

CENSUS 1951
WEST BENGAL



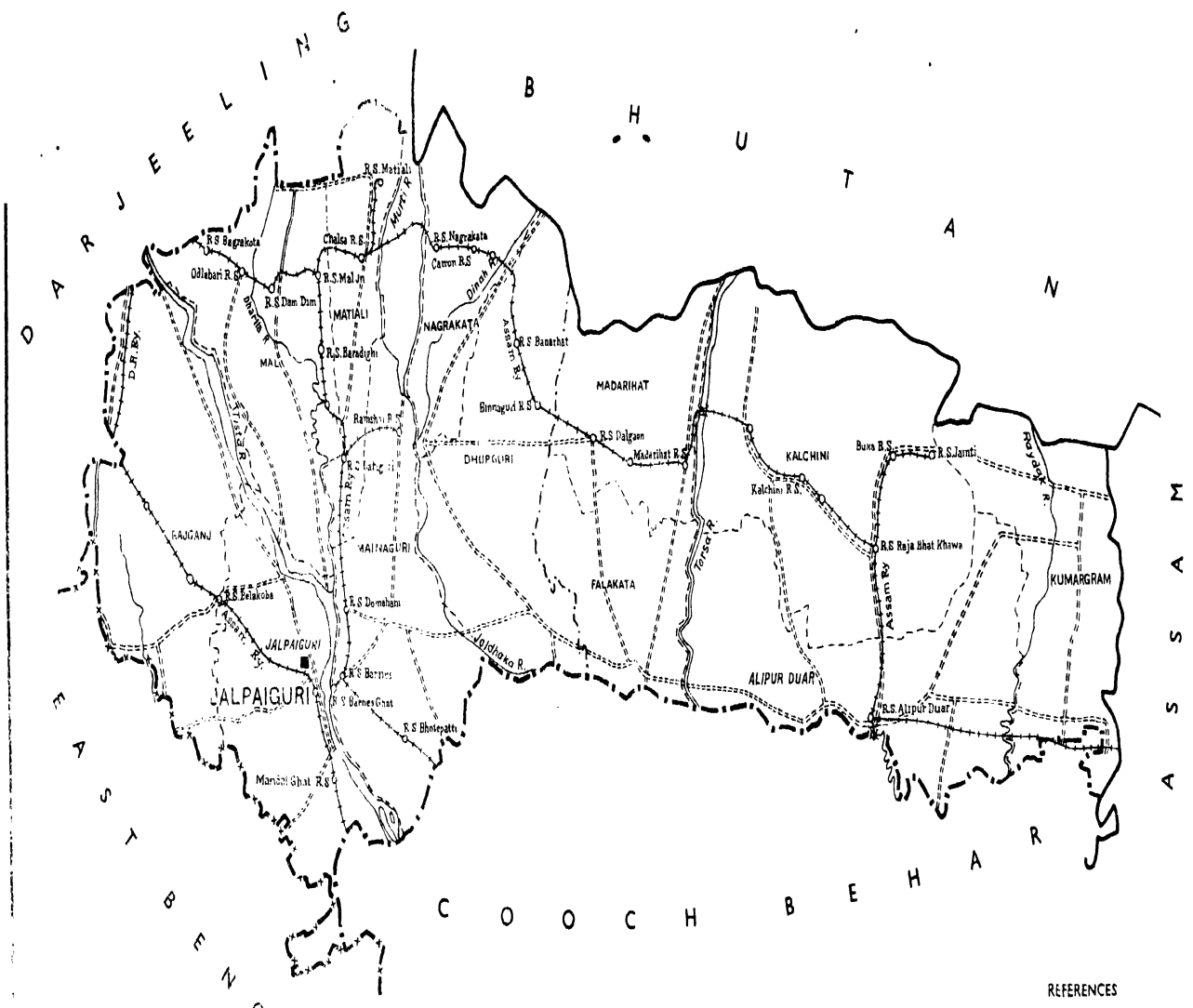
DISTRICT HANDBOOKS
JALPAIGURI

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REFERENCES

- Boundary: International .. - - - - -
- " State
- " District .. - - - - -
- " Sub-division .. - - - - -
- " Police Station .. - - - - -
- Headquarters, District .. ■
- Name : Sub-division .. JALPAIGURI
- " Police Station .. KALCHINI
- Road : Metalled .. = = = = =
- " Unmetalled .. - - - - -
- Railways with Station .. + + + + +

Chhtr: neve not bern shown

The boundary between West Bengal & East Bengal
is approximate & must not be taken as authoritative

Scale 1 inch to 6 miles



Weeds—In young plantations grass and weeds grow very vigorously and cleaning is necessary. The remedy is clean cultivation by the villagers, and the planting of *Boga medeloa* (*Tephrosia candida*) between the lines. The danger is negligible after first three years, except in *sal* plantations.

Fire—In the moister *sal* forests successful protection from fire over a period of years has resulted in such an increase in evergreen undergrowth that the forest is now unburnable and even in the drier parts damage by fire nowadays is almost negligible for the same reason and no protective measures are necessary.

In riverain forests complete fire-protection is impracticable and early burning is resorted to. This consists in setting fire to each patch of forest as soon as it will burn. Where this work is well done fire does little damage and Savannahs tend to fill in with trees—notably *sidha*—and undergrowth such as *bhant* (*Clerodendron infortunatum*).

Where railway lines run through the forest fire-traces are cut and burnt early in the cold weather.

Grazing—There is little damage from grazing and no professional graziers are allowed. The ranges being comparatively small supervision is easy and little illicit grazing goes on except during March and April in exceptionally dry seasons. Forest villagers and purchasers are allowed to graze a limited number of cattle.

Erosion—Usually during the months of July and August when the monsoon is at its peak, the streams and rivers having their sources in the hills are in spate. Trees, boulders, etc. that are carried down get fixed at places on occasion and form snags. These snags sometimes gradually enlarge and act like partial dams. The courses of streams are thus diverted with the consequent erosion of banks. Earth movement is sometimes responsible for the change of course of the large rivers.

Wind and Hailstorms—Large numbers of trees are occasionally uprooted by cyclonic winds, usually in the spring. Storms occur frequently in April and May, especially near the hills, and damage the young shoots of trees.

The hailstorm of April 1919, was the most severe that has been known for many years in the district. Part of North Borojhar Forest was entirely stripped of leaves.

An exceptionally severe nor'wester struck the forests in the neighbourhood of Gadadhar and Nilpara on the 21st April 1936, and did considerable damage.

Wild animals—In young plantations pig and deer are a serious menace and plantations must be fenced.

Pigs attack *sal* seedlings especially during February and March of their second year, and some plantations have been completely destroyed.

Other species are not touched by pigs, but are liable to serious damage by deer which strip off the bark either by gnawing or rubbing. This applies especially to *gamari* and *chickrassi* (e.g., in Nilpara plantations). Wild goats also damage the plantations in the Baksa-Duar Range (e.g., in Talgaon)

Porcupines have been known to destroy row after row of *simal* by undermining the plants and eating the roots.

Rats and mice also damage plantations by gnawing the roots of young seedlings, which are eaten off at the collar.

Elephants and rhinoceros cause considerable damage to plantation fencing in many places with the result that other animals obtain easy entrance. They also trample down or uproot young plants and cause considerable damage to field crops in *taungya* plantations. Elephants are very fond of *chupalish* and break down large trees in order to eat the branches.

Bisons are sometimes reported to be destructive at Panbari.

Insects—The *tun* twig-borer (*Hypsipyla robusta*) which also attacks *chickrassi* (e.g., in Nilpara and Rajabhatkhawa plantations) is a dangerous pest in young plantations. This insect, as well as the *sal* and *gamari* defoliators, is encouraged by pure crops. Portions of the 1924 *sal* plantations at Poro and Nimati were attacked by defoliator in April and November 1927. Extensive defoliation of *sal* in Panbari, South Borojhar, Buxa and Bhutri was noted almost every year between 1916 and 1920 and particularly again in 1923. The *gamari* defoliator has been noticed in the Rajabhatkhawa and Nilpara plantations and the *tun* defoliator in the Mendabari and Sankos plantations.

The longicorn beetle (*Hoplocerambyx spinicornis*) attacks dead and sickly *sal* trees and unbarked logs. For protection against the spread of the borer, *sal* logs are barked within a week of felling, but this is not done in the case of departmentally sawn trees. Damage from this insect has recently been noticed also in *sal* plantation (e.g., the 1917 *sal* plantation at Kodalbasti). Damage by the *sal* borer was particularly noticeable all over the *sal* area in North and South Bholka forests, especially in the flood-affected patches of *sal*. The severity of attack was likely to increase but was minimized in this area by an accidental fire in 1927-8 which killed many of the insects. Dead and dying *sal* trees have been extracted departmentally as far as possible, or sold by public auction, with a view to check the spread of this pest.

<i>Malagiri</i>	<i>Cinnamomum cecidodaphne</i> , Miessn.
<i>Mallata (malata)</i>	<i>Macaranga denticulata</i> , Muell & Arg.
<i>Mandane</i>	<i>Acrocarpus fraxinifolius</i> , Ar- nott.
<i>Mawwa</i>	<i>Engelhardtia spicata</i> , Blume.
<i>Maya</i>	<i>Eriobotrya bengalensis</i> , Hk.
<i>Nageswari (nageswar)</i>	<i>Mesua ferrea</i> , Linn.
<i>Pahenle</i>	<i>Neonauclea griffithii</i> , Hk. f.
<i>Pakasaj</i>	<i>Terminalia crenulata</i> , Roth.
<i>Panchpate</i>	<i>Vitex heterophylla</i> , Roxb.
<i>Panisaj</i>	<i>Terminalia myriocarpa</i> , H. & M.
<i>Parari</i>	<i>Stereospermum chelonoides</i> , DC.
<i>Patmero</i>	<i>Cryptocarya floribunda</i> , Nees.
<i>Patpate</i>	<i>Meliosma simplicifolia</i> , Walp.
<i>Phalame</i>	<i>Walsura tubulata</i> , Heirn.
<i>Phaledo</i>	<i>Erythrina indica</i> , Lamk.
<i>Phirphire</i>	<i>Firmiana colorata</i> , R. Br.
<i>Pipal</i>	<i>Ficus religiosa</i> , Linn.
<i>Pitali (ramritha)</i>	<i>Trevesia nudiflora</i> , Linn.
<i>Putli (Putili)</i>	<i>Acer laevigatum</i> , Wall.
<i>Kumguwa</i>	<i>Knema linifolia</i> , Warb.
<i>Ramphal (bandre, ga- nte)</i>	<i>Gynocardia adorata</i> , R. Br.
<i>Rangbhany</i>	<i>Caryota urens</i> , Linn.
<i>Ritha</i>	<i>Sapindus detergens</i> , Wall.
<i>Runche</i>	<i>Actinodaphus obovata</i> , Blume.
<i>Sakhua (sal)</i>	<i>Shorea robusta</i> , Gaertn.
<i>Sal (sakhua)</i>	Ditto, Gaertn.
<i>Satisal</i>	<i>Dalbergia latifolia</i> , Roxb.
<i>Setikath</i>	<i>Endospermum chinese</i> , Benth.
<i>Sidha (barderi)</i>	<i>Lagerstroemia parviflora</i> , Roxb.
<i>Simal</i>	<i>Salmalia malabaricum</i> , D.C.
<i>Sindure</i>	<i>Mallotus philippinensis</i> , Muell.
<i>Sinkoli, bhale</i>	<i>Cinnamomum obtusifolium</i> , Nees.
<i>Do., (tezpai)</i>	<i>Do., tamala</i> , Nees.
<i>Siris, kalo</i>	<i>Albizia marginata</i> , Merr.
<i>Do., kakur</i>	<i>Do., odoratissima</i> , Benth.
<i>Do., seto</i>	<i>Do., procera</i> , Benth.
<i>Do., tata (portka)</i>	<i>Do., lucida</i> , Benth.
<i>Sissu</i>	<i>Dalbergia sissoo</i> , Roxb.
<i>Sonalu (bandarlata)</i>	<i>Cassia fistula</i> , Linn.
<i>Siyalphusre</i>	<i>Grewia vestita</i> , Wall.
<i>Tanki</i>	<i>Bauhinia purpurea</i> , Linn.
<i>Amil-Tanki</i>	<i>Do., malabarica</i> , Roxb.
<i>Tantri</i>	<i>Dillenia pentagyna</i> , Roxb.
<i>Tarsing</i>	<i>Beilschmiedia sikkimensis</i> , King.
<i>Do., thulo</i>	<i>Do., roxburghiana</i> , Nees.
<i>Segun (Teak)</i>	<i>Tectona grandis</i> , Linn.
<i>Thali</i>	<i>Turpinia pomifera</i> , DC.
<i>Timur</i>	<i>Zanthoxylum budrunga</i> , Wall.
<i>Totola</i>	<i>Oroxylum indicum</i> , Vent.
<i>Tun, (toon)</i>	<i>Cedrela toona</i> , Roxb.
<i>Udal</i>	<i>Sterculia villosa</i> , Roxb.

