

## CHAPTER I

### GENERAL

#### ORIGIN OF THE NAME

No authentic report is available as to the origin of the name of Bhagalpur. This matter has been partially dealt with in the text on History. It is rather strange that in spite of three ancient sites within the district, namely, Karangarh, Champanagar and Mandar Hill and also the claimed ancient Vikramshila at Pathar-ghatta, the district should be known as Bhagalpur spelt Bouglipoor or Baugalpur in old English documents. The district was a part of Anga *desha* of the *Mahabharata* days and it is a mystery how the headquarters of Anga *desha* did not come to have the same place-name. The origin of the place-names of the other important places in this district, namely, Colgong, Suitanganj, Bihpur, Banka, Katauria or Amarpur is also not known definitely. The name Colgong is commonly ascribed to be due to one Kohol *Muni* (sage) who lived there. Some say that the place being far too full of quarrels and acrimony (Sanskrit *Kalaha* means quarrel) came to have this name. Suitanganj has evidently derived the name due to Muslim influence, and in spite of the fact that Jahangira village had the famous Shiva temple on a hillock in the Ganga. In Heber's journal (1824—26) the pencil-picture of this hill has the caption of Jahangira. Banka may have derived the name having been located after a sharp curve of the road or because it was the abode of heroes (Hindi *Banka* means a hero or a *bahadur*). The name Katauria smacks of jungle-life and the area was once full of jungles. Bihpur and Amarpur names are obviously due to some local tradition now lost. It is, however, prudent not to probe too deep into the origin of the place-names.

#### LOCATION

Bhagalpur, the chief and the central district of the division of the same name, is situated between 24°30' and 25°30' north latitude and between 86°30' and 87°30' east longitude. Its length is about 70 miles from north to south and its width varies from 20 to 44 miles. It extends over 2,123 square miles. This has been arrived at by totalling the figures of the constituent units e.g., police stations. The Surveyor-General of India has reported the area of the district as 2,184 square miles. The difference between the two figures is not large and can be ignored. Its population was 1,429,069 in 1951 census which rose to 1,715,128 in 1961 census.

## BOUNDARIES

It is bounded on the north by the Saharsa\* district, on the east, north of the Ganga, by the district of Purnea, on the south-east, south of the Ganga, by the Santhal Parganas, and on the west by the district of Monghyr. The administrative headquarters are at Bhagalpur town, situated on the Ganga, which crosses the district from west to east and divides it into two uneven parts, the smaller portion of north Bhagalpur comprising the three police stations, viz., Naugachhia, Bihpur and Gopalpur of the Sadar Sub-division and the lower portion of south Bhagalpur comprising the rest of the Sadar Subdivision and Banka Subdivision. The area of the north Bhagalpur comes to about 306 square miles or only approximately one-seventh part of the total areas of the district.

## FORMATION AND CHANGES IN THE AREAS OF THE DISTRICT\*\*

The district occupied the S. E. corner of the Mughal Province of Bihar, together with a small portion of Bengal. In 1765 A. D., when the East India Company was invested with *Diwani*, Bhagalpur district was a huge tract in the east of Sarkar Mungir, Subah Bihar, lying altogether to the south of the Ganga except the *pargana* of Chhai. The exact boundaries of the district, at this period, towards the south and west were rather indeterminate, as the whole line of the country lying between *parganas* Bhagalpur and Colgong and the hills, was rendered unsettled by the inroads and disturbances of the aboriginal tribes. It was not till 1774 • that an officer was especially deputed to ascertain these limits.

The areas of the district underwent numerous changes since the British occupation of the district during the past century. The earliest was in 1793, when a few villages from Tirhut (now Muzaffarpur and Darbhanga districts) were added on the north-western frontier.\*\*\*

---

\*Saharsa was created a separate district in 1954 and took out about a half of the former Bhagalpur district.

\*\*Prof. K. K. Basu in his "Old Accounts of Bhagalpur" published in Bihar and Orissa Research Society Journal, Vol. XXI, has amply referred to the report of George Dickinson, dated August 31, 1794, Journal by Capt. W. S. Sherwill who made a geographical and statistical survey of Bhagalpur district, south of the Ganges between the years 1846—1850, the report of J. J. Pemberton (1869), a report of G. Loch, the Collector of Bhagalpur on February 24, 1852 and the report of District Officer, E. F. Lator on May 10, 1855. Their accounts along with the report of Francis Buchanan's Survey of Bhagalpur (1810-11) could be referred to for more details.

\*\*\*W. W. Hunter's Statistical Account of Bengal, Vol. XIV on Bhagalpur District, 1877, p. 21.

The area of the Bhagalpur district seems to be unwieldy during 1810—12 when Francis Buchanan visited the district, as it was 8,224 square miles.\* In 1832, the area of the district was greatly diminished, by the establishment of a separate Magistracy and Deputy Collectorship at Monghyr, where there had been a Joint Magistrate since 1812, subordinate to the Magistrate of Bhagalpur. A great addition, however, soon followed in 1838, when the three extensive *parganas* of Naredigar, Malhanigopal and Nisankpur Kurha were transferred from Tirhut to this district, the Revenue and Sessions Court jurisdiction of Kabkhand and Uttarkhand being, at the same time, removed from Tirhut to Bhagalpur, and their Magisterial and fiscal jurisdiction to Monghyr. This increase, again, was more than counterbalanced by the operation of Act XXXVII of 1855, by which the Santhal Parganas were created into a separate Non-Regulation District, and the Daminikoh *parganas*, Tiliagarhi, Jamuni, Chitauliya, Kankjol, Bahadurpur, Akbarnagar, Inayatnagar, Makrain, Sultanganj, Umbar, Sultanabad, Godda, Umlu-Motiya, Passy, Hendwah, together with *tappas* Muniari, Belpatta and a portion of *parganas* Bhagalpur and Sathari were detached from Bhagalpur district. In 1864, Bhagalpur still further lost the character of a south Ganga district which it had possessed in the eighteenth century, by the addition of seven hundred square miles of country on the north of the river. *Parganas* Kabkhand and Uttarkhand were entirely transferred from Monghyr, and *parganas* Daphar and Nathpur from Purnea. Several petty changes of jurisdiction had since taken place, such as the transfer of *pargana* Kharkpur to Monghyr in 1874, but revenue, magisterial, and sessional jurisdictions became conterminous due to these changes. The area of the district in 1872 was 4,268 square miles\*\* which came to 4,226 in 1911\*\*\*; the difference between the two is not great and can be ignored.

The area of the district remained practically intact since 1911 when the last District Gazetteer of Bhagalpur was published. A great change occurred in 1954 when about half of the portion of the district was detached for the formation of Saharsa district. Saharsa became a sub-district first in 1944 with an Additional District Magistrate and then a full-fledged district in 1954. Almost whole of the north Bhagalpur except Bihpur, Nawgachhia and Gopalpur police stations went over to Saharsa district, which is now a separate district. The sessional jurisdiction of Bhagalpur still remained as the District and Sessions Judge of Bhagalpur has jurisdiction on Saharsa district also.

---

\*Francis Buchanan's *An Account of the District of Bhagalpur* (1928), p. 2. But the last District Gazetteer of Bhagalpur (1911) mentions as 8,225 square miles.

\*\*Hunter's *Statistical Account of Bengal on Bhagalpur* (1877), p. 1.

\*\*\*District Gazetteer of Bhagalpur (1911), p. 1.

The district is now divided into two subdivisions, viz. Bhagalpur (Sadar) and Banka and 7 revenue thanas, viz. Sultanganj, Bhagalpur, Colgong and Bihpur in Sadar Subdivision and Amarpur, Katoria and Banka in Banka Subdivision. For revenue purposes the new revenue thanas are the units. Bhagalpur district before it was bifurcated into Bhagalpur and Saharsa districts consisted of the following 23 *parganas*:—

Colgong, Jahangira, Bhagalpur, Musdi, Lakhanpur, Kherhi, Chhai, Dharampur, Sathiari, Shahroi, Wosila, Chandan Katoria, Darsa Khawra, Hazartaki, Chandwe, Naredigar, Malhani Gopal, Nisanakhpur Korha, Dhaphar, Nathpur, Harawat, Kabkhand, and Uttarkhand.

After Saharsa was separated as a district the following *parganas* remained in Bhagalpur district:—

Colgong, Jahangira, Bhagalpur, Musdi, Lakhanpur, Kherhi, Chhai, Dharampur, Sathiari, Shahroi, Wosila, Chandan Katoria, Darsa Khawra, Hazartaki, and Chandwe.

For police purposes there are police thanas which are not the same as revenue thanas. There are 13 police thanas in Sadar subdivision and 9 police thanas in Banka Subdivision. The police thanas have been described in more details in the text on Law, Order and Justice.

#### TOPOGRAPHY

- The district of Bhagalpur shares in the physical characteristics of most parts of the Bihar State. The river Ganga separates north Bhagalpur from south Bhagalpur and this northern division about one-seventh parts of the district forms an eastward continuation of the great alluvial plain of Tirhut. The surface of the land is plain and the drainage is from west to east. The land in north Bhagalpur is very fertile and Naugachhia is one of the principal centres of trade in grain in the State of Bihar.

