CATALOGUE

OF

MAMMALIA.

INDIAN MUSEUM.

PART I.
CATALOGUE
OF
MAMMALIA
IN THE
INDIAN MUSEUM,
CALCUTTA:

BY
JOHN ANDERSON, M.D., F.R.S.,
SUPERINTENDENT OF THE INDIAN MUSEUM, AND PROFESSOR OF COMPARATIVE ANATOMY,
MEDICAL COLLEGE,

PART I.
Primates, Prosimiae, Chiroptera, and Insectivora.

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PREFACE.

A CATALOGUE of the Mammalia in the Museum of the Asiatic Society of Bengal, drawn up by the late Mr. Edward Blyth, was published by the Society in 1863.

In 1865, the Museum of the Asiatic Society practically became the property of the Government of India, although the legal transfer was not completed until 1876.

The various departments of the Museum have very largely increased since 1863, many of them now being four-fold more extensive than they were seventeen years ago. It was, therefore, recently resolved to issue a series of catalogues of the various departments of the Museum, with the object of making their contents known, and thus extending the usefulness of the Institution.

Two instalments have already been published, viz., a Fasciculus of the Catalogue of the Mollusca, and the first part of a Hand-List of the same group. The present volume, therefore, is the third of the series.

It comprises, however, only the first four orders of the Mammalia, viz., Primates, Prosimia, Chiroptera, and Insectivora; but catalogues of the remaining orders will be published as soon as possible.

Some idea of the increase that has taken place in the
collection of Mammalia since 1863 may be gained from the following table; but in other groups the increase is even more marked:—

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The Chiroptera in this catalogue, with a few exceptions, were identified by Mr. G. E. Dobson, who published a list of them in his Monograph of the Asiatic Chiroptera, issued by the Trustees of this Museum in 1876; and his arrangement of the group has been followed.

A list of the donors to the sections dealt with in this part of the Catalogue will be found after this Preface. It includes, as far as possible, the names of all contributors before and since 1863.
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Cheiroeles torquatus
Genus Nyctinomus—
Sub-Genus Nyctinomus—
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" tragatus
" plicatus
" johorensis
" brazilienbs

VI.—Family PHYLLOSTOMIDEÆ.
I.—Sub-Family PHYLLOSTOMINEÆ.
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Genus Artibeus—
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I.—ORDER PRIMATEs.

I.—SUB-ORDER CATARRHINI.

I.—FAMILY HOMINIDÆ.

I.—GENUS HOMO, Linn., 1766.

II.—FAMILY SIMIIDÆ.

I.—SUB-FAMILY SIMIINÆ.

GENUS ANTHROPOPITHECUS, Blainville, 1839.

1. Anthropopithecus troglodytes.

Simia pan, Donovan, Naturalist's Repos., no. 19, 1823-27.
Anthropopithecus troglodytes, Blainville, Lepons Orales, 1839.
Troglydytes tschego, Duvronoy, Arch. du Mus., t. viii, 1861, p. 15.
Mimetes troglodytes, Gray, Cat. Monkeys & Lemurs, B. M., 1870, p. 6.

The Chimpanzee.

Hab. West Africa.

1a. A stuffed specimen of a young male, probably about 18 months old, No. 2A of Blyth's Catalogue. Presented by A. D. Bartlett, Esq., 1844.
c. An adolescent male in alcohol. By exchange with British Museum, 14th June 1877.

2. Anthropopithecus gorilla.


The Gorilla.

Hab. Gaboon, West Africa,


Genus SIMIA, Cuv. & Geoff., 1795.


Singe de Wurmb, Audubert, Singes et Makis., Fam. I, 1797, p. 18, Tab. Anat., fig. 3.
Simia satyrus, Linn., Syst. Nat. 1766, p. 34.
Pithecus oweni, Blyth, op. cit., p. 375.

The Orang-outang of Borneo.

Hab. Borneo.

3a. A stuffed adult male, its skull, and the bones of its trunk. The bare cheeks are enormously outwardly enlarged,

1 This specimen was received at the Museum immediately after death (during my absence from India), but it is to be regretted that no observations or
the skin of the face and of the great bare area on the
guttural sacks being livid black. The skin of the face is
sparsely covered with short red hairs, and the forehead also
is almost naked. The sides of the upper lip and the
chin are clad with long bright maroon-red hairs. The hair
on the middle of the head, immediately behind the fore-
head, is rather short, while that over the temporal and pariet-
tal regions is long and directed forwards. On the rest of the
head the hair is dark maroon-black, this colour also extending
round the sides of the neck and on to the throat. Between the
shoulders the colour is more rufous, whilst down the back it is
almost as dark as the head, the sides being also maroon-red,
as well as the shoulders, the arms being almost red, and thus
paler than every other part of the body. The lower portions
of the thorax and the abdomen are dark maroon-red. The
legs are almost as pale as the arms. The hair on the body
generally and on the limbs is very long, measuring as much
as 13 to 14 inches.

The skull has a well-developed sagittal and lambdoidal
ridge, and the orbital ridges are also well marked, and the
malo-maxillary area is broad. The facial portion slopes well
forwards, also the interorbital area, in which the nasals are
tolerably well developed. The orbits are large and more or
less rounded. The canines are large, and their ridges very
prominent. The dentition is complete, and the molars are
large, and also the front upper incisors, which, however, are
much ground down. The palate is oblong and deep. The
lower jaw is very powerful and heavy, and the canines are
large. The right tooth, however, is broken across, but its
root is so long that it is visible on the lower aspect of the
symphysis.

This Orang, as stated by its donor, Mr. Rutledge, arrived
at Singapore in a native craft from Borneo, along with
some other Orangs. Presented by Wm. Rutledge, Esq., 8th
November 1880.

6. A flat skin and skull of a young male. This specimen
in life had the cheek swellings partially developed. The
hair on the head is much the same as in the previous male
as regards colour and distribution, but is somewhat shorter.
The skin of the face is sparsely covered with short red hairs,
measurements were recorded, beyond that the huge face measured nearly 14
inches across. The skeleton, with the bones of trunk and of the hind limbs,
still ligamentary, measures 4 feet 4 inch from the vertex to the under
surface of the os calcis in a straight line, although the thoracic portion of the
vertebral column is much curved.
but the red moustache and beard are only beginning to show. The general distribution of colour is much the same as in the previous animal, with the exception of the arms, which are dark maroon-brown; and the hair about the nates and on the sides is more rufous than in the preceding animal. The following are some of the measurements of this individual:

| Measurement                                  | Value     
|----------------------------------------------|-----------
| Heel to vertex                               | 36.25     
| Stretch of arms to middle finger             | 64.50     
| Head of femur to heel                        | 14.75     

The skull measures 6".95 from the occiput to the anterior border of the premaxillary, with a width across the zygoma of 4".75, and a maximum parietal width of 4".12. The milk canines and incisors are still present, but the front upper incisors can be seen in their sockets to be very broad and large teeth, the two permanent molars that are through being also very large. There is as yet no trace whatever of a sagittal ridge, and the temporal ridges from the orbits are still 3 inches apart on the vertex. The orbits are moderately large and rounded, and the interorbital area is nearly vertical, the nasals being small. The muzzle is broad and directed forwards, almost at right angles to the interorbital surface. The symphysis of the lower jaw is deep. The front lower incisors are through and serrated, and the penultimate molar is appearing through the alveolus. Purchased, 28th July 1879.

c. A young male in alcohol and its skull. In life it presented distinct indications of cheek swellings, although it had only its milk teeth. The general colour was dark maroon. It was a heavily-built animal, with shorter fingers than the generality of Orangs of its age. The following were its measurements:

| Measurement                                  | ft. | in.  
|----------------------------------------------|-----|------
| Height, erect, — heel to vertex              | 2   | 1.50 
| Outstretched arms                            | 3   | 4.20 
| " legs                                       | 2   | 7.75 
| Head of humerus to tip of middle finger      | 1   | 6.00 
| Length of middle finger                      | 0   | 2.40 
| " of hind extremity to tip of middle toe     | 1   | 2.75 
| " of middle toe                              | 0   | 1.97 
| " of hand                                    | 0   | 5.50 
| " of foot                                    | 0   | 6.50 
| Vent to vertex                               | 1   | 5.50 

Presented by the Zoological Gardens, Calcutta, 2nd June 1877. This specimen in the colour of its hair more resembled the form
which appears not to have cheek swellings, but in its squat, powerful build and short fingers it was evidently not that race.

d. The skin and skull of an adolescent male. This specimen is nearly uniformly coloured dark maroon, darkest on the head and ferruginous on the back of the thighs, moustache and beard. The hair is long, with the exception of that on the middle of the head, but the direction of the hair on this region and external to it is the same as in the adult animal first described. The moustache and beard are only partially developed. The face is sparsely covered with short red hairs. The cheeks did not present any trace of swellings.

The milk canines are still present, and there is no trace externally of the permanent teeth. The front pair of the upper permanent incisors are fully through, and the outer incisor of the right side is also present, but its fellow of the opposite side is only appearing. The penultimate molar had been in full functional activity. The front incisors are very broad and the molars are very large. The palate is long, broad, and deep. The orbits are small and round, but flattened above, and the interorbital area slopes slightly forwards, and the maxillae are much forwardly directed. From the upper margin of the nasals to the anterior border of the foramen magnum is 4 05, and from the latter point to the anterior margin of the premaxillae measures 5 66. As yet there is no sagittal ridge, the ridges being only feeble raised lines, separated from each other by more than two inches. This character, however, in a male Orang skull is only an indication of youth, whereas it is a characteristic feature of the more delicately formed female skull. The skull presents a depression near the upper border of the left parietal, and another on the right orbit, but similar depressions of this nature are better illustrated in one of the succeeding adult skulls. Presented by the Zoological Gardens, Calcutta, 29th April 1880.

e. A stuffed nearly adult female with its skull and hyoid bone, and the uterus in alcohol. The hair is long and dark maroon, approaching to blackish on the body generally, but on the back of the thighs it is a pallid ferruginous. The hair on the head is long and directed forwards, longest in the temporal region, and the face is sparsely covered with short hairs. The moustache is only very feebly indicated, and also the beard. This animal lived for about one year and a half in the Zoological Gardens, Calcutta, and at its death it measured 3 feet 8 50 inches from its heel to the vertex, and the stretch of its arms was 6 feet 4 inches. The skull has very much the same form as in the preceding male. The skulls so closely resemble each
other than the specific identity of the two animals seems highly probable. This female skull has the same large upper front incisors, but its first and second molars are smaller than in the foregoing male, but the two palates have much the same form. The last molars of this female are through the alveolus, but not yet on a level with the other molars. The orbits are larger than in the foregoing male, and are slightly forwardly oval. The interorbital area has much the same slope as in the preceding male skull, and the facial portion about the same forward direction. From the upper margin of the nasals to the inferior border of the foramen magnum measures 3·70 inches, and from the latter point to the tip of the premaxilla is 5·30 inches. The temporal ridges are far apart.

In the lower jaw there is the peculiarity of the complete absence of the last molar on the left side.

The hyoid: on the basihyal end of the right thyrohyal there is a large hook-shaped process, which in the other basihyal assumes the form of a bullate hooked pointed epiphysis. It is in no way connected with the basihyal, and when the right thyrohyal is viewed from below this hook-shaped body appears only as a backwardly and upwardly projecting process, whereas on the left side it appears as an epiphysis; viewed from above, the basihyal end of the right thyrohyal is seen to have been composed of the hook-shaped process described, and an intermediary portion amalgamated on the under surface; on the left side the same structure is observed. It would thus appear that there are cerato and epiphysals so approximated in their position on the basihyal as to amalgamate with the thyrohyal; on the same stand with this is exhibited the partially ossified thyroid cartilage. Presented by the Zoological Gardens, Calcutta, 8th April 1879.

f. The skin, skull, and the bones of the trunk of an adolescent male. This animal in external appearance is comparable with d, as the hair in colour and distribution is the same, the skin of the face of d being only a little more hairy. This latter character, however, can be explained: the animal died in the month of December, the second cold season it had lived in Calcutta, and it is probable that the increased amount of hair on the face was due to climate.

Although there is such a close resemblance externally between the animals, the skulls are remarkably different. This skull has large upper incisors, but smaller than those of d, as are also its molars. The orbits are much larger and more open, and without any flattening above; the interorbital area is longer, and not so forwardly sloped, and the muzzle is not
so broad, these differences being probably due to the effects of confinement, as the previous specimen d was only a few months in captivity before it died, whereas this animal was nearly three years in confinement and at a period when its teeth would have doubtless attained a greater development had it been in a state of nature. The brain case, although not so high as in it, is fuller and broader. The last molar is not visible, and the outer upper incisors and the canines, above and below, are only coming through. The parietal ridges are mere lines, far apart. From the upper margin of the nasal to the anterior border of the foramen magnum measures 3".55, and the length from the incisor border of the premaxillaries to the foramen magnum is 5".10.

Presented by the Zoological Gardens, Calcutta, 23rd December 1879.

9. The skin and skull of an adolescent female. Dark maroon, darkest on the head and arms, ferruginous on the back of the thighs. The hair is long, and directed forwards on the head, as in the previous examples, which it closely resembles.

The skull is like that of e, but the muzzle is not so forwardly projected. From the upper end of the nasal to the foramen magnum is 3".70, and from the latter to the front of the premaxillary measures 5".40. The temporal ridges are far apart. The incisors are large, but not quite so large as in that skull. The permanent upper incisors are appearing, and the last molar is visible through a small opening in the alveolus. The molars are not quite so large as in e.

The atlas is firmly anchylosed to the skull at the condyles on both sides, and on the left side the bone is amalgamated with the skull at the condyle and along nearly one-half of the

---

1 This animal, after living in the Zoological Gardens, Calcutta, for about 18 months, was suddenly deprived, by death, of the female (e), who had been his constant but distant companion during that period. Her death affected him much, as it did also the young female who had been reared by her, and who was believed to be her child. The male appeared to pine and used to sit outside, on the top of the large house in which they were kept, looking in the direction in which the dead body of his companion had been carried away. During the day he could not be induced to go into his house for shelter from the blazing sun. The result was, that one very hot day, in the end of April, he came down from his look-out in a dazed condition, apparently blind and staggering. He never rallied, and at last he became paralysed and died 7 months afterwards.

The young female, when her supposed parent, but if not so, tender foster-mother, was carried away dead, exhibited all the signs of deep grief, emitting a wailing sound, but no tears, attempting to follow the body, and, when driven back, crying and rolling on the ground in a paroxysm of grief.
basi-occipital, the foramen for the front pair of nerves being almost wholly obliterated on that side, whereas two large foramina occur on the anterior and external aspect at the front, where the atlas has coalesced with the condyle at the skull.

The mammae and teats of this animal were greatly enlarged, and it was stated that she had given birth to a young one on the voyage up to Calcutta from Singapore. Mr. Fraser, who examined this Orang at its death, has recorded in the Museum Register that she had distinct indications of cheek swellings.

Presented by W. Rutledge, Esq., 10th August 1880.

6. A stuffed adult female, its skull and the bones of its trunk. This female exactly resembled the female e in its dark maroon, almost blackish long hair, directed forwards on the head. The face, like the foregoing, was blackish in life, and the eyes were small and brown, and no white sclerotic was visible. It was received in Calcutta, nursing a very young animal, said to have been its own child, and which is separately described.