Fauna—The district has always been famous for its big game and, though the heavy grass and reed jungle which is the favourite resort of wild animals is steadily diminishing owing to be extension of cultivation and tea, the sanctuary afforded by the numerous reserved forests will provide game from being killed out and the district will always afford good sport. The reserved forests are, apart from the private forest of the Baikunthapur Jungle Mahal on the east of the Teesta, from west to east, Apalchand, lower Tonda, Upper Tonda, and Moraghat, all in the Jalpaiguri division, and Kodalbasti, Chilla-patha, Panhari, Bamni, Buxa, Tashigaon, Jain-ti, Gangutia, Raimatong, Rajabhatkhawa, Bhut-ri, Rydak and Chipra, in the Cooch Behar and Buxa Forest divisions. The game sanctuaries are: Garumara, which preserves, among other animals, the rhinoceros, the bison and the elephant; Chapramari, which is famed for birds. The Cooch Behar Forest division of Jalpaiguri maintains the third sanctuary, Jaldapara which contains the Nilpara Forests also famed for the rhinoceros. As in the case of flora, so in the case of fauna, the study of wild life in this district has suffered from its proximity to Darjeeling which offers so many attractions for study. No full inventory has been made out of either wild animals or birds or even butterflies of the Duars. Among the larger carnivora are the tiger, the leopard, and the clouded leopard. The tiger is found all over the country east of the Teesta and very large ones have often been shot. One of the largest lengths has been 10' 2". Recent records of animals shot will be available with the Divisional Forest Officer and the Duars Game Association. There are several persons in the district greatly interested in the preservation of wild life. They produce much local lore. Shoots are organised at very short notice and everybody borrows everybody else's elephants without being under any obligation to ask them to the shoot. For big shoots *jotdars* send their elephants on request, and the Deputy Commissioner himself has six elephants maintained by the Government. It is customary for the Deputy Commissioner to run a shoot every Christmas jointly with the Commissioner or at any other time that is convenient. There is usually a great deal of poaching and clandestine shooting of forbidden game.

The following list of (a) mammals, (b) birds, (c) reptiles, and (d) fish, is reproduced from D.H.E. Sunder's Settlement Report of 1895, and should be read subject to correction. Naturalists often forget to mention the packs of wild dog which roam the Buxa and Sachaphu forests and kill deer and sambur in large numbers.

(a) Mammals

English Name 1	Native Name 2	Scientific Name 3	Remarks 4
The Bengal monkey	Bandor	Macacus rhesus	Found in the Buxa forests and Buxa hills.
The common Indian sloth-bear	Bhaluk or Bhaloo	Ursus labiatus	Found in the Waste-lands of Alipur and Bhalka tahsils, and in the forests east of the Jaldacca river.
The Himalayan black-bear	Bhaloo	Do. Tibetanus	Ditto
The hog-badger	Khud-khudi Bhaluk	Arctonyx collaris	Seen in the waste-lands of Alipur tahsil. Is eaten by Meches and Garos.
The otter	Udh	Lutra nair	Found all along the small hill streams. They are captured in nets. Skins are collected and sold at Jalpesh mela.
The tiger	Go-bagha	Felis tigris	Used to be very common throughout the district. Are becoming scarce owing to increase of cultivation. The flesh is eaten by Santhals. The largest tiger hitherto shot in the district measured 10' 2".
The leopard	Nekra-bagh	Felis pardus	Found throughout the district.
The clouded leopard	..	Felis nebulosa	Found only in the Buxa hills, but very rare.
The leopard cat	Hapa	Felis bengalensis	Common in the district
The jungle cat	Bhar-beli	Felis chaus	Ditto
The civett cat	Goindari	Viverra zibetha	Ditto
The lesser civett cat	Dalgoinda	Viverra Malaccensis	Ditto
The jackal	Sial	Canis Aureus	Ditto
The wild dog	Kuhak	Canis (cuon) Rutilans	Seen in the forests.
The Indian fox	Khak-siali	Vulpes Bengalensis	Common throughout the district.
The porpoise	Sissu	Platanista Gangetica	Found only in the Tista river.
Crocodile	Gharial	..	Found in the Mujnai river.
The black squirrel	Pankiraj	Sciurus Giganteus	Found only in the forests east of Buxa. Is getting rare.
The orange-bellied grey squirrel	Ditto	Sciurus Lokriah	Ditto
The common Indian squirrel	Dhorea	Sciurus Palmaram	Common in the district
The Indian porcupine	Cheda	Hystrix leucura	Ditto Is eaten by Meches, Garos and Rajbansis.
The hispid hare	Khagra-kata indoor	Lepus hispidus	Found in the district, but rare.
The hare	Shesha	Lepus Ruficaudatus	Common in the district
The elephant	Hati or Bonua hati	Elephas Indicus	Found throughout the forests.
Rhinoceros	Hati gera	Rhinoceros Indicus	Found in the forests; also in swampy khas lands. Are becoming scarce. Meches, Garos and Rajbansis eat the flesh.
Ditto	Kuku gera	Rhinoceros Malayan	Body rough and tuberculated. It has a very bad temper.
Ditto	Sheng Shengi gera	Rhinoceros Malayan	Is small and ill-tempered. Shot in Dalgaon forests, but very rare.
The wild pig	Jungly soor or Bonua soor.	Sus Indicus	Common throughout the district. The flesh is eaten by Rajbansis, Meches and Garos.
The pigmy hog	Thaguri soor	Porcula salvania	Found in the forests and waste lands bordering on them in the Alipur and Bhalka tahsils.
The Indian antelope	Talesar harin	Antelope bezoartica	A few may be seen in the waste lands of Falakata, Alipur and Bhalka tahsils.
The bison	Ban-goru	Gavaeus gaurus	Found in the reserved forests.
Ditto	Mithun	Gavaeus frontalis	Found along the foot of the hills between the Toorsa and Rydak rivers.
The wild buffalo	Jungli bhais	Bubalus arni	Seen in the forests of the Bhalka and Alipur tahsils. Are now getting rare.

(a) Mammals (*concl.*)

English Name 1	Native Name 2	Scientific Name 3	Remarks 4
The sambhar	Ghous	<i>Rusa aristotelis</i>	Found in the forests and khas lands east of the Toorsa river.
The spotted deer	Chital or Boro khatiya	<i>Axis maculatus</i>	Seen in the forests north of Bhalka and Alipur tahsils.
The hog deer	Khatia	<i>Axis porcinus</i>	Common in the district.
The swamp deer	Bara singha	<i>Rucervus Duvaucellii</i>	Ditto
The barking deer	Sokra	<i>Cervulus aureus</i>	Common in the reserved forests.

(b) Birds

A list of the game birds found in the district is given below :

Serial No.	English Name 1	Native Name 2	Scientific Name 3	Remarks 4
1	The Indian pea-fowl	Maur	<i>Pavo cristatus</i>	Common in the district, especially in the jungle lands east of the Jaldacca and Toorsa rivers.
	The Kallige pheasant	Kallige	<i>Gallophasis albocristatus</i>	Common in the forest north of Mcenglas and also in the Buxa hills.
3	The Moonal Do.	Bhap	<i>Lophophorus impeyanus</i>	Found between Buxa and Schinchula, but rare.
4	The Red jungle fowl	Bon charie	<i>Gallus ferrugineus</i>	Common in the district. Frequently seen in the early morning and after sunset in the Buxa forests between Janguri and Minagaon along the road to Buxa.
5	The Indian Bustard	Charak champa	<i>Euphoditis Edwardsii</i>	Common in the winter months in grass jungle of high lands.
6	The Bengal floriken	Chorros	<i>Sypheotides Bengalensis</i>	Ditto
7	The lesser floriken	Ditto	<i>Sypheotides auritus</i>	Common between November and March in grass jungle of high land, east of the Jaldacca and Toorsa rivers. Is rare in the Mynaguri tahsil.
8	The Black partridge	Titri	<i>Francolinus vulgaris</i>	Found in the grass land in Falakata and Alipur tahsils. Is getting scarce owing to extension of cultivation.
9	The swamp Do.	Koyar or kaher	<i>Ortygornis gularis</i>	Common in low grass lands east of Jaldacca river.
10	The Grey Do.	Titri	<i>Ortygornis Ponticeri</i>	Found in grass lands in Alipur, Falakata and Bhalka tahsils.
11	The Hill Do.	..	<i>Arboricola torqueola</i>	Found at Tashigaon Buxa.
12	The Grey quail	Noda bhati	<i>Coturnix communis</i>	Common throughout the district.
13	The Button quail	Noona bhati	<i>Turnix Sykesie</i>	Common in the district.
14	The Woodcock	..	<i>Scolopax rusticola</i>	Found in the district, but rare.
15	The Snipe	Cherka	<i>Gallinago Scolopax</i>	Common in marshy land throughout the district, but not in large numbers.
16	The Painted snipe	Chaha	<i>Rhynchoea Bengalensis</i>	Common in the district, and found all round the year.
17	The Jack Do.	Do.	<i>Gullinago Gullinula</i>	Found in char lands of the Tista and Jaldacca rivers.
18	The Common wild goose	Jungli Rajhas	<i>Anser cinereus</i>	Found during the winter months on the Tista and Jaldacca char lands. Has been shot in jheel at Falakata.

In the absence of cost of living index numbers ascertained and declared by the competent authority by notification in the official Gazette in respect of the areas of Dooars, Terai and Darjeeling, the Committee were of the opinion that it was unable at this stage to make any recommendation regarding the intervals at which and the manner in which the cost of living allowance was to be adjusted in future to accord as nearly as practicable with the variations in the cost of living index numbers applicable to the manual workers and the clerical employees concerned [section 4 (1) (i) of the Minimum Wages Act].

