

## REPORT ON A COLLECTION OF MAMMALS FROM TRIPURA

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There is little authentic information about the mammalian fauna of Tripura. Stray records are available from the reports of Blyth (1844, 1847,) Sclater (1891), Khajuria (1954, 1955) and others, based on the collections made by F. Skipwith, A. Grote and J. Barbe, during the middle of the 19th century. During those days, Tripura was known as Tipperah and was in the former province of Bengal. Now, mainly, the hilly portion of Tipperah lies within Indian territory and the plains of Tipperah in Bangladesh. During 1969-73, the Indian portion of Tripura was surveyed on three occasions by us to explore its mammalian fauna. As a result, a collection of mammals was obtained which together with a few specimens in the National Zoological Collections represents 31 species and subspecies. The collection, though small, has produced a number of properly authenticated records of mammals from this area including a species of bat and a subspecies of mungoose new to the Indian region.

All measurements are in millimetres and have been taken after Pocock (1939) for Primates and Carnivora, Khajuria (1952) for Chiroptera, and Roonwal and Agrawal (1966) for the remainder, excepting those which are self-explanatory. The colour names in the text with initial capital letters are according to the nomenclature of Ridgway (1886). All collections have been made by us excepting those where otherwise mentioned.

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### *Abbreviations*

The following abbreviations have been used in the text.

- c—c.*, distance between outer surface of upper canines  
*cb.*, condylobasal length

<i>Cr.</i> ,	cranial rostrum measured from the anterior extremity of nasal to the front of orbit
<i>cw.</i> ,	braincase width
<i>E.</i> ,	length of ear
<i>FA.</i> ,	length of forearm
<i>HB.</i> ,	head and body length
<i>HF.</i> ,	length of hind foot
<i>iw.</i> ,	interorbital width
<i>i</i> <sup>1</sup> — <i>m</i> . <sup>3</sup> ,	length of upper toothrow from first incisor to last molar
<i>l.</i> ,	greatest length of skull
<i>m.</i> ,	length of first lower molar
<i>m—m.</i> ,	maximum distance between outer surface of upper molars
<i>ml.</i> ,	mandibular length
<i>mw.</i> ,	maxillary width
<i>nas.</i> ,	nasal length
<i>on.</i> ,	occipito-nasal length
<i>orb.</i> ,	length of orbit
<i>pf.</i> ,	length of anterior palatal foramen
<i>pl.</i> ,	length of palate
<i>pow.</i> ,	post orbital width
<i>pm</i> <sup>4</sup> ,	length of upper fourth premolar
<i>tb.</i> ,	length of tympanic bulla
<i>Tib.</i> ,	length of tibia
<i>Tl.</i> ,	length of tail
<i>Tr.</i> ,	length of maxillary toothrow
<i>wt.</i> ,	weight of the animal
<i>zw.</i> ,	zygomatic width
<i>Z.S.I.</i> ,	Zoological Survey of India

### *Physiography*

Tripura, the smallest of the five states of north-eastern India, is situated between latitudes 22°–24° 5' N and longitudes 91° 20'–92° 50' E, covering an area of approximately 10451 Sq. Km. It is bordered on the north, west and south by Bangladesh and on the east by Mizoram. For the administrative point of view, it is divided into three districts, namely, North Tripura, South Tripura and Sadar, with headquarters at Kumarghat, Udaipur and Agartala respectively. Tripura has a warm tropical climate. Temperatures are high in the valleys and cooler in the mountains. The monsoon results in an annual rainfall of over 200 cm., mostly between June to September.

Physiographically Tripura can be divided into the plains of Agartala and four valleys, namely, Khowai, Kamalpur, Kailashahar and Dharmanagar. The plains of Agartala are represented by the territory between Bangladesh on the west and the low Baramura and

Deotamura hill ranges on the east. The region is drained by a number of rivers, of which Gomti is the largest, flowing from east to west. East of the Baramura Range lies the Khowai valley, which is bordered on the east by the Atharamura Range (427 m in elevation) and drained by the north flowing Khowai River. Between the Atharamura Range on the west and the Langtharai Range on the east there is the Kamalpur valley, which is drained by the north flowing Dhalai River. The Kailashahar valley with the north flowing Manu River, is east of the Langtharai Range (457 m. alt.) Its eastern boundary is defined by the Sakhontlang Range (elevation ranging from 305 - 762 m). In between Sakhontlang and Jamraitlang Ranges lies the Dharmanagar valley, which is drained by the rivers Zuri in the north and Deo in the south.

These hills are clayey, which obviously means that these are of recent origin.

Tripura is basically an agricultural area in which paddy, jute, cotton, tea and other crops are cultivated. Natural vegetation consists largely of evergreen forests of Sal (*Shorea robusta*), Teak (*Tectona grandis*), Bamboo (*Bambusa* sp.), Rubber (*Ficus elastica*), Semul (*Bombax ceiba*), Jamun (*Sizium jambos*), Cashew nut (*Anacardium occidentale*), Peepul (*Ficus religiosa*), Banyan (*Ficus bengalensis*) etc. and various kinds of shrubs. The Sal, Teak and Rubber plantations have been established by the Forest Department.

#### *Collecting localities*

For a comparative study of the fauna occurring in the above valleys, the State is divided into four zones. The collections have been made in all of the zones at the places noted in parentheses. Zone A, plains of Agartala (Agartala, Charilam, Garjee and Abhoya); Zone B, Khowai valley (Teliamura and Ampii); Zone C, Kamalpur valley (Ambassa and Ganganagar) and Zone D, (Chailingta, Kumarghat and Kanchanpur). The following are the details of collecting localities.

Abhoya (23°18' N, 91° 25' E)—a small village situated *ca* 8 Km. NW. of Belonia.

Agartala (23°50' N, 91° 23' E)—capital of Tripura, as well as the headquarters of Sadar district.

Ambassa (23°55' N, 91° 50' E)—a small town situated on the Agartala-Dharmanagar Highway, *ca* 87 Km. east of Agartala.

Ampibazar (Ampii) (23°40' N, 91°38' E)—a small village, situated on the Teliamura—Amarpur road *ca* 25 Km. south of Teliamura.

Chailingta (24°02' N, 92° 02' E)—a large village situated on the bank of the river Manu *ca* 10 Km. south of Manu town.

Charilam (23°38' N, 91° 18' E)—situated on the Agartala—Udaipur road *ca* 25 Km. south of Agartala.

Ganganagar (23°45' N, 91° 50' E)—a small village situated on the bank of the river Khowai *ca* 28 Km. south of Ambassa.

Garjee (23°25' N, 91° 27' E)—situated on the Udaipur—Belonia road *ca* 65 Km. south of Agartala.

Kanchanpur (23°55' N, 92°12' E)—a sub-divisional town situated on the bank of the river Deo *ca* 40 Km. south of Kumarghat.

Kumarghat (24°10' N, 92°05' E)—the headquarters of the North Tripura District, situated on the Agartala-Dharmanagar Highway *ca* 60 Km. south-west of Dharmanagar.

Teliamura (23°50' N, 91° 35' E)—the second biggest town of Tripura situated *ca* 42 Km. east of Agartala.

