

on the Tsagyen hills, north of Ava, famous for their marble quarries, and on various hills in Pegu as far south as Henzada. In some places hundreds of specimens may be found adhering, in dry weather, to the surface of limestone rock, upon which alone it appears to occur, in the same manner as species of *Pupa* and *Clausilia* are frequently found in Europe, though rarely in India.

The animal of *H. tubiferum* is very small and black, of the usual Helicoidous form, with 4 tentacles, and so far as I could observe, presented no peculiarity.

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*A memoir on the Rats and Mice of India.*—By EDWARD BLYTH.

The following must be regarded as merely a somewhat rude attempt to reduce the present utter chaos of Indian *Muridæ* to some kind of approximation to systematic order; at all events, to present a *Conspectus* of the long series of names and descriptions, that should facilitate the future study of these small animals, and conduce eventually, no doubt, to an extensive reduction of the number of named species, and to the rectification of their perplexed synonyms. At all events, I have brought together every notice which I could find, descriptive of the *Murine* animals of India and the countries adjacent.

Genus GERBILLUS, F. Cuvier.

The Gerbilles are a group of burrowing field-rats, common (as a genus) to Asia and Africa, of gracile form, with small fore-limbs and inversely developed hind-limbs, a longish furred tail, the hairs of which are gradually lengthened towards the extremity into a kind of tuft, and with distinctly grooved upper rodential tusks. There appears to be one Indian species only.

G. INDICUS; *Dipus indicus*, Hardwicke, *Tr. Lin. Soc.* VIII. 279, pl. 7; F. Cuv., *Mamm. Lithog.*, II, t. 73 (not good); Hardwicke, *Ill. Ind. Zool.*—*G. Cuvieri*, Waterhouse, *P. Z. S.* 1838, p. 56;—*G. Hardwickei*, Gray, *Br. Mus. Catal., Mamm.*, p. 132;—*Meriones apicalis* (?), Kuhl, apud Gray; *Mus jencus*, B. Ham., *M. S.*; ‘Desert Rat’ of Elphinstone’s ‘Cabul’ (*vide* Introduction).<sup>\*</sup> For description of habits, *vide* W. Elliot, Esq., in *Madr. Journ. Lit. Sc.* X, 211.

<sup>\*</sup> The ‘Desert Rat’ of Arthur Conolly, ‘Overland Journey to India,’ I. 54, refers to the Jerboa (*ALACTAGA INDICA*, erroneously so called, of Gray).



On careful comparison of numerous specimens from Afghánstân, Sindh, Upper Hindustan, Lower Bengal, Midnapore district, Madras Presidency, and Ceylon, I am satisfied that all belong to one and the same species; the differences which have been stated to exist being merely indicative of individual variation.

A second species, however, inhabits Afghánstân,—the *G. ERYTHROURA*, Gray, *Ann. Mag. N. H.* X, (1842), p. 266: *vide* also *J. A. S.* XV. 139, Dr. Gray states—"Hab. *India*, Afghánstân." I doubt if it inhabits India, any more than does his *Alactaga indica*, *ibid.* p. 262, from "*India*, Candahar, at Quetta;" or his *LAGOMYS RUFESCENS*, *ibid.* p. 266, from "*India*, Cabul;" these latter animals are not at all likely to be found on the Indian side of the passes into Afghánstân, but are inhabitants of a region possessing essentially an European climate.

#### Genus NESOKIA, Gray.

*Ann. Mag. N. H.* X. (1842), p. 264. "Cutting teeth very large, flat in front, and smooth; grinders 3-3; front upper, large with three cross ridges; the middle oblong, and the hinder much narrower behind, each with two cross-ridges; hinder each with two ridges, the hindmost smallest, rather narrow behind; tail short, thick, with whorls of scales and scattered bristles; toes 4-5, moderate, the three middle sub-equal, long, the outer moderate; claws small, compressed; front thumb tubercular, with a rudimentary claw; ears moderate, naked.

"This genus is easily known from *Mus* by the large size of the cutting teeth and the comparative shortening of the tail; it appears to be intermediate to the Rats and RHIZOMYS," (J. E. Gray).

I have studied both MOTOMA and RHIZOMYS alive, in their indigenous haunts, and living examples of both of them; and can perceive no particular approximation in the instance of these two genera.

*N. INDICA*; *Mus indicus*, Geoffroy, Desmarest, p. 474; Lesson, *Manuel*, p. 266; Brandts *Maiz*, p. 114, t. 35; Schinz, *Synopsis Mammalium*, II. 174; *Arvicola indica*, Gray, *Hardw. Ill. Ind. Zool.*

"*M. supra cano-rufescens, subtus canescens; pedibus dorso concoloribus, cauda corpore paululum brevior; auriculis magnis, rotundatis, fuscis, nudiusculis; cauda nigricante. Pili omnes basi cani. Magnitudine M. decumani. Habitat. circa Pondichery.*"

In his Catalogue of the specimens of mammalia in the British Museum, Dr. Gray cites the name *M. indicus*, Geoffroy, as a synonym of his *Mus Kok*; the former name having the priority by many years; but in his subsequent Catalogue of the specimens presented by B. H. Hodgson, Esq. to the British Museum, Dr. Gray gives *M. indicus*, Geoff., as a separate species, and refers to



it the *M. rattus* (?) v. *rattoides* of Hodgson, the description of which indicates a very different animal, with tail longer than the head and body. He also dubiously refers the *M. brunneusculus*, Hodgson, to the same.

This is undoubtedly the common shortish-tailed field Rat of all India, with Ceylon; varying somewhat in shade of hue according to the colour of the soil on which it dwells. Though the reverse of gracile in its appearance, with much of the aspect of an *arvicola*, it is marvellously rapid in its movements, as it plays about the entrance of its burrow!\* And the type, if not the same species, occurs in Afghánstân; but I have not seen it from the eastward of the Bay of Bengal though it is likely enough to occur in the dry climate of the region of the upper Irawádi.

The Indian animal is excellently described by the Hon'ble Walter Elliot, in the *Madr. Journ. Lit. Sc.* X, 209 (1839), by the name *Mus* (*Neotoma*) *providens*, with *M. indicus*, Geoff. and *Arvicola indica*, Gray, cited as synonyms, and the Canarese name *Kok* or *Koku* also assigned to it.† He gives an elaborate account of the habits of the animal; and remarks that—"A variety found in the red soil is much redder in colour than the common *Koku* of the black land. Another variety, he adds, "is said to frequent the banks of nullahs, and to take to the water when pursued; but the specimens I have seen differed in no respect from the common kind, (of which they appeared to be young individuals,) except in size." "The dimensions of an old male were as follow:—length of body, 7 in.; of tail  $6\frac{1}{2}$  in. [!] sole  $1\frac{4}{10}$  in., weight 6 oz. 5 dr." According to my observation, the tail has not exceeded  $5\frac{1}{2}$  in., from any part of the country.

In the *Proc. Zool. Soc.* for 1835, p. 108, it is recorded that specimens were exhibited of eight species of Rats and Mice, collected in India by Walter Elliot, Esq. They were brought under the notice of the meeting by Mr. Gray, who stated that five of them were hitherto undescribed.\* \* \*. The mouse which Mr. Gray has figured from Gen. Hardwicke's drawings, in the 'Illustrations of Indian Zoo-

\* The species of RHIZOMYS are rather slow in their movements.

† "It seems necessary," remarks Mr. Elliot, "to distinguish this species by a new name, that of *indicus* being too general and indefinite. Geoffroy's animal is not sufficiently particularized, to indicate which of the Indian species he meant; and Gray's was given under the supposition that it applied to an ARVICOLA, which, he subsequently discovered, it did not (*P. Z. S.* 1835, p. 108). The present term seems sufficiently applicable to its habit of laying up a large store of grain for its winter food."



logy,' under the name of *Arvicola indica*, is really a *MUS*. A second time, therefore, the specific name *INDICUS* claims priority. Mr. Elliot subsequently presented specimens of this common Indian field Rat to the Society's Museum, which are before me as I now write.

In the *Mag. Nat. Hist. n. s. I.* (1837), p. 585, Mr. Gray describes a *Mus Kok* (!), with the synonym of *Arvicola indica*, Gray. "Length of body (dry)  $9\frac{1}{2}$  in., tail  $4\frac{1}{2}$  in.; hind-feet  $1\frac{3}{4}$  in. Inhabits India." Doubtless from one of Mr. Elliot's specimens; but how different the admeasurements taken from a dry skin! On the same occasion he describes a *Mus Hardwickei*. "Very much like *M. Kok*, but the skull is much wider and stronger, and rather larger; and the cutting teeth are nearly twice as wide, and are flat in front. The grinders are very little larger than those of that species. Inhabits India; gardens." I considerably suspect that these are merely adult and young of the same species! With numerous specimens before me from Lower Bengal, the Midnapore district, the Carnatic, S. Malabar, and Ceylon, I can recognise one species only, varying a little in shade of hue from different localities, and also somewhat in quality of fur, unless this latter difference may prove to be seasonal, as is not improbable. In his catalogue of the specimens of Mammalia in the British Museum, p. 110, Mr. Gray retains his *M. Kok* under *MUS*, and gives as synonym *M. (Neotoma) providens*, Elliot, *Arvicola indica*, Gray, and also *MUS INDICUS*, Geoffroy. (Why, therefore, not adopt this last and much the oldest name for the species?). And at p. 113, well removed from the former, he gives *NESOKIA HARDWICKEI*, v. *Mus Hardwickei*, Gray, and no other species is referred by him to *Nesokia* in that catalogue. But in his catalogue of the specimens and drawings of Mammalia and birds of Nepal and Tibet, presented by B. H. Hodgson, Esq., to the British Museum (1846), the *Kok* v. *providens*, is assigned to *Nesokia*.\*

So common and widely diffused a Rat as this is, throughout the plains of India, must needs be found in the valley of Nepal; and, if so, will be sure to have received one or more names from Mr. Hodgson.

