A STUDY OF INDIAN ECONOMICS

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

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

THE MACMILLAN CO. OF CANADA, LTD.
TORONTO

A STUDY OF INDIAN ECONOMICS

BY

PRAMATHANATH BANERJEA, M.A.

LATE PROFESSOR OF ECONOMICS, CITY COLLEGE, CALCUTTA
AND MEMBER OF THE ROYAL ECONOMIC SOCIETY, LONDON

MACMILLAN AND CO., LIMITED
ST. MARTIN'S STREET, LONDON
1911

पितृदेवेर श्रीचरणे

PREFACE

THIS book is intended to be an introductory manual for those who wish to make a serious study of Indian Economics. It has been written from the standpoint of the scientific inquirer, and is, the author believes, free from political bias. An attempt has been made throughout the book to represent the different sides to every question in the fairest possible manner. The author has purposely refrained from discussing some important practical problems which he intends to deal with in a second volume.

The author has tried to avail himself of the best available sources of information in respect of the various subjects dealt with in the book. He takes this opportunity to express his gratitude to the authors, editors, or publishers of all publications from which he has borrowed any matter. He is especially grateful to Mr. J. M. Keynes, M.A. of Cambridge, for many valuable suggestions relating to Indian currency.

The book is being published in a hurry, and some typographical errors will perhaps be found in it, for which the author craves the indulgence of the reader.

LONDON, *June*, 1911.

CONTENTS

CHAPTER I

INTRODUCTORY - - - pp. 1-5

CHAPTER II

THE NATURAL ENVIRONMENT

Geographical situation. Extent. Natural divisions. Geological structure. Soils. Mineral resources. Climate. The Monsoons. Importance of rainfall. Influence of climate on physique and character. Flora and fauna. Facilities of communication. The importance of the physical environment in India. Economics - - pp. 6-25

CHAPTER III

THE SOCIAL STRUCTURE. THE POPULATION

Density. Distribution. Towns and villages. Division into sexes. Distribution according to age. Dynamics of population. Marriage. Birth-rate. Death-rate. Emigration. Immigration. Internal migration. Movement from occupation to occupation - - - - - - pp. 26-33

CONTENTS

CHAPTER IV

THE SOCIAL STRUCTURE (*continued*). SPECIAL FEATURES OF SOCIETY

The Caste system. Caste tendencies among Mahomedans. Economic significance of caste system. Caste-guilds. Comparison with mediaeval guilds. Modern trade-guilds. Mahomedan guilds. The Joint-family. Laws of succession and property. The Village system. Village communities. Different types of villages. Village economy. Status and custom. Influence of custom on rents, wages and prices - - - - - - - - - pp. 34–52

CHAPTER V

PRODUCTION. GENERAL

Special conditions of land, labour, capital, and organisation. Average production. Average income. Average wealth. Chief characteristics of agriculture and manufactures compared - - - - - - - - pp. 53–58

CHAPTER VI

PRODUCTION (*continued*). AGRICULTURE AND MINING

Agriculture the main occupation of the people. Productivity of land. The harvests. Chief crops. Other kinds of produce. Sericulture. Arboriculture. Influence of forests on rainfall. The Agriculturist. Methods of agriculture. Suggestions for improvement. Agricultural education. Agricultural statistics. Mining - - - - pp. 59–78

CHAPTER VII

PRODUCTION (*concluded*). MANUFACTURES

Manufactures in Mediaeval India. Present position. Indian *versus* foreign capital. Agriculture *versus* manufactures. The Industrial revolution. Industrial education. Technical

education and its influence on castes. The chief industries. Suggestions for improvement. Statistics of industries - - - - - - - - - pp. 79–104

CHAPTER VIII

DISTRIBUTION

Rent. The applicability of Ricardo's theory. Factors determining the amount of rent. Rise of rents. Cash rents and corn rents. Systems of tenure. Wages. Nominal and real wages. Interest. The money-lender. The indebtedness of the agriculturist. Measures for checking indebtedness. Profits. Profits of the middleman pp. 105–121

CHAPTER IX

EXCHANGE

Review of ancient and mediaeval trade. The indigenous system. Transport. The economic influence of railways and steamships. Communication of intelligence. Internal trade. Foreign commerce. Imports. Exports. Trade with the principal countries. Shipping. Frontier trade. The balance of trade. Prices. Index numbers. Causes of the rise of prices. Effects - - pp. 122–138

CHAPTER X

EXCHANGE (*continued*). CURRENCY AND BANKING

Antiquity of money in India. Currency under the East India Company. Fall in the value of the rupee and its consequences. The Herschell committee. The Fowler committee. The gold-exchange standard. Criticism. Alternatives suggested. Buying and selling of rupees by the Government. Gold standard reserve. The volume of currency. Reform of currency. Paper money. Circles of issue. Volume of paper currency. Paper currency reserve. Council Bills. Telegraphic transfers. Credit. Presidency banks. Exchange banks. Indian joint-stock banks.

Progress of banking capital. The Government a great banker - - - - - - - - pp. 139–154

CHAPTER XI

CONSUMPTION

The importance of consumption. The standard of life. Statistics of consumption. Effect of consumption on production - - - - - - - - pp. 155–161

CHAPTER XII

PUBLIC FINANCE

The Imperial revenue. Tax-revenue and non-tax-revenue. The chief heads of revenue. Principles of the distribution of taxation. The "plural" system. Direct and indirect taxation. The maxims of taxation. Land revenue. Zamindari and Raiyatwari tenures. Revenue settlements. Principles of assessment. Incidence of land revenue. Opium. Salt. Stamps. Excise. Provincial rates. Customs. Income-tax. Forests. Registration. Other sources. The burden of taxation. Comparison with the United Kingdom. Expenditure. Chief heads. Gross and net expenditure. Debt services. The burden of debt. Military services. Collection charges. Civil services. Growth of civil Expenditure. Famine-relief and insurance. Provincial finance. Permanent settlement with the provincial governments. Provincial revenues and expenditure. Local finance. Municipalities. District and local boards. Port trusts - - - - - - - - - pp. 162–190

CHAPTER XIII

THE STATE AND ECONOMICS

State landlordism. Permanent zamindari settlements. Tenancy legislation. State and industry. Free trade and protection. India and Imperial preference - - - pp. 191–217

APPENDICES - - - - - - - - pp. 218–224

CHAPTER I

INTRODUCTORY

THE subject of Indian Economics presents many difficulties to the student which it may be useful to note at the outset.

Obstacles to the study of the subject:

The first and the most serious difficulty is found in regard to the applicability of the principles of General Economics to Indian conditions. There was a time when such principles were believed to be of universal application, and the truths which Economics inculcates were regarded as absolute truths, like those of the physical sciences. Some economists, however, early realised the limitations of the science. Mr. Bagehot went so far as to declare that the doctrines of English Political Economy had little validity outside England. He very properly called the English system of Economics "the science of business, such as business is in large productive and trading communities."[1]

Applicability of economic principles.

Economics, as it is taught in the west, is based on a number of assumptions, conscious or unconscious. When we examine these assumptions, we find that many of them are valid in India only to a very

[1] Bagehot, *Postulates of English Political Economy*, p. 7.

limited extent.[1] This being so, it would be wrong to import wholesale into India the economic conceptions of the west, and to apply them without modification or limitation to Indian conditions. But although the conclusions of General Economics may not, in all cases, be quite valid in India, the economic tendencies are none the less true. Human nature being the same everywhere, the same sets of

[1] Mr. M. G. Ranade, in his *Essays in Indian Economics*, summed up the position of India in regard to the ordinary economic assumptions in the following words: "With us an average individual man is, to a large extent, the very antipodes of the economical man. The Family and the Caste are more powerful than the individual in determining his position in life. Self-interest in the shape of desire of wealth is not absent, but it is not the only nor principal motor. The pursuit of wealth is not the only ideal aimed at. There is neither the desire nor the aptitude for free and unlimited Competition except within certain pre-determined grooves or groups. Custom and State regulation are far more powerful than Competition, and Status more decisive than Contract. Neither Capital nor Labour is mobile, and enterprising and intelligent enough to shift from place to place. Wages and profits are fixed, and not elastic and responsive to change of circumstances. Population follows its own law, being cut down by disease and famine, while production is almost stationary, the bumper harvest of one year being needed to provide against the uncertainties of alternate bad seasons. In a society so constituted, the tendencies assumed as axiomatic, are not only inoperative, but are actually deflected from their proper direction. You might as well talk of the tendency of mountains to be washed away into the sea, or of the valleys to fill up, or of the sun to get cold, as reasons for our practical conduct within a reasonable distance of time." Mr. Ranade wrote about twenty years ago, and since then the situation has undergone considerable change; but his description of the state of things remains true to some extent even at the present moment.

causes always tend to produce, under given circumstances, similar sets of effects. And as Indian conditions tend more and more to approach the conditions of the west, the western economic theories become more and more applicable to Indian affairs. It will not do, therefore, to brush aside the theories of General Economics as absolutely useless for our purposes. What is needed is to apply those theories to Indian matters with such modifications and limitations as the differences in the circumstances may suggest. The economic phenomena of India must be studied separately, but they must also be considered in their relation to, and dependence upon, economic phenomena outside the country.

Complexity of Indian economic phenomena.

The second difficulty arises from the fact that India is at the present moment in a state of economic transition. The older habits and customs are being modified by the impact of western ideas and ideals. New circumstances are bringing about changes in the social and economic life of the people. In fact, the conflict between the past and the present is now the dominating condition. The influence of the west is not, however, uniform throughout the country, so that we find industrial India standing side by side with agricultural India. Economic phenomena are complex everywhere, but this fact of transition introduces an additional complexity into the economic problems which present themselves for solution in India.

Want of reliable data.

Another obstacle with which the student is often faced is the absence of reliable data. The Blue-books and Papers published by the various depart-

ments of the Government form his only source of information. But he cannot always depend upon such information, for the agency by which the statistics are collected is hardly trustworthy, and the method employed in their presentation is often unsatisfactory. Much care has, therefore, to be taken in the use of these statistics, and unless that is done the student runs the risk of being led away into wrong generalisations and conclusions.

Personal sentiment.

Personal sentiment is another great obstacle to the proper study of the subject. To make the study fruitful, absolute regard for truth is essential in the investigation of economic phenomena, and personal likes and dislikes must be wholly set aside. Unfortunately, the position in India is such that those who take part in economic discussions often identify themselves with this or that party, and thus find it difficult to recognise and appreciate the whole truth.

These are some of the reasons which account for the fact that although many capable men have dealt with the details of Indian economic facts, yet very few have attempted to grasp the principles or to explain the facts by the aid of theories. It is a matter for great regret that the study of such an important subject has scarcely been pursued in a scientific spirit. The late Mr. Justice M. G. Ranade brought his keen intellect, wide knowledge, and deep insight to bear on the study of the subject, and a portion of the results of his study was given to the public in the shape of his speeches and essays. But they were merely an earnest

of what the people expected from him. Unfortunately, his premature death deprived the country of the services of one of her best and ablest sons.