#### SYSTEMATIC ACCOUNT

#### Order INSECTIVORA

#### Family Soricidae

#### *Suncus murinus caeruleus* (Shaw)

1796. *Sorex caeruleus* Shaw, *Gen. Zool. Mamm.*, 1 : 533 (India).

*Material*.—2 ♂ : Agartala; 10 and 11. xi. 1969; 3 ♂ : Teliamura; 28 and 30. i. 1971.

*Measurements*.—External : 5 ♂ : *HB* 142-176 (156); *TI* 66-104 (85); *HF* 20-28 (24.3); *E* 13.5-15 (14.3).

Cranial : 5 ♂ : *l* 34-40.5 (37.1); *iw* 6.2-7.2 (6.6); *pl* 17-20 (18.4); *i*<sup>1</sup>—*m*<sup>3</sup> 15.7-18 (16.7); *m*—*m* 10-11.4 (10.6); *cw* 13.6—17.3 (15.2); *ml* 17-21.7 (19.2).

Our specimens vary much in size. Their colour, especially dorsally, is variable, ranging from Gray to Mars Brown.

#### Order CHIROPTERA

#### Family PTEROPODIDAE

#### *Pteropus giganteus* ? subspecies

*Material*.—3 ♂ : Amarpur; 23.i.19171.

*Measurements*.— External : 3 ♂ : *HB* 248-250 (249); *HF* 50-52 (51); *E* 39-41 (40); *FA* 166-172 (169); *Tib* 83-87 (85).

Cranial : 2 ♂ : *l* 74.4, 75.5; *cb* 72, 72.6; *zw* 42.8, 44; *cw* 25, 26.2; *Cr* 22.5, 23.6; *pl* 40.7 (in both); *Tr* 32.6, 32.8; *m*—*m* 19, 19.9; *ml* 58.4, 59.

Blyth reported *Pteropus medius* Hodgson (type locality Nepal) from Nepal, Assam and Tipperah, which was, later, synonymized with *Pteropus giganteus leucocephalus* Hodgson (type locality Nepal) by

Andersen (1912). Our specimens from Tripura, however, resemble specimens of *leucocephalus* from Manipur in having thick fur but differ from them in the length of hair on the back and mantle, which is shorter as in the nominate subspecies. On the other hand, a specimen of *Pt. g. giganteus* collected in September from Madhya Pradesh has hair on the back, mantle and belly as long as those of *leucocephalus*. Thus, it appears that there is variability in the characters used to distinguish the two subspecies, namely the relative abundance and length of the fur. An examination of the type or of topotypical specimens may finally decide the status of *leucocephalus*.

***Rousettus amplexicaudatus* (E. Geoffroy)**

1810. *Pteropus amplexicaudatus* E. Geoffroy, *Annls Mus. Hist. nat., Paris*, 15: 96 (Island of Timor).

*Material*.—1 ♂ : Kanchanpur; 12. ii. 1971.

*Measurements*.—External : *HB* 132; *TI* 21; *HF* 17.5; *E* 22; *width of ear* 11.5; *FA* 86; *Tib* 43.

Cranial : *l* 38.7; *cb* 37; *zw* 22.7; *cw* 15.2; *Cr* 13.6; *Tr* 14.6; *pl* 20.3; *m—m* 11.5; *ml* 30.2.

This specimen resembles *Rousettus leschenaulti* in the size of the third lower molar (length × width = 1.9 × 1.0) but resembles *amplexicaudatus* in the width of the ear and in the structure of the baculum viz hurricane-lantern shaped (vide Agrawal and Sinha, 1973), a feature which appears to be a more constant but hitherto unmentioned character for the identification of this species.

The species has hitherto been reported from northern Thailand and Tenasserim eastward to Philippine Islands. Its occurrence in Tripura is, therefore, not only its first record from the Indian region but also extends its range further north-west.

***Cynopterus sphinx sphinx* (Vahl)**

1797. *Vespertilio sphinx* Vahl, *Skr. Naturh. Selsk. Kibenhavn*, 4(1) : 123 (Tranquevar, Tamil Nadu, India).

1912. *Cynopterus sphinx gangeticus* Andersen, *Ann. Mag. nat. Hist.*, 6 : 623 (Lucknow, Uttar Pradesh).

*Material*.—2 ♂, 3 ♀ : Agartala; 13.xi.1969; 5 ♂, 6 ♀ : Charilam; 18-20.xi.1969; 2 ♂ : Garjee; 26.xi.1969; 3 ♂, 3 ♀ : Abhoya; 4-5.xii.1969; 3 ♀ : Teliamura; 29.i.1971 and 1.ii.1971; 1 ♂, 3 ♀ : Amp; 19-21.i.1971; 7 ♂, 5 ♀ : Ambassa; 3-7.i.1973; 1 ♂ : Ganganagar; 10.xii.1972; 4 ♂, 5 ♀ : Chailingta; 20-23.xii.1972; 5 ♂, 6 ♀ : Kanchanpur; 12-19.ii.1971.

*Measurements*.—External : 14 ♂ : *HB* 90-103 (96); *E* 17-22 (20);

*FA* 64-78 (69); *Tib* 23-28 (26). 24 ♂ : *HB* 90-106 (97); *E* 18-23 (21); *FA* 65-77 (71); *Tib* 25-31 (27).

Cranial : 6 ♂ : *l* 31.4-33.4 (32.1); *cb* 30-32.2 (30.8); *zw* 18.9-21.3 (20.3); *cw* 13.1-13.9 (13.6); *Cr* 9.1-9.4 (9.3); *Tr* 10-11.4 (10.7); *pl* 15.1-17.2 (16.2); *m—m* 8.9-10.3 (9.6); *ml* 22.9-24.1 (23.3). 6 ♀ : 32.1-34.4 (33); *cb* 31.0-33.4 (31.7); *zw* 19.4-21.3 (20.4); *cw* 13.2-13.9 (13.6); *Cr* 8.5-9.9 (9.2); *Tr* 10.5-11.3 (11.0); *pl* 15.4-17.0 (16.4); *m—m* 9.0-10.1 (9.8); *ml* 23.2-25.9 (24.1).

A specimen collected during the month of February was found to be pregnant, with one embryo.

#### Family EMBALLONURIDAE

#### *Taphozous longimanus longimanus* Hardwicke

1825. *Taphozous longimanus* Hardwicke, *Trans. Linn. Soc. Lond.*, 14 : 525 (Calcutta, West Bengal).

*Material*.—1 ♂, 1 ♀ : Agartala; 9.xi.1969.

*Measurements*.—External : 1 ♂ : *HB* 80; *HF* 12; *E* 18.5; *FA* 61; *Tib* 25. 1 ♀ : *HB* 85; *HF* 13; *E* 18; *FA* 63; *Tib* 26.

Cranial : 1 ♂ : *l* 20; *cb* 19.5; *cw* 10.1; *m—m* 9.0; *c—c* 4.2; *iw* 7.0; *Tr* 9.0; *m* 16.0. 1 ♀ : *l* 19.3; *cb* 18.5; *cw* 10.0; *m—m* 8.5; *c—c* 4.0; *iw* 5.8; *Tr* 8.7; *ml* 15.7.