\* The late Dr. Kelaart, in his *Prodromus Fannae Zeylanicae*, recognises apart *Nesokia Hardwickei*, Gray, (*Mus dubius*, Kelaart), and *Nesokia Kok*, Gray (*Arvicola indica*, Gray, and *Neotoma providens*, Elliot). A Cinghalese specimen presented by him to the Society is undoubtedly of the common Bengal species. His *N. Kok* appear to have been described from a distorted stuffed specimen, of at most a slight individual variety to the best of my judgment; and he states of it "Dentition as in the last species." (!)



One and probably more than one of the following descriptions in the *Ann. Mag. N. H.* XV. (1845), pp. 267—8, are likely to refer to *M. INDICUS*; and not any of these names occur either in the *Br. Mus. Catal.* of Dr. Gray, nor in the late Dr. Horsfield's Catalogue of the specimens of Mammalia in the India-House Museum, (1850); but some of them are noticed, as will be shewn, in the *Br. Mus. Catal.* of Mr. Hodgson's specimens.

"*MUS ? PYCTORIS*,\* H. characterized by its bluff face with short thick muzzle, and by its short tail, one-third short of the length of the animal. Pelage of two sorts, with the long piles sufficiently abundant, colours of *rattoides*, or of dusky-brown, with a very vague rufous tinge. Below fulvescent; long hairs all black; rest with hoary bases and black points. Inner piles mostly dusky. Snout to vent 7 in.; tail  $4\frac{1}{2}$  in.; head  $1\frac{7}{8}$  in.; ears  $\frac{1}{16}$ ; palma  $\frac{5}{8}$ ; plauta  $1\frac{1}{4}$ . Tenants the woods only;"—*i. e.* open jungle? (I take this to be a synonym of *NESOKIA INDICA*.)

"*MUS MYSTRIX*, H. Remarkable for its soft mouse-like pelagi, and for its tail covered with hairs, so as to conceal the annulated skin nearly. Fur soft, short, and of one kind only; colours clear; above dull fawn, below fulvescent. The piles above are dusky at their roots, black in their centres, and red at their tips. The tail is still shorter than in *Mus ? pyctoris*, being not two-thirds of the length of the animal. Snout to rump 6 in.; tail  $3\frac{3}{4}$ ; head  $1\frac{1}{2}$ ; ears  $\frac{1}{16}$ ; palma  $\frac{7}{16}$ ; plauta  $1\frac{1}{16}$ . Tenants the woods only, dwelling in burrows under the roots of trees, but not gregariously." (*Qu.* young of *NESOKIA INDICA*?)†

"*MUS* (?) *HYDROPHILUS*, H. [*Arvicola hydrophilus*, H., *J. A. S.* X. 915, [apud Gray]. Small Water-Rat of Nepal. Dwells in holes on the margins of ponds and rivers: characterized by its small ears, which are hardly above one-third the length of the head; also by its short tail, and by a pelage that is short and fine, though not so mouse-like as in the last. Above dusky-brown, below and the limbs nearly white. Long piles inconspicuous. Head larger and muzzle thicker than in the common land Rats. Snout to vent  $3\frac{1}{2}$  in.; tail  $2\frac{3}{4}$  in. head  $1\frac{1}{4}$  in.; ears  $\frac{1}{16}$  in.; palma  $\frac{1}{2}$ ; planta  $\frac{7}{8}$ ."‡

\* In *Br. Mus.*, a "specimen with skull, in very bad state." Also a "drawing, of natural size"—"Inhab. Nepal, central and northern hilly region." "Fur soft, dark brown, minutely gray varied, with scattered narrow, white bristles. Lower cutting teeth very narrow, rounded in front, middle of belly whitish. Tail nakedish. Hind-feet 1 in. 3 lin.; tail 4 in.; (imperfect) body and head 7 in.; skull  $1\frac{1}{2}$  in." (Gray).

† In *Br. Mus.*, "a flat skin, without fore-limbs; tail skinned at the end;" and "a drawing of natural size." "Inhab. Nepal, central and northern hilly region." "Fur yellow-brown, minutely black-varied; hair rather short and rigid, lead-coloured, with yellow tips, and with scattered narrow black bristles; beneath yellowish-white; tail hairy, yellow, hind feet 1 in.; tail  $3\frac{3}{4}$  in." (Gray.)

‡ *NESOKIA HYDROPHILA* apud Gray; who also admits his *Nesokia* (!) *kok* from Nepal, v. *M. providens*, Elliot, &c. In *Br. Mus.*, a "specimen without tail, imperfect skull, and drawing of adult and young, nat. size. Grey-brown, beneath whitish; fur very soft, with rather elongated, very slender, soft, longer hairs;



"MUS (?) MACROPUS, H. A Water-Rat like the last, but twice as large. Distinguished by the largeness of its feet, and also by the fine pelage and the proportions of the last, as well as by a similar bluff face, though less so than in *M. (?) pyctoris*. Above smoky black, below smoky-grey. Legs dark, toes pale. Snout to rump  $7\frac{1}{4}$  in.; tail 6 in.; head  $2\frac{1}{8}$  in.; ears  $1\frac{1}{8}$  in.; palma plus 1 in.; planta  $1\frac{3}{8}$  in.; weight 6 oz." (Hodgson.)

In *J. A. S. XV.*, 139, I referred a species from the extreme *N. W.* of India and Afghánstân, to this *Nesokia* group by the name *Mus Huttoni*, nobis; and Mr. F. Moore has since described a *Nesokia Griffithii*, Horsfield, from Afghánstân, in the Catalogue of the Indian-House specimens of mammalia, which is probably the same animal, notwithstanding certain discrepancies in the descriptions.

*N. HUTTONI*, nobis—"Bears a near resemblance to *M. INDICA* (v. *kok*), but the tail is shorter and the general colour much lighter, resembling that of the Gerbilles. On comparison of the skulls, the Zygomatic arch is seen to be conspicuously broader anteriorly; and the palate is much narrower, and contracted to the front: but the most obvious distinction consists in all the teeth, both incisive tusks and grinders, being considerably broader and stronger. In other respects, the skulls of these two species bear a very close resemblance. Length, minus the tail, about 6 in.; the tail, (vertebræ,) 4 in.: tarsus with toes and claws,  $1\frac{3}{8}$  in.; ears posteriorly  $\frac{1}{2}$  in.; to anteal base  $\frac{3}{4}$  in. Fur soft and fine, blackish for the larger basal half of the piles—the surface pale rufescent-brown, deepest along the crown and back, pale below, and whitish on the throat; whiskers small and fine, and chiefly black; tail naked; feet light-brown: incisive tusks buff-coloured; the enamel of these has been partially worn away on those of the upper jaw." (Bl.)

This animal "occurs south of Bwhawulpore, and is abundant in Afghánstân, from Quetta to Girishk, throwing up the mould after the manner of the mole. It feeds on herbs and seed, and burrows in the ground beneath hedge-rows and bushes, as well as along the banks and ditches. Its nest is deep-seated, and it constructs so many false galleries immediately below the surface, that it is difficult to find the true passage to its retreat, which dips down suddenly from about the middle of the labyrinth above. In the gardens and along the sides of water-courses in the fields at Kandahar, their earth-heaps are abundant." (Hutton.)

*NESOKIA GRIFFITHII*, Horsfield "Fur very soft and silky: colour above, dusky chesnut-brown with streaks of a plumbeous tint, the separated hairs being of a leaden-colour at the base, and chesnut-brown towards the extremity; chin, chest, and under parts of a lighter tint, passing into a greyish-leaden colour on

ears moderate, rounded; whiskers black at the base, slender, weak; front cutting teeth broad, yellow; grinders very large, much  $\frac{5}{8}$  larger than in *Mus bandicota*. Hind-foot 1 in. 8 lin.; skull to back of palate 1 in.  $1\frac{1}{2}$  lin.; grinders  $4\frac{1}{2}$  lines long and 2 lines wide." (Gray).



the abdomen. Ears moderately large: thumb of the fore-feet very minute. Cutting teeth flat anteriorly, comparatively large, broad and nearly white. Tail nearly naked, and shorter than the body. Length from snout to root of the tail,  $6\frac{1}{2}$  in.; of the tail 3 in. Hab. Afghánstân, Pushut. (F. Moore.)

The skin of the body of the specimen was probably a little stretched, and that of the tail shrunk, if the caudal vertebræ were not retained within it, as is very commonly the case with skins prepared for stuffing of this group of animals.

All of the foregoing names are applied to animals of a bluff *arvicoline* or vole-like aspect, with tail shorter than the head and body; excepting the *M. rattus* et *rattoides* of Hodgson, which Dr. Gray refers to *M. indicus* as adopted by him, whatever that species may prove to be, though it does not seem likely to turn out a *Nesokia*, and is not classed as such by Dr. Gray.

MUS BANDICOTA, Bechstein; founded on the *Bandicota Rat* of Pennant's 'Quadrupeds,' p. 377; the name, according to Mr. Elliot, being a corruption of *Pandi-Koku* (literally Pig-rat), Telegu, of the Wuddur caste, S. India.\* *M. giganteus* Hardwicke, VII. p. 306, t. XVIII.; *M. perchal* et *M. malabaricus*, (Pennant) Shaw; *M. ikria*, B. Ham. (*ined.*); *M. nemorivagus*, Hodgson, *Ann. Mag. N. H.* XV. (1845), p. 206, *J. A. S. V.* 234, *M. (Neotoma) giganteus*, Elliot, *Madr. Journ. Lit. Sc.* X. 209 (who thus classes it in the same particular division as the NESOKIA INDICA).

