 that of the agrarian reform of Stolypin; in 1917 came the greatest change of all by the Revolution and the abolition of private property.

Russia's population increased to 50,000,000 in 1829 and in 1842 to about 61,000,000, of which only one-eleventh lived in urban places. She remained an overwhelmingly agricultural country, and it is for this very reason that the development or rather the stagnation of the rural settlement is typical of her social history, more than of that of any other country.

The abolition of serfdom was preceded by a long, theoretical "elastic defence". The liberation of the peasants was itself one of the most monstrous and hypocritical pieces of humbug imaginable. In principle it was very similar to the procedure in other States. Economic slavery was substituted for personal thraldom. But in Russia this change was incomparably more abrupt. It aimed at an immediate change-over from an incredible mediaeval enslavement to modern conditions. The antagonism between the ruling class with its thin veneer of European civilisation and the backward peasantry was much greater in Russia than elsewhere. It gave these gentlemen a renewed chance to oppress the peasants, though on a different pretext. The peasant was cheated out of his land by a mortgage out of all proportion to its actual value. In this way many peasants were deprived of their land, or received land of inferior quality and insufficient in amount. Thus a class of impoverished peasants developed,

and the landlords enriched themselves with the land and the ransom.[1] These landless peasants as well as those with poor or little land formed a surplus population in the villages. The Russian peasant cannot understand why the land should belong to someone who does not cultivate it himself, as Stepniak says in his book *The Russian Peasantry*; and he adds that the abolition of serfdom as well as the Act of 1866 on the conditions of the *apanage* peasants were complete failures, and just "moral castles in the air". About 22,000,000 peasants were "liberated". They were given roughly 117,000,000 *desyatins* of land. Within the framework of the field community every peasant on State Land received 6·7 *desyatins*, every *apanage* peasant 4·9 *desyatins*, and the others 3·2 *desaytins* of land. In the Black Soil region the proportion fell to 2·2, and in Podolia to 1·9. The Emancipation meant in fact a strengthening of the field community, since this bond was even more necessary when the unity previously ensured by the landlords was missing. Collective and individual forms of cultivation existed side by side. While in England in the middle of the nineteenth century the land was subdivided as little as possible, and there was a tendency to employ only so many persons in agriculture as the agrarian capacity permitted, thus reducing rural unemployment and improving agriculture, but increasing the migration to the towns; while France treated agriculture on free trade principles and the land as a commercial commodity which could be subdivided almost *ad libitum*, thus retaining too much labour in a highly developed horticulture; while Germany tended not to split up large estates, whereas the smaller holdings were often sub-divided more and more and changed hands easily; in Russia a progressive subdivision of the land was going on in practically every category of landed property. At least in theory everyone had the right to participate in the use of the land within the framework of the field community. Its structure in the middle of the last century has been described as follows: "The principle is that the whole population of a village owns collectively all fields, meadows, pastures, woods, streams, ditches, etc. Every male member has the same claim to an equal portion of all categories of the land and of all its appurtenances. The woods and the pastures, the hunting and the fishing grounds remain undivided, and everyone participates with equal right in their use. Fields and meadows are distributed

[1] S. Kaleko: *Die Agrarverhältnisse in Weissrussland vor der Umwälzung im Jahre 1917*. Jahrbücher für Kultur und Geschichte der Slaven, 1929.

equally according to their value among the male villagers." [1] The arable land was divided into large plots according to its quality, situation, lie, etc. The peasants drew lots for the land so that every holding consisted of a number of patches scattered among the different plots. This principle of equal distribution was very similar to the usage in Central and Western Europe; and it met satisfactorily the Slavonic custom of undivided family property. The importance of the *Mir* increased. It did not in fact recognise any limitation on its sphere of influence, and was therefore in opposition to the administrative organs of the State. The members of the *Mir* had a strong sense of expediency and acted accordingly, while the officials were more concerned with the regulations laid down by the law. The peasants had to do with people of their own kind whom they knew; the officials were foreigners to them. Although the *Mir* could not exert the same authority as at the time of its greatest influence at the end of the eighteenth century, it was still a factor to be reckoned with. Its decisions were recognised to a considerable degree, although interference by the Government was increasing. An *Ukase* of 1905 is characteristic; it decrees that no decision is valid which is taken after the drinking of vodka—a rather negative recognition of the *Mir*.

We possess a number of good reports on rural conditions by travellers who visited Russia in the first half of the nineteenth century. They convey a good idea of the Russian village at the time before and after the Emancipation. The outstanding impression seems to have been "Agriculture is being carried on to-day in the same way as 100 years ago".[2] This backwardness holds good not only for the cultivation of the fields but also for the villages, whose layout and appearance remained practically unchanged except for their growth. "All Russian towns are very spacious and have wide and long streets; their houses are surrounded by large yards as though the citizens want to take no notice of each other. One has to walk longer distances in a Russian hole than in a German dukedom. On the other hand the houses of Russian villages are so close to each other and the thatched roofs of neighbouring houses are so closely interwoven that they seem to say "Together we stand or fall!"[3] However this may have been in other parts of Russia, the principle re-

[1] A. Freiherr von Haxthausen: *Studien über die inneren Zustände, das Volksleben und insbesondere die ländlichen Einrichtungen Russlands*, 1847.
[2] Freiherr F. W. von Reden: *Das Kaiserreich Russland*, 1843.
[3] I. G. Kohl: *Reisen im inneren von Russland und Polen*, 1841.

mained that the social and spatial unity of the village was far greater than in the towns. For instance, to the south of Moscow, in the Government of Tula, the houses of the villages, laid out mostly in two rows on both sides of the road, were arranged so near to each other that their thatched roofs touched and formed an uninterrupted line on each side. Travellers emphasise the uniformity of the villages and the fact that most of them were laid out in two rows and only rarely as nucleated villages ; one wide road, generally without side streets, was the artery of the village. Where the houses did not touch each other they were separated by their yards. It is said that this close arrangement of the houses can be traced back to a regulation framed to make control of the villagers more easy by police supervision and by spying upon each other. In the greater part of Russia the houses were built with their gables to the street. The ground floor contained the stable and/or store-room ; the first floor, eight to ten feet above the ground, was occupied by one large room, and the upper floor by another small room. In the yards behind the houses were several small buildings one behind the other, such as stables, sheds and corn warehouses, the latter sometimes situated outside the village. Threshing-floors and bath-houses were also situated in the back yard.

One hundred years ago the villages between Petersburg and Moscow were small, consisting of five to ten houses. They were the so-called post villages built under Peter I. They were inhabited by Russians, by Germans who had been taken prisoners, and by other foreigners such as Lithuanians, Swedes and Poles, and on the Ishora in Ingermanland chiefly by Finns. In the Government of Yaroslavl the villages were wealthier, more loosely grouped, and sometimes had several side streets. The houses stood with either their gables or their longer sides to the street. Travellers were told that this village belonged to Prince X and the next to Prince Y. This held good of course of the time before the Emancipation. In this Government, to the north of Moscow, cultivation was restricted to four summer months ; only during the eight other months was the population engaged in industrial activities. This development was promoted by the extension of the natural waterways of the Volga system by canals to Petersburg. Rybinsk, roughly half-way between the canals and the Volga, became an entrepôt, " the most enormous warehouse which existed in Russia." The agricultural raw materials were processed by the peasant serfs who were not obliged to work

for their landlord. In this way they earned the money necessary to pay their taxes, the so-called *obrok*, to the landlords. The economic consideration was : cultivation produces food only, but no cash income ; raw materials fetch lower prices than manufactured goods. It is interesting to note that industrial activities were not distributed equally among the villages, but that the villages were specialised, so that something like mass production developed. Thus one village would specialise in boots, another in metal goods, and so on. In a primitive form, not really comparable to the control by the guilds, " factories of free associations " were established. The Crown villages were usually wealthier than other places. There the homesteads consisted of a summer-house with larger windows and a winter house with smaller windows as a semi-detached unit. In the Government of Vologda the villages also were specialised, e.g. for samovars, stonework, etc. These villages consisted of six to ten houses. Their whole area was fenced in, including the gardens which were situated immediately around them. The roads were closed by turnpikes. Generally two villages formed a parish, the fields being as near as possible to each village while meadows and other property were used in common. The layout of the older villages was more compact, but practical considerations, such as the prevention of fire, gradually gained the upper hand over the espionage system of the police and the houses were better spaced.

As early as 1847 the traveller singles out the villages of the *Dukhobortsy*. These villages in themselves do not differ from the usual Russian type. But the following facts are of especial interest. A kind of " Ideal State " of about 4,000 persons on a Christian-Gnostic basis had developed. The adherence of the members to the old type of Russian village was so strong that when they emigrated to Canada they built their settlements in exactly the same way as in Russia. A. von Haxthausen mentions especially the villages of Bogdanovska on the Mologa, and of Terpenie. This sect, which was formed in Russia in the eighteenth century, tried to isolate itself completely from the outer world. They believed in the transmigration of souls and in the existence of an élite of faithful enthusiasts who congregate round Christ, understand his teachings and fulfil them in their mode of life. They include Christ in their belief in the transmigration of souls and regard the leader of the sect as an incarnation of Christ. The leader alone represents the divine principle ;

he is God while the non-*Dukhobortsy* are the radical evil. On this spiritual basis they created a living and working community of peasants. They were liable to persecution, though they were prepared to act in accordance with the Orthodox Church. Several times they were transplanted within Russia; under Alexander I a group was settled in a village on the Sea of Azov, and later in the Caucasus, where their settlements developed favourably even under adverse conditions. In 1890 about 20,000 persons belonged to the sect and formed a community of settlers. Internal and external complications arose. Tolstoy took an interest in them. The attention of the world was attracted, especially in England. Seven thousand migrated to Canada in 1899. About 13,000 remained in Russia. The immigrants were allowed to develop their settlements on a communistic basis.[1] Two colonies were established near Yorkton and one near Assiniboia in Saskatchewan. 57 villages near Assiniboia with an average of 150 to 170 persons were laid out on lines similar to the Russian village. They were alien to their surroundings, alien in their appearance and alien in their social attitude, but they were a proof of the great power of stolid persistence and religious conviction in the Russian peasant. These compact villages are exceptions in a region with dispersed individual holdings. On each side of a road there are about twelve to twenty one- or two-storied houses standing in their tree-planted gardens. Each village lies in the middle of its fields which are, in most cases, cultivated in common. The distance between the villages is between two and four miles. The villagers desire to be as independent from the outer world as possible, and for this reason establish their own workshops. The main place is Verigin, a commercial village called after the leader. In 1904 an area of 500,000 acres was available which was however gradually reduced by the increase of the population of the adjacent districts. The whole is a deliberate attempt to create a unit where all property, land, money, etc., is commonly owned by the Christian Community of Universal Brotherhood. In spite of different conditions of living, ideas and old habits, demanding a communal life and intimate partnership, were strong enough to exclude foreign influences and to overcome all difficulties.

Unlike those of the *Dukhobortsy* are the settlements of the *Cheremissians* round the town of Kosmodemyansk to the east of

[1] W. A. Mackintosh and W. L. G. Joerg: *Canadian Frontiers of Settlement*, 1934.

Nizhni Novgorod. These are nucleated villages with no clear layout. Groups of trees and bushes distinguish them from the typical Russian village. Finnish influences may have played a part. These communities are religious but with a pagan tinge. Their constitution resembles that of the Russian village community so far as the field system is concerned, yet there is a difference in so far as the son does not demand his share of land from his father after his marriage, but from the community. These villages, which are mostly situated in the folds of hills, consist of ten to thirty farms, each with the dwellings of the head of the family and the married descendants and the necessary outhouses.

Farther to the South are the similar villages of the *Chuvashians*. Their homesteads were not enclosed. The dwelling-houses were dispersed on hillocks. Tartar-nomadic influences are evident. Haxthausen mentions in this connection a Tartar village, Jepan-Ashino near Kazan, with several side streets, 80 homesteads and 264 inhabitants. On the other hand the larger villages consisting of about 150 houses and a church were regular, walled in, and served as a protection of the frontier against the nomads. This type was conditioned by its special purpose, which was to form an efficient organisation for military defence.[1]

The land of the Samara region is more fertile. There the villages were larger; a hundred years ago they housed about 3,000 to 4,000 inhabitants. The fields were anything up to 25 *versts* distant from the village; " where the fields are distant from the village the peasant takes the necessary food with him and stays on the fields until the whole cultivation has been finished or Sunday sends him home again ".[2] According to Haxthausen, three factors produced these large agricultural agglomerations which were wrested from the steppes for colonial settlements as late as the time of Peter I; the need of protection, the gregarious instinct and the water supply. He condemns the large size of these villages and recommends splitting them up into several smaller ones, because they can be only too easily destroyed by fire. After a fire the villages were laid out systematically *ab ovo*; all houses were of exactly the same design and their cost was at this time between 150 and 300 roubles. Either there was only

[1] *Allgemeine Geschichte der neuesten Entdeckungen welche von verschiedenen Reisenden in vielen Gegenden des Russischen Reiches und Persiens, in der Historie, Landwirtschaft und Naturgeschichte etc. sind gemacht worden.* Bern, 1777.

[2] P. S. Pallas: *op. cit.*

one street, or the area of the village was divided into squares, each having four to five houses. However, additional factors were the need of protection against climatic disadvantages such as heavy snowfalls and other calamities, and the interest of the landlords, for whom the concentration of their peasants in one or a few places was more convenient, not only from an economic point of view, but also for reasons of better control.

Farther to the south the size of the villages increased up to 7,000 and 8,000 inhabitants, as in the Government of Kharkov. Villages with houses along one street were rare, and if they existed at all they were smaller than the nucleated villages. They were also more spacious, since the houses were surrounded by orchards and vegetable gardens. The typical settlement " is a *dorf*, *dorp*, *trup*, with houses along several curved streets scattered quite unsystematically. The homestead itself was often in the form of a square ".[1] The houses were low without a basement for the stable and the storeroom as was common in Great Russia. There were fewer wooden houses, but more built of clay, reed and wickerwork. " The dwelling houses situated on the slopes of the hills and in the valleys are almost buried under the cover of green trees and luxuriant bushes. Thousands of small and large paths and roads wind between the houses and in the deep depressions." [2] The villages were built in the ravines and valleys which have from time immemorial bitten into the plateau by erosion. I. G. Kohl, the famous German geographer of the middle of last century, vividly describes these places of 2,000 to 6,000 inhabitants. On the central elevation is the principal church ; other churches are erected on elevated spurs. He pictures the impression of the traveller who follows the main road of the village which slopes down to the bottom of the narrow valley. At the deepest point lies the village pond ; here all the main roads cross, to the church, to the administrative building and to the inn. Outside the villages there are sometimes 50 to 100 mills on the plateau where the best use can be made of the wind. Serfs and free peasants mostly live separately, each group occupying one side of the street.

The villages of the *Mennonites* on the Dnieper were similar as regards location and layout. Like the villages of the *Dukhobortsy* they were communities on a religious basis. The *Mennonites* transplanted their ideals and ways of living to the New World. So early as the sixteenth century as a consequence of

[1] A. von Haxthausen : *op. cit.* [2] I. G. Kohl : *op. cit.*

the Reformation they formed a sect under the leadership of Menno Simons of Holland.[1] Their convictions demanded first of all the abrogation of force. "We should not provoke or do violence to any man . . . even when necessary flee for the Lord's sake from one country to another and take patiently the spoiling of our goods, but do violence to no man."

Persecution drove some of the Mennonites to Prussia. They were valuable as peasants but were considered dangerous because they rejected force and thus undermined the military power of the country. Moreover their exemption from military service might have spread and influenced wider circles. They left the country, and between 1787 and 1840 about 8,000 migrated to Southern Russia, where they settled in two large colonies on the Lower Dnieper. If the villages stood near a river their land extended as a long strip at a right angle to it. In 1870 their numbers had increased to over 45,000. They were wealthier than their Russian neighbours and were efficiently organised under a religious leadership. Russia withdrew the previously granted exemption from military service, but later granted a number of new concessions. This led to disunion, and about 15,000 emigrated. As Canada conceded all the demands of the Mennonites the orthodox group settled in Manitoba, while the liberals went to the U.S.A. which granted religious toleration only conditionally. The Canadian settlements prospered. The territory of the Mennonites, however, was soon surrounded by and interspersed with non-Mennonites ; and the small Canadian town disintegrated by its influence the traditional structure of the Russian agricultural settlement. Five thousand Mennonites emigrated from Canada to Mexico, where they hoped to live a more isolated life. The Mennonites of Canada adopted the village layout and certain other principles from their original villages in Russia. The settlements consisted of 20 to 50 homesteads each with 60 *desyatins* of land scattered in several places. Every settler cultivated his land individually. Gradually a considerable degree of social inequality developed. The wealthier landowners dissociated themselves more and more from the village community, while the number of landless peasants increased, since the land was not divided up after the death of its owner. These landless peasants either founded satellites or became farm labourers. The villages in Manitoba developed on similar lines. About 20 to 30 families formed a village community ;

[1] *Canadian Frontiers of Settlement, op. cit.*

each family was allowed to own up to 160 acres of land. Such a village covered about five to seven square miles, its distance from the next village being about three miles. The houses were lined up on both sides of a street about half a mile long. Close social contact and mutual aid were preferred, in spite of the inconvenience which this layout caused in relation to the field system. But in the course of time the disintegrating influences proved the stronger. The scattered patches of land were redistributed and each settler received his holding in one lot. The Canadian quarter section farm was adopted and eventually led to the complete disintegration of the village. The commercial town appeared, the common pasture disappeared, and the old three-year system was replaced by a more complex crop rotation. The town of Winkler became the queen of the settlements of the Mennonites; its population was 81 per cent. Mennonite, but had no agricultural functions.

The Russian settlements of *Siberia* were mostly spacious and, with only rare exceptions, irregular. "The homesteads enclosed by fences are concentrated in the villages and either form streets or are irregularly arranged." [1] Haxthausen points especially to the large size of the homesteads, to their wide and non-continuous arrangement; to the frequent co-existence of a summer and winter house, and to the enclosed vegetable gardens adjoining the houses. The pastures, which were the most important part of the land, were situated in the immediate neighbourhood of the villages, and were enclosed in order that the cattle might be watched more easily. The fields were up to 20 *versts* distant from the village. Owing to the hard climate the summer fields were sometimes six times as large as the winter fields. A rational method was employed for the development of the forests. At right angles to the river glades were cut into the forest at intervals of 50 to 60 *versts* and 50 to 60 *versts* long and 100 feet wide. At intervals of 15 *versts* the forest was burnt down and a space of three to six square *versts* cleared, where villages of 60 to 80 houses were laid out. In this way four villages were built in each glade. After about five years when the consolidation of the villages had progressed sufficiently secondary roads interconnecting the villages in the first glades were again cut out of the forest, with a village at every 15 *versts*.

Some data regarding the structure of a Siberian Government,

[1] C. F. von Ledebour: *Reise durch das Altaigebirge und die songarische Kirgisensteppe*, 1829.

that of Tomsk, District of the Kolyvansk mines, for the year 1826 are of interest.[1]

175,000 peasants, men and women, lived in 40 *volosta* (parishes). There were 31 villages with a church, 1,232 villages with 30,400 houses and 2,526 mills and 1,036 forges. There were 56 post stations and 230 other stations. The winter and summer corn was stored in 492 magazines. There were 181,000 *desyatins* under cultivation, i.e. $2\frac{1}{12}$ *desyatins* per taxable head. 75,000 beehives were distributed over the district. Each *volosta* had to pay taxes consisting of crown-county-parish- and commissariat taxes amounting to 1,144,000 roubles, i.e. 13 roubles 15 kopeks per taxable person. The earnings of the peasants for corn, cattle, honey, butter, tallow, hides, etc., were altogether 971,250 roubles.

The Government of Tomsk contained 58 *volosta* each consisting of several Russian villages, and 94 *volosta* each consisting of several Yassashnik villages. Altogether the Government contained 1,561 villages with about 50,000 houses. There were 11 tanneries, 2 soap-boiling works, 2 tallow-melting workshops, 1 brick kiln, 20 other works for the melting of silver, copper, etc; 2,150 water mills, 426 windmills, 8 horse mills, 1,098 blacksmiths. 11 market houses and 7 fairs served the trade; and 80 post stations the traffic. The high roads which were maintained at the cost of the communities had a length of 2,800 versts. There were 42,000 nobles, officials and townsmen and 236,000 peasants.

In 1904 the peasants of the Government of Vitebsk petitioned the Tsar on the following matter: "If our life persists under the present conditions we shall die of starvation within 15 to 20 years. What do we eat? God alone knows! The dog of a middle-class citizen would refuse the food which has to keep us alive."[2] Such were the conditions of a large part of the peasantry at the time of Stolypin's Agrarian reforms which were the immediate consequence of the Revolution of 1905. A very large part of the land was owned by wealthy landlords and the rest was cultivated by very poor peasants who owned only small plots. The census of 1905 gives the following data:

	No. of Farms (in millions).	*Area of Land (in million desyatins).*	*Average area per Farm (desyatins).*
1. Poor peasants, crushed by serf-like exploitation . . .	10·5	75·0	7·0
2. Middle peasants . . .	1·0	15·0	15·0
3. Bourgeois peasant and capitalist farms	1·5	70·0	46·7
4. Semi-feudal estates . . .	0·03	70·0	2,333·0

[1] C. F. von Ledebour: *op. cit.*

[2] S. Kaleko: *op. cit.*

The basic idea of the reform was the introduction of personal property ; it was therefore directed against the *Mir*, i.e. against its collective tendencies. Apart from social and political abuses the evil plight of the peasants was caused by the increase of population and the penetration of capitalism. The intention to commercialise Russian agriculture and range it beside that of other capitalist countries was bound to fail because the Government drove a wedge between the well-to-do farmers and the masses of poor peasants by making the acquisition of the land previously owned by the village community considerably easier to the former than to the latter. Since the Emancipation the number of peasants had risen from about 45,000,000 to roughly 110,000,000 in 1914. The over-population of the villages reached incredible dimensions. The sub-division of the holdings increased rapidly in proportion to the growing number of marriages and the consequent claims of inheritance.

Russia's industry could not absorb this surplus population. But the peasants had to find work, and thus a new exodus of the peasants began, as has happened so often in the history of Russia. They emigrated to the Black Soil region, to Siberia and to the West. Russian history is a history of colonisation ; it is a never-ending movement of population away from the centre to the outlying regions. The building of the Trans-Siberian Railway began in 1891. Between 1896 and 1914 about 3·6 million peasants were settled in Asiatic Russia, a modest number in comparison with the need : the peasants who had migrated to Siberia before 1912 had left only about 1,000,000 hectares of land in European Russia. The social disparity in Siberia became evident not only in the greater or less poverty of the individual peasants but also in the fact that whole villages, at the beginning of the century, were either poor or rich, or their structure lopsided, depending either on large estates or only on dwarf holdings. These contrasts can be traced back to the middle of the eighteenth century ; thereafter five categories of peasants had developed. They had been taxed differently, they had been treated differently by the authorities, and they had received land according to different principles. These categories were : miners who had become peasants ; previous serfs of the mines ; new settlers since 1865 ; foreigners ; peasants already living in the district. As a result of this stratification villages grew up which produced the social and economic peculiarities described above. Stolypin's agrarian reform used these contrasts to break up the village

communities : the large estates were favoured and separated from the village community. The difficulties were of a special kind because in the Siberian villages more than elsewhere the use of the land was dependent on ethnic characteristics besides the usual conditions such as the quality of the soil, relief, climate, etc.