The southern division of the district is bounded along its northern face by the river Ganga, and has a generally level surface, except near the southern frontier. The southern division is traversed by several streams, having their sources in the hills of the Santhal Parganas, the most important of which is the Chandan. This river enters the district a broad and impetuous torrent, but as it approaches the low land, it spreads over the country in about fifteen different channels, only three of which ever reach the Ganga. One of these streams retains the name of Chandan, but it is a mere water-course which flowing through a hard soil of nodular limestone, pours its water into the Ganga at Champanagar (Champanala), two miles west of the town Bhagalpur. A broad and well

raised belt of limestone on which the town of Bhagalpur is situated extends along the southern bank of the Ganga, and forms a natural and efficient barrier against the incursion of the river. The river Ganga at Sultanganj forms two currents, one towards north-east and the other towards east. The remarkable formation of limestone, about two miles broad, runs almost continuously beside the river from near Monghyr to Colgong, a distance of about sixty miles which had so long proved a great bulwark against the fury of the river. This area was once densely wooded with mangoes, jacks, fan-leaf palms and date trees but a good deal of it had gone to axe. On leaving the belt of woodland, the country is found to be very low and almost treeless to the south. Fine rice-lands exist south of Sultanganj, Bhagalpur, Sabour and Ghogha. South from the line between Sultanganj and Nathnagar the country is subject to inundations from both the Chandan and the Ganga. This lowland remains under water during the rainy season and bears only spring crops. Still further south, the country rises a few feet, and rice is extensively cultivated, wheat, sugarcane, mustard, *arhar* and garden products are also seen, bespeaking the richness of the soil, which is here of a light-greyish colour. Mango-groves, palm trees, acacias, banian and *pipal* trees are found; and whenever a small stream affords facilities, the lands in its immediate vicinity are watered from it.

\* In the further south, about 30 miles south of Bhagalpur, the country begins to wear a different aspect, as the land rises by an easy ascent, and the hilly tracts commence. The soil being less deep than to the northward and lying upon rocks of primitive formation the water is nearer the surface and the trees attain a growth exceeding anything that is ever found on the deep alluvial plains of the Ganga. The *mahua* (*Bassia latifolia*) now becomes common, but palms almost cease to be seen. The mango trees are no longer found in planted groves, but are scattered about in small groups; the cotton tree (*Semal*) attains a great size, measuring sixty or seventy feet in circumference, and patches of *dhak* jungle appear. The better kinds of upland yield maize (*makai*) in the rains and wheat and mustard seed in the cold weather; the poorer are sown with millet (*kurthi*) in the autumn, whilst there is still sufficient moisture in the soil. The sides of the low rolling hills are terraced for the cultivation of rice, which is irrigated by means of a careful system of reservoirs and embankments. The details of irrigation have been given in the chapter on Agriculture and Irrigation. The dense forest is found in Katoria police station in the extreme south of the district bordering Santhal Parganas which has locally earned name "Chotanagpur" of Bhagalpur District.

*Lines of drainage.*—The general lie or inclination of the district for drainage on the north of the Ganga, is towards the south and east, following the course of the rivers and streams. The actual

work of drainage is, however, for the most part performed by the water-courses, or *dhars*, which connect the main rivers. The tract on the south of the Ganga is drained from south to north by the Chandan and its tributaries, together with a number of minor streams or water-courses, which drain off the superfluous rainfall into the Ganga and put on during the greater part of the year dry sandy channels.

### HILL SYSTEM

Hills of the district are generally low and irregularly scattered but in several cases the ranges run from east and north-east to west and south-west. Prominent hill peaks are the Bitaru Pahar (Suiya Beat) (1,324'), Dharampahar (Kojhi village) (1,186'), Malui Pahar (1,078'), Rangsar (1,308') and Mandargiri (700'). The hills are scattered mostly in Katoria, Belhar, Amarpur and Colgong police-stations. They mostly belong to the great Vindhyan mountain system or of Hazaribagh and Rajmahal series. The hills are mostly denuded. Poor species of vegetation grow on the slopes of the hills.

### GEOLOGY

The old District Gazetteer of Bhagalpur (1911) has the following regarding the geological formation of the district:—

“The north of the district is purely alluvial. The deposits which cover the immense alluvial plain of the Ganges and the Brahmaputra and their tributaries belong in part to an older alluvial formation which is usually composed of massive argillaceous beds of a rather pale, reddish-brown hue, often weathering yellowish, disseminated throughout which occur *kankar* and pisolitic ferruginous concretions. Four principal formation occur in the district. Alluvium, new and old ; the Rajmahal Trappean formation ; the Damuda series, the coal measures of India ; and the Gneissic series. The last-named rocks occupy a considerable area in the south of the district, in the Chandan, Katoria, and Danra Sakhwara *parganas*, where they are continuous with those forming the plateau of Hazaribagh, and thus indeed with the immense stretch of similar rocks along the whole east side of the peninsula down to Mysore. The classification of these highly metamorphic fundamental rocks is everywhere one of the most difficult problems in geology ; and as yet, in India, attention has been chiefly turned to other formations of more immediate interest or importance. Even within the small area under notice, great variety is to be found in these rocks, from the massive

homogeneous granitoid and porphyritic gneiss, weathering into great domes with concentric structure, of which Mandar Hill is a fine example, through many varieties of well foliated gneisses, quartzose, micaceous, and hornblendic, to fine mica schists and trappoid hornblende rock. No normal order of succession or of grouping has as yet been made out in this complex series.

"There are several detached patches of gneiss in Bhagalpur District, isolated in the alluvium as near Panya and Kherhi, and in the Ganges at Colgong and Patharghatta. It is probable that the whole alluvial area is underlaid by these rocks, and at no great depth. The Damuda rocks, to which the Indian coal measures belong, are seen only at one spot within the District. The white clays and sandstone, about 150 feet thick forming Patharghatta Hill, are of this formation. They rest upon gneiss at a few feet above high flood level. Every portion of the group is well exposed on the steel sides of the little hill, without any appearance of a carbonaceous layer. Yet there is a deep shaft on the summit, which is said to have been sunk for coal. The Damuda clay furnishes the great bulk of the material for the pottery works at Patharghatta. A finer kind of kaolin is obtained by crushing and washing a decomposed pegmatitic rock, extracted from shallow pits in the gneiss. On the east side of Patharghatta Hill, the sandstone is overlaid by strong beds of dark green basaltic trap. The slope or dip of the beds being easterly, the whole east end of the ridge, as well as some other small hills in that direction, are formed entirely of this rock. The same rock is seen again at the end and south of Pirpainti. These outcrops are all outliers of the great trappean formation, of which the Rajmahal hills are composed. From the fossil plants in the sedimentary beds, interstratified with the eruptive rock, it has been ascertained that the formation corresponds with the Lias horizon of the European series. There are no known outcrops of these intertrappean beds in Bhagalpur.

"The alluvial formation occupies the greater part of the District. Much of it is clearly composed of deposits from the present rivers, whether by annual overflow or in consequence of periodical changes in the channel. But there is frequently observed a stiff clay with *kankar*, and often ochre, very unlike the ordinary silt as freshly deposited. This formation is often found, too, in positions where inundation does not now reach. For these reasons it has been distinguished as the old alluvium, though the precise relation between the two formations has not

been satisfactorily determined. Some observers have maintained that the old alluvium is of marine or estuarian origin. As yet, however, no fossils have been discovered to confirm that opinion. It is, therefore, very desirable that any organic remains found in these deposits should be carefully collected and submitted to competent authority."

The working plan of Deoghar Forest Division which covers Bhagalpur has the following:—

"The Gangetic alluvium thins out near Banka and stable shield of granitic and metamorphic rocks of Archaean Age rise gradually upward. Prosecuting above the surface of the shield are ridges of resistant rocks, chiefly quartzite and fine grained rocks of the country are those of an old plain surface."

"The southern parts of Bhagalpur presents a considerable area of granitoid and porphyritic gneisses towards Monghyr and Santhal Parganas, sometimes showing as dome-gneiss as at Mandar Hill and varying to foliated gneisses and schists."\*

! Regarding minerals the last District Gazetteer of Bhagalpur (1911) mentions as follows :—

"The principal mineral product of Bhagalpur is galena, found in large quantities in *parganas* Sahrui, Chandan, Katuraia, and Danra Sukhwara. Much of it is argentiferous. The following report by Dr. Oldham, Superintendent of the Geological Survey of India, on some specimens sent to Government by the Collector of Bhagalpur, shows the value of this mineral :—"The ores sent are galena, the sulphide of lead, the most common and widely distributed of the ores of lead, consisting of about 14 per cent of sulphur and 86 per cent of lead. Galena generally contains also an admixture of silver in varying quantities, often to an amount which renders the ore very valuable." Sulphuret of antimony, or *surma*, is also found in the same localities. Copper is met with in the southern hills, as native copper, copper pyrites, a sulphuret of copper and iron, and malachite or green carbonate of copper. Talc, chlorite and jasper are found in the southwestern *parganas*. Iron ore is distributed over the whole of the hilly country, very abundantly in places, but the

---

\*The paragraphs quoted from the working plan of Deoghar F.D. is based on data collected from the note of Dr. P. K. Ghose and Haine's Botany of Bihar and Orissa.

difficulties in working it from want of fuel and a good flux prevent its being much used."

