

A  
GEOGRAPHICAL, STATISTICAL,  
AND  
HISTORICAL DESCRIPTION  
OF  
THE DISTRICT, OR ZILA,  
OF  
**DINAJPUR,**  
IN  
THE PROVINCE, OR SOUBAH,  
OF  
**B E N G A L.**

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BY  
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BOOK III.  
NATURAL PRODUCTIONS.

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CHAPTER I.

ANIMALS.

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With the exception of fish, the animals that are found in this district, are of little importance.

I observed only one kind of monkey, which has a tail that reaches below the knee, but not to the heel, and is called *Morkot* by the natives. Its hands are black, and the calosities on the buttocks are brown. When old, the face and buttocks become red. It seems to be the *Simia Rhesus* of Audibert, and the *Macaque à queue courte* of Buffon. The younger animal, the face of which is not red, seems to be the *Patas à queue courte* of this great naturalist. In the district of Dinajpur monkeys are neither numerous nor very troublesome. Those that I saw, were in the woods near Peruya; but I was told, that the greatest number is to be found near Nawabgunj. They assemble there on the banks of the Korotoya, and collect the fruit of Singgur (*Trappè*). According to the natives, after having procured a quantity, the monkeys divide the spoil, and bathe; and then each eats his share. This is probably an idle story, such as are usually current concerning the manners of different animals.

The wild elephant and rhinoceros can scarcely be said to be known. Two wild elephants certainly made their appearance in the forests of Peruya in the year 1806, and remained there a rainy season. They were seen by many, and are said to have killed some people, who straggled near them. It was supposed, that they were accompanied by a rhinoceros, for what reason I cannot say; as this animal, so far as I could learn, was not seen, and does not usually frequent such company. The elephants had probably wandered from Morong. A thousand idle stories were immediately circulated. It was said, that they were actually elephants which had belonged to Bhim Raja, the son of Pandu, who lived about 5,000 years ago. Two elephants to a multitude of people, who chose to assemble and attack them, are not at all formidable: and these invaders ought to have fallen an easy prey, had the people been led to the attack; but no officer of police nor landholder took any pains, and what is every one's business is commonly neglected. They were allowed to ravage at pleasure, and occasioned great dismay, so that several villages were deserted. The only step taken was a grand sacrifice, to which even the Moslems contributed. Twenty or thirty brahmins received a sum of money, and performed a grand ceremony, which was effectual, as the dry season approached.

The jackal and Indian fox (*Canis Bengalensis*, Pennant,) are very common, but harmless. I heard of no wolves nor hyenas.

Tigers and leopards are not numerous ; as they therefore have an abundant supply of food, from the cattle which feed in the woods, they very seldom attack men. Although they frequent the neighbouring forests, and even the streets of Ghoraghat, the people walk alone through both, even at night ; and I heard of only one person in the whole district, who had been killed in the course of the year. It was in this district, that a white animal of this kind was killed some years ago, the skin of which having been sent to Europe by Lord Wellesley, occasioned a dispute, whether it was that of a lion or tiger. No such animal has been seen before nor since. Mr. Tucker, an Indigo Planter of this district, declares, that in a wood near Lalbazar, he saw an animal resembling a tiger in size and colour, but it had a mane like a lion. I offered a considerable reward for it, dead or alive, but without success ; this however is no proof of its not existing, as I found the people totally unwilling to bring even fish, plants, or any other natural production. At Ghoraghat I heard of a small spotted animal of the cat kind, called Nakéswori, which is said to be common in the neighbouring woods, where it lives on trees. No offer of reward could induce the people to bring one. This perhaps may be the *Cerval*, an animal which I have never seen. I have not been able to learn that any where in India there is such an animal as the panther.

The Indian ichneumon is very common, but is seldom tamed. Otters are so numerous, that their fur might become an object of commerce ; but there is no person here who understands the method of taking them : so far as I can learn, it is practised by the people of Dhaka alone. Bears (*Ursus labiurus*, B.) are not numerous nor destructive, and are found chiefly in the ruins of Peruya.

Where the soil is loose and sandy, the common porcupine is abundant, and even destructive ; as it prevents the cultivation of turmeric and ginger. It may be eaten by Hindus of all ranks ; and some that I had caught were disputed for with great eagerness by the people : yet these animals are seldom molested.

Rats and mice are by no means so troublesome as in Europe.

Hares are very numerous, and easily caught : yet although they are considered as pure food, they are seldom molested. When a man wishes to give a feast, he sends out some people with poles, who surround the long grass, and knock down as many as are required.

There are many deer in the vicinity of the Mohanunda, and of the lower parts of the Punabhoba and Tanggone ; but scarcely any where else. They are so numerous among the long reeds and woods of these parts, that they are a nuisance by destroying the crops. I saw no kinds except the axis and porcine deer, and in this class of animals, the natives apply specific names so indefinitely, that I cannot follow them as guides. There are no hunters who make a profession of killing these deer, and of carrying the venison to market, although no one would hinder them. The neighbouring farmers keep nets, and occasionally hunt, partly to save their crops, and partly to procure animal food. I went twice with them, and on one occasion took two deer, and on the other had no sport. I was a good deal surprised at the method. The net is made of whip-cord, and may be about 6 feet wide, and each farmer brings a piece with him of 30 or 40 feet in length. All the pieces having been joined, they are set in a straight line, and are supported on one edge by poles, which incline towards the direction from whence the game is expected to come, and lean on forked sticks. Some persons then remain behind the poles with lances, to kill or seize the game, which comes into the net before it can disentangle itself. The others advance from the net in a line parallel to it, and beat the grass and bushes, and make a great noise. I expected, when they

had set the net, that they would have gone in silence to a distance, and have roused the game as they advanced towards the net; but this they assured me, would not answer: for the game always runs backwards in the direction from whence the noise advanced upon it. The game taken in these nets consists of wild hogs, deer, and tigers.