The pressure of population forced the peasantry not only to migrate but also to undertake part-time work either in the form of home industry or as agricultural labourers. The average size of the peasant holding in 1861 was 4·8 desyatins ; in 1880 it had decreased to 3·5, and in 1900 to 2·6 desyatins. An adequate average would be about 12 to 13 desyatins. The density of the rural population in 1897 was as follows : [1]

	Persons per square Mile.
European Russia north of the Black Soil Zone	64
Black Soil Zone	87
Lower Volga Region	43
Southern Steppe Region	64
Middle Volga Region	96
Central Agricultural Region	109
North Eastern Ukraine	128
North Western Ukraine	157

The agrarian reform of 1906 provided for the distribution of the common pastures and woods and the redistribution of the hitherto scattered peasant land should the village communities apply voluntarily for these changes. A general improvement of agriculture and an increase of the yield were expected from these reforms. But under the existing conditions the antagonism between the better and the poorer holdings also increased. The redistribution of the land amounted in reality to the development of individual ownership of the land. About 2·6 millions of peasants applied for a redistribution between 1907 and 1911. Roughly 900,000 received about 8 million desyatins as personal property. The land of about 6,000 villages was redistributed in order to create new communities ; and the area of about 19,000 villages was split up for the establishment of individual homesteads. As a result of this far-reaching redistribution many plots were very remote from the villages. In the compact villages the small peasants received land near the village, while the land of the middle and well-to-do peasants was distributed in several places if necessary. This led sometimes to strange divisions of

[1] V. P. Tomshenko : *Agricultural Russia and the Wheat problem.*

the land without any functional relationship to the village itself. For instance the land of a village community which was part of a manorial estate lay on one side of the village so that the village itself stood at the other end of the whole area, the reason being that before the Emancipation, i.e. during the time when the peasants had to render compulsory services to the lord, manor land and village land were close together for practical reasons. After 1861 the land of the manor and the land of the village were separated if the population of the village was not transferred to another place. In such a case a solution is only feasible by a unilateral separation of the peasant land. This illustrates why even the land of a small village sometimes lies at a greater distance from the houses.[1]

The reform of 1906 provided for the following changes. Although they affected the structure of agricultural settlement considerably they were yet far from being a fundamental remedy.[2] They are: the setting apart of land for whole villages and its corresponding separation, especially in cases where several villages held land in common; distribution of the land of a village community among several groups; segregation of individual homesteads from a village community; combination of several parishes; the rounding off of peasant land; combination of all holdings within a parish; division of communal land between peasants and private owners.

Two principles governed the execution of these measures. The so-called *otrub* system consisted in the combination of all scattered plots of land belonging to one peasant household in one place, or, if this was not possible, at least of the arable fields, while the homestead remained in the village. The so-called *chutor* system on the other hand aimed at dividing the whole village into dispersed and individual homesteads. Considerable difficulties had to be overcome in the course of this redevelopment towards private ownership. They were especially great if the land of several neighbouring villages was redistributed at the same time; or if not only the peasant land was scattered in strips but the land of these several villages was intermixed as a whole. In such cases intermediate solutions were preferred such as the separation of individual homesteads or of small groups of farms. Other difficulties were the impossibility of cultivating

[1] I. von Keussler: *Zur Geschichte und Kritik des bäuerlichen Gemeindebesitzes in Russland*, 1876.

[2] A. Kolfold: *Die russische Agrargesetzgebung und ihre Durchführung in der Praxis*; in M. Sering: *Russlands Cultur und Volkswirtschaft*, 1913.

all the types of crops which were regarded as necessary for an agricultural unit on a soil suitable only for one or two kinds; or the insufficient supply of water. In the Black Soil region the arable land was abundant, but the supply of water was not so plentiful as in the non-Black Soil Region where a greater diversity of crops was possible. This partly explains the existence of fewer but larger villages near the water sources in the former and the more dispersed structure of settlement in the latter region.[1]

Size of Village.	*Of 100 Villages of the same size there are in the non-Black Soil Region.*	*Black Soil Region.*
Up to 10 inhabitants	63·0	37·0
10–100	78·5	21·5
100–500	67·9	32·1
500–5000	23·3	76·7

The structure of one village may serve as an example for the time before the Revolution of 1917. It is that of a typical Russian village without any special characteristics.[2] The village of Simsk on the Selon river consisted of four parts; the village proper; the *chutori*, i.e. the group of individual homesteads; the station building with a few tea-houses; and the cluster of houses near the ferry over the 300 feet wide river with a few fishermen's houses, tea houses and small wooden huts. It was inhabited by 375 men and 415 women. The arable land was divided into 297 plots. The houses stood on both sides of the main road, separated from it by their little gardens. The distance between the houses was 30 to 60 feet. Behind the houses were the larger gardens and yards with store and bath houses. There was a road running at the back of the yards from which narrow footpaths led to the fields. The three-field system—one field lying fallow, one for winter crops and one for summer crops—was followed. Every peasant had in each of these three divisions about 15 strips each 15 feet wide and not contiguous. For instance in the case of 100 peasants there were 99 strips; this meant that the whole arable land was split up into $15 \times 3 \times 100 = 4{,}500$ plots! There was no wood belonging to the village; the existing wood was part of the big estate. Common meadows were available near the river. After 1861 every family had the right to ask for a whole share, a *dusa*, and for half a share for each child: a *dusa* consists of 5·5 desyatins. The landlord

[1] W. D. Preyer: *Die russische Agrarreform*, 1914.

[2] E. Schneeweis: *Studien zum russischen Dorf im Alt-Nowgoroder Ujezd.* Zeitschrift fur österreichische Volkskunde, 1913.

received 80 roubles for each share as compensation. Gradually this impossible field system was abolished and the Government settled those peasants who were ready for this change within the area of their fields. These *chutori* served as model farms and promoted the break-up of the old village community.

Article I of the Land Decree of 1917 reads : The landowners' right of property in land is hereby abolished without compensation for all time.

The Agrarian Revolution of 1917 and the following years was an integral part of the general Bolshevik revolution. It was a spontaneous eruption of the suppressed masses who felt instinctively that the pressure which had kept them down for centuries was suddenly removed. Even before 1917 the peasant revolts had sometimes assumed the dimensions and intensity of a social revolution, but they remained restricted to individual districts. As a whole the peasantry was passive in 1917 as in 1905. Their revolt against the landlords was stimulated primarily by the conviction that the soil ought to belong to those who till it. The expulsion of the landlords by the peasants took place, in most cases, even before the Bolsheviks constituted their Government, and at a time when Lenin had still to hide from the Kerensky Government. The Agrarian Revolution of 1917 had nothing to do with Marxian theories ; but the subsequent direction of this unorganised movement into systematic channels was the work of the Bolsheviks. Lenin said : " We are supporting the peasant movement to the last, but we must remember that this is not the class which is capable of bringing about or will bring about a Socialist Revolution." The distribution of the land among the peasants ran counter to the agrarian policy of the Bolsheviks, who looked on this precipitate action as an undesirable step towards individual ownership, and regarded not only the capitalist, but also the small independent producer as " bourgeois ". Lenin was convinced that " a system of division of land was opportune at the outset . . . in order to show that the land had been taken away from the rich landowners and turned over to the peasants ". He thought that the fundamental issue was " the transfer of the economy of the country to a technical basis of large-scale production ". Consequently the dangerously large number of individual producers in the villages had to be liquidated. The Five Years Plan of 1929 states : "The Plan aims at creating during the five year period a socialised

producing area to counterbalance the upper (village) stratum of the individual farmers." The peasantry were to understand that an equal division of the land was nonsense ; and that " only in communes, *artels*, and other coöperative organisations for the collective cultivation of the land lies salvation from the disadvantages of small-scale economy." But such a solution could not be imposed from above without the active help of the peasants. The Government could only create the framework within which the peasants must build their own organisation. A decree of 1918 provided for three forms of collectivisation. The *Commune* is the most comprehensive form of an agrarian collective. All the land, all buildings, and dwelling-houses as well as farm buildings, and all agricultural undertakings are handed over to the Commune. Work, consumption and income are distributed equally among all members without regard to the invested share. The second type of an agrarian collective is the *toz* ; in this case temporary work only is organised by pooling the necessary tools and labour for a special purpose. In the third type, the *artel*, the basic means of production, i.e. land, labour and working capital consisting of tools and farm buildings, are collectivised, but only so far as this is necessary for the cultivation of corn or special crops. Dwellings, gardens, poultry and pigs remain individual property.[1] According to regulations of 1930 an *artel* is " a type of collective where the agricultural workers, poor and middle peasants voluntarily unite to build large collective farms by pooling their means of production and labour in order to achieve a high productivity and a large marketable surplus ". And as a further consequence the socialisation of the means of production : " All work animals, agricultural implements, commercially productive livestock, all seed reserves, all cattle fodder, are socialised."

Until the time of the Revolution Russian agriculture followed the line of least resistance, and this fact influenced the structure of settlement in general, i.e. distribution and density, and in particular the layout of the villages or the location of individual homesteads. This tendency was accompanied by a division of the land which aimed at the greatest equality possible as regards its quality, quantity and situation. This principle led to an almost complete disregard of rational management of the farms and to dwarf holdings scattered in many places. The implements

[1] W. Ladejinski : " Collectivisation of Agriculture in the Soviet Union." *Political Science Quarterly.*

were as inadequate as the knowledge of efficient methods of cultivation. The Russian peasant, before the Revolution, was still living in the Middle Ages. It is not astonishing therefore that between 1800 and 1854 there were no less than 35 years with more or less very bad harvests, and that really good harvests were not frequent even in later decades. Although the agrarian reform of 1906 attempted to introduce a certain measure of rationalisation, the result was a further deterioration of cultivation and the growth of social inequality. Even after 1927 there were over 5,000,000 wooden ploughs in the Soviet Union, and in 1925 about 85·8 per cent. of all farms belonging to village communities in the North-west of European Russia had their land scattered in twenty to one hundred different places. In the south and south-east the land was less dispersed, but the fields were farther away from the large village, a disadvantage which can be overcome only by modern means of transport and production. But at this time the villages were still too poor. Of the village population about 10 per cent. were proletarian, 23·3 per cent. semi-proletarian, 62·8 per cent. small producers and 3·9 per cent. small capitalists.

During the first years after the Revolution the villages remained unchanged. Something, however, had to be done. The obvious solution seemed to be to abolish the intermixture of the numerous small lots and to collectivise the land and the work. Under the existing conditions a halfway solution was impossible for the Soviets, because the peasants had already expropriated the land on their own account and yet were incapable of rationalising their farms without outside help. But as the peasants were already accustomed to collective action by the organisation of the *Mir*, it was relatively easy to substitute for the organisation of the *Mir* the village meeting, the main difference being its composition : all inhabitants of the village, men and women over 18 years of age, took part in it, while the *Mir* was composed only of heads of families, and last but not least the most potent factor was the impossibility of putting back the clock. The gap between the " Middle Ages " and modern times had to be bridged without a gradual adaptation to changing conditions. The Government was determined to usher in the Machine Age as quickly as possible ; and the result was that Russia fell an easy prey to the demon of machinery—though this is only too understandable. The rationalisation of agriculture was therefore imperative, the more so as it offered far-reaching opportunities

to attack and destroy the legacies of the past. The tractor became the god of the younger generation. The spontaneous revolution of the peasants, who had suffered too long and too cruelly, and the overwhelming impact of the machines on the life of the village was the unavoidable reaction to age-long neglect and suppression. This attitude cannot be condemned with an arrogant and condescending infallibility or with the enraged disapproval of Western European respectability. Political bias, especially that of persons who are afraid of attacks against their own social order, is never a sound basis of objective judgment. But without such a bias we should not hesitate to admit that Russia had no other choice but to change the structure of her agriculture by a systematic and determined rationalisation and collectivisation.

This implies scientific methods of cultivation and large-scale mechanisation of production. Both can be applied efficiently only on large, i.e. continuous, tracts of land, and both need a certain amount of centralised coördination and systematic education. They demand a general redistribution of population in accordance with changes in the methods of cultivation and further new types of settlement suitable for modern farmers and for a new social community. The U.S.S.R. is to-day once more a field of colonial expansion *par excellence.* Natural increase of population—about three millions before the war—and systematic redistribution, together with the opening-up of new and the development of backward regions, are shifting the centre of gravity of the population.

The realisation of such comprehensive plans needs time and encounters considerable difficulties which are accompanied by failures and a relaxation of rigid doctrine. As to the labour problem the official standpoint has been stated as follows : " It is not true that in a Communist Society people will be equally rewarded. In a Communist Society, which will be a highly productive society, everyone will be rewarded according to his needs because there will be enough for everybody and work will become a habit. But so long as there is not enough for everybody, the only socialist method of distribution of income is distribution in accordance with the quantity and quality of work done." The provision of new technical equipment cannot keep pace with the need, at least not in the beginning. These difficulties are overcome by first supplying the State farms with technical equipment, especially with tractors. They serve as

models for the Collective farms, which are only in the first stage of their development. Stalin remarks in this respect :

The immense difficulties of uniting scattered petty peasant households into *kolkhozy*, the difficult task of creating a great number of large-scale grain and cattle-breeding farms on almost empty spaces, and also the period of time required for the reconstruction and transition of individual farming into the new *kolkhoz* path, a reorganisation that demanded some expense ; all these factors inevitably predetermined both the slow rate of development of agriculture and the comparatively lengthy period of decline in the growth of the available stock of cattle.

The Government regarded as the main obstacles not only the passive attitude of the older generation towards technical innovations but even more the active obstruction of collectivisation by the *kulaks*. · Their " liquidation " was the real agrarian revolution of Russia. The most decisive impetus towards collectivisation came from the poorer peasants. They provided the main contingent of the " new collective farms " during the early period up to 1927. Their standard of living was rising while the kulaks were losing their economic preponderance.

	Income per capita (*in Roubles*)				*Per cent. of* 1928.			
Agricultural Proletariat	122	140	175	234	100	114·8	143·4	191·8
Members of collective farms	145	153	210	234	100	105·5	144·8	161·4
Individual Peasants .	131	124	161	161	100	94·7	122·9	122·9
Kulaks . . .	259	270	181	181	100	104·2	69·9	69·9

The 15th Congress of the Bolshevik Party adopted the following Report of the Central Committee.

Where is the way out ? The way out is in the passing of small disintegrated peasant farms into large-scale amalgamated farms, on the basis of communal tillage of the soil, in passing to collective tillage of the soil on the basis of the new higher technique. The way out is to amalgamate the petty and tiny peasant farms gradually but steadily, not by means of pressure, but by example and conviction, into large-scale undertakings on the basis of communal, fraternal collective tillage of the soil, supplying agricultural machinery and tractors, applying scientific methods for the intensification of agriculture. There is no other way out.

Collectivisation entails the abolition of the old field system, the combination of the millions of scattered plots into continuous large tracts which can be worked with modern machines supplied by numerous Tractor and Machine stations. In 1939 there were over 6,300 such stations available with about 130,000 harvester

combines, 160,000 motor trucks, 105,000 threshing machines, and 394,000 tractors.

Such a far-reaching transformation of the agricultural structure demands new forms of organisation. The stations serve over 250 million acres of collective farm land. In 1938 the average area farmed per Machine and Tractor Station is 1·015 acres. Each station is staffed with engineers, mechanics, agronomists, book-keepers and other trained personnel. There are about 600,000 villages and hamlets in the U.S.S.R. On an average eight to nine form a village Soviet, a *Selo Soviet*. Roughly 70,000 *Selo Soviets* are now entrusted with the fulfilment of certain administrative functions. They are elected by the rural population and are, to a considerable degree, autonomous within their districts. Of the various tasks allotted to the *Selo Soviets* by Decree of 1931 a few of those which have a bearing on collectivisation may be mentioned. The *Selo Soviet* takes the necessary steps to preserve the existing *kolkhozy* and to form new ones ; it discusses and sanctions the plans of collective farms and other coöperative organisations. It assists in the introduction of new methods in the collective farms. It supervises the distribution of labour and technical staff in the collective farms and attends to discipline in the collective and Soviet enterprises ; it takes necessary steps to develop the collectivisation of farms and assists the individual peasants in forming *kolkhozy* ; it renders assistance to *sovkhozy* and to the Motor and Tractor Stations ; it takes all necessary measures to increase the area sown and to raise the yield, and encourages the development of all kinds of farming and the introduction of agricultural improvements.

The following table gives an idea of the progress of collectivisation.

	1929.	*1930.*	*1934.*	*1938.*
Number of collective farms .	57,000	85,400	233,300	243,300
Number of peasant households united in collective farms	1,000,000	6,000,000	15,700,000	18,800,000
Percentage of households collectivised (in proportion to number of households) .	3·9	23·6	71·4	93·5
Percentage of sown area collectivised (in proportion to sown area) . . .	4·9	33·6	87·4	99·3

There are about three Collective Farms for each *Selo Soviet*, but in reality this number is higher in some districts, since many

districts have very few collective farms. The establishment of collective farms has proceeded more quickly in the south and south-west and also in some of the Autonomous Republics than in the more northern regions with their poorer soil. Today the *kolkhozy*, the collective farms, are far more important than the *sovkhozy*, the State farms ; the number of the latter is decreasing in favour of the former.

Russian agriculture works according to a general plan laid down and supervised by a central authority. Neither the selection nor the quantity of the crops which are to be cultivated is decided by the individual community of farmers. Gradually the peasant develops into a technical-minded agriculturist just in the same way as the homesteads and the old villages become elements of an agricultural plant organised on modern lines. Within the framework of the collective organisation each household owns a piece of land privately.

The peasant is partner in a large modern enterprise which is no longer an isolated world of its own but is integrated in the general structure of the country.

Men and women who live their lives under conditions like these are guided by a much stronger and deeper scientific influence than farmers in any European country. They acquire an experimental attitude, and they approach every traditional element not with the assertion " This we must cherish and preserve as a wisdom of the giants of old " but with the question " How can this be improved, developed, reconciled with our positive knowledge ? " They are no longer peasants in the old sense, the sense extolled by Hitler, Pétain and the Roman Catholic Church. They are not ultimate atoms of individualistic greed whose acre and cow makes them for ever impervious to the blandishments of socialism, the polar opposites of the propertyless wage-slaves of industry, the eternal dupes of peers and priests. The collective farms are agro-cities in the making, and their members are the forerunners of the free proletariat of those cities, the predestined partners and unbreakable allies of the trade unions which control the industrial machine.[1]

There are, for instance, about 700 workers out of a total population of 2,000 persons on a collective farm of 4,500 acres ; on the Karl Liebknecht farm near Odessa with 1,180 hectares there are 460 workers out of a total population of 800 persons ; on an Armenian farm of 200 hectares, 300 and 856 respectively.

The State Farms are organised on similar principles. The State Farm " Gigant " in the Northern Caucasus cultivated

[1] L. Barnes : *Soviet Light on the Colonies.*

220,000 hectares in 1930, an acreage that had decreased in 1935 to 110,000 hectares, and employs 5,500 workers who live in blocks of flats.

The whole enterprise had been most carefully planned; a soil survey was made to show which areas were most suitable for cultivation; varietal and manurial trials on a large scale were made; a town was being built along the railway line planned complete with huge blocks of workers' dwellings, hospitals, implement shops, workshops and grain elevators. For convenience of working the farm was divided into twelve sections . . . each section was further divided into 25 squares of 400 hectares, i.e. of 1,000 acres—but although each square was only $\frac{1}{25}$th part of one man's responsibility, it was still five or six times the size of an ordinary English farm.[1]

In 1939 the number of State Farms was not much less than 4,000. They occupied an area of 168 million acres. The following table gives a classification of the existing State Farms.

Grain-growing	477	farms
Cattle-breeding	771	„
Pig-breeding	629	„
Sheep-raising	200	„
Growing cotton and other fibre crops	54	„
Growing special crops (tea, tobacco, etc.)	114	„
Fruit, vegetable and vine-growing	645	„
Studs	118	„
Reindeer-breeding	31	„
Poultry-raising	102	„
Suburban (chiefly for vegetables, dairy produce, and miscellaneous)	816	„

Many State Farms are real townships, populated by thousands of people. Every State Farm maintains nurseries, maternity homes, hospitals, clinics and schools, all expenses being borne by the State. There is little to distinguish life in the State Farms from the life of the workers in the towns. In the "Electrozavod" State Grain Farm (Chkalov Region), for instance, the workers have a club, a moving picture theatre, a large library, 9 elementary and secondary schools, courses in agricultural training, a hospital with 35 beds, a clinic, a drug store, nurseries, etc. One hundred and thirty comfortable and well-designed houses have been built for the workers. All the apartments have electricity and wireless installations.[2]

By 1935 already $\frac{4}{5}$ of all the peasant farms in the U.S.S.R. belonged to collective farms. The systematic coördination of agricultural production is the prerequisite of the redistribution of population and settlement. The old distinction between the

[1] E. J. Russel: "The farming problem in Russia." *Slavonic and East European Review*, 1938.
[2] *U.S.S.R. Speaks for Itself.*

producing southern and consuming northern regions disappears, and with it also the line of demarcation running from the region round Kiev to Yekaterinburg—Sverdlovsk which had come to be regarded as a kind of internal natural frontier. This development is still in flux and only its first outlines are visible today. The same holds good for the abolition of the antagonism between town and country. This problem is tackled simultaneously from two ends. On the one hand agriculture is mechanised and life in the country revivified by the introduction of new ways of life and by the systematic disintegration of the peasant mentality. On the other hand new towns grow up in agricultural districts, new industrial centres which have neither the ambitions nor the functions of large urban agglomerations.

The U.S.S.R. is striving to abolish the contrast between the town and the village, but this does not mean that the towns of the U.S.S.R. will be abolished. On the contrary the industrialisation of rural districts, formerly backward, neglected and uncivilised, is giving birth to a large number of new towns. Agricultural labour is becoming a form of industrial labour and the village is aspiring towards the level of advanced urban culture. New towns are springing up and are helping to overcome the violent opposition between the old town and the old village which impeded productive development—new towns with a different complexion, a different significance, a different destiny and a different national geography.[1]

Up to the present however the old type of Russian village with its two rows of houses lined up along a wide road is still predominant. Like a relic of the past it stands in the middle of its fields; no efficient functional relationship exists between its layout, its houses and its appearance and the large and continuous spaces of cultivated land which are akin to another and more rational spirit.

The main principles underlying the new distribution of agriculture are specialisation of the different regions according to the products best suited to their soil and climate, mechanisation combined with collectivisation; and intensification through irrigation and scientific methods. Since 1913 the cultivated land has increased from 105,000,000 to over 140,000,000 hectares. The extension of the cultivated area proceeds in the main towards the south and the east, but later towards the north and in the central region. Scientific principles guide the redistribution of agriculture.

[1] N. Mikhaylov: *op. cit.*

The success achieved in the transformation of crop distribution in the U.S.S.R. is the result of the successful application of Soviet agricultural science. There are 400 Scientific Research Institutions, 1,500 model fields and stations, 10,000 scientists, all united by one plan and a common aim. The names of world-famed scientists are bound up with the problem of transforming the agriculture of the country. The achievements of plant culture are really magnificent. They have enabled southern grapes to ripen in the *kolkhozy* of the Central Volga Region, the Ivanov district, Bashkiria, and the Trans-Urals ; Ukrainian water-melons in the Moscow district, dessert apples in Krasnoyarsk on the Yenisei where in winter the temperature falls to 50° C. below zero. The mulberry tree has migrated from Central Asia to Bashkiria and peaches have gone to the Ukraine ; the apricot spends the winter in the open near Leningrad. New regions of agriculture are being created—in the high hills of the Pamirs, in the vast forests of Birobidjan, in the Volga delta and in the Arctic Circle.[1]

The danger of exhaustion of the soil is reduced by the introduction of other crops into rotation, side by side with the principal crop.

