

XXXVIII.—*On some new Mammalia from the East-Indian Archipelago.* By OLDFIELD THOMAS.

THE British Museum owes to Messrs. Charles Hose and Alfred Everett a collection of Mammals from North Borneo, and in working them out the following new species prove to need description. The Mount Dulit species will be more fully described in a general account now in preparation of the Mammals obtained by Mr. Hose in that most interesting locality.

*Hemigale Hosei*, sp. n.

Size and proportions of *H. Hardwickei*. General colour above from nose to tail uniform dark smoky brown, without dorsal or nuchal markings. A spot on each side of the muzzle, another over each eye, ears, and chin, white. Teeth markedly smaller than in *H. Hardwickei*.

Dimensions:—

(♂) Head and body 540 millim.; tail 320; hind foot 78; basal length of skull 89.

*Hab.* Mount Dulit, N. Borneo, 4000 feet (*C. Hose*).

*Tupaia Everetti*, sp. n.

Size large; as large as *T. tana*. Fur short, close, and rather harsh. Tail-hairs scarcely or not longer than those of the body. General colour uniform dull rufous-brown; the head rather more olive-brown; an indistinct ferruginous stripe over each shoulder. Underside similar to upper, but rather paler; throat more rufous. Tail cylindrical, not bushy; its hairs, except at the tip, rarely exceeding 10 millim. in length, its colour quite like that of the back.

Skull with the elongate tapering form of that of *T. tana*, though the muzzle is slightly shorter. Zygomatic vacuities very small, only about  $1.5 \times 1.0$  millim.

Teeth, except  $\overline{i.3}$ , very large and stout, markedly heavier than those of *T. tana*.  $\overline{i.2}$  nearly twice the height and more than twice the antero-posterior diameter of that of *T. tana*; internal lobes of  $\overline{p.3}$  and  $\overline{p.4}$  very well developed. First and second lower incisors as usual, but the third one minute and nearly vertical, markedly contrasting with the  $\overline{i.3}$  of *T. tana*, which is well developed and nearly horizontal, like  $\overline{i.1}$  and  $\overline{i.2}$ . On the other hand, the lower canine, to match the heavy  $\overline{i.2}$ ,



against which it bites, is unusually large and powerful, more than twice the bulk of the corresponding tooth of *T. tana*.

Dimensions (approximate, from skin):—

Head and body 210 millim.; tail, without terminal pencil, 170; hind foot (approximate, from skeleton) 48.

Skull: basal length 54; occiput to nasal tip 64.5; greatest breadth 29; nasal tip to front edge of orbit 30.7; interorbital breadth 17.5; intertemporal breadth 18; palate, length 34, breadth outside  $\frac{m.1}{m.1}$  16, inside  $\frac{m.1}{m.1}$  8.2. Front of  $\frac{i.1}{i.1}$  to back of  $\frac{m.3}{m.3}$  33.3; diastema between  $\frac{i.2}{i.2}$  and  $\frac{c}{c}$  4.4, between  $\frac{c}{c}$  and  $\frac{p.2}{p.2}$  0.9.

*Teeth*.— $\frac{i.2}{i.2}$ , height above bone behind 4.8, antero-posterior diameter at base 2.7; canine, height 3, diameter 1.7;  $\frac{i.3}{i.3}$ , height 1.5, diameter 0.6;  $\frac{c}{c}$ , height 5.7, diameter 2.5; combined lengths of  $\frac{m.1-3}{m.1-3}$  10.6, of  $\frac{m.1-3}{m.1-3}$  10.8.

*Hab.* Zamboanga, W. Mindanao, Philippine Islands.

*Type* Brit. Mus. 79. 5. 3. 11. Coll. Alfred H. Everett, Esq.

This striking species has in a general way the skull of *T. tana* and the external appearance of *T. ferruginea*, with the skins of which in fact the type has hitherto lain unnoticed in the Museum collection. The distinctness of the two, however, at once became apparent on direct comparison, and in describing it I have much pleasure in connecting with it the name of its collector, to whose labours we are so largely indebted for our knowledge of the zoology of this region.

Since, as Mr. Everett has shown †, the island of Palawan is not, zoologically considered, properly a part of the Philippine Archipelago, the present is, as far as I know, the first record of the genus *Tupaia* in that group.