The orbits are large and erectly oval. The interorbital area slopes forwards, as in the previous skulls, but the nasal area is not nearly so depressed as in them, and the muzzle is longer. From the upper end of the nasals, to the anterior border of the foramen magnum, is 3"-50, and from the latter to the tip of the maxillary, measures 5"-20. No temporal ridges, beyond a faint line on each side, indicating the attachment of the muscle and posteriorly converging on the parietals to within 0"-35 of each other. The front upper incisors are much smaller than in the foregoing skull, and the molars are also less, and the palate is deeper. In the lower jaw there is a well-developed supernumerary molar on each side.

This individual had doubtless spent all its days in a wild state, dying shortly after its capture. Presented by W Rutledge, Esq., 7th April 1877.

i. The flat skin and skeleton of the young of the previous individual. The hair on the body was sparse and bright ferruginous; dark maroon on the head, and long and directed forwards.

This animal had cut only its first incisors and first bicuspid in the upper jaw. The fontanelle is closed, but the remains of the almost obliterated suture form a permanent raised line. This young animal died the same day as its mother. Presented by W. Rutledge, Esq., 7th April 1877.

j. The skin and skull, and bones of the trunk of an adult female like the preceding adult, but with somewhat shorter hair. The skull has all its teeth, but it is much smaller than
e, g, and h. Its incisors are very much smaller than those of either e or g, but the incisors of h are so much ground down that their original dimensions can only be guessed at, but they appear to have been about the size of those of this specimen. The muzzle, however, of h is very much larger than the muzzle of this skull and measures 2".50 across, while this muzzle is only 2".11 and very much shorter. The muzzle of e is 2".50, while that of g, in which the canines are only partially through, is as much as 2".40. The orbits of this specimen resemble those of g, but differ greatly in appearance from the vertically elongated orbits of h, which are 1".85 in vertical height as compared with 1".50 in this individual. These few details suffice to show how great is the individual variation among the skulls of Orangs, the animals of which were apparently identical in life.

There is a well-marked indentation on the left half of the parietal, and a long rugosity on the temporal ridge of that side. Presented by W. Rutledge, Esq., 3rd March 1879.

k. A stuffed female: general colour as in the previous females; viz., dark maroon, but with short and somewhat sparse hair, probably due to the effects of confinement. Presented by W. Rutledge, Esq., 12th January 1870.

l. The flat skin and skeleton of a young male, dark maroon like the preceding animals. Although this Orang had cut only its first molar teeth below and above, its skull is as long as the female skull j, which conveys some idea of the great difference in size between the sexes. The general appearance of a male skull at this period is that of a female, there being no muscular ridges developed beyond the feeble temporal ridges, which are far apart. The orbits of this skull are large and obliquely placed ovals. Presented by W. Rutledge, Esq., 3rd March 1879.

m. A young male, in alcohol, with no trace of cheek excrescences, a rather large head, with a broad and deep muzzle, and with short and rather sparse hair. The hair short on the head, and deep maroon throughout. Presented by W. Rutledge, Esq., 20th March 1879.

n. The skin, skull, and bones of the trunk of a young male. General colour maroon, passing into bright ferruginous on the back, and still lighter on the back of the thighs, and darkest on the head and arms. The hair is long and distributed in the same way as in the foregoing animals, from which this individual differs only in its brighter colour, paler face, and fleshy colour around the eyes and about the mouth. This colouration of the face has distinguished, more or less, all the young Orangs that have passed under my observation,—they
exceed one hundred in number,—but as age advances the colour becomes darker, and the pale hue is entirely lost.

The first molar is through in both jaws, and it is large; and the other two are visible behind it. No ridges have formed. Extreme length of skull, occiput to front of premaxillaries, 7".05. Presented by W. Rutledge, Esq., 1st March 1876.

o. A young stuffed male like previous specimen: described by Mr. Blyth in a footnote\(^1\) as No. 5, but not entered in his Catalogue. No history.

p. A young stuffed male like the preceding specimen, No. 4B of Blyth’s Catalogue. Presented by Raja Rajendra Mullick, Bahadur, 1859.

q. The flat skin and skeleton of a young male like the preceding specimens. Total length of the skull 6".95; same age of dentition as in the last individual. Presented by W. Rutledge, Esq., 26th June 1875.

r. The skull, and skin of the head, of a young male. The skin of the head has been kept on account of the great length of the hair. The skull resembles the last skull, but the orbits are smaller and more rounded. The first and second molars are through, and the first upper incisor of the left side is nearly fully displayed, while the adjoining teeth are partially through. This skull in its dentition is of the same age as the skull of the dark-coloured male (d) with very large front upper incisors, but the total length of this skull is only 6".73, as compared with 7".60 in the skull d. Its breadth also is very much less, as it measures across the zygoma only 4".50 to 4".98 in d. The great differences that exist between the dimensions of these skulls are also shown in the length of the palate, which is 2".95 long in d, and only 2".50 in this skull. This animal was smaller in every way than the male d, and, like it, had no cheek swellings. This small Orang, however, cannot well be the Mias kassir, for one of the characters of that supposed species is its large incisors and molars, a distinctive feature of the larger of these two Orangs, viz., of No. 3 d, and it is not probable that three species of Orang exist. I am, therefore, disposed to regard these differences only as individual, and there can be no doubt that they are very great, but not greater than the differences in dimensions of skull, and in the size of teeth, that exist among individuals of the various races of men. The next skull reveals also even greater differences of dimensions than in the case under consideration. Presented by W. Rutledge, Esq., 1st June 1880.

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\(^1\) Journ. As. Soc., Vol. XXII, p. 378, No. 5.
s. The skin, skull, and bones of the trunk of a young male of exactly the same external characters as the two previous animals, but with the skull very different from m. It has high oval orbits, but little concavity in the nasal region, whereas in the skull of m there is considerable concavity, and the orbits are more rounded, and the interorbital region more vertical than in this skull, which is also not nearly so full and rounded as in the parietal region. Although they are of the same age as regards their teeth, the skull measures only 6"-77, whereas m is 7"-05. The first molar is also considerably larger than the corresponding teeth of m. Presented by W. Rutledge, Esq., 19th May 1877.

1. A stuffed young female, No. 4C of Blyth's Catalogue. No history.

u. The skin, skull, and bones of the trunk of a young male, exactly like m and o. Milk dentition, but with the first molar through. Total length of skull 6"-25. Molars large. Presented by W. Rutledge, Esq., 2nd December 1878.

v. The flat skin and skeleton of a young male. The hair in its colour and distribution is the same as in the preceding individuals. The total length of the skull is 6"-20. The first and second molars are already through, but the latter only partially, and the upper permanent front incisors are also present. They are 0"-59, broad, but not so large as the incisors of the male d. The molars are not so large as those of o, whereas its incisors are a little broader than the incisors of o, and, as in it, are much serrated. Presented by W. Rutledge, Esq., 1st June 1880.

w. The skin, skull, and bones of a young male. First molar through. Presented by W. Rutledge, Esq., 19th May 1877.

x. The flat skin and skeleton of a young male of the same character as the preceding young specimens. Milk dentition. Purchased, 20th October 1875.

y. The flat skin and skeleton of a young male, the same as in the foregoing individual. Milk dentition. Presented by W. Rutledge, Esq., 8th November 1880.

z. A stuffed young male like the preceding example. Presented by W. Rutledge, Esq., 2nd February 1874.


bb. The skin and skeleton of an adult female, Nos. 4 D and E of Blyth's Catalogue, exactly like the foregoing male m. This animal, which had lived 12 years in confinement, was described by Blyth as a new species, P.
owenii," but in his Catalogue, published afterwards, he regarded it as S. morto, but it has small front incisors. Moreover, the skull has not the form of the female skull of ferine Orangs, and I am disposed to regard its shape as abnormal, and the effects of a life of captivity. Presented by J. Apear, Esq., 1846.

cc. The skin, skull, and bones of the trunk of a young female, having long dark maroon hair on the head, belly and limbs, and bright ferruginous on the sides, back, and hinder aspect of the thighs. The face dusky brown, with a pale area around the eyes and mouth: the same as the preceding female in the colour and length of its hair, and agreeing in all its details with the male m. The first molar is through, one upper incisor (left) and the two lower incisors, the latter being especially strongly serrated, there being one mesial eminence to the serrated edge, with two smaller ones on either side of it. The skull measures 6°•45. Presented by W. Rutledge, Esq., 17th January 1876.

dd. The flat skin and skeleton of a young female, with external characters similar to the foregoing females. Skull 6°•17 long. First molar through. Purchased, 18th February 1879.

ee. The flat skin and skull of a young female; the external characters the same as the preceding; skull 5°•88 long. First molar through. Purchased, 3rd January 1870.

ff. The flat skin and skeleton of a young female, the same as the foregoing; skull 5°•50. Milk dentition. Orbits very high. Presented by W. Rutledge, Esq., 26th April 1880.

gg. A stuffed young female, the skull not removed, but the animal externally inseparable from the foregoing specimens. Presented by W. Rutledge, Esq., 1st February 1874.

hh. The flat skin and skeleton of a young female with milk dentition; the same as the preceding. Purchased, 20th October 1869.

ii. The flat skin and skeleton of an individual similar to preceding one. Presented by W. Rutledge, Esq., 9th February 1874.

jj. A young male in alcohol, with long hair on the head directed forwards, and long hair on the body. General colour red, ferruginous on the body, darker on the head. Also more hair about the face than in m. The muzzle also is smaller, not so broad, although the dentition is in much the same state as

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1 Journ. As. Soc. Bengal. Vol. XXII (1853), pp. 37 to 75, pls. 9, 10.
2 Cat. of Mammals, As. Soc. Mus., 1863, p. 4.
in m. The forehead also is higher than in m. Presented by W. Rutledge, Esq., 20th March 1879.


ll. A young female similar to preceding, in alcohol. Presented by Dr. J. Anderson, 21st January 1867.

mm. A young male in alcohol, like preceding specimen. Presented by W. Rutledge, Esq., 4th January 1873.


pp. An imperfect skeleton of an adult male, considered by Blyth as a female Mias pappan; No. 3F of his Catalogue; and described, op. cit., Vol. XXIV, 1855, pp. 518, 525. Borneo. Presented by Sir James Brooke, C.B., 1855. This specimen is distinguished by a supernumerary molar and by depressions on the skull. The right humerus of this animal had been fractured in life, the two ends of the fracture overlapping each other; a great mass of osseous tissue had been thrown out around them. The left fibula had also been fractured. This specimen has the eleventh rib of the right side firmly amalgamated to the vertebra, like a transverse process.

qq. The skeleton of an adult male considered by Blyth to be an adolescent male Mias rambi, with very large teeth, all the teeth being present and the incisors much worn. The temporal ridges meet on the vertex in a low ridge. The muzzle is heavy and protuberant. Described op. cit., p. 523, No. 3G of Blyth's Catalogue. Borneo. Presented by Sir James Brooke, C.B., 1855.

rr. The skeleton of an aged male older than the previous specimen and regarded by Blyth as a mature male Mias rambi. No. 3H of his Catalogue, and described op. cit., p. 324. It differs in its skull being broader across the malar
region than the previous specimen, in its protuberant muzzle being somewhat narrower, and in its sagittal and lambdoidal crests being much more developed. Sadong, Borneo. Presented by Sir James Brooke, C.B., 1855.

ss. The skeleton of an adult male sent by Sir James Brooke as a *Mias chapin*, was considered by Blyth to be a large old female *Rambi*, No. 31 of his Catalogue. It is remarkable for its large vertically elongated orbits, its rather feeble muzzle, and elongated face. The sagittal ridge is less developed than in the preceding specimen. Described by Mr. Blyth *op. cit.*, p. 521. Sadong, Borneo. Presented by Sir James Brooke, C.B., 1855.

tt. The skeleton of an adult male considered by Blyth to be a small, but full-grown, female *Mias rambi*, although it had been sent as a *Mias pappan*. No. 3J of Blyth's Catalogue. Described *op. cit.*, pp. 522, 523. Sadong, Borneo. Presented by Sir James Brooke, C.B., 1855.

uu. The skeleton of a mature male described by Blyth as a fully mature female *Rambi*, *op. cit.*, p. 523: No. 3K of Blyth's Catalogue. Much the same as the previous specimen, but with the sagittal crest not developed. In this skeleton the twelfth rib of each side is united to its vertebra and resembles a transverse process. Borneo. Presented by Sir James Brooke, C.B., 1855.


ww. The imperfect skeleton of an adult female, No. 4A of Blyth's Catalogue, described by him as *P. morio*, in the Journal of the Asiatic Society of Bengal, vol. XXII, p. 371, plates VII and VIII. Very different from the foregoing male skulls in the absence of muscular ridges. It has all the characters of the skull figured by Owen as *S. morio*¹: incisor 0".50 broad, but the molars are not large. Skull 7".40 long. Said to be from Borneo. Presented by R. W. G. Frith, Esq., 1836.


yy. A young skull bisected, No. 3M of Blyth's Catalogue, retaining deciduous incisors. Length of skull 6".50.

zz. The skull of a younger specimen: first molar appearing. No. 3N of Blyth's Catalogue. Length of skull 5".95.


bbb. The skull of a young animal not in Blyth's Catalogue. Length 6".05.

eee. The skull, and the brain in alcohol, of a young animal with milk teeth and first molar. Skull cap cut away to permit of the removal of the brain. Length of skull 6". Purchased, July 1867.

ddd. The skull of a young animal with the first permanent molar through. The outer plate of the right maxillary and of the mandible has been removed to show the relation of the permanent to the deciduary teeth. Length 5".88. No history.

eee. The skull of a young male with milk teeth only. Length of skull 5".52. Purchased, 17th October 1870.

fff. The skull of a young male with milk teeth. Length 5".43. Purchased, August 1865.


iii. A right scaphoid, lunare, unciform, magnum and cuneiform, in duplicate, marked 3ww. Left scaphoid, 2 lunares, 2 unciform, 2 magnum, and 2 cuneiform bones marked 3xx.

Right calcaneum, astragalus, naviculare, cuboid, cuneiform, and ecto-cuneiform, in duplicate, marked 3yy.

Left calcaneum, astragalus, naviculare, cuboid, cunei-form, and ecto-cuneiform in duplicate marked 3zz.

2nd, 3rd, 4th, and 5th metacarpals of right hand, marked 3aaa. 1st, 3rd, 4th, and 5th metacarpals of right hand, marked 3bbb. Right 4th metacarpal, marked 3ccc; right 3rd metacarpal, marked 3ddd. 1st to 5th left metacarpals, marked 3eee. Left 1st and 2nd metacarpals, marked 3fff. Left 4th and 5th metacarpals, marked 3ggg. Right metacarpals 1st to 5th, marked 3hhh. Right metacarpals 1st to 5th, exclusive of 4th, marked 3iii. Left metacarpals 1st to 5th, marked 3jjj. Left 1st to 5th metacarpals, marked 3kkk. Thirty-one 1st phalanges of hands and feet, marked 3lll. Thirteen 2nd phalanges of hands and feet, marked 3mmm. Twenty ungual phalanges of hands and feet, marked 3nnn. Borneo. Presented by Sir James Brooke, C.B., 1855.
The foregoing seven skeletons from Borneo, presented to
the Asiatic Society of Bengal by Sir James Brooke, were
described by Mr. Blyth in 1855, three as males and four as
females, and he remarked, 1 "There is no reason to doubt
the correct determination of sex in any of the specimens."
To one, however, conversant with the great differences in
size and form that exist between the skulls of the two sexes
of Orangs there is every reason to doubt that any of them are
females. The skulls of these skeletons are all distinguished
by the characteristic features of the male sex, great size,
strong muscular ridges, and huge canines, and all present a
common likeness to the skull 3a, which is certainly known
to be the skull of an adult male Orang-outang, which in life
was distinguished by the enlargement of his cheeks into huge
bare excrescences.