I saw no antelopes, but there may be some; as by the natives they are confounded with deer.

The wild buffalo, exactly of the same kind with the tame, is very common, and exceedingly destructive; nor has any considerable exertion been ever made to free the people from this evil. The animal is too formidable for individual effort to produce any good, and the property of the landholders is so much intermixed, that the endeavours of any one of them would have little effect, provided his neighbours contributed nothing. Many indeed are said to levy money from their tenants, under pretence of hiring armed men to kill these animals, but very few hunters are employed. I inquired every where after such people, but could find none except in two or three places, some of whom were employed by the judge. Unless the destruction of these animals becomes an object of police, and unless the expenditure of the money raised, be carefully checked, no hope of success can be entertained. I have indeed great doubt how far any exertion will be entirely sufficient, unless the woods and reeds which give them shelter are removed. The wild buffalos usually go in small herds, and may be easily killed by means of musket or poisoned arrows. These are the only effectual means for destroying the breed altogether; but others are employed for procuring the animals; for the flesh is eaten both by the Múhammedans, and by the lowest tribes of Hindús. They are sometimes caught in pitfalls, or by a noose suspended between two trees; but they are a shy, sagacious animal, not easily deceived. The natives near the lake at Bamongola, when they find a herd swimming, attack it with boats or canoes, and having seized on the hindmost buffalo by the tail despatch him with a large knife. In the same vicinity the keepers of tame herds are said to be sometimes able to secure wild males, by means of trained females, which surround the male until a keeper comes up, passes a rope through the septum of his nose, and then the females push him towards a tree, where he is fastened until tame. The bulls thus caught are reckoned more valuable than such as have been born in the domestic state; but I believe, the practice is very uncommon: I heard of it only at Bamongola.

The wild hog is by far the most destructive animal in the district, although never of a size to be formidable to the villagers, if armed with pikes. Near many woods they are almost innumerable, and in some places seem to be gaining ground. All that I have said concerning the destruction of the buffalo is applicable to that of these animals: and it seems an object worthy of the most serious attention from the police; circumstances should direct whether it would be most advantageous to make a general hunt, or to levy a contribution with which regular hunters may be hired. I should in general prefer the former, because at convenient seasons all persons may turn out, for a day or two, without inconvenience; and because it can never be the interest of the regular hunters to extirpate the animals. The wild hog is often hunted by the low Hindús for food. He is sometimes caught in nets like deer; at other times he is pursued with common curs of the country, which run round him barking, and thus keep him at bay, until their masters come up, and dispatch him with arrows or spears.

Porpoises are pretty numerous in the large rivers, but are not applied to any use.

No birds are caught for being trained to sport. At present indeed it may be said, that the natives have no turn for any of the amusements of the field. A late Raja spent vast sums upon it, but almost all the people, whom he employed, have disappeared.

There are no paroquets nor birds that are commonly caught to be tamed; and except about Maldeh and other places of much trade, few tame birds of this kind are kept, which must be considered as a comfort to those who have been annoyed, at day-break, by fellows hawling to a miserable paroquet, what they call the name of God, as is very common in Bengal.

Although the country swarms with water-fowl, both web-footed and waders, the natives derive from thence little or no resource for their tables. The common wild goose (*anas anser*) is exceedingly abundant in the cold season, and remarkably good, but is never used; and there is a great variety of ducks and teals, with abundance of snipes, that are equally neglected. When a very extravagant man, at Dinsjâr, wishes to give a feast, he hires some people to catch birds with a rod and bird-lime. Those that are preferred are three birds of the cormorant or shag kind, called by the natives *panikhuri*; several small herons included by the natives under the general name of *sak*; several birds of the Jacana and Gallinule kinds, included under the native term *jolpipayi*, but above all the common house sparrow. This indeed being considered as possessed of aphrodisiac qualities, is in request at all times.

The peacock is very common in the woods, and in many places so numerous, as to be destructive to the crops; but on the whole, the people of this district have little to complain of the feathered tribes, and neglect the luxuries of that kind, which nature has poured forth in abundance.

Several kinds of tortoise are more eagerly sought after, but to European taste they are execrable. Frogs are not eaten by any of the natives, but some lizards are used in food, especially one of which I have sent a description to the India House, and which is called the *Swarna Sookika*. The crocodile is common both in rivers and tanks, but few accidents happen from his violence.

At the season when I visited the district, serpents had retired into holes in the earth, and were very rarely seen; but in the beginning of the rainy season they are driven from their lurking places, and fly for refuge into the huts and higher places near villages. At that time accidents are common, and a good many perish every year from the bite of these vile reptiles. They are supposed to be under the immediate direction of the goddess Bishohori. In the dangerous time many sacrifices are offered to her images, and people are employed to sing her praises to music. Many persons are supposed to know spells (*mantras*), that will cure the bites of serpents; and I was gravely assured, by both Moslems and Hindûs of the highest rank, that they had known these forms of prayer tried with perfect success. Dumdumah is one of the places most infested with serpents, especially with the different kinds whose necks swell, and have what is called a hood; and all of which are exceedingly venomous. There are a few of the people called Byadhs who catch snakes, which they tame, and who are supposed to be possessed of a charm, which prevents them from being bitten. This charm, I know, consists in a blunt rusty knife, with which they scrape out the animal's teeth; the fellows however possess great intrepidity in seizing these formidable reptiles, and great impudence and dexterity in deceiving the people.