The male specimen has a minute aperture below the gular pouch as mentioned by Sinha (1970). These specimens were found to roost on a Palmyra Palm tree.

#### Family VESPERTILIONIDAE

#### *Scotophilus kuhlii kuhlii* Leach

1822. *Scotophilus kuhlii* Leach, *Trans. Linn. Soc. Lond.*, 13 : 72 (India).

*Material*.—1 ♂, 1 ♀ : Agartala; 12.xi.1969; 4 ♂, 3 ♀ : Kanchanpur; 12.ii.1971.

*Measurements*.—External : 5 ♂ : *HB* 66-72.5 (69); *HF* 9-11 (10); *E* 13-15 (14); *FA* 48--49.5 (48.5); *Tib* 19-21 (20); 4 ♀ : *HB* 68-75 (72); *HF* 8.5-11 (10); *E* 14-14.5 (14); *FA* 47-53 (50.5); *Tib* 20-22 (21) ;

Cranial : 4 ♂ : *l* 18.2-18.6 (18.4); *cb* 17-17.9; *zw* 13-13.7 (13.3); *cw* 8.8-9.0 (8.95); *m—m* 8.3-8.5 (8.4); *c—c* 6.2-6.4 (6.3); *i* 4.9-5.0 (4.95); *Tr* 6.2-6.5 (6.4); *ml* 13.3-14 (13.5); 3 ♀ : *l* 18.2-18.8 (18.5); *cb* 17.4-18.2 (17.8); *zw* 12.9-13.6 (13.2); *cw* 9.0-9.2 (9.1); *m—m* 8.1-8.6 (8.4); *c—c* 6.0-6.6 (6.2); *iw* 4.6-4.9 (4.8); *Tr* 6.2-6.6 (6.4); *ml* 13.6-14.0 (13.7).

Genus *Scotophilus* is represented in India by two forms, a larger and a smaller. Three names namely *kuhlii* Leach, 1822; *temmincki* Horsfield, 1824; and *heathi* Horsfield, 1831, have been variously allocated to them (Hill and Thonglongya, 1972). This was mainly due to the uncertain status of *Scotophilus kuhlii* Leach. Recently, the same authors (*loc. cit.*) examined the holotype of *kuhlii* present in the British Museum (Natural History), and on the basis of dimensions of its teeth came to the conclusion that the holotype, though very young, resembled the smaller form. As such, the smaller form of the *Scotophilus*, until recently known as *Scotophilus temmincki*, should now be regarded as *Scotophilus kuhlii*.

According to Siddiqi (1961) the westernmost limit of distribution of *castaneus* (type locality Malacca) is West Bengal (India). But our specimens from Tripura (east of West Bengal) resemble both in colour and measurements with those of rest of India. We, therefore, would prefer to designate our specimens under the nominate subspecies, a conclusion also reached by Hill and Thonglongya (1972).

#### ***Pipistrellus mimus mimus* Wroughton**

1899. *Pipistrellus mimus* Wroughton, *J. Bombay nat. Hist. Soc.*, 12 : 722 (Maheshkatri, Dangs, Surat Dist., Gujarat).

*Material.*—1 ♂ : Ambassa; 7.i.1973; 3 ♂, 3 ♀ : Kanchanpur; 16-19.ii.1971.

*Measurements.*—3 ♂ : *HB* 40-43 (41); *TI* 30-32 (31); *E* 10-10.5 (10.2); *FA* 28-29 (28.5); *Tib* 11-12 (11.6). 3 ♀ : *HB* 38-40 (39); *TI* 30-31 (30.6); *E* 9-10.5 (10); *FA* 28-29 (28.5); *Tib* 12 (in all)

*Cranial* : 2 ♂ : *l* 11 1, 11.4; *cb* 10.3, 10.6; *iw* 3.5, 3.6; *Tr* 3.5, 3.8, *m—m* 4.4, 5.0; *c—c* 3.4, 3.7; *ml* 7.3, 8.0. 3 ♀ : *l* 10.7-11.6 (11); 10-10.7(10.3); *zw* 6.9; *cw* 6-6.3 (6.1); *iw* 3.6-3.7 (3.6); *Tr* 3.3-3.5 (3.4); *m—m* 4.5—4.6 (4.5); *c—c* 3.3 (in all); *ml* 7.5-7.7 (7.6).

The above subspecies is found throughout India extending eastward to Burma, Laos and Vietnam. This is, however, its first authentic record from Tripura.

#### ***Pipistrellus coromandra coromandra* (Gray)**

1838. *Scotophilus coromandra* Gray, *Mag. Zool. Bot.*, 2 : 498 (Pondicherry, Coromandal Coast, India).

*Material.*—1 ♂ : Ganganagar, 13.xii.1972.

*Measurements.*—External : 1 ♂ : *HB* 43; *TI* 35; *E* 10; *FA* 33; *Tib* 14.5.

*Cranial* : 1 ♂ : *l* 12.1; *cb* 11.5; *cw* 6.4; *iw* 3.5; *m—m* 5.7; *Tr* 4.6; *c—c* 4.0; *ml* 8.9.

The species has hitherto been reported from Ceylon to northern Uttar Pradesh, Sikkim, Bhutan Duars and Assam (Kurup, 1968). The present specimen is its first record from Tripura.

Order PRIMATES

Family TUPAIIDAE

*Tupaia glis assamensis* Wroughton

1921. *Tupaia belangeri assamensis* Wroughton, *J. Bombay nat. Hist. Soc.*, 27 : 599 (Mokokchung, Nagaland).

*Material*.—1 ♂ : Ambassa; 5.i.1973; 1 ♂ : Ganganagar; 13.xii. 1972.

*Measurements*.—External : 2 ♂ : *HB* 145, 170; *TI* 160, 162; *HF* 41, 44; *E* 16 (in both); *wt* 120, 140 gm.

Cranial : 1 ♂ : *l* 48.8; *cb* 46; *iw* 13.2; *tb* 9.2; *cw* 19.3;  $i^1-m^3$  25.1; *ml* 32.9.

Two specimens were observed at Ganganagar and one at Ambassa. At both places they were seen moving on the ground in search of food. On being disturbed, they immediately took to trees, climbed up to a height of 3-4 metres, from where took up a position with head downwards and outwards to observe the situation. Two specimens were taken but the third escaped.

The stomach in one specimen had mainly seeds of *Ficus* sp. and a few pieces of insects.

This subspecies is reported from Arunachal Pradesh, Assam, Meghalaya, Nagaland and Manipur. Tripura should also now be included in its range.

Family LORISIDAE

*Nycticebus coucang bengalensis* (Fischer)

1804. *Loris bengalensis* Fischer, *Anat. Maki.*, 1 : 30 (Bengal).

*Material*.—1 ♀ and 1 Juv. (unsexed) : Tippera; 1846; F. Skipwith, *Coll*; 1 (unsexed) : Tippera; 28.vii.1864; A. Grote, *Coll*.

*Measurements*.—Nil.