The variations presented by these skulls in the extent to
which the external margins of their orbits are developed, the
breadth across their orbits, the form of the orbits, the length
of the muzzle, the degree of concavity of the profile, the zygoma-
tic breadth, the degree of convergence of the temporal ridges,
the arch of the frontals and of the parietales, the length, depth,
and form of the palate, the depth of the symphysis, the height
and breadth of the ascending ramus of the lower jaw, and the
dimensions of the teeth, are very great and amply justify
the application to them of the remark made by Wallace 2 re-
garding the Orangs collected by himself in Borneo, that they
manifest differences as decided as those existing between the
most strongly marked forms of the Caucasian and African
crania in the human species.

When Mr. Blyth catalogued the mammals in the Museum
of the Asiatic Society of Bengal, 3 the only two adult female
Orangs then existing in the collection he referred to the sup-
posed species S. morio, Owen, 4 which was founded on a female
Orang skull, whereas all the males were referred by him to
S. satyrs. Two adult, or nearly adult, females have been

added to the Museum since then, but all of them have the features which distinguish the skull figured by Owen as *S. morio*. Among the other numerous additions which have been made towards the illustration of this anthropoid ape, three skulls, nearly the same size as the adult female skull and thus resembling the skull named *S. morio*, are the skulls of adolescent males, their milk teeth being only partially shed. Each of these skulls thus still possessed a great capacity for growth. In four still younger male skulls, nearly equalling in size the adult female skull, but yet with milk incisors and canines, the likeness between the sexes, notwithstanding the disparity of age, is very great; the after-divergence, however, is enormous. After a careful and repeated consideration of the foregoing specimens, skeletons, and skins, the same conclusion has always been arrived at, that these materials are all referable to one large species of Orang-ontang so far as the adult males and females, and probably also the adolescents and young, are concerned. As indicated above, there would, however, appear to be a dark and pale variety.

Some of the males of the dark race had cheek excrescences, while others had not, whereas none of the males of the pale variety manifested any trace of such facial enlargements. I have observed these cheek excrescences beginning to show themselves in a baby dark-coloured male Orang, and have also seen them in another young male of the same colour, probably 6 years of age.

In 1841 Sir James Brooke¹ stated that the *Mias rambi* of Borneo was taller than the *Mias pappan*, which is the Bornean race provided with cheek excrescences, and that the *Rambi* was destitute of those structures. Wallace² also mentions that the Dyaks of North-Western Borneo have names for three species of Mias, although he could never find any one who could determine them with precision. The Dyaks say that the *Mias rambi*, which has very long hair, equals the *Mias chappan* or *pappan* in size, but that it has no cheek excrescences. Wallace, however, regarded the *Mias rambi* as probably only rare examples of the large species in which the excrescences have been little or at all developed. In the "Malay Archipelago" no mention is made of the *Mias rambi*, nor indeed of Orangs without cheek excrescences equalling in dimensions those provided with these structures: all the Orangs, *Mias*

kassir, which had no excrescences, were much smaller animals than those which had them and were referred by Wallace to *S. morio*.

Wallace does not give any detailed description of the skull of the males he referred to *S. morio*, but he says, "It is smaller and weaker, and the zygomatic arches narrower than in the large species; it has no bony crest, but two faint ridges from 1½ inch to 2 inches apart, exactly as in the *S. morio* of Prof. Owen, figured in the 'Transactions of the Zoological Society.' The teeth, however, are, in proportion to the skull, of immense size, equalling, and in one case surpassing, those of the larger animals; the molars extending further backward, and the incisors and canines being set closely together, room is found for them in a much smaller jaw." The only skulls in this Museum corresponding generally to the foregoing description are those of female Orangs.

One adult male skull, 300, resembling, in size and in the development of its zygomatic and orbital ridges, the skull of the adult 3a with cheek excrescences, differs from it and resembles *S. morio* in the temporo-parietal ridges being far apart. Although this feature of *S. morio* occurs in this skull, there can be no doubt of the specific identity of the skull with the individual 3a or with *S. satyrus*, and Mr. Blyth records that Mr. Nicholls, who presented this Orang to the Asiatic Society of Bengal, stated that, if he remembered rightly, the skeleton had been given to him as that of a male, full grown, but not aged, and with a very broad face—a description which evidently indicates that the animal was an Orang with cheek excrescences. The non-union of the temporo-parietal ridges to form a sagittal ridge would appear in the case of male Orangs to be generally a sign that the animal had not attained full maturity. This skull has all its permanent teeth perfectly fresh and unground, and a few more years of masticating activity would probably have brought the ridges together. Even in female skulls referable to *S. morio*, the feeble lines indicating the temporal ridges tend to meet on the vertex in the fully adult animal; and in one skull the ridges are only separated by an interval of 0°·40, which, in all likelihood, would have disappeared with increased age; whereas in a female, with the last molar only cutting the gum, these ridges are 0°·50 apart. At the same time, in some cases, feeble development of the lower jaw, as pointed out by Mr. Wallace, associated with a small zygomatic aperture and a large cranial surface, contributes to keep the temporal ridges
apart; but these conditions cannot be regarded as the chief
cause of separated temporal ridges in Orang skulls, and,
moreover, in the skull 3oo they do not exist, and yet the
ridges are far apart.

In the old male 3pp, in its general features also resembling
the skull 3z, the fronto-parietal ridges remain far apart, even
although the animal is aged. The area, however, between
the ridges is covered with deep indentations—an abnormal con-
dition which may have contributed to the non-union of the
ridges.

The male skeletons also exhibit almost quite as much
variation in the length of their long bones as is manifested
by the skulls, in the particulars already indicated. One is so
remarkable for the shortness of its limb bones that Mr. Blyth
at first regarded it as a new species which he designated
S. curtus, but afterwards, when he had reviewed all the materials
at his disposal, he sunk the name in his catalogue as a synonymy
of S. satyrous.

The skull 3pp is remarkable for the number of depres-
sions on its frontal, as well as on its parietal, region. They
apparently resemble those described by Professor Humphry¹ as
occurring in an Orang from Borneo in the Anatomical Museum
of the University of Cambridge. There is a remarkable de-
gree of similarity between the two skulls, and they further
resemble each other in having the temporal ridges apart and
in possessing supernumerary molars.

The depressions in this skull are chiefly confined to the
interspace between the ridges, but they occur without any
symmetry. There is one large depression on the parietal,
immediately behind the left superciliary ridge 0"·70 long and
0"·65 broad, with another still deeper depression behind it,
0"·30 long and 0"·75 broad. A little removed from the right
superciliary ridge is a long partially-interrupted depression
1"·55 long and 0"·50 broad, which may be regarded as the
equivalent on this side of the depression just described, and
from which it is separated by a prominent eminence. All of
these depressions occur on the frontal, but immediately behi-
d there is another depression occupying the mesial line
of the skull, on the beginning of the parietal, 0"·80 broad and

The specimen described by Professor Humphry is stated to have been a
female, but the figure in which the canines are represented as large would
seem to indicate, along with the general characters of the skull, that the
animal had been a male.
0" 85 long, and still another on the posterior portion of the parietal close to the posterior end of the left temporal ridge. There is no trace of a sagittal suture. Nearly opposite to the first depression on the parietal, but immediately external to the left temporal ridge, there is another and sixth depression which seems to make itself felt along the inner side of the left temporal ridge. On making two transverse sections through these depressions and the intervening elevations, it is found that in the last of the depressions there is considerable thinning away of the walls of the skull, the cancellated substance having disappeared, and nothing but the hard tables remaining, in some places not thicker than 0".05; so that, had the thinning been carried a little further, the skull might have presented the anomalous appearance of a series of openings in deep depressions.¹ In such instances the depression is fully 0".10 in depth, and the walls of the skull on either side of it are fully 0".20 thick, with the diploe well developed. Between the depressions of either side is an elevated, but flattened, area, occupying the middle of the frontal. On the inner surface of the skull there are no concavities corresponding to the external depressions, but there is one small circular pit about 0".30 in diameter underlying the thickened area on the frontal. These defects in the skull appear to be due to an imperfection in the ossifying process, as stated by Professor Humphry, in consequence of which those parts of the skull are left thin.

It will be observed that these depressions, as in the instances cited by Professor Humphry in Man and in the Orang, do not occur in the course of the sagittal suture nor on the eminences of the frontal.²

Finding these depressions, in the two instances recorded,

¹ The skull of a female New Hollander in this Museum has one great parietal depression on the left side of the same nature as those in the Orang described above, another but smaller depression on the right side, and about six other irregular depressions on the left side. The first-mentioned depression is thinned away at its bottom to 0".03.

² In the foregoing New Holland skull the largest of the left parietal depressions involves the left parietal eminence.

In the Museum of the Medical College the skull of a young female Orang presents a simple depression on the commencement of the sagittal suture, and another slight one 0".70 by 0".50, which has its outline well defined by a clear difference in the texture of the depression and that of the surrounding parts. The depressed area is very dense and almost porcelainous. This skull also presents two deep pits on either side of the foramen magnum. The lambdoidal and sagittal sutures are obliterated, but the skull is very small, although it has got its lower permanent and its middle upper incisors.
associated with separated temporal ridges and an abnormal number of teeth, Orang skulls presenting any of these characters, either singly or in association, should be carefully observed.

Supernumerary teeth occur on both the upper and lower jaws of the left side. In the former the supernumerary tooth is a small erect two-fanged cylindrical tooth with two cusps. The normal last molar is deformed, consisting of three distinct internal cusps, with a large external cusp equalling the conjoint dimensions of the three former. In the skull described by Professor Humphry the additional tooth occurred on each side of the upper jaw, and, although smaller than the other teeth, both were well formed and with the normal number of fangs.

The supernumerary tooth in the lower jaw is quite as large as the last molar and has its crown directed forwards to the right side, as in the Orang skull described by Professor Humphry, due to the circumstance that it is set in the base of the coronoid process. From its position its crown could never be brought into use, but the hinder margin of the cingulum is partially worn away by friction against the upper supernumerary tooth.

The female skull 3\(\hat{a}\) has a well-formed additional molar behind the normal last tooth on each side of the lower jaw, each perfectly erect and in no way out of position.

Among these adult male Borneo skulls there is considerable variation, not only in the breadth of the front upper incisors, but in the length of the dental line from the premolar to the last molar, and in the dimensions of the molars, and in some skulls more particularly of the last molar.

Throughout the series there is considerable diversity in the extent and form of the nasal bones. In the skull 3\(\nu\) the nasals are 1\(\text{r}-\text{d}5\) long, expanding from 0\(\text{r}-\text{t}5\) to 0\(\text{r}-\text{t}0\), their greatest width. In the skull 3\(\varpi\) these bones show a decided tendency to unite with the maxillaries, whereas in skull 3\(\beta\) the nasals are little, if at all, expanded below, and are 1\(\text{r}-\text{s}0\) long with a maximum width of 0\(\text{r}-\text{t}5\), exhibiting no tendency whatever to union either with the frontal or maxillaries. In the skull 3\(\text{t}\) the maxillaries form a broad suture between the orbits, and the nasals disappear, being represented by a small azygos bone 0\(\text{r}-\text{t}5\) in length and 0\(\text{r}-\text{t}8\) in greatest breadth, so that it is quite possible that occasionally in Orangs the nasals may be suppressed or lost in the maxillaries, so insignificant is their fragmentary representation in the skull.
## Measurements of Skulls and Skeletons of Orang-outangs, male and female.

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<tbody>
<tr>
<td></td>
<td>3 D. m</td>
<td>3 E.</td>
<td>3 F.</td>
<td>3 G.</td>
<td>3 H.</td>
<td>3 I.</td>
<td>3 J.</td>
<td>3 K.</td>
<td>3 Q.</td>
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<td>3 D.</td>
<td>3 H.</td>
<td>3 I.</td>
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<td>Depth of skull from vertex to base of occipital condyle</td>
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<td>3.80</td>
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<td>Length of skull from occiput to margin of premaxillaries</td>
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<td>8.75</td>
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<td>8.73</td>
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<td>5.30</td>
<td>5.15</td>
<td>5.30</td>
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<td>5.00</td>
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<td>4.03</td>
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<td>Length of skull from frontal-nasal suture to margin of premaxillaries</td>
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<tr>
<td>Greatest lateral diameter of skull at post-auricular ridges</td>
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<td>Distance between temporal ridges</td>
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<td>1.45</td>
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<td>1.65</td>
<td>1.60</td>
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<td>1.81</td>
<td>1.67</td>
<td>1.61</td>
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<td>1.27</td>
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<td>Intercapsular between infra-orbital foramina</td>
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<td>1.50</td>
<td>1.61</td>
<td>1.61</td>
<td>1.50</td>
<td>1.50</td>
</tr>
<tr>
<td>Distance between the inferior margin of the nasal bone and the inferior margin of the premaxillaries</td>
<td>2.70</td>
<td>2.80</td>
<td>2.55</td>
<td>2.70</td>
<td>2.60</td>
<td>2.70</td>
<td>2.60</td>
<td>2.40</td>
<td>2.30</td>
<td>1.80</td>
<td>2.00</td>
<td>2.95</td>
<td>2.60</td>
<td>2.05</td>
<td>1.64</td>
</tr>
</tbody>
</table>