Fish forming by far the greater part of the animal food consumed in the country, the fisheries deserve particular notice. The demand being very considerable, and the supply being rather scanty, there is none exported, and salt is too expensive to admit of its being used in curing fish. The whole fish caught are therefore consumed in the country, and none are imported. During four months of the year, when the rivers are much swollen, fish is very scarce; for the animals have then such an extensive range, that they are not easily caught; but as the inundation subsides, and when the fish are confined within narrow bounds, they are easily secured by various simple means which the natives employ: and a very large portion of those taken are secured, when they may be said to be almost left sticking in the mud, or by means, that in most countries would be quite ineffectual.

The most simple method, when a pond, ditch, or marsh has become nearly dry, and the fish of a large space have been collected into a small pool, is to divide it by dams of mud, and then, having thrown the water from each successively, to catch the fish as they are left dry. This is usually practised by all the poor labourers, especially in the ditches and pools near the rice-fields, which are not let to fishermen by the land-holders.

It must be observed, that in about six weeks after the rainy season commences, every rice-field, although quite dry and hard in spring, abounds with small fishes. They are certainly most numerous near rivers and marshes, from which they in general come; but I am inclined to think, as I observed in Mysore, that the eggs often continue dry in the field, and are hatched after they have been moistened by the rain. The natives account for their appearance in such places by supposing, that they fall from heaven with the rain. The clerk (*mohurrer*) of the division of Rajarampūr assured me, that he had often seen them leaping among the grass, as the shower fell. In fact, a person, who is well disposed, can see any thing: like a very good Danish naturalist, who imagined, that he saw a fish gravely walking up a tree, for he had been assured by the natives, that such was its common practice.

Where the water is deeper, and communicates with the large extent of low land, this method is improved by inclosing a square piece of shallow water, perhaps 15 feet in diameter, with a mound of earth, and leaving an opening of about three feet wide in the side next the deepest water. The space within the dam is then filled with branches of trees, which attract the fish. After the branches have remained for some days, the opening is shut with a dam, the branches and water are thrown out, and the fish are secured. This also is chiefly practised by those who are not regular fishermen; but when this plan is farther improved, it becomes one of the most effectual means of procuring fish, that are employed in this district.

In the old courses of rivers, called *bit*, or in the courses of such as have little current, a large quantity of branches and twigs of trees are tied together, and thrown into the water, so as to occupy a space of 20 or 30 feet square, from the bottom to the surface. After they have remained for from 10 to 30 days, and the fish have entered into all parts, the branches are surrounded by a kind of screen called *byana*, which is made of reeds (*ihiri*) tied parallel to each other, by means of twisted grass (*kese*), and placed so close that the smallest fish cannot escape. These screens are about four feet wide, and of length sufficient to surround the whole heap of bushes. When this has been done, the bushes are thrown out, and the fish are secured by small bag-nets (*chakoni*), the mouths of which are fastened to hoops.

The *byana* or screen is sometimes used, without having previously thrown in branches of trees. This is done in shallow water, where there are many weeds. A space is surrounded by the *byana*, and all the fishermen go in with bag-nets, and secure the fish.

This kind of fishing requires about seven men, who usually have 2 heaps of branches in the water, for nine months in the year, or from about the middle of October, until the middle of July, when the country becomes too much inundated. They draw one of these *byanas* once a week, and in the intervals of this labor surround spaces, as above-mentioned, where no branches have been placed.

These same fishermen employ a kind of traps called *onta*, which are made in form of a truncated cone, four feet high, and from 18 to 24 inches wide at the bottom. These traps are made of reeds in the same manner with the screen, and the edges are not fastened together, but are bent in towards the cavity, so as gradually to approach each other. The fish can readily force their way into the cavity, but their efforts to come out are vain. The fish are directed to the opening by a screen placed on each of its sides, and according to the situation of the fishery, these are disposed in two manners; the one is used during the dry season in shallow water-courses that are stagnant, or contain but little stream; and in such situations the screen extends the whole way across, and has traps at the distance of every 20 or 30 feet. In the one, at Akhanogor, from which the drawing No. 13 was made, and which was about 300 feet wide, a net was suspended over the screen, in order to prevent the fish from leaping over; for some of the carp kind, leap with an agility equal almost to that of the salmon. This apparatus, called a *band*, procures a great many small fish, and is usually rented for a certain sum.

The other situation chosen for this manner of fishing is much more common, as during the rainy reason it is the only way in which these fisherman can procure employment. The screen is placed on the shelving side of a river, with one end to the shore, and the other as far into the water as possible; but it cannot be placed, where there is a greater depth of water than four feet. Such a screen admits of one or two traps, according as the water deepens more or less suddenly; and one man manages two screens. The fish caught in this manner are much smaller than by the other method; but the quantity makes up for this defect. These fishings with the *byana* and *onta* are very productive, especially in the southern and western parts of the district, and require no boats.

Still more simple traps are used. One called *polo* and *trapa* (drawing No. 14) is a basket with a hole in the bottom. In shallow water the fisher puts the mouth on the mud, and then, passing his arm through the hole in the bottom, gropes for the fish which he may have secured. Another called *jakoyi* is a basket of an irregular three-sided form, open at one end, and has a bamboo shaft; see drawing No. 15. The fisher places the bottom flat on the mud, treads among the weeds before the opening, thus drives the fish into the trap, and then suddenly raising the handle, brings the opening above the surface. These two methods can only be practised in very muddy places covered with aquatic plants, and are commonly employed by labourers of the lowest rank to catch fish for their own use.