The above specimens have already been catalogued by Khajuria (1955). An extensive search was made for more specimens of this species but in vain and it appears that the species has become very rare in this area.

Family CERCOPITHECIDAE

*Macaca mulatta mulatta* (Zimmermann)

1780. *Cercopithecus mulatta* Zimmermann, *Geor. Gesch. Mensch.*, 2 : 195 (India.)

*Material*.—1 ♂ : Charilam; 16.xi.1969; 1 ♂ : Ampu; 18.i.1971.

*Measurements*.—External : 2 ♂ : *HB* 540, 550; *TI* 230, 250; *HF* 152, 162; *E* 43, 45.

Cranial : 2 ♂ : *l* 115, 116; *cb* 88.5, 94.3; *zw* 85.3; 87.4; *orb* 64.2, 67.5; *iw* 42.4, 44.0; *mw* 31.4, 31.6; *Tr* 40.5, 42.5; *ml* 82.4, 87.3.

Out of the two monkeys collected, one was a solitary male while the other was the leader of a troop. These are the first authentic records of this species from Tripura.

### ***Macaca arctoides speciosa* F. Cuvier**

1825. *Macacus speciosus* F. Cuvier, *Hist. nat. Mamm.*, 3 : 47 (East-Indies).

1878. *Macacus arctoides* I. Geoffroy, *Zool. Voy. de Belanger*, p. 61 (Vietnam).

*Material*.—1 ♀ Juv. : Tipperah; 17.x.1878; Calcutta Zoological Gardens, *Donor*.

*Measurements*.—Nil.

This specimen has already been catalogued by Khajuria (1954 a). From the label it is not clear whether the specimen is from Tipperah, East Pakistan (= Bangladesh) as mentioned by Khajuria or from the Indian side. However, there has since been no other record of this species from this area. During December, 1972, the authors observed a troop of monkeys at Chailingta ca 10 Km. South of Mau, Tripura, probably of this species.

### ***Presbytis phayrei phayrei* Blyth**

1847. *Presbytis phayrei* Blyth, *J. Asiat. Soc. Beng.*, 16 : 733 (Arakan, Burma).

1847. *Presbytis barbei* Blyth, *J. Asiat. Soc. Beng.*, 16 : 734 (Ye, Tenasserim, Burma/Tipperah hills).

*Material*.—2 ♀ : Charilam; 21-22.xi.1969; 1 ♂ : Ampri; 25.i.1971; 1 ♂ : Kumarghat; 27.xii.1972.

*Measurements*.—External : 2 ♂ : *HB* 530, 565; *TI* 650, 720; *HF* 160, 161; *E* 30 (in both). 2 ♀ : *HB* 540 (in both); *TI* 720, 750; *HF* 153, 155; *E* 32, 36.

Cranial : 2 ♂ ; *l* 102, 102.5; *cb* 78.2, 79.3; *zw* 76.5, 78; *orb* 62 (in both); *iw* 42.1, 42.8; *mw* 31 (in both); *Tr* 31.4, 34.1; *ml* 73.5, 75.9. 2 ♀ : *l* 93.5, 95.4; *cb* 73.6, 74.2; *zw* 74, 74.5; *orb* 58.5, 60.3; *iw* 43, 43.4; *mw* 25.4 (in both); *Tr* 31.1, 32.3; *ml* 68, 69.7.

The taxonomic status of this leaf monkey has already been discussed in detail by Agrawal (1974). These specimens agree with the description of *P. barbei* given by Blyth (1847) in all details, except that the crest over the head which was stated to be absent, is present. Thus no difference exists between the species *barbei* and *phayrei* and, there-

fore, Pocock (1939) was ultimately justified in synonymizing the former with the latter.

This monkey is found in small or large troops throughout Tripura (Table 2) on trees of Sal, Banyan, Cashew, Bamboo, etc. The preferred habitat is bamboos on the hill sides and on the bank of stream in the vicinity of banana plantations. It is fond of leaves and fruits of bamboo and banana respectively. A troop is invariably composed of males, females and young-ones but the exact number of these could not be ascertained. It is very shy and keeps itself hidden in the branches. But its presence is easily detected by its conspicuous white lips and the white area around the eyes. It normally vocalizes as *Hu-un* and when disturbed *Kha-Kha-Un*.

Nothing is known about its breeding habits. A specimen collected on 22 November was pregnant, with a fully developed foetus. The body of the foetus was still naked and white but sparse greyish hairs are present over head, long brown hairs over eye-brows and sparse long white hairs on the upper and lower lips. The eyes are not yet open but the nails are fully developed. The approximate measurements of the spirit-preserved foetus are HB 110, Tl 125, HF 40 and E 12.

### *Presbytis pileatus durga* Wroughton

1916. *Presbytis durga* Wroughton, *J. Bombay nat. Hist. Soc.*, 24 : 655 (Cachar, Assam).

*Material*.—1 ♂ : Tipperah hills; 1846; F. Skipwith, Coll; 1 ♂ : Charilam; 15.xi.1969.

*Measurements*.—External : 1 ♂ : *HB* 610; *Tl* 1000; *HF* 190; *E* 40.

Cranial : 1 ♂ : *l* 109; *cb* 87.7; *zw* 83.1; *orb* 69.7; *iw* 47.4; *mw* 31; *Tr* 36.1; *ml* 80.6.

The colour of head ranges from Hair-Brown to Slaty-Grey rather than buff and the manus and pes are darker (black) than in specimens from Assam in the National Zoological Collections.

An old specimen (Z. S. I. Reg. No. 12221) comes from the Tipperah hills. Khajuria (1954 *b*) reported it as Tipperah hills, East Pakistan but it is doubtful whether it is actually from East Pakistan (=Bangladesh) because the hilly region of Tipperah falls within the Indian limit. As it is, the recent collection is the first undoubted record from Tripura.

### Family PONGIDAE

#### *Hylobates hoolock* (Harlan)

1834. *Simia hoolock* Harlan, *Trans. Am. phil. Soc.*, 4 : 52 (Garo Hills, Meghalays).

*Material*.—1 ♀ : Tipperah; 18.viii.1879; *W.* Rutledge, Coll.; 2 ♂ and 1 ♀ : Ambassa; 4.ii.1971 and 6.i.1973.

*Measurements*.—External : 2 ♂ : *HB* 485, 550; *HF* 150, 160; *E* 29.5, 31.5. 1 ♀ : *HB* 530; *HF* 150; *E* 33.5.

Cranial : 2 ♂ : *l* 109, 112.3; *cb* 93, 95; *zw* 74, 76; *orb* 63.4, 65.5; *iw* 49.5, 49.8; *mw* 33+, 34.5; *Tr* 35.7, 38; *ml* 78.5, 80. 1 ♀ : *l* 110; *cb* 95; *zw* 72; *orb* 61.4; *iw* 48; *mw* 30.5; *Tr* 37; *ml* 77.

In Tripura, the hoolock is localized at Ambassa and in the Atharamura range. It was seen in parties of two to five individuals, thus supporting the observations of earlier workers such as McCann, Mackenzie etc. (quoted by Pocock, 1939).