**MAMMALLIA.**
<table>
<thead>
<tr>
<th>Measurement</th>
<th>3'30</th>
<th>3'25</th>
<th>2'60</th>
<th>2'85</th>
<th>3'40</th>
<th>3'45</th>
<th>3'35</th>
<th>3'20</th>
<th>2'70</th>
<th>2'65</th>
<th>2'40</th>
<th>2'34</th>
<th>2'35</th>
<th>2'38</th>
</tr>
</thead>
<tbody>
<tr>
<td>From the anterior margin of the occipital foramen to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>the posterior margin of the bony palate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of the bony palate along the mesial line</td>
<td>3'55</td>
<td>3'75</td>
<td>3'25</td>
<td>3'50</td>
<td>3'35</td>
<td>3'28</td>
<td>3'30</td>
<td>3'12</td>
<td>2'65</td>
<td>2'67</td>
<td>2'82</td>
<td>2'06</td>
<td>2'50</td>
<td>2'43</td>
</tr>
<tr>
<td>Breadth of palate between canines</td>
<td>1'60</td>
<td>1'50</td>
<td>1'45</td>
<td>1'70</td>
<td>1'57</td>
<td>1'48</td>
<td>1'40</td>
<td>1'50</td>
<td>0'35</td>
<td>1'40</td>
<td>1'60</td>
<td>1'86</td>
<td>1'61</td>
<td>1'69</td>
</tr>
<tr>
<td>&quot;           &quot; last molar</td>
<td>1'58</td>
<td>1'50</td>
<td>1'28</td>
<td>1'50</td>
<td>1'20</td>
<td>1'40</td>
<td>1'10</td>
<td>1'50</td>
<td>1'28</td>
<td>1'33</td>
<td>1'40</td>
<td>1'45</td>
<td>0'50</td>
<td>...</td>
</tr>
<tr>
<td>From the anterior margin of the intermaxillary bones</td>
<td>0'94</td>
<td>1'15</td>
<td>1'00</td>
<td>1'10</td>
<td>0'80</td>
<td>0'80</td>
<td>1'00</td>
<td>0'99</td>
<td>1'09</td>
<td>0'65</td>
<td>0'72</td>
<td>0'70</td>
<td>0'85</td>
<td>0'59</td>
</tr>
<tr>
<td>to the anterior palatine foramina</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth of the crown of the first incisor, upper jaw</td>
<td>0'52</td>
<td>0'56</td>
<td>0'50</td>
<td>0'70</td>
<td>0'62</td>
<td>0'60</td>
<td>0'55</td>
<td>0'56</td>
<td>0'48</td>
<td>0'50</td>
<td>0'50</td>
<td>0'43</td>
<td>0'62</td>
<td>0'43</td>
</tr>
<tr>
<td>&quot;           &quot; second &quot;        &quot;        &quot;</td>
<td>0'38</td>
<td></td>
<td>0'30</td>
<td>0'30</td>
<td>0'35</td>
<td>0'35</td>
<td>0'40</td>
<td>0'35</td>
<td>0'30</td>
<td>0'36</td>
<td>0'35</td>
<td>0'36</td>
<td>0'33</td>
<td>0'26</td>
</tr>
<tr>
<td>Breadth of the incisors in situ</td>
<td>1'60</td>
<td></td>
<td>1'50</td>
<td>1'76</td>
<td>1'60</td>
<td>1'63</td>
<td>1'60</td>
<td>1'60</td>
<td>1'65</td>
<td>1'65</td>
<td>1'65</td>
<td>1'65</td>
<td>1'65</td>
<td></td>
</tr>
<tr>
<td>Longitudinal extent of molars and bicuspids of one</td>
<td>2'15</td>
<td>2'25</td>
<td>2'10</td>
<td>2'37</td>
<td>2'20</td>
<td>2'20</td>
<td>2'10</td>
<td>2'18</td>
<td>2'05</td>
<td>2'05</td>
<td>2'06</td>
<td>2'00</td>
<td>2'16</td>
<td></td>
</tr>
<tr>
<td>side, upper jaw</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of crown of upper canine</td>
<td>0'85</td>
<td>1'20</td>
<td></td>
<td>1'25</td>
<td>0'90</td>
<td>0'87</td>
<td>0'90</td>
<td>1'20</td>
<td></td>
<td>0'42</td>
<td>0'68</td>
<td>0'49</td>
<td>0'68</td>
<td></td>
</tr>
<tr>
<td>Breadth of</td>
<td>0'70</td>
<td>0'68</td>
<td>0'50</td>
<td>0'72</td>
<td>0'28</td>
<td>0'65</td>
<td>0'60</td>
<td>0'70</td>
<td>0'67</td>
<td>0'52</td>
<td>0'60</td>
<td>0'50</td>
<td>0'56</td>
<td></td>
</tr>
<tr>
<td>Length of the lower jaw from the condyle to the</td>
<td>6'35</td>
<td>6'76</td>
<td>6'25</td>
<td>6'40</td>
<td>6'55</td>
<td>7'15</td>
<td>6'50</td>
<td>6'47</td>
<td>6'60</td>
<td>5'65</td>
<td>6'49</td>
<td>5'80</td>
<td>5'45</td>
<td>4'87</td>
</tr>
<tr>
<td>anterior surface of the socket of the incisors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of canine, lower jaw</td>
<td>0'66</td>
<td>1'00</td>
<td></td>
<td>1'00</td>
<td>0'95</td>
<td>0'85</td>
<td>0'86</td>
<td>0'85</td>
<td></td>
<td>0'45</td>
<td>0'68</td>
<td>0'62</td>
<td>0'70</td>
<td></td>
</tr>
<tr>
<td>Greatest breadth of</td>
<td>0'60</td>
<td>0'60</td>
<td>0'55</td>
<td>0'73</td>
<td>0'57</td>
<td>0'55</td>
<td>0'50</td>
<td>0'80</td>
<td>0'53</td>
<td>0'54</td>
<td>0'46</td>
<td>0'40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth of ascending ramus</td>
<td>2'64</td>
<td>2'70</td>
<td>3'50</td>
<td>2'45</td>
<td>2'90</td>
<td>2'88</td>
<td>2'70</td>
<td>2'80</td>
<td>1'60</td>
<td>1'38</td>
<td>2'00</td>
<td>2'10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of right humerus</td>
<td>14'30</td>
<td>15'30</td>
<td>16'50</td>
<td>16'25</td>
<td>18'35</td>
<td>16'05</td>
<td>15'00</td>
<td>12'85</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>&quot; of &quot; radius</td>
<td>14'30</td>
<td>15'25</td>
<td>16'00</td>
<td>16'10</td>
<td>13'50</td>
<td>14'90</td>
<td>13'50</td>
<td>13'25</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>&quot; of &quot; ulna</td>
<td>13'10</td>
<td>14'70</td>
<td>16'80</td>
<td>18'00</td>
<td>14'20</td>
<td>15'40</td>
<td>13'20</td>
<td>13'30</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>&quot; of &quot; femur</td>
<td>10'90</td>
<td>10'20</td>
<td>11'30</td>
<td>11'30</td>
<td>10'45</td>
<td>11'70</td>
<td>10'00</td>
<td>9'20</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>&quot; of &quot; tibia</td>
<td>9'40</td>
<td>9'00</td>
<td>10'00</td>
<td>10'60</td>
<td>0'00</td>
<td>9'30</td>
<td>9'10</td>
<td>8'60</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>&quot; of &quot; fibula</td>
<td>8'60</td>
<td></td>
<td>8'20</td>
<td>9'10</td>
<td>8'40</td>
<td></td>
<td>9'10</td>
<td>8'50</td>
<td>8'05</td>
<td></td>
<td>...</td>
<td>...</td>
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</tr>
</tbody>
</table>
4. Simia abelii.

Ourang-outang of Sumatra, Clarke Abel, As. Resch., vol. xv, 1825, p. 489, pls. 1 to 3, and IV & V.

Sumatran Orang-outang.

Hab. Sumatra.

4a. The lower jaw, No. 3B of Blyth's Catalogue, of the large individual first described by Dr. Clarke Abel in the Asiatic Researches, Vol. XV, 1825. This jaw was figured in the same work, Plates IV and V, and again figured, half natural size, in the Journ. As. Soc. Bengal, Vol. VI, Plate XVIII. Described by Mr. Blyth, op. cit., Vol. XXII, 1853, p. 374. This specimen is very much smaller than the jaw of the next skull. The former measures only 6"-55 in the extreme length of the jaw, whereas the latter is no less than 7"-60. The condyle of Dr. Clarke Abel's specimen is only 3"-50 above the inferior line of the horizontal ramus, whereas in the next individual the measurement is 4"-90. The coronoid process of the former is only 3"-90, while in the latter it is 4"-70, the breadth of root of the ascending ramus in Dr. Clarke Abel's animal being 2"-30 to 2"-65 in next specimen. There is no perceptible difference in the length of the dental line of the two jaws, but this jaw is enormously larger than the other. The symphysis in Dr. Clarke Abel's specimen is only 2"-60, and in the next skull it is as great as 3"-05. The form of the jaws is much the same, and although the smaller jaw has all its teeth, the teeth are not worn, whereas in the other massive jaw the teeth are considerably worn. I am therefore disposed to attribute the difference in size solely to individual peculiarities. Presented by Captain Cornfoot, 1822.1

1 The stuffed skin of Dr. Clarke Abel's specimen from the north coast of Sumatra, presented by Captain Cornfoot, As. Researches, Vol. XV, App. p. 32, 1822, and described in the Asiatic Researches for 1825, in which the head, lower jaw, teeth, hand and foot are figured, was not in the Asiatic Society's Museum when I took charge of it for the Trustees of the Indian Museum.

Owen has stated that the Sumatran Orang has no cheek excrescences, but
HYLOBATES.

b. The skull of an adult male. Sumatra. No. 3C of Blyth’s Catalogue: described by Pearson as S. gigantica, Journ. As. Soc. Bengal, Vol. X, p. 660, and the measurements given by Mr. Blyth, op. cit., Vol. XXII, p. 380, tab. No. 2, and figured l. c., Plates I and II. The skull is much more massive than any of the skulls of S. satyrus and distinguished from them by the great depth of the malo-maxillary area, which is flat and much expanded, and measures 2 inches in height, whereas in the skulls referred to S. satyrus it is seldom above 1".42 in depth. The muzzle also is very powerful, and the canine ridges enormous. The breadth across the front of the orbital region is greater than in the foregoing skulls of S. satyrus, and the superciliary ridges are much more developed. The orbits are irregularly vertically oval. The temporal ridges are strongly marked and form a prominent sagittal ridge. The zygomatic arch is strong, and the lower jaw very massive, with a broad ascending ramus. This skull corresponds so closely to the figure of the skull described by Professor Owen¹ that there can be no doubt of their specific identity.

II.—Sub-Family HYLOBATINÆ.

Genus HYLOBATES, Illiger, 1811.

5. Hylobates syndactylus.

Pithecus syndactylus, Desmarest, Mamm., 1820, p. 531.

Hab. Sumatra and Malayan Peninsula.


Mr. Blyth distinctly mentions that the skin of Dr. Clarke Abel’s specimen possessed cheek excrescences, but less developed than in the Bornean male (Journ. As. Soc. Beng., Vol. XXII, 1853, p. 370).


e. The ligamentary skeleton of an adult male. Presented by W. Rutledge, Esq., 19th April 1874.

f. The skeleton and flat skin of a young male. Presented by the Zoological Gardens, Calcutta, 26th June 1880.

g. The skin and skull of a young male. Presented by W. Rutledge, Esq., 29th November 1880.

6. Hylobates hoolock.

The Fifé Nieuhoff, Recueil des Voyages, &c., t. iii, 1716, p. 168.

Hylobates hoolock, Lesson, Sp. des Mammif., 1840, p. 54.

Hab. Assam; extending into the Eastern Himalayas (Bhutan), also to upper portion of the valley of the Irrawadi, and into the hilly country to the east of that river at Bhamo, and from Manipur and Cachar into Northern Arakan.

6a. A stuffed adult male, and its articulated skeleton: Nos. 5 A and H of Blyth’s Catalogue. Entirely black, with the exception of a white supercilium. From the Barrackpore Menagerie, 1842.

b. A stuffed adolescent male, same as preceding specimen, and its articulated skeleton: Nos. 5 B and I of Blyth’s Catalogue. From Barrackpore Menagerie, 1842.

c. A stuffed adult female, brown above, darker on the under parts, sides of face, hands and feet. No. 5D of Blyth’s Catalogue. Presented by Lieutenant-Colonel R. S. Tickell, 1842-49.

d. A stuffed adult female: the same as c. No. 5F of Blyth’s Catalogue. Presented by Raja Rajendra Mullick, Bahadur.
HYLOBATES.


g. The skin of a young male: black. Purchased, September 1866.

h. A stuffed young black female. Purchased, 19th May 1868.

i. The skin of a young black male. Purchased, 29th May 1869.


n. The skin of a young black male. Presented by W. Rutledge, Esq., 16th June 1871.


p. The skin of a young male: blackish brown on the back, and sides of the face and middle of chest. Presented by W. Rutledge, Esq., 30th June 1871.

q. The skin and bones of the trunk of a nearly adult female: pale yellow above, and light brown below and on the sides of the head. Cachar. Museum Collector, 1867-68.

r. A characteristic adult male, jet black, with white supercilium. Samaguting, Assam. Presented by Captain J. Butler, October 1872.


t. The ligamentary skeleton of a young male. The general colour of this gibbon was yellow, but the belly and inside of the limbs were brown. Cachar. Presented by C. Brownlow, Esq., 2nd August 1872.

u. The ligamentary skeleton of a young male, like the preceding specimen. Cachar. Presented by C. Brownlow, Esq., 2nd August 1872.

v. The skin and ligamentary skeleton of a young male, the same as the two preceding specimens. Cachar. Presented by C. Brownlow, Esq., 2nd August 1872.
w. An imperfect flat skin of a black male. Hotha, Western Yunnan. Dr. J. Anderson. Presented by the First Expedition to Western Yunnan, 1868.

x. Another similar male skin. Teng-yue-chow, Yunnan. Dr. J. Anderson. Presented by the First Expedition to Western Yunnan, 1868.

y. The skin of a young female, also its skull and the bones of its trunk. Presented by W. Rutledge, Esq., 17th April 1877.

z. The skin, skull, and bones of the trunk of an adult female: greyish yellow above and blackish brown below, and on the sides of the head and on the fingers. Presented by the Zoological Gardens, Calcutta, 19th May 1877.


bb. The skin and skull of a young female. This specimen has the head and back greyish yellow; this colour also occurring here and there on the limbs and along the mesial line of the under surface of the body. This individual marks the transition from black to pale yellow, a colour which frequently occurs in adult females. Tipperah. Presented by the Zoological Gardens, Calcutta, 28th August 1879.

cc. The skin and skull of a young black female. Presented by W. Rutledge, Esq., 10th April 1880.

dd. A young skull, No. 5I of Blyth’s Catalogue.

ee. A young skull, No. 5L of Blyth’s Catalogue.

ff. A young skull, No. 5M of Blyth’s Catalogue.

gg. A young skull, No. 5K of Blyth’s Catalogue.


ii. The skull of a young animal. No history.

jj. The skeleton of a young male. Purchased, 12th June 1869.

kk. The ligamentary skeleton of an adolescent male. Purchased, 6th June 1869.


Simia longimana, Schreber, Säugeth. Bd. i, 1775, p. 66, pl. iii, fig. 1 (Buffon).
Hylobates variegatus, Kuhl, Beitr. zur Zool. 1820, p. 5.
Simia variegata, Fischer, Syn. Mamm. 1829, p. 11.

Hab. Arakan, Lower Pegu, Tenasserim, and Malayan Peninsula.

7a. A stuffed adult female; brown, but paler on the lower half of the back. In Skin Collection. No history.
7b. The skin of an adult: brown, but passing into greyish between the shoulders and along the back; darkest on the head.
7c. A stuffed adult male: brown, but much variegated on the back and on the arms with an intermixture of yellowish. No history.
7d. A stuffed adult female: brown, becoming pale yellowish-brown on the back and on the extremities, the legs being but little paler than the normally coloured feet. No history.
7e. A stuffed adult female: pale yellow. Malacca, 1846.
7f. A stuffed young female: rich yellow.
7g. A stuffed very young female: pale yellow.
7h. A stuffed adult female, black, with the usual distinctive marks. Presented by A. Grote, Esq., 26th June 1864.
7i. A stuffed young female: brown, pale yellowish on back of the thighs, and yellowish on the throat, chest, and middle line of abdomen. Purchased, 20th September 1866.
7j. A stuffed adolescent male: black, with the usual markings. Tenasserim. Presented by the Countess Mayo, 14th February 1870.
7k. A stuffed adult male: brown, darkest on the head, passing into light yellowish-brown on the lumbar region. Presented by W. Rutledge, Esq., 14th July 1871.
7l. A stuffed young animal: top of the head black, paler on the occiput and between the shoulders, where the colour is greyish. On the lumbar region, hips, and under surface of thighs the colour is yellowish. Hands yellowish brown, feet yellow, and the area around the nude, black face white.
m. A stuffed young female: greyish brown, dark brown on the vertex; back greyish, passing into yellow on the lumbar region, and on the back of the thighs. Presented by W. Rutledge, Esq., 29th September 1871.

n. The skin of an adolescent: pale brownish yellow, the hands and feet somewhat paler; the eyebrows blackish, and the area around the face white. No history.

o. The skin of a young male: black, with some grey patches on the back, and pale on the sacral region: area around callosities and the back of the thighs rusty yellow; mesial line of chest and abdomen greyish yellow. Presented by W. Rutledge, Esq., 2nd March 1876.

p. The skin, skull, and bones of the trunk of a young male. Presented by the Zoological Gardens, Calcutta, 6th May 1877.

q. The skin, skull, and bones of the trunk of a young male. Presented by W. Rutledge, Esq., 19th August 1878.

r. The skin, skull, and bones of the trunk of a young female resembling l and m. Presented by W. Rutledge, Esq., 13th February 1877.

s. The skin of an adult, uniform pale, sandy yellow. Mooleyit Range, Tenasserim. Collected by Mr. Ossian Limborg. Presented by Dr. J. Anderson, 10th December 1880.

t. The skin of an adult female like the last, and from the same locality. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.

u. A nearly mature male foetus in alcohol. The head is especially well clad with hair, but the back of the loins and of the brachium are covered with numerous hairs directed downwards, but all the other parts are nearly nude. The teats are especially well developed. This is the foetus of t. Mooleyit Range, Tenasserim. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.


w. The skull of a dark-coloured young animal. Nasal processes of frontal downwardly prolonged and broad. No history.

x. The skull of a pale adolescent: nasal processes of frontal short and narrow. No history.


z. The skull of a young yellow individual. No. 8E of Blyth's Catalogue.
8. Hylobates agilis.


