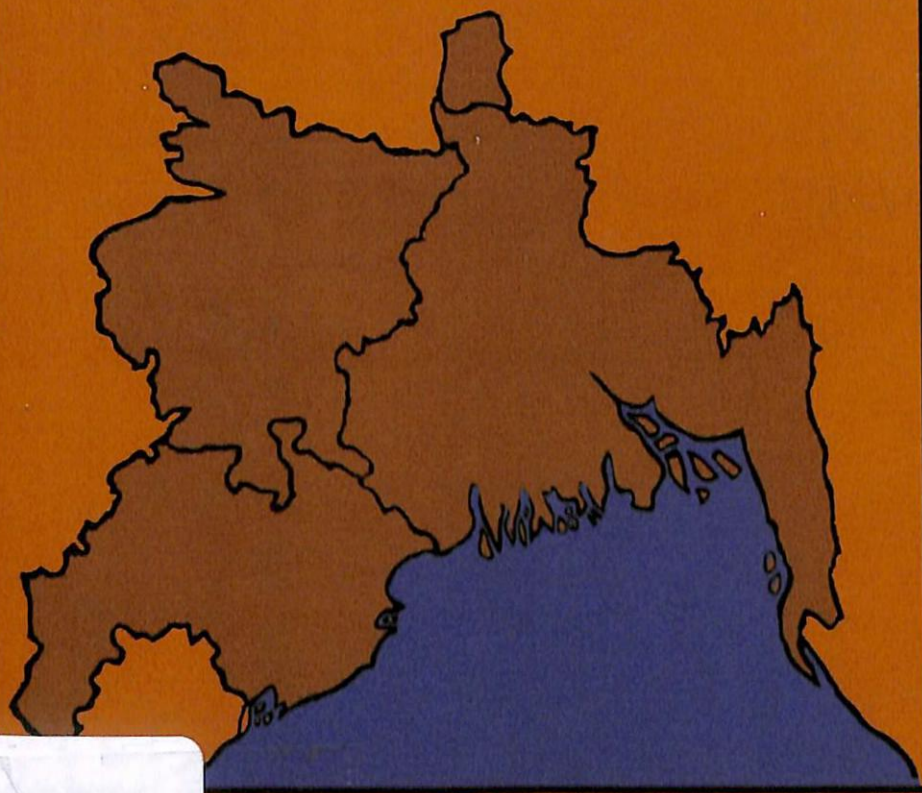


# BENGAL BIHAR AND ORISSA SIKKIM

*L. S. S. O'MALLEY*



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REGIONAL GEOGRAPHIES OF INDIA

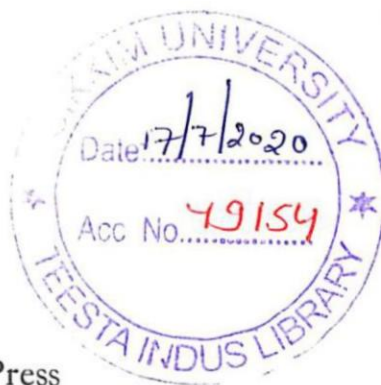
BENGAL  
BIHAR AND ORISSA  
SIKKIM

BY

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## CHAPTER I

### PHYSICAL ASPECTS

THE country dealt with in this volume, though only one-ninth of the total area of India, is nearly as extensive as the German Empire, while its population is considerably more than a quarter of that of the whole Indian Empire. It includes : (a) The Presidency of Bengal, with an area of 84,092 square miles and a population of 46,305,642 persons. It is somewhat smaller than Great Britain, but contains nearly a million more inhabitants than the whole of the British Isles. (b) The Province of Bihar and Orissa, which extends over 111,829 square miles and has 38,435,293 inhabitants. Its area is a little greater than that of Italy, while it is only a little less populous than France. (c) The State of Sikkim, a small and sparsely populated country, with an area of 2818 square miles and a population of 87,920 persons.

The name Bengal has at different periods borne very different meanings. Under the Muhammadan rule it designated the Bengali-speaking area in the alluvial basins of the Ganges and Brahmaputra, of which the limits roughly corresponded with those of the modern Presidency. Under British dominion its significance was changed. The term "Bengal Establishment" was applied to all the settlements of the East India Company in north-eastern India, from Balasore in Orissa to Patna in the heart of Bihar. These were grouped together in the



Presidency of Bengal, which bore the official title of Fort William in Bengal, Fort William being the name given to the English settlement at Calcutta in honour of William III. As the limits of British authority were extended, the ceded and conquered territories in northern India were added to the Presidency, until it comprised all the British possessions outside the Bombay and Madras Presidencies.

This wide connotation of the name Bengal was perpetuated until recently by the military system of "Presidency Armies" and "Commands." The whole of northern India was allotted to the Bengal army until 1895, while, from 1895 until the reorganization of the Indian army in 1905, the Bengal Command included the United Provinces, Bihar and Orissa, Assam, and parts of the Central Provinces, as well as the present Bengal. The old use of the term has not altogether fallen into desuetude. The term Bengal Civil Service is still occasionally used for members of the Indian Civil Service serving in northern India, while the India Office List shows all members of that service in the Punjab, North-West Frontier Province, United Provinces, Central Provinces, Bengal, Bihar and Orissa, Assam and Burma as members of the Bengal Establishment.