FORESTS

General description—The forests of the Jalpaiguri district are numerous and valuable and cover and even larger area (662 square miles) than those of the adjoining district of Darjeeling (487 square miles). In addition to the reserved forests, which are situated entirely in the Western Duars between the Tista and Sankos rivers, there is a large forest measuring 77 square miles, west of the Tista, which belongs to the Raikuts of Baikunthapur. All the forests are plains forests, with the exception of about 45 square miles in the vicinity of Buxa which occupy hilly ground rising rapidly from 500 to 4,000 feet. The principal timber tree, the importance of which is so great that the working of all reserved forests is directed among other aims towards obtaining a maximum quantity of mature timber from it, is *sal* (*Shorea robusta*); in some parts it grows nearly pure, but it is more often mixed with a large number of other species. The great difficulty experienced in dealing with the forests is to ensure natural reproduction of *sal* and at the same time to protect the forests from fire. The Baikunthapur forests, which received little attention from its owners and was until recently burnt through every year to ensure good grazing for cattle and buffaloes, contains hardly a tree which is not twisted and blackened by fire; at the same time this repeated burning has destroyed the soft wood trees and dense herbaceous undergrowth which spring up faster than *sal* and choke and kill the young trees, so that the natural reproduction is excellent and young *sal* plants abound in every direction. In the Government forests, on the other hand, the work of fire-protection has been carried out carefully, with the result that though the larger trees were preserved, the dense undergrowth tended as a result to interfere with the growth of young plants, and natural production was not as satisfactory as could be expected. In the matter of new plantations no very satisfactory work was done up to the beginning of the present century. Extraction was poor and although the forests were some of the richest that one could wish for in India, there was lack of supervision and much theft. As a result forest revenues dropped steadily up to about 1910. The alarming way in

which revenues fell up to this period has been described by both D. H. E. Sunder and J. A. Milligan in their settlement reports of 1895 and 1919. But after 1911 a succession of very energetic Divisional Forest Officers, commencing with E. O. Shebbear from November 1913, made a great effort to put matters right. Since 1913 there was a series of very well thought out working plans, the fifth and the last for the Jalpaiguri Forest Division being planned for 1942-1956 and for the Buxa Forest Division for 1945-1964. These working plans took account of every detail of the preservation, growth, increase of the forests, and evolved skilful plans designed to improve the forest revenue. The working plans are models how Government property should be looked after. They give a complete account of the forests, of the geological tracts, the forests, the method of utilisation, of their produces, staff and labour supply, and historic treatment of the past systems of management and statistics of growth and yield. In the working plan proper it lays down in very great detail the plan for clear-felling, selection, soft-wood working, fuel working, riverain working and the regulation of games and fisheries. It deals with establishment and labour and various administrative prescriptions. Under each section details are explained of the general constitution and character of the vegetation, of the silvicultural system, choice of species, the selection and exploitation of the sites and rotation of plantations, the probable yields of clear-felled areas, the consequences of clear-felling, the rules for conducting clear-felling, the methods of improving the felling yield. They also give a mass of miscellaneous instructions on dry felling, climber cutting in high forests, thinning in plantations, climber cutting in plantations and controlled burning. Every forest produce is taken care of, including bamboo, cane, thatch, grazing, fodder, other minor produce, forest roads and bridges, buildings and other forest property, rules to be observed to prevent fires, and maintenance of boundaries. Clear-felling is followed by new plantations, preceded by a careful selection of the species to be planted. Only as much area is clear-felled as it is possible to plant them anew in the next year or years. Otherwise matured timber is extracted individually and sold. There are regular programmes for climber-cutting and thinning. There are separate rules for the supply of firewood to tea estates, and others for permission to graze cattle in the reserved forests. Throughout the district the forests have green savannahs of grass. These grassy savannahs are a source of danger to the adjoining forests owing to their extreme inflammability, particularly when tortuous natural boundaries make it difficult to burn the outside grass, and near tea gardens when the Managers object to the early burning of grass on their grants. In addition to the reserved forests there are six square miles of Khas Mahal forests. All

the forests of the district are at present controlled by the Forest Department, the Baikunthapur forest being controlled under the Private Forests Act by the Divisional Forest Officer Jalpaiguri. The reserved forests of the district are divided for administrative purposes into three divisions, the Jalpaiguri, Cooch Behar and Buxa Divisions, the headquarters, of which are at Jalpaiguri, Cooch Behar and Rajabhatkhawa. The forests of the Jalpaiguri Division lie between the Mahanadi and Torsa, of the Cooch Behar Division between Torsa and Kaljani, while those of the Buxa Division are situated east of the Kaljani river in the Alipur Duars subdivision.

The forests of the Jalpaiguri Division cover an area of 165 square miles, and are situated entirely in the plains at the foot of the Bhutan hills. Besides the Baikunthapur forests, they are divided into five ranges, Apalchand, Upper Tondeu, Lower Tondeu, Daina and Moraghat, and consists of blocks, the names and areas of which are given below :

RANGE	BLOCK	Area of Block (acres)	
I PRIVATE FORESTS			
Baikunthapur	Sarogara Sikarpur	49,280	= 77 sq. miles
II RESERVED FORESTS			
A. Jalpaiguri Division			
Apalchand	Udlabari	2,264	
	Sialduba	1,456	
	Churabhija	1,290	
	Apalchand	2,105	
	Hanskhali	3,024	
	Chel river	1,586	
	Phuljhora	3,083	
	Chengmari	1,368	
		16,176	
Upper Tondeu	Sipchu	1,573	
	Chapramari	2,741	
	Udlajhora	3,731	
	North Indong	1,353	
	Khariarbandar	821	
	Pangjhora	4,655	
	Hillajhora	3,114	
	Kakurjhora	1,316	
	Selkapara	2,044	
	Bhokolmardi	2,275	
	Tondeu	2,906	
	Dhupjhora	1,158	
		27,687	
Lower Tondeu	South Indong	2,811	
	Gorumara	1,613	
	Medlajhora	2,159	
	Barahati	2,293	
	Central	1,973	
	Sursuti	4,355	
	Bichabhanga	1,528	
	Lataguri	3,765	
	Khairanti	64	
			20,561
		C/O	77 sq. miles

Daina	North Daina	3,283	B/F 77 sq. miles
	Central Daina	7,342	
	South Daina	5,230	
	Ramshai	3,804	
	Jaldhaka	3,091	
		22,750	
Moraghat	North Moraghat	1,333	
	Central Moraghat	5,290	
	South Moraghat	5,117	
	Gosaihat	1,876	
	Dalgaon	1,487	
	Rehti	3,483	
		18,586	
	Total	105,760	= 165 sq. miles
Khas Mahal Forests		3,840	= 6 sq. miles
B. Cooch Behar Division			
Madarihat	Dumchi	3,018	
	Khairbari	4,843	
	Titi	9,609	
		17,470	
Nilpara	Joygaon	4,578	
	Dalsingpara	5,049	
	Hasimara	4,216	
	Jaldapara	8,302	
	Rangamati	2,208	
	Barnabari	4,101	
	Godamdabri	3,880	
	Bhutri	3,841	
	Nilpara (Bhutri 6)	341	
		36,516	
Chilapata	Torsa	6,993	
	Salkumar	1,293	
	Malangi	3,162	
	Chilapata	4,944	
	Borodabri	5,978	
	Mendabari	4,383	
	Bania	6,835	
		33,588	
Cooch Behar	Pattakhawa	3,776	
	Garadhat	9,280	
	Scattered bits of forests all over the State	2,408	
			15,464
	Total	103,038	= 161 sq. miles
C. Buxa Division			
Rajabhatkhawa	Dima	2,428	
	Nimati	5,879	
	North R.V.K.	12,935	
	South R.V.K.	13,063	
	Jainti	9,761	
	Phaskhawa	5,985	
		50,051	
Damanpur	Panbari	7,925	
	Gadadhar	3,529	
	Chiko	6,305	
	Damanpur	6,197	
	Poru	9,095	
		33,051	
		C/O	409 sq. miles

C. Buxa Division (concl'd.)

		B/F	409 sq. miles
Baksa Duar	Pana	3,271	
	Adma	6,222	
	Chunbhathi	4,968	
	Tobgaon	7,817	
	Tashigaon	3,171	
	Santrabari	5,791	
	Raimatong	8,791	
		<hr/>	
		40,031	
Total		123,133	=192 sq miles
<hr/>			
Rydak	Hatipota	3,543	
	Bhutanghat	2,524	
	North Rydak	3,741	
	Central Rydak	4,900	
	South Rydak	5,666	
	Marakata	3,616	
	Narathali	3,292	
	Dawla	1,322	
		<hr/>	
		28,604	
Bholka	Newlands	2,116	
	Kumargram	2,556	
	Sankos	2,726	
	North Bholka	3,519	
	South Bholka	5,786	
			<hr/>
		16,703	
Total		168,440	=263 sq. miles
Grand Total		864	sq. miles

The tree of overwhelming importance for timber in Jaipauri District is *sal* (*Shorea robusta*). Other timber trees which are fairly numerous are *chilauni* (*Schima wallichii*), *sissu* (*Dalbergia sissu*), *khair* (*Acacia catechu*), *kuinjal* (*Bischofia javanica*), *malagiri* (*Cinnamomum cecidodaphne*) and *simul* (*Bombax malabaricum*); but few trees of large size belonging to these species, are to be found. The forests may be divided into four types, viz.:—*Sal* forest, Mixed, Evergreen, and Savannah; but these types merge into one another and are found in many places inextricably combined. The *sal* forest is in some parts nearly pure, with as many as 200 stems to the acre, but is more often mixed with varying proportions of other species, including *tatri* (*Dillenia pentagyna*), *udal* (*Sterculia villosa*), *saj* (*Terminalia tomentosa*), *kumbi* (*Careya arborea*), and *chilauni* (*Schima wallichii*).

In Apalchand, out of a total area of 16,176 acres of forest working, as much as 14,154 acres are *sal* circles, 1,368 acres for fuels and 654 acres for riverain working. In Upper Tondu, which contains the famous Chapramari game sanctuary, out of a total of 27,687 acres, 10,059 acres are worked under *sal*, 7,518 acres under soft wood, 7,930 acres under riverain working and 2,180 acres for working in game sanctuary. In Lower Tondu, which now contains the equally famous Garumara game sanctuary of 5

square miles, out of total of 20,561 acres as many as 19,432 acres are under *sal* working, and 1,129 reserved for the game sanctuary. Lower Tondu contains some of the noblest *sals* in India, the clear thick boles of *sal* trees attaining frequently the amazing height of 75 to 80 feet. The Daina range of 22,750 acres contains only 25 acres under *sal*, the remainder being under riverain working. Moraghat range has a total area of 18,586 acres, of which as much as 15,103 acres are under *sal*, 1,585 acres under soft wood and 1,898 acres under riverain working. North Moraghat block of this range contains some of the finest virgin *sal* forests. The north and south blocks of Moraghat have been systematically planted under *sal* for a very long time and great care is taken of the timber. The growth is fast and the cutting of climbers and thinning are carefully done.

In the Cooch Behar Forest Division, Madarihat range contains an area of 17,470 acres, of which 7,553 acres are under *sal* selection, 7,861 acres under soft wood and 2,056 acres under riverain work. The Nilpara range has a total area of 36,516 acres, and contains the famous Nilpara game sanctuary for the rhinoceros. The sanctuary spreads over an area of 8,316 acres. The area under *sal* conversion and long rotation are 2,305 acres and 8,779 acres respectively. The Chilapatha range has a total area of 33,558 acres, of which 10,547 acres and 6,767 acres are under *sal* conversion and short rotation respectively, while 16,274 acres are under game sanctuary. These three ranges comprise the Jalpaiguri section of the Cooch Behar Forest Division. This Division contains a small riverain tract on the Torsa in which the right of hunting and fishing rests exclusively in the Maharaja of Cooch Behar, according to the terms of the merger of Cooch Behar State into West Bengal.

In the Buxa forest division there are five ranges. The first, Rajabhatkhawa has an area of 50,051 acres, of which 32,941 and 4,390 acres are under *sal*, 5,928 acres under firewood, and 1,290 acres under riverain tract. Protection work is being carried on in 5,502 acres. In the Damanpur range the total area of 33,051 acres is made up of 2 kinds of work: 17,784 acres under *sal* conversion and 15,267 acres under short rotation. In the Buxa Duar Range a great deal of protective plantation has become necessary. Out of a total of 40,031 acres, 18,573 acres is under protective plantation, 9,328 acres under *sal* conversion, 8,750 acres under *sal* improvement and 2,784 acres under long rotation. The Raidak range has a total area of 28,604 acres, of which 16,871 acres are in riverain tracts, 1,156 acres are undeveloped, and 5,666 and 4,911 acres are under *sal* conversion and protection respectively. In the last range, namely, the Bholka range, out of a total of 16,703 acres, as many as 11,492 acres are still undeveloped, 618 acres are riverain and 4,593 acres under firewood.

The preservation of wild life, the prevention of fire, the protection of forests against climbers and dense undergrowths, the protection of river banks so that they do not burst their sides or divert their course, the wise disposal of fodder and thatching grass, are some of the subsidiary but important duties of the Forest Department. The Games Associations for the protection of wild life are doing good work and regular meetings of these Associations on the State level serves to keep this problem fresh in everybody's mind. On the other hand, it is necessary to appreciate the extensive damage that is often inflicted by wild animals on standing crop, tea gardens, human habitations, human and domestic animal life and even such things as boundary pillars. The elephant, the wild buffalo, the various families of deer, pig and other small animals, carry on regular depredations among standing crop, while the elephant often turned wild is frequently a menace both to life and property. The tiger not infrequently comes out of the forests and lifts cattle. The India-Bhutan boundary pillars are often sad preys to the inquisitiveness and disgust of wild animals.