In the following pages an attempt will be made to deal with the subject in a systematic manner. The prevailing method and arrangement will be followed, with such modifications as the differences in the social and economic organisation suggest, and the theories of General Economics will be examined in the light of Indian facts. No one, I am sure, will expect an exhaustive and satisfactory treatment of the various questions of Indian economics in a small handbook like this. My object is merely to make the reader acquainted with the general economic phenomena of India so as to help him in pursuing a fuller and more detailed study of the subject.

CHAPTER II

THE NATURAL ENVIRONMENT

MAN is ultimately dependent on nature in every aspect of his life. His economic life, in particular, is closely related to the facts of nature. The physical environment is, in reality, the basis of all economic activity. In the case of India, therefore, as in that of any other country, a study of economic phenomena should start from an investigation of the physical factor. This may be considered, for our purpose, under the five heads of the geographical location, the geological structure, the climate, the flora and fauna, and the facilities of communication.

1. GEOGRAPHICAL SITUATION

Extent. India extends north and south from latitude 8° to latitude 38°, and the extreme points on the west and the east are situated respectively at longitude 66° and longitude 100°. It comprises an area of 1,773,168 square miles. The area of India is about fifteen times that of Great Britain, and nearly one-sixth of the total inhabited area of the globe.

Boundaries. The range of the Himalayas, with its snow-clad

peaks penetrating far into the sky, forms the northern boundary of this vast country. On the north-west and the north-east also it is bounded by lofty mountains which prevent ingress or egress except through a few narrow passes and defiles. On every other side the boundary is the sea.

Natural divisions:

Thus situated, India forms a unit by itself, separated as it is by nature from the rest of the world. But within its own borders the country presents so many marked differences in physical features that it is often described as a continent rather than a country.

Northern India,

Just below the Himalayan range of mountains, which is the most striking feature in the geography of India, lies the sub-montane region with its dense forests and an inhospitable climate. Next comes the great plain of Northern India, from about 150 to 300 miles in width, and watered by three great systems of Himalayan rivers,—the Indus, the Ganges, and the Brahmaputra. Broadly speaking, the western half of this plain may be described as dry and sandy,[1] and the eastern half moist and water-logged.

Peninsular India.

To the southward lies the peninsula, consisting of a rugged plateau separated from the north by the Vindhya range, and flanked on the west by the steep hills of the Western Ghats and on the east by the Eastern Ghats which gently slope into the Bay of Bengal. This plateau is of an average height of 1500 feet, and is cut into a few deep valleys through which five great rivers

[1] These features reach an extreme point in Sind and the desert of western Rajputana.

carry their waters to the Arabian Sea and the Bay of Bengal.

2. GEOLOGICAL STRUCTURE

Geology of India in ancient ages,

India, in the ancient geological ages, was very different from what we find her now. Geologists say that in the earliest period she was represented by the southern peninsula and was connected with Africa by land; while over the area where now exist the regions of the Punjab and Rajputana, the tides of a wide and shallow sea ebbed and flowed. Then followed a series of volcanic cataclysms and violent earthquakes which entirely changed her natural features. Finally, as the result of a slow process of geological evolution extending over thousands of years, she acquired her present shape and physical characteristics. These successive formations have left their marks on the physiography of India, and they may be grouped under six heads: (*a*) Achaean, (*b*) Vindhian, (*c*) Gondwana, (*d*) Basaltic, (*e*) Tertiary and Cretaceous, and (*f*) Alluvial. As, however, a detailed examination of these formations is not necessary for our purpose, we shall content ourselves with a general description of the various kinds of soils and minerals which owe their existence to them.

in the modern age.

Soils:

The most extensive, and agriculturally the most important, tracts are the alluvial. They comprise the greater portions of Sind, Gujrat, Rajputana, the Punjab, the United Provinces, Bengal, extensive tracts in Assam and Burma, the Godavari,

Krishna, and Tanjore districts of Madras and strips extending along the eastern and western coasts of the peninsula. Alluvial soils also fringe the courses of the rivers in many other places.[1] Alluvial.

Alluvial soils differ in different parts of the country in respect of their physical as well as their chemical properties. Generally speaking, in north-western India the soils are porous, dry, and, in some places, sandy. In Bengal, the soils are more compact, less coarse, and moist. The soils in the deltas of Peninsular India are non-porous, clayey, and of dark colour. The chief advantages of porous and light soils are that they are easily worked by the plough and easily permeated by water. They lead to great fertility of the land in places where the atmosphere is moist. But their great defect is that they allow the water to sink into the lower strata, and are unsuitable for the growth of those kinds of plants which require the retention of a great deal of moisture about their roots; and thus they cause infertility of the land in those parts in which showers are not frequent. The alluvial soils are, on the whole, rich in chemical properties. Phosphoric acid, potash, lime, and magnesia are found in sufficient amounts, but nitrates are often in defect. In some places, however, barrenness results from an excessive accumulation of magnesia and soda salts on the surface. A great variety of *rabi* and *kharif* crops is grown on alluvial soils.

[1] *Imperial Gazetteer of India*, vol. iii. p. 8.

Trap soils.

Next in importance are the trap soils which cover the whole of the Deccan and considerable parts of the Central Provinces, Hyderabad, and Kathiawar. On the uplands and the slopes of hills, the soils are porous and light and are generally poor. The chief crops of these areas are millets and pulses. In the lowlands the soils are thicker and darker-coloured and more fertile. They are suited to the growth of cotton, wheat, millets, and pulses.

Black cotton soils.

In portions of the Deccan trap area is found the black cotton soil or *regar*, which possesses an almost inexhaustible fertility. This soil is the product of the decomposition of lavas. It is of a dark colour and is exceedingly compact and tenacious. It is highly retentive of moisture and rich in chemical properties. The kind of crops most suited to these areas is the *rabi*, but the *kharif* crops are also grown in many cases. Cotton, wheat, linseed, and millets are the chief crops. Soils akin to the black cotton soil of the Deccan are found in the river-valleys of a few other districts in Bombay and Madras.

Crystalline soils.

So much about the special varieties of soils. The rest of India may be described as the "crystalline soils tract." But these soils differ so much from one another in the different provinces in regard to their physical and chemical characteristics that it is hardly fair to put them all in one class. They are usually sterile when they occur on the uplands, but the clayey and brownish loams of the lowlands are fertile. The better kinds of such soils are suited to a great variety of crops, the

most important being rice. The reddish-coloured laterite soils of certain districts in Bombay are rather infertile, being highly porous and dry. The crystalline soils generally are deficient in the nitrates and phosphoric acid.

In the midst of these varying features one characteristic is found to be common to almost all soils, viz., their comparative dryness. This absence of moisture in the land makes the supply of water an absolute necessity in Indian agriculture.[1]

Such is the surface of the earth as we find it in India. It is needless to say that it is of the greatest importance in the economic life of her people, whose material and moral welfare is indissolubly bound up with the soil. But of equal importance is what lies beneath the surface. The wealth of a nation in modern times corresponds, in a large measure, to its output of economic minerals.

Mineral resources:

The mineral wealth of India has not yet been fully ascertained; but judging from the amount of actual production, her mines and her possibilities as shown by investigations, we may say that India is rich in mineral resources.[2] These are widely

[1] In this respect, Indian conditions differ widely from those of England, where, on account of the presence of an excessive amount of moisture in the land, drainage is the most essential thing in cultivation.

[2] Mr. V. Ball, in his introduction to the *Economic Geology of India*, quotes the statement of Megasthenes that "India has underground numerous veins of all sorts of metals," and regards it as entirely true. He goes on to say, "Were India wholly isolated from the rest of the world, or were her mineral productions protected from competition, there cannot be the least

distributed over almost the whole of her area, and it will perhaps be useful if we briefly describe the chief kinds.

Coal.

Coal is the most important of the mineral products of India. Its quantity is large and the quality is good. It is found chiefly in Bengal, Assam, and the Central Provinces, and in smaller quantities in Burma, Central India, the Punjab, Madras, Kashmir, and Baluchistan.

Iron.

Iron[1] ores of a superior quality are to be found in abundance in various parts of India. The chief iron areas are Barakar, Chaibassa, and Itori in Bengal; the northern and eastern districts of the Central Provinces; the eastern half of Central India; Mahabaleswar and Malwa in Bombay; and Mysore. It is also found in small quantities in the Punjab and the United Provinces, Kashmir and Rajputana. At present, however, it is nowhere worked to any considerable extent except in Barakar in Bengal; but it is hoped that there will be a great expansion of the production and manufacture of iron in the near future.

Petroleum.

Petroleum oil is found chiefly in Assam, Burma, and Baluchistan, and an inferior quality in certain

doubt that she would be able, from within her own boundaries, to supply very nearly all the requirements, in so far as the mineral world is concerned, of a highly civilised community." (V. Ball, *Economic Geology*, p. xv.).

[1] The importance of iron and coal in the economy of a country is immense. The dominant industrial position of England is due, in a large measure, to her possession of an abundance of these minerals. Coal is important not only as ordinary fuel, but as the indispensable requisite in all productive industries.

districts of the N.W. Frontier Province. The petroleum resources of India are confined to the two systems of folded rocks on the eastern and western Himalayas. Rock-salt is obtained in large quantities in the famous Salt Range and in the Kohat district of the Punjab. Tin is found only in lower Burma and in the Hazaribagh district of Bengal; but the total quantity of output is not large.

Rock-salt.

Tin.

Of the materials used for agriculture and the chemical industries, saltpetre is the most important. The natural conditions for the production of saltpetre in Behar, which is the chief source of the compound in India, are ideal, but the production is now diminishing. India is very deficient in her supply of phosphates. The only deposit worth noticing is in the Trichinopoly district of Madras. The export of phosphates in the form of bones is a circumstance to be greatly deplored. Potash salts are very rare. Gypsum, alum, and sulphur are obtainable in several parts of the country. Borax is obtained from Kashmir and Tibet. Soda salts are obtained from the soil in various parts of the country.

Materials for industries.

India was, in ancient times, famous for her precious metals. At present her production of these is not large, though it is still considerable. The most important of these is gold, which is found in large quantities in the Kolar field in Mysore. Some amount is also found in the mines of Hyderabad and several other places. Besides, in all the Provinces of India small quantities of gold are

Gold.

obtained from river gravels by the indigenous process of washing. Both copper and lead are widely distributed over the whole of India. Copper is found chiefly in Bengal, and also in several places in the Central Provinces, Rajputana, Southern India, and at various places along the Himalayas.

Copper.

Lead.

Lead occurs in Bengal, Central Provinces, Rajputana, the Karnul district in Madras, and certain districts in Bombay. In some places, silver and zinc have been found associated with lead.

Silver and zinc.

Aluminium.

Of recent years, aluminium has been discovered to occur in abundance in Burma and the whole of Peninsular India, and it is believed that this industry has a great future before it.

Manganese.

Manganese occurs in such abundance in the Central Provinces that India now takes the second place among the manganese-producing countries of the world. It is also found in certain parts of Bombay, Madras, Hyderabad, Burma, and Chota Nagpur.