Different administrative areas have also gone by the name of Bengal during the last sixty years. In 1854 a separate province of Bengal was created which included practically the whole of the present provinces of Bengal and Bihar and Orissa, and also Assam, which was detached and placed under a Chief Commissioner in 1874. Thenceforward the name was applied to the territory under the administration of the Lieutenant-Governor of Bengal, i.e., Bihar, Chota Nagpur and Orissa, as well as the present Bengal, which was, and still often is, distinguished by the appellation of Lower Bengal or "Bengal proper." In 1905 the province of Bengal was reduced to a much

smaller area, as shown in the map on page 158, but this arrangement did not last long, for in 1912 the Presidency of Bengal was created. The opportunity was taken to revive the old official designation of Fort William in Bengal, but it is usually called Bengal, and in ordinary speech the name of Fort William is only applied to the fort

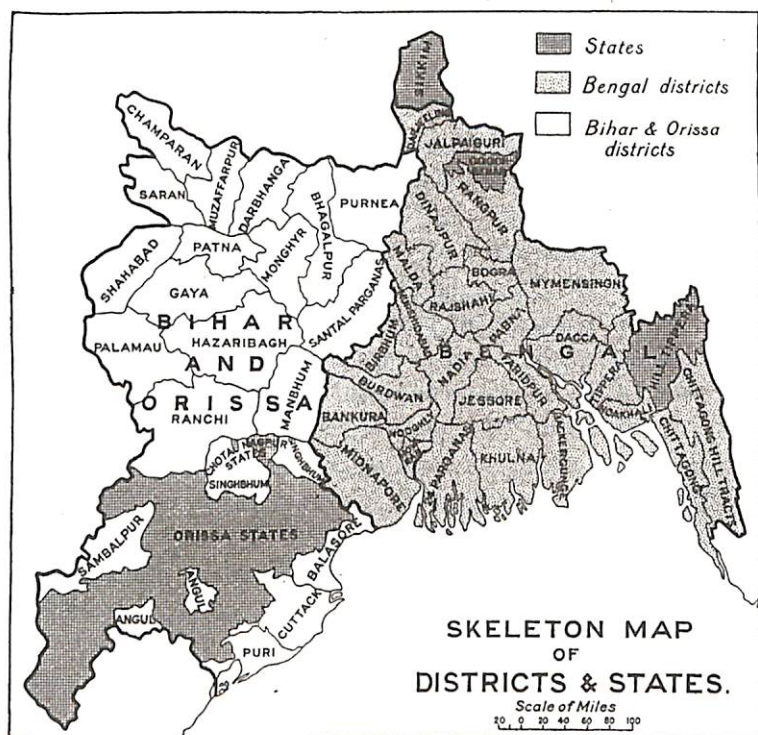


Fig. 1. Skeleton Map of Districts and States

in Calcutta. In this volume the name Bengal refers solely to the newly created Presidency.

Bengal lies between the twenty-second and twenty-seventh parallels of north latitude, while its limits east and west lie between the eighty-seventh and ninety-third degrees of east longitude. It stretches from the Himalayas

to the sea, being bounded on the north by the Himalayan countries of Nepal, Bhutān and Tibet, while its southern coast is washed by the waters of the Bay of Bengal. To the east lie Assam and Burma, and on the west it is bounded by Bihar and Orissa. Nearly the whole of it is a fertile alluvial plain watered by the Ganges and Brahmaputra and by their numerous tributaries and effluents. For thousands of square miles neither a hill nor a rock can be seen, nor can even a stone be found in the silt-formed soil. Far different is the appearance of this deltaic country from that of the alluvial river-plains to the north-west. "The air is now languorous and vapour-laden, the vegetation luxuriant and tropical. The firm grey plain of wheat and millets and sugarcane, dotted with clumps of park-like trees, gives place to rice swamps and bamboos, palm and plantain." Though there is a gradual rise of level to the north, it is so small as to be imperceptible. Calcutta, 86 miles from the sea, is only 18 to 21 feet above mean sea level, and Siliguri, at the foot of the Himalayas over 300 miles from Calcutta, has an elevation of only 400 feet. There are, moreover, scarcely any ridges or marked undulations to break the uniformity of the level flats. Monotony therefore is the defect of the scenery. At the same time, the monotony of the scenery is relieved by the prodigality of nature. Heat and humidity produce a prolific vegetation. The eye accustomed to the sunbaked plains of northern India is soothed by perennial turf and the fresh greenness of the countryside; while scattered homesteads, nestling in thickets of bamboos, palms, plantains and evergreen plants, have a certain quiet charm of their own.

With the exception of some small areas to the extreme north and south-east, which will be described later, the whole country is remarkably homogeneous. Certain natural divisions are, however, recognized, the difference



between which depends mainly on the extent to which the process of land-making by the great rivers is in progress, is gradually disappearing or has altogether ceased. The first is **North Bengal**, which lies from west to east, between Purnea and the Brahmaputra and, from north to south, between the lower spurs of the Himalayas and the Ganges. The country slopes gradually southwards in a wide alluvial plain, watered by rivers debouching from the Himalayas, and broken only by the Barind. This is a comparatively high belt of older formation on the confines of Dinājpur, Mālda, Rājshāhi and Bogra ; it is still in many places covered with brushwood jungle, interspersed with large trees, the remains of an extensive forest. North Bengal has been subject to great fluvial changes. The Tīsta river once flowed through its centre to meet the Ganges, but in 1787 it changed its course and broke into another channel by which it found its way to the Brahmaputra. Owing to the vagaries of this torrential river, the country is seamed with silted channels.