The following chart taken from Dunn's Memoirs\* shows the mineral occurrences in the district :—

| Mineral.                                               | Place.            | Location.                             |
|--------------------------------------------------------|-------------------|---------------------------------------|
| Chromite .. ..                                         | Baida Chauk       | Five miles from Mandar Hill.          |
| Clay (Kaolin) .. ..                                    | Colgong .. ..     | .. ..                                 |
|                                                        | Kasdihi .. ..     | Near adjacent hill Kasdihi (Colgong). |
|                                                        | Letwa Baran       | Near Banka.                           |
|                                                        | Patharghatta Hill | .. ..                                 |
|                                                        | Samukhi .. ..     | .. ..                                 |
| Glass Sand .. ..                                       | Patharghatta Hill | .. ..                                 |
| Lead and Silver .. ..                                  | Dudhi Jarna       | .. ..                                 |
|                                                        | Phoga .. ..       | .. ..                                 |
|                                                        | Gonora .. ..      | .. ..                                 |
|                                                        | Kajiria .. ..     | .. ..                                 |
|                                                        | Karda .. ..       | .. ..                                 |
| Occurrences of little or no importance—Fuller's earth. | Patharghatta Hill | .. ..                                 |

Regarding the occurrences of minerals it may be further stated that some minerals, viz., China clay, fire clay, mica, garnet, quartz and felspar and galena are found in the district. The details of these minerals are as follows\*\* :—

*China clay.*—Good quality of China clay deposits have been located at Patharghatta hill in the village Madhorampur in police-station Colgong. This mine is under exploitation since about four decades. At present Messrs. Bengal Potteries, Limited are working this mine.

Several other good deposits of China clay have been found to be located in the villages Samukhia (Banka P.-S.) and Sudletwa (Katoria police-station). But these deposits have not been properly exploited.

*Fire clay.*—A good quality of fire clay is found in the village Madhorampur (Colgong P.-S.) where as stated before China clay is also found. This deposit was worked in the past.

\*Memoirs of the Geological Survey of India, Vol. LXXVIII by J. A. Dunn (1941), p. 238(I).

\*\*The details have been supplied by the District Mining Officer, Deoghar.

*Mica*.—Occurrence of mica deposit is reported to be found in the several villages in Katoria police-station. One Fulhara mine is being worked from several years. The Fulhara mica mine once gave very good production of ruby mica.

*Garnet*.—Garnet is said to be deposited in the villages Bhelwa and Kolharia in Katoria police-station.

*Quartz and Felspar*.—These minerals are found in association with mica pregmaitite. Owing to transport difficulties, they have not been exploited.

*Galena*.—Samples of galena was collected from the village Tonapathar (Katoria P.-S.). The details of deposit and its economic importance have not yet been investigated.

Production figures of mineral in 1960 was for China clay 507 tons (value Rs. 60,035) and mica 2,966 cwt. (value Rs. 22,560).

#### RIVER SYSTEM

The river system of the district consists of a reach of the Ganga about sixty miles in length with some Himalayan affluents on the north bank; and on the south a few hill streams, which during the greater part of the year, are sandy water courses but in the rainy season become rivers of considerable size, unnavigable, however, from their rapidity and uncertainty of their floods. The northern rivers which mostly rise in the hills of Nepal flow in Saharsa district which was a few years before part of the old Bhagalpur district. Only a few rivers, viz., the Tiljuga and Ghaghri, etc., with their tributaries flow in the north of the district. The northern rivers have mostly a direction from north to south, with a slight inclination eastwards. The principal of the northern rivers are Tiljuga and Ghaghri. The Chandan alone amongst the southern streams is deserving of notice. The following is a brief account of each of the above rivers, their courses and more remarkably of the drainage channels or *dhars* that fall into them:—

#### *Ganga*

“The Ganges first touches Bhagalpur District at Tulsipur, and for about ten miles forms the boundary between *parganas* Jahangira in Bhagalpur and Pharkiya in Monghyr; it then regularly enters the District opposite the village of Sultanganj, where a great mass of granite rises out of its bed. Thence the vast river flows with two great bends, the first northward round the town of Bhagalpur, and the second southward to Colgong, where it meets a low range of hills, by which its course is again diverted in an almost northerly direction for eight miles until

it reaches Patharghat. At that point it receives the united waters of the Kosi and all the northern rivers of the District. The Ganges throughout this part of its course is navigable during the whole year for the largest native boats and for river steamers of very considerable tonnage. The average width of its bed is three miles, but during the hot weather the waterway has a width of only half a mile, the rest being a dazzling plain of white sand. During the rainy season the whole of the deep bed is filled, and a margin of from five to ten miles on the northern bank and from one to two miles on some parts of the southern bank are inundated."\*

#### *Chandan*

The Chandan is the largest of the hill streams in the south of the district. It rises in the district of Santhal Parganas, just north of Deoghar hills known as Tirhut Parbat and Digharia Pahar. It is fed by numerous minor streams and rainfall in its catchment area which is approximately 500 square miles. Though it vouchsafes in the hills of Santhal Parganas, it floods mostly in the plains of the southern Bhagalpur District. At about thirty-five miles from its embouchure into the Ganga it begins to throw off branches to the eastward and then flows northward ultimately it joins the river Ganga near Ghogha. It thus gradually loses nearly the whole body of water it brings down, the main channel at its junction with the Ganga being reduced to insignificant dimensions.

The upper catchment of the river is hilly and densely wooded. The river debouches into plains near Damdhar where a major tributary meets. The confluence point is about 10 miles above Banka. Another main tributary, the Orinala meets the river Chandan about 2 miles below Banka. The main tributaries of the Chandan are the Panch Katia, Kudar and Orni which join the river below Rosunia where the site for a dam exists across the river Chandan itself. There are good dam sites in the Kudar and Orni at the villages Kulhar ia and Chattarpal respectively. The minor tributaries are the Chathari, Kadi, Dharwa and Daljore. Its catchment area is mostly in Santhal Parganas and partly in Bhagalpur district. It consists mostly of jungles with outcrops of gneisses which are found almost everywhere. Out of the total catchment area of 500 square miles, the hilly catchment along with forests is about 300 square miles and the rest

---

\**District Gazetteer of Bhagalpur* (1911), p. 5.

200 square miles forms a plain block of cultivated areas. The river Chandan flows on ridge practically in 30 miles length from near bank. The river branches off into many channels and irrigates its adjoining fields before it falls into the river Ganga by several mouths.

The average annual rainfall in the catchment area is about 47 inches. The maximum discharge of the river in 1961 (2nd October) which broke all the previous records and inundated vast areas in the south of the district, was about 1.2 lac cusecs. The average *Hathia* discharge which is the main period of irrigation in 1957 was about 500 cusecs. Being a hill stream, it is liable to sudden and violent inundation, but except when in flood, the channel is a dry bed of gritty sand, pierced throughout with innumerable cuts for irrigation purposes. Since a long time the river has been utilised for irrigation purposes. The former local Zamindars constructed inundation canals big or small for irrigating *kharif*, *rabi* and hot weather crops. The former embankments and bunds are still in existence and are now under the Revenue Department. Some of the inundation canals were provided with head sluice with or without regulator. But in course of time especially when the abolition of zamindari was in view the beds of the inundation channels got silted for want of proper maintenance and attention, have not been revived probably because of the larger schemes of irrigation.

The river as stated before is flowing near Banka practically on a ridge and so has been irrigating very large area by inundation canals taking off from it near villages Ekorja, Kunari and Riga. The former inundation canals though were useful had some technical deficiencies and so could not do assured irrigation. Efforts are now being taken to upgrade some of the former irrigation channels by adding modern contrivances. A planned net work of irrigation channels from the three former *danrs*, viz., Kajia, Mahasari and Katoria have been desilted and upgraded recently which have total gross commandable areas of about 70,000 acres on the right bank of the Chandan river. The details of the Chandan reservoir schemes have been given in the chapter on "Agriculture and Irrigation."

#### LAKES AND MARSHES

There are no lakes in Bhagalpur District. Considerable tracts of land on the south of the Ganga are inundated every year, but as they dry up and are cultivated in the cold weather, they

cannot be called marshes. Indeed, they form one of the most fertile parts of the district, the cold weather crops being remarkably luxuriant. Bhorang *jheel* near Shivnarayanpur is a fairly large water-logged tract now overgrown with weed which used to be a good spot for game birds.

#### FLORA OR BOTANY

There is no tract of woodland in Bhagalpur District which deserves the name of a forest but there are patches of low jungle interspersed with trees of large size in the Banka Subdivision to the south of the district. Along the southern hills there are two distinct tracts, one stretching from near the Amarpur police-station to the Belhar police-station. The second begins near Chandan, and runs by Jaipur along the whole Santhal Parganas boundary to Lakshmipur. There are three forest ranges, viz., Banka, Baunsi, and Katoria. The Divisional Forest Officer whose headquarters are at Deoghar has jurisdiction over the three forest ranges of the district.