Mica.

Mica is one of the most important mineral products. India turns out more than half of the total mica supply of the world. The main source of production is in the Hazaribagh and Gaya districts of Bengal. It also occurs in the Nellore district of Madras.

Cobalt.
Nickel.

Cobalt is found in Rajputana, and nickel is obtained from the gold-fields of Kolar.

Precious stones.
Diamond.
Ruby.
Sapphire.

Various kinds of precious stones are to be found in different parts of India, important among them being diamond, ruby, and sapphire. Diamonds occur chiefly in Madras, the Central Provinces, and near Panna in Central India. Ruby-mining is a

very profitable and flourishing industry in Upper Burma. The chief seat of sapphire is Kashmir, but the mines are said to be exhausted.

Besides these minerals, there are various kinds of miscellaneous minerals. Stone also is important, it being the chief material used for building and ornamental purposes. Miscellaneous minerals.

Numerous hot and mineral springs are found in different parts of India, but their neglect is a curious feature in the situation. As instances may be mentioned the hot springs at Manikarn in Kulu, the sulphur springs at Lasundra in the Kaira district and at Vajrabai in the Thana district of the Bombay Presidency, and other springs along the foot-hills of the Himalayas.

3. CLIMATE

The climate of any place is determined by various factors, the chief among these being its latitude, altitude, proximity to the sea, and position in regard to the prevailing winds. India is such a vast country that its parts differ widely from one another in respect of each of these factors, giving us sharp contrasts in climatic conditions. Sharp contrasts in climate.

Excluding the Himalayas,[1] which act as a climatic barrier in shutting out the cold winds of

[1] The Himalayan range exercises the greatest amount of influence on the physical condition of India, and on the moral and economic life of her people. Not only does it act as a climatic barrier, but it is the perennial source of all the great rivers which moisten the parched lands of Northern India and give inexhaustible fertility to the soil.

Central Asia and keeping within the borders of India the vapour-bearing winds of the south-west monsoon, the country may be divided, for meteorological purposes, into two parts: Peninsular India and Northern India.

The Peninsula,—variations slight.

The whole of the Peninsula falls within the Tropics and has a hot climate, the variations of temperature between summer and winter being small. The coasts have an even smaller range of temperature, and the atmosphere there is usually cloudy. These features are specially observable on the windward coasts, and they diminish with increasing distance from the sea.

Northern India,—

Almost the whole of Northern India lies beyond the Tropic of Cancer, but here the climatic conditions are more complex. In technical language, the climate may be described as continental. The

severe heat and extreme cold.

severity of heat or cold and the amount of moisture present in the air, however, differ greatly in the different provinces and in different seasons. In the Punjab and the North-western Frontier Province we find bitter cold in winter and extreme heat in summer. As we travel eastward the severity both of heat and of cold steadily diminishes. In Bengal and Assam, the winter is mild and the summer is moderately hot. Again, Sind, the Punjab, and Rajputana are exceedingly dry, while the atmosphere of Assam and of East Bengal is always saturated with moisture.

Altitude tempers the heat of low latitudes. Up on the hills, it is delightfully cool and refreshing even in midsummer, but beyond a certain point the excess of cold forbids human habitation.

These are the general features of the climate of India, which are, however, to a large extent disturbed by the periodical or monsoon winds, of which we shall speak presently.

The seasons:

The Indian year is divided into six seasons; but, for economic purposes, it may be divided into two—Winter and Summer,—the latter being subdivided into dry summer (April, May, and June) and wet summer (July, August, and September). This alternation of the seasons is of the greatest importance in the economy of Indian life, as it leads to an alternation of the meteorological conditions, and thus gives rise to the most momentous results. In winter, dry land winds prevail over the greater part of India, while in summer we have winds of oceanic origin, with high humidity, much cloud, and frequent rain. This alternation is due to a difference in temperature and atmospheric pressure in different regions.

Winter, dry summer, and rainy summer.

The monsoons.

The whole of India lies within the belt of the northern trade-winds. Under normal conditions, therefore, we should expect the wind to blow from the north-east throughout the year. As a matter of fact, however, the north-east wind blows during only one-half of the year. During the other half, the wind movement is modified because of the presence of the continent of Asia near the equator. This disturbance of the air-current is due to the fact that land and water differ greatly in their behaviour regarding absorption and radiation of heat. In April and May, the plains of Northern India become very much hotter than the water of the Indian

Ocean near the equator; and, consequently, the pressure becomes much lower in the former region than over the equator. The heated air rises and the cooler air from near the equator rushes in to take its place. Thus an air-current is established in the lower strata of the atmosphere from the south towards the north. Just at this time, south of the equator, the wind blows as a south-east trade-wind. As it reaches the equator, it finds the barometric pressure higher there than in Northern India. It then swirls round and blows as a south-west wind, accelerating the air-movement which has already begun from the equator towards India. This is the south-west monsoon. Being of oceanic origin, the wind is laden with moisture, and, as it moves along, it drenches the parched lands of India with rain. The south-west monsoon usually establishes itself in Bombay and Bengal early in June, and before the end of the month it extends over the whole of Northern India.

South-west monsoon.

The south-west monsoon reaches India in two currents—the Arabian Sea current and the Bay of Bengal current. The former gives rain to Bombay, the Punjab, and a part of the Central Provinces, and the latter to the rest of India and to Burma. India gets nearly 90 per cent. of her annual rainfall from the south-west monsoon. This monsoon usually continues till September.

Two currents: Arabian Sea current, Bay of Bengal current.

In October and November, the temperature over the land in India becomes lower than that over the sea near the equator; consequently, the barometric pressure is higher, and winds now begin to blow

towards the equator. This is often alluded to as the north-east monsoon, but it is, in reality, the normal north-east trade-wind. Being of land origin it does not contain much moisture, and is, therefore, called the dry monsoon, in contradistinction to the south-west monsoon, which is wet. The little moisture which it contains is really the residue left by the south-west monsoon, which has been prevented by the Himalayas from passing out of India. The north-east trade-wind picks up a considerable amount of moisture during its passage over the Bay of Bengal, and gives rain to the south-eastern districts of Madras. This north-east wind is thus of great economic importance to Madras, although the total quantity of rain which India gets from it is small. Some amount of rain also falls in the Punjab during the winter months.[1]

North-east monsoon.

The amount of rain that falls in India varies from year to year. It depends on the force and direction of the air-current. The quantity which any particular part of the country receives depends on the configuration of the surface of the land, on its situation with reference to the winds, and on any other factor which causes reduction in the temperature of the air. For instance, while a large amount of rain falls in the coast districts of Bombay, the table-land of the Deccan and Southern India gets very little rain from the south-west monsoon, the Western Ghats acting as a barrier to the passage of the vapour-bearing winds. Where, on the other

Amount of rain determined by—

Situation,

[1] The exact cause of this rainfall has not yet been ascertained, but it seems to be due to local storms.

hand, no such obstacle is offered to the passage of the monsoon current, the clouds travel far into the interior of the country. The east coast of Madras does not receive much rain from the south-west monsoon, for it does not lie in the path of the winds, their direction being north-easterly. Again, any cause which cools the air-current leads to a condensation of water-vapour and to the fall of rain.

Height,

Thus rainfall is abundant on the mountains, while it is scarce in deserts where the atmosphere, being hot, is capable of holding in suspension a large amount of water-vapour. Forests keep the atmosphere cool and thus help the fall of rain.

Moisture of air.

Importance of rainfall.

The success or failure of the crops depends entirely upon the amount, distribution, and time of occurrence of the monsoon rains. In European countries, the variations in rainfall may increase or diminish the abundance of a crop, but in India they produce far greater consequences. In one year rainfall may be so abundant that harvests are plentiful, in another an almost total failure of the rains may lead to a severe famine involving the loss of thousands of lives. The prosperity of the country mainly depends on the monsoons, and natural water-supply is the chief factor determining the density of population and the state of civilisation in any particular part of India.

Influence of climate on physique and character.

The climate of the country affects not only the productivity of the land, but the physique and character of the people. A hot and moist climate tends to cause much fatigue after moderate exertion and a general ill-defined condition of debility. It thus

produces a disinclination to hard work. Various kinds of tropical diseases also render the body weak and reduce the longevity of life. The cumulative effect of all this on the people is to produce a lack of the energy and strength needed to develop the best in themselves and in the resources of the country.

4. FLORA AND FAUNA

The geographical position of the country and its climatic and geological conditions have an important bearing on the vegetable and animal life of India. The large extent of its area and a great variety in physical features and climate, combined with the natural fertility of the soil, enable the country to produce almost every kind of vegetable life. Here we find not only the tropical and sub-tropical products, but the products of the temperate zone as well. The most important among the tropical products obtained here are: rice, coffee, cocoa, sugar-cane, cinchona, jute, spices, india-rubber and gutta-percha; pineapple, bananas, and other kinds of tropical fruits. The chief sub-tropical products grown are: cotton, tobacco, opium, and tea. Of the products of the temperate zone, the following may be mentioned as the more important: wheat, maize, barley, pulses, potatoes, hemp and flax, and various kinds of fruits. Besides these, many miscellaneous articles are found, such as a large variety of oil-seeds, gums, timber, and indigo.

Vegetable life.

Tropical, sub-tropical, and temperate-zone products.

Animal life.

Animals are of great use for purposes of cultivation and draught. At one time India possessed a fairly large supply of good and serviceable cattle. But of late there has been a great deterioration in the quality, and diminution in the quantity, of live stock. The want of good cattle is a great drawback in the improvement of agriculture. Cattle-rearing is difficult in those parts of the country in which rainfall is large, because the rain-water washes away the salient constituents which are essential to the health of the cattle. There the animals do not grow up to a good size and strong. For this reason, horses are rare in Lower Bengal, the Carnatic and Coromandel coasts, and Lower Burma. In the drier parts, on the other hand, such as Baluchistan, the Punjab, Rajputana and Kathiawar, very good horses are found. The most important of the Indian animals are bullocks, which are used almost everywhere for the plough as well as for carrying loads and drawing water. Buffaloes also are used for similar purposes in many parts. The cow and the she-buffalo are highly useful in almost every part of the country, as milk and *ghee* are among the chief articles of food consumed by the people. Sheep and goats are found in every province. The donkey is a very useful animal, especially in Northern India. The camel is plentiful in the sandier parts of the country, and is a very useful animal for carriage. The region in which good cattle is reared includes the Punjab, Kashmir, Rajputana, and Kathiawar, where rainfall is not excessive.

Animal products.

Products obtained from animals, besides milk, are

wool, wax, and ivory, all of which are articles of utility and in demand.

Aquatic products.

Of the aquatic products fish, of course, is the most useful. The pearl fisheries of the Indian Ocean are also very important from the economic standpoint.