It will be useful to reprint here a list of drugs, indigeneous to the district, including mineral drugs, which W. W. Hunter recorded in his Statistical Account of Jalpaiguri in 1876.

Drugs indigeneous to the district—Dhenus (*Abelmoschus esculentus*); kunch (*Abrus precatorius*); apang (*Achyranthes aspera*); bach (*Acorus calamus*); bel (*Aegle marmelos*); chureta (*Agathotes churayta*); ghrita kumari (*Aloe indica*); kulujan (*Alpinia galanga*); chatum (*Alstonia scholaris*); kalap-nath (*Andropogon paniculata*); khas khas (*Andropogon muricatum*); sialkanta (*Argemone mexicana*); nim (*Azadirachta indica*); dhak or palas (*Butea frondosa*); kat-karanja (*Caesalpinia bonducella*), bakam (*Caesalpinia sappan*); akhund (*Calatropis gigantea*); ganja (*Cannabis indica*); lanka marich (*Capiscum annuum*); sonalu (*Cassia fistula*); mom or wax (*Cera flava*); bhant (*Clerodendron viscosum*); dhaniya (*Coriandrum sativum*); jajpal (*Croton tiglium*); mdrawan (*Cucumis pseudo-colocynthis*); katki (*Cucumis utillissimus*); bagh bharengra (*Jatropha curcas*); haldi (*Curcuma longa*); ban-haldi (*Curcuma zedoaria*); mutha (*Cyperus hexastachylus*); dhutura (*Datura alba*); amla (*Embbica officinalis*); munsu sij (*Euphorbia higuraria*); jaistha madhu (*Glycyrrhiza glabra*); nil (*Indigofera tinctoria*); ajawan (*Ligustrum ajowan*); am (*Mangifera indica*); pudma (*Mentha sativa*); karela (*Momordica charantia*); sujina (*Moringa pterygosperma*); tamak (*Nicotiana tabacum*); saluk (*Nymphoeca lotus*); amrul (*Oxalis corniculata*); bara ghakru (*Petalium murex*); pipul (*Piper longum*); raktachandan (*Pterocarpus santalinus*); anar (*Punica granatum*); erendi (*Ricinus communis*); jangli piyaj (*Urginea Indica*); til (*Sesamum orientale*); sada sarisha (*Sinapsis alba*); kala sarisha (*Sinapsis nigra*); tentul (*Tamarindus Indica*); haritaki (*Terminalia chebula*); methi (*Trigonella foenum-graecum*); adrakh (*Zinziber officinale*); buch (*Zinziber zerumbet*).

Drugs sold in the bazar—Babla (*Acacia arabica*); atis (*Aconitum heterophyllum*); jangli akrot (*Aleurites triloba*); jawasi (*Alhagi maurorum*); ilachi (*Amomum cardamomum*); Hijli badam (*Anacardium occidentale*); akarkora (*Anthemis pyrethrum*); china badam (*Arachis hypogoca*); gochru (*Asteracantha longifolia*); kotilla (*Astragalus virus*); gugal (*Balsmodendron mukul*); mahua (*Bassia latifolia*);

resut (*Berberis lycium*); gandha berosa (*Boswellia thurifera*); jita (*Carum album*); lang (*Cinnamomum zeylanicum*); nebu (*Citrus, numerous varieties*); golancha (*Cocculus cordifolius*); narikel (*Cocos nucifera*); bihidana (*Cydonia vulgaris*); garjau tel (*Dipterocarpus laevis*); takhm balanga (*Dracocephalum royleanum*); chhota ilachi (*Elettaria cardamomum*); panmuri (*Foeniculum panmorium*); chaulmigra (*Gynercardia odorata*); kala kutki (*Helleborus nigra*); khorrassani ajawan (*Hyoscyamus niger*); kapur (*Laurus camphora*); halim (*Lapidum sativum*); tisi (*Linum usitatissimum*); jaiphal (*Myristica officinalis*); jatanansi (*Nardostachys jatamansi*); hing (*Narthex asafetida*); kala-jira (*Nigella sativa*); khet-papra (*Oldenlandia biflora*); salep misri (*Orchis mascula*); aphin (*Papaver somniferum*); kala-dana (*Pharbitis nil*); gandhaberoza (*Pinus longifolia*); kabab chini (*Piper cubeba*); kala-marich (*Piper nigrum*); majuphul (*Quercus infectoria*); riwan chini (*Rheum emodi*); manjit (*Rubia muujista*); rita (*Sapindus emarginatus*); bhalatak (*Semecarpus anacardium*); chaulnadi (*Sphaeranthus hirtus*); kuchila (*Strychnos nuxvomica*); beheyra (*Terminalia belerica*); palwal (*Trichosanthes dioica*); indrajab (*Wrightia anti-dysenterica*).

Mineral drugs—Phutkuri (alum); rasanjan (sulphate of mercury); sankha (arsenic); kharimati (chalk); tuta (sulphate of copper); hira-khas (sulphate of iron); raskapur (calomel); murdan shankar (oxide of lead); sorali (nitrate of potash); tabasir (silicate of potash); sajmati (carbonate of soda); sohaga (biborate of soda); gandhak (sulphur).

The Baikunthapur forest is situated on the Teesta river and forms a long narrow strip stretching from the boundary of the Darjeeling district to within a few miles of Jalpaiguri town. Buchanan Hamilton gives an account of this forest as the Woods of Batris Hazari of Baikunthapur, published as an appendix elsewhere in this volume. The working of this forest has been supervised by the Divisional Forest Officer, Jalpaiguri since 1905 with small intervals when the control went over to the Raikuts. The forest is divided into two ranges, the Sarogara range in the north and the Sikarpur range in the south. The total area, as already stated, is 77 square miles.

An alarming feature in the district is the turning over of erstwhile grazing lands to cultivation. As a consequence the forests are being encroached upon for fresh grazing, particularly, the riverain tracts the denudation of which is adding to the problems of river training and flood erosion. In recent years rivers have become more uncontrollable than before and frequently overtop their banks.

NATURAL CALAMITIES

The following is a brief chronological account of the natural calamities of the district. Recent years (1950 to 1952) have seen some disastrous floods. In 1950 a heavy flood in the river Tista broke out in the middle of June and partly inundated 56 mauzas under police stations Mainaguri and Mal, as also three Wards of Jalpaiguri Municipality. There was a considerable loss of homestead, movables and cattle. The number of families affected by the flood was, 4,135, 3,163

APPENDIX I

GAZETTEER

Alipur Duar—The headquarters station of the subdivision of the same name. It is situated on the north bank of the Kaljani river, in 26° 29' N. and 89° 32' E. Its population in 1951 was 24,886. Alipur Duar is named after the late Colonel Hedyat Ali Khan, who did good service in the Bhutan war and was the first Extra-Assistant Commissioner to be stationed there. It is the centre of a large and increasing trade, and an important railway colony. It is a station on the Assam Railway, and is connected by a good road with Jalpaiguri; another road runs north to Buxa, but this is in bad order up to Buxa Road station, though efforts are being made to improve it. Alipur Duar is not a healthy place; it is situated on low-lying ground where rice used to be cultivated before the annexation of the Western Duars. There are several old beds of the Kaljani river in the neighbourhood and one of these, now a stagnant *jheel*, runs right through the civil station. During the rains, water lies about freely, and though much is being done to keep the roads and drains free from jungle, the inhabitants suffer severely from malarious fever. The rains are heavy and last from May to September. In these months when rain is not falling the heat during the day and often during the night is most oppressive; at such times there seems a want of sufficient air to breathe, and the steamy atmosphere renders it difficult to summon enough energy to do any work.

The Alipur Duars Subdivision—The eastern subdivision of the Jalpaiguri district, lying between 26° 24' and 26° 51' N. and 89° 3' and 89° 53' E. and extending over 1,078.5 square miles. Its population was 368,396 in 1951.

It is still sparsely peopled, the density to the square mile being only 342, but it includes large areas of reserved forest and tea, and the waste land available for settlement is being steadily taken up and brought under cultivation. The subdivision forms part of the Western Duars and has increased in numbers and prosperity since it came under Bengal province. The rise of the tea industry has led to the introduction of a large foreign population and many immigrants from Cooch Behar and the district of Rangpur have made their homes in it. The subdivision contains the former military cantonment of Buxa and 345 villages, at one of which, Alipur Duar, its headquarters are situated. The chief markets are at Alipur Duar, Buxa, Falakata, and Madari Hat; there are also large private markets on some of the tea gardens.

Ambari Falakata—Formerly called the Bengal Duars, a small Government estate, or *tahsil*, lying to the west of the Tista, and bounded on all sides by the Baikunthapur *pargana*. It was annexed from Bhutan in 1865 at the same time as the Western Duars and takes its name from a mango grove which stands on one of its *jots*. The Karatoya runs through the centre of the *tahsil*. The land on both sides of the river is high and sandy, but grows crops of mustard and *aus* rice; the soil is generally inferior to that east of the Tista, and there is a tendency for the people to move into the Western Duars. The area of Ambari Falakata is 9,837 acres or 15 $\frac{3}{8}$ square miles, of which 9,370 acres were settled by D.H.E. Sunder in 1889-95.

Bagrakot—The terminus of the western branch of the Bengal-Duars Railway. It is situated near the foot of the hills close to the Darjeeling border, and is always much cooler than Dam-Dim, 6 $\frac{1}{2}$ miles distant.

Barnes Junction—A station on the Bengal-Duars Railway. It is connected by a branch line, about a mile in length, with Barnes Ghat on the left bank of the Tista opposite Jalpaiguri, with which it is connected by a ferry under the control of the railway company. Barnes Ghat used to be the terminus of the Bengal-Duars Railway and passengers and goods were ferried across the river and joined the Eastern Bengal State Railway at Jalpaiguri. The construction of the southern branch of the railway in 1898-1900 to Lalmanir Hat on the Dhubri extension of the Eastern Bengal State Railway gave through communication and avoided the troublesome crossing of the Tista river. There is a bazar at Barnes Junction.

Bhutan Duars—The tract of country lying along the foot of the Himalayas which was ceded by the Bhutias after the Bhutan war. It was divided into two portions; the Western Duars, which now forms part of the Jalpaiguri district, and the Eastern Duars, which is included in the district of Goalpara. The Bhutan Duars comprises a strip of country about 180 miles in length with a breadth of from 20 to 30 miles.

Buxa—Formerly a military cantonment and later a political prisoner's detention camp. Situated on a small gravel plateau 1,800 feet above sea level, in a valley in the lower range of the Bhutan Hills, in 26° 46' N. and 89° 35' E. It commands one of the principal passes into Bhutan and is two miles from Santrabari, at the foot of the hills and six miles from the frontier. A good road, maintained by the Central Works and Buildings Department, leads to it from the Buxa Road station on the Assam Railway; for three miles this road runs through the reserved forest to Santrabari whence a hill road, with gradients too steep for carts, winds in and out to the cantonment. Before the railway was constructed troops had to march from Cooch Behar, 32 miles away, and the road was then kept in excellent repair. The cantonment, which was established during the Bhutan war in 1864, consisted of a rough fort with 3 pickets called the right, left, and *Mardala*, on spurs at a higher elevation. Water is obtained from two perennial streams, one of which issues from the base of the plateau. The average annual rainfall is 209 inches. Though it is not situated at a high elevation, the climate of Buxa is salubrious and there is little illness. During the rains the place swarms with leeches, and it is impossible to move off the roads without getting covered with them. Buxa lies on one of the trade routes from Bhutan, whence ivory, wax, wool, musk, rhinoceros horns, cotton cloth, *endi* silk cloth, blankets, honey and brick, tea are imported and bought by local merchants, who pay for them in cash or barter rice, tobacco, English cloth, betelnut, etc., for these commodities. Large quantities of indigenous wool from Bhutan, Tibet and Central Asia enter India by this route for export to Europe.