The forest of the Banka Range exists mainly on the hill slopes and their outskirts while the forests of the adjoining Katoria Range lie mostly on gently sloping and undulating plain. The description of plain and hill forests is as follows :—

#### PLAIN FOREST

*Sal* is practically pure on plains, except where it has been ousted partly or wholly due to selective overfelling. Lakshmipur forests, which were at one time rich in *sal*, are now carrying poor dry miscellaneous growth with traces of *sal*. This biotic degradation is very conspicuous in varying degrees in the forests of Banka and Katoria ranges. Crop in this division, falls in general within 1 ft. in girth. It has been reduced to sapling size with a few young poles in the over-exploited forests of Sarawan Beat, Suiya Beat, etc. Crop of larger size is found in some of the valley bottoms in interiors of Bhagapathar, felling series in Koiridih Beat, valley area in Kasbawasila, Amahra supporting good growth of *sal* with many stems of 2 ft. and over. Malformation is a common feature in forests existing in populated and easily accessible localities. Some of the forests, e.g., in Lakhna and Murlidih (Madhupur Range) have been reduced to mere bushy stage with a doubtful future before them, unless special treatment is given to them.

Main associates of *sal* are *Terminalis tomentosa*, *Diospyros melanoxylon*, *Buchanania latifolia*, *Diospyros melanoxylon*, *Lagerstroemia parviflora*, *Sterculia Spp.* etc., occur. Density is generally open. Size of the crop is mostly under 1 ft. in girth. Digharia Pahar appears to have the best wooded slopes with good density at many places and quite frequent occurrence of poles of nearly 2 ft. in girth.

*Bamboo*

Exploitable bamboo (*Dendrocalamus strictus*) occurs on Trikut Pahar, Digharia Pahar, and Bhusi Dhamsila Bamboo Plantation in Kasbawasila block. Congestion and malformation is very common owing to prolonged maltreatment and over-exploitation. Bamboo on Phuljoi Pahar is not being able to grow up beyond switchy stage due to maltreatment.

*Khair*

*Acacia catechu* has come upon eroded sites, profusely at places, e. g., Jaipur felling series and adjoining areas. Exploitable size is rare; only 2,150 trees of 2 ft. and over in girth have been found on enumeration in Katoria Range.

*Salai*

There is profuse occurrence of *Boswellia serrata* on higher reaches of many hill slopes. Crop in general, is below exploitable size. *Salai* areas too are not easily accessible.

The description of the trees mentioned in the last *District Gazetteer of Bhagalpur* (1911) is quoted here—

“The following are the trees most frequently met with in these woods, with some of the products derived from them. The first place must be given to the (1) *sal* or *sakua* (*Shorea robusta*), which is very plentiful in the southern hills and in the neighbourhood of the Nepal frontier.\* Few large trees are now to be seen, as they are regularly cut down when the trunks have grown to a height of fifteen feet, to be used to support the roofs of huts. If larger, they are considered unwieldy, as the art of sawing is not practised by the hill-men. The extraction of the resin, which is always followed by the death of the tree, prevents its growing to a large size; but some immense specimens of *sal* are still to be met with in the north of the district. (2) The *abnus* or Indian ebony-tree (*Diospyros melanoxylon*) is a valuable tree, its black heart-wood being largely used by cabinet and ornamental furniture makers. The outer wood is white and soft, and is usually eaten away by insects. The ripe fruit is used in curries and is very astringent in flavour.

“The terminalias are very important trees in Bhagalpur. The (3) *asan* (*T. tomentosa*) is the principal of them, and it

---

\*This portion is now in Saharsa District.

is on the leaves of this tree that the *tasar* silk-worm (*Antheroea paphia*) is fed. This valuable insect is reared now only on *asan* trees in the jungle of thana Katuraia. With a view, perhaps, to confining the employment to themselves, the rearers have established certain rules of purity which they allege are absolutely necessary, and any infringement of which would totally destroy the success of their operations. Women, who would seem to be best fitted for such work, are entirely excluded, even their wives not being permitted to approach the workers. The low castes are excluded, as their appetites are defiled by the gross impurity of animal food. The workers eat sparingly, once a day, of rice cleaned without boiling (*alwa dhan*) and seasoned only with vegetables. They are not permitted to employ the washerman or the barber. The best cocoons are produced in the forests, whence they are brought by the wandering tribes. From these cocoons three successive broods are obtained, but those reared from the wild cocoons, *dhaba*, are said to be the best; the others, *sarihan*, *jarham* and *langa*, gradually degenerate. The cocoons for breeding are placed in a large flat basket. When the moths cut their way out, they immediately pair. In from fifteen to twenty hours afterwards, the males die, and are thrown away, and from twenty to twenty-five impregnated females are placed in a cylindrical basket with a narrow mouth, which is covered with leaves. Some leaves are also laid on the bottom of the basket. On the latter leaves, in the course of the day, the females deposit their eggs about 150 to 350 a-piece and then are thrown away. The eggs are placed in small baskets made of the leaves of the *bel* tree. On the ninth day the eggs are hatched; and the baskets on which they are lying are put upon a tree, over the leaves of which the young insects immediately spread. When they have consumed all the leaves of one tree, they are removed to other trees, and in thirty-six days from the time of their being hatched begin to spin. In fifteen days this operation is completed, and the cocoons are collected. The yield of a cocoon, that is, the tissue wound from it, gives usually about 10.2 grains troy of silk. From 700 to 1,000 cocoons are required for the production of a piece of silk from four to five yards long, and  $1\frac{1}{4}$  yard wide, which sells at from eight to ten rupees. The only operation attended with any trouble is removing the worms from one tree to another. The worms, however, must be watched, as crows and other birds, and hornets are apt to destroy them. Cocoons intended for sale are killed by being

put in boiling water, and then dried in the sun. All the large branches of the *asan* tree are lopped near the stem and young shoots, which produce large succulent leaves, are permitted to grow. The worms are only applied to the same tree once in two years, a whole year's rest being necessary before new branches begin to appear. The old die after being denuded of their leaves. The local supply of cocoons is insufficient to meet the local demand, and cocoons are largely imported from Gaya (Nawada Subdivision), the Sonthal Parganas, Birbhum, and Hazaribagh (Giridih Subdivision). None come from Malda or Murshidabad.

"Some experiments made formerly in Bombay led to the belief that the *tasar* worm might be domesticated, but it seemed doubtful whether this operation would not be more expensive than in the case of the common silk-worm (Bombay  $\times$  *mori*). In India there are special difficulties. The plaster or cement exuded by the worm with the filaments is peculiarly tenacious, and cannot be dissolved in water of a lower temperature than 200 Fahr.—a heat that can be kept up in the reeling basins only by the use of steam. The silk is also said to be difficult to dye in the finer shades of colour. Another obstacle is presented by an inherent defect in the filaments themselves. The thread of the *tasar* silk-worm is spun from a double spinnaret, and the filaments do not lie parallel, although close side by side; they are spirals, touching each other only at the exterior points of their curves, and united by the natural gum in, and with which they are exuded. It is on its spiral texture that the well known elasticity of the silk depends. In reeling the silk, it is necessary that the spirals should be worked well into each other, so as to form an even round thread; but it is doubtful whether the filaments can be brought to bear the amount of *croissance* necessary to produce the round thread, and till this can be effected, it will be impossible to provide an article of export which will be acceptable in the European market.....If an effective system of reeling be devised, it can only be carried out under skilled supervision in large filatures....

- (4) "The *kawa* (*Terminalia Arjuna*) is an immense tree, and is held sacred by the hill people. The kernels of the fruit of the (5) *buhira* (*T. belerica*) are eaten by the natives, and are said to taste like filberts. The tree is a large one yielding a white wood, durable though soft. Its gum, which much resembles gum Arabic, is abundant, and dissolves readily in water. (6) The *badam*

TABLE 4.  
Mean Wind Speed in Km/hr.  
(SABOUR.)

| January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | Annual. |
|----------|-----------|--------|--------|------|-------|-------|---------|------------|----------|-----------|-----------|---------|
| 1        | 2         | 3      | 4      | 5    | 6     | 7     | 8       | 9          | 10       | 11        | 12        | 13      |
| 4.5      | 5.5       | 7.4    | 9.5    | 10.5 | 8.9   | 9.3   | 8.7     | 7.1        | 4.3      | 3.5       | 4.0       | 6.9     |

TABLE 5.  
Special Weather Phenomena.  
(SABOUR.)

| Mean number of days<br>with— | January. | Feb-<br>ruary. | March. | April. | May. | June. | July. | August. | Sep-<br>tember. | October. | Nov-<br>ember. | Dece-<br>mber. | Annual. |      |
|------------------------------|----------|----------------|--------|--------|------|-------|-------|---------|-----------------|----------|----------------|----------------|---------|------|
| 1                            | 2        | 3              | 4      | 5      | 6    | 7     | 8     | 9       | 10              | 11       | 12             | 13             | 14      |      |
| Thunder ..                   | ..       | 0.6            | 3.0    | 2.7    | 4.0  | 7.2   | 14.1  | 11.3    | 13.0            | 16.1     | 2.1            | 0.0            | 0.1     | 74.2 |
| Hail ..                      | ..       | 0.0            | 0.0    | 0.2    | 0.1  | 0.0   | 0.0   | 0.0     | 0.0             | 0.0      | 0.0            | 0.0            | 0.0     | 0.3  |
| Dust-storm ..                | ..       | 0.6            | 0.1    | 0.6    | 0.7  | 2.7   | 0.7   | 0.0     | 0.2             | 0.0      | 0.0            | 0.0            | 0.0     | 5.6  |
| Squall ..                    | ..       | 0.0            | 0.0    | 0.0    | 0.0  | 0.0   | 0.0   | 0.0     | 0.0             | 0.0      | 0.0            | 0.0            | 0.0     | 0.0  |
| Fog ..                       | ..       | 4.4            | 2.6    | 0.1    | 0.0  | 0.0   | 0.0   | 0.0     | 0.0             | 0.0      | 0.6            | 0.0            | 0.4     | 8.1  |

TABLE 3.