5. FACILITIES OF COMMUNICATION

Communication easy in Northern India,

The flatness of the surface makes communication easy in the plains of Northern India. Roads and railways can be constructed here without much difficulty. The Ganges, with its numerous tributaries and branches, furnishes some thousands of miles of waterways, which are of immense economic importance. The Brahmaputra also in its lower course affords some facilities of transport. The Indus and its tributaries are navigable by small boats, and by steamers during a part of the year. In the southern half of the country, the nature of the surface has placed great impediments in the way of communication. Roads are not easy of construction, and railways have become possible only in certain parts of the peninsula, and even there only with the aid of much engineering skill. The rivers also are not quite so useful as waterways, all of them being too impetuous in times of flood and too scantily supplied with water at other times.

but difficult in the peninsula.

The sea, the great highway.

The long sea-board of India offers facilities of communication between the coast districts of the country. The number of natural harbours, however, is few, and during the monsoons the Indian

Ocean becomes exceedingly rough. But in spite of these disadvantages, the sea has now become a natural highway connecting India with the other parts of the world.

Natural advantages many, disadvantages few.

We have now finished our brief survey of the physical environment in India and its relation to the economic aspect of the life of the people. We have noted the many natural advantages which the country enjoys and the few difficulties it labours under. It is necessary to recognise the dependence of the people on nature; but it would be a mistake to suppose that this dependence is absolute. Man can, in some measure, modify his environment. The people of India can, by their intelligence and knowledge, control the forces of nature to a considerable extent. Let us try to understand this point clearly.

Dependence on nature not absolute.

Natural obstacles surmountable.

The productiveness of the land depends on the fertility of the soil. But natural fertility can be increased by the effort of man and decreased by lack of proper care. Wasteful cultivation may turn the best land into the poorest; and the worst land can be converted into the most fertile by the application of proper manures and the adoption of a well-regulated method of agriculture. In mining, the extension of knowledge and inventiveness may lead to the artificial manufacture of new and useful metals, supplementing and even superseding the use of the minerals which are now known to the world. As for the climate, it is essentially unalterable; but even here modifications may be secured in various ways. Afforestation may lead to an increase of

rainfall where it is at present scanty, and irrigation may be so practised as to carry water to any place where it is wanted. Extensive drainage works, the reclamation of swamps and marshes and the re-excavation of silted rivers may also affect for the better the climate, the health of the people, and the moisture conditions of the land. The effects of extreme heat and cold may be mitigated by various artificial means. The enervating influence of the climate on body and mind may be counteracted by the adoption of proper care and a scientific mode of living.

The flora and fauna of the country are determined partly by the physical conditions and partly by the will of man. Scientific knowledge may be applied to the improvement of the existing vegetables and fruits, and new sorts may be made to grow. So also, the breed of cattle may be improved and certain new kinds may be introduced.

As for communication, science has surmounted most of the difficulties which nature placed in certain parts of the country. Railways have penetrated into places which would otherwise have remained unapproachable, and distance is no longer a bar to communication. The formidable ocean now affords the easiest and cheapest means of transport.

CHAPTER III

THE SOCIAL STRUCTURE

THE POPULATION

NATURE and man are the two chief agents in the production of wealth. In the last chapter we described the part played by nature in the economy of Indian life. The present chapter will be devoted to a brief discussion of the human element.

Population.

The total population of India is about 315 millions or about six times as large as that of the British Isles, and nearly one-fifth of the population of the whole world.[1]

Density.

The average density of the population is 184 to the square mile,[2] which is very much the same as in France. But in India, distribution of the people is not even throughout the country. The density of population depends on several factors, the most important of which are rainfall, the climate, the

Local distribution unequal.

[1] Of this a little less than four-fifths is in British India and a little more than one-fifth in the Native States.

[2] Sir A. J. Baines points out (in an article in the *Journal of the Royal Statistical Society*, December, 1904), that, in the case of India, "the mean density figure is in itself peculiarly devoid of significance."

soil, the configuration of the surface, and the state of civilisation. As a rule, the population is the densest in those parts in which there is an abundant supply of water, either natural or artificial; but there are exceptions. The greatest density is to be found in the delta of Bengal, which has an average population of 552 to the square mile, and the next densest tract is the Gangetic plain of the United Provinces. The density is the lowest in Upper Burma, the North-western Frontier Province, and Baluchistan. Between these extremes there is every shade of variety.

Population mainly rural.

The people for the most part live in villages. In England[1] more than half the people live in towns of over 20,000 each, in India only one-twentieth.[2]

Towns comparatively few.

There are only 29 towns with a population of over 100,000. The number of towns each containing populations varying from 5000 to 990,000 is 2224. But the number of villages is no less than 730,000. The reason for this is to be found in the fact that the people are in the main agricultural. Though the rural people may be less progressive in their thoughts, ideas, and habits than the town people, there is no antagonism between life in towns and that in villages. There was a time when the urban population was much larger and the social importance of the towns greater. With the decay of the industries, the towns sank in importance, and there

[1] The proportion of urban population of England was 71·3 per cent., and that of the United States 33·3 in 1901 (Board of Trade Yellow-book, 1911).

[2] In Bengal, only 2 per cent. of the people live in cities.

was a tendency for a larger and larger proportion of the people to become rural.[1] Of recent years, however, there has become discernible a tendency working in the opposite direction; and towns are once more beginning to take their proper place as centres of thought, culture, and industry in the life of the nation.

Division into sexes.

The division of the people into sexes is important from the economic standpoint, for a very large proportion of the female sex in India can hardly be regarded as producers of wealth at all. The social customs prevent females, of the higher and middle classes in particular, from participating in the production of wealth, at least in a direct way. Taking the country as a whole, there is a slight excess of males over females. Among the higher classes, however, the female portion slightly preponderates over the male.

Distribution according to age.

Another important fact about population is distribution according to age. The old and the very young are consumers of wealth, but not producers. Roughly speaking, the limit for active work may be put at the ages of 15 and 60. The number of persons between these limits are about 17 millions, or 55 per cent. of the population. If we deduct from this a large proportion of the females and the infirm and the sick persons, we get the total number of able-bodied persons who may participate in the production of wealth, or, in other words, who form the labour-supply of the country.

Health.

The most important fact to be considered when

[1] The late Mr. Justice M. G. Ranade bitterly complained in his Essays and Speeches of this progressive ruralisation of the people.

dealing with the human element in production is the health of the people. The efficiency of labour is greatly impaired by the general ill-health of the people in most parts of the country. This is due to unfavourable climatic conditions, insufficient nutrition, the want of pure water, insanitary surroundings, artificial modes of living, and unhealthy social customs. All these factors render the body weak and less able to resist disease. To these must be added the epidemics which sweep over the country every now and then, sometimes causing great havoc and devastation.

Dynamics of population.

So much about what may be called the status of the population. But the movement of the population is also very important. Changes are affected by three factors: birth, death, and migration. We shall briefly notice each of them.

Marriage.

Birth depends on marriage and fecundity. In India, marriage may be said to be almost universal. Roughly speaking, we may say that religion and social customs favour the marriage almost of every person before the age of puberty is reached. Consequently, the hypothesis of Malthus that marriages increase with prosperity and decrease with adversity does not hold good in India. As a matter of fact, improvident marriages are more frequent among the lower than among the higher classes. The proportion of celibates is much lower in India than in Europe and America. On the other hand, custom forbids the marriage of widows among the Hindus; and, moreover, as there is a great disparity in the ages of the husband and the wife, we find a higher

proportion of widows here than in European and American countries. The proportion of widowers also is a little higher. The fecundity of marriage among the poorer classes is greater than among the middle and higher classes, and also among the Mahomedans than among the Hindus. This is due perhaps to the absence of prudential considerations.

Birth-rate. The average crude birth-rate in India during the last ten years was 38·5 per thousand of the population. No reliable figures can be obtained of the refined birth-rate, that is to say, of the births compared with the number of women of child-bearing age. But it may be said in a general way that women begin to bear children at an early age and also cease very early.

Death-rate. The increase or decrease of population depends not only upon the birth-rate but upon the death-rate. In India, the death-rate is abnormally high, as compared with the death-rate in other civilised countries. During the years 1899-1908 the average death-rate was 34·5 per thousand. In the modern civilised communities, the normal death-rate varies from 17 to 21 per thousand. This high rate of mortality in India is due to several causes,—famines, epidemic diseases, want of proper food and good drinking water, insanitary conditions, and the impaired vitality caused by early marriage. In bad seasons the population usually decreases; while in good seasons there is an increase of population, this being due not so much to increased birth-rate as to the diminution in mortality. The mortality in towns is a little higher than in the country,

probably because of the greater congestion in the former.

Migration is another factor which affects the number of the population. Migration is of two kinds: internal and external. Internal migration, again, may be either from place to place or from occupation to occupation. Movement of the people from one province or district to another goes on continually. For instance, the factory hands in the Calcutta mills are all drawn from up-country. But even such movement is rarely, if ever, practised on a large scale. The conservative habits of the people, their love of home, their poverty, their lack of knowledge of the labour conditions in other parts, all tend to keep them tied to their native villages. One important exception, during recent years, has been the migration of a large number of people to the Canal Colonies in the Punjab.

Migration—

internal,

The caste system and social customs used in days of old to prevent absolutely the movement of labour from occupation to occupation. The influence of caste and of customs is, however, growing less every day, and restrictions are gradually passing away; but even now the movement is very far from being free.

from occupation to occupation,

External migration may take the form either of emigration or of immigration. The former may serve as an outlet for the surplus population of the country; but the total actual number of emigrants from India is so small that, for practical purposes, they may be neglected.[1] The number of

emigration,

[1] The present tendency of emigration is to fall in number. In 1900-1 the total number of emigrants was 26,508; but in 1908-9

Immigration.

permanent immigrants into the country is exceedingly small.

Increase of population.

In the course of the last ten years the population of India has increased from 294 millions to 315 millions. The rate of increase has been a little over 7 per thousand per year. Now the question arises whether the population is increasing too fast. There are some thinkers who are alarmed at the rate of increase, and who believe that the pressure of population on the means of subsistence will soon produce great misery in the country. As a matter of fact, however, the population is not increasing as rapidly as in other civilised countries.[1] Moreover, as Prof. Seligman points out, the problem of population is not one of mere size, but of efficient production and equitable distribution. The real antithesis is not between population and food, but between population and wealth. If population increases, while the production of wealth remains stationary, greater misery will undoubtedly be the consequence. But if, on the other hand, wealth and productive efficiency are increased simultaneously with the increase of population, the country will be able to support a much larger population than it does at present. This is the view also held by Mr. E. A. Gait,

it was rather less than 12,000. These emigrants usually go to the British colonies (Mauritius, Natal, British Guiana, British West Indies, Fiji, etc.), and to Dutch Guiana as unskilled labourers (*Statistical Abstract for British India*, p. 227).

[1] The rate of increase in England and Wales was 12·17 per cent. during 1891-1901, and 10·91 per cent. during 1901-11. In India the rate of increase during 1891-1901 was only 2·4 per cent.

one of the editors of the *Imperial Gazetteer of India*,[1] who says, "Apart from the non-agricultural forms of employment which are rapidly growing in importance, it seems certain that, even in the most crowded tracts, more scientific farming would greatly increase the present produce of the soil. There are, besides, many parts, *e.g.* Burma, where, even under present conditions, ample scope remains for expansion; and many others, such as Western Rajputana, where, with the aid of irrigation, crops might be grown on what is now a sandy desert."