Chalsea—A station on the eastern extension of the Bengal-Duars Railway. A metalled road leads from it to Matrali Hat, one of the largest markets in the tea-garden area.

Chota Sinchula—A peak of the Sinchula range situated about 7 miles north of Buxa cantonment in 26° 47' N. and 89° 34' E. It is the highest point in the Jalpaiguri district and has an elevation of 5,695 feet above sea level. This peak separates Indian from Bhutan territory.

Dam-Dim—A station on the Bengal-Duars Railway and the terminus of the original line. It is surrounded by tea gardens and a weekly market is held which is largely

APPENDIX I—contd.

attended by labourers. The Dam-Dim police station was formerly notoriously unhealthy and the men stationed there suffered severely from malarious fever; it was removed to Mal in 1908.

Dhupguri—A village on the Jalpaiguri-Alipur road about half way between Mainaguri and Falakata. It is the centre of a fertile tract of rice growing country and is connected by good roads with Gairkata on the north and Naothoa on the north-west, at both of which places there are large markets through which supplies reach the tea gardens. The market at Dhupguri is of considerable importance and much jute is brought to it for sale. There is a police station here, but the men suffer much from fever and the place is one of the unhealthy stations in the Western Duars.

Domohani—A station on the Bengal-Duars Railway about nine miles north of Barnes Junction. The railway workshops are situated here and there is a large market. A good road connects Domohani with Mainaguri, three miles to the north-east, and there is a ferry across the river Tista to Paharpur on the Jalpaiguri-Dam-Dim road.

Duars, Western—The tract of country, lying along the foot of the Himalayas between the Tista and Sankos rivers. It includes some outlying spurs in the north-east of the district, on one of which the former Buxa cantonment is situated, and has an area of about 1,968 square miles. It is bounded on the north by the Darjeeling district and Bhutan, on the east by the Sankos river, on the south by Cooch Behar and pargana Baikanthpur, and on the west by the Tista river. This tract, with the Eastern Duars, which now forms part of the Goalpara district, was annexed to Bengal in 1865 at the time of the Bhutan war. The Western Duars slopes from north-west to south-east, and is intersected by numerous rivers and streams, which drain the Himalayas. In the north, a series of well wooded plateau, rising to between twelve and fifteen hundred feet, form the connecting link between the hills and the plains. Their soil, a reddish loamy clay, in places of great depth, their climate, and the rainfall which reaches 180 inches in the year, are all well adapted to the growth of the tea plant, and the gardens extend throughout their entire area except where the land is occupied by the reserved forests, the area of which is 509 square miles. At the foot of these plateau used to stretch a belt of grass jungle, which gradually gave way to the ordinary cultivation of the plains, but as far east as the Torsa river nearly all the grass has been cleared away and the land brought under the plough. East of Alipur Duar the country is thinly peopled and there is still a good deal of waste land available for settlement. The closest tillage is to the west between the Tista and Torsa rivers, where rich fields of rice, jute, tobacco, and mustard stretch up to the Cooch Behar boundary. Owing to the development of the tea industry, the population, which was very small when the Western Duars was first acquired, is rapidly increasing; large numbers of immigrants, mainly from Chota Nagpur and the Santhal Parganas, have come into the district to work in the tea-gardens and many of them have settled down in it. For administrative purposes the Western Duars is divided into four *tahsils*, viz., Mainaguri, Alipur, Falakata, and Bhalka. The principal Government markets are Mainaguri, Ramshai Hat, Matiali Hat, and Amguri in the Mainaguri *tahsil*; Falakata, Gairkata, and Madari Hat in the Falakata *tahsil* and Alipur Duar in the Alipur *tahsil*. Many of the tea gardens have *hats* of their own and there are several private markets, the most important

of which are Baradighi, Naothoa, Dhupguri and Silitorsa.

Falakata—A village, the headquarters of a police station, situated on the east bank of the Mujnai river close to the boundary of Cooch Behar in 26° 31' N. and 89° 13' E. It is also the headquarters of the *tahsil* of the same name which comprises the tract of country between the Jaldhaka and Torsa rivers. Falakata was formerly the headquarters of what is now the Alipur Duar subdivision. It has an important market at which some of the best jute, tobacco and mustard grown in the Western Duars are sold and is connected by a good, well bridged road with Madari Hat, the eastern terminus of the Bengal-Duars Railway. It is 32 miles from Jalpaiguri and 22 miles from Alipur Duar, the main road between which places passes through it. The Mujnai river is navigable up to Falakata by boats of 50 maunds burden throughout the greater part of the year. An annual fair, lasting about a month, is held in February on the occasion of the Sripancham festival. Bhutias used to visit the fair in large numbers but few of them do so now.

Gairkata—A village on the Angrabasha river, a tributary of the Duduya; it has a large Government market and is the centre of a series of roads, maintained by the Works & Buildings Department, which connect it with the rice growing country on the south, and the tea gardens on the north. There is a large tea gardens here.

Jalpaiguri—Formerly the administrative headquarters of the Rajshahi division and now of the northern tracts of the Presidency Division, and of the Jalpaiguri district, situated on the right bank of the Tista river in 26° 32' N. and 88° 43' E. Its population at the census of 1951 was 41,259. The town derives its name from the olive trees which used to exist in some numbers; even as late as 1900, many of them were to be seen near the Deputy Commissioner's cutcherry. The town is divided into two parts by the Karla river over which there are three bridges, two near the Deputy Commissioner's offices, and the other higher up stream, near the market place Jalpaiguri is a well wooded town, the main roads being shaded by avenue of trees; in May and June when the *ajar* trees are in flower, the effect is very pretty. A fine view of the snowy peaks of the Himalayas can be seen in clear weather from the iron bridge across the Karla river.

Jalpaiguri has always been a bad place for fires and floods owing probably to the inflammable nature of most of the buildings and their lowness of elevation. In 1878 the whole of the Government offices, except the treasury, including the Commissioner's office, the Deputy Commissioner's offices, the Judge's Court house and the Munsif's Court were burnt to the ground. In consequence of this fire the Commissioner removed to Rampur Boalia, but Jalpaiguri again became the headquarters of the division in 1888 when Lord Ulick Browne was Commissioner. In 1897 the Munsif's court was again burnt down, in 1898 the Circuit House, in 1905 the market and surrounding shops, in 1906 the Deputy Commissioner's offices, and in 1907 the Zilla School. The temporary buildings, in which the Deputy Commissioner's offices were housed, were destroyed by fire in 1908.

The town though small does a considerable trade; it is served by the Assam Railway and is connected with Barnes Ghat on the east bank of the Tista by a ferry.

APPENDIX I—concl'd.

A Municipality was constituted in 1885 and the Board consisted of 13 Commissioners of whom 3 were *ex-officio* members, the Deputy Commissioner being the Chairman, while the rest were nominated by Government.

The Jalpaiguri Subdivision—The western subdivision of the Jalpaiguri district, lying between 26° 16' and 27° N. and 88° 25' and 89° 7' E. and extending over 1,296 square miles. Its population in 1951 was 546,142 giving a density of 385 persons to the square mile. The subdivision includes two distinct tracts—the permanently settled *parganas*, which once formed part of Rangpur, and the Mainaguri, Nagrakata, Dhupguri, Mal and Matiali police stations west of the Tista. The subdivision contains one town, Jalpaiguri, its headquarters, and 431 villages. There are interesting archaeological remains at Jalpes. The chief centres of trade are Jalpaiguri town, Mainaguri, Aimguri, Matiali Hat, and Dhupguri, and several of the tea estates have large weekly markets of their own. Recently a number of silver coins have been found in Sarugaon Tea Estate on the Dima River. The writings on the coins are: (1) Obverse—'Abadul Imam Ali Mustafizul Musalmin' and on the (2) Reverse 'Sultan-ul Axam Nasirrez-zahman waled Abul Zatar Muhammad. This may throw new light on the history of this tract.

Jalpes—A village in *pargana* South Mainaguri, situated in 26° 31' N. and 88° 52' E. It contains a temple of Siva, which was built on the site of an earlier temple by Pran Narain, one of the Cooch Behar Rajas about three centuries ago. The temple is a massive whitewashed building, surmounted by a large dome, with an outer diameter of 34 feet, round the base and top of which run galleries; it stands on a mound near the bank of the river Jhorda and is surrounded by a moat. A flight of steps leads down to the basement which is sunk some depth in the mound and which contains a very ancient Siva *linga*.

This *linga* is called Anadi without beginning in the hymns of Siva and is also referred to in the Kalika Puran which relates how "somewhere in the north-west of Kamrup, Mahadeo appeared himself in the shape of a vast *linga*." An old established fair is held at Jalpes in February at the time of the Sivaratri festival; it lasts for about three weeks and is attended by people from all parts of the district as well as from Rangpur, Duajpur, and other parts of Northern Bengal. Bhutias come from Darjeeling, Buxa and Bhutan with cloth, blankets, ponies and skins and take away cotton and woolen cloths, betelnut and tobacco. The fair has increased considerably in size during recent years.

Kumargram—A small village at which are situated the headquarters of the Bhalka *tahsil*. Roads run from it to Alipur Duars and to Chakchaka, on the Cooch Behar boundary. A market is held here twice a week.

Madarihat—A village on the west, or right, bank of the river Torsa and the terminus of the eastern branch of the Bengal-Duars Railway. It is connected by a good road with Falakata on the south, and the Hantapara tea garden and bazar on the north. Madari Hat is of some importance as a seat of trade and its market, which is held once a week, is growing rapidly. Nearly all the land in the vicinity has been brought under cultivation, much of it by Oraona and Nepalis; jute is a large crop.

Mainaguri—A village situated on the Jhorda river seven miles from Jalpaiguri. The main road from Jalpaiguri to Alipur Duar passes through it and several other roads run from it, the principal of them connecting it with Domohani railway station and Ramshai Hat. The Jalpes temple is four miles from

Mainaguri. Mainaguri is the headquarters of the *tahsil* of the same name and a police station is located here. The small civil station has been laid out carefully; a pretty flower garden has been made round the tank near the *tahsil* office, trees have been planted and the roads and drainage much improved. The public buildings are all good; the *tahsil* office, the school house, and the hospital being the most noticeable. There is a good inspection bungalow on the other side of the river which is bridged at Mainaguri. The market is one of the best in the Western Duars; the sheds have corrugated iron roofs and masonry platforms; it is well drained and a plentiful supply of water is obtained from wells.

Mal—A junction on the Bengal-Duars Railway from which branches run east to Madari Hat, west to Bagrakot on the border of the Darjeeling district, and south to Barnes Junction, and Lalmanir Hat. A large market is held once a week at Batugol, 1½ miles away on land belonging to the Hahaipatha tea garden; it is attended by numbers of labourers from the neighbouring tea gardens. The Dam-Dim police station was removed to Mal and an Inspector of Police will have his headquarters here.

Matiali Hat—A small bazar in the centre of the Chalsa group of tea gardens. A metalled road, maintained by the Works & Buildings Department, connects it with the Chalsa railway station five miles to the south. A large market is held here once a week, and is attended by thousands of tea garden labourers; the trade is mainly in the hands of Marwari merchants, several of whom have shops at Matiali Hat and do a flourishing business. There is a police outpost in the bazar, subordinate to the Mal police station.

Nagrakata—A station on the eastern extension of the Bengal-Duars Railway. There is a police station here. Nagrakata derives its name from Nagra Bhutia who used to live here.

Rajabhatkhawa—A station on the Assam Railway north of Alpur Duar. A road runs west from it to the Torsa river and all the traffic from the gardens between the Torsa and the railway line comes to this station. Rajabhatkhwa is the headquarters of the Buxa forest division, the place is little more than a large clearing in the Buxa forest but at times it has quite a large population owing to the amount of timber exported from it. There is a small market here.