*Frequency of Annual Rainfall in the district (Date 1901—1950).*

| Range in mm. | Number<br>of<br>years. | Range in mm. | Number<br>of<br>years. |
|--------------|------------------------|--------------|------------------------|
| 1            | 2                      | 3            | 4                      |
| 601—700      | 2                      | 1201—1300    | 10                     |
| 701—800      | 0                      | 1301—1400    | 5                      |
| 801—900      | 3                      | 1401—1500    | 8                      |
| 901—1000     | 7                      | 1501—1600    | 2                      |
| 1001—1100    | 7                      | 1601—1700    | 1                      |
| 1101—1200    | 5                      |              |                        |

TABLE 2.  
*Normals of temperature and relative humidity.*  
 (SABOUR.)

(SABOUR.)

| Month.    | Mean daily maximum temperature. |      | Mean daily Minimum temperature. |                    | Highest maximum ever recorded. |                    | Lowest minimum ever recorded. |       | Relative Humidity. |  |
|-----------|---------------------------------|------|---------------------------------|--------------------|--------------------------------|--------------------|-------------------------------|-------|--------------------|--|
|           | °C                              | °C   | °C                              | Date.              | °C                             | Date.              | 0830                          | 1730* |                    |  |
| 1         | 2                               | 3    | 4                               | 5                  | 6                              | 7                  | 8                             | 9     |                    |  |
| January   | 23.6                            | 8.1  | 29.0                            | 1958 January 27    | 0.6                            | 1934 January 19    | 82                            | 64    |                    |  |
| February  | 25.9                            | 10.6 | 33.3                            | 1949 February 26   | 2.8                            | 1950 February 12   | 76                            | 55    |                    |  |
| March     | 32.7                            | 15.4 | 41.1                            | 1941 March 29 ..   | 3.9                            | 1945 March 8 ..    | 54                            | 37    |                    |  |
| April     | 36.5                            | 21.1 | 43.3                            | 1956 April 21 ..   | 13.3                           | 1957 April 10 ..   | 52                            | 37    |                    |  |
| May       | 37.0                            | 24.7 | 45.1                            | 1958 May 27 ..     | 16.1                           | 1934 May 30 ..     | 67                            | 53    |                    |  |
| June      | 34.8                            | 26.3 | 46.1                            | 1931 June 12 ..    | 19.4                           | 1934 June 2 ..     | 78                            | 72    |                    |  |
| July      | 32.2                            | 26.3 | 37.8                            | 1958 July 8 ..     | 22.8                           | 1956 July 26 ..    | 85                            | 83    |                    |  |
| August    | 31.7                            | 26.2 | 37.4                            | 1957 August 21 ..  | 22.8                           | 1933 August 23 ..  | 85                            | 85    |                    |  |
| September | 32.0                            | 25.8 | 37.8                            | 1933 September 18  | 21.7                           | 1956 September 27  | 84                            | 83    |                    |  |
| October   | 31.2                            | 21.7 | 35.6                            | 1957 October 17 .. | 13.3                           | 1954 October 31 .. | 78                            | 76    |                    |  |
| November  | 28.1                            | 13.9 | 33.3                            | 1957 November 4 .. | 6.1                            | 1934 November 30   | 74                            | 72    |                    |  |
| December  | 24.6                            | 8.8  | 29.4                            | 1955 December 5    | 3.3                            | 1942 December 27   | 80                            | 71    |                    |  |
| Annual    | 30.9                            | 19.1 | ..                              | ..                 | ..                             | ..                 | 75                            | 66    |                    |  |

\*Hours I. S. T.



TABLE  
Normals and extremes

| Station. | Number of years of data. | January. | February. | March. | April. | May. | June. | July. | August. |
|----------|--------------------------|----------|-----------|--------|--------|------|-------|-------|---------|
|----------|--------------------------|----------|-----------|--------|--------|------|-------|-------|---------|

| 1                     | 2   | 3        | 4    | 5    | 6    | 7    | 8     | 9     | 10    |
|-----------------------|-----|----------|------|------|------|------|-------|-------|-------|
| Bhagalpur             | 50  | (a) 11.9 | 19.8 | 12.5 | 17.3 | 57.4 | 173.0 | 245.6 | 268.2 |
|                       |     | (b) 0.9  | 0.5  | 1.2  | 1.3  | 3.1  | 8.6   | 13.7  | 13.7  |
| Banka                 | 50  | (a) 15.5 | 22.3 | 15.0 | 17.0 | 62.0 | 190.7 | 301.5 | 275.3 |
|                       |     | (b) 1.2  | 1.5  | 1.1  | 1.3  | 3.4  | 9.2   | 14.9  | 14.4  |
| Colgong               | 50  | (a) 10.7 | 20.3 | 12.9 | 24.4 | 71.9 | 214.1 | 286.3 | 282.2 |
|                       |     | (b) 1.0  | 1.6  | 1.0  | 1.6  | 3.6  | 9.2   | 13.4  | 13.9  |
| Baunsi                | 50  | (a) 12.5 | 23.4 | 15.0 | 19.1 | 66.0 | 190.5 | 281.9 | 275.6 |
|                       |     | (b) 1.0  | 1.7  | 1.3  | 1.8  | 3.9  | 9.4   | 15.2  | 14.8  |
| Sultanganj            | 34  | (a) 12.9 | 18.0 | 8.4  | 15.0 | 39.1 | 166.4 | 285.5 | 281.7 |
|                       |     | (b) 1.1  | 1.6  | 0.7  | 0.9  | 2.4  | 7.2   | 13.1  | 12.3  |
| Katoria               | 29  | (a) 15.5 | 23.4 | 12.5 | 22.3 | 54.9 | 167.9 | 317.3 | 259.1 |
|                       |     | (b) 1.3  | 1.7  | 0.9  | 1.5  | 3.3  | 8.4   | 16.9  | 15.1  |
| Sonehat               | 27  | (a) 14.0 | 19.8 | 10.9 | 25.4 | 59.2 | 163.3 | 276.1 | 274.5 |
|                       |     | (b) 1.5  | 1.4  | 0.9  | 1.8  | 3.3  | 7.2   | 13.9  | 13.4  |
| Amarpur               | 28  | (a) 15.7 | 25.7 | 15.2 | 17.3 | 66.8 | 183.4 | 341.4 | 275.8 |
|                       |     | (b) 1.3  | 1.9  | 1.1  | 1.3  | 2.9  | 7.1   | 15.3  | 13.8  |
| Sabour                | 30  | (a) 13.7 | 20.1 | 9.7  | 25.1 | 55.4 | 170.4 | 256.3 | 266.2 |
|                       |     | (b) 1.2  | 1.6  | 0.8  | 1.9  | 3.7  | 8.4   | 15.0  | 14.8  |
| Bangson               | 45  | (a) 10.4 | 19.6 | 10.9 | 18.5 | 64.5 | 191.8 | 301.0 | 304.3 |
|                       |     | (b) 0.9  | 1.6  | 0.7  | 1.3  | 3.7  | 8.2   | 12.8  | 13.3  |
| Bhagalpur (District). | ... | (a) 13.3 | 21.2 | 12.3 | 20.1 | 59.7 | 181.3 | 289.3 | 276.3 |
|                       |     | (b) 1.1  | 1.6  | 1.0  | 1.5  | 3.3  | 8.3   | 14.4  | 13.0  |

(a) Normal rainfall in mm.

(b) Average number of rainy days (days with rain of 2.5 mm. or more).

*Winds*

Winds are generally light with a slight increase in force in the late summer and monsoon seasons. In May the winds are mainly from directions between north-east and south-east. In the monsoon season the winds are easterly or south-easterly. Winds are variable in October. In the rest of the year winds are south-westerly to westerly in the mornings and westerly to north-westerly in the afternoons.

*Special weather phenomena*

Storms and depressions particularly those in the late monsoon and post-monsoon months which originate in the Bay of Bengal and move in a north-westerly to northerly direction, affect the district and its neighbourhood and cause heavy rain and strong winds. Thunder storms occur during the period February to October, but their frequency is highest in the monsoon months. Those in April and May are sometimes violent. Fogs occur occasionally in the winter season.

Tables 3, 4 and 5 give the temperature and humidity, mean wind speed and the frequency of special weather phenomena respectively for Sabour.