Pithecus agilis, *Desmarest, Mamm.* 1820, p. 532.


Hylobates variegatus, *Temminck, Monogr. de Mamm. t. i., 1827, p. xiii.*


Hab. Sumatra, Siam, Cochin China, Borneo, and Sulu Islands.

A careful reconsideration of the various gibbons to which the terms above given have been applied leads me to regard them all as local races and varieties of one and the same species.

8a. The skin of a young male: brown, paler on the lumbar region, and on the outside of the hind limbs; hands and feet black; chest pale yellowish-brown; supercilium white; no white on the whiskers. Presented by W. Rutledge, Esq., 6th September 1869.

b. A stuffed young female: brown, passing into yellowish on the lumbar region, and to pale brown on the outside of the thighs; top of the head brown, parietal and occipital regions pale greyish-brown; supercilium and whiskers white; chest and inside of limbs black; hands and feet blackish brown. Presented by W. Rutledge, Esq., 16th January 1870.

c. A stuffed young male: the same as the preceding. Presented by W. Rutledge, Esq., 8th August 1871.


e. A stuffed young male and its skull: the same as b. Presented by W. Rutledge, Esq., 13th July 1875.

The skin, skull, and bones of the trunk of an adult female: greyish brown on the back, passing into yellowish brown on the lumbar region, and on the back and the sides of the thighs; into darker fuliginous brown on the shoulders, sides, and outsides of the limbs. Top of the head dark brown; supercilium greyish; whiskers darker grey; throat, chest, and anterior half of front limbs black; inside of fore and hind limbs darker than the outsides; mesial portion of ventral aspect white. Presented by W. Rutledge, Esq., 8th May 1873.

h. The skin and skeleton of a young male: general colour asky, darkest on the vertex, shoulders, and across the chest, and on the hands and feet; fading to pale grey on the lower portion of the back and on the hind limbs. Presented by W. Rutledge, Esq., 16th January 1877.

i. The skin, skull, and bones of the trunk of an adult female: supercilium grey; forehead and mesial line of crown black-brown; temporal and supra-occipital regions yellowish grey. Sides of the face and neck, throat, chest, shoulders, upper half of the fore limbs, under surface and inside of thighs and fore limbs, black; a narrow dark-brown line from the sides of the neck round the nape; back light yellowish-grey, passing on the sides into brown; limbs greyish brown; hands black; feet less so. Purchased, 24th December 1878.

j. The skin, skull, and bones of trunk of an adult female: grey from the occiput downwards along the back, becoming paler on the hinder quarters, with a distinct yellowish tint. The crown, also the sides of the head and neck, the throat, breast, shoulders, inside of brachium and posterior border of antibrachium, and the whole of the under parts and inside of the thighs, black. Supercilium greyish. The outside of the forearms brownish grey, also the hands. The outsides of the thighs greyish, like the back; the lower portion of the hind limb grey and blackish; the feet greyish. Presented by W. Rutledge, Esq., 14th July 1877.

k. The skin, skull, and bones of the trunk of a young female, like the previous specimen, but the grey of the back paler and somewhat yellow, and not extending upwards beyond the shoulders, above which the colour is brownish asky, darkening into fuliginous blackish brown on the crown; hands and feet black, or nearly so. Purchased, 25th December 1878.

l. The skull of a young male resembling k. Presented by Babu R. R. Shaw, 4th March 1867.

Le Moloch, Audebert, Hist. Nat. des Singes, 1st fam., sec. ii, fig. ii.
Simia leuciscus, Schreber, Säugeth. tab. iiiB, 1775.

Hab. Java.

9a. A stuffed specimen in bad condition; yellow; darkest on the top of the head and the outside of the brachium; palest on the nape and down the back. No. 6 of Blyth’s Catalogue. Presented by the Maharajah of Burdwan, 1848.

b. Another specimen, like the preceding, but younger; No. 6 of Blyth’s Catalogue. Presented by the Maharajah of Burdwan, 1848.

c. Another, nearly the same as the two preceding specimens, but tending to brownish grey on the top of the head and outside of the arms, and on the shoulders. No. 6 of Blyth’s Catalogue. Presented by the Maharajah of Burdwan, 1848.

d. A stuffed adolescent female and its skull: Nos. 7 A and B of Blyth’s Catalogue: yellowish grey; dark brown on the vertex, on the inside of the thighs, and along a line from the groin to the axilla. Pale yellowish-white on the lower half of the back, and on the hips and back of thighs. Fingers and toes dusky. The area of the fontanelle in the skull is ossified as a distinct bone intercalated between the anterior portion of the parietal and posterior half of the frontal; last molar not through. Purchased, 1834.

e. A stuffed young female: pale yellow; fuliginous on the top of the head, nape, shoulders, and upper half of the back, and on the outside of the brachium; inside of thighs, outside of antibrachium tinged with fuliginous; hands concolorous with antibrachium, and the feet yellow, like the legs; area around the face yellow; chest and belly yellowish, but the former tinged with fuliginous. Purchased, 18th July 1869.
f. A stuffed adolescent female: almost uniform greyish brown, darkest on the forehead and brachium; palest on the side of the face and on the supercilium. Presented by Wm. Rutledge, Esq., 4th September 1870.

g. A stuffed young female, and the bones of the trunk: nearly the same as the preceding; the visceræ in alcohol. Presented by Wm. Rutledge, Esq., 2nd July 1872.

h. A stuffed young female, and the bones of the trunk: slightly darker than the last two; fuliginous yellow on the lumbar region, hips, upper half of the inside of the thighs, chest, and belly, the chin, the sides of the face, and the supercilium. Presented by Wm. Rutledge, Esq., 26th June 1873.

i. The skin of a young female, its skull (milk dentition) and the bones of the trunk: resembling the preceding specimen. Second and third digits of the right foot partially united at their base. Presented by Wm. Rutledge, Esq., 10th April 1876.

j. The skin of a young male, the skull and bones of the trunk: ashy grey on the upper parts, darkest on the crown, the forehead being greyish white; the throat, neck, chest, mesial line of the belly, and the front and outside of the thighs yellowish grey; the fingers and the distal ends of the toes dark brown. Presented by Wm. Rutledge, Esq., 7th July 1877.

k. The skin of an adolescent female, its skull and the bones of the trunk: like the preceding specimen, but somewhat paler; no yellowish grey on the throat, no brown on the fingers and toes; yellowish around the callosities and on the back of the thighs. Presented by the Zoological Gardens, Calcutta, 21st July 1877.

l. The skin of a young female, its skull and the bones of the trunk: like the preceding individual, but somewhat darker. Presented by Wm. Rutledge, Esq., 10th December 1878.

m. The skin and skull of a young male. Presented by Wm. Rutledge, Esq., 3rd December 1879.

n. The skin and skull of a young female resembling i. Presented by Wm. Rutledge, Esq., 2nd March 1880.

10. *Hylobates leucogenys.*


Hab. Siam.

10a. The skin, the skull, and the bones of the trunk of a
young female: wholly black, with the exception of a feebly whitish supercilium, and a greyish white ruff on the sides of the face and behind the chin. The interocular nasal portion of the skull is relatively narrower than in *H. agilis*. Presented by the Zoological Gardens, Calcutta, 4th December 1878.

b. The skin and skull of an adolescent female: wholly black, with a brown tinge on the body; whiskers and eyebrows grey. In both of these specimens the second and third digits of the feet are united at the base. Presented by Wm. Rutledge, Esq., 13th June 1874.

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II.-FAMILY CERCOPITHECIDÆ.

I.—SUB-FAMILY SEMNOPITHECINÆ.

**Genus Semnopithecus**, F. Cuv., 1821.

11. *Semnopithecus entellus*.


*Hab.* India.

11a. A stuffed adult male, No. 27A of Blyth's Catalogue: pale yellow; pale brownish on the outside of the limbs, and black on the hands and feet. Presented by Edward Blyth, Esq., 1842.

b. A stuffed adult female, No. 27B of Blyth's Catalogue: brownish on the middle of the back from the nape to the tail, and dark brown on the outside of the limbs; hands and feet black. Presented by Edward Blyth, Esq., 1842.

c. A stuffed adolescent female, No. 27C of Blyth's Catalogue: like the preceding specimen, but more brightly coloured
on the head, and golden yellow or rusty fulvous on the flanks and under surface, thus approaching S. pileatus. Jangipur. Presented by J. W. Laidlay, Esq., 1848.

d. A stuffed young male, No. 27D of Blyth's Catalogue: pale yellow; brownish on the middle of the lower two-thirds of the back, and slightly so on the outside of the limbs; hands and feet black. Presented by Edward Blyth, Esq., 1842.

e. A stuffed young female, No. 27E of Blyth's Catalogue: pale yellow; no trace of brown on the back; hands and feet brownish black. Presented by Edward Blyth, Esq., 1842.

f. A stuffed young male: pale yellow, slightly suffused with fuliginous on the lumbar and sacral regions, and on the middle of the back; limbs pale yellow; hands and feet brownish. Purchased, January 1866.

g. A stuffed adult (gravid) female: the bones of the trunk, and the foetus in alcohol. Yellow on the head, flanks, belly, and front of fore-arms and back of thighs; rather dark-greyish brown on the back, with a yellow tinge, but the former colour deepening towards the tail. Purchased, 8th August 1869.

h. A stuffed young male: pale yellow, suffused with pale fuliginous on the middle of the back; yellow, slightly rusty on the back of the thighs; reddish brown on the tail and similarly coloured around the ankles, on the tarsal and on the carpal regions; the rest of the upper surface of the hands and feet black. Purchased, 8th March 1870.

i. The skin of a pale yellow adolescent male: much the same as the last, but the rufous less intense. Asiatic Society's specimen, but no history.

j. The skin, skull, and bones of the trunk of a young female: pale yellow, fuliginous on the latter half of the back and on the outside of the limbs; tail brownish yellow; hands and feet black. Presented by Wm. Rutledge, Esq., 9th February 1874.

k. The flat skin and skeleton of an animal the same as the preceding female j. Purchased, 22nd June 1872.

l. The flat skin and skeleton of an adult male: rather bright yellow and golden on the ventral region; lower half of back and outside of limbs dusky fuliginous; hands and feet black. Purchased, 6th August 1873.

m. The flat skin and skeleton of a younger and more deeply coloured male than the preceding. Presented by Raja Rajendra Mullick, Bahadur, 7th December 1873.

n. The flat skin and skeleton of a young female: dusky on
the lower half of the back and on the outside of the limbs. Presented by B. Collins, Esq., 13th September 1874.

o. The skin, skull, and bones of the trunk of an adolescent male. Purchased, 6th October 1877.


q. The articulated skeleton of an adult male. Probably No. 27F of Blyth's Catalogue.


s. The disarticulated skeleton of an adult female. Royal Botanical Gardens, Howrah. Purchased, 30th December 1868.

t. The disarticulated skeleton of a young female. Presented by Dr. J. Anderson, 24th June 1869.

u to w. Three skulls of adult males, Nos. 27G, H, and I of Blyth's Catalogue.

x. The skull of an adolescent male. Presented by G. Sceva, Esq., 10th October 1868.


**Var. a.**

Semnopithecus schistaceus.


*Hab.* Himalaya, Bhutan, and to the West of Simla, at elevations from 4,000 to 13,000 feet.

11aa. A stuffed adult male and skull, Nos. 28A and B of Blyth's Catalogue: head, neck, chest, inside of limbs, and under parts yellow; general colour of the trunk brownish or fuliginous yellow, and darkest on the shoulders, outside of
fore limbs, and thighs; hands nearly black; feet dusky; hair long and, profuse on the body, and on the feet; tail concolorous with the body, paling towards the tip. Masuri. Presented by Captain T. Hutton, 1848.

bb. The skin of an adult male: general colour of the upper parts, except the head, dark slaty, darkest on the outside of the fore limbs, passing almost into blackish on the fingers; dark on the thighs, but paling towards the ankle and passing almost into blackish on the toes. Tail concolorous with the back, becoming darker towards the tip. Head pale yellow, nearly white; chin, throat, chest and under parts, and inside of limbs, yellowish. Fur wavy, profuse, and long. Sikkim, Himalaya. Presented by L. Mandelli, Esq., November 1875.

c. The skin of another adult, the same as the last. Sikkim. Presented by L. Mandelli, Esq., November 1875.


12. Semnopithecus priamus.


Presbytis priamus, Blyth, Journ. As. Soc. Beng. vol. xvi, 1847, p. 732, pl. liv. fig. 1; Cat. Mamm. As. Soc. Mus. 1863, p. 12; Jerdon, Mamm. Ind. 1867, p. 7.

Presbytis thersites, Elliot, Blyth, Journ. As. Soc. Beng. vol. xvi, 1847, p. 1271, pl. liv. fig. 3.

Semnopithecus albipes, Gray, Cat. Monkeys and Lemurs, B. M., 1870, p. 15.


Hab. The Eastern Ghâts of India, and Northern Ceylon.

12a. A stuffed adult female, and skull: No. 30A of Blyth’s Catalogue. Pale fuliginous on the upper parts of the trunk and on the head, but palest on the head and darkening towards the rump; almost yellow on the nape. Outside of the fore limbs and thighs pale ashy brown; yellow on the sides of the head, throat, chest and inside of the limbs, lower half of the thigh, and hands and feet. Coromandel Coast. Presented by Sir Walter Elliot, 1847.

b. A stuffed adult male, and skull, No. 30B of Blyth’s Catalogue. Much darker than the preceding specimen:
fuliginous brown on the upper parts, except the sides and part of the head and nape, which are yellowish; vertex pale fuliginous brown, the same colour as the back, also the outside of the limbs and the tail. Under parts, inside of the limbs, and back of thighs yellowish; upper surface of hands showing a distinct tendency to dusky. St. Pedro, Ceylon. Presented by E. L. Layard, Esq., 1848.

c. A stuffed adult and its skull, No. 30C of Blyth’s Catalogue. Larger than the preceding, but with the head and nape darker; limbs fuliginous, the hands and feet concolorous with them. "The original of P. thersites, Elliot, from Ceylon."—Blyth. Ceylon. Presented by Sir Walter Elliot, 1845.


Blyth described S. priamus as having a compressed, high, vertical crest, but one of the foregoing specimens (c) shows no sign of a true crest, and, as Blyth stated that the specimen which was under his observation when alive had no crest, I examined the types of the species a and b, and found that in a the skin of the vertex had been cut open and cotton wool introduced between the skull and the skin, and that where the cotton wool was there the crest existed. In b the short compressed crest occurred exactly over the point of a wire that perforated the skull and pressed against the skin.

e. The skull of an adult male, No. 30E of Blyth’s Catalogue. Trincomali. Presented by Dr. E. F. Kelaart.

f. The skull of an adult male, No. 30F of Blyth’s Catalogue. Trincomali. Presented by Dr. E. F. Kelaart.


h. The skull of an adult female, No. 30H of Blyth’s Catalogue. Ceylon. Presented by E. L. Layard, Esq.