**West Bengal** is the country to the west of the Bhāgirathi and Hooghly rivers, which stretches from the Bay of Bengal to the fringe of the Chota Nagpur plateau. It includes two distinct zones, one a semi-aquatic rice plain, the other a rolling upland country, which lies outside the true delta. The former, which comprises the districts of Hooghly and Howrah and the east of Burdwān, Midnapore and Bānkura, is a low-lying delta formed by the Bhāgirathi, Dāmodar, Ajay and Rupnarayan rivers. Between the rivers the surface sinks into basins, some of which are only a few feet above mean sea level. To the west a hard ferruginous soil takes the place of the deltaic detritus, and wide expanses of scrub jungle are found instead of the closely tilled fields of the eastern lowlands. In the north-western corner the poverty of the soil is compensated by richness of mineral resources, which have



made this part of West Bengal a hive of industry. It is here that the Rāniganj coal-field is situated, while the iron-ore and clays found in close proximity to the coal measures partly feed the blast furnaces at Barākar and the pottery works at Rāniganj.

In Central Bengal, lying between the Bhāgirathi on the west and the Padma and Madhumati on the north-east and east, we enter on a typical delta, in which the process of land formation has nearly entirely ceased. Nowhere higher than 70 feet above sea level, its elevation sinks in the south to between 10 and 20 feet. The greater portion has now been raised, by the deposit of silt, to a height which ensures it against inundation, but at the same time prevents it from receiving the fertilizing layer that the floods formerly left behind them. It is a land of dead and dying rivers—to use the expressive Indian terms—of low rice plains and swamps (called *bils*), which will never be filled in because the rivers no longer distribute the silt-laden waters of the Ganges, being locked into their channels by the high banks of silt which they have deposited. Engineering skill has, however, shown that even the morasses can be made available for tillage and human habitation. In the 24-Parganas district the Magra Hāt drainage scheme has recently reclaimed a swampy area of 290 square miles, where formerly the inhabitants were said to be “inured to a semi-amphibious life by a long course of preparation resulting in the survival of the fittest.” There is one large but shallow lake, called the Salt Water Lake, which extends over 30 square miles in the vicinity of Calcutta.

**Eastern Bengal**, lying to the east of the Padma and the Madhumati, is the united delta of the Ganges and Brahmaputra, in which the creative energies of those great rivers have full and free play. It is a fertile semi-aquatic plain, rich in crops of rice and jute, and covered by a network of

ivers, streams and creeks. Boats take the place of carts, the waterways serve as roads. The land is subject to annual inundation and silt fertilization. The slope of the country is away from and not towards the chief rivers, and the water in the minor channels flows from and not towards the main streams. In the rains a volume of turgid water spreads itself over the country; low-lying areas are inundated to a depth of 8 to 14 feet, the water covering



Fig. 2. A Bengal *Bil*

everything but the river banks and the artificial mounds on which the houses are built. Strange as it may appear, this is the healthiest part of Bengal and the land is thickly populated, the density in some parts being over 1000 per square mile.

The level is only broken by a low tableland in the north-east, called the Madhupur Jungle, which, as its name implies, was formerly covered with forest. Its

average height above the plain is only 40 feet, but its ridges have exercised an influence out of all proportion to their height, for the hard clay of which they are composed has resisted the erosion of the great rivers and deflected them to the south-east. These rolling uplands covered with short grass or dark green forest afford a welcome relief to the monotony of the alluvial flats. Away from the great rivers with their moving panorama of boats, from the dug-out canoe to the large cargo boat with its high bow, broad stern, bulged-out belly and spreading square sails, the scenery is generally tame and dull.

"In the lowest parts of all," writes Mr B. C. Allen of the typical district of Dacca, "the depth of the flood is such that the houses have to be perched on hillocks, where there is barely room for a cowshed and none for anything so pleasant as a garden. This dismal country is really least unattractive in the rains. It is then covered with water, which is green with jute, and all the creeks and channels are full. These minor streams flow between banks which are higher than the neighbouring country and are generally fringed with trees, and thus form more attractive waterways than the great rivers, from which little can be seen but a dreary waste of waters, with here and there a few huts rising precariously above the flood which threatens to engulf them. The people who live in these tracts have become almost amphibious in their habits. In the height of the inundation no land is to be seen, and all travelling has to be done by boat. To say that travelling has to be done by boat gives, however, but an inadequate idea of the real condition of affairs. Half a dozen huts are clustered together on a little hillock a few yards square, and the inhabitants cannot proceed beyond that hillock, whether to visit their neighbours or their fields, to go to market



or to school, without wading, swimming or travelling in or on something that can float. This expression is used advisedly, for the people by no means confine themselves to boats. For minor excursions rafts made of plantain trees are much in vogue or circular earthenware pipkins, more difficult of navigation than a coracle. A visitor to one of these hamlets in the rains may see a grey-bearded patriarch swimming towards him from the fields and may be asked for alms by an old woman standing in water breast-high amongst the jute plants."

From the preceding pages it will be seen that the greater part of Bengal is a delta in various stages of formation. The process is connected with great changes in the lower course of the Ganges, which have taken place within historic times. Formerly the main body of its waters flowed southwards to the sea through the Bhāgirathi, but as this channel silted up, the main stream made its way into other distributaries, moving further and further eastward until it found an outlet in the Padma, as the present main stream is called. The effect of its movements on the land surface is lucidly described by that eminent geologist, the late Dr Thomas Oldham, whose description throws such light on the physical geography of Bengal, that it may be quoted *in extenso*.