*Temperature*

There are meteorological observatories at Sabour and Bhagalpur. As the data for the latter stations are available for a few years only and as the meteorological conditions at the two stations are very similar, the climatological account which follows is based mainly on the data of Sabour. The data for Sabour may be taken as representative of the district as a whole. The cold season starts in November when temperatures begin to drop. January is the coldest month with the mean daily maximum temperature at  $23.6^{\circ}\text{C}$  ( $74.5^{\circ}\text{F}$ ) and the mean daily minimum at  $8.1^{\circ}\text{C}$  ( $46.5^{\circ}\text{F}$ ). During cold waves which sometimes affect the district in the wake of western disturbances which pass across north India in the winter season, the minimum temperature may go down to a degree or two above the freezing point of water. In February the temperatures increase slowly and from March onwards the increase is more rapid. May is the hottest month with the mean daily maximum temperature at  $37.0^{\circ}\text{C}$  ( $98.6^{\circ}\text{F}$ ). The maximum temperature in this month and the early part of June before the onset of the south-west monsoon may sometimes go above  $45^{\circ}\text{C}$  ( $113^{\circ}\text{F}$ ). With the onset of the monsoon by about the second week of June the day temperature drops down appreciably and there is some relief from the oppressive heat, but the night temperature remains at about the same level as in the summer. After the withdrawal of the monsoon by the end of September night temperatures drop rapidly while the day temperatures decrease slowly in October and fairly rapidly from November. The highest maximum temperature recorded at Sabour was  $46.1^{\circ}\text{C}$  ( $115.0^{\circ}\text{F}$ ) on 1931 June 12 and the lowest minimum temperature was  $0.6^{\circ}\text{C}$  ( $33.1^{\circ}\text{F}$ ) on 1934 January 19.

*Humidity*

March and April are the driest months of the year when the relative humidities are about 50 to 55 per cent in the mornings and 35 to 40 per cent in the afternoons. Humidities increase in May and June and in the monsoon season they are above 80 per cent. In October, November and December the relative humidities are between 70 and 80 per cent usually. Thereafter they decrease gradually.

*Cloudiness*

During the period October to April skies are generally clear or lightly clouded. The cloudiness increases from May and during the south-west monsoon season the skies are mostly heavily clouded or overcast.

On the approach of an individual the fish dives under water with great agility but does not stay there long and comes up to the surface at a short distance from its original position. As the fish progresses, ripples of the displaced water are formed at the sides of the head. During locomotion the pectoral fins are constantly in action, and the pelvics are held out fully stretched. The tail fin moves gently from side to side. The fish moves through the water very gracefully and occasionally ducks its head below the surface presumably to keep the eyes moist. Sometimes, when suddenly alarmed, it skips along the surface by using its muscular tail and tail fin for giving a push to the water. The skipping is done only over a very short distance after which the fish dives and clears away under cover of water.

#### CLIMATE\*

The climate of this district is characterised by a hot summer and a pleasant winter season. The cold season starts in November and lasts till February. The period from March to the first week of June is the summer season and this is followed by the south-west monsoon season which lasts till the end of September. October is a transition month.

#### Rainfall

Records of rainfall are available for ten stations in the district for periods ranging from 37 to 91 years. The details of the rainfall at these stations and for the district as a whole are given in tables 1 and 2. The average annual rainfall in the district is 1174.2 mm. (46.23"). The rainfall is fairly uniform throughout the district. About 81 per cent of the annual rainfall is received in the south-west monsoon season, July being the rainiest month. The variation in the annual rainfall from year to year is not large. In the fifty-year period 1901 to 1950 the highest annual rainfall which amounted to 138 per cent of the normal occurred in 1922, while in the very next year 1923, the annual rainfall, was the lowest being only 53 per cent of the normal. There were five years when the rainfall was less than 80 per cent of the normal. At some of the stations rainfall less than 80 per cent of the normal have occurred on two or three consecutive years. As will be seen from table 2 the annual rainfall in the district was between 900 and 1400 mm. (35.43" and 55.12") in 34 years out of fifty.

On an average there are 59 rainy days (i. e., days with rain of 2.5 mm.—10 cents—or more) in a year. This number varies from 52 at Sultanganj to 64 at Katoria.

The highest rainfall in 24 hours recorded at any station in the district was 351.3 mm. (13.83") at Bangaon on 1890 July 27.

---

\*The write-up of this sub-section has been contributed by D. D. G. of observatories (Climatology and Geophysics), Poona.

"The scaly ant-eater (*Manis Pentadactyla*), the *bagarkit* of some of the natives, and *ban rohit* or forest carp of others, is met with on the banks of streams in the north. A ring, made of its scales and worn on the left hand, is considered a charm against fever. Its flesh is also valued as an aphrodisiac.

"The birds and reptiles of Bhagalpur are almost identical with those of the adjoining district of Monghyr, which have been described in the Gazetteer of that district. The most plentiful small game are wild geese, wild duck, teal, green and rock pigeons, snipe, quail, ortolan, black, painted, grey, and double spurred partridges. There are also the *chandil* or crested lark, the crane in all its varieties, peacocks, parakeets, parrots, hawks, doves of various kinds, the *bulbul*, spoonbill, *sarus*, *teru*, fishing eagle, vulture, kite, crow, jackdaw, owls, large and small, king-fishers, wood-peckers, jays, plovers, curlews, paddy-birds, *koi*, golden oriels, and common sparrows. Of reptiles, there are the black and brown cobra, the *dhemna*, the *korait*, the green snake, the *mahil* tree-snake, and several kinds of water snakes, the *gosamp*, blood-sucker, *bishkopra*, scorpion, centipede, and various kinds of lizards, the man-eating crocodile and the fish-eating gavial are both found especially in the north of the district."\*

In absence of detailed investigation it is difficult to ascertain the exit and decline of the faunas mentioned in the last *District Gazetteer of Bhagalpur*. But it is reported that some specimens, viz., *bija*, *barsinghas*, *sambhar* and *bagar kit*, etc., have either been disappeared or have become rare. The birds and reptiles are still almost identical with those of the adjoining district of Monghyr.

### Fish

The principal species of fish are members of the great carp family including the well-known *rohu* (*Labeo rohita*). *Katla* (*catla buechanani*), *Boari* (*Wallago attu*), *tengra* (*Macrurus tengra*), *Lilpa* (*Clupea ilisha*), *bachwa*, *Jhinga*, *pothia* and featherbacks, etc. Fish is found in the rivers, streams and low lying fields.

The details of the fisheries have been given in the chapter on "Agriculture and Irrigation".

A Grey mullet of the genus *Mugil artedi* locally known as *Arwari* is found in Bhagalpur, Purnea and Patna. Of these, *M. corsula* has the remarkable habit of swimming with its eyes above the surface of the water and usually moves in small shoals.

---

\**District Gazetteer of Bhagalpur* (1911), pp. 19—24.

hunted down. The common Indian hare (*Lepus ruficaudatus*) or *khargosh* is very abundantly found; it is eaten by all classes, being considered pure food.

“There are no wild elephants now in Bhagalpur, but down to the end of the eighteenth century they were found in large numbers both north and south of the Ganges. Even in Dr. Buchanan Hamilton’s time (1807—13) they did much mischief along the foot of the southern hills, from Rajmahal to Monghyr. He states that they had then, according to native tradition, been only thirty or forty years in this part of the country. Whence they were said to have come, he does not mention. He estimated them in 1810 at one hundred head. He also speaks of a colony of elephants frequenting the marshy parts of the north of the District. The Indian wild boar (*Sus indicus*) is found in all parts of the District, but chiefly in the part north of the Ganges. It does considerable damage to crops, and it is freely eaten by numerous low castes.

“There are no true stags in the District, but smaller deer are numerous. The *barasingha* or swamp deer (*Rucervus Duvancellii*) is sometimes met with as high as eleven hands. It was common near the Tarai, but scarce in the southern hills. The *sambhar* stag (*Rusa Aristotelis*) was similarly distributed; it is a taller and heavier animal than the last. It is hardly ever heard of now. Its horns vary very much in size, being sometimes short and very thick, and sometimes long, thin and curved. The spotted deer and hog deer are common both north and south of the Ganges. The former (*Axis maculatus*) is rarely ten hands high, but is generally more than two hands higher than any specimen of the latter (*A. porcinus*) that I have seen. The spotted deer are very gregarious, whilst the hog deer is a solitary animal, both sexes being generally found alone. The barking deer (*Cervulus aureus*) is also met with and supplies better venison than any of the foregoing. Like the mouse deer (*Meminna indica*) a pretty little animal about ten inches high, it is common in the hilly country to the south. A few four-horned antelopes (*Tetracerus quadricornis*) stray in from the Tarai. The antelope or *kalsar* (*Antelope bezoartica*) is common on open plains in the north of the district, and affords much sport. Wild buffaloes (*Babalus arni*) are now becoming very scarce, but may occasionally be seen in the north of the district. They were common formerly in the Kosi diara area.

"The Bengal and gold-spotted mongoose (*Herpestes malaccensis* and *H. nepalensis*) are abundant, and are prized for their antipathy to snakes. Their alleged immunity from the deadly poison of the cobra is believed to due, more to their activity in escaping the deadly bite than to any peculiar power of resistance to its influence in their constitution.