The skull of S. priamus, in its adult condition, is considerably smaller than that of S. entellus; the vertical depth of its face is relatively less than in that species, while, on the other hand, it is proportionally broader across the orbits. Its frontonasal depth also is less than in S. entellus, the nasals being short and broad, and the nasal opening considerably shorter than in that species; a line drawn through the centre of the face, from the alveolar border of the premaxillaries to the supraorbital ridge, does not touch the distal end of the nasals, these bones being rather flattened and broad, and slightly
concave. These differences in the details of the configuration must confer on S. priamus a very different visage from that of S. entellus. There is not much difference in the teeth of the two forms, but in S. priamus they are relatively larger than in S. entellus, except the canines, which are smaller.

13. Semnopithecus hypoleucus.


Hab. Forests of the Malabar Coast.

13a. A stuffed adult male and skull, No. 29A of Blyth’s Catalogue. Head, except the eyebrows and skin of face, yellow; throat, under parts, inside of brachium and thighs yellow, especially bright on the chest and belly. Brown from the shoulders to the root of the tail, darkest on the middle of the back, paler on the sides and the posterior half, and the outside of the thighs. Antibrachium, front of thighs, and lower half of legs black, light brownish on the front of the tibia. Hands and feet black, concolorous with the limbs. Tail black, brownish towards its tip. Hair of head semi-erect and backwardly directed; a few black hairs before the ears: nails black.
The skull of this species has the general features of the skull of S. priamus, but it is smaller and characterised by much less prominent supraorbital ridges and by considerably less interorbital breadth, with narrow rather compressed nasals, in this respect conforming to the female of S. priamus. The skull is entire, with the exception of the occipital and basi-occipital portion, and its length from the premaxillaries to the lambdoidal ridge is 4”-26, the palate measuring 1”-73. The fronto-malar and greatest zygomatic breadth are respectively 2”-55 and 3”-30. These measurements show that this species is the smallest of the Indian Semnopithecus. Travancore. Presented by Dr. W. Coles, 1841.

14. Semnopithecus pileatus.


Hab. Northern Assam, Tipperah, Eastern Bengal Hill Tracts, Arakan, Upper Burma, and Tenasserim.


b. A stuffed adult female, No. 31B of Blyth’s Catalogue. Considerably paler than the preceding specimen, especially on the posterior half of the trunk and the limbs, which are almost yellow. Carpal portion of hand blackish, fingers yellowish; feet similarly coloured. Tail concolorous with the back, becoming darker towards the tip. Chittagong Hills. Presented by the Rev. J. Barbe, 1844.

c. A stuffed adolescent male, No. 31C of Blyth’s Catalogue. The orange yellow especially bright on the front of the shoulder, side of the neck, and head. Outside of lower half of hind limbs rich yellow, hands and feet dusky. Tipperah Hills. Presented by F. Skipwith, Esq., 1846.

d. A stuffed female, No. 31D of Blyth’s Catalogue. Light coloured; under parts pale yellow; no trace of orange. General colour of upper parts and outside of limbs greyish or fuliginous, darkest on the front of the head and on the shoulders. Presented by the Barrackpore Menagerie, 1843.

e. A stuffed young female, the same as the last specimen, but the fingers yellow and the carpal region dusky. Presented by Wm. Rutledge, Esq., 20th December 1870.

f. A stuffed adult male, its skull, and the bones of the trunk. Sides of head and under parts pale yellow, as in the preceding specimen. Upper parts greyish, passing into blackish on the dorsum of the hand; fingers yellow; feet and lower half of tibial portion of leg and the whole of the dorsum of the feet yellow, except a transverse blackish band across the base of the toes. Presented by Raja Rajendra Mullick, Bahadur, 19th March 1878. This is a Menagerie specimen.

g. The skin of a young animal: rich yellow above; supraorbital hairs black; forehead yellow; vertex dusky grey;
occiput yellow: a fuliginous band across the nape: back of neck rufous or orange; back, outside of fore limbs, and dorsum of first half of the tail, pale greyish with an orange tinge. Lower half of outside of limbs, hands, and feet rich yellow; under parts yellow.

h. Skin of an adult male: upper surface of head dark brown, passing into greyish on the occiput; the dark-coloured cap rapidly contracts on the nape into a narrow area on the back of the neck; dark greyish-brown over the shoulders and backwards along one-half of the back, passing into grey on the lumbar region, first half of the tail, and outside of the fore limbs and thighs; terminal half of tail black and tufted; hands dark greyish-brown; base of the toes and their first halves brownish; sides of the head and ventral aspect of the body bright rusty yellow. The inside of the fore limbs and lower half of the legs pale yellow. The hair of the crown cap longish and directed backwards; a tuft of long yellow hair below and behind the ears is directed forwards, as in S. cephalopterus. Khási Hills. Presented by Lieut.-Colonel H. H. Godwin Austen, 11th May 1870.

i. The skin of an adolescent female: darkest on the outside of the fore limbs; the hands and feet dark brown, with the exception of the great toe, which is yellow. The greyish of the posterior half of the back and the first half of the tail is suffused with yellow. The yellow of the sides of the head and under parts is almost orange-yellow. Sibságar, Upper Assam. Presented by S. E. Peal, Esq., July 1870.

j. The skin and skull of an adult female. The yellow of the sides of the head and under parts deep orange; outside of the fore limbs suffused with pale orange; lower half of hind limbs wholly orange-yellow, also the hinder portion of the thighs. Fingers yellow; dorsum of hand more or less blackish; dorsum of feet yellow, darkest across the metacarpals. Samaguting, Assam. Presented by Captain J. Butler, 4th October 1872.


l. The skin of an adult male resembling h. Samaguting, Assam. Presented by Captain J. Butler, 4th October 1872.

m. The skin and skull of an adult male, like k, but darker. Samaguting, Assam. Presented by Captain J. Butler, 4th October 1872.

n. The skin of a young male, and its skull. It resembles l, but is not so orange below. Hill Tracts, Arakau. Presented by the Zoological Gardens, 23rd January 1878.
The skull of an adult male. Assam. Museum Collector, 1874.

The skull of a female, less the lower jaw. No history.


15. Semnopithecus cephalopterus.

The lion-tailed monkey (β), Pennant, Syn. Quad. 1771, p. 100, pl. 108 fig. 2.

La guenon à face pourpre, Buffon, Hist. Nat. Suppl. t. vii, 1789, p. 80, pl. xxii.


Presbytis albinus, Kelaart, Prodromus Faunæ Zeylanicae, 1852, p. 7.

Semnopithecus kelaartii, Schlegel, Mus. d'Hist. Nat. des Pays-Bas (Simia), 1876, p. 52.


Hab. Ceylon and its highlands.

15a. A stuffed adolescent female, No. 34A of Blyth's Catalogue. Hairs of head longish and brown; eyebrows black; beard and whiskers white; body black, with the exception of the sacral region, back and outside of the thighs, which are greyish, this colour most pronounced on the sacral region; tail, for three-quarters of its extent greyish brown. Inside of thighs anterior to the callosities, and the last quarter of tail pale yellowish, almost white. Purchased, 1845.

b. A stuffed young male, the same as the preceding, but the black hairs of the trunk tinged with greyish, and the yellowish at the base of the thighs absent. Purchased, 10th December 1866.
c. A stuffed adolescent female: tinged with greyish; the whiskers, below the ears, brown throughout the greater part of their extent, but white at the base. The yellow, anterior to the callosities, well developed. Presented by Wm. Rutledge, Esq., March 1868.

d. A stuffed very young male: brownish black; no yellow area before the callosities. Presented by Wm. Rutledge, Esq., 1870.

e. A stuffed adult male, its skull, and the bones of its trunk: brown, with a large grey area in the sacral region and base of the thighs; hair on head brown and longish. Presented by the Barrackpore Menagerie, 1872.

f. The skeleton of a female, No. 34E of Blyth’s Catalogue. No history.

g. The skull of a female, No. 34F of Blyth’s Catalogue. No history.

h. The imperfect skeleton of a young female. Presented by Wm. Rutledge, Esq., 18th February 1871.

i. The skin, skull, and bones of the trunk of a young female. Presented by Wm. Rutledge, Esq., 7th February 1877.

j. The skeleton of an adult female. Presented by Wm. Rutledge, Esq., 7th November 1878.

k. The skull of a young male. Purchased, 8th July 1879.


m. A stuffed adolescent female, and its skull, No. 34B of Blyth’s Catalogue. Uniformly pale brown, except on the head, which is still paler yellowish brown; sacral region pale grey; hands and feet dark brown; a pale yellow area at the base of the thighs internally and before the callosities. Ceylon. Presented by R. Templeton, Esq., 1848.

n. The skin and skull of an adolescent male, No. 34C of Blyth’s Catalogue. Rufous brown, but otherwise resembling the preceding specimen, only the inner aspects of the thighs appear to have been dark brown, with no yellow area at their base. Ceylon. Presented by T. C. Jerdon, Esq., 1843.

o. A stuffed adolescent female: brown, passing into grey on the sacral region; inside of the thighs darker than the outside; a pale yellow area at their base; head pale brown; beard and whiskers white. Purchased, 1st November 1866.

Hill variety (S. ursinus, Blyth).

p. A stuffed adult male and skull, No. 33A of Blyth’s Catalogue. Dark brown, passing into black on the hands and feet,
and into slightly paler brown on the head; hardly perceptibly paler on the sacral region, but passing into greyish brown on the tail. Eyebrows long and black; beard and whiskers white; fur profuse and long, and nearly 3½ inches in length. Newara, Elia, Ceylon. Presented by Dr. E. F. Kelaart, 1847.

q. The skin of a young male, No. 33B of Blyth’s Catalogue; paler brown than the preceding; pale yellowish-brown on the head; beard and whiskers white; sacral region and outside of thighs faintly paler brown. Newara, Elia, Ceylon. Presented by Dr. E. F. Kelaart, 1816.

r. A stuffed young female, No. 33C of Blyth’s Catalogue; resembling the last specimen, but with a pale yellow area on the inside of the base of the thighs anterior to the callosities, as in true S. cephalopterus. Mountains of Ceylon. Presented by Dr. E. F. Kelaart, 1846.

White variety (S. senex, Erxl.).

s. A stuffed young female, No. 34D of Blyth’s Catalogue; pale-yellowish white throughout, except on the head, which is faintly marked with brownish, and over the shoulders and the middle of the back, which are tinged with dusky. Ceylon. Presented by Dr. E. F. Kelaart, 1851.

16. Semnopithecus johnii.

Cercopithecus johnii, Fischer, Syn. Mamm. 1829, p. 25.
Semnopithecus jubatus, Wagner, Schreber, Säugeth. Suppl. Bd. i, 1840, p. 305.
Semnopithecus cephalopterus, Blyth, Journ. As. Soc. vol. xiii, 1844, p. 469 (partim).
Presbytis jubatus, Jerdon, Mamm. Ind. 1867, p. 8.

Hab. Nilgiris to Travancore.

16a. A stuffed adult male, No. 35A of Blyth’s Catalogue: jet black; head brown with long hair, paler on the occiput, and similarly-coloured beard and whiskers; grey on the
Mammalia.
sacral region and back of the thighs, less so on the tail, and no yellow at the base of the thighs. Barrackpore Park Menagerie, 1844.

b. A stuffed adult female, No. 35B of Blyth's Catalogue; resembling the last, but with the yellow area at the base of the thighs, as in S. cephalopterus. Nilgiris. Presented by T. C. Jordan, Esq., 1843.
c. The flat skin and articulated skeleton of a female. Purchased, 15th November 1867.

17. Semnopithecus obscursus.

Semnopithecus leucomystax, Müller and Schlegel, Verhandl. 1839-44, p. 65.

Hab. Malayan Peninsula and Siam.

17a. A stuffed adult male, and skull, No. 37A of Blyth's Catalogue; dark brown on the sides of the body, slightly paler on the back; fore limbs dark brown, hind limbs paler greyish brown; hands and feet black; occiput with long, backwardly directed, pale brownish-yellow hairs; whiskers brown and long; beard sparse and whitish. Malayan Peninsula. Presented by the Rev. F. W. Lindstedt, 1846.

b & c. A stuffed adult female and skull, No. 37B of Blyth's Catalogue, and its young one: it resembles the previous specimen, but the yellow of the head is more or less continued to the root of the tail as a broad yellowish-brown band; the young male, probably No. 37D of Blyth's Catalogue, is bright yellow, and its tail is bushy towards its extremity. Presented by R. W. G. Frith, Esq., 1846.

d. A stuffed half-grown male, No. 37C of Blyth's Catalogue; pale brown, palest on the middle of the back; pale area of head not so yellow as in adults. Presented by Mr. W. G. Moxon, 1856.

e. Skin of a very young female, probably No. 37E of Blyth's Catalogue: pale brown; outside of hind limbs yellowish; tail dusky brown at base, bright yellow in the rest of its length; occipital region pale yellowish-grey. Presented by the Rev. F. W. Lindstedt.
SEMNOPITHECUS.

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f. A stuffed young male, probably No. 37F of Blyth’s Catalogue: same age as preceding specimen; yellow, marked on the anterior half of the body with brownish, not obscuring the underlying yellow; the grey on the occiput showing faintly; lower halves of fore limbs and hind feet brown. Presented by the Rev. F. W. Lindstedt.

g. The skin of a somewhat older individual, No. 37G of Blyth’s Catalogue: passing from yellow into brown; the hind quarters and tail still yellow; occipital region bright grey. Mergui. Presented by Major Berdmore, 1854.

18. Semnopithecus maurus.

The middle-sized black monkey, Edwards’ Gleanings, Nat. Hist. 1764, part iii, p. 221, pl. 311.


Semnopithecus edwardsii, Fischer, Syn. Mamm. 1829, p. 15.

Presbytes maura, Gray, Hand-list Mamm. B. M. 1843, p. 3.


Hab. Malayan Peninsula, Sumatra, and Java.


e. The skin and skeleton of an adolescent male. Presented by Raja Rajendra Mullick, Bahadur, 5th August 1876.

f. The skin, skull, and bones of the trunk of a young
female: yellow at the base of the tail beneath, and before and external to the callosities. Presented by Wm. Rutledge, Esq., 18th January 1877.

9. The skin, skull, and bones of the trunk of a young male: no yellow at the tail or callosities. Presented by Wm. Rutledge, Esq., 26th January 1877.

h. The skin, skull, and bones of the trunk of a young female. Presented by Wm. Rutledge, Esq., 1st October 1880.

i. The skull of an adolescent female, No. 32C of Blyth's Catalogue. No history.

j. The skeleton of a male, No. 37H of Blyth's Catalogue. Tenasserim. Presented by Dr. Helfer, 1838.¹

k. The skeleton of an adult female. Purchased, 24th November 1865.

l. A stuffed adult female: rich ferruginous; the *S. pyrrhus* of Horsfield, Java. From the collection of the India Museum, London. Presented through the Trustees of the British Museum, 13th January 1880.


Presbytis barbei, *Blyth, Journ. As. Soc. Beng.* vol. xvi, 1847, p. 734,


Hab. Tipperah; Irrawadi Valley; Tenasserim.

19a. A stuffed adult male and its skull, No. 36A of Blyth's Catalogue: blackish brown, except on the front of the shoulders and fore limbs, lower part of hind legs, the back and sides of the head, and the tail, which are greyish-brown. Hands, feet, eyebrows, and whiskers black, and the under parts nearly the same; dark greyish-brown on the lighter upper parts. Tipperah Hills.² Presented by the Rev. J. Barbe, 1845.