"I suppose no one will hesitate to acknowledge that the whole of the country lying between the Hooghly on the west and the Meghna on the east is only the delta caused by the deposition of the debris carried down by the rivers Ganges and Brahmaputra, and their tributaries. It is also equally well known that in such flats the streams are constantly altering their courses, eating away on one bank and depositing on the other, until the channel in which they formerly flowed becomes choked up, and the



water is compelled to seek another course. It is also certain that, in this peculiar delta, the general course of the main waters of the Ganges has gradually tracked from the west towards the east, until, of late years, the larger body of the waters of the Ganges have (*sic*) united with those of the Brahmaputra, and have together proceeded to the sea as the Meghna. Every stream, whether large or small, flowing through such a flat, tends to raise its own bed or channel, by the deposition of the silt and sand it holds suspended in its waters; and by this gradual deposition the channel bed of the stream is raised above the actual level of the adjoining flats. It is impossible to suppose a river continuing to flow along the top of a raised bank, if not compelled to do so by artificial means, and the consequence of this filling in and raising of its bed is that, at the first opportunity, the stream necessarily abandons its original course, and seeks a new channel in the lower ground adjoining, until, after successive changes, it has gradually wandered over the whole flat and raised the entire surface to the same general level. The same process is then repeated, new channels are cut out, and new deposits formed.

“ Bearing these admitted principles in mind, look to the delta of the Ganges and Brahmaputra. The Ganges river, emerging from its upper levels round the Rājmahāl Hills, and prevented by their solid rocky barrier from cutting further to the west, sought its channel in the lower ground adjoining, and originally the main body of its waters flowed along the general course now indicated by the Bhāgirathi and Hooghly. But, gradually filling up this channel, it was again compelled to seek a new course in the lower, because as yet comparatively unfilled-in, ground lying to the east. And the same process being repeated, it wandered successively from the rocky western limit of the delta-flat towards the eastern. If this progress

eastwards was allowed to be sufficiently slow to admit of the gradual filling in of the country adjoining, the delta was formed continuously up to the same general level, and the larger streams or channels, passing through this flat to the sea, became unavoidably diminished in size and in the quantity and force of the water they carried, the main body passing around further to the east and having its course in the channels successively formed there."

The southernmost portion of the delta goes by the name of the **Sundarbans**, meaning literally the forests of *sundri* trees (*Heritiera littoralis*). The area so designated is 6500 square miles in extent, or about half the size of Holland. It stretches for nearly 200 miles along the Bay of Bengal, and its average breadth inland is from 60 to 80 miles. It is sometimes depicted as a desolate region, half-land half-water, a labyrinth of interminable forest and swamp, devoid of human habitation. This is no longer the case with the northern portion, where the morasses have been converted into fertile rice fields. The jungle is, moreover, being steadily pushed back and the margin of cultivation extending southward. Its spread is conditional on the eradication of jungle, the construction of dams and dykes to keep out salt water, a rainfall sufficient to wash the salt out of the soil, and last, but not least, a supply of drinkable water—that first essential of human settlement. It need not be altogether fresh, for the people seem to get inured to brackish water, which they drink regularly, without any apparent evil consequences: in many parts fresh water is more difficult to get than food. The southern portion of the Sundarbans is still a network of tidal waters, sluggish rivers, inosculating creeks and forest-clad islands. No less than 2000 square miles are under forest, the most plentiful and important species being the *sundri*. It is "a sort of drowned land, covered with

jungle, smitten by malaria, and infested by wild beasts; broken up by swamps, intersected by a thousand river channels and maritime backwaters, but gradually dotted as the traveller recedes from the sea-board with clearings and patches of rice land."

There are two tracts outside the alluvial area which have still to be described, viz. a hilly region on the south-east frontier and a small Himalayan area to the north. The former consists of a succession of low hill ranges occupying the district of Chittagong, the Chittagong Hill Tracts and Hill Tippera. In the district first named the hills enclose cultivated river valleys of considerable extent; they are separated from the sea by a belt of alluvial land, which near the coast merges into a mangrove swamp with vegetation like that of the Sundarbans. The Chittagong Hill Tracts and Hill Tippera are made up of forest-clad hills and ravines, sparsely inhabited by aboriginal tribes of Mongoloid origin, who are only just beginning to learn the use of the plough.

To the north the frontier district of Darjeeling contains a small portion of the Himalayas. The mountains rise from the plains in a succession of bold spurs and ridges separated by deep valleys and attain a height of 12,000 feet in the Singalila range. On one of the ridges the hill station of Darjeeling is perched at a height of 7000 feet above sea level. Below that height many of the slopes are laid out with tea-gardens, but above it primeval forest still holds its own. The country at the base of the Himalayas is known as the *Tarai*, i.e., the wet lands. It is a marshy belt of land, notorious for its unhealthiness, which was formerly covered with dense forest. This has been partially cleared away, giving place to trim tea-gardens and ordinary cultivation; but wide stretches are left, in which the *sāl* tree (*Shorea robusta*) predominates. In this forest region gigantic trees tower a hundred feet or



more above one's head, and there is a luxuriant undergrowth of matted cane brakes, bamboo thickets, etc. Further into the plains the forest growth is replaced by savannahs, reedy flats and grassy plains with grass growing 20 feet high, through which one can scarcely force one's way unless on an elephant.

In Jalpaiguri this Tarai country is known as the **Duārs**,



Fig. 3. In the Tarai

or more strictly the Western Duārs, as it is the western portion of the Bhutān Duārs, or doors of Bhutān, a tract that was annexed from Bhutān in 1865. This submontane region has an average breadth of 22 miles and a total area of nearly 2000 square miles, of which a quarter is still under forest. In the north a series of wooded plateaux, rising to between 1200 and 1500 feet high, form a connecting link between the hills and the plains. Their



soil, climate and rainfall (which reaches 180 inches in the year), are all well adapted to the growth of the tea plant, the cultivation of which is carried on in a chain of tea-gardens. The land at the foot of these plateaux, which fifty years ago was under heavy grass and reed jungle, has now been brought under the plough and yields magnificent crops of rice, jute and tobacco