"The Indian wolf (*Canis pallipes*) has been seen on both sides of the Ganges, but is now very rare. It is called *hundar* by the natives of Bhagalpur. The jackal, or *gidar* (*Canis aureus*) is the most plentiful of this genus. Its peculiar cry is heard everywhere marking, according to native opinion, the various watches of the night. The wild dog or *bankuta* (*Cuon rutilans*) is said to be met with; its existence in Bhagalpur is not beyond doubt, although many dogs of a deep rusty colour and marked vulpine aspect are found wild in the southern hills. The Indian fox (*Vulpes bengalensis*) or *lomri* is seen everywhere; it is a pretty little animal.

"The whale tribe is represented by the Gangetic porpoise or *suns* (*Platanista gangetica*). It feeds on small fishes and crustacea and may be seen in large shoals at the mouth of the Ghugri. Its ordinary length is from 6 to 7 feet. Its habitat is muddy water, in which good sight is of little use. Its eyes are small, and the optic nerves rudimentary. The porpoises are shot and speared when they venture into shallow water. The lower classes of fishermen eat their flesh, and their oil is collected as a specific for rheumatism.

"The rodents include squirrels, rats, hares, and porcupines. The striped squirrel (*Sciurus palmarum*) is the most common of the tribe. Indeed, it is doubtful whether any other squirrel is found. The gerboa rat (*Gerbellus Indicus*) is said to be sometimes met with. The natives call it *harinmus* or antelope rat. The bandicoot (*Mus bandicoota*), which derives its name from the Telinga word *pandikoku* or pig rat, is found in towns. The brown rat (*M. decumanus*) is found in most masonry buildings; and the Nepal rat (*M. plurimamis*) in the northern plains. The common mouse (*M. urbanus*) is also plentiful. The Indian porcupine (*Hystrix leucura*) or *sahi* is becoming scarce, as it is eaten by the lower castes. It is usually obtained by being smoked out of its burrows. When attacked it usually runs a little, and then suddenly charges backwards with its spines erect. The smaller or Bengal porcupine is also found and

combs at the bottom of the galleries. He then with violent puffs dissipates the dust and crumbled particles of the nest, and sucks out the inhabitants of the comb by such forcible inhalations as to be heard at 'two hundred yards distance or more'. Large larvae are in this way sucked out from great depths under the soil. These bears are confined to the southern hills, and are becoming scarce. The hog-badger or *bhal-sur* is an inhabitant of the Tarai. It has been observed that this animal can walk erect on its hind feet. Some specimens kept in captivity, preferred fruit, rejecting animal food, whilst others seemed to thrive on meat and fish alone. The badger or *bija* (*Mellivora Indica*) keeps the hilly tracts, and rarely exceeds three feet in total length. The yellow bellied weasel (*Mustela Kathiah*), a most offensively smelling animal, a native of Nepal, is said to be met with in the Sub-Tarai country. The Indian otter or *uth* (*Lutra nair*) is sometimes found in muddy streams, and is trained for fishing purposes. Its success in killing and bringing up a fish, often five times its own size, is remarkable. Just outside the district, at Rajmahal, the fishing castes bestow much care on training otters.

"The tiger (*Felis tigris*) is occasionally found amongst the high grass jungles of the Kosi, and in the hills in the south of the district.

"The leopard (*Felis pardus*) is also found chiefly to the south of the Ganges. The large tiger-cat (*F. viverrina*) is found in thick jungles, and also along the edges of marshes in the north. It has been known to carry off very young children and calves. The leopard cat (*F. bengalensis*), which is similarly distributed is not such a large or powerful animal. There are several species of wild cats, the *jangli billi* (*F. chaus*) being the most common. The common hyaena (*Hyaena striata*) is occasionally seen. Civets are numerous in Supaul and are met with in the southern hills, both the larger (*Viverra zibetha*) and the smaller (*V. malaccensis*) being represented. Both are kept in confinement by natives for the sake of the drug derived from their subcaudal glands. They live on small birds and animals, egg-snakes, frogs, and insects, and are in their turn eaten by some low castes, such as Musahars. The *Khatas* or common tree-cat (*Paradoxurus musanga*), also called toddy cat by Europeans from its well-established habit of drinking the juice of the Palmyra palm, is found in the southern *parganas*; and the Tarai tree cat (*P. bondar*) in the northern forests.

only on the south of the river. It is strange that it has never availed itself of an opportunity of crossing over, but such is the case, every authority since Buchanan-Hamilton having failed to obtain a specimen to the north of the Ganges. A long-tailed monkey has, however, been occasionally seen in the northern boundary of the District, probably the Himalayan *langur* (*Presbytis Schistaceus*). The short-tailed monkey or *bandar* (*Inuus rhesus*) is numerous everywhere, particularly so in the northern forests. The *Macacus radiatus*, the showman's monkey, has been seen, but such specimens were probably escaped menagerie animals. Bats of many kinds are also met with. The most numerous of the frugivorous tribe is the large fox-bat or *badur* (*Pteropus Edwardsi*), well known for its inroads on garden fruit. The small fox-bat or *Chamgudri* (*Cynopterus marginatus*) takes up its residence in every house. The Vampire (*Megaderma lyra*) is common, particularly in the Supaul subdivision. Several species of leaf bats (*Rhinolophus*) are found, chiefly in the hills. The long-armed bat (*Taphozous longimanus*) frequents out houses and ruins everywhere. The wrinkle lipped bat (*Nyctinomus plicatus*) is mostly an inhabitant of trees. The yellow bat (*Nycticepus luteus*) is occasionally found. The Harlequin bat (*Nycticepus ornatus*) is seen but rarely.

"The insectivora are fairly represented the most common member of the order being the shrew, the *chhachhunda* of natives and musk-rat of Europeans (*Sorex caeruleus*). The large mouse-coloured shrew (*S. murinus*) and the Nepal wood shrew (*S. nemorivagus*) are also met with. The Himalayan water shrew is occasionally seen near the hill streams in the north of the district. Some hedgehogs are also found, probably *Erinacei collares*. The *Tupaia Ellioti*, or Madras tree shrew is found in the southern hills. Two kinds of bears have been recognised, the common black Indian bear (*Ursus labiatus*) and the *bhal bajra* (*U. Indicus*). They are both harmless animals except when attacked. They live on black ants, termites, beetles, fruits, particularly the seeds of the *Cassia fistula*, date fruit, and honey, but their favourite food consists of the succulent petals of the *mahua*. Colonel Tickell's account of the power of suction in the bear, as well as of its faculty of propelling wind from its mouth, has been verified in this district. By these means it is enabled to procure its common food of white ants and larvae with ease. On arriving at an ant-hill, the bear scrapes with his forefeet until he reaches the large

(25) The pomegranate or *anar* (*Punica granatum*). (26) The grape (*Vitis vinifera*); a green variety has been brought to the district from Lahore: it thrives well, but the fruit is small. (27) The *wampi* (*Cookia punctata*), a rare fruit—the climate is not favourable to it. (28) The *sapota* (*Achras sapota*), there are some fine trees with excellent fruit in this district. (29) The *karanda* (*Carissa carandas*), plentiful in all gardens. (30) The *bijati* (*Ehretia serrata*), a native of Bhutan, a few are found in the north of the district, fruit good. (31) The *khirni* (*Mimulus kanki*), with a rather large oval berry, a handsome tree. (32) The *maina* (*Vangueria spinosa*) with a yellow succulent fruit of the size of a cherry, not much eaten. (33) The *pir alu* (*Posoqueria uliginosa*), a small thorny tree yielding an edible berry. (34) *Jalpai* (*Elaeocarpus serratus*), said to resemble olives in taste: used in curries. (35) The *paniyala* (*Flacourtia catephracta*) a favourite fruit. (36) The *bainchi* (*Flacourtia sepidea*), little eaten in this district. (37) The *badam* (*Amygdalus communis*): many trees of this excellent nut are met with in the district, grown from imported seed.\* It is reported that except a few most all the fruit trees are in existence.

#### FAUNA OR ZOOLOGY

Regarding Zoology the last District Gazetteer of Bhagalpur (1911) mentions :—

“The FERAENATURA of Bhagalpur are very numerous when compared with those of most Districts of Bengal and Bihar, a circumstance probably due to the variety of the physical characteristics of the District, and to the fact that it lies between and merges into a number of tracts, distinct in their climate and elevation. The Fauna of Central India is represented by a few members found in the southern hills, which are really outlying ranges of the great Vindhyan system. The animals of Rajmahal, which are specifically distinct, add their quota on the east. North of the Ganges most of the mammals found in the central plain of Bengal are to be met with; whilst further north not a few representatives of the Nepal and Himalayan families occur, together with some of those peculiar to the Tarai.