A far-reaching plan for the reclamation of marshlands has been worked out and partly executed. " The whole of the newly created agriculture of the Far North is based on the cultivation of drained marshes." Also the conquest of the desert by cultivation has begun. " In common with every other work of amelioration, irrigation in the U.S.S.R. is a complex system : not only are new irrigated ploughlands created, but water transport, the fishing industry, and the water supply of industrial enterprises and towns are improved, and hydro-electric stations are constructed. The complexity of the works is ensured by the fact that all branches of economy are united under one plan." Central Asia profits especially from this progress. For instance in the basin of the river Vakhsh a large irrigation scheme is planned and already partly in use ; by 1934 about 8,500 households settled in the valley. In 1939 canals in Tadjikstan supplied water to 300,000 hectares of cultivated land. In addition 80,000 hectares are irrigated by recent schemes. The main developments are, besides the Vakhshstroy scheme, the completion of the Ferghana Canal, the Great Hissar Canal irrigating 37,000 hectares, and the canal at Stalinabad. Industrial enterprises develop such as the chemical combines in Aktyubinsk and Kara-Bougaz, or coal mines in Karaganda ; their workers have to be provided with vegetables, and this again stimulates cultivation, in this case horticulture.

[1] N. Mikhaylov : *op. cit.*

Two other regions may serve as illustrative examples ; the needs of consumption are the primary factors of the redistribution of agriculture and horticulture. Yakutia :

The chief obstacle to progress hereabouts has been the frozen sub-soil. When the thaw comes and the river rises with the melting of the snows at its source, floods cover the land either side of the river : then the frozen soil prevents the draining off of this flood-water until the river itself can take it back. It would seem that the usual estimates of its depth—i.e. the sub-soil—are guesswork (100–200 feet) ; its depth is unknown but certainly four times as deep as the estimates. In the same way the usual estimate of the depth of the thaw is misleading (3–5 feet). If the moss covering the earth is removed and all else done to expose the surface to the sun, the thaw reaches down to 15 feet. In such land drought is impossible. Possibilities in the way of raising crops extend accordingly. In fact the raising of necessary crops and of many luxuries is no longer the chief difficulty but rather the maturing of them. Artificial heat and light provided by electricity is being used to supplement crop-raising. Apple trees are being trained flat on the ground to avoid the killing winds. The Igarka water-mains are laid with steam-pipes alongside which prevent the water supply freezing. In this way the most important hindrance to the use of the frozen sub-soil region—lack of drinking water—ceases to be an insoluble problem.[1]

The town of Igarka on the Yenisei lies about 60 miles to the north of the Arctic Circle. It has now a population of roughly 20,000 inhabitants and its own supply of vegetables and a dairy farm.

The Kola peninsula is being industrialised. About 150,000 persons are living in this region. They need their own supply of vegetables and dairy produce.

. . . in the Kola peninsula, the extreme North-West of European Russia, Khibini, there is a sort of Polar Rothamsted. In 1923 I. G. Eichfeld exiled himself to that terrible climate, living in a primitive hut, in order to settle the question as to whether men could live and work in the Arctic freed from scurvy and other hindrances by means of keeping them supplied with fresh vegetables and dairy stuff raised on the spot. He has settled the question. They can be raised . . . seed that he has raised, acclimatised to Arctic temperatures, has gone to all those other quarters of the Union where similar temperatures have to be met, some sub-tropical, like those of Tadjikstan, but arctic enough by reason of their altitude. Eichfeld had in front of him the most northerly agronomic station in the world, three kinds of soil, no manure, and three months' sunshine a year, though, certainly, sunshine for 24 hours a day when sunshine came. His assets, besides his own brain, were some enthusiastic workmen

[1] E. S. Bates : *Soviet Asia.*

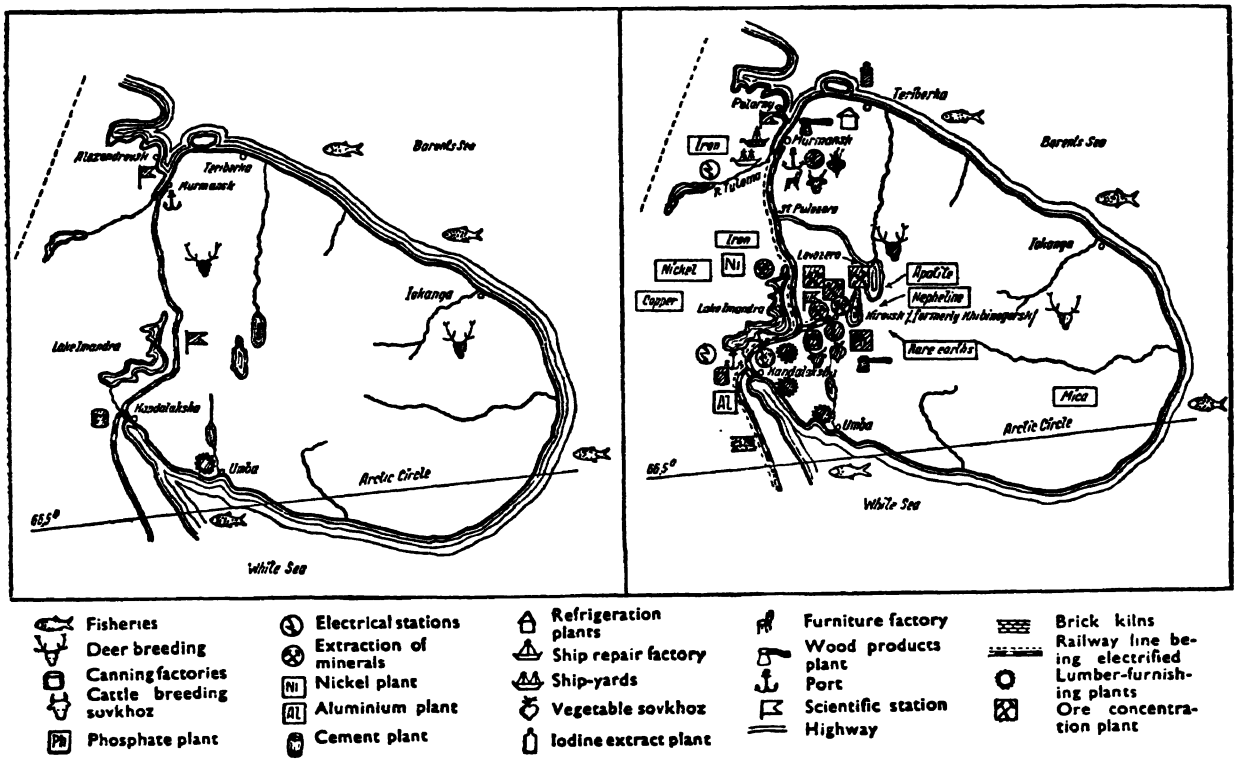


Fig. 58. Industrialization of the Kola Peninsula, 1928–35

and two marvellous horses. But then again the horses had to be provided with fodder ; and how was he to get hay from Novgorod, hundreds of miles away?—or from Kazakstan, half as far again? There was the alternative of mineral manure, but experiment showed him that he could not get full value out of mineral manure except on land that had been treated with animal manure. Some of the most promising land, too, stood under water most of the summer, and workers had to go about on skis in mid-June. The first three years were spent reclaiming marsh. . . . He had black currant plants brought from Siberia resistant to the temperature but unproductive and crossed these with others which were productive but not resistant. He succeeded. He went on to other bush fruit, to vegetables and then to flowers, to 35 big farms, 1,500 workers, 1,200 animals, tractors, 20,000 experiments. . . . If Eichfeld had believed anything agricultural experts said, he would never have started. As it was, by 1934, he was feeding all his livestock on home-produced forage and exporting a large proportion of his 30,000 lb. of forage seed for use elsewhere, as, for instance, into the Lena District, to be sown partly by aeroplane on land which thereby was converted into pasture areas, for reindeer, and so put the reindeer-breeding industry on a new footing. He was raising grain, tobacco, tomatoes, cauliflowers, cucumbers, celery, strawberries, irises, roses, besides those fruits and homelier vegetables and flowers with which he started business, and exporting seed from these also to enable industry to thrive where otherwise it could not thrive, and also to induce the nomad tribes of Siberia to settle and coöperate in a more satisfactory way of life than they had thought possible before.[1]

It is obvious that changes in the agricultural structure such as have been mentioned have a far-reaching effect on the redistribution of population and the development of urban places. Agriculture and industry are interrelated—as they always have been—but in a new way. For it is agriculture that gives birth in many cases to towns and to industries.[2] Rural regions with large machine tractor stations, regions where nomad tribes have been settled as farmers, and regions like Birobidjan, the Jewish Autonomous Republic in the Far East, where the different nationalities develop their own agriculture, all of them stimulate the development of towns and industries which are based on agricultural raw materials, side by side with those built up on other natural resources.

A few words about the redistribution of transport are added, for without fundamental changes in this field no plans can be realised, especially in a country of such vast dimensions as the U.S.S.R. A redistribution of the rural population without an efficient net of communications is an impossibility. Before the

[1] *Op. cit.* [2] N. Mikhaylov : *op. cit.*

Revolution the railway lines were focussed on the central region of European Russia. Moscow and Petersburg were the centres of attraction, while the outlying parts, especially in Asia, were neglected. They were colonial appendices of the centre. Although the railway system has increased from 36,300 miles in 1917 to roughly 60,000 miles, it is still insufficient. The most important new railways are: lines connecting the Central Region, i.e. Moscow and Leningrad, with the Urals and the Ukraine; the Turksib Railway between Turkestan and Western Siberia; the connection between the industrial area of the Urals and the Karaganda Coal Basin and farther to Lake Balkash and to the Turksib; the line linking Khabarovsk, Komsomolsk and Nikolayevsk.

The length of the navigable inland waterways of the U.S.S.R. is not much less than 66,000 miles. Canals are planned and already partly in use which will create a unified system of water transport and connect the isolated water basins of the main rivers, increase the area of irrigation and thus improve and extend agriculture. The Baltic—White Sea Canal takes first place; its length is 141 miles. "Dams several kilometres long support a huge artificial reservoir—1,300 square kilometres in area and containing 5,500,000,000 cubic metres of water. It is twice as big as the Lake of Geneva. Five fishing villages were removed from the flooded islands and transferred to the new shore. The track of the Murmansk railway was moved aside for a length of over 100 kilometres." Peter the Great had had the intention of linking the Moscow river with the Upper Volga by a canal, but the project proved to be too complicated and had to be abandoned. The canal has been finished in 1937. It is 79·5 miles long, 18 feet deep and 280 feet wide. A large storage lake "the Sea of Moscow" was created at the Volga terminus of the canal. It holds about 40,000,000,000 cubic feet of water and covers an area of 126 square miles.

The contours of the shores are veiled in a misty haze, one catches the sound of a distant ship's siren. It is echoed by the sirens of other ships. From 'the Sea of Moscow' vessels sail in different directions. Some proceed west to Kalinin. Others take the course southward to the Canal and then on to the Moskva river, the Oka, Volga and the Caspian Sea. Boats sail from here eastward to proceed along the old channel of the Volga to the Mariinsk system leading to Lake Onega and further west to Leningrad and the Baltic, or north to the White Sea along the Stalin White Sea—Baltic Canal.[1]

[1] *U.S.S.R. Speaks for Itself, op. cit.*

Moscow is now a port of three seas, the White Sea, the Baltic and the Caspian Sea. It is further intended to connect the Volga and the Don at Stalingrad and to irrigate the Volga Region over an area of 4 to 4·3 million hectares.

These few remarks, though inadequate in scope and selection, will show to what an extent the agricultural map of the U.S.S.R. will be changed by the development of the transport system. It will improve not only the balance and the standard of agriculture throughout the State but it will also affect the structure of rural settlement to a considerable degree.

III. Urban Settlement

The development of the towns in Russia was not accompanied by the rise of a middle class. Thus just those people were missing who were the foremost agents of industrial activity as the primary factor in an urban structure—at least as we understand it. In Russia rural trades and industrial villages are the counterpart of the first stage of industrialisation which is characterised by the work of the guilds and crafts in the towns of Western Europe during the Middle Ages and the Renaissance. The initiative of the burghers was lacking. The State took their place, then as to-day, and bridged the gaps in the Russian economy. It is for these reasons that the rôle of the towns in the life of Russia is different from that played by the urban communities in the West. It is not long ago that most towns, with but few exceptions, resembled villages rather than urban centres, not only in their outer appearance and their whole atmosphere, but also in their socio-economic structure.

This socio-economic structure survived for a long time, although the history of Russia is packed with dynamic tensions. Only the Church outlived all changes. It involved the individual in a collective magic, the communal tendencies of which are latent in every Russian soul. This attitude was not a prime mover of individual initiative; an impact from outside was needed to stimulate social and economic changes. Until a short time ago Russia had hardly any contributions to make in the field of science. Up to 1823 only 8,500 works had been printed in Russian. Such an atmosphere was not favourable for the development of a diversified social structure. Thus between the bureaucracy, the nobility and the peasants the connecting link of the middle class was missing. The towns were instruments of

the Government. They were distributed over the country as fortified places. The internal structure underwent fundamental changes when the Tsarist system collapsed and the hollow social pyramid crumbled.

In old Russia the market-places of the towns served not only for the exchange of goods but also as the centre of political life. The trade between the various market towns was inconsiderable owing to the great difficulty of transport. The economic regions were separate more or less self-sufficient units focussed on a local centre. Church and market belong together. Both need peace as the essential prerequisite of their wellbeing. In Russia this inter-dependence went so far that sometimes goods were stored in the cellars and weighed in the aisles of the church. The word *pogost* means the market as well as the church place. The clergy took an active part in the commercial activities and acted sometimes as financiers. In the sixteenth and seventeenth century the military joined in ; for instance in 1634 taxation was extended especially to soldiers who were engaged in part-time trade and/or industry.

In the sixteenth century the urban population was classified into agriculturists and tradespeople. For reasons of taxation a clear distinction between town and country was made by the Government. The persons taxable were responsible collectively for the payment of the taxes. The suburban communities were taxed on equal terms with the villages. But the Government, taking advantage of the possibility that the industrial and commercial groups of the population could pay more than the peasants, based the taxation in the towns on the dwelling unit, i.e. the shops and workshops, which were taxed more heavily, while the taxation in the villages was assessed on the basis of the plough.

The Russian towns did not develop in accordance with the needs of the people ; they were products of government policy. Up to the eighteenth century the citadel surrounded by a wooden wall formed the centre of the town. Within its precincts the residence of the *voyvod*, the administrative buildings and the main churches, the prison and the arsenals as well as the houses of the officials and soldiers were situated. It was a town within a town, as in China and India, but the outer town was not walled in. The population permanently engaged in trade and industry lived outside the *gorod* in the outskirts, the *posad*. These outlying parts were mostly built later than the fortified centre. The

third zone was occupied by the so-called " free districts ", the *sloboda*, for craftsmen and shopkeepers of all kinds.

The towns were in the first instance military-administrative centres. Practically all places to the south of the Oka originated as such fortified localities. The nearer they were to the frontier and the younger their origin the more the military element predominated. For instance in the middle of the seventeenth century there were 74 per cent. civilians in Serpukhov, 65 per cent. in Byelov, 43 per cent. in Kursk ; and to the south nearer to the Byelgorod frontier there were only 2 to 6·5 per cent. civilians in five of twenty-four towns. Moscow was an exception. Its population was dependent in one way or another on the Court. It was " one single Tsarist Estate ". Of more than 16,000 houses in 1701 only 7,000, i.e. 44 per cent., were inhabited by civilians, who belonged to the population of the Tsarist *sloboda* and worked for the Court. The remaining 9,000 houses belonged to the Church and the administration.

As to the amount of trade handled in Moscow foreign visitors remarked at the end of the sixteenth century that there were in all the shops of Moscow not so many goods as in one single shop in Venice. It is sufficient to look at drawings of the streets of Moscow in the seventeenth century with their wooden houses separated from each other by long fences, without pavement, or still worse with a wooden pavement, with the crowds selling and buying, and with dirt in the main squares. A few illustrations are sufficient proof that in spite of the presence of the Court Moscow was only a village of vast dimensions.[1]

At the time of Peter the Great there were in the whole of Russia about 250 towns. Catherine II " promoted " a number of places to the rank of towns for administrative reasons. In numerous cases such " towns " were later on reduced to common villages. In these towns the industrial and commercial portion of the population was small even as late as the middle of the nineteenth century. In 1844 the municipal budget in most towns was no higher than 40,000 roubles yearly, except in Moscow, Petersburg, Odessa, Nizhni Novgorod ; usually it did not surpass 20,000 roubles. These sums were used in the main for the purposes of the Government, and only to a small degree for the maintenance of the streets, street lighting, etc. It is obvious that under these conditions the urban population could not exert an important influence. It did not develop in opposition to the

[1] P. Milyukow : *Scizzen Russischer Culturgeschichte*, 1898.

power of the State as in Western Europe, but it did owe its position and corporative institutions to the State.

Up to the seventeenth century the urban population was almost as "nomadic" as the other groups of the population. Very often the censuses of the sixteenth century indicate that the owners of urban houses have left the town. Though military service exempted men from the municipal taxes during the seventeenth century, the urban population was gradually fixed to its original place of residence by the collective liability for the payment of the taxes. It was progressively separated from the other categories of the population and made sedentary. But in spite of this development the urban population remained relatively fluctuating till the nineteenth century. I. G. Kohl mentions this especially for the Petersburg of the year 1841 :

> The population of the City of Petersburg, from the highest down to the lowest classes, is so fluctuating, so subject to constant changes that nothing seems to be stationary and settled except a very few elements. The great are coming and going; the foreigners are arriving. They accumulate wealth and return to their homeland while new ones appear. The soldiers are shifted from one place to another. The officials seldom remain in their posts for a longer time, they are transferred to other districts; the common people, the servants, the workers, hundreds of thousands of carpenters, masons, factory workers, handymen and others are serfs who are given leave by their masters only for a limited time and are frequently replaced by new-comers. Even the *izvoshchiks* and the coachmen are affected by the nomadic whirl which shifts the population, shuffling and mixing it constantly from one end of the Russian Empire to the other. On the front seats of the coaches ever new faces appear, which, as in the times of the Great Migrations, come from the Volga, the Don and the Dnieper regions only to disappear again. In a word Petersburg is like all towns in Russia, a place where people meet only to do business. It is unlike our own cities where people come into the world between gloomy walls and vegetate like moss on the roofs of houses for one generation, grow grey and decay only to cede their places to the next generation. At the end of a decade the bulk of the population of Petersburg has completely changed.

The separation between the production of raw materials and their manufacture developed only slowly in Russia. The origin of Russian industry lay outside the towns, in the villages. Their home industries grew beyond self-sufficiency, supplying not only their own hinterland but also other districts. However, Russian manufacture and modern industry are not the organic continuation of these early stages, nor are they the result of the increasing

needs of the masses. It was the State which promoted their development for its own needs and especially those of the Army. In so far Russia followed the West, but with this difference, that in the West the " nationalised " industries are situated in the towns and were partly re-ruralised in the course of their early development, while in Russia on the other hand these industries remained in the villages. The following description gives a good picture of the conditions at the end of the eighteenth century :

Every Russian peasant is, as it were, also a craftsman and manufacturer. There is hardly any product which he needs for his simple life and his modest luxury that must be provided by the towns ; the whole of his furniture, clothing, food are produced, assembled, prepared, processed, used and consumed in his own native place. Very rarely one meets a peasant not skilled enough to make all his own household and farm implements himself. Usually, however, only a few people in a large village are engaged in the exclusive manufacture of this or that product. Thus nobody is forced to neglect agriculture entirely for the pursuit of these tasks. In a village where this industrial mentality has taken root an unemployed peasant is a rarity. In very densely populated districts or in the neighbourhood of large towns this useful industry sometimes acquires a really urban character. There are even whole villages which either neglect agriculture altogether or leave it to the women and children.[1]

And for a later period :

Various industries based on wood and wood products have been developed in the Governments of the Forest Region ; among others are found mat weaving, sieving and winnowing, the production of bast shoes, wheels, sledges, wooden pots and pans, pitch and tar burning, furrier trades, leather work and tanning. Entire villages in the Government of Nizegorod and of the neighbouring Governments were engaged in the production of iron goods. All the inhabitants of the village of Rabotnikol on the Volga were blacksmiths ; the village of Bezvodnol on the Volga is engaged in wire drawing ; by this time the village of Pavlovo was already distinguished by its trade : here 3,000 peasants formed something like a factory, although each worked by himself. They manufactured padlocks, scissors, knives, swords, rifles, axes, etc. These products found their way to all parts of Russia and were even exported to other countries, especially to Persia.[2]

Russian economy was still very primitive when Western experience began to penetrate. Capital, workers, entrepreneurs, consumers were lacking. In the initial stage the difficulty was

[1] H. Storch : *Historisch-statistisches Gemälde des russisches Reichs am Ende des achtzehnten Jahrhunderts*, 1799.
[2] M. Tugan-Baranowsky : *op. cit.*

overcome by supplying the factories with serf-workers, and on the other hand by the artificial creation of a whole class of obligatory consumers through the granting of monopolies. Catherine II abolished the personal monopolies and tried to promote free competition. She decreed in 1780 :

The decree of the Board of Manufacturers was promulgated at a time when private profit did not seem to be sufficiently attractive for the promotion of useful handicrafts and manufacture ; then the Government endeavoured to remove all prejudices. But now all our subjects enjoy such an unlimited measure of liberty in their industrial activities that they are not restricted either by private applications for monopolies or by the supervision of their production. Private profit is now guaranteed in the best and safest way. The private factories and manufactories are to be regarded as nothing but private property at the free disposal of the owner without his seeking any permission from the authorities.

When at long last certain results were achieved European industry had already gained an enormous advantage and was protected by efficient customs barriers. Whereas the towns of the West followed the general economic development and paid for their economic growth with the loss of their autonomy during the period of absolutism, the structure of Russian towns hardly changed at all.

A Memorandum by the Moscow Section of the Board of Manufacturers of the year 1845 states : " The merchants have increased the number of factories to a considerable degree, the peasants have enriched themselves by profitable work so that they begin to set up small establishments for the manufacture of cotton products for themselves. As the merchants had not enough buildings for their weaving looms they began to distribute them in the villages ; and in this way this became common usage." The reactions of this procedure on the development of urban industry are obvious. This decentralisation prevented the establishment of modern plants or made it more difficult. This situation was explained very aptly at the beginning of the last century, in a manual published in 1815 by a certain Mordvinov under the title " Some Observations on the State of Manufacture in Russia ". He says :

The lack of factories in Russia is possibly the main reason why her agriculture is so little developed, and how could it be improved when the peasant has neither good tools nor good harness for his horses nor any other adequate farm implements? The expansion of the non-agricultural industries is of special importance for Russia

because the peasant is without work for half the year owing to climatic conditions. With regard to a modernisation of the peasant economy it may safely be said that the greater the progress in this respect the more would the manufacture of various articles in the interior of the country increase. Where there are no craftsmen or industrial workers the peasant is a primitive producer tormented by the burden of his work which bears little fruit because his tools are bad. . . . The peasant in England prospers because factory and handicraft have been highly developed. If manufacture is lacking in a country, the spread of knowledge and enlightenment ceases and the social structure suffers. A prosperous town needs the agriculturist, the craftsman, the manufacturer and the merchant; but if we compare the degree of advantage of each of these classes to the agriculturist, we must confess that the manufacturer is considerably more useful than the merchant.

There was little change until the middle of the nineteenth century. In the year 1845 a merchant named Zukov submitted a Memorandum to Tsar Nicholas:

There are peasant manufacturers who take woof and warp in Moscow for the manufacture of percale and plush. . . . They have their workshops in their homes, and if they have not enough room they distribute the woof in the villages . . . therefore those manufacturers who were anxious to improve their products have discontinued their work because their business was dependent on the peasants, who are only interested in a high profit and let the quality of the products fall off as if they were to compete with each other. Almost all these producers in the various districts around Moscow, in the Government of Vladimir, especially in the district of Suja, are peasants or manufacturers or itinerant vendors. . . . The peasants of the village of Ivanovo alone market up to 50,000 pieces of percale . . . To-day there are two-thirds more new merchants than in the suburbs of Moscow; they are all simple peasants and they are full of lying and cheating as they always have been.