**Sikkim** presents the most extraordinary contrasts within its narrow limits. Its mountains tower up far above the snow line, reaching an altitude of 28,146 feet in Kinchinjunga on the western boundary. The valleys between them descend to a minimum level of little more than 700 feet. Every variety of climate and vegetation is found—tropical, temperate and Alpine. On the higher elevations is perennial snow. In the lower valleys a tropical vegetation runs riot in a steamy hot-house atmosphere. The rainfall in the south is heavy, averaging 133 inches in the year at Gangtok, but in some of the valleys to the north it falls to 20 inches or less. It is a land of stupendous heights and depths; but what perhaps most strikes the ordinary traveller, who has to keep below the snow line, is the peculiar V-shaped valleys with steep and often precipitous slopes. The rivers at their base run in deep ravines, the ascent from which is almost precipitous for the first few hundred feet. So narrow and deeply cut are their channels, that though their roar may be heard from afar, the stream itself is often invisible until within a few hundred yards.

The population is practically confined to the ridges, slopes and valleys below 7000 feet, that being the highest level at which maize, the staple food of the people, will ripen. In addition to maize, millets and pulses are extensively cultivated, while rice is raised on the slopes below 4000 feet. Irrigation being essential to rice cultivation, and there being no such thing in the country as

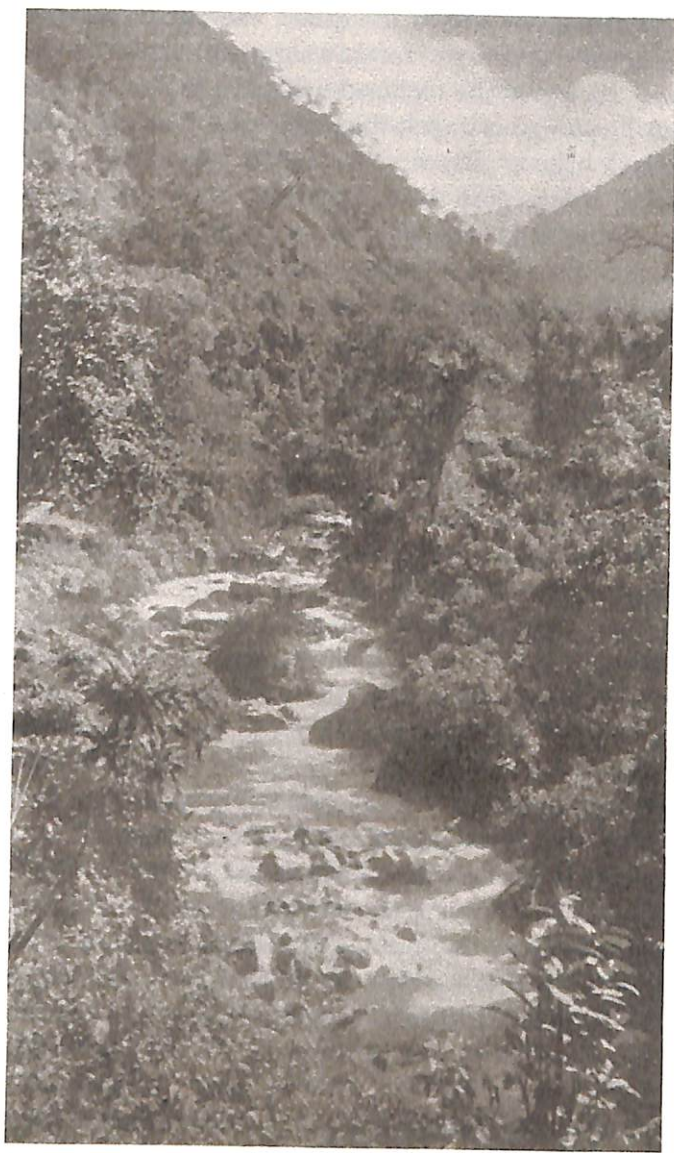


Fig. 4. A Sikkim Valley

large level fields, the hillsides are laboriously carved out into terraces, one above the other, the outer edge of each being banked up so as to retain a supply of water for the rice plants. Some of the terraced fields are so narrow that the use of the plough is impossible, and the soil has to be turned over with a hoe. From 7000 feet to 14,000 feet, which is the level of tree growth, the country is under virgin forest and uninhabited except for occasional settlements of graziers. From 15,000 feet upwards there is a mass of snow-clad peaks and glaciers, which form the source of most of the rivers, but from 12,000 to 15,000 feet the aspect is less bare and rugged, and some grassy plateaux with small lakes are to be found. The ridges at the latter height are clothed with rhododendron and coniferous forests, while the grass lands are carpeted with Alpine flowers, primulas, aconite, iris and the like.

The province of Bihar and Orissa extends from the borders of Nepal and Darjeeling to the Bay of Bengal and the northern districts of Madras. It is bounded on the east by the Presidency of Bengal and on the west by the United Provinces and the Central Provinces. It is by no means a homogeneous area, for it is made up of three sub-provinces, viz., Bihar, Chota Nagpur and Orissa, which differ widely in their physical features, the character of their peoples, their languages and land systems.

Bihar, which consists of the Patna, Tirhut and Bhāgalpur Divisions or Commissionerships, has an area of 42,361 square miles and a population of 23 $\frac{3}{4}$  millions, which is very nearly equal to that of the Punjab. It consists of the eastern portion of the Gangetic valley that lies between the lower spurs of the Himalayas on the north and the Chota Nagpur plateau on the south. It is an alluvial plain watered and drained by the Ganges and its tributaries, such as the Gandak, Son, Gogri and Kosi, which sometimes sweep down in disastrous floods. The climate



is drier than that of Bengal, and the rainfall, which averages 50 inches in the year, is not only lighter but more capricious, its vicissitudes exposing the country to occasional periods of scarcity. Throughout almost its whole extent the general aspect is that of an unbroken level, diversified by clusters of villages, mango orchards, clumps of bamboos and groves of palm trees. In the hot weather it presents a dreary appearance, for as far as the eye can see there is a wide expanse of bare dun-coloured fields enclosed by small embankments which give them a curious chess-board appearance. In the rains, however, it is covered with waving sheets of green rice and maize, and in the cold weather teeming crops of wheat, barley, and other grains and pulses are raised.