Gen. Hardwicke figures and describes this huge Rat of extraordinary size; stating that—"The subject here described and figured was a female. Its weight was 2 lbs.  $11\frac{1}{2}$  oz. Its total length  $26\frac{1}{4}$  in., of which the tail measured from root to tip 13 in. The male grows larger and weighs 3 lbs. and upwards." Hence Mr. Hodgson was induced to consider his *nemorivagus* as distinct, being about one-third smaller. He gives:—snout to rump 12 in.; tail  $9\frac{1}{2}$  in.; weight 17 to 20 oz. "A full grown male," according to Buchanan Hamilton (*MSS.*), "measures  $10\frac{7}{10}$  in. from nose to tail, and the tail  $8\frac{3}{4}$  in." The stuffed specimens in the Society's collection are from Ceylon; and measure:—the head and body about 13 in., and tail (vertebræ)  $9\frac{1}{2}$  in. These well agree with Buchanan Hamilton's published figure.

I find, however, on reference to the late Dr. Kelaart's *Prodromus Faunæ Zeylanicæ*, that a large Cinghalese Bandicoot Rat measured

\* In Australia, the appellation 'Bandicoot' has been currently adopted for a genus of small marsupial animals, the *Perameles* of Shaw.



—"head and body 14 in.; tail 13 in.; weight 2 lbs. 10 oz. Rarely are larger specimens found."

Dr. Kelaart continues—"The Bandicoot is found in all parts of the island. Those from Newera Ellia are particularly large, and of a darker colour than those from the maritime provinces. A specimen found in the neighbourhood of Kandy, had a rufous tinge on the posterior portion of the back.\* \* \* These animals are very destructive to grain-crops. At Newera Ellia, they are the farmers' pest; fields of potatoes and beds of peas are much injured by these rapacious creatures; and the dove-cot and poultry-yards are not exempted from their attacks. Some classes of Malabars are very partial to the flesh of these Rats, and they are much sought after by the coolies on coffee estates, who eat them roasted."

The late Dr. Cantor includes this species in his catalogue of the Mammalia inhabiting the Malayan peninsula; but I have never seen it from the Indo-Chinese region. It inhabits various parts of India; but I never succeeded in procuring a fresh specimen from the vicinity of Calcutta. It is not unusual, however, here as elsewhere, to hear a full-grown *MUS DECUMANUS* designated a 'Bandicoot.' This huge species would seem to be intermediate in habits as in structure, to *M. INDICUS* and *M. DECUMANUS*.\*

*M. SETIFER*, Horsfield, figured in his Zoological Researches in Jáva: *M. giganteus* juv. Temminck, apud Gray. "Allied to the *M. BANDICOTA*, but clearly distinct as a species." Horsfield's Catalogue. Inhabits Sumátra, Jáva and Borneo; and Dr. Cantor gives it from the Malayan peninsula (Penang), *J. A. S.* XV. 254. "The larger of two individuals, captured in gardens, measured:—head and body  $10\frac{1}{8}$  in.; tail  $7\frac{1}{2}$  in." (Cantor.) In his *Br. Mus. Catal.*, Dr. Gray mentions a 'black variety,' and a "brownish variety with face brown" from Tasmania! In the 'Zoology' of the voyage of the 'Samarang,' Dr. Gray has attempted a *Conspectus* of the Zoology of the Malayan peninsula and islands, wherein he includes but five species of *MUS*; viz., *M. SETIFER*,—*M. BANDICOTA*, from the Malayan peninsula, Jáva, and Sumátra, *M. DECUMANUS*, Pallas from Jáva, Sumátra, Banda, Borneo, Celebes, Amboyna, Timor, Malayan peninsula (Penang).

\* A "specimen, from Egypt," is given in the *Br. Mus. Catal.*, as the Egyptian Bandicoot, *M. GIGAS*.



M. RUFESCENS, Gray, apud Gray (*flavescens*, Elliot), from Penang, on the authority of Cantor; and M. MUSCULUS (?) apud Cantor, from Penang. We possess two specimens from Malacca, which bear considerable resemblance to each other except in size; but one is certainly not the young of the other, as shewn by the comparative size of the feet. Had they been of the same species, the feet of the smaller specimen would have been considerably larger. The larger of the two is perhaps the young of M. SETIFER; measuring about  $6\frac{1}{2}$  in. long: tail  $5\frac{1}{2}$  in.: hind-foot  $1\frac{7}{16}$  in.: auricles of medium size, naked: tail with close rings fringed with short setæ: fur rather coarse on the upper parts, approaching to the spinous character, and the soft under-fur not shewing at the surface; of an uniform yellowish rufescent brown above, a little paler below, passing into dull albescent on the throat: the whiskers reach to beyond the ears, and are of a shining dark brown colour; and there are only a few fine long hairs protruding beyond the general surface of the fur of the back; the smaller specimen appears to be the young of M. ROBUSTULUS, nobis, and is doubtless the M. RUFESCENS apud Cantor; but its fur tends somewhat unusually to be weakly spinous. The general colour is of a dull *murim*-brown above, slightly albescent below, passing to dull white on the throat. Length of head and body about  $4\frac{1}{2}$  in.; and of hind-foot  $\frac{15}{16}$  in., *Mus setifer* is included in M. ? of E. L. Layard's 'List of the Mammalia observed in Ceylon,' *Ann. Mag. N. H.*, 2nd series, VII. (1851), p. 405; but not in Dr. Kelaart's *Prodromus Faunæ*.\*

MUS DECUMANUS, Pallas, *Glires*, 91; Buffon, *H. N.* VIII. t. 27: *M. javanus*, Pallas, apud Schinz, *M. norvegicus*, Buffon. To this species Dr. Gray refers (with a mark of doubt), in his Catalogue of Mr. Hodgson's collection, the *M. decumanoides*, Hodgson, (*nec* Waterhouse, *nec* Horsfield), which does not appear to have been described; also *M. brunneus*, Hodgson, *Ann. Mag. N. H.* XV. (1845), 267; described as follows:

'*Mus brunneus*, H. Common house rat of Nepal. As nearly allied to *decumanus* as *nemorivagus* is to the Bandicoot, [*i. e.* identical]; above rusty-brown; below rusty, more or less albescent. Extremities pale, fleshy-white nearly. Tail barely longer than the head and body. Long piles sufficiently numerous,

\* Another species has been (or is to be) described from those islands, by the same naturalist, as M. PALMARUM. I have not seen any description. The name would indicate the habits of MUS RUFESCENS.



but not rigid. Snout to vent  $9\frac{1}{4}$  in. ; tail  $9\frac{1}{2}$  in. ; head  $2\frac{1}{4}$  in. ; ears 1 in. ; palma  $\frac{7}{8}$  in. ; planta  $1\frac{5}{8}$  in. ; weight 12 to 15 oz. (Hodgson)."

"*M. brunneusculus*, H. Lesser Brown Rat of Nepal. Closely resembling the last, but considerably smaller, as proved by numberless specimens: above rusty-brown, below rusty. Extremities pale. Snout to vent  $8\frac{1}{4}$  in. ; tail 9 in. ; head  $2\frac{1}{8}$  ; ears 1 ; palma —? ; planta —? ; weight 9 to 10 oz." (This as before remarked, Dr. Gray assigns dubiously to *M. indicus*, Geoffroy, *apud* Gray ; nec *M. indicus* *apud* nos.)

In the *Ann. Mag. N. H.*, N. S. XVI. (1855), p. 112, Dr. Horsfield describes :—

"*Mus tarayensis*, Hodgson. Nearly allied to *M. brunneusculus*. Colour of the body and head above, dark brown, delicately variegated with blackish and rufous hairs ; a very slight gloss on the surface. Outer sides of the extremities, rather darker. Under parts from the chin to the vent, and inner parts of the extremities, greyish-brown, with a rusty shade. Tail shorter than the body, tapering to an abrupt tip.\* Head lengthened and compressed, muzzle gradually tapering to an abrupt tip—*Distinguishing character*. A dark-brown surface with a slight gloss. Head lengthened. Tail shorter than the body. Underneath rusty-grey. Mr. Hodgson's collection," continues Dr. Horsfield, "contains only a single specimen, and further observations are required to confirm the distinctness of this species."

MUS PLURIMAMMIS, Hodgson, *ibid*. "Colour above, brown, with a rufescent shade ; fur soft, consisting of brown and rufous hairs intermixed in equal proportions, forming an uniform upper surface ; a rather obscure band extending from the gape over the cheek, terminating under the ears ; and the abdomen and adjoining parts, rufous-grey. Head proportionally short, muzzle abrupt, ears moderate. Tail equal in length to the body, tapering to a sharp point, and minutely annulated. Length of the head  $2\frac{1}{2}$  in. ; of the body from the neck to the snout  $5\frac{1}{2}$  ; of the tail the same."

"The distinguishing character, according to Mr. Hodgson," remarks Dr. Horsfield, "rests on the number of teats exceeding that of other species ; but the number is not stated !" This is perhaps a GOLUNDA ?