The most simple net in this country is the *besal* (drawing No. 16), which is stretched between two bambus, that meet behind at an acute angle, (about 75°;) by which the fisherman holds. The net is of a triangular form, so as to apply to the bambus, but is much bagged behind.—The fisherman, walking up to the middle in the water, pushes the points of the bambus along the bottom for a little

way, and then raises them up to secure whatever fish may have come into his net. The bambus are from 12 to 15 feet in length.

The same form of net is enlarged, so as to have bambus 19 cubits long, and is then used in a boat. A rower at each end manages the canoe, which is kept broadside on to the stream, and allowed to descend with it; and a third man lowers the points of the bambus, which are fixed at right angles to the gunwale, and then occasionally raises them to secure the fish. This is one of the most common nets used by fishermen—its mesh is small. The boat is 16 or 17 cubits long,  $2\frac{1}{2}$  wide, sharp at each end, and broadest abaft the middle. At the widest part of the boat two forked sticks project between three and four feet outwards and upwards from the gunwale, and a stick lashed between the forks serves as a lever, over which the bambus of the net are raised and lowered. On the gunwale opposite to the net is a small outrigger, which serves as a balance.—This kind of fishing may be carried on at all times, but the rainy season is the most favourable. Most of the fish caught in this manner are of the crustaceous kind. On the Mohanonda, a boat built of *sai* will cost 20 rupees, and will last 15 years; but it requires considerable repairs. The net is usually made of *son*, but sometimes of cotton, and were it sold, is worth 10 rupees; but the fishermen usually make it themselves, and it costs only the materials.

The same kind of net is still more enlarged, and is raised by a complicated machinery of bambus; see drawing No. 17. It is called a *chauri* or *khora*, and is fixed on the steep side of some river. A frame of four strong bambus (*a b, c d, e f, g h*), supports the net (*i k, l m*), placed with its descending edge (*l m*) towards the mouth of the river; and also supports two sloping bambus (*n o, p q*), on which a man walks, who has one end of a long rope (*r s*) round his middle. The other end passes over a bambu, for they have no pulley, and raises the net when the man walks down, and lowers it into the water when he walks up the sloping bambus. The moving power is increased by a lever of bambu (*t u*), the heel of which (*t*) rests on the bank, while the rope from the man's waist is fastened to the other end, and that again is connected with the bambus of the net. This is the most complicated machine that I have seen the natives employ, and seems to me very ill contrived. I regret that my draftsman's want of skill in perspective, will render the drawing scarcely intelligible. The net is quadrangular. Two corners (beyond *l m*) are stretched to the bambus; one of the other two corners (*i*) is fixed to the bambu lever, while the other (*k*) is fixed to the end of a bambu, that projects over the river, which is fastened to where the lever and the two lateral bambus (*r m, r l*) join, and which is suspended by a rope (*w x*) from the frame, so that this corner should always be high.—Ropes (*y z*) also pass from the bank to the two lateral bambus, which prevent them from yielding to the stream, while a small bambu (1, 2,) from one of the lateral ones, stretches out the lower edge of the net. Two men are employed at this net; one below, who is generally the proprietor, and who takes out the fish; the other walks backward and forward on the inclined bambus, and is usually hired, getting  $\frac{1}{3}$  of the fish. These are generally small, and most are caught from about the middle of September until the middle of November, when the rivers are falling.

Another kind of net, somewhat of a similar nature, would appear to be better fitted for such a large machine. It is called *chak* or *jhati*, and is of a square form, a good deal bagged in the centre; see drawing No. 18. Its angles are fastened to the ends of two bambu bars that cross each other at right angles in the centre, which is suspended from the end of a bambu lever, the other end of which rests



against the bank where the fisher sits. He lowers and raises his net by means of a rope that is fastened to the far-end of the lever. A large net of this kind, raised and lowered by a man on an inclined plane, with the assistance of a pulley, might be a good contrivance in muddy water. The *chak* is used chiefly by poor farmers and labourers.

The casting net is very much used. One from 9 to 11 cubits in diameter, and called *dhomoro* and *khyepia* and *khyepujai*, is commonly thrown from the shoulder, either from the shore or from a boat. The mesh is small, and the sinkers are often merely earthen rings baked by the potters; but iron rings are also used for the purpose. If made of cotton, the net will last seven years; if of *son*, it will last only four, and will cost from 8 to 10 Rupees. If the net is thrown from a boat, two men are required to this fishery; one to throw the net, and another to manage the boat. This latter and the boat are usually hired by the man who fishes with the net, and who allows the boatman  $\frac{1}{3}$  of the fish that are caught. The boat is only 13 or 14 cubits long, and  $2\frac{1}{2}$  broad, and costs on the Mohanonda about 14 rupees. Small fish, especially of the crustaceous kind, are chiefly caught in this manner, which is only used in the dry season.

A much larger kind, 38 cubits in diameter, and called *otkar*, is frequently employed, and is thrown by means of a long narrow boat, which must be rather longer than the diameter of the net. This is gathered carefully into the boat, one edge being taken in first, and then one fold is placed above another. The boat is rowed into the stream, and by a rower at each end, is placed broad-side on. Two other men then throw over first one edge of the net, and, as the boat drives, they throw gradually the remainder. The whole sinks to the bottom, and the boat is allowed to drive, until the edges of the net have been dragged close to each other, when the net is drawn to the shore. Very large fish are caught in this manner.