Rajganj—A village in *pargana* Baikunthpur on the main road between Jalpaiguri and Silguri. Another road from Bhajanpur on the Tutalya road passes through it and connects it with the railway station at Belakoba on the Assam Railway; this road carries heavy traffic particularly during the jute season. Rajganj is in the Baikunthpur estate, the Raikat of which owns the large market to which jute of excellent quality is brought for sale. There is a police station at Rajganj, the jurisdiction of which coincides with that of the old Sanyasikata police circle.

Ramshai Hat—The terminus of a short branch line from Latiguri station on the Bengal-Duars Railway. It is situated on the right bank of the Jaldhaka river with the Lower Tondu forest on the west and the Daina forest across the river on the east. Before the construction of the eastern extension of the railway to Madari Hat, traffic to and from the tea gardens east of the Jaldhaka had to use this station and, after the disastrous floods in 1906, this traffic returned temporarily to its old route. Ramshai Hat is connected by road with Chalsa, Nagrakata, Mainaguri, and Gaikata. There is excellent big game shooting close to the forests and particularly in the jungle between the Jaldhaka and Daina rivers which is a favourite resort of tigers.

APPENDIX III

Extracts from Dr. Francis Buchanan-Hamilton's Account of the District of Rangpur, 1810

(Sketches mentioned in the extracts have not been reproduced).

Topography

Rivers—Since the survey was made by Major Rennell, the rivers of this district have undergone such changes, that I find the utmost difficulty in tracing them. The soil is so light, and the rivers in descending the mountains have acquired such force, that frequent and great changes are unavoidable; so that whole channels have been swept away by others, and new ones are constantly forming. The nomenclature is therefore exceedingly difficult. After tracing the name of a river from some distance you all of a sudden lose it, and perhaps recover the same name at a distance of 20 miles, while many large rivers intervene, and no channel remains to assist in discovering the former connection. The old channels have not only lost a current of water; but have been entirely obliterated by cultivation, or by beds of sand thrown into them by newly formed rivers. In some instances different portions of the same river remain, while others have been lost, and the intervals are filled up by new channels, so that apparently the same river has various names in different parts of its course.

The confusion that has arisen from these circumstances is so great, that Major Rennell seems to have been overpowered, or unwilling to waste time on the investigation; and owing to the contradictory accounts given by the natives, he seems to have altogether avoided giving names to many of the rivers. In the transient view, which I had an opportunity of taking, my difficulties have of course been greater, so that in my description I am afraid that there are numerous errors; yet, I enter into it with minuteness, the changes to which rivers are liable in a country of this nature, being a subject upon which naturalists have as yet but slightly touched.

Rivers west from the Korotoya—Beginning at the west we first find the Mahanonda, which according to the report of the natives, arises from the lower mountains of Sikkim in the dominions of Gorkha, and for about five miles after descending into the plains forms the boundary between that kingdom and the Company's territory. It then for about six miles separates this jurisdiction from that of Puraniya, and then flows a long way entirely through that district, until it reaches the frontier of Dinajpoor, as formerly mentioned. So far as it continues on the frontier of Ronggopoor, the Mahanonda is inconsiderable. It has indeed a channel of no small size, being perhaps 300 yards wide; but in the dry season the quantity of water is trifling, and even in the highest floods does not rise over the banks. It rises suddenly and falls quickly, so that boats do not attempt to navigate it; and even in the rainy season it is only frequented by canoes, which ascend with difficulty, but aid in floating down a little timber. In dry weather its stream is beautifully clear.

From this district the Mahanonda receive three small branches, which arise from springs in the fields. The most northerly is the Trinayi, which joins the Mahanonda, a little south from Sonnyasikata. Next is the Ronchondi, which, arising in Sonnyasikata, afterwards separates this division from that called Boda. The third is more considerable, and takes its rise from the fields of Sonnyasikata by two heads, the eastern called Chokor, the western called Dayuk. After the junction this last preserves the name, and passing through the division of Boda, enters Puraniya, where I hope hereafter to find it. The next river, which I have occasion to mention is the Nagor, already described in my account of Dinajpoor. At present it takes its rise from a field just where the districts of Puraniya and Dinajpoor

join with this; so that it may be considered as barely touching the division of Boda.

Rivers connected with the Korotoya—The Korotoya, which at the commencement of this degenerate age (Kohyugo) formed the boundary between the dominions of Bhogodotto and those of Virat, now forms part of the boundary between this district and that of Dinajpoor. Its topography is attended with numerous difficulties, part of which have been anticipated in my account of Dinajpoor. It runs for about 45 miles through the centre of the north-west divisions of this district, and is then swallowed up by the Tista. I shall first describe this part of its course. By the natives of Gorkha, it is said to rise from the lowest hills of the Sikkim district, at a place called Brohmokundo; and immediately after leaving the hills it forms the boundary for a few miles, between Gorkha and the dominions of the Company. It then passes a mile or two through the latter, and enters a small territory belonging to Bhotan, through which it passes five or six miles, and re-enters this district as a pretty considerable river, which in the rainy season admits of being navigated. Its channel is not so wide as that of the Mahanonda, but it does not rise and fall so rapidly. More timber is floated down its channel than by that of the Mahanonda; and, when it has reached Bhojpoor, a mart in Boda, it is frequented in the rainy season by boats of 400 *mans* burthen. During this part of its course it receives from the west a river, which rises from the low hills of the territory of Sikkim with two heads, the Jurapani and Sango, which unite under the latter name in the division of Sonnyasikata, and in that of Boda fall into the Korotoya. Below this for some way, the Korotoya forms the boundary between Ronggopoor and Puraniya, when turning to the east it passes entirely through the former, and has on its southern bank a considerable mart named Pochagor, to which boats of 1000 *mans* burthen can come in the rainy season. It is however, only boats of 4 or 500 *mans*, that usually ascend so far. A little above Pochagor, the Korotoya receives from the north, a small river named the Chau, which rises from a field in the division of Sonnyasikata, and has a course of about 14 miles. Below Pochagor, the Korotoya receives from the same direction, a river named Talma, which, coming from the forests towards the frontier, has a course of double the length.

The Korotoya is now a very considerable river, and passes through the division of Boda, in part, however, separating that from detached portions subject to the Raja of Vihar, until it receives from the Tista a branch called the Ghoramara. The united stream for about two miles retains the name of Ghoramara, for the old channel of the Korotoya has become almost dry; but at Saldanga, a considerable mart, the Korotoya again resumes its name, and in the rainy season is usually frequented by boats of from 5 to 600 *mans* burthen.

The Korotoya then continues its course to the south-east for about three miles, when it joins the old Tista, and loses its name although it is at present the most considerable stream; but the immense sandy channel of the Tista announces its recent grandeur. In fact when Major Rennell made his survey, the great body of the Tista came this way and joined the Atreyi; but in the destructive floods which happened in the Bengal year 1194, the greater part of the water of the Tista returned to its ancient bed, and has left this immense channel almost dry. I shall therefore proceed to give an account of this channel as forming a part of the Korotoya. It is called as I have observed, the old (Buri) Tista, although from the course of the Korotoya it is evident

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burthen on some of the Zemindars who choose to feed them. Many from this district go to that place, and occasionally some go to Jagonnath, Kasi and Goya. This is chiefly done, when a Brahman comes from any of these places, and undertakes to conduct a flock. The hospitable roofs of the Kangkinya and Bamondangga Zemindars afford every accommodation to these persons, until their flocks assemble, and the poor Bengalese have not that turbulence, of which his contemporaries were so much accused by Xenophon (*proem. in libro de Cyri Inst.*) but offer themselves with the utmost readiness for the use of their pastors. The only difficulty that the Brahman encounters, is in coming so far; his stay here, and his return is comfortable and advantageous.

For maintaining the rules and discipline of castes, those of Bengal follow nearly the same customs as in other parts, only there are very few of the Company's called Dols, and it is only in Bahirbondo that there are many Dolpotis. In my account of Dinajpore I have explained these terms. The Brahmans, Kayasthas, and intermediate tribes, settle all offences against custom in assemblies of the chief people in the neighbourhood (Punchaet). The lower castes have chiefs called Poramaniks or Prodhans, whose office is not hereditary. These are in general appointed by the proprietors of the land, with the consent however of the caste, and of the spiritual guide, and are very much under the influence of the latter, who shares in all fines. The chief profit of the Poramanik arises from his being the cook at marriages, when he receives a piece of cloth and 3 or 4 annas in money.

In the western parts the tribes of Kamrup follow nearly the same plan, the Khyen and Rajbongsis, who reckon themselves pure, decide all matters of caste in assemblies, while the Danyi, impure Rajbongsis, and other low tribes have chiefs (Poramanik). In the eastern parts again every thing is settled by the Medis, appointed by the spiritual guides. The plan, which is followed in Haworaghat, may serve as an example for the whole. The priest (Purohit) of the Vijn Raja, to which chief the territory belongs, has drawn up a proper code of rules called Prayoschitto Tottoo, which is generally observed. Each Medi has under his care a company (Mel or Kel), which contains about a hundred families of the worshippers of Vishnu (Bhokot) of all castes. Each of these has its own Poramanik, for there all the Rajbongsis are also called Koch, and do not pretend to be judged by their peers (Punchaet). When a person has been discovered in the transgression of any rule of his caste, as described in the code of laws, he is in danger of excommunication, and must humbly entreat the Medi to remove the scandal, which is done by a fine. Almost the only transgression committed in that quarter, arises from the good nature of the men, who in Haworaghat are particularly obliging to their wives, and will not see many frailties. The fine is usually one rupee, and in extraordinary cases arises to double that sum. With this, as there is no small money, the Medi purchases salt, which is divided into 10 equal portions, of these one goes to the Raja's priest (Purohit); one is taken in the Raja's name, but this also falls to the share of the priest; one goes to the easy man's spiritual teacher (Guru); one to his priest (Purohit), and six are divided among the Medi and the kindred of the delinquent. The Raja's priest is said to make about 500 Rs. a year from his fifth share of the fines in Haworaghat alone, where the whole population may be rather more than 40,000 people, of which not above a half are subject to these rules of caste, the Muhammedans, the impure Gorami Koch, and the Rabhas, making a large proportion of the inhabitants.

NATURAL PRODUCTIONS OF RONGGOPOOR

Animals—In the woods of Mechpara are found two kinds of the ape, both called Hulluk by the natives. The one, which is of a grey colour, seems to be the *Simia Moloch* of Audibert; and the other, which is black, with broad white eye brows, is the second variety of the long-armed ape, described by Pennant. Although the colours of these two animals are very different, their manners, shape, and cry, are so much alike as to give room to think that the difference arises from some accidental circumstances, that I have not been able to trace.

The Hulluks live in considerable herds; and although exceedingly noisy, it is difficult to procure a view, their activity in springing from tree to tree being very great; and they are very shy. In the dry season, when water is scarce, and they are under the necessity of leaving the woods to procure drink, they are often caught, as nothing can be more awkward than their walk, which is always erect. The old ones, when caught, are very intractable, and seldom live long; but the young ones are readily tamed, are fond of being caressed and scratched by men, and of playing with dogs; but they are extremely irritable, and impatient of restraint. Although uncommonly ugly and misshapen, the Hulluk has much less grimace than a monkey, and is not so exceedingly dirty and indecent; but it seems to be endowed with less intellect, vivacity, and courage. The two animals have a mutual detestation; but a monkey always puts to flight an ape larger than itself. Spiders and grasshoppers seem to be the favourite food of the Hulluks; but they also eat fish and wild fruit and leaves. They have three kinds of cry, all shrill, harsh, and monotonous. One somewhat resembles Ayu, avu, ayu, and seems to mark impatience; another is like Ula, ul, ul, with nearly the sound of vowels and accent of the English work buzzza; the third is a short kind of bark wou, wou, wou. These two last seem to express various degrees of satisfaction. The resemblance of apes to mankind, and the painful education that has been given to the few which have reached Europe, having led to opinion concerning their faculties, as far removed from truth, as a description of the leaned pig would be an accurate representation of the groveling race, I have entered more fully into an account of this animal's manners, than its consequence otherwise would require. As this animal has nails on the thumbs of its hind hands, for they cannot with propriety be called feet, it must be classed with the Pongo of Buffon; but it will be a distinct species, if that great naturalist was sufficiently accurate in stating, that the Pongo has no callosities on his buttocks; for both the grey and black Hulluks have that distinguishing mark, although it is much concealed by the length of their hair.