## Order CARNIVORA

### Family VIVERRIDAE

#### *Viverra zibetha picta* Wroughton

1915. *Viverra zibetha picta* Wroughton, *J. Bombay nat. Hist. Soc.*, 24 : 64 (H'Kamti, 500' on the Upper Chindwin, Burma).

*Material*.—1 ♂ : Charilam; 21.xi.1969; 1 ♂ : Abhoya; 9.xii.1969; 1 ♀ : Amp; 17.i.1971.

*Measurements*.—External : 2 ♂ : *HB* 660, 785; *TI* 370, 430; *HF* 117, 134; *E* 50, 56. 1 ♀ : *HF* 800; *TI* 480; *HF* 119; *E* 55.

Cranial : 1 ♂ : *l* 140; *cb* 136; *zw* 64; *iw* 23.7; *pow* 20; *c—c* 25; *pm*<sup>4</sup> 14.2; *m*<sub>1</sub> 13; *ml* 96. 1 ♀ : *l* 134.5; *cb* 135; *zw* 68; *iw* 23.4; *pow* 20.7; *c—c* 22.7; *pm*<sup>4</sup> 13.3; *m*<sub>1</sub> 13.3; *ml* 94.

In two specimens the mid-dorsal black stripe, though narrow and gradually diminishing, extends upto the penultimate black bend of the tail, whereas in the third specimen from Amp, it only reaches the second black band from the proximal end.

The gut in one of the specimens contained 10 fishes (approx. 5 cm. in length) and a frog, and that in the other bird-feathers. This supports the observations of Blanford (1891) and Mackenzie (quoted by Pocock 1939).

This subspecies ranges from Assam east of the Brahmaputra to N. Burma. These specimens are the first to be recorded from Tripura.

#### *Viverricula indica* ? subspecies

*Material*.—1 ♂ : Amp; 17.i.1971; 1 ♂ : Chailingta; 21.xii.1972; 1 ♀ : Kumarghat; 26.xii.1972.

*Measurements*.—External : 2 ♂ : *HB* 600 (in both); *TI* 365, 420; *HF* 101, 102; *E* 38.5, 39.5. 1 ♀ : *HB* 585; *TI* 350; *HF* 90; *E* 40.

Cranial : 2 ♂ : *l* 97, 101.5; *cb* 96, 98; *zw* 42.6, 44.3; *iw* 10.3, 12.3; *pow* 10, 13.2; *c—c* 15, 15.3; *pm*<sup>4</sup> 8.2, 9; *m*<sub>1</sub> 7.6, 7.9; *ml* 64.3, 65.2. 1 ♀ : *l* 97.6; *cb* 96.5; *zw* 43.2; *iw* 11.9; *pow* 12.5; *c—c* 14.7; *pm*<sup>4</sup> 8.6; *m*<sub>1</sub> 7.9; *ml* 65.

The male specimen from Ampī tallies well with the description of *V indica thai* given by Pocock (1939) both in skull size and in coloration but the other two specimens differ from it in having the skull slightly smaller and the tail-tip being not conspicuously white but mixed with slaty.

A cursory examination of the skins of this species in the National Zoological Collection reveals that the pattern as well as the ground coloration varies widely irrespective of locality and season. Therefore, a detailed revision of the species may focus some light over the exact subspecific identity of our specimens.

### ***Herpestes auropunctatus birmanicus* Thomas**

1886. *Herpestes birmanicus* Thomas, *Ann. Mag. nat. Hist.*, (5) 17 : 84 (Pegu, Burma).

*Material*.—2 ♀ : Ampī; 18 and 19.i.1971; 3 ♂ : Ambassa; 7.ii.1971 and 4.i.1973; 1 ♀ : Chailingta; 22.xii.1972; 3 ♂, 1 ♀ : Kumarghat; 28-30.xii.1972.

*Measurements*.—External : 6 ♂ : *HB* 315-360 (340); *TI* 240-278 (253); *HF* 59-62 (61.2); *E* 24-25 (24.6). 4 ♀ : *HB* 290-315 (302); *TI* 200-230 (214); *HF* 52-55 (53); *E* 21.5-24 (22.5).

Cranial : 6 ♂ : *cb* 64.5-70 (67.7); *zw* 30.7-35.6 (33.3); *iw* 10.7-12.6 (11.8); *pow* 10.13-6 (11.4); *c—c* 11-12.1 (11.5); *pm*<sup>4</sup> 5.8-6.8 (6.3); *m*<sub>1</sub> 5.6-6.1 (5.9); *tb* 14.6-16.3 (15.4); *ml* 41.5-45.5 (43.9). 3 ♀ : *cb* 61.9-63.7 (62.7); *zw* 29.8-30.4 (30.1); *iw* 10.6-10.9 (10.7); *pow* 9.4-10.4 (9.8); *c—c* 10.3-11 (10.6); *pm*<sup>4</sup> 6-6.2 (6.1); *m*<sub>1</sub> 5.2-5.6 (5.4); *tb* 14.2-14.7 (14.4); *ml* 39.5-39.7 (39.6).

Female specimens are slightly smaller than the males. Our male specimens are definitely large and fall within the range of *H. a. birmanicus* but females are slightly smaller than the measurements given by Pocock (1941).

The known range of this subspecies is lower portion of Burma from Toungoo to Tenasserim. The present record extends its range further west, upto Tripura. Incidentally, it overlaps with the known distribution of *auropunctatus*, viz from Kashmir to Bhutan Duars, Orissa, West Bengal, Assam and Manipur.

### Family FELIDAE

### ***Felis bengalensis bengalensis* Kerr**

1792. *Felis bengalensis* Kerr, *Anim. Kingd.*, : 151 (Southern Bengal).

*Material*.—1 ♀ : Tipperah Hills; Zoological Gardens, *Donor*.

*Measurements*.—Cranial : *l* 88; *cb* 81; *zw* 60.5; *iw* 14.2; *pow* 28; *pl* 34.7; *tb* 20.2; *pm*<sup>4</sup> 9.4; *m*<sub>1</sub> 7.3; *ml* 55.8.

The specimen has already been catalogued by Sclater (1891). The skull has the orbit nearly complete.

*Felis temmincki* (Vigors and Horsfield)

1828. *Felis temminckii* Vigors and Horsfield, *zool. J. Lond.*, 3 : 451 (Sumatra).

*Material*.—1 ♂ (Skin) : Tipperah Hills; 1878; Zoological Gardens *Donor*.

*Measurements*.—Not known.

Sclater (1891) reported this specimen from Tipperah Hills, Bengal. As the hilly region of Tipperah falls in India, in all probability it came from the present Tripura State.

Order ARTIODACTYLA

Family CERVIDAE

*Muntiacus muntjak vaginalis* (Boddaert)

1785. *Cervus vaginalis* Boddaert, *Elench. Anim.*, 1 : 136 (Bengal).

*Material*.—? ♂ : Ambassa; 5.ii.1971 and 2.i.1973.

*Measurements*.—External : 2 ♂ : *HB* 710, 1000; *TI* 72, 140; *E* 84, 97; *ht. at shoulder* 440, 600.