### *Tupaia picta*, sp. n.

Rather smaller than *T. ferruginea*; more heavily built than *T. dorsalis*. General colour of back olive-grey, coarsely grizzled with yellowish; more rufous posteriorly. Centre of back with a distinct dorsal stripe extending from the withers to the rump, the stripe better defined than in *T. montana*, but neither so long nor so sharply defined as in *T. dorsalis*. Head, hands, and feet dull grizzled olive; sides dark rufous; a distinct shoulder-stripe present. Underside grey, the hairs washed terminally with yellow; chin and chest rich yellow

\* The most anterior premolar. Specimens in the Museum show that this tooth changes in *Tupaia*, and is therefore clearly  $\frac{p.2}{p.2}$ , the true  $\frac{p.1}{p.1}$  of Carnivora and Insectivora never changing.

† P. Z. S. 1889, p. 220.



or orange. Tail broad and bushy, evenly distichous, its hairs above basally mixed red and black, at the tip and below brilliant chestnut-rufous.

Skull much as in *T. ferruginea*, but the zygomatic vacuity reduced to a long narrow slit about 4·5 millim. long and only about 1 millim. high.

Teeth also not materially different from those of *T. ferruginea*.

Dimensions of the type (Brit. Mus. 92. 2. 8. 1) \* :—

Head and body 185 millim.; tail 162; hind foot 42·5.

Skull: basal length 45; greatest breadth 26·3; nasal tip to front edge of orbit 21; interorbital breadth 15; intertemporal breadth 17·5; palate, length 27·5, breadth outside  $\frac{m.1}{m.1}$  15, inside  $\frac{m.1}{m.1}$  8·5; front of  $\frac{i.1}{i.1}$  to back of  $\frac{m.3}{m.3}$  26·4; diastema between  $\frac{i.2}{i.2}$  and  $\frac{c}{c}$  4, between  $\frac{c}{c}$  and  $\frac{v.2}{v.2}$  1·8.

*Hab.* Baram, N. Borneo. First collected by Mr. Hose; other specimens since received from Mr. Everett.

This handsome species is readily distinguishable from *T. ferruginea* and *T. splendidula* by its duller body-colour and the presence of a black dorsal stripe; from *T. tana* by its smaller size and shorter muzzle; from *T. dorsalis* by its less defined dorsal line, bushier tail, and heavier teeth; and from *T. montana*, described below, by its brilliantly rufous tail and coarsely grizzled back.

#### *Tupaia montana*, sp. n.

Rather smaller than *T. ferruginea*. Dark grizzled rufous above, with an indistinct black dorsal line from the withers to the rump, broadening out and almost indistinguishable over the loins. Tail rather short; above dull grizzled rufous, below more olivaceous yellow, the lateral hairs ringed terminally with black.

Dimensions :—

Head and body of type (♂) (c.) 200 millim.; tail (c.) 140; hind foot 41. Front of  $\frac{i.1}{i.1}$  to back of  $\frac{m.3}{m.3}$  27; back of  $\frac{i.2}{i.2}$  to front of  $\frac{c}{c}$  4·5.

*Hab.* Mount Dulit, 5000 feet (C. Hose).

#### *Tupaia melanura*, sp. n.

Size of *T. minor*. General colour of *T. javanica*, but without the shoulder-stripe. Tail slender, cylindrical, close-

\* The specimen selected as the type is one of Mr. Everett's, Mr. Hose's original specimen having an imperfect skull; the latter gentleman is, however, the first discoverer of the species.



haired, as in "*Dendrogale*," but without any terminal pencil; its colour deep shining black, except at the base, where it is like the back. Face coloured as in *T. minor*, not as in "*Dendrogale*."

Dimensions of the type (♀) :—

Head and body 125 millim.; tail 136; hind foot 29·7. Basal length of skull 30; front of  $\frac{i-1}{m}$  to back of  $\frac{m-3}{m}$  17·7.

*Hab.* Mount Dulit, 5000 feet (*C. Hose*).

*Sciurus Brookei*, sp. n.

Allied to and of the general colour of typical Singapore specimens of *S. tenuis*, Horsf., but distinguished by its much larger size and by its cheeks, anal region, and the proximal inch of the tail beneath being bright rufous.

Dimensions :—

Head and body 205 millim.; tail 144; hind foot 37; basal length of skull (c.) 37.