The natives use the sein of several sizes, and different names.

The *pahiljal* of Ghoraghat is a sein composed of several pieces, about 11 cubits wide by 12 cubits long, which belong to different fishermen, six or seven of whom unite their stocks, and join their different pieces into one net. The centre pieces are the widest, the mesh is small, the floats are gourds, and the weights are rings of potter's ware. It is thrown out in the usual manner from the stern of a boat, and requires six or eight men to draw it. The fish are divided equally, the owner of the boat taking  $\frac{1}{2}$  share more than the others.

At Potnitola, on the Atrayi, the large sein is called *bed*, and is made in one piece 60 fathoms long and 10 or 11 cubits wide in the centre. It is floated by the spongy stems of the sola (*Æschynomene diffusa*, W.), and sunk partly by iron rings, and partly by those made of baked clay. The twine made of *son* would cost 10 rupees: but the plant is usually reared by the men, and spun by the women in intervals of labour, so that no estimate can be formed of its value. The boat is made of mangoe wood, costs about three rupees, but lasts only two years. Six men are required; the proprietor of the net and boat takes  $\frac{1}{4}$  of the fish, the remainder is divided equally among the other five men; so that a capital of less than 16 rupees is reckoned adequate to the labour of two men for the rainy season, at which time only this net is used in the river. At all seasons it is used in tanks. The largest fish are caught by it, such as rohit, katol, chitol.

The *tana* is a smaller sein of fine twine, about 90 cubits long and 3 cubits wide. It is floated by cuttings of a spongy reed called *ulu khagra*, and sunk by rings of potter's ware. One man goes with the boat, and another holds the end that is left on shore. I should have supposed, that the man in the boat had most trouble,

but his situation is considered as preferable. This net seems well fitted for clear water, a shallow river, and sandy bottom. Two or three nets of this kind are sometimes joined into one.

The *tuse* is a small drag net, that is well fitted for fishing in shallow water among weeds. It is about 20 cubits long and 5½ cubits wide, and has neither floats nor sinkers. A row of sticks, about two feet long, and two feet from each other, unite the two side-ropes, so that the net bags behind. A man at each end goes into the water, until both are about three feet deep; they then immerse the net, and drag it towards the shore with one end of the sticks touching the ground.

In the Mohanonda, which is frequented in the rainy season by the fish called *ilish*, four other kinds of nets are used. They are called *khurki*, *sanggula*, *konagu*, and *ber*: but as I was there at another season, I had no opportunity of seeing them, and cannot describe them from the accounts of the natives. This fishery lasts from about the middle of June until the middle of October, and two very fine kinds of Cyprinus, the rohit and katol, are frequently caught in the same nets.

Wherever the fishery is of such importance as to employ regular fishermen, the landlord exacts a revenue, which seems judicious and proper; because the proprietors are interested to improve the fishery, and to take care of the people employed; for, I am persuaded, that a common property is in general neglected, and turns out of little or no advantage either to the public or to individuals. In this district the property in the fisheries (*jolkor*) has in many places been separated from that of the adjacent land, which seems to me to be a great loss; as it is the proprietor of the neighbouring land alone that can take care either of the fish or fishermen. Yet, probably some specious reason was held out for the separation, which I am told was made when the Raja's estates were sold for arrears of revenue, and the sales were of course conducted by the collector. I heard however no reason assigned for such a separation, and must confess, that I know of nothing rational which can be alledged in its defence. Even the fish in ponds do not always belong to the proprietor of the banks, who of course will never take care to stock them, and who is the only person that can prevent poaching, so that probably not ¼ of the fish is produced for use that might be by proper care.—The same may be said of *bils* or water-courses.

The duties, that are levied on the fishermen, are in general moderate enough, and do not amount to a considerable sum. The largest proprietor, of whom I heard, (Boloram Yoti,) receives only 2,000 Rupees a year, and I believe, that part of this arises from some duties which he levies on ferries. The proprietors generally let their fisheries from year to year, and the farmers (*Isaradars*) sometimes employ fishermen to catch the fish, either for wages or for a share; and sometimes levy so much money for each man or boat employed. Thus, a water-course in the Maldeh district pays to the proprietor 130 rupees a year. The farmer employs 14 men to fish with the *byana*, and these give him one-half of the fish. They fish for nine months in the year, and each can make about four Rupees a month, out of which, however, they have to deduct all expenses; but these are inconsiderable, as they require no boat and make the whole apparatus. The farmer therefore receives about 500 Rupees, out of which is only to be deducted the rent, and the charge of watching to prevent imposition. Small traders come and purchase the fish, which they retail at different markets.

These fishermen, when they fish with the trap (*onta*), pay two rupees a head for the season of three months. Their profit is then still greater, but they have remarkably good market in the manufacturing towns. Those who fish on the

Mohanonda pay 12 annas a head yearly for the dry season, and the same sum, with four rupees for each boat that is wrought by five men, if they are employed in the *ilish* fishery. In this case the more wealthy men furnish the boats and nets, and take one-half of the fish, while each man pays his share of the duty. The profits of those who fish with nets and boats is more considerable than of those who use the screen and the traps.

Near Maldeh, the traders who retail fish have some capital; in other parts they are in general very poor, and the fish are often retailed by the wives of those who catch them.