Cranial : 2 ♂ : *l* 159, 196; *cb* 147, 183.5; *iw* 33.2, 40.5; *zw* 68.4, 82; *nas* 38.5, 57.2; *pf* 26.6, 32.7; *pl* 91, 104; *cw* 51.5, 59.3; *ml* 124, 154.

Both of these are juvenile. In one the third upper and lower molars are half erupted, in the other still within the gums.

This subspecies is reported from Kumaon - to Bhutan Duars, Assam, Chindwin (Burma), Yunnan etc. These specimens are the first to be recorded from Tripura.

Order LAGOMORPHA

Family LEPORIDAE

*Lepus nigricollis ruficaudatus* Geoffroy

1826. *Lepus ruficaudatus* Geoffroy, *Dict. Class. Hist. Nat.*, 9 : 381 (Bengal).

*Material*.—1 ♀ ; Abhoya ; 9.xii.1969; 1 ♂, 2 ♀ : Kumarghat, 25 and 30.xii.1972.

*Measurements.*—External : 1 ♂ : *HB* 470; *TI* 75; *HF* 102; *E* 9.4  
2 ♀ : *HB* 458, 500; *TI* 74, 78; *HF* 103, 115; *E* 93, 104.

Cranial : 1 ♀ : *on* 96; *cb* 82.8; *zw* 43; *iw* 23.4; *tb* 11.7; *nas* 40.7;  
*pl* 38; *Tr* 15.2; *ml* 69.

A female collected at Abhoya during December was pregnant, with two fully developed foetuses, thus supporting Hodgson's view (quoted by Blanford, 1891) that two young are generally produced at a birth. However, Blanford (1891) found a single foetus in more than one instance. Winter appears to be the breeding season as is reported for the nominate subspecies. The fully developed foetus is about 100 mm in length; it is fully haired and the eyes are closed.

The species is common throughout northern India ranging from Rajasthan to Meghalaya, but this is its first authentic record from Tripura.

## Order RODENTIA

### Family SCIURIDAE

#### *Ratufa bicolor gigantea* (McClelland)

1839. *Sciurus giganteus* McClelland, *Proc. zool. Soc. Lond.*, : 150 (Assam),

*Material.*—1 ♂, 2 ♀ ; Garjee; 25-27.xi.1969; 1 ♀ : Abhoya; 3.xii. 1969; 1 ♂, 1 ♀ : Ganganagar; 13-15.xii.1972.

*Measurements.*—External : 2 ♂ : *HB* 390, 400; *TI* 408, 450; *HF* 86, 88; *E* 30 (in both). 4 ♀ : *HB* 309-390 (360); *TI* 435-490 (472); *HF* 85-90 (87); *E* 30-32 (31).

Cranial : 2 ♂ : *on* 74.7, 75.2; *zw* 46, 46.3; *pl* 33.3, 33.6; *nas* 24.1 (in both); *iw* 29.8, 30.9; *orb* 24.6, 24.8; *Tr* 14 (in both); *tb* 14.5, 15.3; *ml* 43, 43.6. 3 ♀ : *on* 75.1-77.6 (76.3); *zw* 45.9-47.1 (46.6); *pl* 32.5-34 (33.4); *nas* 23.5-25.4 (24.5); *iw* 29-32.1 (30.5); *Tr* 14.5-15.1 (14.7); *orb* 25.4-25.6 (25.5); *tb* 14.5-14.7 (14.6); *ml* 43.3-44.7 (44).

Out of six specimens, the pelage is black in three, blackish brown in two, and black with brown patches on the sides of the rump in one.

An examination of other specimens in the National Zoological Collection reveals that variation in the dorsal colour is marked in this subspecies. It varies from black to brown (Table 1.). Although there is no distinct seasonal variation there is a tendency to become black in winter as is found in *Callosciurus erythraeus*.

These specimens constitute the first authentic record of the subspecies from Tripura,

**Table 1.** — Dorsal colour of body in different months of the year, in *Ratufa bicolor gigantea* (McClelland).

Month	Locality	Dorsal colour of body		
		Brown	Blackish brown	Black
February	Assam	1	1	—
March	West Bengal & Assam	6	1	—
April	Burma	—	3	—
May	Bhutan & Arunachal	—	2	—
June	Assam	1	—	—
August	West Bengal & Burma	2	2	—
November	Assam & Tripura	—	4*	—
December	Bhutan & Tripura	—	—	3 + 1*

\* Brown patch on the rump.

### *Callosciurus erythraeus punctatissimus* (Gray)

1867. *Macroxus punctatissimus* Gray, *Ann. Mag. nat. Hist.*, 20 : 283 (India).

*Material.*—4 ♂ : Garjee; 26.xi.1969—1.xii.1969; 1 ♀ : Teliamura; 27.i.1971; 6 ♂, 3 ♀ : Ambassa; 4-10.ii.1971 and 1-4.i.1973; 2 ♂ : Ganganagar; 12-14.xii.1972.

*Measurements.*—External : 11 ♂ : *HB* 225-253 (237); *TI* 230-253 (246); *HF* 54-58 (55.5); *E* 20-23 (22). 4 ♀ : *HB* 212-253 (232); *TI* 225-260 (248); *HF* 56-58 (57); *E* 20-22 (21.5).

Cranial : 11 ♂ : *on* 55.4-57.9 (56.6); *zw* 31.7-34.7 (33.7); *iw* 18.7-22 (20.6); *nas* 17.8-18.9 (18.2); *pl* 26.9-28.5 (27.8); *tb* 10.2-12.1 (10.9); *Tr* 9.7-10.6 (10.2); *orb* 17.1-18.2 (17.5); *ml* 31.0-32.7 (31.5). 4 ♀ : *on* 54.6-58.5 (56.3); *zw* 31.4-34.6 (32.4); *iw* 17.5-22 (19.1); *nas* 17.5-18.7 (17.9); *pl* 27.2-28.3 (27.9); *tb* 10.4-11.3 (10.9); *Tr* 10-11 (10.4); *orb* 17.1-18 (17.4); *ml* 30.6-32.6 (31.5).

The taxonomic status of this species has been discussed in detail by Agrawal and Bhattacharyya (in press). These specimens differ from those of *Callosciurus erythraeus erythrogaster* in being much darker in dorsal body colour but tally well with the original description of *Macroxus punctatissimus* Gray (1867) (= *Callosciurus erythraeus punctatissimus*) both in the fine grizzling of the dorsal fur as well as in the darkness of colour. Therefore, we consider the latter to be a valid subspecies.

The stomach in three examples contained approximately 50% Insects (mainly ants and a few beetles) and 50% vegetative matter (mainly fruits and a few pieces of leaves). Roonwal (1949), however, found the stomach of one of this species full of pieces of figs with a few of its own hairs, at Manipur.

**Callosciurus pygerythrus blythi** (Tytler)

1854. *Sciurus blythii* Tytler, *Ann. Mag. nat. Hist.*, 14 : 172 (Dacca, Bangladesh).