Yet not only tradition but the deliberate policy of the landlords and capitalists prevented the development of large urban establishments.

The landlords use large amounts of their available capital and their dispensable peasants for the establishment of factories on their land. The wealth of their land in raw materials and the skill of their peasant-serfs enables them to erect establishments of the most varying kinds on their estates. Thus we find on many of them glass-making and kilns for the production of pottery, weaving, knife and machine manufacture combined with existing installations for tar making and distillery, brick and saltpetre works. Several of these industrial activities are already so familiar to the peasants of the great landlords that villages once exclusively agricultural have been

transformed into large manufacturing places where the peasants not only work in the establishments of their masters but by weaving, spinning, forging, sharpening and pressing of knives and swords on their own account have become wealthy manufacturers. Well-known cutlery villages where peasants have made large fortunes by forging knives are not the only ones of this kind. These prominent and influential aristocratic manufacturers are in many cases a great hindrance to a prosperous manufacture because they exclude the small but skilful producers in many industries by monopolies which the great producers alone are privileged to obtain. The relationship of Russia's aristocracy to the manufacturing industries is very much the same as that of England's aristocracy to agriculture. In England, which is so dependent on the import of agricultural raw materials, the influential aristocracy owns all the land and lets the worker and the citizen pay dearly for his daily bread while they prevent the improvement of agriculture through prohibitive Corn Laws. In Russia, with an abundance of raw material but with a lack of factories, the aristocratic manufacturers have induced the State to issue rigid decrees and to impose high tariffs against other countries. Their position alone gives them a natural superiority quite apart from the fact that they often form associations for a special branch of industry and persuade the Government to grant them monopolies. In this way they prevent useful innovations and the development of new trades while the citizen and the poor have to pay a high price for their products.[1]

The nationalistic and reactionary Slavophiles of course supported the countryside against the towns. This becomes vividly clear in a contemporary paper which tries to make this point of view palatable to the public with an almost naïve hypocrisy. In one of the first issues the "Moskovite" of the year 1845, the year in which this periodical was taken over by the Slavophiles, we find an article *On the Manufacturing Trades in Russia*. The usefulness of this development is not denied, but it holds :

The manufacturing trades are very important as a means of improving the standard of living of the lower classes. However not every kind of trade satisfies the interests of the people to the same degree. The small village trades are the most desirable, for they represent a special characteristic of Russian life. Manufacture is not carried on in the towns to the same degree as is the case in foreign countries, but much more in the villages ; and it has destroyed neither the purity of morals of the producers nor the blessings of their family life. If we compare our industrial conditions with those of other countries where the interests of the producers are sacrificed to the interest of production we cannot but desire that our village trades should be preserved. Although backward in their technical

[1] I. G. Kohl : *op. cit.*

development they should be preferred for their moral qualities. It is, therefore, only too natural that the towns, town manufacture and town life, should not enjoy the sympathy of adherents of the past with its patriarchal ways of life. The prosperity of the trades is not dependent on living in towns, which is alien to the national character of the Russian people, to its historical development and to the nature of the country. Life in the towns is hardly a necessity for the nation. The people should continue their rural life, but their well-being must be improved. Their handicrafts, trades, commerce and manufacture should be maintained and their family life be preserved, but without concentrating these activities, as is done in other countries, in urban surroundings, which are usually demoralising.

When at long last an urban industry grew up in spite of all obstructions and the influence of the towns increased, sentiment still clung to the fiction of the peasant worker, but in reality the link between town and country had been broken.

Whatever the reasons which favoured the transformation of the former peasant into a factory worker, it has at least produced special categories of factory workers. They are still regarded as peasants; but their relation to their native community consists merely in the taxes they have to pay when they exchange their passports. In reality they have neither land nor a home in the country, as both have mostly been sold long ago. Even their right to the land is purely formal. The riots in the factories in 1855 and 1886 proved that these workers considered themselves as entirely estranged from their native village; and they are looked upon as strangers by their fellow villagers. We have, therefore, an independent class of workers which possesses neither a home nor other property. It is attached to nothing and lives from hand to mouth; and it is no mere thing of yesterday, for a great part of it has its factory genealogy and has already reached a third generation.[1]

Merchants and traders played an important part in Russia because the density of population was low and the number of towns small. Before Peter the Great, especially in Moscow, the big capitalists dominated commerce while industry was carried on in small enterprises. But the agglomerating power of commerce was not strong enough to change the structure of the towns fundamentally, and industries grew up only sporadically in the early period. Although there were, for instance, about 2,000 merchants and tradespeople in Nizhni Novgorod—and about the same in the Moscow of 1638—the actual producers among these groups were few; and in other places the producers numbered still less. There were only 180 craftsmen in Pskov in the seventeenth century, 183 in Tula, 318 in Kazan. This

[1] E. Dementjev: *Die Fabrik, was sie der Bevölkerung gibt und was sie von ihr nimmt.*

number corresponded to only 20 per cent. to 40 per cent. of the urban population. The rural industries were far more important than those in the towns, especially if the towns were new or if large Crown villages with an industrial population were near. On the other hand townspeople were also engaged in agriculture beside their industrial work. They owned large meadows and herds of cattle and cultivated their own fruit and vegetables. For instance the land register of Pskov, an important trading centre, shows that large tracts of fields and meadows belonging to the Church were at the disposal of the inhabitants of the *posads* as well as of the peasants who had to pay one quarter of the harvest for their use. Similar arrangements can be found in other places. As already mentioned, in 1649 a definite distinction was made between town and country for purely administrative reasons, i.e. for taxation ; the population of the *posad* was fixed to its place and commerce and industry were declared the monopoly of the towns.

What categories of urban industries and trades existed in the Russia of the sixteenth century ? In the first place there was the food trade with a great variety of bakeries which were essential for provisioning the fluctuating population of the towns, while the sedentary portion of the townspeople continued to bake their own bread. The clothing trades occupied the second place, while spinning and weaving were mostly carried on as home industries. Then followed the other trades, especially metal-work. The workshops were small. Moscow was far ahead of other towns. In 1638 there were 2,367 craftsmen and 2,100 tradesmen ; the rest consisted of coachmen, herdsmen, hunters, musicians, etc. But this number does not include the masters working for the Court and the soldiers who worked as carpenters, etc. The frequently great shortage of labour in Moscow was overcome by conscribing craftsmen from the monasteries or elsewhere ; for example from every district, out of ten tailors two were sent to Moscow. The individual industries were subdivided into numerous small units. There were for instance about 400 masters in the food and clothing trade, 211 in woodwork, 497 in metalwork which was specialised as work in precious metals, bell casting, soldering, the making of tubes and the production of cannons; in the latter category alone there were 248 masters and 113 blacksmiths. Only under Peter the Great were larger factories established in Moscow ; a State factory for the production of sailcloth with 1,162 workers, and a cloth

factory with 730 workers as well as a linen factory with 841 workers. In these cases the State supplied the manufacturers with the buildings and the necessary workers. Sometimes whole villages with their population were handed over to the entrepreneurs. But the shortage of labour continued. An *Ukase* of 1721 gives the manufacturers the right to buy entire villages with the special proviso that these villages should remain for ever inseparably attached to the factories. In contrast to Western Europe Russian industry originated in compulsory labour. The towns were not sanctuaries of freedom. The existing unions of craftsmen were not guilds in the Western sense. They were formed by the municipalities just in the same way as the whole classification of the urban population was a result of governmental action. An act of the year 1785 created five categories ; members of the guilds, associates, aliens, citizens and denizens.

In the sixteenth and seventeenth centuries inter-local exchange developed in addition to the local markets, especially because the North was poor in corn which the South could supply. On the other hand the North supplied the other regions with fish, salt and other products. In the sixteenth century there was in every town at least one market hall, the so called *gostinnoy dvor*, where only merchants from other countries or towns could store and sell their goods. This arrangement was in keeping with the general tendency to separate foreigners from natives. Up to the middle of the eighteenth century no fundamental changes took place. The description which Kohl gives of the year 1841 may therefore be taken as representative of the prevailing conditions :

> The *gostinnoy dvor* is usually situated right in the centre of the town ; and all other shops and markets are distributed in the outer rings of the towns. The more distant from the centre the more trade is done in raw materials ; thus victuals are farther away than manufactured goods, wood farther away than iron, coaches and sledges at a greater distance than furniture, and hay, straw, cattle, horses and the like are even outside the town. This is the general trend, but every town has its special characteristics. In some places there are certain market places which one does not find elsewhere, for instance the so-called *tolkushige zuinoks*, the lower grade and second-hand markets in the big cities. In other places the different markets and shops, especially the *gostinnoye dvorui*, have a somewhat different significance, as for instance in a town with a big fair or in the capital or in a trading centre of the interior. But it should be noted that we are talking only of specifically Russian goods and of Russian merchants, and only of what grew and was produced in the neighbour-

hood of the towns for their consumption, or what the industry of the Russian Empire or the trades of the neighbouring Asiatic States could provide, in a word of the Russian—Tatar—Bokharian—Chinese trade.

In spite of the innumerable customs and tolls trade was very lively and was specialised to an astonishing degree. It has been rightly said that there were as many markets as goods ; opportunities of buying were abundant. People flocked to markets and squares, to the many rows of booths ; they crowded in Bjelygorod and Kitaygorod and at the Moskva river, everywhere where a great variety of goods was offered for sale. And this took place not only in booths and storehouses but also in huts, on benches, tables and barrels. There was stationary as well as itinerant trade. In 1701 there was one salesroom to every two or three houses. Over 400 salesrooms were registered in Tula, consisting of about 210 booths, 118 benches, 29 storehouses, 13 huts. At the end of the sixteenth century the merchants represented 44 per cent. of the entire population of Tula ; 70 per cent. if the craftsmen were added. The land register of Ryazan of 1626 records 377 booths. In 1646 there were 269 booths in Vyazma, and 1,200 booths and storehouses in Pskov at the end of the sixteenth century. According to the register of 1620 there were 1,900 houses and about 600 salesrooms in Nizhni-Novgorod ; 1,000 houses and 200 to 400 booths in Ustyug, of which 68 were blacksmiths' shops.[1]

Until the latter part of the nineteenth century the market played a rôle in the Russian towns similar to that of industrialisation in the towns of the West. It attracted people to the towns, though not to the same degree as industry. In the course of development the agglomerating power of the new factories was gradually increasing. However there were in 1804 only 95,000 factory workers in 2,423 establishments. In 1825 this number had grown to 210,000 in 5,200 establishments. In 1840 Moscow alone had about 40,000 workers out of a population of 350,000 ; one-quarter belonged to the middle classes, the citizens and craftsmen, and one-half were members of the lower classes and workers. The work of two-thirds of the factories was done in villages, especially of the textile factories. The following figures though incomplete give a fairly good idea of the state of industrial activities in general and of the size of the factories in detail. There were in—

[1] I. Kulischer : *Russische Wirtschaftsgeschichte*, 1925.

	Workers
14 cotton spinning mills	434
105 manufactories for cotton and mixed-cotton goods	18,312
26 manufactories for silk and mixed-silk goods	1,512
55 manufactories for woollen goods	8,346
4 manufactories for stockings	71
3 manufactories for soap boiling	21
4 manufactories for stearine candles	233
5 manufactories for buttons	98
4 cast iron works	59
2 iron works	80
13 chemical factories	98
2 machine factories	120
28 potteries and brick works	872
1 coach builder's yard	220[1]

Was the development of the Russian towns, the relationship between town and country and the part which industry played in this process, different from the corresponding evolution in the West? To answer this question with a simple Yes or No is not possible. The towns of the West grew up against the power of the feudal lords. They were places of freedom where art and craftsmanship attained their highest perfection. The towns of Russia were products of an autocratic régime. They were not the guardians of freedom. On the contrary they were instruments of oppression and deprived the people of their freedom of movement. There were, of course, in the West also numerous towns founded "from above", i.e. by feudal lords as protection for their territory. But in these cases privileges of various kinds were granted as inducements to people to settle in these places. The towns of Russia laid out around a fortified centre or as walled-in places were instruments of an oppressive administration; they did not stimulate productive industrial activities. But administrative measures were no substitute for individual initiative, the less so as the existing "entrepreneurs" were not at all interested in the development of urban industry.

The evolution of Russian manufacture and industry differed considerably from that of the West, especially in so far as their distribution and growth are concerned. In the West the first stage was the manor and village economy. Then the industrial activities were concentrated in the towns, and the antagonism between town and country increased the more agricultural and industrial production grew apart. In Russia, on the other hand, the village-economy remained dominant. It is the countryside which determined the economic functions of the towns. Industry

[1] F. W. von Reden: *op. cit.*

remained ruralised and the economic activities of the towns seemed to be a mere appendix of rural production. These trends persisted for a long time ; only in the second half of the last century did more up-to-date establishment accelerate the growth of the towns. But the towns of Russia lacked steadiness of development. Their growth was not the result of a changing and expanding internal economy. It was a mere accretion.

The location of most of the towns followed an almost stereotyped pattern. Urban settlements grew up as nodal points on important trading routes or as riverside places sometimes serving as rallying points for small flotillas, or as advanced fortified posts. In the beginning they consisted only of block houses for temporary use during the fairs. Gradually they developed into permanent settlements and fortified places. The most characteristic and best known is the old Kremlin town. Around the centre, the Kremlin, the outer parts of the town extended to all sides. The ground plan is concentric with a net of arterial roads converging on the Kremlin with a mess of secondary streets between them. In the Western provinces the colonial town of the East Prussian type with its central rectangular market-place dominates the picture : the main streets were focussed on the market-place, while the secondary streets mostly formed an irregular pattern. In the marginal districts of the forest regions and in the East the type of the younger colonial town prevailed, also with a central market-place, but often with a regular and rectangular street pattern. The younger the towns the more regular was their layout. The plan of the small towns consisted of one long main street. There were of course, a great number of towns whose layout was conditioned by topographical factors ; and many " copies " of the capital Petersburg. Kohl describes this :

The Russian Government is more anxious than any other Government to impose a dull uniformity on everything and to model it on the same pattern. True to the impulse which Peter the Great gave to his administration the Government endeavours to make all advantages and talents accessible to the provincial towns as quickly as possible. Hence the schemes which are worked out in Petersburg for every town and into which it must gradually fit itself ; hence the regulations concerning the service of young people in the provincial towns ; hence the schools in the capitals of the Governments modelled after their prototypes in Petersburg, and the institutes for boys and young society ladies. In Russia there is so extremely little opposition, so extremely little independence, so extremely little variety

that everybody, so to speak, is affected by the same penchant. Everybody is polarized in the same way, attracted by the same magnet, so that all throw themselves with a certain passion into the capital if for no other reason than to be near the centre. In order to civilise the whole Empire the Government tends to create small miniature Petersburgs in the provinces, an intention which has already proved successful to no inconsiderable degree.

Moscow is the Kremlin town *par excellence*. It is first mentioned in 1147. It developed in the centre of the great nodal system which is formed by the routes from Lithuania and Novgorod to the Volga, to the Tatar Region and the colonies in the Crimea. Ten years later the first wooden walls were erected around the Kremlin. The economic development of the Moscow territory went hand in hand with the growth of its political influence. Around the Kremlin the town of the merchants, *Kitai Gorod*, " Chinatown ", was built on an area of 185 acres. It was walled in the sixteenth century. *China* is in this case the distortion of the base *Kity* meaning " earthen fortifications ". This nucleus was gradually surrounded by other rings, by the White Town and the so-called Earth Town, the *Semlyanoy Gorod*. The original form of the three-quarter circle was preserved so long as Moscow was confined to one side of the river : it was extended to a full circle when it spread to the other side. Moscow's layout has often been compared with that of Prague. But there is a difference in so far as the Hradčin is situated on the other side of the Moldau, so that the town of the burghers is separated from it by the river. Prague has two centres, the castle and the town, aristocracy and burghers ; Moscow has only one, the Kremlin. In both cases the streets are focussed on the castle. But Prague's layout is unilateral, Moscow's symmetrical. The extension which took place at the end of the sixteenth century covers an area of 5,000 acres. The last extension was carried out in 1742. The new wall had a perimeter of 20 miles. But this outer wall was not the actual defence line, it was merely the customs frontier of the town. Outside this line were outworks and fortified monasteries. The circular streets of modern Moscow follow the line of these fortified rings. The newer districts adjoin the older parts and cover about three-quarters of the whole area of Moscow. Peter the Great undertook a certain modernisation of the town after the fire of 1701, but lost interest when his new residence, Petersburg, began to occupy his mind. Moscow grew in spite of this neglect, but it grew unsystematically and preserved the character of a huge village.

The old Moscow was a market and castle town. Heinrich von Staden describes it in his *Notes on the Principality of Moscow* :

Before the Grand Prince began the *aprisna* the town of Moscow had been built with the castle and the surrounding suburbs in the following way. In the east there was a double gate. In the north the town was wide. The castle was situated in the south near the river. In the west there was again a double gate. There were three gates : the castle had one gate to the west and two gates to the north. The town from the eastern gate to the western gate throughout its whole length was a market-place. There was a church in front of the castle in the square. It was round, with galleries, and above the first gallery it was decorated with many saints who were adorned with gold, precious stones, pearls and silver.

And a market town Moscow was still centuries later.

To the class of works gigantic in time and space and in human achievement belongs without doubt the enormous Moscow, the capital of the colossal Russian Empire. According to the testimony of the Russian annalists its foundation falls in the year A.D. 882. If we look at the town from a tower in the centre the land is covered with houses as far as eye can reach up to the horizon. The circumference is six miles. 53 main streets and 482 side streets and narrow lanes pass through a mass of more than 10,000 houses. The town has twelve gates and two rivers, the Moskva and the Yausa, which pass through it. 23 bridges serve as communications between the different districts ; 500 churches and monasteries with their towers, besides the remains of past glory, contribute towards its venerable appearance ; but magnificent palaces stand side by side with low and wretched wooden huts. Around the Kremlin the second main part of this colossal town, *Kitai Gorod*, or China Town, stretches in a semicircle along the banks of the Moskva. The name is of Tatar origin and refers to the once prosperous trade between Russia and China and to the Chinese goods which are often sold in this district.[1] It is also called simply " the town ", *Gorod*. It is surrounded by a wall and a moat and has four gates, while the Kremlin had five. It is almost entirely covered with booths, stores and shops in which one can find and buy all kinds of goods domestic and foreign : food, coaches of every make, and even prefabricated houses which need only erecting. The bustle of the crowds is very great the whole day long ; and one needs special care and caution not to fall into the hands of rogues and scoundrels who are specially active in this district. The number of all booths and shops is estimated at over 6,000.[2]

The craftsmen of Moscow were very poor and lived in outlying districts. The miserable houses were often their own

[1] This is the more old-fashioned interpretation of this name.
[2] I. C. Petri : *op. cit.*

property, but they were very small. They owned only a part of such a place, a quarter or an eighth, so that a number of them had to share the whole. In such cases small primitive huts were erected in the yard of the main house. Sometimes they had not even a separate abode, but four, six or even nine lived together in one hut. The shops and booths were also very small and divided among several tradesmen. The size of the booths is about four by five yards. In 1726, for instance, only 307 out of 827 tradespeople had a booth to themselves ; the rest had to content themselves with only a part of one.

The population of Moscow in 1913 numbered 1·6 million inhabitants ; in 1934 it had risen to 3·6 million. In 1913 Moscow covered an area of 9,149 hectares ; in 1934 28,500 hectares. In 1913 about 257 million people used the tramways ; in 1934 this number had grown to 2,018 million. Before 1914 the members of the Moscow *Duma* represented first of all the landed interest. The improvement of the housing conditions of the workers was left to individual philanthropists. A chintz factory, for instance, provided houses for unmarried workers. A paper mill erected small houses with gardens which were let for 2 to 6·5 roubles per month, and a coach factory developed a housing estate for its workers. But in general the housing conditions were bad, even worse in Moscow than in Petersburg where in 1890 about 55 per cent. of all apartments had only one window leading to the yard and 70·8 per cent. of all one-room tenements were situated on the back yards.[1]

In 1934 the Moscow Soviet began the preparation of a new plan for the development of Moscow. L. M. Kaganovich describes it as follows :

. . . the proposal is to build in the large cities, particularly in Moscow and Leningrad, no more new factories . . . the further growth and development of our cities is dependent on the general planning of the national economy, based on the equable distribution of productive forces throughout the country and the maximum use of all its natural resources. Under Soviet conditions it is not the market that is the main factor determining the growth of cities, but the planned development of industry. Hundreds of large Soviet farms and collective farms and thousands of machine and tractor stations are becoming the foundation of thousands of new cities in the agricultural regions. A vivid illustration of the difference between the natural development of cities with us and under capitalism is furnished by the fate of certain cities in the Ukraine. On the right-

[1] I. Mavor : *An Economic History of Russia.*

bank part of the Ukraine are many towns that grew up as trading centres on the basis of the capitalist market. But under the conditions of the proletarian dictatorship, in this present period, when private trade has almost entirely disappeared and coöperation is making such gigantic strides, there is going on not merely a numerical reduction of the population of these towns but their entire extinction as cities and market centres. Yet at the same time on the left bank of the Ukraine as well as throughout the whole Soviet Union we are witnessing a rapid expansion of cities. Where there was formerly a population of 10,000 or 15,000 there are now 100,000 and more. And this is because industry itself is rapidly developing.

In this connection a few representative statements are of interest. Engels :

Only a society which is capable of bringing its productive forces into motion harmoniously in accordance with a single general plan will be able so to organise them as to make it possible to distribute large-scale production equably throughout a country in full accord with its own development and the development of the other elements of production. Hence the abolition of the difference of interests between the city and the country is not only possible but has become essential in the interests of industrial and agricultural production and in the interest of public hygiene.

Lenin :

Capitalism breaks old ties between agriculture and industry ; but at the same time, in the course of its highest development, it prepares new elements for the establishment of a connection between the town and the country uniting industry and agriculture on the basis of a conscious use of science and the combination of collective labour, the redistribution of population (putting an end at one and the same time to rural seclusion and unsociability and savagery, and to the unnatural crowding of vast masses of people in large cities).

Stalin :

The question of the relations between the town and village is being placed on a new footing, and the effacement of the contrast between the town and the village will be accelerated (owing to the present rate of development of the collective farm movement). This circumstance is of the utmost importance for our construction. It will transform the psychology of the peasant and will turn him towards the town. It will create the basis for the effacement of the contrast between the town and the village. It will make it possible to supplement the slogan of the Party " Face to the village " by the slogan for the collective farm peasant " Face to the town " ! And there is nothing surprising in that, for the peasant is now receiving from the town machines, tractors, agronomists, organisers and finally direct aid in the fight to overcome the kulak. The peasant of the old type,

with his barbaric mistrust of the city which he regards as a plunderer, is passing into the background. His place is being taken by the new peasant, the peasant of the collective farm, who looks towards the city with the hope of obtaining from it real and productive aid.

The " gigantic plan for the complete reconstruction of Moscow during a period of ten years " cannot be considered as the expression of modern principles of town planning, although a considerable number of detailed and useful innovations are introduced. Moscow is to-day the largest centre of the machine-building industry in the U.S.S.R. The intention is to shift offending industries out of Moscow, i.e. those which have harmful effects by noxious fumes and poisonous effluents. The area of the new city is estimated as 40,000 hectares ; its various uses are as follows: industry, basic and municipal 11·5 per cent.; railway transport 5·5 per cent. ; residential quarters 23·9 per cent. ; public buildings 13·4 per cent. ; streets and squares 15 per cent. ; open spaces 24·2 per cent. ; water expanses 6·5 per cent. The percentage for industrial establishments is still rather high, a fact that is not very compatible with the statement that " towns must not go on giving birth to new factories and to millions of new inhabitants for ever ".