¹ This skeleton was first determined by Pearson as the skeleton of a Negro monkey, *S. maurus*, *Journ. As. Soc. Bengal*, vol. vii (13), p. 669, but Blyth regarded it as probably belonging to *S. obscurus*. A comparison, however, of its skull with that of *S. obscurus* (a skull of which Blyth had not) proves it to be most nearly allied to this species.

² Blyth, in his description of this species, gives Tenasserim Province of Ye as the locality from whence he obtained his types, but in his Catalogue of Mammals (p. 14) Tipperah is given as the correct locality on the strength of information subsequently communicated by Mr. Barbe.
A stuffed adult female and its skull, No. 36B of Blyth's Catalogue: the same as the preceding. Presented by the Rev. J. Barbe, 1845.

c. A stuffed young male: paler than the adults. Purchased, 1866.


e. The skull of an adult male, killed in the 2nd defile of the Irrawadi. Dr. J. Anderson. Presented by the Second Expedition to Western Yunnan, 1875.

This species appears to be very closely allied to the next, and a larger series of specimens than is at my disposal will probably prove their identity.

20. Semnopithecus phayrei.


Presbytis phayrei, Blyth, Cat. Mam. As. Soc. Mus. 1863, p. 15.

Hab. Arakan.

20a. A stuffed adult male, No. 38A of Blyth's Catalogue, and skull: uniform brown, slightly paler on the shoulders and passing into dark blackish-brown on the antibrachium, and hands and feet; tail concolorous with the body; white of the under parts scarcely extending on to the inside of the limbs; hair of head rather long, not radiating on the crown, directed outwards and backwards on the middle of the frontal region, and forming a vertical crest; whiskers rather long; a broad area around the eyes pure white; nose black; around lips fleshy white. The skull has the interorbital space of moderate length, the forehead rather full, but the supraorbital ridges are not strongly developed, whilst the external orbital angle of the frontal is rather prominent in adults. The greatest breadth of the orbits is from the external frontal angle obliquely downwards and outwards across the orbit, whereas in S. barbei and S. obscurus the orbits are nearly round. The ridges marking the attachments of the temporal muscles do not meet on the middle line, but are separated by about an interval of an inch. The brain-case is upwardly tilted, so that the occipital region is nearly vertical, and associated with this there is a downward slope of the facial region. Arakan. Presented by Sir Arthur P. Phayre, 1844.


21. Semnopithecus holotephreus.


Hab. Unknown.

21a. A stuffed adult male, its skull and bones of the trunk: uniform dark slaty-grey, passing into black on the forearm and hands, and also on the feet; under parts and inside of front limb and thighs pale yellowish grey. Head slightly crested over the vertex, but only with a feeble tendency to lateral compression, supraorbital hairs moderately long and black; whiskers rather long, directed backwards and outwards, hiding the ears in front; face bluish black; area around the eyes and lips white.

The nasal region of the skull is rather prominent, nearly straight and moderately broad, with the orifice narrow and rather long. Supraorbital ridges are well developed, and the orbits are nearly round and of moderate size. The premaxillaries form a slightly expanded suture with the nasals. The last-mentioned bones are about half the lateral length of the premaxillaries. The palate has moderately broad margins, very slightly posteriorly convergent.

The colour of this specimen has much faded since it was first described, and it now resembles S. barbei, with which it may ultimately prove to be identical.

Presented by Wm. Rutledge, Esq., 29th October 1872.

22. Semnopithecus cristatus.

Simia cristata, Raffles, Trans. Linn. Soc. vol. xiii, 1822, p. 244.
Semnopithecus pruinosus, Desmarest, Mamm. 1820, (Suppl.) p. 533.


Hab. Sumatra and Borneo.

22a. A stuffed adult male: brownish black, tinged with fuliginous on the flanks, forearm, and crest; a short crest on the vertex directed backwards, and with long black hair on the temporal region directed forwards. Sumatra. Collected by Sir Stamford Raffles, and presented by him to the India Museum, London, as an example of *S. cristatus*. Presented by the India Museum, through the Trustees of the British Museum, 13th April 1880.

b. A stuffed adolescent female and its skull: black; the hairs tipped with lustrous grey on the head and trunk, and yellowish grey on the limbs, except on the hands and feet, which are black; hair of the under parts pale and more broadly tipped yellowish grey; tail black, tipped with grey above, under surface yellowish, especially at the root; hair very short on the sides of the head, where it is so broadly tipped with grey as to be almost white; medium crest erect and compressed; front of forehead black, whiskers long, backwardly and upwardly directed, and broadly tipped with yellowish grey. Face bluish black. Type of *S. rutledgii*. Presented by Wm. Rutledge, Esq., 18th September 1871.

c. A skin of a young female, like the preceding, with its skull and the bones of its trunk; but the under surface of the tail at the root quite yellow; crest but little defined, and front of the head jet black. Presented by Wm. Rutledge, Esq., 14th December 1874.


23. *Semnopithecus siamensis*.


Hab. Siam and Malayan Peninsula.

23a. A stuffed adult male and its skull, No. 39A of Blyth’s Catalogue: brown, passing into rusty brown on the occipital portion of the crest, and into blackish brown on the parietal and frontal regions, on the hands and feet, and on the tail. Under parts, and the hinder two thirds of the outsides of the thighs, yellowish; outside of tibial portion of limb greyish brown. The hair of the head radiating from two centres on the frontal, enclosing a short crest, forwardly directed, continuous with the higher peaked, laterally compressed, parieto-frontal crest.

There are generally only four tubercles on the last molar of the lower jaw, but in one of the skulls in this Museum there is a distinct rudimentary fifth talon.


d. A stuffed young female, No. 38D of Blyth’s Catalogue. The brown colour is confined on the back by a well-defined area, the sides being yellowish. Last half of tail bushy and dark brown. Malacca. Presented by the Rev. F. W. Lindstedt, 1846.

e. Skin, skull, and bones of the trunk of an adolescent male. Presented by Wm. Rutledge, Esq., 29th December 1878.

24. Semnopithecus femoralis.

Semnopithecus sumatranus, Müller and Schlegel, Verhandl. 1839-44, pp. 61, 73, tab. 10 bis, fig. 1 Δ.
Simia femoralis, Cantor, Journ. As. Soc. Beng. vol. xv, 1846, p. 175.

Hab. Sumatra and Borneo.
24a. A stuffed adolescent female: blackish brown [above, passing into black on the hands and feet; beard and all the under parts yellowish white, but with a greyish tint on the sides of the chest; inside of the fore and hind limbs pure pale yellowish, running as a mere but prominent line to the wrists and ankles. A narrow, unsullied yellowish-white line down the centre of the chest and belly; tail greyish at the base underneath. Purchased, 11th December 1867.

b. A stuffed adult female like the preceding, and its skull, but the chest and belly are greyish black, with the exception of the narrow median yellow white line; the white on the inside of the limbs is confined to the brachium and thigh; beard sparse and greyish. Presented by Wm. Rutledge, Esq., 6th July 1869.

c. Skin and bones of the trunk of a young female, like the preceding, but with the white of the inside of the fore limbs prolonged to the wrist. Presented by Wm. Rutledge, Esq., 10th April 1876.

25. Semnopithecus melalophus.


Semnopithecus sumatranus, var. aurata, Müller and Schlegel, Verhandl. 1839-44, pl. x, bis, fig. 2, head of 2.


Presbytes flavimanus, Gray, Hand-list Mamm. B. M. 1843, p. 3.

Presbytes nobilis, Gray, Hand-list Mamm. B. M. 1843, p. 3.

Semnopithecus nobilis, Gray, Cat. Monkeys and Lemurs, B. M., 1870, p. 17.

Hab. Sumatra.

25a. A stuffed young female, the skull and bones of the trunk; uniform pale yellowish-white, except on the crest and back, which are marked with blackish brown; hands and feet yellowish; face in life leaden bluish black, with whitish around the eyes and lips. Crest erect and laterally compressed. Presented by Wm. Rutledge, Esq., 4th December 1874.

b. A stuffed still younger female, and its skull: the same as the preceding. Presented by Wm. Rutledge, Esq., 11th May 1875.

c. The skull of a female resembling a, but with outside of the limbs marked with orange-yellow, a black crest and the

d. Skin, skull, and bones of the trunk of an adult female: crest black in front and greyish behind; the back much more darkly marked with blackish than the previous specimens; pale rusty brown or yellow on the sides; outside of the limbs and hands yellowish; tail pale yellowish-brown, marked with darker; under parts whitish. Presented by Wm. Rutledge, Esq., 6th November 1874.

e. The skin of an adolescent female and skull: equally dark on the back with the last specimen, but with less yellow on the sides and limbs. Presented by Wm. Rutledge, Esq., 13th May 1875.

f. The skin, skull, and bones of the trunk of an adult male of the same coloration as d, but the feet yellower than the outside of the limbs. Presented by Wm. Rutledge, Esq., 6th November 1875.

g. The skin of an adolescent male, and its viscera in alcohol: this specimen resembles d. Presented by Wm. Rutledge, Esq., 6th June 1876.

h. The natural skeleton of an adult male. Presented by Wm. Rutledge, Esq., 5th May 1876.

i. The disarticulated skeleton of an adolescent female. Presented by Wm. Rutledge, Esq., 4th July 1875.

j. The skin, skull, and bones of the trunk of an adult female. Presented by Wm. Rutledge, Esq., 20th October 1876.

k. The skeleton of a young female. Presented by Wm. Rutledge, Esq., 17th October 1876.

l. An adult male in alcohol. Presented by Wm. Rutledge, Esq., 10th June 1879.

Sub-Genus NASALIS, Geoff., 1812.

26. Semnopithecus (Nasalis) larvatus.


La guenon a long nez, Buffon, Hist. Nat. Suppl. t. vii, 1879, p. 53, pls. xi and xii.

Le Kahau, Audebert, Hist. Nat. des Singes, Fam. iv, sect. ii, fig. i, 1797.

The Proboscis Monkey, Shaw, Genl. Zool. vol. i, pt. i (1800), pl. 22.

Cercopithecus larvatus, Wurmb, op. cit. p. 145.


Cercopithecus (Nasalis) nasicus, Desmarest, Mamm. 1820, p. 55.
Simia nasica, F. Cuv., Dict. des Sc. Nat. t. xx, 1821, p. 32.
Semnopithecus larvatus, Fischer, Syn. Mam. 1829, p. 16.

Hab. Borneo.

26a. The skin of an adult female. Purchased, 30th April 1878.


c. The skin, skull, and bones of the trunk of a young male: the sacral spot grey. Presented by Wm. Rutledge, Esq., 4th July 1879.

d. The skin, skull, and bones of the trunk of a young female: penultimate molar appearing. Presented by Wm. Rutledge, Esq., 8th July 1880.

Genus COLOBUS, Illiger, 1811.

27. Colobus guereza.


Hab. Abyssinia.


II.—Sub-Family CERCOPITHECINÆ.

Genus CERCOPITHECUS, Erxleben, 1777.

28. Cercopithecus pygerythrus.

Cercopithecus faunus, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 10.
Chlorocebus pygerythrus, Gray, Cat. Monkeys & Lemurs, B. M., 1870, p. 25.

_Hab._ South Africa, Cape of Good Hope, banks of the Zambesi and Batoka, and Mozambique.


_b._ A stuffed adult male, considerably darker and without the yellowish tint on the back and sides, but in other respects resembling this species. Purchased, 1865.

c. The skin, skull, and bones of the trunk of an adolescent male: resembling 31a, and like the last specimen, but with a blue scrotum. Presented by Wm. Rutledge, Esq., 18th November 1876.

d. The skin of an adult male, and its skull: resembling the last specimen. This animal lived for some years in the Zoological Gardens, and bred with its female, the face of the young animal being white. Presented by the Zoological Gardens, 29th May 1880.

e. A stuffed adolescent male. Purchased, 28th July 1869.

29. Cercopithecus sabæus.

Cercopithecus griseoviridis, Desm., *Mamm. 1822, p. 61.

_Hab._ Abyssinia.


_b._ A young female, stuffed, No. 22B of Blyth’s Catalogue. Cape de Verde Islands. Purchased, 1847.

Cercopithecus.

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d. The skin of an adult male: much more yellow than the preceding individual; tail pale yellow; white below, and with a well-marked yellowish terminal tuft. Adigrat, Tigré, Abyssinia, 8,000 feet, April 1868. W. T. Blanford, Esq. Presented by the Abyssinian Expedition, 1868.


f. A skull, by exchange with H. Lydekker, Esq., 5th December 1877.

g. The skeleton of a young male. Presented by Wm. Rutledge, Esq., 24th February 1880.

30. Cercopithecus albogularis.

Cercopithecus albogularis, Fraser, Zool. Typica, pl. 2. 1848-49.

Hab. East Africa.


b. A stuffed young male: the callosities surrounded by a narrow line of deep rusty, which extends on to the under surface of the base of the tail. Purchased, 16th March 1866.

c. The skin, skull, hyoid and bones of the trunk of a fine adult male; no rufous around the callosities or on the under parts of the tail. The white of the side of the neck and between the arms anteriorly extending well up the side of the neck as an imperfect collar. Purchased, 26th November 1875.

d. The skeleton of a young male. Purchased, 5th June 1869.

e. The skin, skull, and bones of the trunk of an adult male. Purchased, 17th June 1878.

31. Cercopithecus mona.

La mone, Audubert, Singes, 1797, Fam. iv, Sect. 11, fig. 7.
Simia mona, Erxleben, Syst. Reg. Am. 1777-8, p. 32; Schreber, Säugenth. Suppl., pl. i, p. 97, 1840, pl. 15; F. Cuv., Hist. Nat. des Mammif. t. i. livr°. ix, Aout 1819.

Hab. West Africa.

31a. The skin, skull, and bones of the trunk of a young male. Purchased, 8th June 1878.
c. The skin, skull, and bones of the trunk of a young male. Purchased, 27th November 1879.

32. *Cercopithecus leucampyx*.


*Hab.* West Africa.

c. The skeleton of a female, by exchange, 21st January 1879.

33. *Cercopithecus ruber*.

Simia patas, *Erxleben, Syst. Reg. An.* 1777-78, p. 34; *Schreber, Säugeth.* Bd. i, 1774, p. 98, pl. 16.

*Hab.* West Africa.

b. The skin, skull, and bones of an adult male. Presented by Wm. Rutledge, Esq., 18th January 1879.
c. The skin, skull, and bones of the trunk of an adult female. Presented by O. L. Fraser, Esq., 27th October 1880.

34. *Cercopithecus petaurista*.

Simia petaurista, *Erxleben, Syst. Reg. Nat.* 1777-78, p. 35; *Schreber, Säugeth.* 1774, bd. 1, p. 103, pl. 19B.
Cercopithecus ascanias, Audebert, Hist. Nat. des Singes et Makis, Fam. iv, Sect. ii, fig. xiii; Schreber, Säugeth. pl. 19C.

Hab. West Africa.

34a. The skin, skull, and bones of the trunk of a young male. Presented by Wm. Rutledge, Esq., 29th October 1878.

35. Cercopithecus diana.


Hab. West Africa.


b. The skeleton of a young male. Purchased, 18th May 1879.

Genus CERCOCEBUS, Geoffroy, 1812.

36. Cercocebus fuliginosus.

Mangabey, Audebert, Singes, Fam. iv, Sect. ii, p. 15, pl. 9.
Cercocebus fuliginosus, Geoff., Ann. du Mus. t. xix, p. 28.

Hab. West Africa.