The short-tailed monkey, called Morkot by the natives, and described in my account of Dinajpore, is found in the woods of this district; and I have already mentioned the great colony of this vile animal that is on the hill Tokoreswori. At Nenggotiyar Pahar, North from Yogighopa, there is another, but not so remarkable. In Bengal the monkies, which have tails longer than their body and head, seem in general to be called Longgur. In the woods, near Goyalpara, I observed a herd, but had no opportunity of observing them close. Although nearly of the same size, they seem to differ from the Honuman on the banks of the Ganges, in being all over of a pale yellowish red, and in being remarkably shy. It is probable, that they may

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be of the kind, which Audibert has called *Simia Entellus*. Both species of monkeys live entirely on vegetables, and in Mechpara are many destructive in both gardens and fields. The apes living chiefly on insects, do not harm to the natives.

The *Lemur tardigradus*, by the natives of Mechpara, where it is sometimes but rarely caught, is called Loj-jawoti Banor, or bashful monkey. In comparing it with a monkey, the people here have been more successful in their classification than those of Hindustan, who call it a cat. It is, however, an animal of prey, and feeds, I believe, chiefly on small birds which it takes at night, and is then very active. Its manners in some respects resemble those of the bat, as it is dazzled by the glare of day, and then retires to rest, hanging from the branch of a tree, much as the large bats of India do.

The common black bear of India is occasionally found in the wilder parts of the district; but is not numerous. One of their principal hunts is in the old ramparts of Komotapoor, where the holes, which they dig in the earth, are secured from being filled with water. Many also haunt Singeswor forest, and sometimes kill a person that has straggled near. They destroy mangoes, jaks, plantains, and honey; but do no harm to the crops nor herds. The proper name in this district is Bhandi; but towards the south the word Bhaluk is in common use.

Otters are very numerous, and in the northern parts of the district a few skins are procured by farmers for the Bhotan market; but this kind of hunting is not carried to the extent of which it is capable. A few of the hunters from Dhaka, who are of the tribe called Gangrar, frequent the banks of the Brohmoputro, and kill otters for the traders of that city. Their first step is to catch a living young otter, and these are procurable between the middle of November and the middle of December. During the two following months is the season for hunting. The hunter goes to a place frequented by otters, ties the young one to a bush or reed, and conceals himself near. Its cries soon bring the old ones, which the hunter strikes with a harpoon. The hunter as usual is paid in advance, and is allowed half a rupee for every skin. Each hunter takes in advance from 5 to 10 Rs. for the season, at the end of which he delivers the skins that he has procured, and settled his account. The otter of India is about 3½ feet from the snout to the end of the tail.

Foxes (*canis Bengalensis* Pennant) and jackals are numerous in every part of the district; and I heard of a hyæna having carried away two children; but in this district this is not a common animal. On the north-west frontier towards Nepal, I heard of a wild animal called Hungra. It is said to be like a jackal; but whether or not it is a wolf, I was not able to determine; for in no part of the country could I induce any person to bring me the wild quadrupeds. In the same vicinity I heard of another animal seemingly of the canine tribe. It is called Kuhok, and by the natives is said to be of two religions. The Moslem Kuhoks live upon hares and deer, while the Hindus content themselves with carrion. They produce between the middle of November and middle of January, and the young are then sometimes caught; but I had no opportunity of seeing one.

The tiger, commonly called Govagha by the natives, on account of its killing cattle, in most parts of the district is very seldom seen. In Bottrishazari, one of the countries most exposed to their depredations, a man

may be killed once in two or three years, and from 16 to 20 cattle may be annually destroyed. Even the buffalo has been known to fall a prey to the Govagha, of which I never heard an instance in any other part of India. In the easternwilder, tigers are by no means so troublesome as I expected; and the injury which they commit is still less considerable than in Bottrishazari. They seldom, I was told come on the plains; but are very numerous among the Garo mountains. Leopards are not more common than tigers. In Mechpara and Molonggo, I heard also of the small animal of this kind (Nakeswori), that is said to live on trees; but although I offered very considerable rewards, I could not procure one either dead or alive.

Porcupines are not so numerous as in Dinajpore, and are still less sought after for food. Hares are very abundant in every part of the district, even on the left of the Brohmoputro. Thus I did not expect, as to the east of the lower part of its course, this animal is not found. In some parts of the district, chiefly towards the west the farmers have nets, and are at the trouble of catching the hares. In others they are totally neglected, or when people are hunting deer, they may occasionally be at the trouble of knocking down a few hares with a stick. Rats are very troublesome and destructive, especially a kind, that, as the winter crop of rice comes to maturity, and the fields become dry, forms large holes under ground, where it hoards up grain to last it for the season. Poor boys are very diligent in the search of these hoards, and often procure a very considerable quantity of grains.

Both in the woods of Mechpara, and in those of Bottrishazari, the Pangolin is found. In the latter it is called Keyot Machh, or the fish of the Keyot (a tribe of Hindus). In the former Katpohu (timber animal) is the name by which it is known. The reason assigned for this name is, that it lives in the hollow trunks of trees. It is a very rare animal, but very much sought after, as its flesh is supposed to possess strong aphrodisiac qualities.

Elephants are numerous throughout the two eastern divisions, and may frequent the parts of the two divisions towards the north-west, that are situated towards Nepal and Bhotan. Of late years they scarcely ever have penetrated into any other part of the district, and seem therefore to be on the decrease; as 20 years ago they often came far south. They are exceedingly destructive to the crops of grain; and notwithstanding vast labour and trouble taken to watch the crops, do much injury. When the rice approaches maturity, every man, in the parts which the elephant frequents, is under the necessity of watching through the night. Stages are erected on posts 12 or 14 feet high, and on one side of whom always mount the same stage. One feeds a fire that burns constantly on the open part of the stage, while the other in his turn, is allowed to sleep, except when any wild animals such as elephants, deer, or hogs, come into the field; then he is roused, and both unite in shouting and in making all the noise they can with sticks or drums. They never attempt to attack the animals. The principal haunts of the elephant in the rainy season, seem to be the Sal forests; in the dry season they chiefly frequent the thickets of reeds, by which so much of the country is overgrown. They very rarely go upon the mountains. Their two principal retreats however are Porbotjoyar, and the deserted tract of the country which is situated between the Garo mountains, Mechpara, Kalumalupara and Koroyivari. During the whole night that I slept at the entrance to this tract from Nivari, the roaring was incessant. Near this I observed a regular road, which was said to be one of their paths, and that in their

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excursions they usually frequent one route, which soon becomes well beaten and smooth. I no where heard of their attacking men; but a very large one, which I saw swim over the Brohmoputro in the height of the floods, landed at Goyalpara, and in his passage through the town overthrew several huts that were in his way, while he was eating the plantain trees; so that a very general alarm being spread, I was under the necessity of sending people to shoot him. This animal was a male, and had neither tusks nor tail, and was looked upon by the natives as a curiosity, although the loss of his tail was probably a mere accident.

In this district very little progress has been made in the art of taking and taming these valuable animals. Several of the proprietors of land have tame females trained for the purpose (Kumki). These are provided with a long rope, which is fastened to their girdle, and then coiled on their back. On its end is formed a noose, which a man who sits on the back of the trained female, throws round the neck of the wild elephant, and then the tame one walks away until assisted by another tame female, endeavour to fasten ropes to his legs, and he is dragged to a place where there are tame. He is then led to a more convenient place by the tame females. The elephants usually caught in this manner are too small, being seldom procured more than 6½ feet high; and a larger proportion of them seem to die, than of those which are caught by being surrounded with a fence (Khada). The Vijni Raja formerly paid his tribute in elephants; but, as very few survived, and as they were seldom of a good size, a value was put upon each that he should deliver, and the payment has been taken in money. It is however, more to be attributed to the manner of catching, than to the defect of the breed, that the quality of the elephants which he delivered was of so inferior a nature; and I have no doubt, that the people of Chatigang would in this district procure most excellent cattle.

In Mechpara at Haworaghat a few elephants are occasionally caught in pitfalls (Dhor). These are dug in the paths above-mentioned 12 cubits long, 8 deep, and 4 wide, and carefully covered with branches and earth. People provided with means of kindling torches watch near, and when an elephant falls, they suddenly come up with lights, and make a noise which drives away the herd. If they were not disturbed, the others would help their companion to escape. When thus deserted, ropes are made fast to the captive, and tied to trees. The people then dig, and throw in pieces of wood and earth until the poor animal is able to come out of the pit, and is placed in a state of discipline. This also is a very bad manner of catching elephants, as they are often so much injured in the fall that they do not recover. Many elephants are killed for their teeth. The people employed are Raibongsi, Garo, Rahja and Kachhari farmers, who usually are allowed one tooth, and give the other to the proprietor of the land; but it is said, that the Vijni Raja takes both teeth, and only makes the hunters a present. In the north-west part of the district the elephant seems to be totally unmolested, at least by the people of Bengal, who neither attempt to kill, nor tame them.

In most parts of the district there are only a few hogs; but in the two eastern divisions, in the two towards the north-west and near the forest called Singheswor, and near the woods of Pangga Raja, they are very troublesome and destructive. The Hindu farmers there, have nets, in which they catch the wild hog, and he is considered as pure food. No attempts are made to eradicate the breed, which indeed, I believe, could only be done by clearing the country. Even in the clear

parts of the country, although the lower Hindus kill the wild hog on purpose to eat him; no attempt is made to extirpate the animal. Most people suffered loss by them, in parts of the district where there is little waste land, and where the few wild hogs that are found, nestle in the thickets by which the villages are surrounded.

Everywhere that there are forests and extensive thickets of reeds, the rhinoceros is not uncommon; and in the two eastern divisions several persons make a profession of hunting this animal, which is quite harmless, and neither injures the persons nor crops of the inhabitants. It is a solitary animal, nor at any season does the male live in the society of the female. The rhinoceros is killed on account of the horn and skin. The horn is in great request, being considered as possessed of great medical virtues, and it is employed for making bracelets and cups, that are used in the religious ceremonies of the Hindus. A good horn is worth 6 Rs on the spot. The skin is used for making targets. Each skin gives five or six cuts, of which the two best are on the hips. Each skin according to its size is worth on the spot from 2 to 3 Rs. The proprietor of the land usually gets the horn, and the hunter (Pahulwan) is allowed the skin; but the landlord is generally cheated.

In the two eastern divisions, the hunters that kill the rhinoceros and elephant, may be about 60 or 70 in number, and are employed chiefly by four merchants residing at Dhubri, of whom one is a Bengalese and three are Siks. All the hunters are farmers, and employ only a part of their time in the pursuit of game. Each man usually receives 6 Rs. at the beginning of the season, and may kill one or two rhinoceroses and one elephant; but he also occasionally kills buffaloes for their skins and horns; at least these are the only saleable parts. The hunters of course eat the meat, as they do also that of the rhinoceros. The hunters use a large piece called Kamchunggi, which requires a rest to enable the hunter to take an aim. Poisoned arrows are also employed both for killing the buffalo and elephant, but it is only fire-arms that are sufficient for killing the rhinoceros.

In the two eastern divisions deer are exceedingly numerous, and very destructive, and there are many in the two frontier divisions towards the north-west. In other parts they are scarcely known. Among the natives musks, deer and antelopes are included under one Generic name, which in the Sangskrita is Mrogo, in the Bengalese is Horin, and in the vulgar dialect of Kamrup is Pohu. In other parts this last word is considered as applicable to any quadruped. I shall commence with the largest.