Till a few years ago the fields in the vicinity of the villages were white, during the latter season of the year, with the opium-yielding poppy, a plant with white flowers which is better suited to the climate than the red or purple variety that is grown in Mālwa. Its cultivation was abandoned in 1911 in order to give effect to the agreement with China for the gradual diminution and final extinction of the export of Indian opium to that country.

Bihar is so called after the town of Bihar in the Patna district, which was its capital at the time of the Muhammadan invasion. This town, again, derived its name from a great *vihāra*, or Buddhist monastery, which was established there in the tenth century A.D. The Muhammadans, by a playful conceit, which was, however, based on a real admiration for its climate and fertility, declared that the name meant the land of eternal spring (from the Persian *bahār*).

Chota Nagpur, which consists of the Division of the same name and of the two small States of Kharsāwan and Saraikela, extends over 26,769 square miles and has 5½ million inhabitants. It is thus nearly as large as Scotland



and has a million more inhabitants. The greater part is an upland region with a general elevation of 2000 to 2500 feet. A large part is still covered with forest, in which *sāl* (*Shorea robusta*) predominates, or with low scrubwood jungle. Cultivation is mainly confined to the valleys and depressions between the ridges, which are enriched with detritus washed down from above. The rainfall is fairly heavy, averaging 53 inches in the year, but owing to the broken undulating surface it runs off rapidly, and to admit of rice cultivation, which requires standing water, the slopes have to be carved into terraces, which spread down them in a fan-like formation. On the higher levels maize, millets, oilseeds and pulses are raised, but the crests of the ridges are infertile. Its agricultural resources are limited, and failures of the harvests occur periodically, but scarcity does not press hardly on the hardy aboriginal races, who can supply their needs from the forests and, even in the fat years, make considerable use of edible jungle products, such as the fruit of the *mahua* tree (*Bassia latifolia*). On the other hand, Chota Nagpur possesses great mineral wealth, especially in coal, the principal fields being the Jherria field in Mānbhūm, the Giridih field in Hāzāribāgh (where also there are mica mines) and the Daltonganj field in Palāmau.

The scenery is diversified and often beautiful. Open country and rolling downs alternate with richly wooded hills enclosing peaceful and secluded valleys. Streams of clear spring-fed water may be seen rippling down over rock-strewn beds, and wooded glens with "pools, shaded and rock-bound, in which Diana and her nymphs might have disported themselves." Even in the hot weather, when the whole country seems scorched and parched, the eye can be refreshed by the evergreen verdure of the woods, and there is a welcome touch of colour

in the scarlet blossoms of the *palās* tree (*Butea frondosa*).

The name is a corruption of Chutia Nagpur, Chutia being a village on the outskirts of Rānchi which was at one time the seat of the Nāgbansi chiefs, who ruled over the central plateau.

Orissa is the name given to the whole country in which the speakers of the Oriya language form the dominant people. It includes the Orissa Division and the Orissa Feudatory States, the latter of which occupy as large an area as Ireland. Altogether, this sub-province extends over 41,789 square miles and has a population of 9 million persons. Physically, it is a heterogeneous area, for it comprises two very different tracts, viz. the alluvial delta of the Mahānadi and other rivers flowing into the Bay of Bengal and a hilly hinterland made up of the Feudatory States and the districts of Angul and Sambalpur.

The Feudatory States are sometimes called the Garhjāts, a hybrid word meaning forts. The Hindustani word *garh*, meaning a fort, has been Persianized into the plural Garhjat, and the English, in ignorance of this, have added the letter s, so as to make a double plural like "fortses." The name is due to the country having been studded with the fortresses of the chiefs; a similar designation is that of Chhattisgarh in the Central Provinces, meaning the land of the thirty-six forts.

The three sub-provinces fall within four natural divisions, viz., North Bihar, South Bihar, Orissa and the Chota Nagpur Plateau, the delimitation of which is determined by physical and ethnological affinities and not by political and linguistic considerations, as is the case with the sub-provinces.

**North Bihar** is the portion of Bihar lying to the north of the Ganges. To the north-east and north-west there is a submontane strip of prairie land and denuded

forest, but the remainder of the country is an alluvial plain nearly entirely under cultivation, which supports a teeming population; the density averages 646 persons to the square mile and in some parts rises to over 1000 per square mile. It is watered by a number of rivers flowing southwards from the Himalayas, which have gradually raised their beds by the deposition of silt and flow on ridges slightly above the general level of the surrounding country. Most of them are apt to overflow their banks after heavy rainfall in the mountains of Nepal, and in past ages they have frequently changed their courses. There are numerous marshes and meres, some of which are large enough to be regarded as fresh-water lakes or lagoons; they are generally shallow sheets of water, expanding in the rains and contracting during the dry season. Some represent the deeper portions of abandoned river beds, e.g., the Kābar Tāl in the Monghyr district and a chain of 43 lakes, with an aggregate area of 139 square miles, in Champāran, which mark a former channel of the Gandak. Others are merely trough-like depressions between present river beds. In the rains they are filled by the overflow of the rivers, but for the remainder of the year they dry up, either entirely or in part, and admit of cultivation or form prairies covered with the rank *pod* grass and the graceful pampas, but with an undergrowth of more succulent herbage, which affords abundant pasture for great herds of cattle.