[1] Vide *Imperial Gazetteer of India.*

CHAPTER IV

SPECIAL FEATURES OF INDIAN SOCIETY

1. THE CASTE-SYSTEM

THE most striking feature in the structure of Hindu society is what is known as the caste-system. It is a very ancient institution, but when and how it first appeared it is impossible to say with any degree of certainty.

Origin. We find it vaguely alluded to in a few passages of the Vedas, and recognised in Manu's code, in the great Epics, and in the Puranas. In the Bhagavat Gita, Sreekrishna, the incarnation of the Deity, says, "I have created the four castes according to the qualities and occupations of their respective members." This seems to be the correct view of the origin of the system.[1]

[1] M. Senart was perhaps right in saying, "Caste is the normal development of ancient Aryan institutions, which assumed this form in the struggle to adapt themselves to the conditions with which they came into contact in India." It appears quite probable that, being surrounded on all sides by hostile aborigines, the Aryans found it necessary to set apart the hardiest portion of the population for the exclusive occupations of war and government. Thus perhaps was formed the Kshatriya caste.

The essential feature of the system is that "birth determines irrevocably the whole course of a man's social and domestic relations, and he must through life eat, drink, dress, marry, and give in marriage in accordance with the usages of the community into which he was born."[1]

Essential feature.

Mahomedanism, in its pure form, inculcates equality among all followers of the religion and is opposed to the system of a hierarchy of castes. But in India the contagion has spread to the Mahomedans, among whom caste tendencies are

Caste tendencies among Mahomedans.

Then, as engagement in warfare was found incompatible with the performance of religious ceremonies and the acquisition of learning and the imparting of education, the most intellectual and selfless among the people formed themselves into a separate class. Thirdly, as the importance of agriculture, industry, and trade was realised more and more with the growth of civilisation, a third class began to devote their energies exclusively to those occupations; and lastly, the less cultured among the Aryans, together with the conquered tribes, formed the Sudra caste. In course of time, subdivisions of these original castes were made, and many new ones came into existence. In the earlier stages of national development, as M. Senart points out, the principles underlying the social structure of the Greeks and the Romans were the same as those of the Hindus. In India, however, the distinctions became rigid and stereotyped; in Europe, society was soon able to throw off the shackles.

A caste is defined in the *Imperial Gazetteer of India* as "a collection of families or groups of families, bearing a common name which usually denotes, or is associated with, a specific occupation; claiming common descent from a mythical ancestor, human or divine; preferring to follow the same calling; and regarded by those who are competent to give an opinion as forming a single homogeneous community." How far this definition is correct it is not our business to discuss here.

[1] Vide *Imperial Gazetteer of India*.

visible. In some places, the social distinctions have become quite marked and well-defined.

The caste-system has undoubtedly many bad features, but it has some good points also which are not often appreciated by careless observers.[1] Whether good or bad, changed conditions have led to a modification of the system. Occupation is not now necessarily the indication of a man's caste.

Caste-system modified. Members of different castes are now-a-days to be found in almost every occupation. Caste rules have now become less rigid than before, and the modern tendency is to eliminate from the system features which are unsuited to the economic organisation of modern society.

Economic significance. The chief economic significance of the system is that it fixes absolutely the supply of any kind of labour. The scope given for the play of competition

Limitation of competition. thus becomes limited, and consequently the law of demand and supply is rendered either inoperative or oppressive in its operation. When there takes place any change in the economic world, labour is unable to adjust itself to the altered circumstances and suffers in consequence, sometimes very heavily. Wages and prices have very often to be regulated by custom or some other artificial means. Further,

Unsuited to large-scale production. the institution of caste is ill-suited to large-scale production, in which minute subdivision of labour is essential, and which requires the supply of any

[1] The caste-system has undoubtedly conduced to the stability of Hindu society, and it would be absurd to regard it as a relic of uncivilised times. In the west the social distinctions are based on wealth ; in India they depended upon the possession of intellectual and spiritual qualities.

kind of labour to immediately respond to the demand for it. The system, moreover, has its influence on the character of the individual. Where birth determines the whole course of a man's occupation, his capacities may not be put to the best use, and each profession may have to tolerate many persons who are incompetent or useless in that particular profession, but who may perhaps do better in some other.

Capacities not put to the best use.

Thus there results a great economic loss. But, on the other hand, much economic advantage ensues from the fact that every man inherits a certain amount of skill from his parents and unconsciously imbibes much of the technical knowledge from the atmosphere of the particular profession in which he is brought up. Another great merit of the system is that, by limiting the influence of competition, it stands forth as the protector of the weak. Everyone finds a place in the economic organisation—no one is absolutely helpless.

Inherited skill.

Caste the protector of the weak.

Whether the merits of the system are greater than its defects is a question very difficult to answer. But the prevailing opinion seems to be that the advantages are far outweighed by the disadvantages.

Balance of merits and defects.

An important institution connected with the caste-system was the caste-guild of ancient times. Each caste was, to some extent, also a trade-guild. As a trade-union it used to insist on the proper training of the youth of its craft, to regulate wages, to deal with trade delinquents, and to supply courts of arbitration for the settlement of disputes.

The caste-guild.

Its functions.

Its objects.

Its chief objects were to regulate competition among its own members, and to uphold the interests of the body in its disputes with other craftsmen. The decisions of the guild were enforced by social penalties or fines. The guild encouraged efficiency by means of rewards and discouraged inefficiency by social disfavour. It also exercised the functions of a mutual assurance society; and by finding employment for the unemployed and helping the poor and the needy, the guild-system avoided the necessity of a poor-law.

Caste-guilds compared with mediaeval guilds of Europe.

The caste-guilds of India were, in many respects, similar to the guilds of mediaeval Europe; but there were many points of difference. These latter were not endogamous, and there was no bar to the admission into the circle of outsiders who had learnt the business. The common occupation was a real tie and a source of strength, not a symbol of disunion in the different parts of society as in the case of the Hindu guilds. Lastly, the European guilds might expand and develop, while the Indian system was rigid and stereotyped.

Their importance.

There was a time when these caste-guilds were of the greatest economic importance. By their excellent organisation they largely promoted the production of wealth. The famous fabrics of rural India were developed under the supervision of these guilds. Caste-guilds as such are now to be met with only in a few places in India,[1] and even where they exist they do not exercise anything like their old influence. But there are trade- or craft-guilds in almost

Modern trade-guilds.

[1] The highly-developed guild-system at Ahmedabad still exists.

every part of India, the objects of which are similar to those of the craft-guilds of old, but which are rarely strong enough to perform their duties in a proper manner. The membership is not necessarily confined to one caste. The bond of union is not half so strong, and they lack the unity of sentiment and efficiency of organisation which ensure the success of the trades-unions of modern Europe and America.

Mahomedan guilds.

The Mahomedans of India also have their trade-guilds, which are organised on principles similar to those of the Hindus. But the democratic organisation of Mahomedan society prevents these guilds from being stereotyped into castes. In some trades the guilds are well organised, and are strong enough to wield considerable influence over the members.

2. THE JOINT-FAMILY.

Family the unit of society.

In India, the unit of society is not the individual but the family. Among the Hindus this family includes not only the husband, the wife, and the children, but many more members besides. The essential feature of the system is that the consumption of goods is common, and every member of a family shares in the prosperity or adversity of every other member.

Consumption in common.

The Hindu law of property is essentially different from the laws which regulate property in the west. In Europe and America ownership, as a rule, is single, independent, and unrestricted. In India corporate property is the rule, and absolute

unrestricted ownership is found only in a few parts of the country and in rare instances in the rest. The law in this respect is based on the joint-family system, which was, and to some extent still is, the backbone of Hindu society.[1]

Originally, every Hindu family, and all its property, was not only joint but indivisible.[2] Now it has ceased to be so; but so long as partition does not take place, jointness is presumed, and every member has the right of enjoyment to the family property. The system is organised on the principle of subordination of all members to the head—not on co-ordination or equality of all members.

Different schools: Mitakshara, Dayabhaga.

There is a great deal of divergence in the doctrines of the various schools of Hindu law. The Mitakshara school, which governs the greater part of Hindu society outside Bengal, is more rigorous in its regard for the security of the joint-family than the Dayabhaga school, which governs Bengal proper. According to the former, ancestral property is owned and enjoyed by the members of a family as a whole, the share of each remaining unascertained until and unless there is a regular partition. The person who is the head of the family for the time being is only the manager, and has no right to sell or dispose of it in any way, except for the benefit of the family or for legal necessity. Dayabhaga, however, gives greater powers to the head of the family, and, according to recent decisions, he is considered as the absolute owner of the property, having full rights of disposal over it.

[1] Mayne, *Hindu Law*, p. 293. [2] *Ibid.* p. 332.

As for self-acquired property, both the schools give the owner full rights to it.

This system has existed in India for ages, but is now in a state of decay. It is regarded as a blessing by some thinkers and as a curse by others. Looked at from an economic standpoint, it appears to have merits as well as defects. The chief merit lies in the fact that almost everyone can be sure of a bare subsistence, which is the first condition of economic advancement. Children are not liable to be cast adrift into the world at a time when their physical and mental capabilities are as yet undeveloped. They receive a start which is a great advantage to them in their race of life. The aged, the weak, and the infirm are also taken care of, and may be made useful members of society.

Merits of the joint-family system.

But, on the other hand, it should be noted that when the means of subsistence are secured without any effort on a man's own part, he loses the great incentive to work, and is apt to become lazy and dependent on others. Self-reliance—the great virtue without which no economic progress is possible—is thus discouraged. Economic freedom, which is such an important matter in the production of wealth, is also curtailed. Moreover, the burden of a large family makes a man afraid of undertaking risks and unwilling to launch on new ventures. He is thus in a manner prevented from making the best use of his capacities.

Defects.

Sometimes not only consumption but also production is found to be in common. Every member contributes by his labour to the production of the

Sometimes, production in common.

family wealth. In such cases, the members of the joint-family are like the members of a communistic or co-operative society, and the advantages of the joint system are secured without some of its usually attendant evils. The situation is reversed in instances in which only a few work and the rest depend on them.

The economic gain is in some cases greater, and in others less, than the loss. The system is believed by some to be a relic of the old patriarchal form of family government, and is now steadily losing ground.

Mahomedan system.

The Mahomedans also generally live under the joint-family system, but among them there is no presumption of jointness. The bond of union, in fact, is not so complete as among the Hindus, and, consequently, the system is far less rigid. The Mahomedan law gives the owner of the property for the time being absolute dominion over it, whether such property be self-acquired or ancestral. He can dispose of it in any way he likes, provided that operation is given to the transaction during his lifetime. It is only in respect of dispositions by will that the donor's power is limited by the rights of his heirs.