The rent in most parts is lower, and the fishermen poorer than near Maldeh. At Ghoraghat, for instance, on a noble river, each fisherman pays five annas a year, and fishes in whatever manner he pleases. His monthly gains are reckoned from two to three rupees. On the Atreyi at Potnitola, each fisherman pays six annas a year; but then except from the chief men, 10 annas more are said to be exacted as presents, making the whole duty one rupee a head, and they may fish in whatever manner they may please. At Potiram, each fisherman pays 1½ rupees a year. Fishermen in general are not so poor as the common labourers who are employed in agriculture, and many of them live like farmers who have two ploughs. The whole number in the district may be about 2,500 houses.

The kinds of fish taken are very various, and mostly very small. There is nothing like an extensive fishery of any one kind, except that of the *ilish* in the Mohanonda, which I have just now mentioned. On all other occasions, among 100 fish taken there will be 20 different species. Although the last system of this part of Natural History, published by M. Lacepede, is extremely valuable, very few of the fishes of Bengal are described in it. I must therefore content myself, for the present, with reducing them to his genera, although I have spared no pains in procuring descriptions and drawings of these interesting animals. The names vary a good deal in different rivers, even of the same district. I begin with a list of those I found in or near the Atreyi at Potnitola.

1—Tengpa, *Tetrodon*, a bad small fish, reckoned impure by the Brahmins.

2—Vam, *Macrogathe armé*.

3—Gongti, *Macrogathe aquilloné*.

4—Gongor Gangti, *Macrogathe*, good fish resembling eels in taste.

5—Baliya, *Gobie Eelotre?* a small but good fish.

6—Kholisha, *Trichopode*, a beautiful small fish.

7—Gojal, *Ophiocephale*.

8.— { Goroyi, } *Ophiocephale karawey*.

9.—Cheng, *Ophiocephale*.

Much used by the natives, but very indifferent eating.

The last, being extremely tenacious of life, is often found wriggling from one pool to another, when there has been a heavy rain. It is one of the kinds which are supposed to fall from heaven with showers of rain.

10.—Koyi, *Lutjan grimpeur*. This is a fish very much esteemed by the natives, and one of those supposed to fall from heaven. They also have a fable of its being able to climb a cocoanut tree. It is with the utmost astonishment, that I perceive M. Lacepede was carried into this error by a foolish account published in the Linnæan Transactions. I should rather have classed this fish with the Holocentres, and M. Lacepede has probably taken his account entirely from

the before-mentioned source. The animal is remarkably tenacious of life, and I know can live a whole day without water. It is very well tasted, but full of bones; and is reckoned a restorative.

11.—Chanda, *Centropome*.

12.—Rangga Chanda, *Centropome*.

13.—Nam Chanda, *Centropome*.

These fish are very common; but are too small for being dressed in the European manner.

14.—Bheda, *Holocentra*. This fish has a strong resemblance to the Koyi, in its external appearance, tenacity of life, and dietetic qualities.

15.—Pongya, *Cobite*, a small fish, little esteemed.

16.—Magur, *Macropteronote grenouiller*, an ugly fish, but very much esteemed by the natives, who consider it as very strengthening. I think it is far from being pleasant to the taste.

17.—Kamaclasinggi, *Silure Fossile*, a fish very much resembling the former in appearance and qualities. It is reckoned impure for Brahmins, who eat the other readily.

18.—Poba, *Silure*, a small pretty fish of an excellent flavour.

19.—{ Boyali, } *Silure*, a large ugly fish, which often grows to six feet in length.  
{ Keyali, }

By the natives it is thought good; but does not suit my taste. The Brahmins consider it impure.

20.—Labhuy, *Silure*.

21.—Gagra, *Pimelode barbu*?

22.—Rita, *Pimelode*.

23.—Ari, *Pimelode*.

24.—Vagari, *Pimelode*.

Large ugly fishes; but thought very good by most natives.

25.—Gagot, *Pimelode*, a small fish with many bones.

26.—Vacha, *Pimelode*, a fish about the size of a herring, and considered as very good by the natives.

27.—Banspatari, *Pimelode*, a beautiful small fish, which from its shining colours and shape is by the natives compared to a bambu leaf.

28.—Tengora, *Pimelode*, a pretty small fish, that the natives think very good.

29.—Kangkila, *Esoce*, an excellent small fish.

30.—Pangchok, *Esoce*, a very small fish.

31.—Ghobol, *Muge*, a fish about a foot long, which swims with its eyes above water. It is very good to eat.

32.—Telar, *Cluspee*, a fish about the same size and value.

33.—Pholuyi, *Myse*, a fish about the same size and value.

34.—Chitol, *Myse*. This grows to a very large size, and is a rich fine tasted fish; but the natives do not like it, because it feeds on dead bodies.

35.—Koroti, *Clupanodon*, a small fish of little value.

36.—Chela, *Cyprin*. This is one of a numerous tribe of Indian fishes, which resemble the *Cyprin cluspeide*. It is very common in every part of Bengal, but is of little value.

37.—Elangga.

38.—Sangpuyi.

39.—Dangrika.

40.—Debori.

41.—Titpungti.

## 42.—Pungti.

These are all small species of the *Cyprin*, which are very common, and much used by the natives, but are very poor eating. Some of them are very beautiful, especially No. 39 and 40. No. 41 and 42 are the best for eating.

43.—Soron-pungti, *Cyprin Bulatmai*? a beautiful fish which grows two feet in length. It is not much valued.