Dr. Kelaart called "the attention of observers to a yellow reddish-brown variety of the common house Rat, found at Trincomali and Batticaloa which may probably," he suggested, "be the *Mus decumanoides* of Hodgson :—this Rat may be thus described ;—above, dark yellowish-brown, with long thin black hairs. Beneath, dingy, or yellowish-ash, with a few long grey hairs. Shorter fur of the back very similar to that of *M. rufescens*, (Gray, v. *flavescens*, Elliot) ; but much darker and of a slight rufous or reddish shade on the rump and posterior limbs. Base of hairs ash. Feet brown ; soles purplish. Length of head and body  $7\frac{1}{2}$  in. ; tail  $8\frac{1}{2}$  in. ; planta 1,  $1\frac{1}{10}$  in. This is the common

\* *Qu.* Mutilated and healed ? E. B.



house Rat of Trincomali, smaller than the *MUS DECUMANUS*,\* of which we have seen only a few specimens in Trincomali, where it is rare in houses in the town; but abundant in the dock-yard. *MUS DECUMANUS* is not very common in the hilly parts of the island: other Rats seem to replace it altogether on still higher parts. At Newera Ellia, where we resided for seven months, not one was observed. But it will not be long, ere the Brown Rat will find its way there also. (*Prodromus Faunæ Zeylanicæ*, pp. 60-1.)

Dr. Kelaart also describes—

“*MUS CEYLONUS*, Kelaart. Fur soft, lead colour; hair of upper parts tipped with dark fawn and black. Ears large, naked. Whiskers tinged black. Tail longer than the head and body, scaly. Head and body  $4\frac{3}{4}$  in.; tail 6 in. This small Rat is found in out-houses in the cinnamon gardens at Colombo. I have no reason to think it to be the young of the former species. The teeth were well developed. The darker colour and long tail will easily distinguish this species from other Colombo Rats.” (*Ibid.*, p. 61.)

The common European Brown Rat is nowhere a more intolerable nuisance than in Calcutta and its vicinity: but it is not generally distributed over the interior of the country. In S. India Mr. Elliot states that “it is not so common above the Ghâts as below.” Col. Sykes, however, states that “the Norway or Brown Rat abounds in Dukhun.” I observed it to be very numerous at Akyab; but further south, at Rangoon and Moulmein, also in Tavoy and Mergui, I remarked no traces of it; nor have we ever received specimens from that line of coast; though Dr. Cantor gives it from Penang, and notes it as “*cosmopolita*.” Other sites in the intertropical Eastern Archipelago are noted in p. 334; and the nuisance that Dr. Kane found this species to be in the course of his arctic explorations is sufficiently described in his most interesting narrative. In N. America, Mr. Catlin describes its first appearance among the wigwams of the far west, where its advent was rather hailed at first by the red men, on account of its attacking and destroying the indigenous *MERIONES*; but it fast proved to be by far the greater pest of the two, and soon domiciled itself as completely among the red men as elsewhere. According to Fischer, this noxious animal was introduced into Europe about the year 1730, and the current statement is that it originated in Persia or its vicinity; if so, it should at least have spread into

\* “A large Brown Rat at Colombo measured, the head and body 10 in., and tail 11 in.” (Kelaart.) A specimen with which he favored the Society as an example of his small house Rat of Trincomali appears to me to be a half-grown *M. NEMORALIS*! and a tailless specimen from Newera Ellia appears to be quite similar.



Afghánstân, where, according to Capt. T. Hutton, it would seem to be unknown in Kandahar (*J. A. S.* XV. 140). According to Mr. F. T. Buckland, "it made its appearance in Paris about the middle of the eighteenth century, and in England not many years earlier. It is now agreed by most naturalists," remarks this author, "that it is a native of India and Persia; that it spread onwards into European Russia, and was thence transferred by merchant-ships to England and elsewhere." (*Curiosities of Natural History*, 5th Edit. p. 62.)

If an indigenous inhabitant of *India*, it would undoubtedly be more generally diffused over this, if not also the neighbouring countries. I suspect that the trans-Baikalian region of E. Asia has at least as good a claim to the *discredit* of originating the abominable Brown Rat as any other. *MUS DECUMANUS* is included in the list of Mammalia inhabiting the Amur territories by Mr. E. G. Ravenstein, in his 'Russians on the Amur,' &c., (1861), p. 316; and again, at p. 323, "It is owing to the rapacity of the *MUS DECUMANUS* that the Tunguzians build their store-house on four poles, to keep the contents beyond its reach; and among the Goldi the Manchus are nicknamed 'Sungari,' *i. e.* *Rats*, on account of the rapacity with which they exact tribute." Whatever the extremes of temperature and climate, *MUS DECUMANUS* contrives to find itself a home, and to increase and multiply about human abodes and granaries, to the serious detriment of not quite all-subduing man! Calcutta specimens are undistinguishable from British; and I observe no marked difference in one received from Amoy, except that it is in finer pelage and rather brighter coloured than usual.

*M. DECUMANOIDES*, Temminck (*nec* Hodgson), is given in Dr. Horsfield's Catalogue of the Mammalia in the India House Museum: "two specimens, from Bengal, presented by Gen. T. Hardwicke." I have seen no description. Surely not *M. nemoralis*, nobis?

*MUS RATTUS*, L. (Buffon, *H. N.* VII. 278, t. 36.) The European Black Rat I have only seen from vessels in the port of Calcutta, which differs in no respect from others received from France. Mr. Elliot, in his 'Catalogue of Mammalia in the Southern Mahratta country' notes it as "rare," and Mr. Layard includes it from Ceylon, where Dr. Kelaart obtained one individual in a house, in Trincomali, remarking that he had



not seen it from any other part of the island. "No doubt," he adds, the Black Rat has been introduced by ships which frequent the various ports of the island." This, and not *M. DECUMANUS*, is said to be the species which has overrun New Zealand, and is there supposed to have exterminated the frugivorous native Rat of the country, stated to have been of frugivorous habits.\* The *M. rattus* v. *rattoides* of Hodgson, Dr. Gray refers to *M. INDICUS*, Geoffroy. It is thus described.

"*M. rattoides*, H. Black Rat of Nepal as similar to the Black Rat of Europe, as the foregoing, [*M. brunneusculus*,] is to our Brown Rat, and bearing in Nepal the same relation the one to the other as in Europe. Above, dusky or blackish brown; below, dusky hoary. Limbs dark, fingers pale; tail decidedly longer than the body and head; long piles sufficiently numerous. Snout to vent  $7\frac{1}{2}$  in.; tail  $8\frac{3}{4}$ ; head  $1\frac{7}{8}$ ; ears  $\frac{7}{8}$ ; palma  $\frac{1\frac{3}{8}}{1\frac{3}{8}}$ ; planta  $1\frac{1}{2}$ ; weight 5 to 7 oz."

Specimens presented by Mr. Hodgson to the British Museum are marked as "A. B. Reddish, bad state. C. B. Rather brown, not good state. G. I. Three skulls, J? Var. darker, with whitish bristles, no hind-feet. *M. brunneusculus*, Hodgson E. (?)"

\* Referring, however, to the 'Fauna of New Zealand' in Dieffenbach's work, I find that he cites *MUS RATTUS*, L., with a note of doubt; and adds—"It would be interesting to see whether it is the European, the Indian, or the New Holland Rat, that has been introduced, or if there may not be more than one kind." What he means by the *European* or the *Indian* Rat is not so clear. But he adds—"There exists a frugivorous native Rat, called *Kiore maori* (indigenous Rat) by the natives, which they distinguish from the English Rat, (*not the Norway Rat*), which is introduced, and called *Kiore pakia* (strange Rat). On the former they fed very largely in former times; but it has now become so scarce, owing to the extermination carried on against it by the European Rat, that I could never obtain one. A few, however, are still found in the interior, viz., at Roturua, where they have been seen by the Rev. Mr. Chapman, who described them as being much smaller than the *Norway Rat*. The natives never eat the latter. It is a favorite theme with them to speculate on their own extermination by the Europeans, in the same manner as the English Rat has exterminated their indigenous Rat." (Dieffenbach's *Travels in New Zealand*, &c., II. 185.)

Mr. F. T. Buckland, however, quoting the *Field* newspaper, on the subject of the imported Rat of New Zealand, mentions that "with the exception of a small species of Rat, now nearly extinct, having been all but exterminated by the importation of the *common Norway Rat*, there is not a single indigenous animal [mammal] in the country; the Rats have become a serious nuisance." (Vide, however, p. 168 *antea* regarding a small aquatic furred quadruped not improbably an *ORNITHORHYNCHUS*.)

Of *MUS RATTUS*, Mr. Buckland writes—"The Black Rat, or as it is sometimes called the old English Rat, does not seem to be an aboriginal occupier of the British soil. The earliest mention of it is by Genver, in his *Historia Animalium*, published at Zurich about the year 1587. It is probable that it was introduced into Britain from France, the Welsh name for it being to this day, as I have it from a gentleman of Welsh extraction *Ilygodyn Frenziz*,—the 'French mouse.' " Certainly, the remains of neither *MUS RATTUS* nor of *M. DECUMANUS* have been found fossil in the British island, as those of *ARVICOLA AMPHIBIA* are so abundantly.



In a late No. of the Proceedings of the Linnæan Society\* it is shewn that, in London, the *M. DECUMANUS*, *M. RATTUS*, and *M. ALEXANDRINUS*, interbreed and commingle, yielding fertile hybrids of all degrees of intermediateness.

*MUS ANDAMANENSIS*, Blyth, *J. A. S.* XXIX. 103. *M. Nicobariensis* (?) Scherzer, 'Zoology of *Novara* Expedition.'

The indigenous Rat of the Andaman Islands. Length about 8 in.; tail the same; ears much as in *M. DECUMANUS*. The fur a shade darker on the back than in that species, paler on the sides, and dull white below; the long piles at once distinguished by their flattened spinous character, which is also slightly the case in *M. RATTUS*, though much less conspicuously than in the present species. It would appear to be a burrower in the ground.

