

Notes on *Echinosorex gymnurus* (Raffles)

By F. N. CHASEN

Twenty-four well made skins¹ illustrate variation in this species along the north-west coast of Borneo from Kuching in Sarawak to Sandakan in British North Borneo.

The material confirms a previous view² that animals from the extreme north of Borneo are whiter (less sprinkled with black hairs) than those from most of Sarawak. It also shows that in the extreme west of Sarawak parti-coloured black and white examples very like typical *E. g. gymnurus* of Sumatra occur.

I cannot trace a record of an albescent *Echinosorex* from the Malay Peninsula³ but a few are known from Sumatra. On the other hand the greater part of Borneo seems to be occupied by almost entirely white animals: they are, at least, dominant everywhere with the possible exception of the north-west corner of the island in which nothing is known of *Echinosorex*. A progressive tendency to albinism along the north coast, roughly from west to east, makes it necessary to recognize more than one Bornean race.

1. Not a large series but probably the greatest number of specimens ever examined from such a limited locality.

2. Chasen and Kloss, Bull. Raffles Mus., 6, 1931, p. 45.

3. In Blanford's reference to entirely white specimens "Burmese" must be a misprint for "Bornean".

E. g. albus (Giebel).

Gymnura alba Giebel, Zeitschrift für die Gesamten Naturwissenschaften 22, 1863, p. 277; pls. 1 and 2 (Borneo).

Specimens from near Sandakan in the extreme north of Borneo have been described in detail elsewhere: broadly speaking, they are entirely white on the underparts but show a few black-tipped hairs on the dorsal surface, although the position and number of these is variable. From Lyon's description¹ of specimens from south-west Borneo, and by analogy, animals recorded by various authors from north, south, south-west, west, and central Borneo probably belong to this race the type locality of which can be restricted to the likely locality of Bandjermasin in south Borneo. Giebel's description and plate indicate a very white animal.

E. g. candidus (Günth.)

Gymnura rafflesii var. *candida* Gunther, Proc. Zool. Soc., 1876, p. 425 (Labuan).

Seven of the twenty-four Bornean skins are from near Sandakan and are referred to *albus* above. Of the remaining seventeen skins, only two examples, from Kuching and Baram, could be confused with the north Bornean series and these not with the whitest examples therein. The others are pied, like the Sumatran and Continental races, or white plentifully sprinkled with long, black hairs on the upper parts: animals of the latter type are dominant in the neighbourhood of Kuching and also occur at Balingian (about halfway along the Sarawak coast) and as far north as the island of Labuan and the opposite mainland.

The three skins of "normal" colour deserve closer attention for hitherto such specimens from Borneo seem only to have received two casual references in literature². One specimen is without definite locality but that it came from Sarawak is certain and from the western part of the State more than likely: the other two are labelled in some detail as from Kuching in 1894 and 1896.

The type locality of *Viverra gymnura* Raffles is Bencoolen on the south-west coast of Sumatra. Unfortunately, only two specimens³ from that island are available for comparison: both are from the north-east coast (near Medan and Pematang Siantar) and it is just possible that they should be referred to the northern race (*burmanicus* Trouess., syn. *minor* Lyon) of

1. Lyon, Proc. U. S. Nat. Mus., xxxvi., 1909, p. 453.

2. Dobson, Mon. Insectiv., 1882, p. 4; Shelford, A Naturalist in Borneo, 1916, p. 27 (an indirect reference).

3. Kindly lent by Dr. K. W. Dammerman and Mr. H. J. V. Sody.

the species which is said to differ in colour-pattern from typical *gymnura*.

From these two Sumatran skins the Bornean specimens differ in having the pale areas of the head, neck and fore-back more solidly white. Except on the forehead, sides of the head, and chin the Sumatran examples have the pale areas formed by numerous, scattered, long white hairs growing out of a shorter, soft, dark grey under-fur whereas in those from Borneo the under-fur of the head and neck is largely white and tipped with white even on the back. Although normal in pattern, these animals in fact show the tendency to albinism so marked a feature of the species in Borneo.

Whether or not they differ in colour from exact topotypes of *E. g. gymnurus* cannot now be decided. The largest skull has the basal-length 79.95 mm. which is within the range of both *E. g. gymnurus* and *E. g. candidus*; but as both parti-coloured and white specimens occur near Kuching it is preferable to place all with the variable Sarawak form and to regard *candidus* as a variable race, darker than *albus* and extending from Kuching to Labuan. At the same time the possibility that the range of typical *gymnurus* extends to extreme north-west Borneo whence no information is available must not be forgotten.

The two races, *candidus* and *albus* seem to meet in the vicinity of Labuan where "white" animals representing both forms are found. It therefore seems permissible, and it is certainly convenient, to regard Günther's *candidus* as representing the darker form although this author's description would fit selected examples of either race.

Note.—Adequate series of *Echinosorex* from places outside Borneo seem not to exist in any museum. The following is a grouping of the published measurements¹ of the basal length of adult skulls (on the available figures and specimens no sexual difference in size can be made out) together with those of a few unrecorded specimens in the Raffles Museum, arranged geographically, roughly from north to south.—

Sumatra

<i>North.</i> —Medan; Siantar; Tapanuli,	70	–73	mm.
<i>Central.</i> —Siak and Mandau Rivers; Pulau Tebing Tinggi, ..	73	–78	mm.
<i>South.</i> —Bencoolen (topotypes) ..	70	–77	mm.

¹ Detailed measurements have been published by Lyon (l.c.s.); Robinson and Kloss, Journ. F. M. S. Mus., vii, 1919, p. 268; and Chasen and Kloss (l.c.s.).