It is, of course, a very difficult and intricate problem to provide sufficient dwelling space for the rapidly increasing population. The efforts in this respect are, however, intensive. The plan envisages a population of five millions in 1945 and a metropolitan area of 60,000 hectares with 30 million square metres of dwelling space and 10 million square metres of surfaced streets. The increase of the population results not only from an external influx but also from a considerable natural growth, which is 8·8 per 1,000 inhabitants. The doubling of the dwelling space up to 1945 will be effected by the erection of residential blocks with not less than 6 storeys. In this way the built-up area is to be reduced and space gained for street widening and open spaces.

The plan is based on the historically evolved principle of the radial-circular city. Architects of " left " tendencies desire completely to do away with existing Moscow, substituting for the circular zones a system of parallel ribbons (industrial zone, residential zone, administrative zone). Their plan was discarded, as was also the conservative plan which strove to preserve Moscow inviolable while building new quarters outside the town. The plan for the reconstruction of Moscow also discards the policy of splitting up the city

into smaller units, into a conglomeration of satellite towns, as well as " gigantomania "—the building of sky-scrapers.[1]

The fact that " the principal aim of the plan is the consideration of the human being, the creation of the most comfortable and hygienic conditions for the life of the population in the new capital ", and that " 20 square metres of open space per head of the population " are to be provided—all this does not prove that the great chance to plan on a large scale and without any interference by private interests will be rightly used. The war has interrupted the execution of this scheme and thus provided a renewed opportunity to start afresh. Let us hope that the Soviet Government will make right use of the great progress made in the field of town planning and of the experience gained in other countries.

The introduction of new principles has been attempted, but the pressure of industrialisation and the urgency of preparation for war have prevented their realisation. Moreover, a certain retreat from modern innovations soon became apparent and contributed towards the abandonment of progressive tendencies in town planning. Magnitogorsk is the most definite example in this respect. Here the principle of a linear layout was to be applied—if the progressive plans which were prepared had been adopted. The different zones running parallel to each other are separated by green belts. The succession of these zones is as follows : railway zone, industrial zone, residential zone, agricultural zone, each with all the institutions needed for its proper working. Thus the industrial zone contains not only factories but warehouses and the appropriate railway installations ; the residential zone contains not only dwellings but shopping centres, a juvenile town, and is divided in a number of neighbourhood units ; the green belt near to it offers all facilities for recreation, playing grounds, swimming pools, etc. This procedure conforms much more to modern requirements. In Soviet Russia the difficulties which are encountered in the development of existing towns in Europe do not exist, and in the special case of Magnitogorsk there was a great opportunity to adopt the most advanced principles, as the whole town had to be built from the beginning. It is unfortunate that neither Magnitogorsk nor Moscow has been planned in a modern spirit. The principle of clear functional relationship between the different districts which should be

[1] L. M. Kaganovich : *Socialist Reconstruction of Moscow and other Cities in the U.S.S.R.*

applied with even more consistency in the case of an old town has been entirely neglected.

Science and systematic research have changed the map of Russia within the framework of a new social and economic order. The interior frontiers have been redrawn in accordance with the needs of the different nationalities. New economic units have been developed and the disparity between the central region in European Russia and the outlying colonies has disappeared. Siberia has been divided into *oblasti*, or provinces each having a distinct character of its own. There are now the provinces of Chelyabinsk, Sverdlovsk, Omsk, Novosibirsk, Altai (region), Krasnoyarsk (region), Irkutsk and Chita ; the two Far Eastern units of the Khabarovsk and the Maritime Regions ; and the Yakutsk and Buryat-Mongol Autonomous Republics.

The plans envisaged by the Soviet Government demand a full knowledge of the natural resources of the country. Consequently geological exploration and survey are undertaken on a large scale. As the first step a number of specialised educational institutions for the training of geologists have been set up. The second step consisted in the creation of the Geological Board as a central body to which the whole work was entrusted. On this basis the rediscovery of the country proceeded, and is still proceeding, according to a unified plan for the whole of the U.S.S.R. Considerable results have already been achieved, the more so as no private boundaries hamper the full and rational use of the scientific and technical work. New minerals such as apatites, potassium salts and borates have been discovered and additional knowledge of the location of deposits and their potential use has been gained. In general a trend towards the East is the result, as evidenced for instance in the oil or the coal industry. Other important deposits which have been explored systematically are ores, i.e. iron, chromite, manganese, copper, aluminium, and many more. It is obvious that this development has a far-reaching bearing on the redistribution of population and industry. In this connection it is pertinent to mention the determined efforts to open a North-East Passage from the White Sea to the East along the coast of Northern Siberia, i.e. between Murmansk and Vladivostok. Early attempts in the sixteenth century failed ; the time was not yet ripe for such complicated adventures. During the first Five Years Plan this problem was attacked with the help of science, air transport and wireless stations. A fleet of powerful ice-breakers keeps the seas open ; about sixty polar

stations, partly engaged in assisting navigation by weather reports, have been established ; a Central Board of the North Sea Route has been set up, not only for the tasks directly connected with this route, but also for the economic and cultural development of the whole Arctic region. New posts have been built foremost among them Noviport on the estuary of the Ob, Dudinka and Igarka on the Yenisei, and Tiksi on the Lena.

Planning in the Soviet Union is a very practical activity, not a theoretical subterfuge or a mere lip service. The work is directed by the State Planning Commission attached to the Council of People's Commissars and by corresponding commissions for the constituent republics, territories, regions and districts of the U.S.S.R. The plans are based on the potential and the existing capacity of production as well as on the natural resources already prospected and on new establishments coming into operation. A schedule of priority is worked out for the period covered by the plan, and the key problem, i.e. the plan for the key industry, is determined. Each industry works according to a plan which has been worked out for each of its establishments and agreed upon between the Chief Administration, the local management and the trade unions. The execution of the plans is supervised and controlled by the Government, and if need be adapted to changing requirements, so that overproduction in any branch is avoided.

The problem of the redistribution of industry as stated by Lenin is to create

> a rational distribution of industry in Russia from the point of view of proximity to raw materials and the minimum waste of labour in the graduated process from the working-up of raw materials to all the following stages of manufacturing the unfinished goods and even to the production of the finished article. . . . To the north of Vologda, to the south-east of Rostov-on-Don and of Saratov, to the south of Orenburg and of Omsk, and to the north of Tomsk extend huge, boundless expanses which could contain a large number of great cultured States. And on all these expanses a patriarchal régime of semi-savagery and real savagery prevails. And what of all the outlying peasant regions in the rest of Russia, where hundreds of miles of country roads, or rather roadless country, separate the village from the railway, from material connection with culture, with capitalism, with large-scale industry, with the large towns ? [1]

As to the economic and cultural backwardness of the formerly neglected parts of Russia, Stalin declares : " In addition to the

[1] Lenin : *The Food Tax*, 1921.

schools and language the Russian proletariat must do everything to ensure that centres of industry are set up in the outlying districts in the culturally backward republics—which are backward not because of any fault of their own, but because they were formerly looked upon as sources of raw material." The principles of a planned economy can be formulated as follows : complete socialisation of all means of production and distribution ; passing of the power into the hands of the working class ; concentration of production and specialisation of industry ; elimination of the contrast between town and country ; abolition of colonial exploitation ; scientific research."

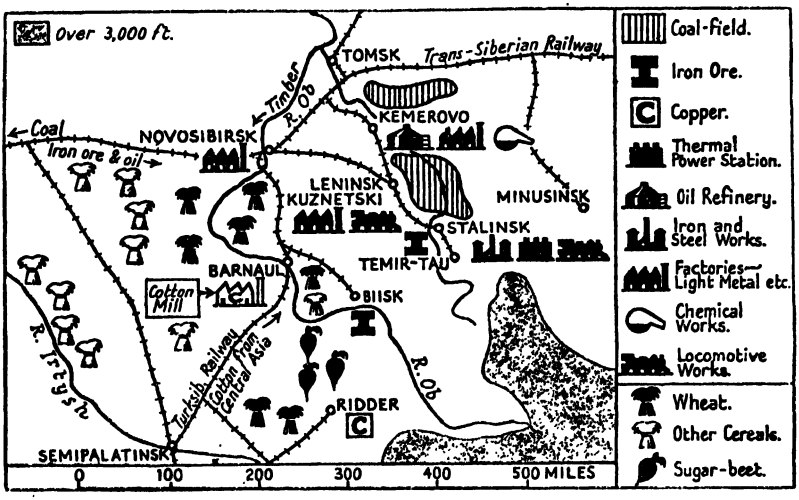


Fig. 59. The Kuznetzk Coal Basin

Up to 1914 the greater part of the metal, chemical and textile industry was concentrated in the regions of Moscow, Leningrad, Ivanovo and in the western zone of the region of Gorki (Nizhni Novgorod). This distribution did not correspond to the distribution of the raw materials. The Soviet Government has changed this situation radically. The plans which have not yet been carried out promise an even more far-reaching transformation. Regions formerly supplying raw material as their main and exclusive economic contribution are industrialised, e.g. Central Asia, Transcaucasia, the Far East, Siberia. They are now in need of the import of coal, oil and iron ore. Industry is spreading over all parts of the U.S.S.R., and the old industrial

centre without losing its importance as an industrial region is becoming an integral part of an economic system covering the whole country. Possibly the most important of the new enterprises is the *Ural and Kuznetsk Combine* bringing together Kuznetsk coking coal and the ores of the Urals. 1,250 miles apart iron and steel centres were established ; an iron and steel and ore mining centre in the Southern Urals, and an iron and steel and coal mining centre in Western Siberia. In the former Magnitogorsk, to-day a city with a population of 250,000, has been laid out anew while other places such as Chelyabinsk with

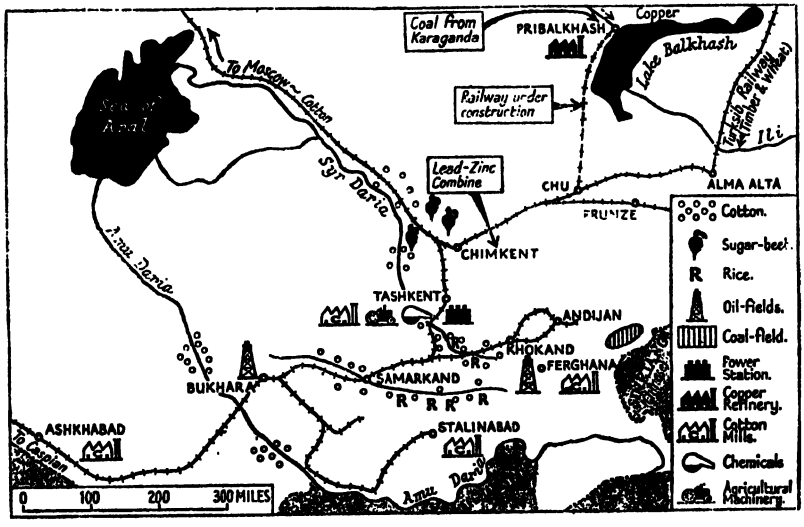


Fig. 60. Soviet Central Area

250,000 inhabitants (1939), Sverdlovsk with 425,000 (1939) and Nizhni Tagil with 126,000 (1933) have grown in size, population and industry. In the latter region the population of Novosibirsk has increased from 5,000 in 1900 to over 120,000 in 1936 and to over 400,000 in 1939. The respective figures for Stalinsk are 3,890 and 170,000. Kemerovo had about 22,000 inhabitants in 1936 and 133,000 in 1940. Other towns are Leninsk-Kuznetsky with about 70,000, Prokopievsk with 120,000, and Anzhero-Suzhensk with 100,000 (1933). Tomsk and Barnaul have likewise participated in the increase of population and are now important centres of this industrial area.

The eastward and southward movement of industry and

population affects the whole of Soviet Asia. Only a few examples can be given as illustrations of the general tendency. They do not pretend to be complete.

To the south-west of the Kuznetsk region another industrial area is developing around Karaganda, now a town with about 170,000 inhabitants. The coalfields also supply the plants in Magnitogorsk and Kounrad and Pribalkash with their copper deposits. The industrialisation of this zone, situated to the north of Lake Balkash, will greatly change the social and economic structure of *Kazakhstan*. It covers an area of over one million square miles with a population of about 6,800,000. The capital is Alma-Ata (Verny) with 230,000 inhabitants and a growing industry which profits from the connection with other parts of Central Asia through the Turksib Railway. Other towns are Semipalatinsk (110,000) with a meat combine and tanning, leather and footwear industries, based on the raw material of the region ; Petropavlovsk (90,000) ; Ust-Kamenogorsk, Ridder with lead refineries and Chimkent to the west of Alma-Ata. It is to be expected that the importance of the Kazakh Republic will increase in accordance with its great possibilities if a sufficient number of new settlers can be attracted.

Uzbekistan covers an area of over 66,000 square miles and has a population of about 6,200,000, of whom roughly 1,300,000 live in towns. Tashkent, the largest city of Central Asia, with 585,000 inhabitants, is an important centre of agricultural machine building, chemical industries, cotton, silk and other light industries. It has a large power station and is the seat of a considerable number of educational institutions. In the larger scale industries of Uzbekistan over 100,000 people are employed. Oil, coal and copper resources are developed. Cotton, which under the Tsars was not allowed to be woven or spun in this region, is now a main basis of industry. Large textile mills have been built not only in Tashkent, but also in other places, e.g. Ferghana.

Turkmenistan, *Tadzhikstan* and *Kirghizia* cover an area of over 300,000 square miles with a population of about 4,300,000. Ashkhabad, the capital of Turkmenistan, has now a population of 130,000 and large cotton mills. Cotton growing is developing systematically and on a large scale in numerous collective farms. It is a major industry of this region. Sulphur and potash have been found and are now worked on a commercial scale. The capital of Tadzhikstan is Stalinabad (formerly Dushambe) with

82,000 inhabitants and important cotton mills, and a branch of the Academy of Sciences. It is now connected to the railway system of Central Asia; so is Frunze (formerly Pishpek) the capital of Kirghizia, with over 100,000 inhabitants, a power station, a large meat-packing combine, and many light industries and a university.

Although the increase of population in Eastern Siberia and in the Far East is not considerable, industrialisation has already produced decisive changes. A few remarks may be appropriate to outline the general tendencies of this development which will lead, without doubt, to far-reaching changes in the economic structure when peace permits concentration on this task under better conditions.

As in Western Russia, the development of the Far East began with a programme of hydroelectrification. The harnessing of the Angara River which flows from Lake Baikal into the Yenisei is comparable in conception with that of the Dnieper. The Baikal hydroelectric dam, situated near the Trans-Siberian railway, has a capacity of 600,000 kw., and provides power for a new industrial grouping at the important cross-roads to Yakutia, the Far East and Mongolia. Here the coal of Cheremkhovo is the basis, in conjunction with the adjacent deposits of rock salt and lime, of a developing chemical industry. Here too a synthetic rubber plant uses by-products of the coalfield to provide part of the rubber which the Soviet Union urgently needs. Bauxites from the lower reaches of the Angara constitute the raw materials for an aluminium factory with a potential output of 30,000 to 40,000 tons annually, a valuable supplement to Soviet aluminium supplies, which formerly came from Volkhov, near Leningrad. The Cheremkhovo coalfield, together with those of the Bureya and Kolyma basins, produces annually over 6,000,000 tons of coal, slightly under a sixth of the Donbas output, part of which was exported or used for domestic heating. South of this region on the Trans-Siberian railway is the largest Soviet aircraft factory east of the Urals, the Irkutsk Works, well sited both for native raw materials and for the import of the easily transportable British or American aluminium by the Far East railway. The third Five Years Plan established in the Far East a machine tool industry to serve its defence industry. Komsomolsk is a city of youthful engineers who convert the iron and locally produced steel into machine tools. At Irkutsk, Krasnoyarsk, Vladivostok and Ulan-Ude (capital of the Buryat-Mongolian Autonomous Republic) specialised machine tools have been made for the last eight years. It is, nevertheless, certain that British and American machine tools will have to be imported to compensate for the opportunities of replacement, now lost, which the Soviet machine tool industry of the west formerly supplied.[1]

[1] M. Edelman: *Manchester Guardian*, 1944.

The total arable area of the Soviet Union has been estimated as about 1,037,400,000 acres, of which only something over 330,000,000 acres are under cultivation. If only a part of this still undeveloped land is opened up, it will influence the redistribution of the population to a very high degree and give birth to new industrial enterprises. It is not only agriculture and industry which play an important rôle in this process but also the growing consolidation of the constituent national units. Practically all these former colonies and " agrarian adjuncts " are developing their own industries, their own cultural life, and their own towns.

When the towns and fields, the rivers and the roads, the factories and the collective farms of Russia are free again, a colossal task lies before her. She can then continue with the work of a peaceful redistribution of her population. She can continue to adapt to new conditions the production and life of her peoples. She can continue to redraw the map of the country, not only on paper but on the soil with the plough, with the sinking of new wells and new shafts, with the building of new settlements and with the development of her existing towns and villages. She can continue to direct the brains and the hands of her men and women and of her children towards the creation of a happier and a peaceful environment and a fruitful balance between the individual and the community. Let us hope that at this time the invisible frontier which separated Russia from the rest of the world before the present war has fallen definitely and for good, and that the world can be administered as one coherent unit. This problem, which is the greatest issue of the recent war, needs the systematic collaboration of all countries. It needs world planning and the definite abandonment of *laisser-faire*. The contribution of the U.S.S.R. towards national and regional planning is essential. We shall have much to learn from her experience. The real problem is not to change frontiers but to abolish them. The net of spiritual, social and economic inter-dependence is growing narrower and narrower, and at the same time it is spreading more and more closely over the last hitherto only loosely enmeshed parts. We are witnessing to-day the growing unification of the world. The U.S.S.R., covering one-seventh of the surface of the globe, is destined to play an essential part in this process.

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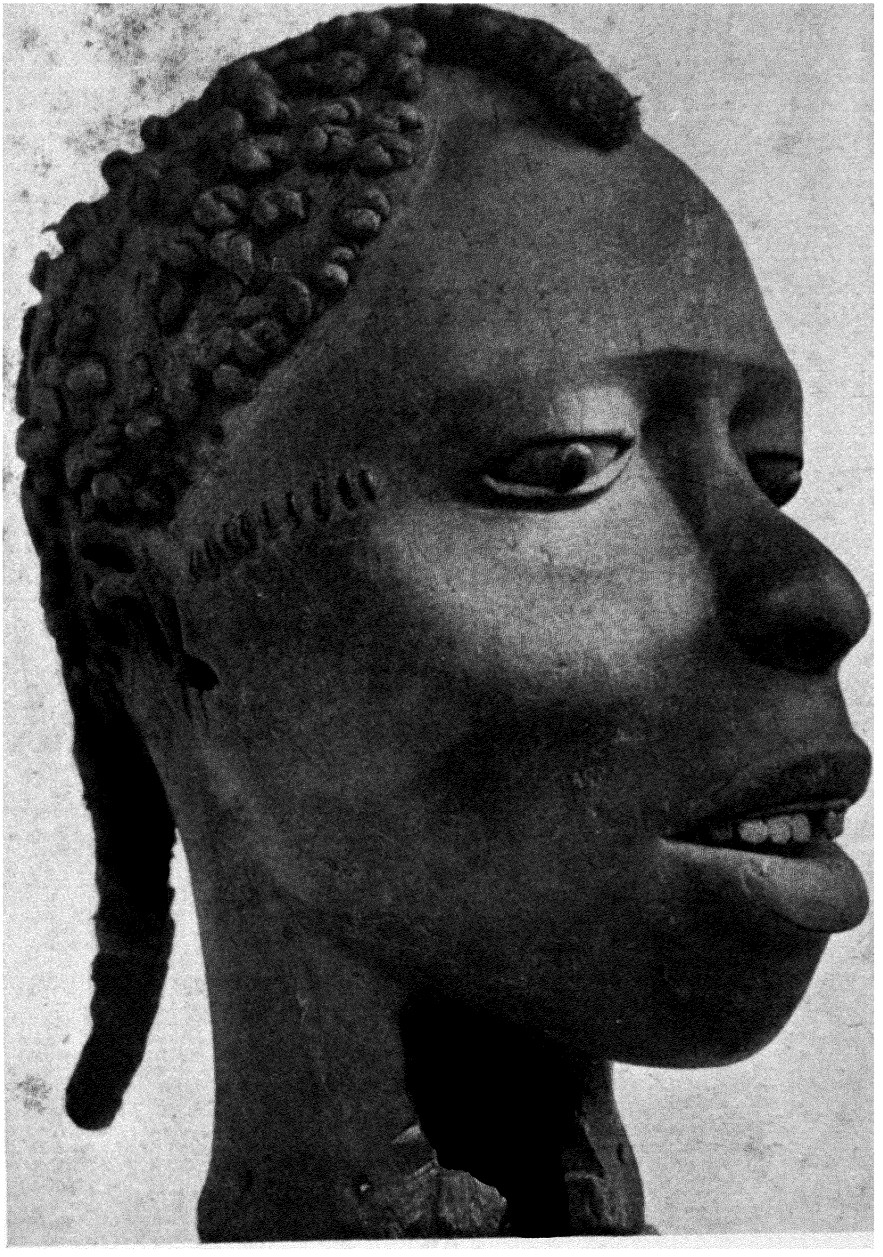
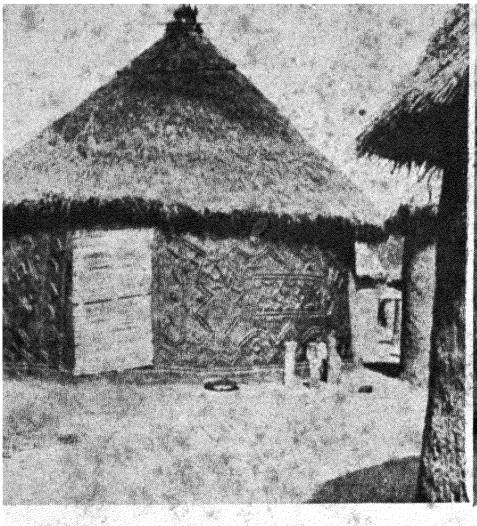
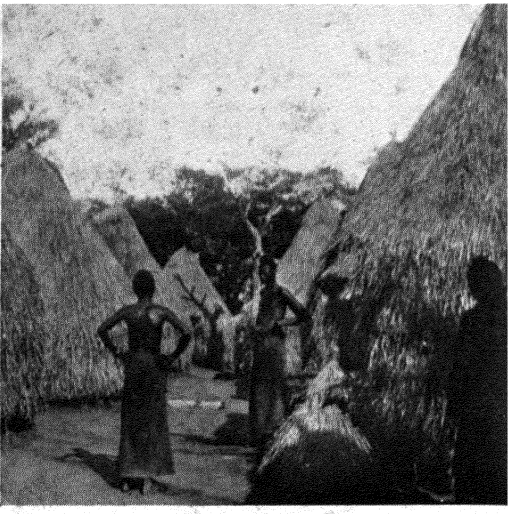
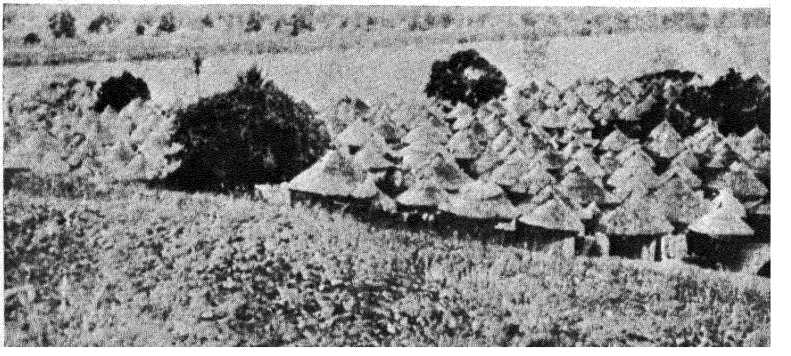