*Material*.—2 ♂, 3 ♀ : Agartala; 10-11.xi.1969; 2 ♂ : Garjee; 24-26.xi.1969; 2 ♂ : Teliamura; 27.i.1971-2.ii.1971; 2 ♂ : Amp; 17-23.i.1971; 1 ♂ : Ambassa; 4.i.1973; 3 ♂, 1 ♀ : Ganganagar; 9-14.xii.1972; 1 ♂ : Chailingta; 21.xii.1972; 1 ♀ : Kumarghat; 25.xii.1972; 1 ♀, 2 ♀ : Kanchanpur; 16-17.ii.1971.

*Measurements*.—External : 12 ♂ : *HB* 182-213 (195); *TI* 173-201 (188); *HF* 42-48 (45); *E* 18-22 (19.7). 7 ♀ : *HB* 174-196 (186); *TI* 178-203 (185); *HF* 41-46 (44); *E* 18-20 (19.3).

Cranial : 12 ♂ : *on* 47.3-50.5 (49.3); *zw* 27.30 (28.6); *iw* 14.6-18 (16.2); *nas* 13.3-15 (14.5); *pl* 23-25.8 (24.1); *tb* 8.7-9.4 (9.0); *Tr* 9.0-9.8 (9.3); *orb* 15.1-16.5 (15.8); *ml* 26.2-29.1 (27.4). 6 ♀ : *on* 46.1-50.3 (48.5); *zw* 26.3-29.4 (28); *iw* 15-16.5 (15.6); *nas* 12.6-15 (14.3); *pl* 22.6-24.1 (23.6); *tb* 8.7-9.2 (8.9); *Tr* 8.8-9.5 (9.3); *orb* 14.5-16 (15.3); *ml* 26-27.4 (26.8).

The body colour is more or less similar to that described by Ellerman (1963) for this subspecies but the colour of the posterior abdominal region and of the flanks ranges from Buff to Orange-Buff or Vinaceous Pink.

Out of twenty-one specimens from Tripura, only one, collected in November, has a white patch on the thigh. The position of this patch in other specimens in the National Zoological Collection is as follows :

- (i) No patch in 44 examples collected between November to April.
- (ii) Patches present in 20 examples collected between May to October and one each in April and November.

The exact significance of these patches is obscure. But since these occur seasonally, they may be connected with breeding similar to that in *C. pygerythrus pygerythrus*, mentioned by Khajuria and Ghose (1970).

The stomach in two examples contained entirely vegetable matter (pieces of some pulpy fruit) except a large ant.

The subspecies is known so far from Assam, Meghalaya, Nagaland, Manipur and N. Burma. Tripura should now be added to its range.

**Dremomys lokriah macmillani** Thomas

1916. *Dremomys macmillani* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 238 (Tatkon, West Burma).

*Material*.—2 ♂ : Ambassa; 9.ii.1971 and 4.i.1973.

*Measurements*.—External : 2 ♂ : *HB* 171, 190; *TI* 162, 165; *HF* 48, 49; *E* 19, 21.

Cranial : 1 ♂ : *on* 52.4; *zw* 29; *iw* 15.5; *nas* 15.4; *Tr* 9; *tb* 8.4; *ml* 19.3.

The colour of the throat and belly is Buff-Pink in one specimen and Buffy in the other. The species is, no doubt, arboreal but seeks its food from the ground. In habit as well as in ventral colour it much resembles the tree-shrew (*Tupaia*).

This subspecies is reported from Assam, Meghalaya, Nagaland, Manipur and Burma. Tripura should now be added to its range.

#### Family MURIDAE

#### *Rattus rattus arboreus* (Horsfield)

1851. *Mus arboreus* Horsfield, *Cat. E. Ind. Mus.*, : 141 (Bengal).

*Material*.—3 ♀ : Charilam; 16-20.xi.1969; 1 ♂ : Abhoya; 4.xii.1969; 1 ♂, 7 ♀ : Ampri; 19-23.i.1971; 1 ♀ : Kumarghat; 26.xii.1972; 2 ♀ : Kanchanpur; 14-15.ii.1971.

*Measurements*.—External : 2 ♂ : *HB* 157, 172; *TI* 174, 176; *HF* 34, 35; *E* 21 (in both). 13 ♀ : *HB* 131-170 (151.5); *TI* 137-213 (181); *HF* 30-34 (32); *E* 20-23.5 (22).

Cranial : 2 ♂ : *on* 38, 39.1; *cb* 34.8, 37.5; *zw* 19, 19.4; *iw* 5.7, 6.2; *tb* 6.9, 7.1; *nas* 13.5, 13.7; *pl* 20, 21.8; *pf* 6.5, 6.9; *Tr* 7, 7.3; *ml* 20.4, 21.1. 10 ♀ : *on* 37.2-42.5 (39.6); *cb* 34.5-38.9 (36.9); *zw* 17.3-20.5 (19.3); *iw* 5.5-6.0 (5.8); *tb* 6.4-7.7 (7.2); *nas* 12.7-15.0 (14); *pl* 19.4-22.9 (21.4); *pf* 5.7-7.5 (6.7); *Tr* 6.4-7.2 (6.9); *ml* 19.8-22.3 (21.1).

The dorsal body colour ranges from light brown to rufous brown and the ventral colour from milky white to white suffused with slaty; the slaty colour is prominent in one specimen. Of fifteen specimens, three have a pink mid-thoracic stripe and three others a slaty stripe or slaty patches.

Although the subspecies is widely distributed throughout North-eastern India from Uttar Pradesh to West Bengal, this is its first record from Tripura.

#### *Rattus nitidus nitidus* (Hodgson)

1845. *Mus nitidus* Hodgson, *Ann. Mag. nat. Hist.*, (1) 15 : 267 (Nepal).

*Material*. — 1 ♂, 1 ♀ : Ganganagar; 10. xii. 1972.

*Measurements*. — External : 1 ♂ : *HB* 166; *TI* 167; *HF* 38; *E* 21.5. 1 ♀ : *HB* 161; *TI* 180; *HF* 36; *E* 22; mammae 12.

Cranial : 1 ♂ : *on* 40.2; *cb* 37.6 *zw* 19; *iw* 5.9; *tb* 5.9; *nas* 16; *pl* 21.2; *pf* 7.1; *Tr* 6.7; *ml* 21.1.

Table 2 — Range of distribution of various species and subspecies of mammals in Tripura.

