Two New Mammals from Borneo

By F. N. CHASEN

Sciurus jentinki subsignanus subsp. nov.

Sciurus tenuis jentinki, Chas. and Kloss, Journ. Straits Br., Roy. Asiat. Soc., VI, pt. 1, 1928, p. 42.

Like *Sciurus j. jentinki* Thos.[1] from Mt. Kinabalu, British North Borneo, but the tail hairs tipped with buff, not white.

Type.—Adult male (skin and skull), collected above Long Petak (lat. 1° 44′ N.), on the Telen River, a tributary of the Mahakkam, or Kutai River, Dutch East Borneo, altitude above 1172 metres, on 17th October, 1925, by H. C. Siebers. Raffles Museum (ex. Zool. Mus., Buitenzorg) No. 1257.

External measurements.—Head and body, 128; tail, 126; ear, 13; hind-foot s.u. (dry) 33 mm.

Skull.—Greatest length, 36.8; condylo-basilar length, 29.1; palatilar length, 14.7; least interorbital breadth, 11.2; median nasal length, 11; upper molar row (alveoli), 6.6; zygomatic breadth, 21.9 mm.

Specimens examined.—Four, compared with forty topotypes of *jentinki* from Mt. Kinabalu, North Borneo.

Remarks.—Since Mr. Boden Kloss and I referred these squirrels from East Borneo to *S. jentinki* I have collected a large series of exact topotypes and two forms are certainly recognizable.

Rattus alticola kinabaluensis subsp. nov.

Intermediate between *R. a. alticola* Thos.[2] and *R. a. ochraceiventer* Thos.[3]; the under parts as in the former and the upper parts as in the latter form, but slightly brighter. Tail bicoloured to the tip.

Type.—Adult male (skin and skull), collected at Lumu Lumu, Mt. Kinabalu, British North Borneo, 5,500 ft., on 15th April, 1929, by F. N. Chasen, Raffles Museum, No. 4099.

External measurements taken in the flesh.—Head and body, 168; tail 166; hind-foot, s.u., 35; ear, 23 mm.

Skull.—Greatest length, 42.7; condylo-basal length, 34.5; palatilar length, 16.7; diastema, 11.2; upper molar row, 6; length of anterior palatal foramina, 6.1; median nasal length, 16.6; breadth of combined nasals, 4.5; zygomatic width, 18.7 mm.

1. Ann. Mag. Nat. Hist. (5), XX, 1887, p. 129.
2. Op. cit., (6) 11, 1888, p. 408: Mt. Kinabalu, 8,600 ft.
3. Op. cit., (6) XIV, 1894, pp. 451 and 456: below 3,000 ft.

Specimen examined.—Nine males and one female from Lumu Lumu, 5,500 ft.

Remarks.—On the Kinabalu massif *Rattus alticola* seems to have developed three forms, or altitudinal subspecies.

The lowland form (*ochraceiventer*) has short, very spinous fur. The pelage on the under side is as spiny as that on the upper side, but shorter. The colour is bright, the upper parts being fulvous in general tone and the under parts even brighter and tinged with rufous. It is found in the primary forest of the lowland zone, that is below 4,000 ft.

The intermediate form (*kinabaluensis*) has the pelage longer and thicker and the under parts are less stiffly spinous. In colour the upper parts are much as in the lowland form although, on the series, the limbs are slightly brighter, but the under parts have changed to creamy white. This form was found only at 5,500 feet in dense, tall, very mossy and damp forest.

In the high-level form (*alticola*) the pelage is thickest and softest, the difference being especially marked on the under parts which are not spinous to the touch. The under parts remain whitish, but the upper parts have darkened and become colder in tone, losing all the fulvous element. This form was found among the stunted vegetation of the tree limit at 10,200 feet and also at the much lower level of 5,000 ft. on the Marei Parei spur which, however, is very open, boulder strewn country with scrub vegetation.