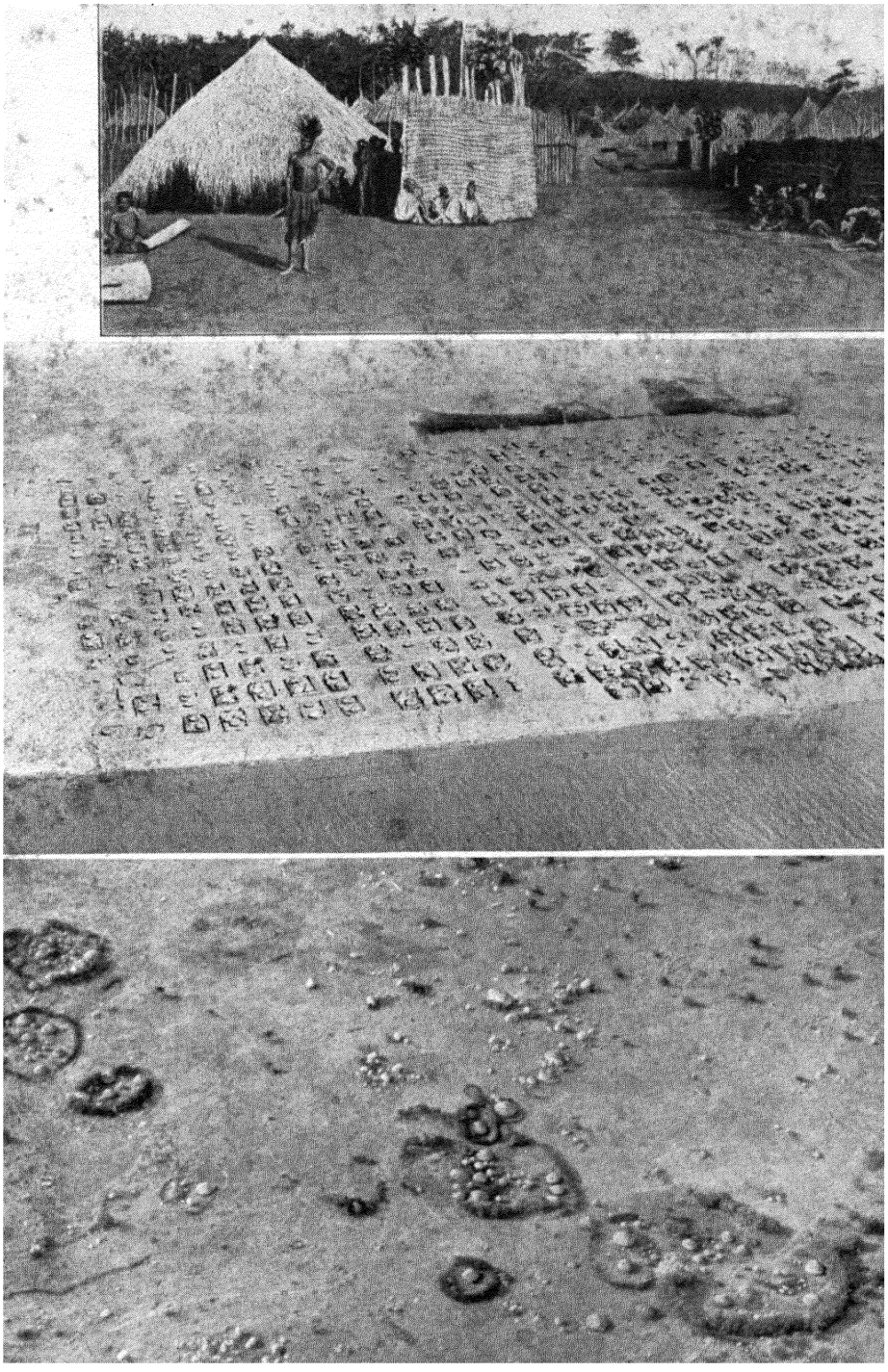
STREETS AND HOUSES

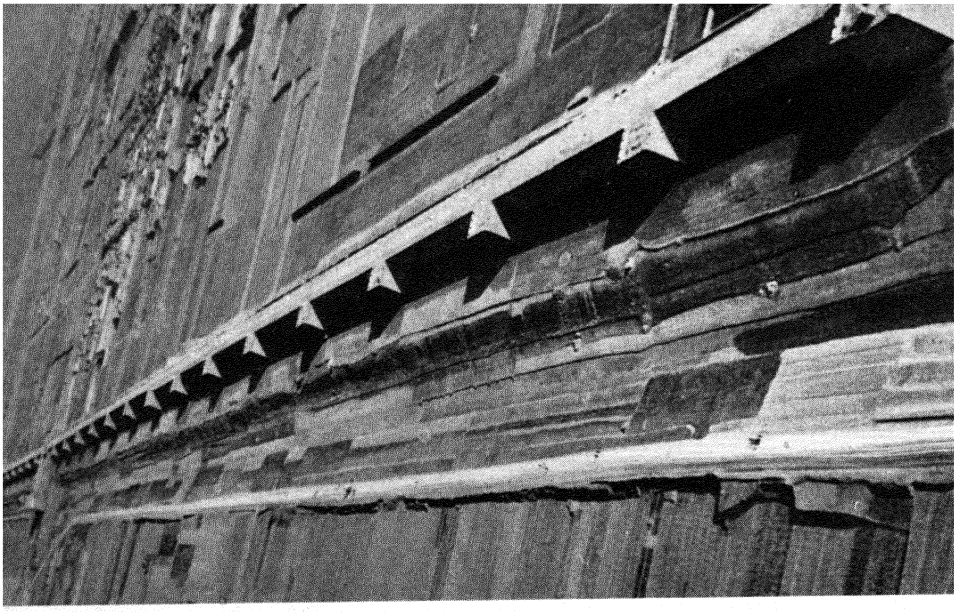
This head of a Negro used in ritual dances is one of the most expressive of African sculptures. It has grown out of the same spirit that makes the huts of the Negroes sculptures of particular beauty and functional clarity. But this sense for plastic art is counterbalanced by the almost complete lack of a sense for space and for the tensions inherent in space relations. The sculpture-like huts are the main element in the layout of the Negro settlements. Streets are merely an interspace left over between the irregular clusters or regular rows of huts.



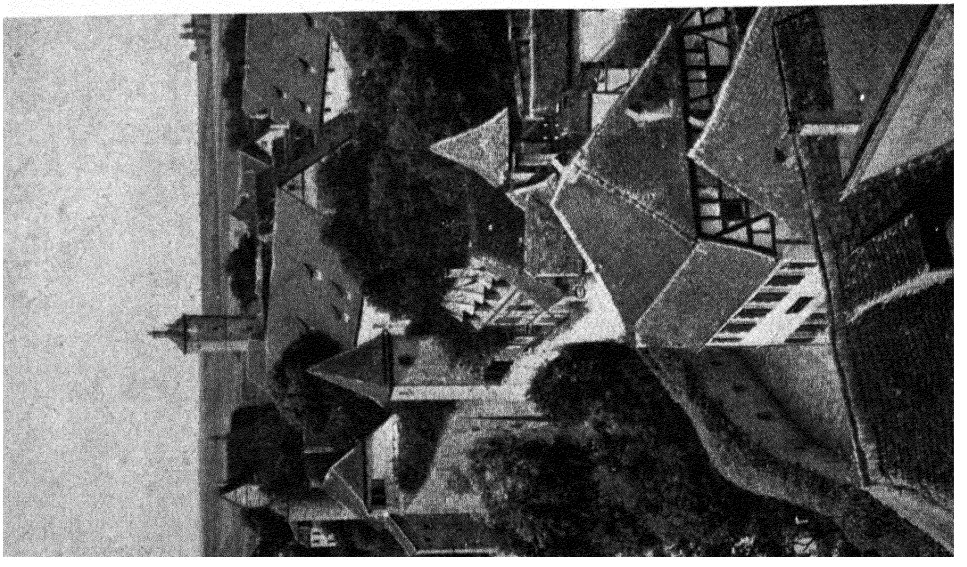




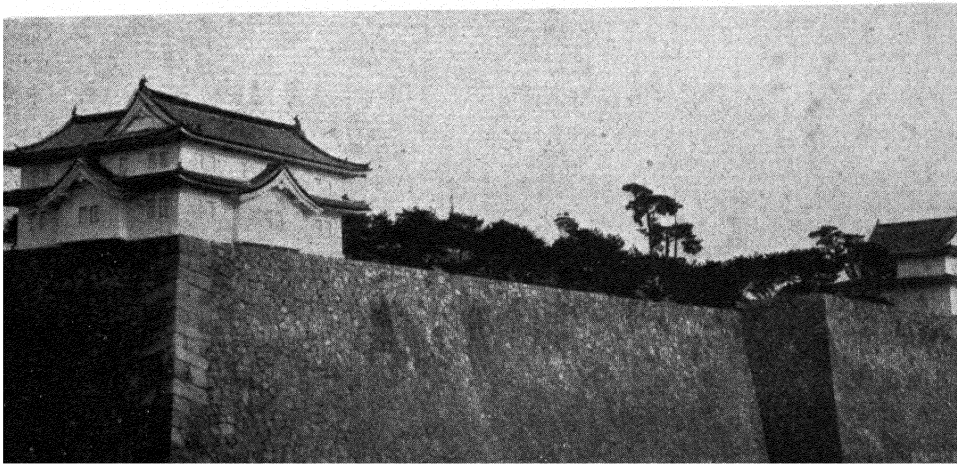




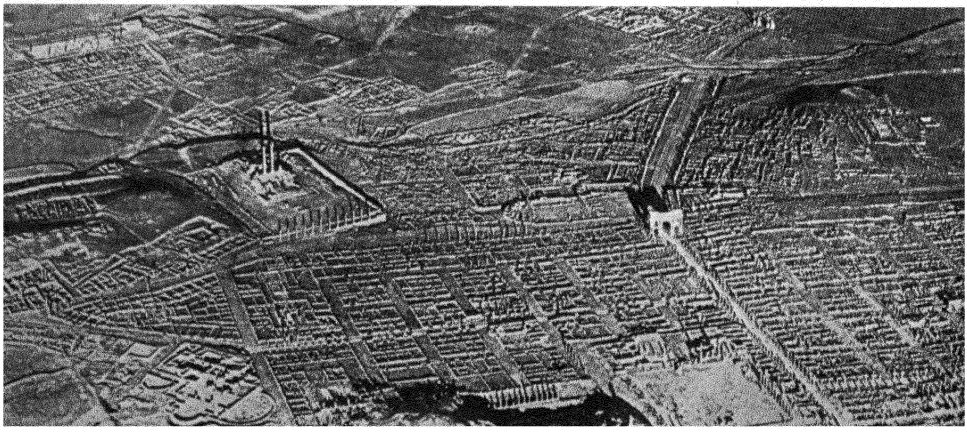
The small-scale town of the European burgher is embedded in and interspersed by natural vegetation. Its wall is adapted to the terrain, and reveals something of the diversity of the enclosed buildings. The large-scale city of the Imperial Administration of China is cut off from the countryside, but encloses large open spaces. Its wall is a rigid screen hiding the manifoldness of the interior and conveying no impression of depth.

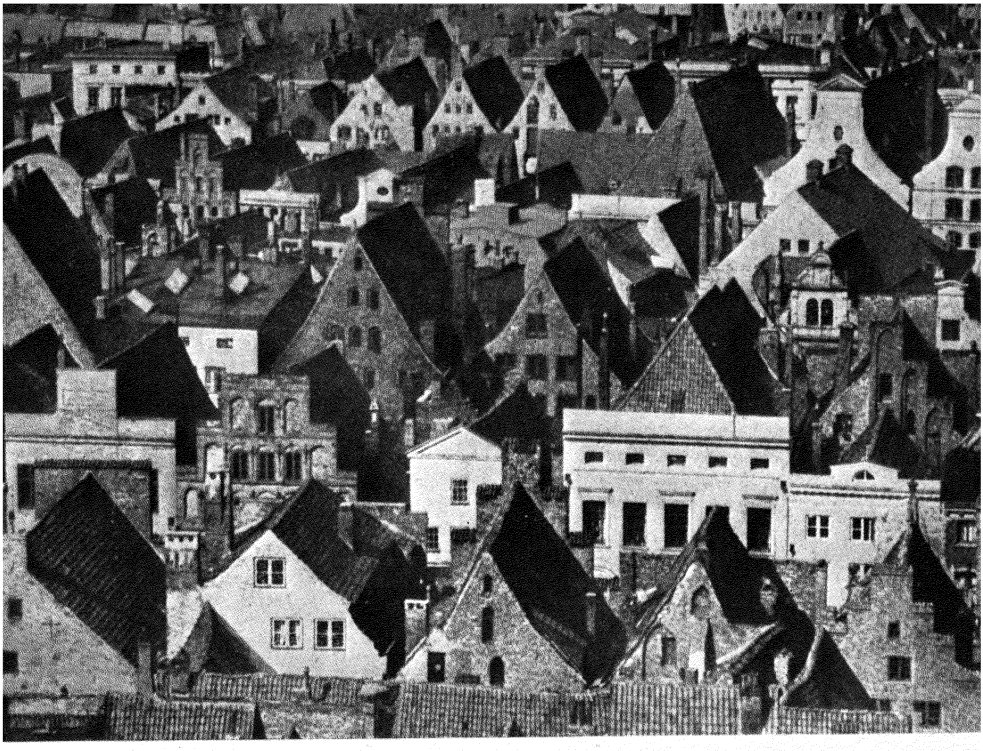


In contrast with those of China, many towns in Japan grew up, unprotected by a wall, around the castles of the *daimyos*. Their wide main streets dissect the layout into blocks built over to their fullest capacity with standardized houses.

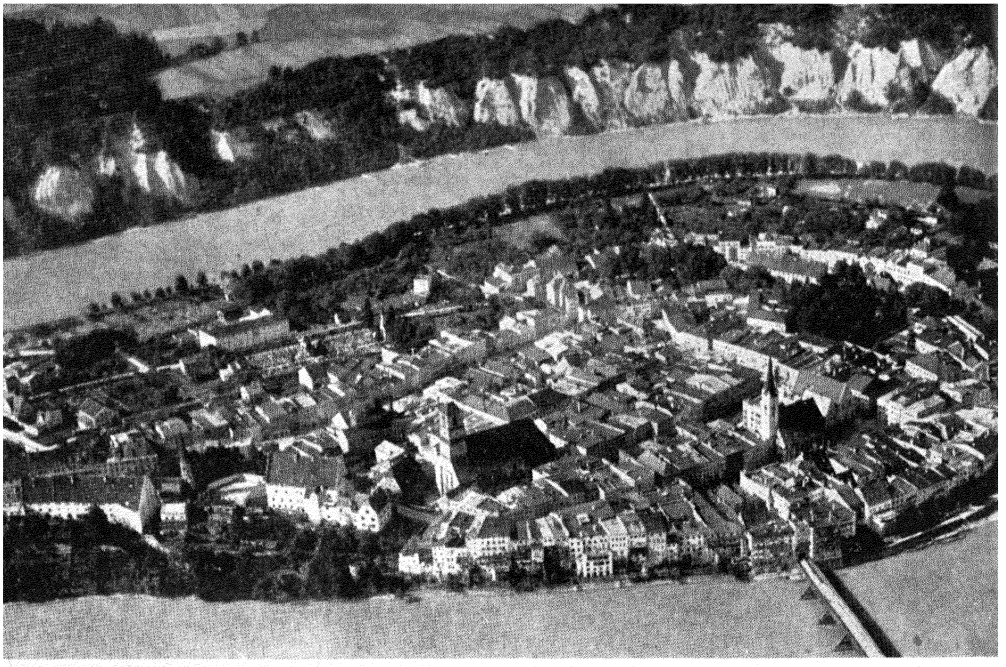


Pompeii and Timgad are examples of the rational lay-out favoured by the Romans and of the birth of the cult of the street.

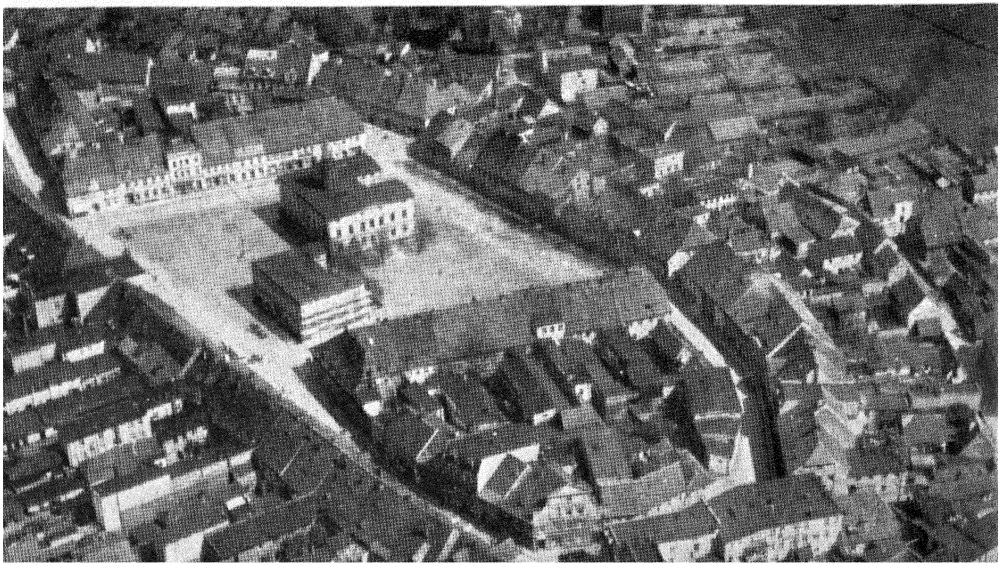


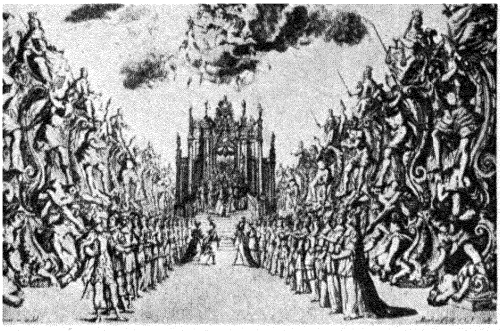


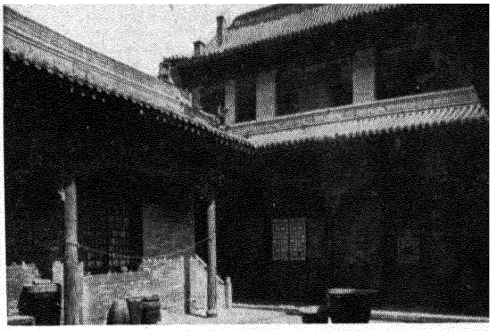
Unity in diversity : the house as an individual personality reinforces this by turning its gable to the street.



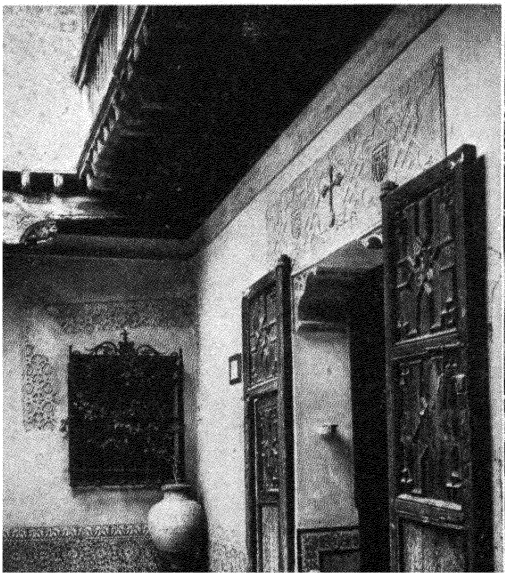
Adaptation to the natural configuration is reflected not only in the general form of this "peninsula" town but also in the pattern of the streets and its efficient interdependence with the arrangement of the houses. The large square of the other town with its public buildings serves as a cattle market. Streets and houses are orientated towards this as a centre.

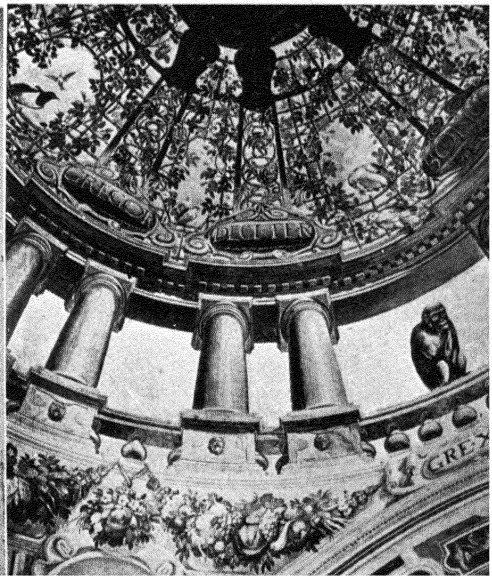




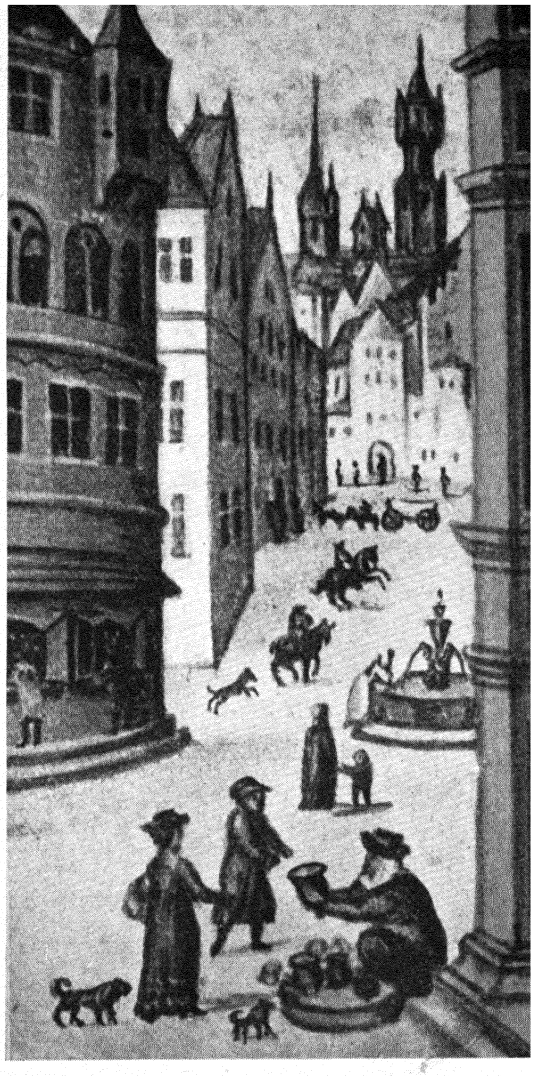


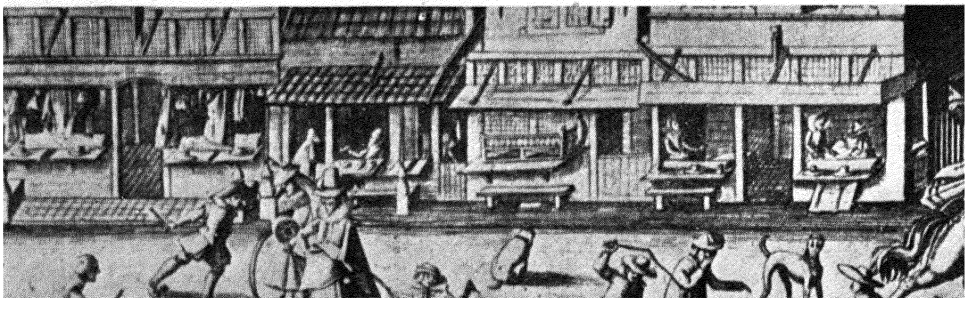
The Baroque, the style of the " as if ", uses every means of illusion, on the stage as well as in the churches. The Jesuits are among the foremost promoters of this ostentatiousness and this new feeling of space. The perspective view becomes one of the main instruments of town planning. But the Baroque also creates such unsurpassable interiors as the inner courtyard of the house of the painter El Greco in Toledo, rivalling the noblest Chinese dwellings.