	Zone A				Zone B			Zone C		Zone D			Tipperah
	Agar- tala	Char- ilam	Gar- jee	Abh- oya	Telia- mura	Ampi	Amar- pur	Amba- ssa	Ganga- nagar	Kumar- ghat	Kan- chanpur	Chail- ingta	
<i>Suncus murinus caerulescens</i>	*	—	—	—	*	—	—	—	—	+	—	—	
<i>Pteropus giganteus</i>	+	+	—	—	—	—	*	—	—	—	+	—	
<i>Rousettus amplexicaudatus</i>	—	—	—	—	—	—	—	—	—	—	*	—	
<i>Cynopterus sphinx sphinx</i>	*	*	*	*	*	*	—	*	*	—	*	*	
<i>Taphozous longimanus</i>	*	—	—	—	—	—	—	—	—	—	—	—	
<i>Scotophilus temmincki</i> <i>wroughtoni</i>	*	—	—	—	—	—	—	—	—	—	*	—	
<i>Pipistrellus mimus mimus</i>	—	—	—	—	+	—	—	*	—	—	*	—	
<i>Pipistrellus coromandra</i>	—	—	—	—	—	—	—	—	*	—	—	—	
<i>Tupaia glis assamensis</i>	—	—	—	—	—	—	—	*	*	—	—	—	
<i>Nycticeilus coucang</i> <i>bengalensis</i>	—	—	—	—	—	—	—	—	—	—	—	—	*
<i>Macaca mulatta mulatta</i>	—	*	+	+	+	*	—	+	—	—	+	+	*
<i>Macaca arctoides speciosa</i>	—	—	—	—	—	—	—	—	—	—	—	+	*
<i>Presbytis phayrei phayrei</i>	—	*	+	+	+	*	—	+	+	*	+	+	*
<i>Presbytis pileatus durga</i>	—	*	+	+	+	—	—	+	—	—	+	—	*
<i>Hylobates hoolock</i>	—	—	—	—	—	—	—	*	—	—	—	—	*
<i>Viverra zibetha picta</i>	—	*	—	*	—	*	—	—	—	+	+	+	*
<i>Viverricula indica</i>	—	—	—	—	—	*	—	—	—	*	—	—	*
<i>Herpestes auropunctatus</i> <i>birmanicus</i>	+	—	+	+	—	*	—	*	—	*	—	*	*



1 ♀ : *on* 44.7; *cb* 42; *zw* 21.3; *iw* 6.4; *tb* 6.1; *nas* 18; *pl* 24.8 *pf* 7; *Tr* 6.9; *ml* 24.

The dorsal colour of the body ranges from Ochraceous to Olive and the ventral surface is ashy.

The subspecies is known from northern Uttar Pradesh, Nepal, Sikkim, Bhutan and Meghalaya; this is its first authentic record from Tripura.

#### **Mus musculus castaneus (Waterhouse)**

1843. *Mus castaneus* Waterhouse, *Ann. Mag. nat. Hist.*, 12 : 134 (Philippine Islands).

*Material.*— 1 ♂ : Teliamura; 27.i.—1971; 2 ♂, 1 ♀ : Kanchanpur; 14—16. ii.1971.

*Measurements.*— External : 3 ♂ : *HB* 67—83 (74); *Tl* 76—97 (84); *HF* 16—17 (16.5); *E* 12—13 (12.6). 1 ♂ : *HB* 67; *Tl* 84; *HF* 17; *E* 12.

*Cranial* : 1 ♂ *on* 21.7; *cb* 20; *zw* 11; *iw* 3.8; *tb* 2.8; *nas* 8.0; *pl* 10.7; *pf* 4.8; *Tr* 3.0; *ml* 10.5. 1 ♀ (Subad.) : *on* 19.5; *cb* 18; *zw* 9.6; *iw* 3.7; *tb* 3.0; *nas* 7.1; *pl* 10.2; *pf* 4.0; *Tr* 2.8 *ml* 8.9.

#### **Mus booduga booduga (Gray)**

1837. *Leggada booduga* Gray, *Charlesworth's Mag. nat. Hist.*, 1 : 586 (South Maharatta, India).

*Material.* — 1 ♀ : Kumarghat; 19. xii. 1972.

*Measurements.* — External : *HB* 75; *Tl* 65; *HF* 14; *E* 12.

*Cranial* : *on* 20; *cb* 19.2; *iw* 3.3; *Tr* 2.9; *ml* 10.6.

This specimen is not only the first record from Tripura but also extends the distribution of the subspecies slightly eastward.

#### **Bandicota bengalensis bengalensis (Gray)**

1835. *Arvicola bengalensis* Gray, *Illust. Ind. Zool.*, 2, pl. 21 (Bengal).

*Material.* — 1 ♂, 2 ♀ : Abhoya; 5—9. xii. 1969.

*Measurements.* — External : 1 ♂ : *HB* 164; *Tl* 118; *HF* 32; *E* 20. 2 ♀ : *HB* 147, 150; *Tl* 110, 120; *HF* 30 (in both); *E* 20 (in both).

*Cranial* : 1 ♂ : *on* 34.5; *cb* 36.1; *zw* 22; *iw* 6.0; *tb* 8.1; *nas* 9.6; *pl* 20.9; *pf* 7.8; *Tr* 6.5; *ml* 21. 2 ♀ : *on* 32.8, 33.3; *cb* 34.6 (in both); *zw* 21.4, 22.2; *iw* 5.8, 6.0, *nas* 9.0; 9.7; *pl* 20, 20.2; *pf* 7, 7.5; *Tr* 6.5, 6.6; *tb* 7.8, 8.0; *ml* 20.7, 20.9.

All of the specimens are young. The length of the tail ranges from 72—80% (75%) of head and body length rather than over 80% as mentioned by Ellerman (1963).

Although this subspecies is known to occur throughout India except in Kashmir and Himachal Pradesh (Agrawal and Chakraborty, 1976, until now it has not been reported from Tripura where it is found only in the western portion adjoining Bangladesh.

#### General observations

It has been mentioned earlier that Tripura State is divided into four zones by seven hill ranges. Collections were made in all, the four zones. A list of species either collected or observed in these zones has been given in Table 2.

From the table, it is obvious that several species such as the Short-nosed Fruit Bat (*Cynopterus sphinx*), the Leaf-Monkey (*Presbytis phayrei*), the Capped Langur (*Presbytis pileatus*), the Rhesus Macaque (*Macaca mulatta*), the Irrawaddi Squirrel (*Callosciurus pygerythrus blythi*), the Jackal (*Canis aureus*) etc. are widely distributed throughout Tripura, whereas others such as the Slow Loris (*Nycticebus coucang bengalensis*), the Leopard Cat (*Felis bengalensis*), the Golden Cat (*Felis temmincki*) etc., which were very likely common in this area in the last century have since become scarce. Within the four Zones, the fauna of Zone C is quite characteristic, being represented by the Hoolock (*Hylobates hoolock*), the Tree-Shrew (*Tupaia glis*), the Orange-bellied Himalayan Squirrel (*Dremomys lokriah*), the Himalayan Rat (*Rattus nitidus*) etc., which were not seen in other Zones. Similarly, the Lesser Bandicoot Rat (*Bandicota bengalensis*) could only be collected in Zone A. Elephants, which are said to be very common throughout the State are now localized to its south-eastern portion, which is, still, the least disturbed area. Incidentally, seven tigers have been reported from this State in the Tiger Census report of 1972.

#### SUMMARY

This paper is based on a collection of mammals from Tripura. Thirty one species and subspecies are represented, of which twenty two constitute the first authentic record from this area, including two new to the Indian region. As a result of this study, variations in size, coloration, etc. are reported in a number of forms. The taxonomic status of *Presbytis barbei* Blyth, *Callosciurus erythraeus punctatissimus* (Gray) and *Pteropus giganteus leucocephalus* Hodgson has been discussed. The report also incorporates ecological observations made in the field.

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