3. THE LAWS OF SUCCESSION

Succession: among Hindus;

There is no such thing as succession, properly so-called, in an undivided Hindu family governed by the Mitakshara law. The whole body of such a family constitutes a sort of corporation, and, on the

death of any member, the property devolves on the remaining members by survivorship and not by succession. Succession takes place only when property is separate. Under the Dayabhaga law, however, succession takes place even to the joint property. The whole of the property passes to the male children when there are any. If there be no male children, it passes to the next of kin.

among Mahomedans.

Under the Mahomedan law, the property is divided, on the demise of its owner, among a larger number of heirs, many of the near relations obtaining shares even when there are male issue.

No primogeniture.

The law of primogeniture does not exist in India except in the case of ruling chiefs or in a few families where there is a special custom to that effect. Thus according to the Hindu as well as the Mahomedan law of inheritance, property, whether real or personal, is divided among a number of persons. The result of such division is that it prevents the accumulation of wealth in a few hands and enables a considerable number of persons to enjoy moderate wealth. It minimises the distance between the high and the low, and fosters a large middle class. Such a system is admirably suited in one respect to the industrial progress of a country, for it gives to a considerable part of the people something to start business with; but this amount not being large enough to live upon, most people are driven to work in order to be able to live in the standard of comfort proper to their social status. It fosters the growth of self-respect and the habits of self-help and self-reliance among a large class of

Division of property: its advantages,

disadvantages.

people. On the other hand, it hinders large-scale production for want of a concentration of capital; and in a country where the Joint-Stock and the Limited Liability Company systems are rare, it tends to arrest industrial progress.

4. THE VILLAGE SYSTEM

As we have already seen, the great body of the people of India is rural. It is so, not because the people do not know the art of building towns, but because the occupation of agriculture makes it necessary for the people to live in villages.

From the very earliest times, the village has always been the unit of administration in India. Here, as in all other countries of old, the people gathered together in villages for better protection and mutual assistance. The peculiarity of India, however, lies in the fact that a system of village communities prevailed here which lasted for many thousand years. Sir Charles Metcalfe gives an excellent description of these organisations, from which the following lines are worth quoting: "The village communities are little republics, having nearly everything they can want within themselves, and almost independent of foreign relations. They seem to last where nothing else lasts. Dynasty after dynasty tumbles down; revolution succeeds to revolution; Hindu, Pathan, Mogul, Mahratta, Sikh, English, are all masters in turn, but the village community remains the same."[1]

Village communities.

Sir Charles Metcalfe's view.

[1] Sir Charles Metcalfe continues: "This union of the village communities, each one forming a separate little state in itself,

Although the system of village communities is now in a state of decay, it has not yet been entirely overthrown. It still exists in a state of greater or less completeness in many parts of India, especially in the Punjab and Madras. These villages are walled in, and the people live within them as compact groups. Each village has its arable land and grazing field just outside the limits of the inhabited area. This land, together with the dwelling-houses, is technically known as the village. Its constitution and ownership may change, but the village itself as a local feature always remains the same. The village.

The original cause of the foundation of village communities is to be found in the co-operation of a number of persons for clearing the jungle and for defence against wild animals and neighbouring enemies. But the bonds which hold together the village landholders are not merely physical but social and economic. Origin. The bond.

There are two kinds of villages—the Raiyatwari and the Landlord- or Joint-village.[1] In the first, the village contains a number of cultivating holders who usually till the land themselves, but sometimes employ tenants. These holdings are separate units—they are not shares of a whole belonging to them all. The several holders are Two kinds: Raiyatwari,

has, I conceive, contributed more than any other cause to the preservation of the people of India, through all the revolutions and changes which they have suffered, and is in a high degree conducive to their happiness, and to the enjoyment of a great portion of freedom and independence."

[1] *Vide* Baden-Powell, *Land Systems of British India.*

distinct in interest, and the only bonds which unite them are locality, common subjection to the headman, and common services of the village artisans and menials. This form of village is universal in Madras, Bombay, Central India, and Berar; it also originally existed in the Central Provinces and Bengal.

Landlord-village.

In the landlord-village the holdings of the cultivating landholders are not separate units; they are parts of the entire area of the village which is owned by an individual or a family having the claim to be superior to the cultivating landholders. The proprietary body[1] is of common descent, and may consist of a large number of co-sharers. This co-sharing body rarely cultivates the land itself; more often, the land is cultivated by a subordinate body of tenants who pay rent to the landlord (or body of landlords).

Principles of sharing.

There are three principles according to which land is divided among the co-sharers: (*a*) The ancestral or family-share system (known as the *pattidari* system), by which each member of the co-sharing body takes the fraction of the whole which his place in the family 'tree' or genealogical table points out; (*b*) special customary system of sharing, *e.g.*, sharing in equal artificial lots (called the *bhaiachara* system), sharing by ploughs, or with reference to shares in water, or shares in wells; and

[1] Sir Henry Maine thinks that property in land, as it is understood in Europe, is a comparatively modern institution, but Baden-Powell, a great authority on the subject, contests this view (*Vide* Baden-Powell, *Indian Village-Community*).

(*c*) the system of *de facto* holdings, by which what each now holds is regarded as the measure of his interest. The landlord-village system prevails in the United Provinces of Agra and Oudh, the Punjab, and the North-western Frontier Province.

Sources.

Landlord-villages owe their origin to one of three principal sources. First, they may have been founded by single persons or grantees or revenue farmers; or they may have been founded by the dismemberment of the houses of ruling chiefs; or thirdly, they may have been created by tribal groups or colonist associations, as for instance, the Jats and the Rajputs.

Village officers.

The Headman:

his functions in Raiyatwari,

In each of the Raiyatwari villages there is an official headman (called *patel*, *mandal*, or *reddi*). His office has always been regarded as of great importance. He often exercises petty magisterial powers, and also decides petty suits either as an arbitrator or as a civil judge. He also performs various duties of a general character, concerning the well-being of the village. But he has no responsibility for the revenue, except that of his own holding. He holds a hereditary position, and is remunerated by the grant of a plot of land. In the landlord-villages the business of the village is entrusted to a punchayet or council of village heads, the leading man among them being selected as the representative of the body and the headman. He is called the *lumbardar*, and is directly responsible for the revenue of the village.[1]

and landlord-village.

The Patwari:

Another officer of the village is the *patwari* or

[1] There may be more than one *lumbardar* in a village.

his duties.

accountant. He is entrusted with many important duties. He has to keep the village accounts of revenue payments by the proprietors or co-sharers, and outstanding balances; of rent payments by tenants, and of items chargeable to the common expenditure of the village. He has to produce and keep the village maps, field-registers, and other records of landed rights, shares, and interests. He fills up the statistical returns of the crops sown and harvested, the number of cattle, and such other things. He has to take note of all changes that occur in the ownership of land. Lastly, he has to report at once to the tahsil any unusual occurrence in the village. Besides these officers, there is a watchman or *chowkidar* in each village, and, in some cases, one or two more officers.

Village economy.

Each village constitutes an industrial unit, of which the chief feature is its self-sufficiency.[1] It is, to a large extent, independent of relations with the outside world, so far as its internal economy is concerned, for within its own boundaries the village possesses all the factors which are requisite for the supply of its few wants. The great bulk of the people is agricultural. The cultivators take lease of small plots of the village land either directly from government or from a landlord (or a body of joint-landlords), to whom they pay rent. They work the land themselves with the aid of their family members and sometimes also of hired servants. They supply the small capital from their own savings or

[1] *Vide* Sir T. Morison, *Industrial Organisation of an Indian Province.*

borrow from the village landlord or the money-lender. They are also themselves the managers, organisers, and experts of their petty farms; and they carry their produce to the market—which is held once or twice in the week—to exchange it for other commodities.

Classes in the village.

Besides the two classes of landlords and cultivators, there is a third class of inhabitants in the village composed of the artisans. The weaver, the blacksmith, the oilman, and the jeweller supply the needs of the small society, and are recognised members of the village community. The petty shopkeeper performs the important function of exchanging the different products. The money-lender—who also usually combines other functions, especially that of a wholesale grain merchant—is, by virtue of his position, a very important member.

The place of competition in village economy.

The services of the artisans, etc., are very often paid for in kind. In the village economy there is very little competition[1] with the outside world, though within the village the motive of self-interest prompts everybody to find the best advantage for himself. Wages and profits are, to a large extent, governed by custom and are comparatively fixed and inelastic. Division of labour is carried to some extent, but as division depends on the extent of the market it cannot be carried very far. Labour is immobile; and what little capital there is in the village is locked up in the land.

Division of labour.

Immobility of labour.

Want of capital.

[1] Sir Henry Maine says, "Competition, that prodigious social force, of which the action is measured by political economy, is of relatively modern origin" (*Vide* Maine, *Village Communities*).

Sense of unity. The different classes in the village are conscious of the fact that each is dependent on the others, and that the interests of each class are bound up with those of the rest. Thus there grows up a strong sense of unity and solidarity which helps to preserve the integrity of the village.

Life in the village, The villager lives a simple, and in years of good harvest, a contented life. There is very little wealth in the village, but the evils of capitalism are also absent. The cultivator or artisan knows little of the comforts and luxuries of urban life, and does not miss them. He knows that there are things higher than those of this world, and strives to attain them in the way which his religion and traditions point out to him.

Such is the village system in its pure form. But to-day it is hardly to be found in its entirety in any part of India. The economic conditions of the changing. country are now undergoing a more or less complete transformation, and the village must necessarily change to keep pace with the march of events. The impact of western civilisation is also working a change in the ideas and ideals of the villager, and is making it impossible for him to retain his old simplicity of life.

5. STATUS AND CUSTOM

In India, every man is born into a certain status in society and family, and the whole course of his life is determined by such status. Custom was, in the ancient days, the supreme regulator of his actions

and relations in life. The influence of custom is, however, growing less every day. In India, as in every other progressive country, the movement is from status[1] to contract. Yet even now it may be asserted of a majority of the Indian people that their actions are governed more often by custom than by free competition. Mr. M. G. Ranade says, "There is neither the desire nor the aptitude for free and unlimited competition, except within certain predetermined groups or grooves. Custom and state regulations are far more powerful than competition, and status more decisive in its influence than contract."[2] The influence of custom, however, is not necessarily harmful. In many cases it is highly beneficial, for custom often stands forth as the protector of the weak against the strong. It furnishes an alternative principle to that of unlimited competition, which, while it makes the strong stronger, has often a tendency to extinguish the weak. On the other hand, competition helps in bringing out the best in man and nature, while custom not unoften hinders the process.

Influence of custom

Under the Hindu as well as the Mahomedan administration, and, to a large extent, during the early days of the British rule, custom used to regulate rents. Later, however, competition tried to assert itself in the fullest measure. The government then realised that the effect of unlimited

on rents,

[1] Status may be defined as the position or standing of a man as determined, not by his own free will, but by circumstances over which he has no control. Status is opposed to contract.