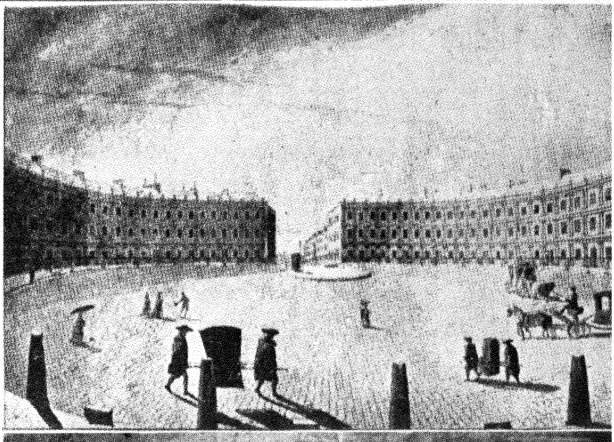


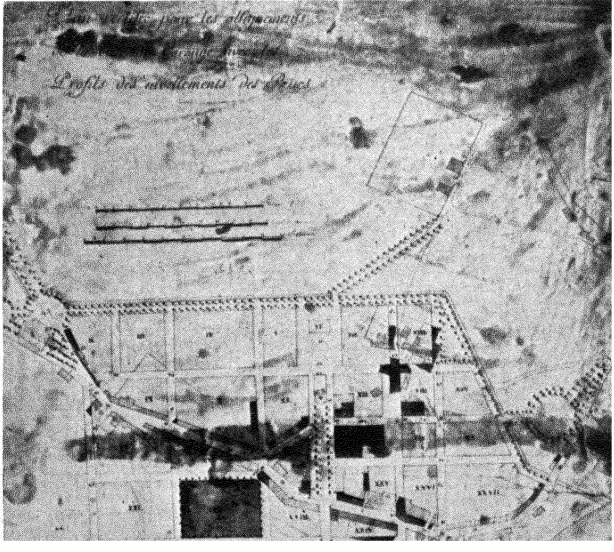


The pedestrian scale of the towns gradually widens out to the carriage scale of the towns of the late Renaissance and the Baroque. Not only do the towns grow in general, but the streets become broader and the individual fronts of the gabled houses grow together into an uninterrupted block-front. The majestic sweep of the Crescent in Bath would have been impossible in a mediaeval town. The utilitarian functionalism of the early streets gives way to an ostentatious grandeur, and with it nature penetrates the interior of the towns, as in Carouge with its tree-lined streets or in Amsterdam along the canals.





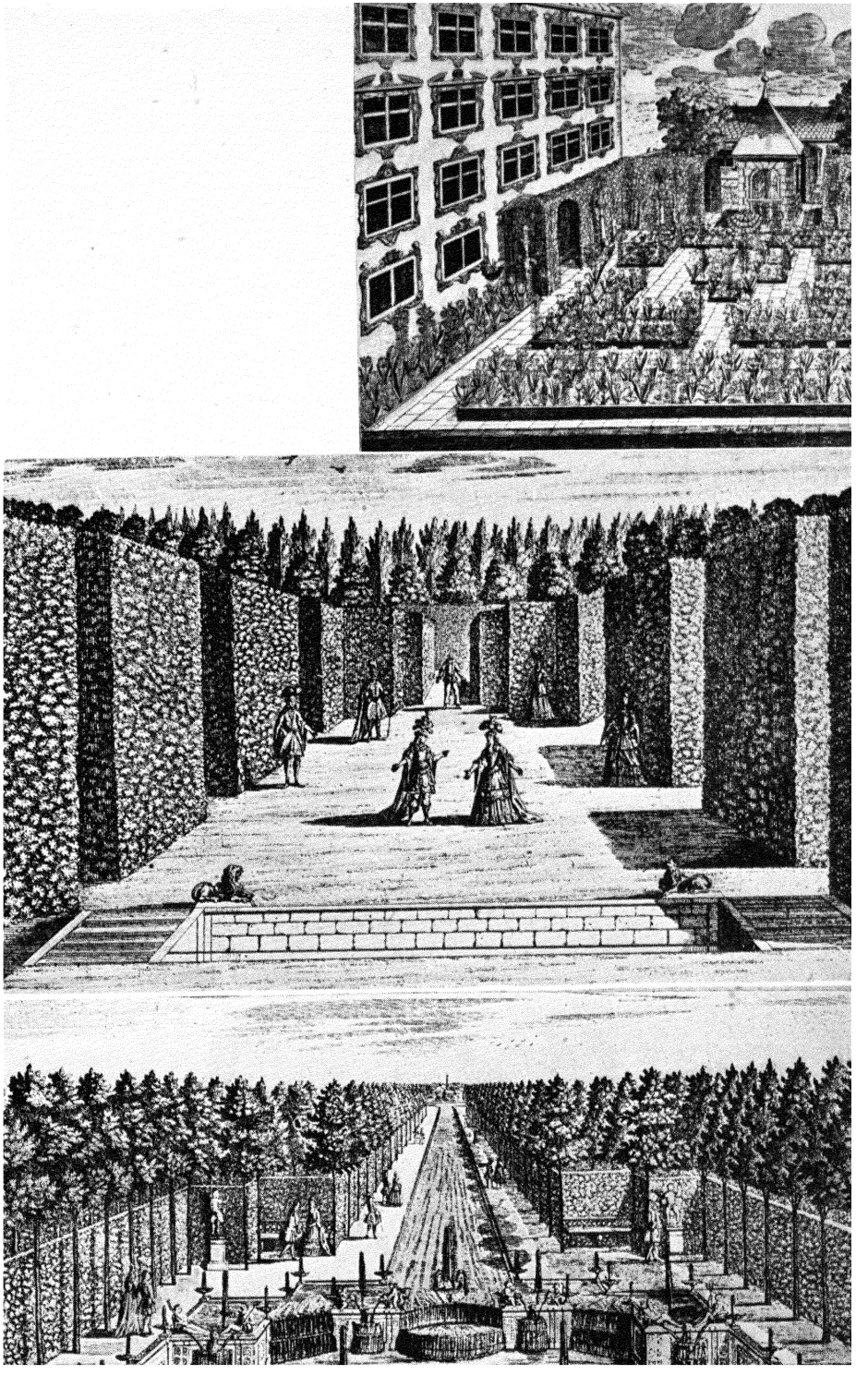



Profils des nivellements des places

From the early house-garden with its toleration of nature in the decoratively arranged " flower-pots " of beds cut out between the slab-covered paths to the benevolent domestication of nature of an English landscape, every period has found its own specific solution to the problem of harmonizing nature and architecture. In the beginning trees and flowers are kept at a distance from the buildings within the walled-in garden, which is laid out with no systematic relation to the house. Gradually nature and architecture coalesce : parts of the house are covered with bushes and espaliers. The Baroque introduces both the perspective view and the illusion of the theatre as landscape effects. Nature is treated as a building material in the same way as bricks or stones. The separate parts of the garden are systematically co-ordinated and put into organic relationship with the buildings.

All these garden designs have in common that they do not attempt to imitate the natural landscape. They treat the garden as a part of the architectural work fenced off from nature. It remains an enclosed space, a garth.

Only when architecture begins to decline does the romantic movement gain the upper hand ; the man-made garden imitates nature and the natural landscape becomes a sort of man-made garden.



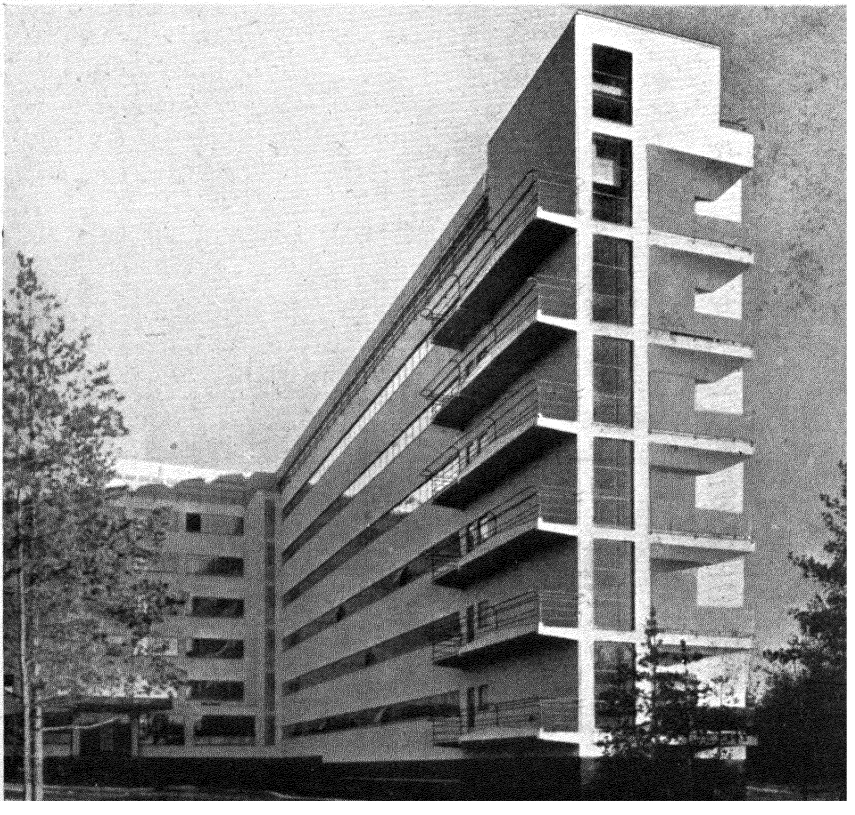
The blending of nature with the work of man finds its perfect solution in the Chinese and Japanese gardens. They do not imitate nature but create a microcosm out of nature's overwhelming diversity. They aim not at reality

The blending of nature with the work of man finds its perfect solution in the Chinese and Japanese gardens. They do not imitate nature but create a microcosm out of nature's overwhelming diversity. They aim not at reality

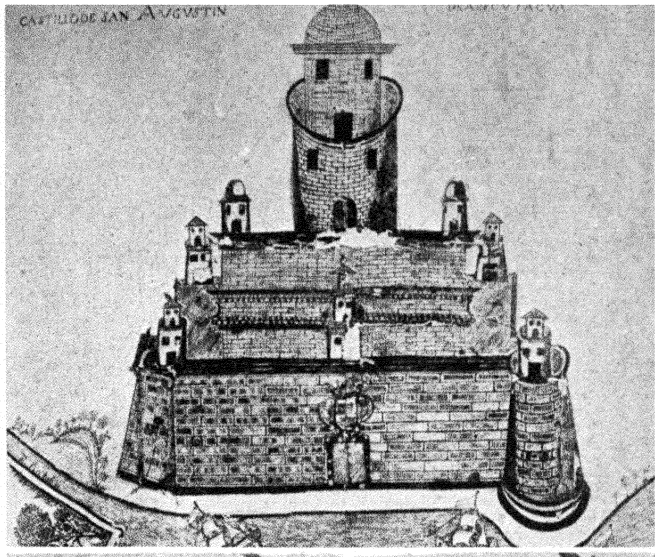
The past : clarity and system.

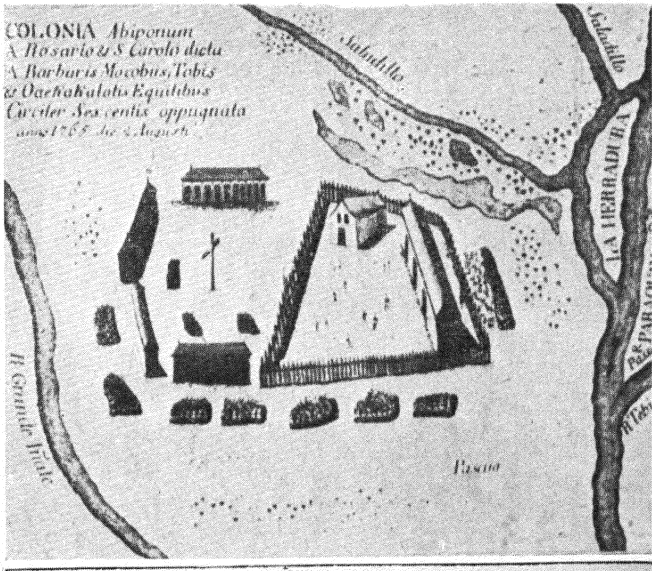
The present : the nondescript street disappearing into a vacuum.

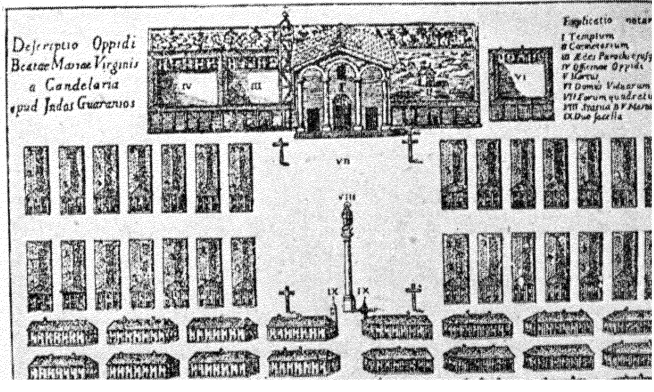
The future : organic unity, transparency and sincerity



THE STATE OF THE JESUITS

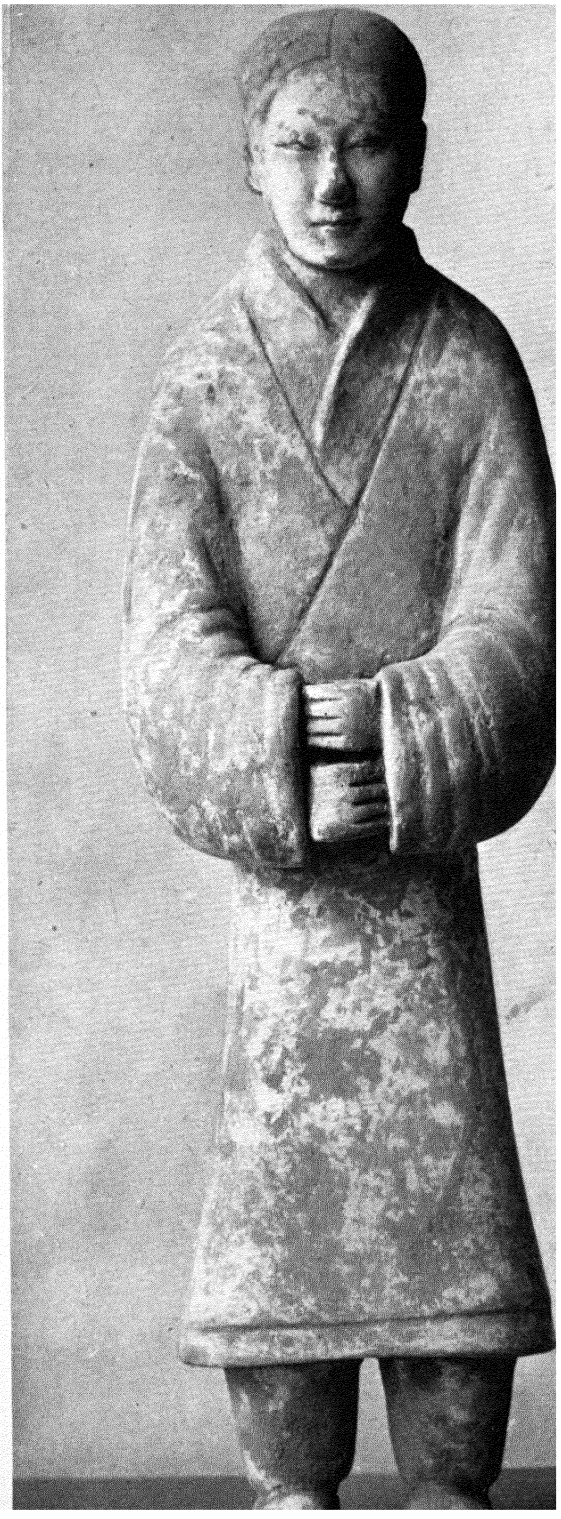




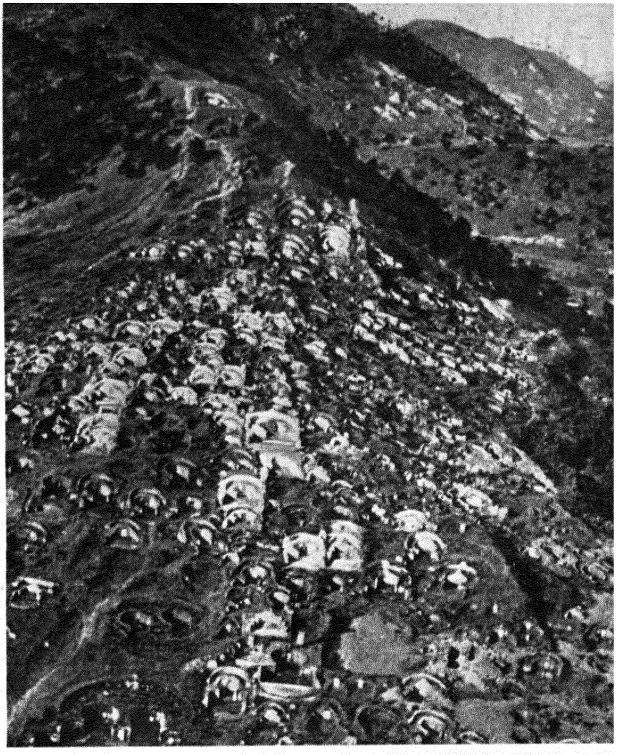


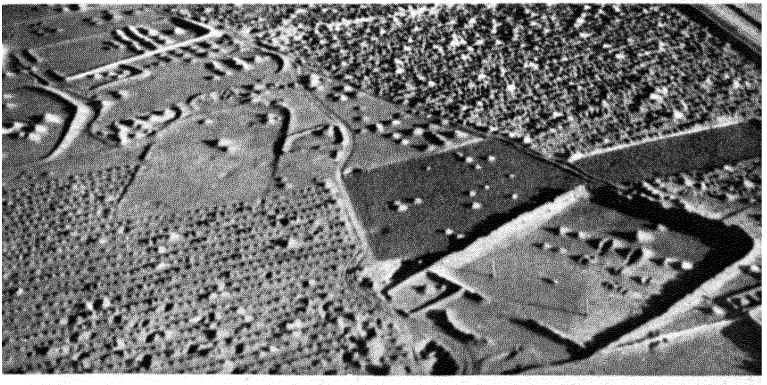
From primitive beginnings the Jesuits build up systematically laid-out settlements within the framework of a state. They use the contemporary forms of Europe for the physical embodiment of their aspirations, but create a social structure in flagrant contrast to everything Europe stands for. They plan the first communist state and make it a reality.

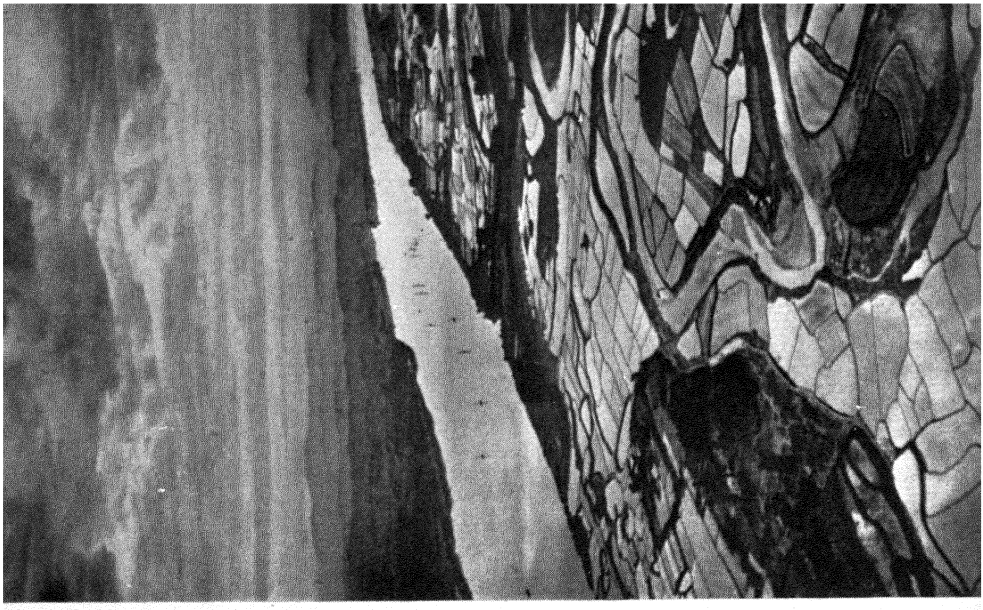
CHINA



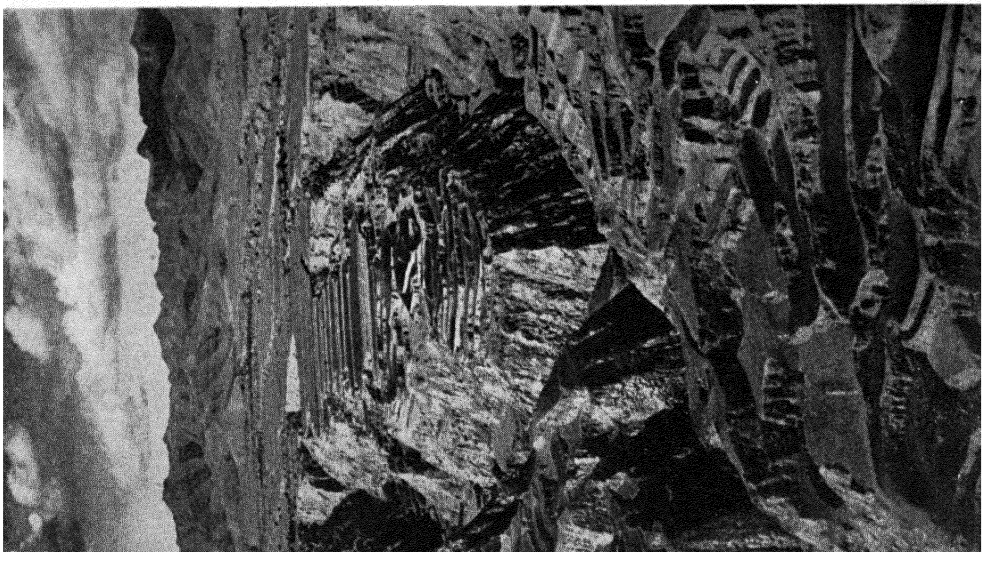
This statue of an attendant dating from the fifth or sixth century A.D. was placed in the tomb of a person of importance. It is a symbol of the cult of the dead and ancestor worship. Devotion to tradition has dominated the life of the Chinese for thousands of years, and has proved stronger than utilitarian considerations. Innumerable graves are spread over the country, impeding cultivation and withdrawing a considerable portion of valuable farmland from the urgently needed extension of the cultivable area. This is one of the visible marks of the submission to tradition. Another outcome is the indifference to nature's powers of devastation. This attitude has resulted in a neglect of modern methods of flood prevention.