*Hab.* Mount Dulit, N. Borneo (*C. Hose*).

*Sciurus Lowii*, sp. n.

Size and general colour above of *S. tenuis*, Horsf., but darker, sleeker, and more finely grizzled. Ears black-rimmed. Whole of under surface and inner sides of limbs pure white or yellowish white, without admixture of grey. Tail broadly ringed with orange and black. Muzzle of skull markedly longer and interorbital breadth less than in *S. tenuis*; incisors thrown more forward, forming a more open curve, and the lower pair as dull-coloured in front as the upper.

Dimensions of the type, an adult male in skin (probably overstretched) :—

Head and body 154 millim.; tail 95; hind foot 33.

Skull: basal length 34; greatest breadth 23·3; nasals, length 12, breadth 5·5; interorbital breadth 11·2; diastema 10·1; palate, length 19·5. Front of  $\frac{p-4}{m}$  to back of  $\frac{m-3}{m}$  6·6.

*Hab.* Lumbidan, on the mainland opposite Labuan (several specimens collected by Sir Hugh Low); other specimens from Baram (*A. Everett*).

*Type* Brit. Mus. 76. 5. 2. 14.

The occurrence of a typical grey-bellied short-snouted *S. tenuis* in Mr. Everett's Baram collection proves that this white-bellied form, of which the Museum possesses six specimens, is really distinct from that animal, with which I had hitherto provisionally left it.

The difference in proportion between the skulls of *S. tenuis* and *S. Lowii* is readily shown by the fact that in the former the interorbital breadth is equal to the distance from the front



face of the incisors to the middle or back of  $\underline{p.4}$ , while in the latter it does not reach to the anterior edge of  $\underline{p.3}$ .

*Tragulus nigricans*, sp. n.

Allied to and apparently about the size of *T. napu*, F. Cuv. Arrangement of colours above much as in that species, but the whole of the dorsal and lateral surfaces broadly washed with jet-black, the hairs white at their bases, then dull orange and broadly tipped with black. Nape with the indistinct blackish line found in *T. napu*. Face and sides of neck mixed black and dull fulvous. Chin with the usual naked glandular patch between the rami of the lower jaw. Arrangement of white throat-bands quite different from that of the allied species, perhaps most similar to that of *T. Stanleyanus*. All the stripes very narrow, sharply defined. Anteriorly on each side of the naked space there is a short pure white stripe, which ends abruptly at about the level of the posterior canthus of the eye; these short stripes are completely separated from each other and from the posterior stripes by a dark brown space, the break in their continuity with the latter being not less than one inch in length. Posteriorly the median white stripe, which is very narrow and scarcely broader behind, is bounded on each side, between the lateral white stripes, by deep jet-black fur, strikingly different from the fur in the corresponding position in the other species. Behind the stripes are separated from the white patch between the fore limbs by a broad blackish band. Belly-hairs broadly tipped with black, but the inner sides of the thighs, as usual, white.

Skull and teeth of the only specimen too young and in too bad a condition for detailed comparison; but, comparing the actual sizes of the milk-teeth,  $\underline{m.p.2}$  is much smaller than in a specimen of corresponding size of *T. napu*,  $\underline{m.p.3}$  is slightly smaller, while  $\underline{m.p.4}$  and  $\underline{m.1}$  are of about the same antero-posterior diameter. Similarly below  $\underline{m.p.2}$  and  $\underline{m.p.3}$  are each much smaller than in *T. napu*, while  $\underline{m.p.4}$  and  $\underline{m.1}$  are of about the same size.

Dimensions of teeth:—

Antero-posterior diameter of  $\underline{m.p.2}$  7 millim.,  $\underline{m.p.3}$  7.5,  $\underline{m.p.4}$  5.8,  $\underline{m.1}$  6.5, of  $\underline{m.p.2}$  5.7,  $\underline{m.p.3}$  6.6,  $\underline{m.p.4}$  8,  $\underline{m.1}$  7.2.

*Hab.* Balabac, Philippine Islands.

*Type* Brit. Mus. 91. 11. 28. 2. Collected by the Steere Expedition to the Philippines, 1887–88.

It is unfortunate that the only specimen obtained of this new Chevrotain is both young and in bad condition; but its general blackness and the peculiar character of its throat-markings separate it at once from any of its congeners.



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