“Monkeys are numerous both north and south of the Ganges. The *hanuman* or *langur* (*Presbytis entellus*) is found

yield a more abundant, stronger, and cheaper drink, which, however, lasts for a much shorter time. About the end of March the *tal* begins to blossom, and throws out numerous flowering stems or spadices. Towards the close of April the ends of these are cut three times a day, a thin slice being removed at each cutting, and jars are suspended under them to catch the juice. New spadices shoot in succession for two months and continue to yield till the end of June. In Bhagalpur only the male flowers are cut, the female ones being left to mature their fruit. The juice ferments without being exposed to the sun and without the addition of old juice, a circumstance due probably to its being collected in the hot weather. During the height of the season it sells for half the price of date spirit, that is, for a farthing a quart; and as it is also nearly twice as strong, it forms one of the cheapest intoxicating liquors in the world. Some trees bleed throughout the rainy season, and their juice is used instead of yeast for making bread. (7) The tamarind, *imli* or *tentul* (*Tamarindus Indica*), thrives in Bhagalpur, and the fruit is exported. (8) The plums, *bair* and *kul* (*Zizyphus jujuba* and *Z. vulgaris*), are very common fruits. Three kinds are enumerated by natives, the *narkuli*, the *patnai* and the *desi*; the last is wild; the first, which is the best, tastes like the English pear, and the *patnai* like half-ripe plums. They all ripen between June and August. (9) The *jam* or *jamun* (*Eugenia jambolana*), (10) the *banjam* (*E. fruticosa*), (11) the *jamru'* (*E. alba*); and (12) the *gulab jam* (*E. jambos*), are all eaten, the best tasting like half-ripe plums, and the wild sorts being little better than sloes. They ripen between June and August. (13) The *tipari* or gooseberry of Europeans and *phukta* of natives (*Sida Asiatica*), is a palatable fruit. (14) The *amra* (*Spondias mangifera*) is a large plum like fruit, rather wanting in flavour which ripens in the cold weather. (15) The *kamranga* (*Averrhoa carambola*) is found under two varieties—one producing a sweet, the other a sour, fruit: both blossom during the rainy season the fruit ripening during December and January. (16) the custard apple or *a'a* (*Anona squamosa*). (17) The bull's heart or *non-ata* (*Anona reticulata*). (18) The *amaltas* or *aura* the *amluki* of Bengal (*Embllica officinalis*). (19) The guava or *unjir* (*Psidium pyrifera*). (20) The pumelo or *batavi nebu* (*Citrus decumana*). (21) The lime or *nebu* (*Citrus limomum*); there are several varieties of this fruit. (22) The *papita* (*Carica payaya*), (23) The *gab* (*Diospyros embryopteris*). (24) The fig or *dumar* (*Ficus carica*).

whole fermented mass, flowers and water, is then put into a still, and the spirit is drawn slowly off. It is never rectified, and after distillation is always very much diluted with water, and consequently will not keep above fifteen days. If rectified, or even if kept undiluted it could be preserved longer, but in that case customers would not have enough for their money. The still is a large earthen jar, inclining a little to one side, placed over a rude fire-place, confined by two walls of earth. The head of the still is a small earthen pot inverted on the mouth of the larger and smeared with clay. Three tubes of hollow bamboo pass from the head to an equal number of narrow-mouthed, unglazed earthen jars that serve as receptacles, and are placed in a shallow trough containing water.

- “(3) The jack fruit or kanthal (*Artocarpus integrifolia*) is also very common. (4) The plantain or *kela* (*Musa sapientum*), found everywhere, is of an inferior description. (5) The *khajur* or date palm, and the *tal* tree (*Borassus flabelliformis*), are both common throughout the district, being cultivated for the intoxicating fermented juice, called *tari*, obtained from them. The *khajur* is fit for tapping when ten years old, and lives about twenty years more, during which time a notch is yearly made in the stem just under the new leaves that shoot from its summit, and on opposite sides of the stem in alternate years. The cut is triangular, and at its lower corner a leaf is placed to collect into a pot the juice that exudes. The season commences about the beginning of October, and lasts until the end of April. The cut bleeds for from two to seven days, and is kept open by means of scraping the surface or removing a very thin slice from it. The tree is allowed an equal number of day's rest before a new incision is made. The cuts are made in the afternoon, and the juice exuding during the night is collected in the morning, the yield being about four pounds weight from each tree. Its taste when fresh is sweet, with somewhat the flavour of the water contained in a young cocoanut, but slightly bitter and astringent. Owing to the coolness of the season it does not readily ferment. It is, therefore, collected in large earthen jars, which have been first filled up to a sixteenth of their capacity with old fermented liquor, and exposed to the sun for about three hours when the fermentation is complete. The spirit is sold for about a half penny a quart; and two quarts, or one penny's worth, will produce intoxication. At the season when the supply of date-liquor begins to fail, the *tal* trees commence to

the northern marshes. (29) The *kasmar* or *kasambar* (*Schleichera trijuga*) is a short, middling-sized tree, the pulpy subacid aril of whose fruit is edible. (30) The *katail* and *ghunt* are common shrubs in the jungle.

"The fruit trees indigenous to Bhagalpur District are the following:—(1) The mango or *am* (*Mangifera Indica*) is common all over the District, specially to the north of the Ganges. (2) The *mahua* (*Bassia latifolia*), the most extensively grown tree in the southern hills. The ripe kernels are eaten like almonds, but are not wholesome. They also yield an oil, four pounds of kernel producing one pound of oil. After being dried in the sun for some days, they are broken in a mortar, and then put in a common oil mill and pressed. In the cold season the oil is thick, but in hot weather it becomes liquid. In most parts it is only used for lighting purposes, being unfit for food on account of its bitter, disagreeable flavour. The poor in the hill tracts, however, use it in cookery, and remove the bitter taste by boiling it in water. The most important produce of the tree is the flower, which expands in the evening and falls the following morning. It is succulent, resembles a round berry and is full of a thick sweet juice, which would not be disagreeable but for a strong narcotic smell. When collected the flowers are spread on mats, or on a piece of clear ground, and dried in the sun and are then fit for sale. A single tree yields from 10 to 60 lbs. of dried flowers; but it is alleged that were care taken to keep off deer and monkeys, double that quantity might be procured. In the eighteenth century the flowers sold on the tree for from 6 to 3 maunds ( $4\frac{1}{2}$  to  $2\frac{1}{2}$  cwt.) to the rupee (then worth about 2s.); and in the year 1810-11 at Banka, close to the forests, according to Dr. Buchanan Hamilton, only one and a quarter maunds (102 lbs.) was obtained for this money. The present price varies from sixty to eighty pounds for the rupee. In the southern parts of the District, the poor are compelled to derive from this flower a portion of their ordinary nourishment amounting, according to Dr. Buchanan Hamilton's estimate, to five-twelfths of their entire food during five months of the year. *Mahua* flowers are, however, most used for the distillation of country spirit. The process is a very simple one. The flowers, with from an equal to a double quantity of water, are put in large earthen vessels with narrow mouths and left to ferment. This is effected in from four to eight days, according to the heat of the weather. The

(T. Catappa) is also a timber tree. (7) The *hara* (T. chebula) produces the myrobalams of trade. The tender leaves are punctured by an insect in order to deposit its eggs. The wound enlarges through the extravasation of sap, into a hollow gall, from which good ink is derived. It also yields to the cotton-dyeing caste of Chhipis a most durable yellow. (8) The *kadam* (Nauclea cadamba) is a large tree with thick foliage. (9) The *amaltas* (Cassia fistula) is remarkable for its pendant racemes of bright yellow flowers. (10) The *mahuā* is a most useful tree. A description of it is given lower down under the heading "Fruit Trees." (11) *Bijasar*, the *paisar* of the women and the *pitsal* of Bengal, is a large timber tree. It yields a red juice, which hardens in the air into a dark red, very brittle, gummy resin, and has a strong astringent taste. (12) The *sitsal* (Dalbergia latifolia) is not common, and its wood—black, with branching light-coloured veins—is not much used. (13) The *sisso* (D. sissoo) yields to boat-builders their crooked timbers and knees. It and the *sitsal* grow to a large size. (14) The *paltus* (Butea frondosa) grows to a large size in Bhagalpur, and yields a ruby-coloured stringent gum. There are several species of Acacia. The best known are—(15) A. Arabica (*Babal*); (16) A. farnesiana; (17) A. Sirissa (*sirish*) and (18) A. tomentosa (*sain babal*). (19) Entada pursoetha (*gilla*), which, like the Acacias, was formerly included in the genus Mimosa, is remarkable for the size of its nuts, and the hardness of the interior albumen, which is used by washermen for crimping linen. From (20) Acacia catechu is obtained the native drug called *kath*, which is eaten along with *pan*. It is prepared either from the chopped up heart-wood of the tree, or from the exuded gum yielded by cutting through the bark. All acacias, particularly the two first-mentioned and a related species (21) Albizzia stipulata (*simlaki*), produce gum, having much of the appearance and qualities of gum Arabic. (22) The *sakai* (Boswellia thurifera) yields frankincense, and is a large conspicuous tree. The resin, although plentiful, is not much collected. (23) The *piyar* (Buchanania latifolia) is a timber tree the kernels of whose fruit take the place of almonds amongst natives. (24) The *karanji* (Sterculia urens) is remarkable for its white bark and usually leafless condition. (25) The *papra* (Gardenia latifolia) is a small but very ornamental tree. (26) The *kachnar* (Bauhinia variegata) is a tall, elegant tree, little used but for firewood. (27) The *tentul* (Tamarindus Indicus) is not a common tree, but is met with occasionally of large size. (28) The *jar* (Barringtonia acutangula) is the most common tree in