There are certain Indian Rats with the tail longer than the head and body, of arboreal habits, building nests in the branches of trees, never burrowing in the ground, and when they enter houses, (the commonest Bengal species (*M. RUFESCENS*) at least,) very commonly hide or attempt to hide during the day, in the *jilmils* or venetian blinds of apartments. The largest of these I have termed,—

*M. NEMORALIS*, Blyth, *J. A. S.*, XX. 168. This resembles the next, except in being considerably larger, much less rufescent above, and the under parts are merely paler or dull greyish brown, occasionally somewhat albescent. Length about  $8\frac{1}{2}$  in., tail  $9\frac{1}{2}$  in., hind-foot  $1\frac{1}{2}$  in. Inhabits Lower Bengal and also Ceylon.

*MUS RUFESCENS*, Gray, *M. N. H.*, *N. S.*, I. (1837), p. 585, apud Gray, though the description does not apply, and the tail is stated to be shorter than the head and body, whereas the reverse is the case.†

\* *Proc. Lin. Soc.*, Feb. 6th, 1862, p. 66: also *Zoologist*, p. 7983.

† "*M. RUFESCENS*, Gray. House Rat [!] Fur pale brown; beneath, yellowish-grey. Under fur lead coloured, with numerous slender brown bristles, marked with a deep central channel, ending in a black hair-point; of the chin and under sides, softer, with whitish slender bristles. Tail nearly as long as the body [!], with rather small square scales, and very short hairs. Feet brown; claws white, covered with white hairs. Length of the body and head  $6\frac{1}{2}$  in.; tail  $5\frac{3}{4}$  in. [!], hind-foot  $1\frac{1}{4}$  in.; to base of thumb  $7\frac{1}{2}$  lines. Inhabits India."

It is utterly impossible to recognise the species from the foregoing description. On the same occasion Dr. Gray described—

"*M. ASIATICUS*, Gray. Pale brown blackish, varied. Ears large, nakedish. Cheeks, chin and beneath, greyish. Whiskers elongate, black. Tail as long as the body and head, with short adpressed black hairs, longer and more abundant near the tip. Cutting teeth smooth, and yellow in front. Thumb of fore-feet quite rudimentary, slightly clawed. Sole of hind-feet bald to the heel, with six tubercles; outer hinder largest. Heel narrow, one-third the length of the foot.



*M. flavescens* et *rufus*, Elliot; *M. arboreus*, B. Ham., Horsfield's Catalogue, and figured by this name in one of B. Hamilton's unpublished coloured drawings; (vide *J. A. S.*, XX. 168); *M. montanus*, *Kandianus*, et *tetragonurus*, Kelaart *J. A. S.*, XX. 169, 185. In general about 7 in. long, with tail 8 to  $8\frac{1}{2}$  in. Colour rufescent, brown above, white or yellowish white beneath, mostly abruptly separated from the hue above, and rarely gradually blending. Inhabits perhaps all India, with Ceylon, also China;\* and as Mr. Hodgson could scarcely but have met with it in the valley of Nepal, I take the following also to refer to it.

*Mus Caudator*, Hodgson; described in Horsfield's Catalogue of the Mammalia in the E. I. Museum, p. 144. "Above, chesnut-brown with a rufous shade, more clear and passing into reddish on the rump; underneath from the chin to the vent, with interior of the thighs, white, with a very slight yellowish shade. Muzzle rather sharp, ears proportionally long. Body and head,  $5\frac{3}{4}$  in. long; tail, in the prepared specimen, 6 in." (A young individual?) "Tail exceeding the body in length," Hodgson, *Ann. Mag. N. H.*, 2nd series, III. (1849) p. 203.

The *MUS PALMARUM*, Scherzer, from the Nicobar islands, probably belongs to this group.

*M. CINNAMOMEUS*, Blyth, *J. A. S.*, XXVIII. 294. "Like *M. flavescens*, but smaller, with proportionally longer tail and softer fur, of a fine bright cinnamon colour, with inconspicuous black tips, the under-parts white, which is abruptly divided from the cinnamon hue above. Length of head and body about 6 in., the tail  $7\frac{3}{4}$  in., and

The ball of the outer toes rather less than half the distance from the front of the foot. Inhabits India." Dimensions not stated.

In the *Brit. Mus. Cat.* p. 109, specimens are recorded from Mexico and Bahia! Another is stated to have been received from *India*, on which the description was founded.

Dr. Kelaart gives a *MUS ASIATICUS*, Gray, with a note of doubt. "Head and body (of a full grown *enciente* female) 6 in.; tail  $5\frac{1}{4}$  in. Fur soft; above, pale brown mixed with black; sides, ashy-grey. Beneath, pure white, but not so defined as in *MUS RUFESCENS* (*flavescens*, Elliot); tail rather thin, shorter than the head and body. Ears large, slightly villous. Limbs slender. *Geographical distribution*, India, Ceylon."

In Dr. Kelaart's *Prodromus Faunæ Zeylanicæ* we have *Mus flavescens*, Elliot (syn. *M. rufescens*, Gray, and *M. rufus*, Elliot), with var. *rufo flavescens* (syn. *M. tetragonurus*, Kelaart); also var. *Kandianus* (syn. *M. Kandianus*, Kelaart); and *M. nemoralis*, Blyth (erroneously described, syn. *M. arboreus*? apud Kelaart). Specimens of all these were received in the Society's Museum from Dr. Kelaart, and may be positively referred to *M. RUFESCENS*, Gray, (apud Gray). It is therefore useless to quote his descriptions; but he also sent the true *M. NEMORALIS*, nobis, of which I take his "small house Rat of Trincomali" to be a half grown example.

\* We have a Chinese specimen, presented by R. Swinhoe, Esq.



hindfoot  $1\frac{1}{4}$  in." Two specimens received from the late Major Berdmore, of Schwe Gyen, on the Sitang river, which separates Pegu from Martaban. The upper parts of this species are as brightly coloured as in the British Dormouse (*MYOXUS AVELLENARIUS*), or scarcely less so.

*MUS NIVIVENTER*, Hodgson, *J. A. S.*, V. 234; *Ann. Mag. N. H.*, XV. (1845), p. 267, a house Rat. Proportions and characters of the last [*rattoides*], but tail rather shorter, and long piles of the pelage rarer. Size less. Above, blackish brown, shaded with rufous; below, entirely pure white, tail and all. Snout to vent  $5\frac{1}{4}$  in.; tail 6 in.; weight 4 to 5 oz., of rare occurrence in Nepal.\* Col. Tytler brought two specimens in spirit from Masuri, which I have considered to be this, and have noticed in *J. A. S.*, XXVIII. 295, as "a well marked species, rather larger than as originally described." A male measuring 6 in. long, with tail 7 in., and hind-foot nearly  $1\frac{1}{2}$  in., female even larger or 7 in. long, with tail  $7\frac{1}{2}$  in. Two specimens, from Landour, I have supposed to be of this race; but they are very like *M. RUFESCENS*, only with coarser and sub-spinous fur of duller colouring, and the minute setæ on the tail are dusky-brown.†

*MUS ROBUSTULUS*, nobis, *J. A. S.*, XXVIII. 294; also *M. RUFESCENS*, Gray (?), *var ? ibid.*; and (I suspect) *M. RUFESCENS*, auct. of Burma and Penang, auctorum: *M. rattus*, brown *var*, apud nos, *J. A. S.*, XVII. 559 (?) perhaps also *M. Berdmorei*, nobis, *J. A. S.*, XX. 173. The common Rat of Lower Pegu and the Tenasserim provinces, taken about houses at night, but I think not a burrower. The description of *M. ROBUSTULUS* was taken from a particularly fine specimen preserved in spirit; much like *M. RUFESCENS*, but the upper parts are darker and less rufescent, and the tail about equals the head and body in length. One example procured in the vicinity of Calcutta, or perhaps this should rather be regarded as a variety of *M. RUFESCENS*.

\* In *J. A. S.* V. 234, it is thus described "Above, saturate black-brown; below, pure white, tail considerably longer than the body, and paled on the inferior surface."

† "Dark brown; the cutting teeth very narrow and slender; hind-feet slender, 1 in. Length of head and body,  $6\frac{1}{2}$  in." (Gray, in *Cat. of Mr. Hodgson's specimens*). Probably, therefore, not the same as the above; the fore teeth of which are of the usual breadth, and the hind-foot measures  $1\frac{3}{8}$  in. (.....? Specimens.)



*M. Berdmorei* is thus described—"Length about a foot, of which the tail is not quite half. Ears posteriorly  $\frac{3}{8}$  in. Hind-foot  $1\frac{3}{8}$  in. Fur shortish, even coarse and hispid, but not spinous, of one quality, with no long hairs intermixed. Its colour grizzled grey, [dull brown] above, unmixed with rufous, below and on the feet, white. Rodentia tusks white. Tail rather more copiously clad than usual with long hairs." (E. B.) We have three specimens from Mergui, neither of which accords well with either of the others. One bad skin is decidedly *M. ROBUSTULUS*; that of *M. Berdmorei* has peculiarly hispid fur; and the third (entire in spirit) has dark upper-parts and very white lower-parts, also smaller front-teeth.

*MUS NITIDUS*, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 267. "Distinguished for its smooth coat or pelage, wherein the long hairy piles are almost wanting. It is a house Rat, like *M. NIVIVENTER*, but much rarer, and frequents the mountains rather than the valleys. Structure nearest to *rattoides*, and colour very similar to that or dusky brown above and dusky-hoary below. Long piles  $\frac{1}{16}$  in. long; basally horny, apically black. Short piles cinereous below, with pale rufous tips. Snout to vent  $6\frac{1}{2}$  in.; tail  $7\frac{1}{4}$  in.; head  $1\frac{1}{16}$  in.; ears  $\frac{3}{4}$  in.; palma (with nail)  $\frac{1}{16}$  in.; weight  $3\frac{1}{2}$  oz." We have several specimens of what I take to be this Rat from Darjiling: they are especially distinguished by the fineness and softness of the fur. One specimen only of eight, from Darjiling, which I refer to this species has the lower-parts pure white, abruptly defined; but it is obviously of the same species as the other, and one supposed *MUS RUFESCENS* from China (*J. A. S.*), seems really not to differ, except in being not full grown.