Four of the districts of North Bihar, viz., Sāran, Champāran, Darbhanga and Muzaffarpur, constitute the Tirhut Division, the creation of which in 1908 brought into official use the old popular designation of this part of the country. Tirhut is a corruption of Tīrabhukti, a Sanskrit name meaning the river-side land, which can be traced back to the fourth or fifth century A.D., for it is inscribed on seals of that period which have been



excavated at the village of Basārh (the ancient Vaisāli) in the Muzaffarpur district. Tirhut used to be pre-eminently the land of indigo, but the industry has declined very rapidly since synthetic indigo was put on the market in 1897, and the area under the plant is now only a third of what it was before that year.

**South Bihar** is the portion of Bihar lying south of the Ganges within the districts of Shāhābād, Patna, Gaya, and Monghyr. The greater part of it is an alluvial plain

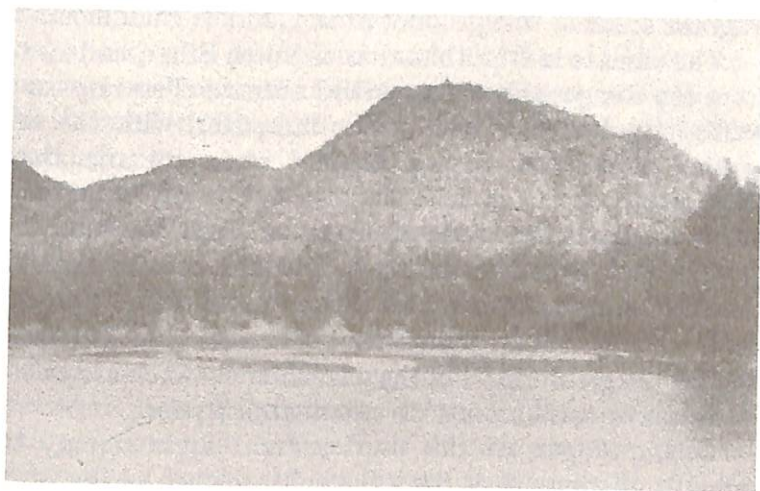


Fig. 5. Umga Hill in Gaya District

sloping gently northwards to the Ganges, but the south of Shāhābād is occupied by the Kaimur Hills, which form a rocky plateau mainly used for pasturage. Further east, in the south of Patna, Gaya and Monghyr, there are a number of ridges and spurs projecting from the plateau of Chota Nagpur, as well as semi-detached ridges and isolated peaks that rise abruptly from the level plain and appear to form irregular links between the ridges. Much of the southern area is broken country with a fringe of brushwood

jungle; the soil is poor, it has little or no irrigation, and it yields precarious crops. The land to the north, on the other hand, is highly cultivated, extensively irrigated and well populated. It was the rice exported from here that first acquired the name of Patna rice, now so well known in the market. As early as the seventh century A.D. the Chinese pilgrim, Hiuen Tsiang, noted that the country grew a rice of a delicious flavour, which was commonly called "rice for the use of the great"; a heretic king was, he solemnly declared, converted to Buddhism by the fragrant scent of this product of the land of Buddhism.

The climate is drier than that of North Bihar, and away from the Ganges there is a marked absence of swamps and water-logged areas. The rivers, moreover, with the exception of the Son, have a smaller catchment area than those north of the Ganges, and are not of any great size. Large demands are made on them for irrigation, and the greater part of their water is diverted into irrigation channels and reservoirs and thence distributed over the fields. They dry up soon after the cessation of the rains, and for the greater part of the year their channels are either waterless or contain only an attenuated stream.

Orissa proper, as the third natural division may be called to distinguish it from the sub-province of the same name, stretches along the sea-board from the Chilka lake to the Subarnarekha river and comprises the three districts of Puri, Cuttack and Balasore. It is a narrow strip, fifteen to seventy miles broad, in which three distinct zones are found, viz., an unproductive maritime belt, a central plain of rich alluvium, and a hilly submontane tract. The land along the coast is largely impregnated with salt. Salt manufacture was formerly an important industry and a century ago yielded the East India Company a yearly revenue of 18 lakhs of rupees. It is a low-lying swampy area traversed by sluggish brackish creeks which

creep to the sea through banks of black mud bearing a mangrove vegetation. It has aptly been described as the Sundarbans on a miniature scale. Near the sea this desolate region gives place to sandy ridges, 50 to 80 feet high, and the latter to dunes, which are sometimes covered with creepers and wild convolvulus, and drifts of blown sand. The central zone forms the delta of the Mahānadi, Brāhmani and Baitarani rivers. It is a fertile alluvial plain, intersected by deltaic rivers which throw out a network of branches. In many ways it resembles Bengal. "A warm steamy atmosphere favours the same palm and rice cultivation, and all the conditions of a productive but enervated human existence are present." In the western fringe the land rises in rocky undulations, isolated peaks and long ranges of hills, with wooded slopes and fertile valleys.

Orissa contains the one large lake of the province, the **Chilka Lake**. This is a shallow pear-shaped lake lying mainly in the Puri district, but extending at its southern extremity into the Ganjām district of the Madras Presidency. It is 44 miles long and has an area varying between 344 and 450 square miles, for it expands in the rainy season and contracts in the dry weather. It was originally a bay of the sea, which first began to shoal up owing to deposits of silt brought in by the rivers and carried up the Bay of Bengal by the violent south winds of the monsoon, and was eventually cut off from the sea by a spit formed by the same agency. The sandy bar which now separates it from the Bay of Bengal is pierced by one narrow outlet, through which the tide pours in. This is sufficient to keep the water of the lake salt from December to June, but in the rains the sea water is driven out by the volume poured in by the rivers, and the Chilka becomes a fresh-water lake.