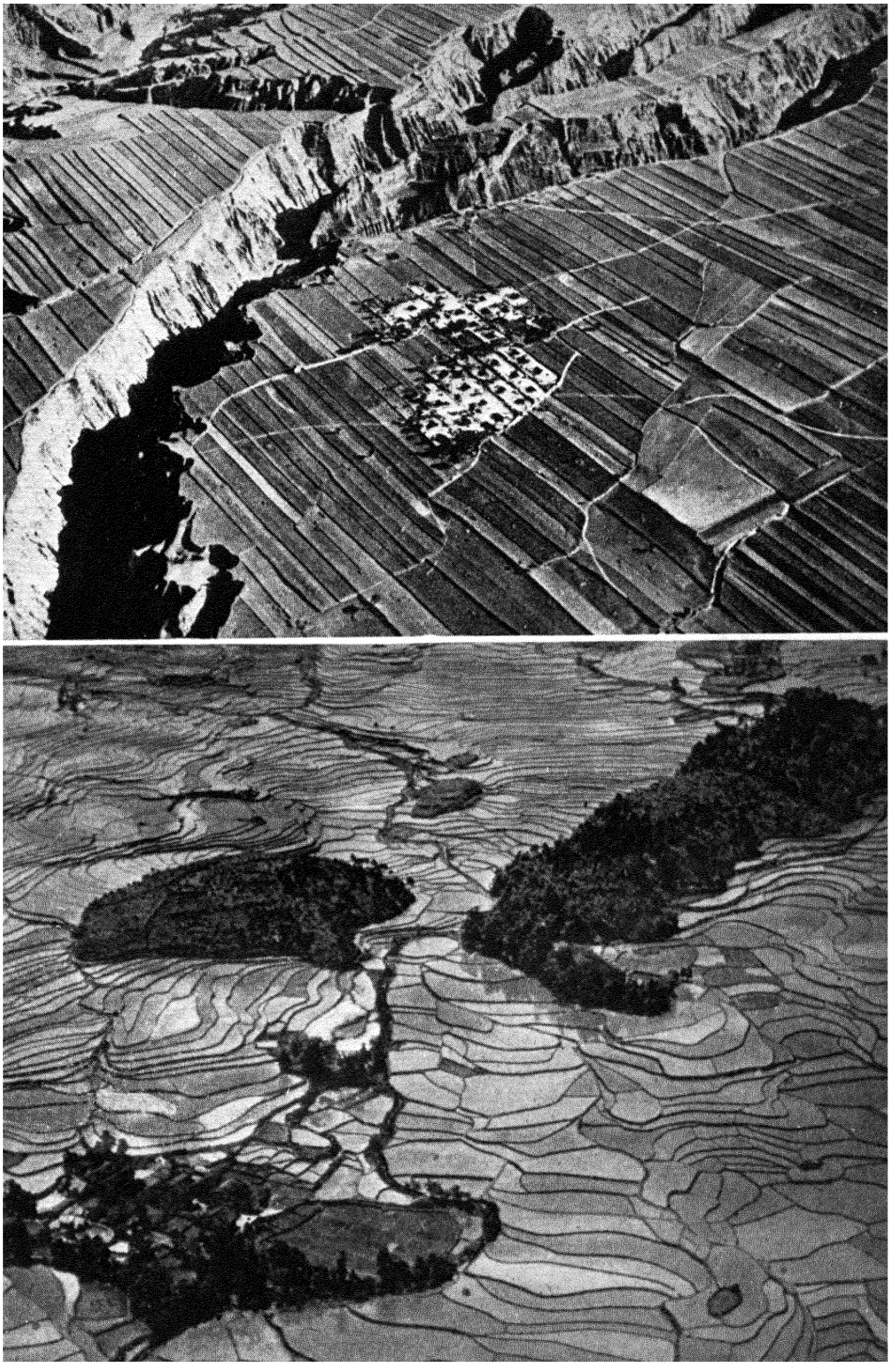


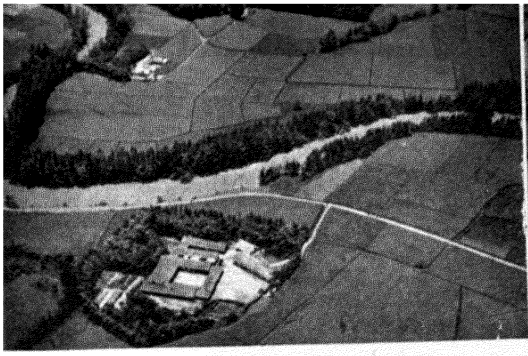


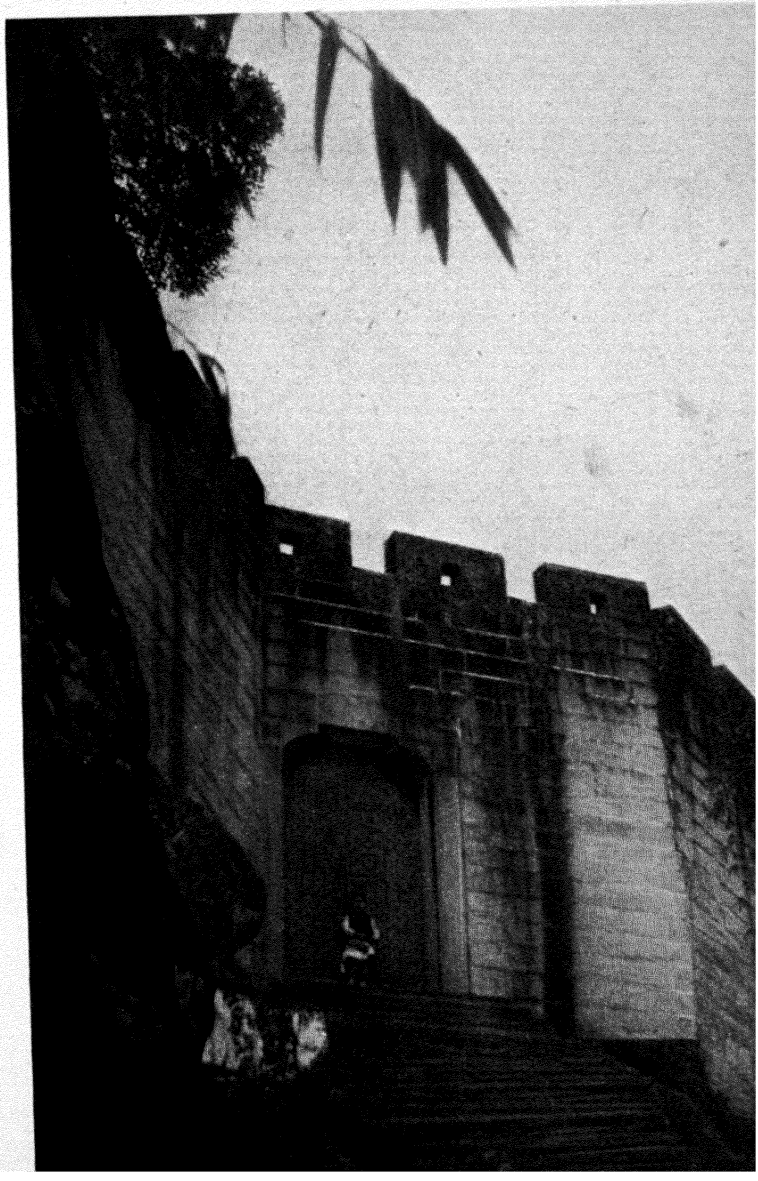


On the other hand it has fostered an adaptation to nature full of a deep understanding of the peculiarities inherent in the various types of landscape. It is a tacit agreement between man and nature, free from European aggressiveness, that has moulded the loess terraces of the North, the rice terraces of the South, the pattern of the fields, and in general the stream-lined contours of the face of rural China.

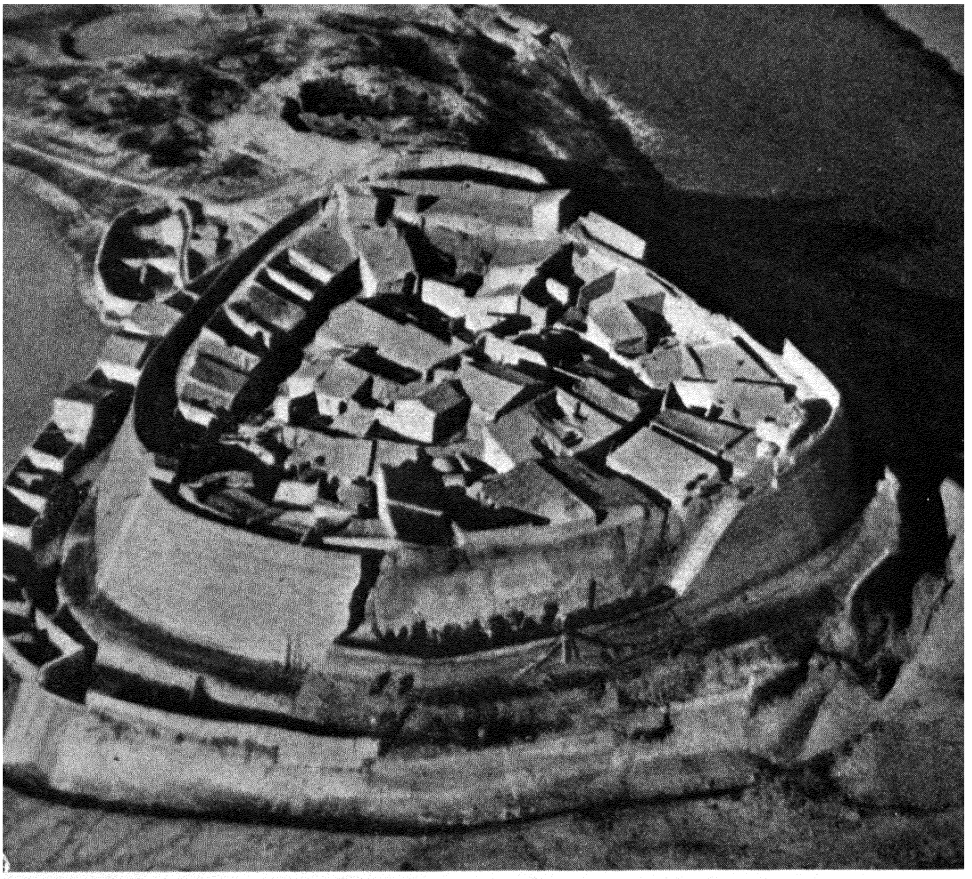


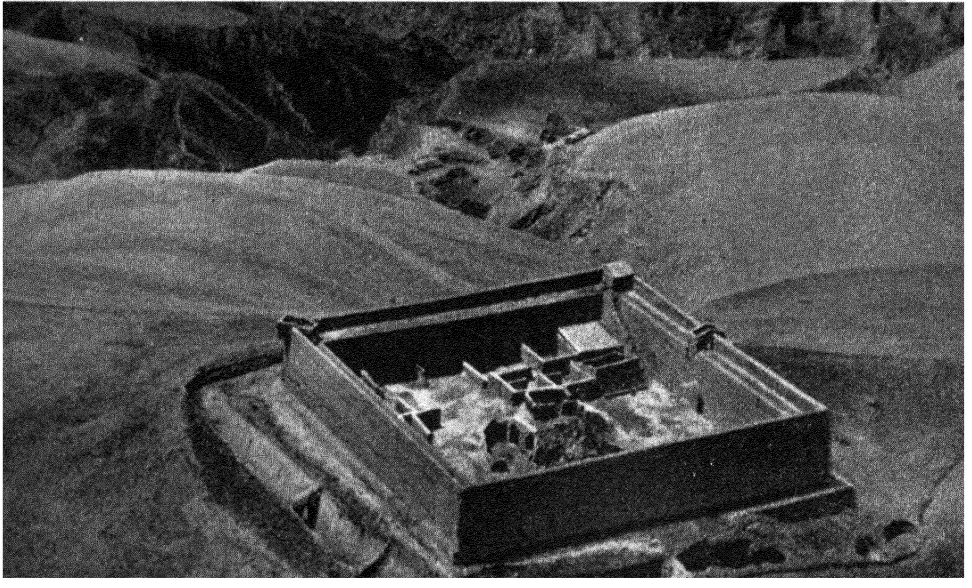


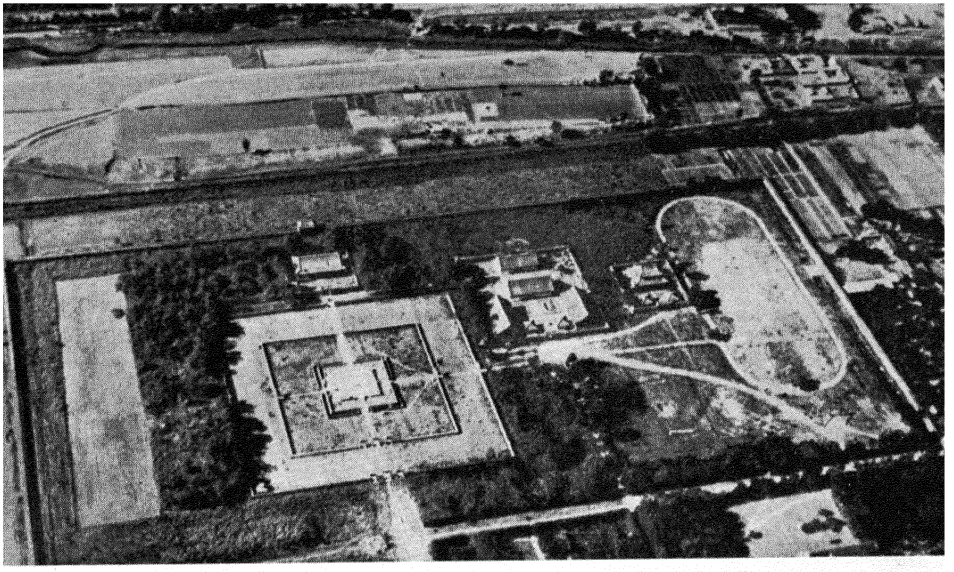




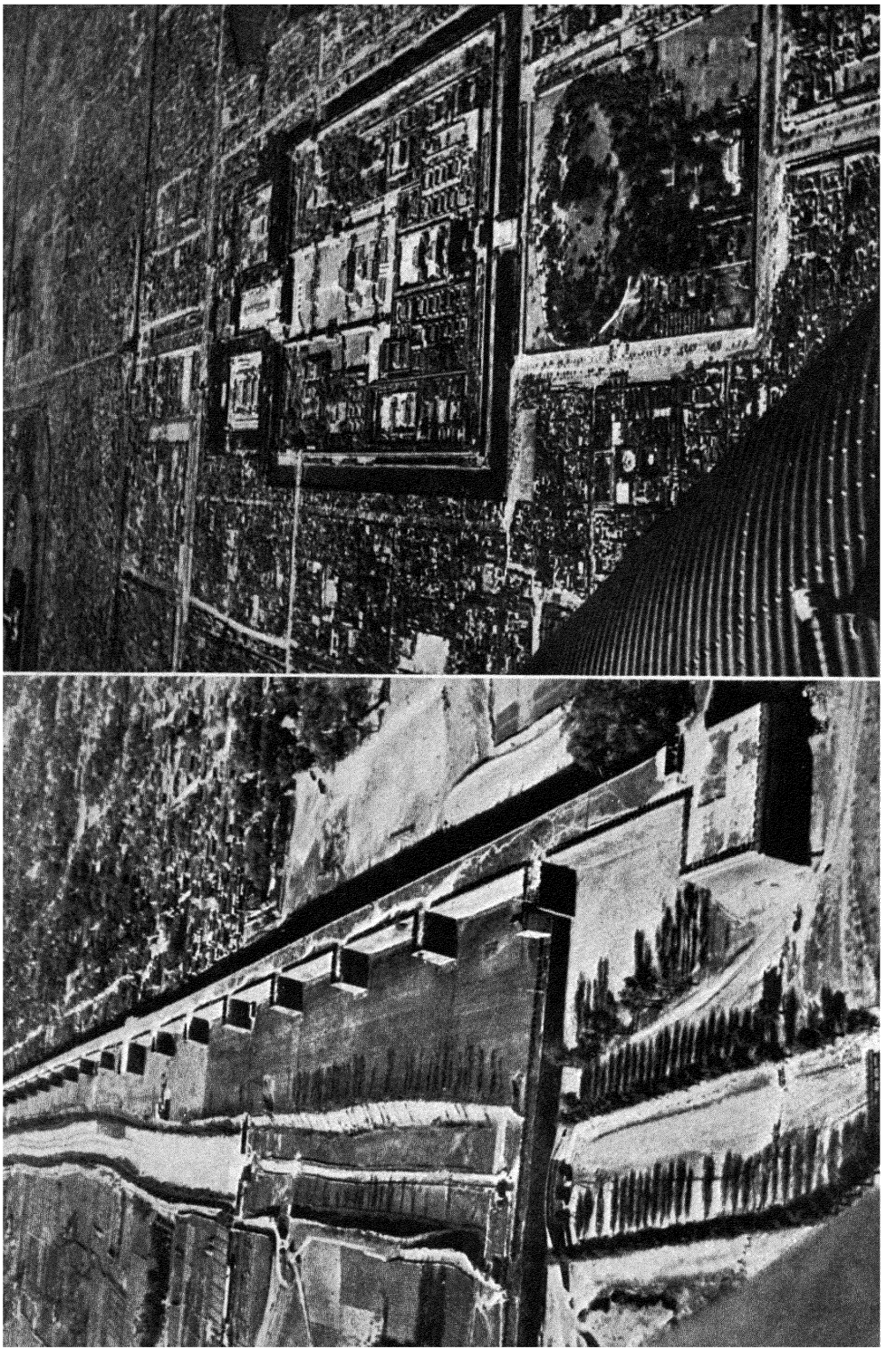
Numerous types of rural settlements exist side by side, ranging from compact to loose villages, from street villages to single farmsteads and even to cave dwellings, from fortified and overcrowded to deserted settlements.



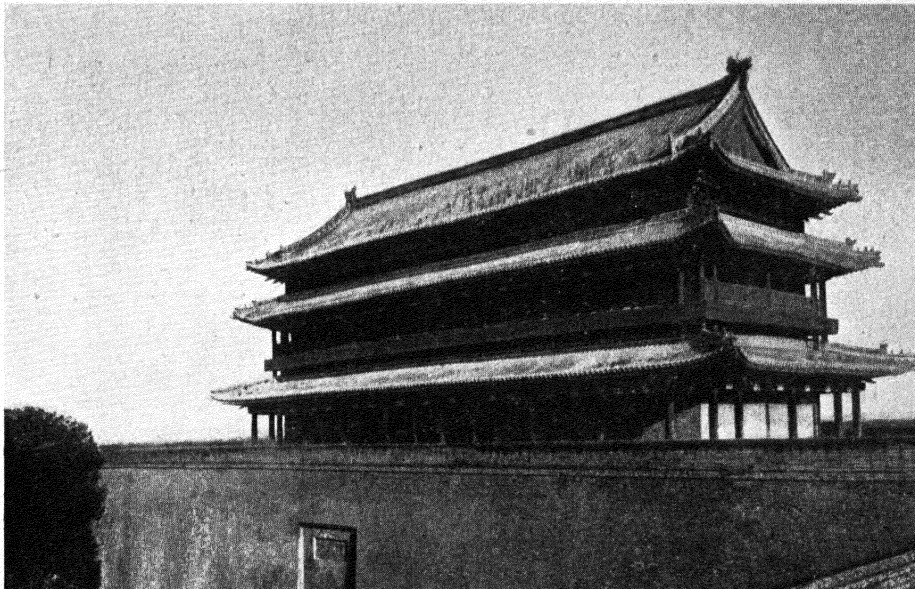




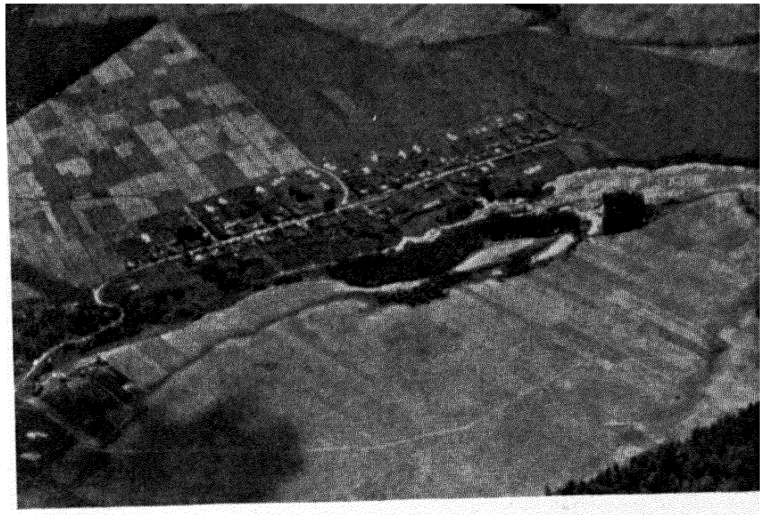
The Earth is conceived as a square, and the Altar of the Earth is therefore square. This idea is reflected in the layout of the towns. The walls form a gigantic rectangle, with only a few gates on each side, with numerous projecting towers. The centre repeats the form of the outer wall. The main streets run in a straight line from one gate to the other while the intermediate space between them consists of an apparently inextricable mess of secondary streets, lanes and blind alleys. Original conception and eventual reality are identical, forged together by an unsurpassable balance of rational thinking and spiritual clarity.



The grandiose purposiveness of the city wall dominates everything, only the towers above the gates interrupting its majestic flow. Its length and height are indicators of the importance of the city.



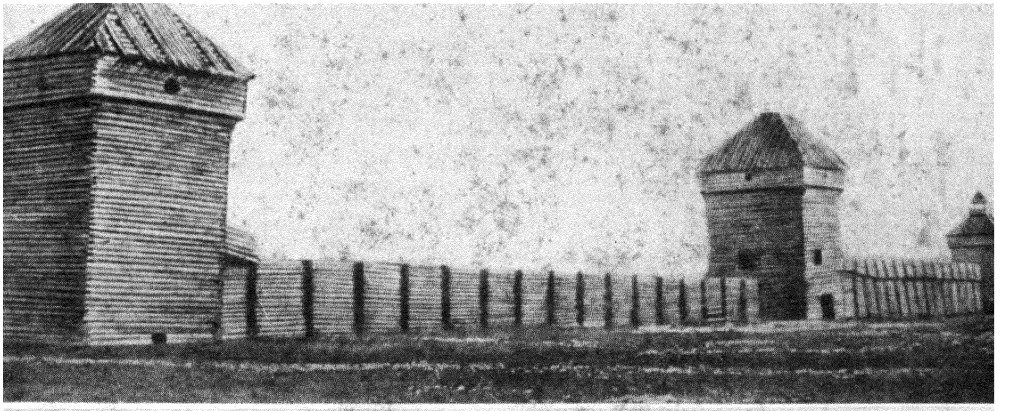
RUSSIA



This street village surrounded by numerous small plots of land is typical of many others throughout Tsarist Russia. Its layout is not ingenious and the field system lacks functional interdependence with the arrangement of the houses. It is in appearance and structure the successor of the old wretched villages and small market towns. Only the church distinguishes the latter and interrupts the unimpressive skyline.

The towns are surrounded by wooden walls above which the bulbous church towers and the upper parts of the more important buildings project, adding a lively note to the otherwise uninspiring uniformity.

The houses of the inhabitants are huddled together as mere by-products of this official pretentiousness. They do not lose their rustic characteristics and make even Moscow an enormous village, a Tsarist estate.



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