*MUS HORIETES*, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 268. "Dwells in houses and out-houses. A small land species with fine pelage, and no peculiarity of physiognomy or proportion. Tail longer than the animal. Colour above, sordid brown; below, sordid white. Snout to rump 4 in.; tail  $4\frac{1}{4}$ ; head  $1\frac{1}{4}$ ; ears  $\frac{7}{16}$ ; palma  $\frac{1}{2}$ ; planta  $1\frac{1}{8}$ ." Hodgson.

*MUS FULVESCENS*, Gray, Catalogue of Mr. Hodgson's specimens, p. 18. "Fur pale fulvous, hair very soft, lead coloured, with bright yellow tips, and interspersed slender black bristles; throat, belly, and beneath, pure white; tail elongate, nearly bald; cutting teeth nar-



row; skull about 1 in., 2 lin.; hind-feet about 1 in." (Gray). No other measurements given! "Nepal."

MUS *ÆQUICAUDALIS*, Hodgson, described in Horsfield's Catalogue, p. 144. "Pure dark brown above, with a very slight cast of rufescent in a certain aspect; underneath, from the chin to the vent with interior of the thighs, yellowish-white. Ears nearly an inch long; head proportionally long. Dimensions from the snout to the root of the tail,  $8\frac{1}{2}$  in.; tail in the living animal, equal in length to the body; head  $2\frac{1}{2}$  in." (Hodgson.)

Of all of the foregoing species or races described by Mr. Hodgson, carefully prepared specimens are most acceptable; and residents in the hill-stations should be able to identify at least some of them, and so help to elucidate such distinctions as may really exist among them.

MUS *CONCOLOR*, nobis, *J. A. S.*, XXVIII. 295 (the young); and *M.* (unnamed), p. 294 *ibid.*, (the adult). Common small thatch Rat of Pegu and Tenasserim provinces. This species conducts from the long-tailed Arboreal Rats to the ordinary house Mice. Certain Arboreal Mice that are diminutives of the former constitute the *VANDELEURIA* of Gray *Ann. Mag. N. H.*, X. (1842), p. 265: such are—

MUS *OLERACEUS*, Bennett, *P. Z. S.* 1832, p. 121: *M. oleraceus et (olim) longicaudatus*, Elliot; *M. dumeticola*, Hodgson, and the young (?), *M. povensis*, H., *Ann. Mag. N. H.*, XV. (1845) 268-9, also *M. dumecolus*, Hodgson, (undescribed). Length about or nearly 6 in.; tail 4 to  $4\frac{1}{4}$  in.\* Of a bright pale chesnut hue; below, white. "Constructs its nest of oleraceous herbs in the fields." (Sykes). Specimens from Asám and from the Deyra Doon are absolutely similar to others from S. India; and as Hodgson's descriptions of a Nepalese Mouse also accord, I infer that his species differs in no respect. "Tenants woods and coppices." (Hodgson).

MUS *BADIUS*, Blyth, *J. A. S.*, XXVIII. 295. Like *M. OLERACEUS*, but the eye fully twice as large, and black whiskers; colour of the upper-parts a more rufous chesnut or cinnamon hue; of the lower-parts white, almost pure. Length of a female 3 in. to base of tail; the tail  $4\frac{2}{3}$  in.; and hind-foot  $\frac{5}{8}$  in. Received from Schwe Gyen.†

\* A Deyra Doon example in spirit measured  $2\frac{7}{8}$  in., with tail  $4\frac{1}{2}$  in.

† We have a small rufous Mouse in spirit, which I suspect is from Kashmir, or otherwise trans-Himálayan. I cannot distinguish it from *M. MINUTUS*, Pallas (vide *Messorius*, White, &c.), also in spirit from England.



MUS GLIROIDES, Blyth, *J. A. S.* XXIV. 721. "This has very much the aspect of the British Dormouse (*MYOXUS AVELLANARIUS*); but what little remains of the tail of the only specimen sent is nude, and the colouring is much less bright, though inclining to the same hue. It would seem to represent a very distinct division of the genus *MUS*; but the specimen is evidently young, and more and better examples are needed for a satisfactory examination. Fur exceedingly dense and fine, nearly  $\frac{3}{8}$  in., long upon the back, and of a light brown colour tinged with fawn externally, the piles dusky-ash for the basal two-thirds or more; lower parts white, very faintly tinged with fawn; the white purest about the lips and chin: whiskers long, copious and fine (like those of *MYOXUS AVELLANARIUS*): feet large and clad scantily with white hairs; but a distinct dark brown mark upon each hind-foot, reaching almost to the division of the toes: ears rather small, ovoid and naked. Length of head and body 2 in.; tail — ?; ears posteriorly  $\frac{1}{16}$  in.; and tarsi  $\frac{5}{8}$  in." From Cherra Punji.

MUS PEGUENSIS, Blyth, *J. A. S.* XXVIII. 295. "A field Mouse with tail longer than the head and body, well clad with hairs that become longer to the end. Length to base of tail  $3\frac{1}{8}$  in.; of tail  $3\frac{7}{8}$  in.; ear-conch  $\frac{1}{2}$  in.; and hind-foot  $\frac{3}{4}$  in. These are the measurements of a female in spirit. A stuffed male has the tail (vertebræ)  $4\frac{1}{2}$  in. Fur very full and dense, pale fulvescent olive-brown on the upper-parts, slightly yellowish-white below: whiskers remarkably long." Not much unlike *M. SYLVATICUS* in appearance, but the tail longer and very conspicuously hairy towards the end, indeed more so throughout than in any other mouse I know of, as especially seen when held up to the light; but it does not appear to be specially akin to the *HAPALOMYS LONGICAUDATUS*, nobis, *J. A. S.* XXVIII. 296. Both were received from Schwe Gyen, on the Sitang river.

The series next following consists chiefly or wholly of house Mice.

MUS URBANUS, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 269: *M. dubius* (?) H., *ibid.* p. 268: *M. musculus* apud Elliot et Kelaart: *M. mami*, Gray (undescribed). "The common house Mouse of India generally, with Ceylon. Species usually found in the city of Kat-

Of the diminutive species from China noticed in *J. A. S.* XXIX. 90, the specimen has been lost or mislaid by one of our taxidermists, to whom I gave the skin to be mounted.



mandoo: allied to *dubius* in its proportions and colours, and possibly *dubius* may be the immature. Above, embrowned ruddy-luteous; below, luteous, more or less rufescent. Feet paler. Snout to rump  $2\frac{3}{4}$  in.; tail  $3\frac{3}{4}$  in.; head  $1\frac{1}{16}$  in.; ears  $\frac{6}{16}$  in.; palma  $\frac{3}{8}$  in.; planta  $\frac{3}{8}$  in.; weight  $\frac{1}{2}$  oz." (Hodgson).\* "On comparing fine specimens of the common English mouse in spirit with equally fine examples of the Indian house mouse, it is seen that *M. MUSCULUS* has conspicuously larger ears, much smaller eyes, broader paws, and the tail is one-fourth shorter, measuring 3 in. in *MUSCULUS* and 4 in. in *URBANUS*. The fur again is of very different texture," *J. A. S.* XXVIII. 296. This animal has been received from Port Blair, where doubtless recently introduced.

*MUS HOMOURUS*, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 268. *M. Nipalensis*, H., *J. A. S.* X. 915, (undescribed). "The common house mouse of the Himálaya hill-stations, from the Panjáb to Darjiling." "Distinguished by a tail equal to the animal, being usually quite equal, but sometimes rather less. Coloured like *DECUMANUS* but purer, or rufescent brown above, and rufescent white below. Hands and feet fleshy white. Snout to rump  $3\frac{1}{2}$  in.; tail  $3\frac{1}{2}$  in.; head  $1\frac{1}{16}$  in.; ears  $\frac{9}{16}$  in.; palma —?; planta —?; weight  $\frac{3}{4}$  oz. It has eight teats only in the females? The other Mice have ten and the Rats twelve." (Hodgson). "As compared with the European *M. MUSCULUS*, the fur is much more Gerbille-like in character, the piles less dense and sinuous." (*J. A. S.* XXVIII. 295.)

*MUS CRASSIPES*, Blyth, *J. A. S.* XXVIII. 295. "Like the preceding, but with the tail rather longer than the head and body. Length  $2\frac{3}{4}$  in., tail  $3\frac{1}{4}$  in.; hind-foot  $\frac{3}{4}$  in." "The feet particularly large, and, like the tail, well furnished with coarse short setæ. From Máswei." Described from a specimen in spirit belonging to Col. Tytler.

*MUS TYTLERI*, Blyth, *J. A. S.* XXVIII. 296. "Length  $2\frac{3}{4}$  in.; tail the same (having about 24 vertebræ). Fur unusually long and full, of a pale sandy mouse colour above, isabelline below, and pale on the well clad limbs and also on the tail laterally and underneath. Whiskers exceedingly fine in texture, and of a whitish colour. Male

\* *M. dubius*, H., "a house Mouse, but also found in out-houses and gardens rarely allied to *dumeticola* [oleraceus] by its long tail. Above, dusky brown, touched with fawn; below, sordid fawn. Snout to rump  $2\frac{1}{4}$  in.; tail 4 in.; head  $\frac{7}{8}$  in.; ear  $\frac{3}{8}$  in.; weight 2 oz." (Hodgson.)



from Deyra Doon," also described from a specimen in spirit belonging to Col. Tytler.