44.—Kalbosu, *Cyprin*, an ugly black fish, strongly resembling the barbel. It grows often to a foot and a half in length, and sometimes to double that size. It is considered by the natives as a good fish, and is both light, and well tasted; but it has many small bones.

45.—Rohit, *Cyprin Rooce* of the English in Bengal. This is one of the most beautiful of fresh-water fishes, being finely shaped, and elegantly adorned with green, purple, gold, and silver, constantly varying one into the other. It thrives well in ponds, but is best when found in running streams. The fish is much and deservedly valued, being light and well-flavoured. It is only inferior to the following in not being so rich.—It grows to about three feet in length.

46.—Katol, *Cyprin*, when taken from rivers with a good stream, this is perhaps the best fresh-water fish in the world; the body is white, light, and firm, and the head and belly are remarkably fat without being luscious or heavy. It grows to a very large size, and weighs from 16 to 50 lbs. Though only a clumsy made fish, it is remarkably active and strong, and frequently springs over the net with great violence. Its colours are not remarkable for beauty.

47.—Kuchiya, *Unibranchaperture*, an eel, as good as the kind common in Europe. The natives reject it, from its near approach to a serpent.

Besides these I observed many other fishes in the district, especially the following:

48.—Khoskhosya, *Muge*, a small fish of little value.

49.—Dari, *Cobite*, a beautiful small fish.

50.—Korki-tengora, *Pimelode*.

51.—Kavasi-tengora, *Pimelode*.

52.—Ram-tengora, *Pimelode*.

53.—Changrarmara, *Pimelode*.

54.—Uruya, *Pimelode*, a small fish of little value.

55.—Silon, *Pimelode*, a large ugly fish, much used by the natives.

56.—Chakunda, *Clupanodon*, a small fish of little use.

57.—Ilish, *Clupanodon*. I have already mentioned the fishery of this species in the Mohanonda, which is almost the only river in the district that it frequents. This species is called Sable-fish by the English, and is the most important in Bengal. It has a strong resemblance to that called *la Fiente* by Lacepede, but has no teeth. During the floods it ascends in immense numbers to spawn in the Ganges and its larger branches, for 500 miles from the sea, and retires as the rivers decrease. It is usually about a foot and a half long, and is a rich, high-flavoured fish; in taste it resembles somewhat both the salmon and herring, to which last it has the strongest affinity. It is however rather heavy and difficult of digestion, and contains a vast number of small bones, so as to require much precaution in eating. These bones are destroyed, when it is cured with tamarinds, and the fish then becomes a very relishing morsel.

58.—Peyoli, *Cyprin*, a small fish of little value.

59.—Kursa, *Cyprin*. This sometimes grows to a foot and a half in length, but is little valued.

60.—Hayali, *Cyprin*.

61.—Tila, *Cyprin*.

Two small fishes of little value.

62.—Mirgal, *Cyprin*, a most beautiful fish like the Rohit, and almost as good ; but it does not grow to quite so large a size, being seldom found more than two feet in length.

63.—Khorki.

64.—Bhanggona.

These are two beautiful fishes, somewhat between a carp and a mullet, as their lower jaw resembles that of the latter. They grow to about a foot in length, and are tolerably good to eat.

The crustaceous fishes are perhaps more valued by the natives of Bengal than the fish properly so called, and are excellent seasoning to eat with a food so insipid as rice. In some parts, especially near the sea, they are of many different kinds and sizes, from that of a shrimp to those which are larger than lobsters, for those that are mostly used are of the oblong kind, and are called by the generic name Chinggori. In almost every ditch near the sea they are found in myriads ; but in Dinajpúr, except near the Mohanonda and the lower part of the Koro-toya, they are very scarce. In the Mohanonda there are three kinds :

1.—Jhingga, a small prawn.

2.—Tengguya, a large prawn.

3.—Maubo, a crawfish, which is often 15 inches in length, and as much in circumference.

Crabs frequent the fresh waters of Bengal, and are distinguished from the oblong kinds of crustaceous fishes by the generic name Kangkora. They are reckoned much inferior to the long-shaped fishes of this kind, and are indeed considered as impure by the higher ranks, who eagerly devour the others. In this district there are many crabs, but few of them grow to a size that would fit them for a European table. They are chiefly found in the parts near the Nagore, Tanggon, and Punabboba, that are entirely inundated in the rainy season. When the inundation retires, these parts may be observed covered with little heaps of earth, about a foot high, and eight inches in diameter, and in the top of each is a perforation. Under these are the lurking places of the crabs, which retire there for the dry season, and live in pairs. According to the report of the natives, these animals, as the water subsides, dig perpendicular shafts, about three inches in diameter and seven or eight cubits deep ; and, when at that depth, they form a chamber about a foot in diameter, which contains water until the next inundation, and in which a male and a female crab take up their residence. I attempted to dig several ; but being too early in the season, the water always rose upon me before I reached the chamber.

Insects are not very troublesome in this district ; at least from November until April, the season when I was there, I scarcely observed any musquitos, although this is the season, when they are most troublesome in Calcutta. I was told, however, that in the parts of this district which are inundated these insects become almost intolerable in the rainy season.

The only wild insect which produces any thing of value is the bee, and it is the wax alone that is an object of commerce. Mr. Fernandez has rented the whole, except some portion of what is produced in Maldeh, and to each land-holder he pays a certain sum, which must be very inconsiderable, as the whole wax which he procures is said to be only 100 maunds, probably 70 or 80 per cent. Mr. Fernan-

dez employs people in different parts to collect the wax ; and these, who are called sirdars, employ servants to cut the combs. At Nawabgunj, which is one of the most productive districts, and which gives ten or twelve maunds each of 3,840 sicca weight, the people told me, that he allowed them 25 Rupees for each maund, (about lb. 82) delivered at Dinajpúr, and they had all the honey ; but this is of little value. In other places, however, it was said, that the sirdars contract to give him a certain quantity of wax, and take the surplus and the honey for their trouble.