The low mud flats formed by the silt deposit of



the rivers which feed it are encroaching on the lake, and its depth scarcely anywhere exceeds 12 feet and averages only 5 to 6 feet. The sea is also incessantly at work building up the bar; this is steadily growing in width, and in some years the channel through it can only be kept open by artificial means. There are a number of islands in the lake, of which the largest, the Pārikud islands on the east, are partially joined to the bar. One small island in the south, which goes by the characteristically English name of Breakfast Island, is capped by a building and pillar said to have been erected by an early Collector of Ganjam, who bore the Pickwickian name of Snodgrass and is the hero of several good stories.

The term **Chota Nagpur Plateau** is used to designate the elevated country extending from the Gangetic valley to the hilly tableland of the Central Provinces and approaching close to the Bay of Bengal on the south-east. It is not intended to imply that it forms a tableland like the steep-walled precipice behind Cape Town with its long and lofty horizontal top. The word plateau is, in fact, a technical expression for an area of which the lowest levels are at a considerable height above the sea. The plateau as thus defined extends far beyond Chota Nagpur itself, stretching into the inner highlands of Orissa on the south-east and, through the Santāl Parganas, as far as the bank of the Ganges on the north-east. The administrative areas included in it are the whole of the Chota Nagpur Division, all the Orissa States, the Angul and Sambalpur districts of the Orissa Division and the district of the Santāl Parganas.

It is a rugged region of inequalities, consisting of a succession of plateaux, hills and valleys, drained by several large rivers, such as the Dāmodar, Barākar, Subarnarekha, Brāhmani, Baitarani and Mahānadi. The

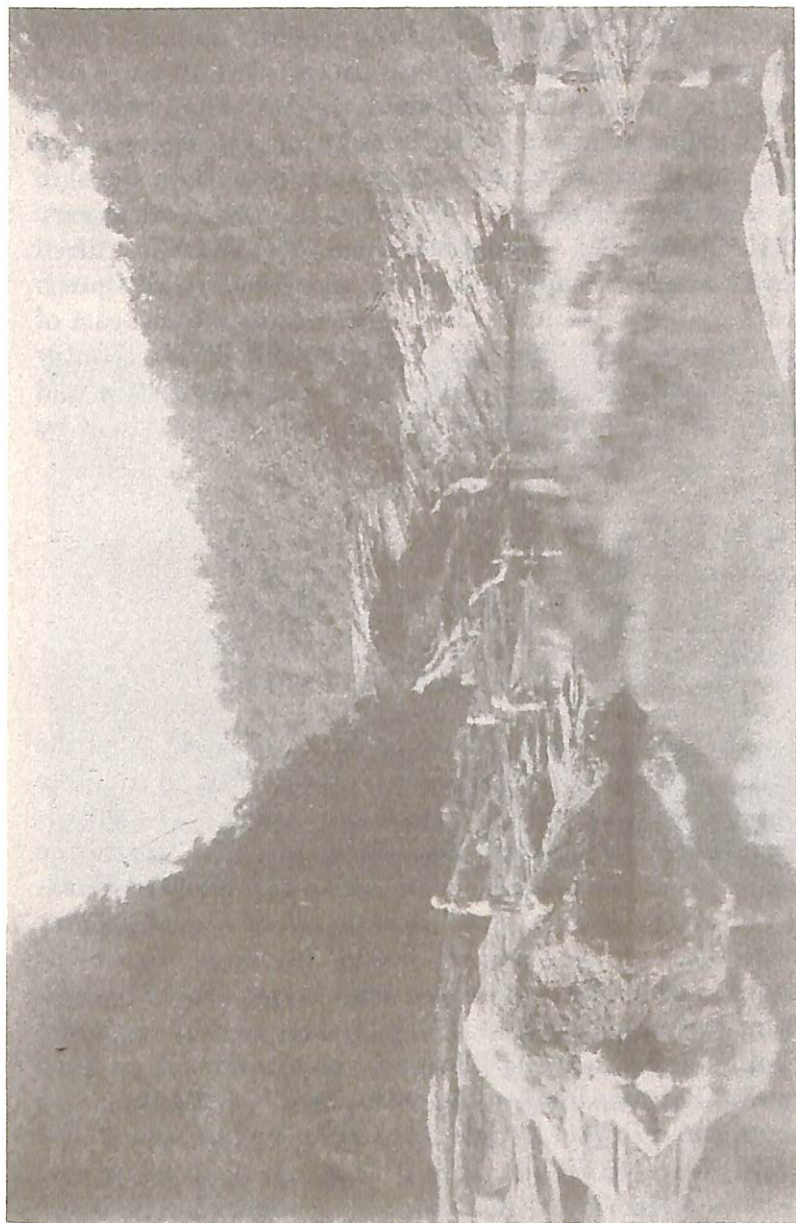


Fig. 6. A River Valley in Chota Nagpur

land is still largely covered by forest, and is thinly peopled, mainly by primitive tribes, who still use the bow and arrow. One wild race, the Bīrhors, live on the wild animals they net, and chiefly on the *hanumān* or long-tailed monkey, whose flesh they eat, while the skin is used for their drums. In the more remote areas very little change has taken place since 1866, when Sir Alfred Lyall wrote, "I suppose there is no wilder or less known part of India than the interminable forests south-east of Nagpur towards the sea. It is a hilly forest country inhabited by what we call forest tribes, with here and there an oasis of cultivation and civilized settlement by the superior races."