MUS BACTRIANUS, Blyth, *J. A. S.* XV. 140. "Presents a very close approximation to *M. MUSCULUS* in size, proportions and structure, inclusive of the conformation of the skull; but the fur is much denser and longer, and its colouring absolutely resembles that of a pale specimen of *GERBILLUS INDICUS*, except that there is no whitish about the eyes, nor is the crown of a deeper hue, and the tail is thinly clad with short pale hairs to the end.\* \* \* The entire under parts and feet are white; and the upper-parts light isabelline, with dusky extreme tips to the hairs, and their basal two-thirds deep ash." (B.) :—The common house Mouse of Kandahar; but the house Rat is, I believe, unknown there: at least so all my informants agreed in stating, and I certainly never saw one, although for two years I was in charge of extensive grain godowns, which would naturally have attracted them had any existed." (Hutton.) Syn? *M. gerbillinus*, nobis, *J. A. S.* XXII. 410, and *M. Theobaldi*, nobis, *J. A. S.* XXII. 583.

*M. gerbillinus*. Entire length of male 5 in., of which the tail is  $2\frac{7}{8}$  in. Hind-foot  $\frac{3}{4}$  in., ear-conch barely  $\frac{1}{2}$  in. Female rather smaller. Fur of mean length, of a sandy-brown colour on the upper-parts, white below and on the limbs, which latter have a faint tinge of the colour of the back. About twenty-five caudal vertebræ. Tail thinly clad with minute setæ." From Pind Dadun Khan.

*M. Theobaldi*. "Like *M. gerbillinus* [BACTRIANUS], but larger, with comparatively shorter tail and larger feet. Dimensions of an adult female—Length of head and body  $2\frac{7}{8}$  in.; tail  $2\frac{5}{8}$  in.; ears  $\frac{1}{2}$  in.; tarsæ and toes  $\frac{1}{16}$  in." From Kashmir.

M. NITIDULUS, Blyth, *J. A. S.* XXVIII. 294. "A house mouse apparently, with tail equal to the head and body, and uniformly furnished with minute setæ to the end; ears large and ample. Total length  $6\frac{1}{2}$  in.; hind-feet a little exceeding  $\frac{3}{4}$  in.; and ears (posteriorly)  $\frac{9}{16}$  in. Colour nearly that of *M. DECUMANUS*, with the under parts subdued white tolerably well defined. Of the same subgroup as *M. MUSCULUS*\* and *M. URBANUS*," but with the front-teeth conspicuously larger. Received from Schwe Gyen, on the Sitang river.

\* Perhaps *M. MUSCULUS* (?), L., apud Cantor, from Penang; *J. A. S.* XV. 254. "In colours, this slightly differs from the European Mouse, the upper parts



MUS CUNICULARIS, Blyth, *J. A. S.* XXIV. 721. "A small field (?) mouse remarkable for its ample ears, and tail shorter than the head and body. Length of head and body  $2\frac{1}{2}$  in.; of tail  $2\frac{1}{8}$  in.; ears posteriorly  $\frac{1}{2}$  in.; and hind-foot  $1\frac{1}{6}$  in. Colour of a wild Rabbit (*LEPUS CUNICULUS*); above, below white; and the feet with brownish hairs above, but with white hairs upon the toes: tail conspicuously ringed, the setæ minute and inconspicuous." From Cherra Punji.

MUS DARJEELINGENSIS, Hodgson, described in Horsfield's Catalogue. "Above dusky brown with a slight chesnut reflection; underneath pale yellowish white. Snout to vent 3 in.; ears long; tail  $2\frac{1}{2}$  in. Proportions of body, tail and extremities, comparatively slender." (Horsfield).

MUS ERYTHROTIS, Blyth, *J. A. S.* XXIV. 721. "Another and very different form of mouse from [*M. GLIROIDES*], and equally from the common house mouse. Length of head and body  $2\frac{1}{4}$  in.; tail  $2\frac{3}{8}$  in.; and consisting of about 26 vertebræ: ears small and hairy,  $\frac{1}{5}$  in., long externally: hind-foot and claws  $1\frac{1}{6}$  in. Fur long and very dense; of a rich dark brown colour, grizzled, and brightly tinged with rufous or rufo-ferruginous towards the tail and upon the ears conspicuously: lower parts albescent, tinged with fawn: feet with brown hairs upon their upper surface; and the tail considerably hirsute. From Cherra Punji.

The ordinary field Mice of India have the tail shorter than the head and body, the fur not spinous, and white or pale lower parts abruptly separated from the colour of the back. Such are—

MUS INFRALINEATUS, Elliot, *M. S.* *M. Ellioti*, Gray, (undescribed, nec *Golunda Ellioti*, Gray,) *Br. Mus. Catal. Mamm.*, p. 110. The largest of the group. Length about 5 inches; and tail  $4\frac{1}{4}$  in.; hind-foot  $1\frac{1}{6}$  in. Light fulvous brown above, white below, with a mark on the chest of the colour of the upper parts. From S. India.

being a mixture of shining grey and tawny. The separate hairs are leaden grey at the base, then tawny with black apex; some are longer and uniformly dark brown. Beneath, pale ash. The ears are larger, more than half the length of the head, with very short hairs, rounded, blackish. Toes, palms, and soles, whitish. Tail slender dark grey, with very short adpressed brown hairs. Length of head and body  $2\frac{5}{8}$  in.; tail  $2\frac{1}{2}$  in." (Cantor).

I had missed our solitary specimens of *M. NITIDULUS* and of *M. GLIROIDES*; when I chanced to find the former in a bottle containing Kandyan examples of *M. RUFESCENS*! No doubt some one had broken the bottle, and said nothing about it; a trick not wholly new to my experience in the Society's Museum.



MUS CERVICOLOR, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 268; *M. albidiventris*, Blyth, *J. A. S.* XXI. 351. "Distinguished by its short tail. Above dull fawn, below sordid white. Lining of ears and extremities pale. Snout to rump  $3\frac{1}{2}$  in.; tail  $2\frac{7}{8}$  in.; head 1 in.; ears  $\frac{9}{16}$  in.; weight  $\frac{3}{4}$  oz. Females less and having ten teats," (Hodgson). Length of a large male  $3\frac{1}{4}$  in.; of which the tail is  $2\frac{3}{4}$  in.; tarsi to tip of claws  $1\frac{1}{6}$  in.; ear (from anterior base),  $\frac{9}{16}$  in. Nepal; Bengal (vicinity of Calcutta); Malabar.

MUS FULVIDIVENTRIS, Blyth, *J. A. S.* XXI. 351: *M. cervicolor*?, Hodgson, apud Kelaart, *Prod. Faunæ Zeyl.*; p. 64. "Length about  $2\frac{3}{4}$  in.; tail (vertebræ)  $2\frac{1}{2}$  in.; tarsi to tip of claws  $\frac{5}{8}$  in. Colour of *M. SYLVATICUS* above the fur shorter and less fine (as in its various Indian affines), lower parts rufescent or isabelline, or they may be described as a pale weak ferruginous. Twenty caudal vertebræ distinguishable, with  $\frac{1}{4}$  in. additional of tail-tip." (E. B.) From Ceylon. "Found in houses in Trincomali." (Kelaart).

MUS STROPHIATUS, Hodgson, *Ann. Mag. N. H.*, XV. (1845), p. 268. "A field mouse closely allied to *M. CERVICOLOR*, but seemingly distinct. Bright fawn above, pure white below; a cross or gorget on the breast. Snout to vent  $3\frac{1}{8}$  in.; tail  $2\frac{7}{16}$ ; head less 1; ears  $\frac{9}{16}$  in.; weight  $\frac{1}{2}$  oz." (Hodgson.)

MUS TERRICOLOR, Blyth, *J. A. S.* XX. 172. "This much resembles *M. LEPIDUS*, Elliot, in form and colour, but the face is very much shorter, and the fur short, soft, and not spinous in the least degree. Its colour varies, however, according to the soil; those of the alluvium of the Ganges being darker than specimens from the ferruginous soil to the westward. All have the under-parts white, abruptly separated from the hue of the upper-parts, and in the various affined species. Length  $2\frac{1}{2}$  in.; of tail  $2\frac{1}{8}$ ; ears  $\frac{1}{4}$ ; hind-foot  $\frac{9}{16}$  in. Inhabits gardens and is very numerous in the open fields; together with *GERBILLUS INDICUS* and *MUS INDICUS*." (E. B.) The most common field and garden Mouse in Lower Bengal. I found it very abundant in the Santál districts westward of Midnapore.

Allied to the foregoing are certain spine-clad field Mice which have been designated *LEGGADA* by Dr. Gray, (*M. N. H.*, I., 1837, p. 586).

*L. SPINULOSA*, Blyth, *J. A. S.* XXIII. 734. "Nearly affined to *M. PLATYTHRIX*, Sykes, but of a dark dusky colour above, with ful-



vous tips to the softer fur: below and all the feet [dull] whitish. Upper rodential tusks orange, the lower white. Whiskers long and fine, the posterior and longer of them black for the basal half or more, the rest white. Length of adult male (in spirit)  $3\frac{3}{4}$  in.; tail 3 in. (about, the extreme tip wanting in the specimen); planta  $\frac{7}{8}$  in." (E. B.) From the Punjab, and specimens since received from S. Malabar, (*J. A. S.* XXIX. 3,) are quite similar, unless rather larger, and there is little difference in the colour of the upper and lower tusks.