In this district there is only one kind of bee, which so strongly resembles the insect domesticated in Europe, that I should consider it as of the same species, were not its manners very different. The natives of India have no where tamed this industrious creature, and every kind, of which the honey is collected, is in Bengal usually called a honey-fly ; nor could I discover, that the people had any appropriate name for this species. It frequents the forests in the rainy season, and in some districts the people employed in collecting the wax suppose, that the bees do not then build, nor live in society, but that they take shelter from the rain under leaves, and that a great part of them perish from the severity of the weather. This is probably a mistake, and is believed only owing to these people having never frequented the woods to look for the bees ; for I found, that at Nawabgunj, a considerable part of the wax is procured in the woods, about the end of September, and must have been formed in the rainy season. Besides at Ghoraghát, that is the most productive district of which I heard, and yields near 30 maunds a year, most of the wax is gathered in the rainy season ; and the people say, that then the bees breed, and live in society just as at other times. In the dry season the bees frequent the vicinity of villages, and form their nest on the branches of the neighbouring trees. Each nest consists of a single semicircular comb attached to the lower side of a horizontal branch by its diameter. One, which I measured, and which was said to be of the usual size, extended about two feet in radius. On each face is a series of cells, and in some parts of the comb there are three rows, with passages conducting to those in the centre. The bees, when at rest, cover the whole surface of the comb. Near the villages they begin to build in November, when the cruciform plants, resembling mustard, that are cultivated for oil, begin to flower. In January, when they have brought up a brood of young, they eat the honey and desert their nest, which is collected for wax. In the middle of December, I examined a comb : the greater part of the cells were filled with young bees, a small portion was filled with honey, and a larger with a yellow powder, which the natives, I believe, justly consider as the food for the young bees, and as the pollen of various plants. The bees begin to build again in March, when most of the trees come into blossom ; and having bred in June, they consume the honey, and retire into the woods. The combs formed at this season are the most valuable, and contain most honey. In order to procure this, the people chase away the bees, which is easily done by a little smoke occasioned by some burning husks of rice held under the comb in a basket that is made of a green plantain leaf. I saw this practised with great success before a multitude, who imagined that the wax-gatherer was possessed of a spell or prayers, which saved him from being bitten. A comb, such as I have mentioned, is said usually to give about a pound of wax, when cleared and melted ; but those collected in spring are said to give 20 pounds of honey and wax.

There are several species of shells, chiefly snails (*Helices*), that are burned into lime, sufficient to supply the usual demand of the country, which is confined to the

chewing with betel, to the white-washing of a few religious buildings, and to a small quantity used in manufactures. When any large building is to be constructed by a European, stone-lime is generally brought from Sylhet, but the natives prefer that made from shells. They of course must make advances long before the lime is wanted, to enable some poor people to collect shells in the dry season. Most are procured from marshes and old courses of rivers, where the water is stagnant.

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## CHAPTER II.

### PLANTS.

A country so much cultivated as this district, is not favourable for the pursuits of a Botanist, neither was my journey through it performed at a favourable season. I have not much therefore to offer on the subject, especially as I found a great difficulty in procuring any satisfactory intelligence from the natives, who apply names so indefinitely even to the most common plants, that in order to avoid numerous mistakes great precaution is required.

Among the natural vegetable productions of most countries, forests constitute a valuable and most distinguished part. In this district, however, although not very extensive, the demand for their produce is so small, that forests may be considered as not only almost useless; but from their harbouring destructive animals, they ought to be looked upon as injurious, and therefore should be eradicated as soon as possible. By some unaccountable caprice the property of the forest is often vested in a person different from the owner of the soil. This person, although he has no legal right to prevent the owner of the soil from cultivating it, will of course take all indirect means of securing or enlarging his property, and none is so effectual as the encouraging the breed of destructive animals. In one division, I accordingly heard it alleged, that the keepers of buffaloes turn loose all the young males, and allow them to become wild.

The wastes (*jongol* or *bonyá*) of this district may be divided into two kinds, one containing trees called here *katal*, the other contains reeds of various kinds, and is denominated from the species which is most predominant with the term *bonyá* annexed. The English call this kind of waste or forest by the appellation of grass-jungle. The proprietor, as I have said before, receives a very inconsiderable profit from both kinds. Those who want timber for building, or for the implements of agriculture, must pay a trifle for permission to cut a tree; and where there is a demand for the produce of the forest, a *bonkor* is appointed, who levies a small duty on those who cut fire-wood, thatch reeds, bambús, or the tree of which catechu is made. Other persons (*pholkor*) rent the wild fruits which are used as acids in cookery, for medicine, or for dyeing and tanning. Finally, other persons rent the duties (*kahachoráyi*) that are levied on the buffaloes which pasture in forests.

The only people who can be called wood-cutters in this district are those employed for supplying manufacturers, and especially the Company's factories, with fuel. At Maldeh the fire-wood is cut by farmers, who live near the woods of Peruya, at times when they would otherwise be idle. Fifteen times a month a man cuts as much wood, as when green, loads four oxen, and brings it for sale. For the 60 loads he receives four Rupees, and pays a small monthly duty for each ox; the