The stag is by far the most common deer of this district, and by the natives is called Gaoth and Bhalonggi. In travelling through the two eastern divisions I saw a great number, and had a great deal of difficulty to account for their appearance. In April and May I saw none that had horns; and every herd, that I observed, had young ones, so that I concluded all which I saw, to be females; and they were all of a light red colour, exactly like the common red deer of Europe. These were the Bhalonggi of the natives. In November and December, again, all that I saw were full grown, had all horns, and were therefore evidently males. These by the natives were called Goaj, and were all of the brown kind with long hair under their necks, like the *Biche d'Ardennes* of Buffon, which seems to be the same with the greater Axis of Pennant, or with what Europeans in India commonly call the elk. The natives of this district allege, that there is one

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only species, and that all the males are dark brown, and all the females light red, and the appearances, so far as I saw here, would induced me to join in their opinion, had not I in other parts seen both males and females of each kind. What became of the males in spring, and of the females in winter, I know not; but among many hundreds seen at each season, all the kinds seemed to be of one sex. Both seemed equally fond of the company of the wild buffalo, which probably serves them as a protector.

At Goyalpara the axis or spotted deer is called Borokhotiya, and the procine deer is called Khotiya; but neither are so common as the stag. The *Cervus muntjac* of Gmelin, or rib-faced deer of Pennant is sometimes found near Goyalpara, where it is called Maya. The common Antelope, or *cervicapra* is found but rarely in this district, and is confined to its Northern parts. By the natives it is called Kalshangr.

No person in this district makes a profession of hunting deer, nor are their skins in request; but many farmers employ their leisure hours in killing them, and thus procure a supply of excellent food, which is partly used when recently killed, and partly preserved by being dried in the smoke. This is done by carefully removing the fat, and separating the muscular fibres into slips of about the thickness of the thumb. The deer are caught in pitfalls by guns and by nets. Occasionally a sportsman goes out at night with a lantern tied to his head. The deer approach to view the extraordinary appearance, and the man takes the opportunity of killing them with arrows.

In all parts where deer are found, the wild buffalo is very common, and exceedingly destructive. It is a handsomer animal than the tame breed, and in its motions has a much finer carriage. Many are caught in pitfalls by the farmers, who frequently also catch young ones alive, especially in the rainy season, when the inundation confines the herds to a few high places. On such occasions the farmers in their canoes attack a herd with spears; and, after having killed or dispersed the old ones, are often able to secure some of the young.

Besides the hunters (Pahulwan) of the rhinoceros and elephant, who occasionally kill the buffalo, there are a few hunters (Kangri), who pursue this animal alone. These also are farmers, and receive advances from some traders of Goyalpara for the horns and skins, which are sent to Dhaka. Two or three hunters generally go together, and without attempting to conceal themselves, shoot the buffalo with poisoned arrows. The slightest wound proves fatal in 5 or 6 hours, during which the hunters watch the animal, and avoid a near approach, until he is dead. The poison is a root brought from the snowy mountains, which seems to be in universal use throughout India. Twenty buffalo hides bring the hunter from 2½ to 3 Rs. When a herd of wild buffaloes is very troublesome, and will not remove for the shouting and noise of the villagers, a little grain procures the assistance of these hunters. They kill five or six, and the remainder go away. They seem rarely to hunt, except on such occasion, as the whole number of skins procured is very inconsiderable.

In the Brohmoputro there are many porpoises of the kind described by Dr. Roxburgh in the Asiatic Researches. They are killed by the tribe of fishermen called Gangrar, who use the oil. According to these fishermen, the porpoise brings forth her young between the 11th of February and 11th of April, and bears only one at a time. They do not give suck for more than a month by which time the teeth of the

young have grown, and they are able to provide for themselves. The male and female do not pair. They are seen in copulation between the 13th of May and 14th of July, so that their period of gestation is about 9 months. They have been caught 7½ feet long, and 6 feet is the common size. They live entirely on fish. They may be taken at any season; but the most convenient is from the middle of January until the middle of March. The fishermen in a fast rowing boat watch their coming up to breathe, which they generally do repeatedly near the same place, and strike them with a harpoon, that has three slender barbed prongs of iron about a foot in length. These are fixed into one end of a piece of wood; the other end goes into the hollow of a slender bamboo, which serves as a shaft; but the piece of wood separates from the shaft, whenever the animal is struck; and is connected with it merely by means of a rope; and this is the case with all the kinds of harpoon, that these fishermen employ. The shaft floats, and enables the fishermen to follow the porpoise, until it dies. After the entrails and bones have been thrown away, the whole body is cut in pieces, which are melted in an earthen pot for about an hour and a half. The oil is then strained from the flesh by means of sack cloth. One porpoise gives from 10 to 15 seers (84½ sicca weight) or from 21 ⅓ to 32 ⅓ lb. of oil, which is not saleable, and is used by the fishermen themselves, partly for the lamp, and partly for making torches, with which they attract large fish towards their boats, and thus strike them. Should there arise any demand for train oil, much might be procured by this fishery, as porpoises swarm in every large river of Bengal.

It will not be necessary to enter into a detail of the birds, that are found in this district; as in general they do neither harm to the inhabitants, nor are they applied to any use; yet birds of the genera of pigeon, partridge, quail, peacock, pheasant, bustard, bittern, plover, snipe, and duck of a great variety, and many of them very good, are in an extraordinary abundance. These however are not the kinds most in request among the natives, who, when they eat any wild bird, which is very seldom, prefer small herons, shags, and sparrows to all others. The wild fowl (*Phasianus Gallus*) is very common in the woods, but is so very unclean a feeder, that it is impossible to endure it as food.

In the account of the tribes, by which this country is occupied, I have mentioned two, the Nohiyas and Telenggas, which catch birds with a rod, the end of which is besmeared with bird lime. Some of these birds, chiefly parakeets, are tamed, and sold; but the greater part of what these poor creatures catch is eaten by themselves, and it is very seldom, that they can find a purchaser for any part of their game.

The farmers near Goyalpara catch many young Moynas (*Gracula religiosa*) Phoridis (*Psittacus ginguanus* B) and Tiyas, which is the most common parakeet of Bengal, but does not seem as yet to have been introduced into the systems of ornithology. It comes nearest to the *Psittaca torquata* of Brisson. In the same parts is also frequently procured the Bhimarj (*Lanius malabaricus*), which sings with a fine mellow voice, like that of a bull-finch but louder. All these are eagerly bought up by the boatmen from the south, and the parakeets are distributed among the idle fellows about all the towns, to the great annoyance of every person, who wishes to sleep after break of day.

These two kinds of parakeet, and Bawoyi (*Loria typhina*) are exceeding great nuisances to the farmers of the two eastern divisions, who are compelled to watch their crops by night to drive away elephants, hogs, buffaloes and deer, and by day to scare these

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birds. The millet (China, Kangni) suffers in particular from their depredations, the flocks being inconceivably numerous. The Kam, a bird approaching near the *galinula porphyrio*, is very numerous in ditches and ponds, and destroys a great quantity of grain. Large flocks of a crane called Kolong, and of another called Saros (*ardea antigone*) frequent this district in winter, and eat much rice. They come from the north in the beginning of the cold season, and retire when the heats commence.

In the dry season the pelican (*pelicanus philippensis*) is very common on the sands of the Brohmoputro. In the rainy season it is said to frequent the Garo mountains, where it breeds. In November and December I observed many thousands of them, in flocks, soaring high over the land between these mountains and the Brohmoputro. They always fly in lines like wild geese; but on these occasions the lines crossed each other in various directions forming numerous squares and parallelograms, as if in a regular dance. It seemed to be merely for amusement, that the pelicans were thus employed, as they do not fish like the gulls by darting on their prey, but wade quietly along the shore, until a fish comes within reach of their enormous gape; nor were they emigrating from one place to another; but continued each time, that I observed them, for more than an hour, to wheel about in various directions, so as constantly to alter the disposition of their lines; but the lines were always strictly preserved.

The Pangga Raja employs 5 or 6 Falconers (Mirshekari), who train hawks, and catch, with the rod and line, the birds with which these are fed. Many hawks are used by the natives; but in this district the two most remarkable are the *Falco minutus*, little larger than a lark; and the Sofyedbaz, a very large Falcon with much white on her plumage, and an expanse of wing of 4 feet. It is an exceedingly fine bird. No other native indulges in this sport.

Reptiles as usual in warm climates are abundant. Near the Brohmoputro both river-turtle and land tortoises are much used in the diet of the natives; but towards the west it is only a few that use them, although according to the Hindu law both are pure. Towards the Brohmoputro a particular class make a profession of catching them, and in all places they are caught by the common fishermen, especially by those who do not use nets, such as the Danyi.

The people who make a profession of catching turtle are the Gangrar, above mentioned as those who kill otters and porpoises. They employ a harpoon with three barbed prongs about four inches in length, and sell the turtle to petty dealers who retail them through the country, especially at the markets frequented by the Garos, who seem remarkably fond of this kind of food. All of them, that I have attempted to eat, appeared to me to be very bad.

Among the natives the river turtles are called by one general name, Kachhim, and there are several kinds, of which the three following approach near to the *cartilaginea*, *triunguis*, *membranacea*, and *ferox* of zoologists; but I cannot refer any of them, with certainty, to any species, that I find described in such books, as are within my reach. They always live in rivers, and never frequent the banks nor marshes as is done by land tortoises. They deposit their eggs in holes formed in the sand, underwater, and eat nothing except fish.

1st. The most common is called Chhim or Panimech. In the Brohmoputro it is very often found five or six

feet long, and 14 inches thick; but I am informed, that they have been caught 7½ feet in length. It lays its eggs between the middle of August and the middle of September, as the floods begin to retire, and in one hole the fishermen sometimes make a prize of 200 eggs. An ordinary sized turtle of this kind is sold, by the fishermen of Goyalpara, for four anas. 2nd. These people informed me of another kind, which grows to the same length with the Chhim; but, when five feet long, is no less than two feet in thickness. It is called Donail, and one of this kind, it is said will weigh 49 seer of 80 s.w. (a little more than 102 lb.). It is said to be very scarce, so that I could not procure one at Goyalpara; but in the west part of the district I found a kind called there Hurum, which seems to be the same. It is reckoned better for eating than the Chhim. 3rd. The species which is called simply Kachhim, or by way of excellence Jat Kachhim, is also very common, and is sacred to a peculiar deity, as I have before mentioned. It is reckoned better eating than the Chhim; but does not grow to more than 18 inches in length. It is readily distinguished by four yellowish circles on its back.

Some other river turtles, in the strength of their shells, and great convexity of their backs, approach nearer to the land tortoises, and by the natives are called Dura; but these give the same name to some land tortoises, the shells of which are not very evidently divided into different shield-like portions. 4th. The Dura strictly so called is a river turtle, not so exceedingly fierce as the three former, which bite most violently, but it is much better provided with defence, as the fore part of the two shells can at pleasure be drawn close together like a valve, so as to cover the head entirely; and for each hind leg. It grows to about 2 feet in length, is reckoned better than any of the before mentioned kinds, and salls at the river side for about two anas.

The land tortoises are called by the generic name Kochchhop; but several of them, as I have now said, are called also Dura, and some also are called by a generic name Kothuya, the exact difference between which and Kochchhop I have not yet ascertained. When placed on their backs, they can all raise themselves, and, although occasionally seen in rivers, they more usually frequent marshes, and often burrow under the ground, and are reckoned better eating, than the latter kinds of river turtle. 5th. The Salidura, called also Dura Kathiya, never grows to above six inches length of shell. 6th. The Kuyi Kathuya grows to about a foot in length. I am not exactly sure, whether or not the Kuyi Dura is different. 7th. The Pangchure grows to the same size with the Salidura, and at Goyalpara sells for 4 anna. 8th. The Khagrakata grows to about the same size. 9th. 10th. The Kori Kathuya and Gangrchipa grow to about a foot in length, and are said never to go into the river.

I have procured drawings and descriptions of four of these land tortoises, without being able to refer them to any of the kinds described in the books which I possess. In the Brohmoputro as well as the Ganges there are two kinds of crocodile, which at Goyalpara are both called Kumir; but each has a specific name. The *Crocodylus gangeticus* is called Ghoriyal, and the other is called Bongcha. This approaches so near in its form to the crocodile of the Nile, that for a long time I considered it as the same; but its manners are very different, from those attributed to the animal of Egypt; and in the lower parts of Bengal we have what appears to me another species of crocodile called Hangsa Kumir, the manners of which seem more conformable to the descriptions of the Nilotic quadruped.