[2] Vide *Essays in Indian Economics*, by the late Mr. Justice M. G. Ranade.

competition would be to injuriously affect the interests of the masses of the people and to entail great misery on them. They, therefore, decided to confine the operation of competition within reasonable limits; and the main object of their rent legislation has been to secure to the tenants the rights conferred by custom. Custom thus is still, to a large extent, the foundation of rents in India. The Ricardian doctrine of rent has practically no application here; and, consequently, the conclusion drawn from that doctrine, namely, that rent forms no part of the price of agricultural produce, is also inapplicable to the case of India.

on wages, Custom was the chief regulator of wages in India till the middle of the last century. Nowadays, however, they are governed more by competition than by custom; but still they are not so elastic and responsive to changes of circumstances as in Europe or America. The fluctuations in the rates of wages are slight,—the deviations from the usual wage levels of any particular locality are always confined within narrow limits. In the remote villages, custom is still the chief factor in determining wages. The economic theory that wages depend on demand and supply of labour is as true in India as elsewhere, but the law finds a very limited scope for its operation.

on prices. Prices used also at one time to be determined, to some extent, by custom. But nowadays they almost always depend entirely upon the relations between demand and supply. It is only in the most remote villages that custom is now found to exercise any considerable influence on prices.

CHAPTER V

PRODUCTION

1. GENERAL OBSERVATIONS

Special conditions of land,

Of the factors of production, natural resources are, of course, of primary importance. India, as we have seen, is very rich in this respect. There is an abundance of fertile land as well as of mineral resources. The productivity of land, however, depends on rainfall, which is a very uncertain factor in the situation. Land is split up into millions of small plots, which are held by a numerous body of petty farmers. All land is subject to payment of rent.[1]

labour,

Labour is plentiful and cheap, but ignorant and mostly unskilled. Movement of labour from place to place is very irregular, and that from occupation to occupation is rare. Competition, when it acts, affects the labourer injuriously. The labourer is diligent and sober, but poor, unenterprising, and unambitious. He possesses a natural quickness of

[1] The hypothesis of no-rent land is true only in countries where there exists an active competition among the landowners, and where the demand for land has not yet outstripped the supply of it.

intelligence,[1] but education has not taught him how to put it to the right use. He is poor, and often heavily indebted. He usually works on his own account, and takes upon himself the functions of the capitalist and the business manager, which he is unfit to fulfil properly. Division and differentiation of labour is carried only to a limited extent.

capital,

Indigenous capital is not only small in the country, but also shy.[2] Even where there is wealth, lack of enterprise often prevents the owner from investing it in profitable undertakings, for he does not fully recognise the necessity of taking risks, and has lost the habit of forecasting the future.

organisation.

Business organisation, which is perhaps the most important factor in the success of modern industry, has not yet been developed to any appreciable extent in India. Practical experience—the best school for learning business—has not taught the people how to manage big concerns and to properly discharge the multifarious and arduous duties of the modern entrepreneur. Industrial training and the acquisition of commercial knowledge have been, until recent years, most lamentably neglected. The value of co-operation and combination is not fully appreciated. Men of ability and character rarely engage in busi-

[1] Sir John Strachey says, "The agricultural classes are certainly not inferior in intelligence to the peasants of many of the countries of Europe" (*India, its Administration and Progress*, p. 394).

[2] This is believed to be the result of the misrule which the country groaned under in the eighteenth century, and which prevented the accumulation of wealth and dulled the desire of the people to improve their economic condition.

ness, and the result is that those who do, do not inspire the faith and confidence which is the corner-stone of modern industrial activity.

These are the chief among the drawbacks which, in spite of the richness of natural resources, have prevented the production of wealth from proceeding at a rapid rate. The annual production is not at all comparable to that of any other civilised nation. The country generally is not in a prosperous condition. There are some who would go so far as to assert that the condition of the middle classes of society has decidedly become worse than before, while the poorer classes lead a precarious sort of existence from year's end to year's end. A large majority of the people never have a silver piece in their possession.

Average production.

The average farm production per head is calculated at Rs. 40 per year.[1] The average income per head as computed by Lord Curzon is Rs. 30 (£2); but Mr. William Digby and Mr. Dadabhai Naoroji would put it at an even lower figure. In calculating the income of the ordinary cultivator or labourer, the incomes of the rich and well-to-do classes must be deducted from the total national dividend. This would give us only 17s. as income per head of the ordinary people. This income compares unfavourably with the incomes of the other civilised countries. The average income of the people of the United Kingdom is £37, or 18·5 times as great as that of India. The average income

Average income.

[1] This is the figure also accepted by Sir Robert Giffen (vide *Economic Journal*, 1904).

in the United States is £39; that in France, £27·8; and in Germany, £22·2.[1]

Wealth.

Reliable statistics of the wealth of India[2] are not available. The average wealth per head of the population has been variously computed at from £10 to £25. The average wealth of the United Kingdom is £302 per head; of France, £252; of the United States, £216; and of Germany, £156.

This is certainly a very gloomy picture; but it need not fill us with despair about the future. Strenuous and persistent efforts on the part of the people are sure to lead to an immense improvement in the economic situation. As a matter of fact, there are already visible signs of the approach of a better state of things. The defects mentioned above are not inherent in the character of the people, but are the result of circumstances which they are now endeavouring to control and modify. We already find that a wave of enthusiasm for industry is passing over the land. A new spirit of enterprise is abroad. Labour is trying to shake off its lethargy

[1] *Vide* Mulhall, *Dictionary of Statistics*.

[2] India has been celebrated from the earliest ages for her immense wealth. She was at one time the richest country in the world. It was the wealth of India which was the cause of the foreign invasions from the time of Alexander down to the eighteenth century. When Sultan Mahmud of Ghazni sacked the temple of Somanath, the booty was so large that it was impossible to calculate its value. At Kanauj, Mahmud was so much struck by the splendour and magnificence of the city that he declared that "it was only rivalled by the high heavens." The spoil of Nadir Shah was valued at £625,000,000 (*vide* J. S. Cotton, *Colonies and Dependencies*, and Lethbridge, *History of India*).

and ignorance; capital is overcoming its shyness; and the people are preparing themselves for a new industrial life.

Summary.

The economic position, so far as production is concerned, may be summed up as follows: The productive capabilities of India are great. She possesses an abundance of natural resources and a plentiful supply of cheap labour; but she lacks capital, enterprise, and organisation. The defects are, however, remediable, and, as a matter of fact, attempts are being made to overcome them.

2. AGRICULTURE AND MANUFACTURE COMPARED

Before passing on to a somewhat detailed description of the agricultural and manufacturing industries of the country, it would be well to note the chief characteristics of a mainly agricultural country as compared with those of a mainly manufacturing country. They are:

Chief features of the two.

(*a*) In a mainly agricultural country competition, or rather freedom of enterprise—which is the chief feature of modern industry—cannot have its full application. The agriculturist has to go to the land for his work; but raw material can be brought to the manufacturer to be worked on by him.

(*b*) The agriculturist has to depend very largely on nature; he has to adapt his work to the seasons. But the manufacturer is more free in this respect.

(*c*) Much less specialisation is possible in agriculture than in manufacture.

(*d*) As the produce of agriculture depends largely on factors which are beyond human control, *e.g.*, rainfall, it is uncertain. In manufactures the produce is sure.

(*e*) In agriculture, the law of Diminishing Return applies with full effect. In manufactures, the effect of that law is often more than counterbalanced by the law of Increasing Return.

(*f*) In an agricultural country labour is generally immobile, because it is inconvenient and wasteful to the labourer to move from one plot of land to another; and where there is peasant proprietorship there can hardly be any movement at all. In a manufacturing country there are no obstacles to mobility of labour beyond the ordinary obstacles of the ignorance, poverty, and conservative habits of the labourers.

(*g*) There is much less scope for the division of labour in agriculture than in manufactures.

(*h*) The profits of manufactures are higher than those of agriculture; and, as a result, when exchange transactions take place between the raw materials of one country and the manufactures of another, the latter gains more by the exchange than the former.

(*i*) A manufacturing country is capable of supporting a larger population than an agricultural one.

CHAPTER VI

PRODUCTION—(*Continued*)

1. AGRICULTURE

AGRICULTURE is, of course, the most important industry of India. It gives employment to two-thirds of the total population of the country, and of the rural population nearly 90 per cent. are connected with it, either directly or indirectly.

People mainly engaged in agriculture.

In a large country like India, the productivity of the land cannot but differ from place to place. We have on the one side the exceedingly fertile black cotton-soil and the alluvial land of the Gangetic Delta, and, on the other, the barren rocks of the Vindhyan hills and the sands of western Rajputana. Intermediate between these two extremes is to be found almost every possible variety of fertility. Speaking generally, however, we may say that the land is fertile in India.

Productivity of land.

Land may be classified in a variety of ways. The chief classifications adopted are those into cultivated, cultivable, and non-cultivable; irrigable and non-irrigable; *ek-phasli* and *do-phasli*.

Land classified.

The actual produce of any year depends on the amount and distribution of the rainfall. The

Produce depends on rainfall.

periodicity of the seasons allows of two, and in some places of three, harvests in the year. The two main harvests are the *kharif*, or the summer crop, and the *rabi*, or the winter crop. The *kharif* crops require much water for their growth, and, therefore, are sown as soon as the south-west monsoon commences, and they are reaped between September and November.

Harvests:

rabi and *kharif*.

The *rabi* crops, as the name implies, are less dependent on rainfall. They are usually sown in October and November, and they ripen in March and April. The conditions affecting their growth being different, the character of the two kinds of crops also differs. This difference in character, however, is specially marked in Northern India; but is less marked in Bengal, and still less in Madras. During the period of their growth they are subject to a considerable degree of cold, which limits the choice of staples. In Bengal and Madras very much the same kind of crops may be grown in summer and winter.

The *rabi* less dependent on rainfall than *kharif*.

In the Bombay presidency, which gets almost the whole of its rainfall from the S.W. monsoon, *kharif* is the chief kind of crops. Madras grows chiefly the *rabi* crops, for it is in winter that the N.E. monsoon brings rain to the province. In Northern India the south-west monsoon rain gives the condition necessary for the growth of varied *kharif* crops, while the winter weather is well suited to the *rabi*.

Indian crops may be divided into (1) cereals, (2) pulses, (3) oil-seeds, (4) fibres, (5) dyes, (6) drugs, (7) spices, (8) table-vegetables, (9) pot-herbs,

Classification of crops.

(10) miscellaneous crops, (11) fruits, (12) fodder crops, and (13) root-crops. This division, however, is not strictly logical, as some of the crops fall into more than one of the classes. A brief account of the chief crops is given below, which will perhaps be found useful.

The chief crops: Rice.

Rice is grown in areas of heavy rainfall, as, for instance, Bengal, Assam, Burma, and the west coast of Bombay. Not only is it far the most important crop of Bengal, but over 34 per cent. of the cultivated area of India is under rice. The varieties of rice are innumerable. In Bengal there are two main harvests, the *aus*, or early crop, and the *aman*. The *aus*, being a winter crop, does not require as much rainfall as the *aman* does. The *aus* rice is all coarse, and is eaten by the poorer classes alone; but it serves as a provision against famine when there is a failure of the rains. Rice is an important crop in Madras and Bombay also. In the United Provinces and Oudh it is grown either in damp localities or with the help of irrigation. It is practically the sole crop in Deltaic swamps.