L. JERDONI, Bl., *n. s.* Bright dark ferruginous above, pure white below; some fine long black tips intermingled among the spines of the back: limbs marked with blackish externally; the feet white. Length about 4 in.; tail  $3\frac{1}{2}$  in.; hind-foot  $\frac{7}{8}$  in. Procured in Sikhim by Dr. Jerdon.

L. PLATYTHRIX; *Mus platythrix*, Bennett, *P. Z. S.* 1832, p. 121; *M. saxicola*, Elliot, *MSS.* Light sandy brown, white beneath; the flat spines less developed than in the two preceding species. Length  $3\frac{1}{2}$  in.; tail  $2\frac{1}{2}$  in.; hind-foot  $\frac{3}{4}$  in.; S. India. *Vide* Elliot in *Madr. Journ. Lit. Sc.* X. (1839), p. 215.

L. LEPIDA; *Mus lepidus* Elliot, *Madr. Journ. L. Sc.* X. 216: *L. booduga*, Gray, *M. N. H.*, I. (1837), p. 586. Similar to the last but smaller, and but weakly spinous. "The dimensions of an old male were—length of head and body  $2\frac{9}{10}$  in.; tail  $2\frac{7}{10}$  in.; hind-foot  $\frac{6}{10}$  in." (Elliot). *Vide loc. cit.* S. India. "Inhabits India, Bombay. They live in pairs in the black soil, making little burrows, in which they produce two or three young." (Gray.) The colour of this small mouse would rather indicate that its abode was in a pale sandy soil. Mr. Elliot writes—"Lives generally in pairs in the red soil," &c.

Another type has been designated GOLUNDA by Dr. Gray, in *M. N. H.*, I. (1837), p. 586. "The grinders, when perfect, low, with a broad flat crown; the cross-ridges of the crown of the upper grinders divided into three distinct slightly raised tubercles. Rat-like *MUS*."

G. ELLIOTI, Gray, *M. N. H.* 2nd series, I. (1837), p. 586, (nec *Mus Elliotti*, Gray, *Br. Mus. Cat.*). "Fur pale brown, with minute, very slender, hair-pointed black tips. Chin, throat, and beneath, whitish. Under fur paler. Teeth yellow; upper cutting teeth groov-



ed in front. Ears covered with short hair. Inhabits India, Bombay." No dimensions given!

SYN. *Mus hirsutus*, Elliot; the *Gulandi* of the Canarese. "About the size of *M. lanuginosus*, or a little larger,—but differs in living entirely above ground, in a habitation constructed of grass and leaves, generally in the root of a bush at no great height from the ground, often indeed touching the surface. The head is longer than that of the *Mettade*, but the muzzle is blunt, rounded, and more obtuse, and covered with rough hair. The face and cheeks are also rougher than those of other Rats; the ears round and villose, the eyes moderate; the whiskers long and very fine. The colour is an olive-brown above, mixed with fulvous; beneath yellowish-tawny; sometimes paler, or light yellowish-grey.

"A male *Golunda* measured—length of body  $6\frac{1}{2}$ , of tail  $4\frac{3}{10}$ ; of head  $1\frac{1}{10}$ ; of ear  $\frac{6}{10}$ , weight nearly 3 oz."

For habits, *vide* Elliot, *loc. cit.*

A number of specimens in spirit presented to the Society's Museum by Mr. Elliot are considerably smaller, though appearing to be adult, and a female is sent with its born young; these accord, however, precisely with the 'Coffee Rat' of Ceylon, as described by the late Dr. Kelaart. He presented the Society with a specimen which is unquestionably identical in species with Mr. Elliot's specimens sent by the latter to the Society's Museum.

G. COFFÆUS, *Mus coffæus*, Kelaart, *Prodromus* (1852), p. 67. "Head and body  $4\frac{1}{2}$  in.; tail 4 in. Fur thick, stiff; above, fulvous-brown, mixed with black; beneath, tawny-grey. Hairs of upper-parts, flattened, ashy-grey, tipped yellow, with some thinner and longer ones, also tipped yellow, with subterminal black band. Under fur soft, and of a light lead-colour. Face and cheeks rough. Ears moderate, subovate, villous; yellow-ferruginous. Tail round, tapering, scaly and villous; its upper surface dark brown—lower surface yellowish. Cutting teeth yellow. Upper ones grooved as in GERBILLUS.

"This is the Rat which [in Ceylon] is so destructive to coffee-trees. Whole plantations are sometimes deprived of buds and blossoms by these Rats. They are found in all the higher parts of the Kandian provinces. The attention of Europeans has only been drawn to them since coffee-planting commenced in the island. They appear to be migratory; and are not always seen in coffee estates: when they do visit the cultivated parts, their numbers are so great, that in one day more than a thousand have been known to be killed on one estate. In clearing forests, the nests of these Rats are met



with under the roots of trees. We have not been so fortunate as to see many fresh specimens; only one was brought to us from Kaduganava: a premium is set by some coffee-planters on the heads of these rodents. The Malabar coolies are very fond of eating them roasted, or fried in oil."

G. MILTADA, Gray, *M. N. H.*, 2nd series, I. (1837), p. 586. "Length of body and head  $4\frac{1}{2}$  in. Fur very soft, mouse-coloured varied with black; chin, and beneath, whitish. Under-fur lead-coloured, with very numerous soft brown hairs having long black tips; of the belly white, with brownish tips. Ears large, hairy. Whiskers very slender, long. Tail shorter than the body, scaly, covered with short adpressed black hairs, hiding the scales. Feet pale; claws white. Inhabits Bombay. Lives in cracks in the black soil, in pairs; and are often crushed, when the rain, or cultivation, obliterates the cracks."

Syn. *Mus lanuginosus*, Elliot, *Madr. Journ. Lit. Sc.* X. (1839), p. 212. "*Mettade* of the Waddurs. The name adopted to designate this species is taken from the word *Mettade*, meaning soft, in allusion to its fur, which is fine and soft, *mettanu* meaning soft in Telegu. It is about half the size of *M. INDICUS*, which it somewhat resembles. The head is short, but the muzzle, instead of being square and truncated is sharp; the ears are larger in proportion and more ovate. The general form is not so stout. The tail is shorter than the body. The colour above is reddish-brown, with a mixture of fawn; lighter beneath, close and soft, with a few longer hairs projecting. A large adult male measured—length of body  $5\frac{6}{10}$  in.; of tail  $4\frac{3}{10}$ ; total  $9\frac{9}{10}$ ; of head  $1\frac{4}{10}$ ; of ear  $\frac{8}{10}$ . Weight  $2\frac{1}{2}$  oz."

For description of habits, *vide* Elliot, *loc. cit.* I have not yet seen this species.

G. NEWERA, Kelaart, *Ann. M. N. H.*, 2nd series, VIII. (1851), p. 339. Length of body and head  $3\frac{1}{4}$  in.; tail  $2\frac{1}{2}$  in. Fur soft, yellowish-brown varied with black; chin and beneath yellowish-grey; under-fur dark lead colour; soft long hairs on the upper parts of the head and body, with longer black-tipped hairs having a subterminal yellowish band; fur of belly dark lead-colour, tipped with yellowish-grey; ears large, hairy on both sides, of a light rusty or ashy colour; whiskers slender, moderately long, some greyish, others blackish; tail shorter than the body, tapering to a point, scaly; upper surface of a black colour and covered with short semi-adpressed black hair; lower surface yellow or ashy colour, covered with short hair of the same yellow colour; feet having dark brown claws, purplish, four toes



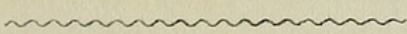
to the fore-feet, with a clawless rudimentary thumb [as in all *muridæ*?] \* \* \* Incisors yellow, the superior grooved in the centre: molars flat, deeply 3-lobed, the tubercles rising in three distinct lines, middle larger than those of the sides, and the front one extending beyond the other lobes.

"This Rat is found in pairs in the black soil of Newera Ellia, and is a great destroyer of peas and potatoes. In the Ouva district, we found another soil Rat, smaller than the above, and of a pale ashy colour, which at the time we referred to *L. boodaga* of Gray, but having since lost the specimen preserved in spirit, we are not able to give a description of it. That it was very different from every other Rat here described [in *Prodromus*], we have no doubt."

Genus HAPALOMYS, Blyth, *J. A. S.* XXVIII. 296.

H. LONGICAUDATUS, Bl., *loc. cit.* Received from Schwe Gyen, on the Sitang river.

The reader has at length before him, without need of further research in books (so far as I can discover), an epitome of the long and perplexing series of Indian *Muridæ*, so far as the published descriptions of them can help him to identify any species that may fall under observation. In any part of India and the neighbouring countries, he might render useful service by collecting an adequate series of examples of the species procurable in the vicinity, both carefully prepared skins for mounting, and some entire specimens in spirit. Wherever found, these animals are, in general, obtainable in any quantity, from certain classes of natives who eat them, (or at least those inhabiting the jungles or open country,) and who are familiar with their haunts and habits. With really good and properly preserved specimens from different parts, and in sufficient number, the real species would soon be discriminated from the factitious, as indeed is already the case with a good many of them; and the latter would soon fall into the rank of synonyms, as by degrees one after another became identified and understood. It may not be a particularly inviting group to study, in the opinion of many observers and collectors; but it needs to be assiduously 'wrought out;' and the difficulty of reconciling the synonyms will be considerably diminished now that all the very numerous names and descriptions have been collated in one continuous grand series.







Blyth, Edward. 1864. "A Memoir on the Rats and Mice of India." *The journal of the Asiatic Society of Bengal* 32(IV), 327–353.

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