Wheat.

Wheat is grown in more or less quantities in every province. The great wheat-producing tracts, however, are the United Provinces, the Punjab, Behar, the Central Provinces, and Rajputana. The conditions favourable for the growth of wheat are exactly the reverse of those of rice; consequently, we find that, broadly speaking, where rice thrives, wheat does not. Wheat is a *rabi* or winter crop. Wherever possible it is irrigated. There are two chief classes of wheat, soft and hard. Indian wheat

compares very favourably with the wheats of other countries, and India is, next to the United States, the largest wheat-producing country in the world.

Barley and Oats. Barley is grown to a small extent all over India, and chiefly in the United Provinces. It serves as food for men as well as animals. Oats are a very minor crop in India.

Maize. Maize is grown in most parts of India, but in the United Provinces it forms an important food-crop.

Millets. Millets are grown extensively in almost every part of India. There are several varieties of this crop, the chief being juar, which is the staple grain-crop of Southern India. Millets can be used also as a fodder-crop.

Buckwheat. Among cereals is also classed buckwheat, the grain of which is very nourishing. It is grown in the Darjeeling hills and also in the Central Provinces and Behar.

Pulses of various kinds. Next to cereals, pulses occupy the most important place as food-grains. Various kinds of pulse-crops are grown in India; the most important of these are *arahar*, *chana*, *musuri*, *urd*, *mug*, and *kalai*. Pulse-crops thrive best in the United Provinces and Behar. In the Deltaic portion of Bengal they do not grow well, an excess of ordinary salt being injurious to these crops. Some of the varieties of pulses are used as fodder for cattle.

Oil-seeds. Oil-seeds form very important crops in every part of India. Next to cereals they occupy the largest area in Bengal. There are several kinds of these, the more important among them being

mustard (*rye, sorson,* and *tori*), linseed (*tisi*), *til*, castor (*rehri*), *sorguja* and ground-nut. Oil is also obtained from fruits, such as cocoa-nut and mahua, from various flowers, and from cotton-seeds. Castor-seed is also important because the *eri* silk-worms are reared on its leaf. The enormous export trade in oil-seeds is a great loss to the country. It is desirable, therefore, to export only the oil and to retain the cake for use as animal food or manure in the country.

Among the fibre-crops, jute and cotton, of course, are the most important. Bengal holds the virtual monopoly of jute in the world. There are extensive areas in some of the other provinces of India also, which may prove suitable for this industry. It is chiefly grown on land which is liable to be submerged in the rainy season. The conditions which are suitable for rice are also suitable for jute. It is a very paying crop. The first mention of jute as an article of export was made in 1828. Three-fourths of the product are now exported out of the country. The out-turn of jute in Bengal may now be put down at six million maunds, rated at eight or nine crores of rupees. It is now grown in many places where rice used to be grown before; and this is a matter deserving of consideration. Jute.

Two other fibre-crops allied to jute are Bombay hemp or *mesta-pat*, which is regarded by experts as even superior to jute, and *sunn*-hemp. Rhea is another important fibre-crop. Great hopes are entertained of the prospects of this industry in future. Aloe-fibre is also a useful economic product, *Mesta-pat.* *Sunn*-hemp. Rhea. Aloe-fibre.

which is grown only in tropical and sub-tropical countries.

Cotton. Cotton holds a very important place among the agricultural products of India. It is grown more or less over almost the whole of the country. The principal cotton-growing tracts, however, are the plains of Guzerat and Kathiawar, the highlands of the Deccan, the valley of the Central Provinces, and Behar. They fall into two classes: cotton-crop and tree-cotton; but there are numerous forms of the cotton-crop, and tree-cotton also is of several kinds. In Peninsular India the most suitable soil for cotton is the black cotton-soil. The quality of the product is inferior to that of the United States, and the yield per acre is also less. It is believed, however, that cotton cultivation is capable of being greatly improved. Unless attempts are made in that direction, India is sure to be ousted from the cotton market by other countries.

Indigo. Indigo was at one time one of the chief crops of India. The use of aniline dyes has, however, greatly diminished its importance. Its cultivation has now ceased in Bengal, but has been continued in a less degree in Behar and the United Provinces.

Poppy. Poppy cultivation is mainly restricted to Behar and districts of the United Provinces north of the Ganges. In British India it is conducted on behalf of the government. Poppy is also cultivated in some of the Native States of Rajputana and Central India. It is a *rabi* crop.

Tobacco. The total quantity of tobacco grown in India is large. It is grown in every district; but the chief

places of production are the Tirhut districts of Behar, Rangpur in Bengal, and certain districts of Madras.

Tea, Coffee, and Cinchona.

The chief tea-growing tracts are Assam, Darjeeling and Julpaiguri in Bengal, the Nilgiris in Madras, Dehra-Dun in the United Provinces, and the Kangra valley in the Punjab. The export trade of tea is already large, and there is room for further expansion. The cultivation of coffee is confined wholly to Southern India. The two main centres of the cultivation of cinchona are Darjeeling and the Nilgiri hills. It is a government monopoly.

Table vegetables.

Of table vegetables a large variety is found in India. The most common and important is potato. It is usually grown after aus paddy or jute; in tracts of the country where potato is the principal crop, it often forms the only crop of the year. Deep cultivation is essential for the growth of the crop. The other common vegetables are *palvals*, brinjals, cabbages, cauliflowers, tomatoes, and turnips. Akin to potatoes is cassava, called *simulalu* or *Sarkar-kanda*. This vegetable sometimes serves as the chief food during a famine. It resists drought and yields a nourishing and palatable food. A more extended cultivation of the article is desirable as a protection against famine.

Fruits.

Nowhere, perhaps, in the world can a larger variety of fruits be found than in India. The cultivation of fruits is not, however, undertaken according to proper scientific methods. If that is done, the quality of the fruits will be improved and

the yield greatly increased. India is capable not only of supplying herself abundantly with fruits, but also carrying on a lucrative trade with other countries.

Sugar.

Sugar was, at one time, a very flourishing industry in India. It has now greatly declined owing to the importation of foreign sugar. It still possesses, however, great possibilities, and of recent years there have been visible signs of a revival. It may be regarded as a half-manufactured article. Sugar is obtained either from the sugar-cane or the palm. The best cane is grown in the United Provinces and in some districts of Behar. Palm-sugar is manufactured either from the juice of the ordinary palm or of that of the date-palm. The palm-sugar industry still languishes in some districts of Bengal.

Spices.

Although spices of various kinds are grown in different parts of the country, the total production is not sufficient to meet the demand; and a great extension of their cultivation is needed.

Lac and Indiarubber.

Among the miscellaneous crops the more important are lac and india-rubber. Lac is a resinous incrustation formed on the twigs of certain trees. Assam, Burma, and the forest districts of the Central Provinces and Nagpur are the chief sources of its supply. The importance of india-rubber as an economic product is being recognised more and more widely every day. In India, its principal sources of supply are Assam and Burma. If the cultivation of rubber on a large scale can be made successful in India, it would add materially to the national income.

Sericulture was once a profitable industry, but towards the middle of the last century it declined. At present it is showing signs of a revival. The chief area is in selected parts of Bengal, Assam, and the Central Provinces. Sericulture.

The crops most largely used as fodder-crops are *juar*, *bajra*, and *ragi*. In the Punjab and in Behar *juar* is largely cultivated as a fodder-crop. It is also grown in some parts of Bombay. In Madras *ragi* mostly takes the place of *juar*. Sugar-cane, as a fodder-crop, is used principally by the European planters in Behar. Grams, oats, barley, turnips, and prickly pears are grown in different parts of the country as fodder-crops. Some kinds of trees are frequently very valuable as supplying fodder for cattle. Very little, however, is known of the comparative feeding values of Indian fodders. It is needless to say that the cultivation of fodder-crops is very necessary for the improvement of cattle. Fodder-crops.

Accurate and reliable statistics regarding the agricultural produce of India are not available. But the following figures[1] will give the reader approximate ideas: Agricultural statistics.

	Million acres.
Net area of land by professional survey,	623
Area under forest,	82·5
Not available for cultivation,	157·6
Cultivable waste other than fallow,	113
Fallow land,	50
Area irrigated,	42
Net area sown with crops,	218

[1] The figures are for the year 1908-09 (vide *Agricultural Statistics of British India*, and *Statistical Abstract for British India*). Figures are not available for the Native States.

	Million acres.
Total area under food-grains, - -	197
„ „ other food crops, -	7
„ „ sugar, - - -	2·5
„ „ coffee, - - -	0·1
„ „ tea, - - -	0·5
„ „ oil-seeds, - -	14
„ „ cotton, - -	13
„ „ jute, - - -	3
„ „ opium, - -	0·5
„ „ indigo, - -	0·3
„ „ tobacco, - -	1
„ „ fodder-crops, -	4·6

Of the total area under food grains a little more than one-third is under rice, slightly more than one-fifth under wheat, and about one-fourth under bajra. The average out-turn of wheat in India is 13 bushels per acre, while it is 29½ bushels in England.

Arboriculture. Arboriculture is a science akin to agriculture, though trees can hardly be classed as agricultural crops.

India is capable of growing various kinds of trees. They grow naturally on tracts where there is an abundant rainfall; but they can be grown everywhere,—even in the arid tracts. At one time almost the whole country of India was covered with trees. In the first half of the nineteenth century, however, the matter was badly neglected, and many parts of the country were denuded of forests. The propagation of trees which yield starch, oil, sugar, vegetables, and fibres is of vast importance to a country where failure of agricultural crops through drought or inundation is of frequent occurrence.

Apart from their invaluable uses for food, fodder, and timber, trees are highly useful for their influence on the climate and rainfall. The presence of trees reduces the temperature of the atmosphere, while radiation is hindered at night. Trees thus produce the effect of equalising temperature; and by keeping the atmosphere moist they induce the fall of rain.[1] Beneath the shade of trees a rich layer of humus is formed which keeps the roots cool in summer and warm in winter, besides absorbing and retaining a great quantity of water. It is in this way that trees sometimes change the character of the poorest soils permanently for the better. Further, they prevent the soil from being washed away or denuded by rain. Trees also act as a most valuable fertilising agency of surface soils by bringing up food materials from the depth of the land and storing them in leaves, which afterwards fall and get mixed up with the soils. Lastly, they serve as break-winds in localities where high winds are an objection. It is essential, therefore, that the earnest attention of the people as well as the Government should be turned in this direction.

Beneficial influence of forests.

In India, as we have seen, the land is split up into millions of small holdings. Agriculture is consequently practised on a small scale. Cultiva-

Method of agriculture, small scale,

[1] This has been proved by experiment. For instance, in the Delta of the Nile, since the planting of trees the average number of rainy days in the year has increased from 6 to 40. In India many fertile parts of the country have become sterile since the destruction of forests (*vide* N. G. Mukherji, *Handbook of Indian Agriculture*).