36a. The skin, skull, and bones of the trunk of an adolescent male. Purchased, 9th May 1879.

b. The skin, skull, and bones of the trunk of a young male. Presented by O. L. Fraser, Esq., 14th October 1880.

Genus MACACUS, Lacépede, 1803.

37. Macacus sinicus.

Cynocephalus sienisis, Latr., Hist. Nat. de Buffon (Sonnini ed.) t. xxxvi (1809), p. 263.
Inus (Macacus) sinesis, Wagner, Schreber, Säugeth., Suppl. Bd. v, 1855, p. 56.

Hab. Southern India.

37a. A stuffed adult male; uniform olive brown above and on the outside of the limbs and upper surface of the tail. The laterally divided hair on the forehead dark brown, passing into greyish brown on the sacral region in reflected lights. Under parts pale greyish-yellow. Purchased, 12th June 1870.

b. A stuffed adult male like the last. Madras. Presented by Dr. J. Anderson, 21st February 1866.

c. A stuffed adult male, about the same age as the preceding, but darker, more especially on the root of the tail and on the groin. Purchased, 27th December, 1867.

d. A stuffed half-grown female, No. 18A of Blyth's Catalogue: darker than any of the preceding males. Purchased, 1844.

e. A stuffed female, about the same size as the last, but paler. Purchased, 5th March 1868.


g. A stuffed young female, slightly paler than f. Purchased, September 1866.

h. The skin of a young female. Presented by Wm. Rutledge, Esq., 5th January 1875.


k. The disarticulated skeleton of a young animal. Purchased, 25th September 1866.

1 Journ. As. Soc. Beng. vol. xxix, p. 87.
MACACUS.

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i. The skull of an adult male. Presented by Dr. J. Anderson, 1865.

m. The skeleton of an adult female. Presented by Raja Rajendra Lal Mullick, Bahadur, 7th December 1874.

n. A newly-born male in alcohol, bred in the Zoological Gardens, from a pair brought from Madras. Presented by the Zoological Gardens, 22nd June 1880.

38. Macacus pileatus.

La guenon couronnée, Buffon, Hist. Nat. Suppl. t. vii, 1789, p. 61, pl. xvi (juv.)
Le bonnet chinois, Audebert, Hist. Nat. des Singes, 1797, Fam. iv, sect. ii, fig. 11.
Macacus sinicus, Desmarest, Mamm. 1820, p. 64.
Inuus (Cercopithecus) sinicus, Wagner, Schreber, Säugeth. Suppl. Bd. i, 1840, p. 139.

Hab. Ceylon.


The Philippine monkey, Pennant, Syn. Quad. 1771, p. 121.

*Hab. Irrawadi valley, Burma, through Malayan Peninsula and islands; Siam.*

39a. A stuffed adult male and skull, No. 20A of Blyth’s
Catalogue: this has evidently been a Menagerie specimen. Faded, but brownish-olive above with a slight rufous yellow tint, brightest on the head; yellowish grey on the sides of the head and on the feet. Purchased, 1844.

b. A mounted ferine adult male and its skull: olive brown above, passing into a greyish olive on the outside of the limbs: dark olive-brown on the frontal region, and greyish around the face, which is covered with short hairs; beard and whiskers rather profuse and greyish; fingers and toes dark brown; face dusky fleshy; upper eyelids white; tail brownish above in its first third, olive yellowish below and pale brownish-olive in its last two thirds; under parts greyish, differing but little in tint from the outside of the limbs, but the hairs not annulated; tail nearly as long as the body; hair of head smooth and directed backwards. Desertion Creek, Elephant Point, banks of Irrawadi, near Rangoon. Presented by J. Armstrong, Esq., 27th January 1876.

c. The skin and skull of an adult ferine male, like the last specimen. Arakan. Procured by the Museum Collector, 1871.

d. The skin of a wild adult male. Tenasserim. Houngdarau, Maulmain District. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.

e. The skin of a wild adult male. Tenasserim. Houngdarau, Maulmain District. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.

f. The skin of a wild young male. Tenasserim. Houngdarau, Maulmain District. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.

g. The skin of a wild female. Tenasserim. Houngdarau, Maulmain District. Collected by Mr. Limborg. Presented by Dr. J. Anderson, 10th December 1880.

h. The skull of a male, but not fully grown. No. 20D of Blyth’s Catalogue.


j. The skull of an adult male. No history.

k. The skull of an adult male. No history.

l. The skull of an adult female, No. 20E of Blyth’s Catalogue. No history.

n. The natural skeleton of a young animal. Presented by Dr. J. Anderson, April 1866.

Smaller var. (M. carbonarius).

o. A stuffed adult male and its skull: rich yellowish-brown, darkest on the head, paler on the outside of the limbs; tail brown above at base, greyish yellow throughout the greater part of its extent; temporal region and sides of the face greyish, also the under parts of the body. No. 21A of Blyth’s Catalogue. Purchased, 1844.

p. A stuffed adolescent male and its skull: all the teeth through; the animal, however, is smaller than o; brownish olive, passing into grey on the sides of the head, lower half of the hind limbs, and under surface and inside of the limbs; long black superciliary hairs; upper eyelids bluish white; face and ears black; tail black at the base, brown olive in the remainder, and greyish yellow below. Purchased, December 1865.

q. A stuffed adult male and its skull: rather bright rusty red-brown on the head, nape, shoulders, and back, as far as the loins; passing into brown on the loins and into black on the upper surface of the tail in its proximal third; supraorbital hairs black; temporal region and sides of the head and beard greyish; outside of the limbs dark olive-brown, speckled with black; inside of the limbs, under aspect of the trunk, and rest of the tail below and above greyish. Presented by Wm. Rutledge, Esq., 12th June 1870.

r. A stuffed young male and its skull: brown above, yellow speckled; olive grey on the outside of the limbs; tail blackish above and in its first portion, greyish below and in the rest of its extent; supraorbital hairs and some on the forehead black; temporal region and sides of the head greyish; under parts greyish. Purchased, 16th October 1868.

s. A stuffed adult female and its skull: dark olive-brown, speckled with yellowish and black; paler on the limbs; blackish on the base of the tail above, rest of the tail greyish yellow; head coloured as in the last specimen; whiskers rather long. Presented by Wm. Rutledge, Esq., 10th March 1868.

t. A stuffed adolescent female and skull: the same as the last specimen, but the tail darker, being nearly brown. Presented by Dr. J. Anderson, 17th April 1868.

u. A stuffed young male and skull: resembling 48r, but greyer on the limbs. Purchased, 17th April 1870.

v. A stuffed young male and skull, No. 21B of Blyth’s
Catalogue: uniform rich brown, darkest on the head and back, and brightest on the outside of the hind legs; black supraorbital hairs, with blackish hairs on the cheeks; under parts yellowish, with an orange tint; tail yellowish brown, dark brown above; the fur has a faint trace of yellowish annulations.


w. A stuffed young female and skull, No. 20C of Blyth's Catalogue: yellowish brown, with an olive tinge and richly punctulated with yellow, paler on the limbs and darkening on the middle of the head, on which the hairs have broad black tips; supraorbital hairs black; sides of the head yellowish; under parts yellowish white. Timor. Presented by W. H. Benson, Esq., 1846.

x. A stuffed young female and skull, No. 20B of Blyth's Catalogue: dark fuliginous brown, with a slightly rusty tinge on the hind limbs; under parts yellowish; the hairs show only a faint trace of commencing annulations on the head, which is still less marked on the trunk. Nicobar Islands. Presented by Capt. Lewis, 1846.

y. The skeleton of a young male. This animal was brown above, the hairs on the anterior half of the head being broadly tipped with black; the sacral region and outside of the thighs were washed with blackish; tail black above, in its first two thirds, under surface yellowish white. Presented by Wm. Rutledge, Esq., 25th September 1871.

z. The flat skin and skeleton of an adult female resembling 39q. Presented by G. Nevill, Esq., 1st July 1873.

aa. The flat skin and skeleton of an adult female, like last specimen. Presented by Wm. Rutledge, Esq., 9th July 1873.

bb. The flat skin and skeleton of a female that resembled M. aureus, Is. Geoff. Presented by Wm. Rutledge, Esq:

cc. A very young female, in alcohol; long hair on the crown of the head, tending to form a crest. Presented by O. L. Fraser, Esq., 9th September 1878.

dd. The flat skin and skeleton of an adult male of the rufous variety. This specimen was the parent of a hybrid, bred in the Zoological Gardens, Calcutta, from M. rhesus. Presented by the Zoological Gardens, 5th August 1878.


ff. A very young male, in alcohol: blackish brown above, brown on the outside of the limbs and tail, and yellow below;
hair on the head rather long, but backwardly directed in two lines, one on either side of mesial line of frontal. Temples nearly bare. These are essentially the characters of extreme youth in this species. Purchased, 10th October 1867.

**gg.** A young male, in alcohol, and its skull. Purchased, 26th May 1870.


**ii.** A foetus in alcohol. Penang. Presented by Dr. F. Stoliczka, October 1870.

**jj.** A young male, in alcohol: dark coloured. Presented by Wm. Rutledge, Esq., 19th July 1879.

**kk.** The skeleton of an adult female. Purchased, 6th August 1868.

**ll.** The skeleton of an adult male. Purchased, July 1866.

**mm.** The skull of a young female. Purchased, 20th December 1867.

**nn.** The skeleton of an adult male. Purchased, 4th January 1868.

**oo.** The skeleton of an adult female. Purchased, 8th January 1870.

**pp.** The skeleton of a young animal. Presented by Dr. J. Anderson, January 1872.

**qq.** The skull of an adult female. Purchased.

40. **Macacus silenus.**

The Lion-tailed Monkey (a), Pennant, Syn. Quad. 1771, p. 109, pl. 120, fig. 1.

Simia leonina Shaw, Genl. Zool. vol. i, pt. i, 1800, p. 34.


Inuus (Maimon) silenus, Wagner, Schreber, Säugeth. Bd. i, 1840, p. 141, pls. xi B and xi xi*.


MACACUS.


Hab. Southern India.


d. The skin, and bones of the trunk of an adolescent male. Purchased, 22nd October 1875.

e. The skin, skull, and the bones of the trunk of an adolescent male. Presented by Raja Rajendra Mullick, Bahadur, 19th December 1876.

f. The skull of an adolescent female. Purchased, 12th February 1866.

41. Macacus rhesus.

Le macaque à queue courte, Buffon, Hist. Nat. Suppl. t. vii, 1789, p. 56, pl. xiii.


Le rhesus, (Simia rhesus) Audubert, Hist. Nat. des Singes, 1797, Fam. ii, sect. i, pl. 1.


Simia erythrea, Schreber, Säugeth. 1775, pl. viii c.


Macacus rhesus, Desmarest, Mamm. 1820, p. 66, pl. vii, fig. 2 (Buffon); Anderson, Anat. & Zool. Resch. 1878, p. 55.

Inuus (Maimon) erythreus, Wagner, Schreber Säugeth. Suppl. bd. i, 1840, p. 142, pl. viii, c. (fig.; Buffon, ix, B.)


Inuus (rhesus) erythreus, Wagner, Schreber, Säugeth. Suppl. bd. v, 1855, p. 56.


Hab. India generally and ascending the Himalaya to 7,000 feet and upwards (Simla and Nepal); extending into Assam, Arakan, and through Upper Burma to the Province of Yunnan, Western China.

41a. A stuffed adult male, No. 15A of Blyth’s Catalogue (domesticated): rufous on the hind limbs and hind quarters. No history.

b. A stuffed adult ferine male, No. 15B of Blyth’s Catalogue. Brown anteriorly and on the top of the head, greyish on the sides of the head; washed with rufous on the hind quarters and hind limbs; greyish yellow below; tail well clad. Sundarbans. No history.

c. A stuffed domesticated male, No. 15C of Blyth’s Catalogue. Monstrously obese; uniform yellowish brown; bright rusty yellow on the hind quarters. No history.

d. A stuffed very young animal. The young of No. 15D of Blyth’s Catalogue: reddish brown on the body, passing into brown on the head; hair not annulated. No history.

e. The skin and skull of an adult wild male: uniform brown on the upper surface of the body and tail; pale greyish brown on the under parts, and on the limbs; no rufous on the hind quarters; an almost black band of supraorbital hairs; moustachial hairs and those of the beard black; the skull fully adult. It differs from the skull of *M. assamensis* in its more elevated orbits, narrower interorbital space and shorter muzzle, besides being smaller in every way than the skull of that species. The extreme length of this skull is 5".19, while the skull No. 42a, that of a male which has only its permanent incisors cutting, the last molar being still in its socket, is already 5".54. The maximum breadth of this adult male skull across the zygomatic arches is 3".30, and that of the much younger skull of *M. assamensis* 3".63. This specimen and its skull are described in *Proc. Zool. Soc.* 1872, p. 529, skull figured. Sundarbans. Museum Collector, 26th April 1878.

g. The skin and the skull of an adult male: like the last, but darker on the front of the forehead, which is almost black. Sundarbans. Museum Collector, 26th April 1870.


i. The skin and the skull of an adolescent male, like the preceding, but not so dark on the fore quarters. Sundarbans. Museum Collector, 26th April 1870.


k. The skin of a young male: brown on the head and the middle of the back, unannulated brownish yellow on the sides, and bright rusty yellow on the hind quarters, tail and outside of the thighs. Sundarbans. Museum Collector, 26th April 1870.

l. The skin and the skull of an adolescent female, like the last. Sundarbans. Museum Collector, 26th April 1870.

m. The skin and the skeleton of an adolescent female: long black supraorbital hairs, and a whorl of black hairs on the sides of the head; hinder half of body bright rufous. This specimen (β) is the subject from which the figure, pl. iii, in my Anat. and Zool. Resch. was taken. Kakhyen Hills. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1868.

n. The skin and the skeleton of an adolescent female: black supraorbital hairs very sparse, and only a few black hairs on the sides of the head; hinder half of the body and outside of hind legs rufous. This specimen is a of the Anat. and Zool. Resch. Hotha Valley. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1868.

o. The skin of a young male: black supraorbital hairs and on the sides of the head as in 41uj; body generally yellowish, brick-red on the hind quarters and down the outside of the thighs; upper surface of the head brownish; antibrachium olive brown; tail rufous at base, brownish above and yellowish below. Samagating, Assam. Presented by Captain J. Butler, 4th October 1872.


q. The skeleton of a female. Purchased, 22nd February 1867.

r. The skeleton of an adolescent male. Purchased, 16th April 1868.
The skeleton of an adult female. Purchased, 5th August 1869.

The flat skin and skeleton of an adolescent female. Presented by Dr. J. Anderson, 7th May 1870.

The skeleton of an adult female: a remarkably large and deep depression on the frontal over the left orbit. Presented by Dr. J. Anderson, July 1876.

The skeleton of an adolescent male. Presented by Dr. J. Anderson, July 1876.

The skull of an adult male. Purchased, 23rd September 1869.

The skull of an adult male. Presented by Dr. J. Anderson, July 1876.

The skull of an adult male. Presented by O. L. Fraser, Esq., 17th August 1876.


42. Macacus assamensis.


Inuus (rhesus) pelops, Wagner, Schreber, Säugeth. Suppl. bd. v, 1855, p. 56.

Inuus (rhesus) assamensis, Wagner, Schreber, Säugeth. Suppl. bd. v, 1855, p. 57.


Macacus problematicus, Gray, Cat. Monkeys and Lemurs, B. M., 1870, p. 123.


Hab. Himalaya, Assam, and Upper Burma.

42a. The skin and skull of an adult male; the tail has about the same proportion to the body as in M. rhesus; general colour rusty brown above, darkest over the shoulders and palest on the hind quarters and on the outside of the limbs, in which the brown is less marked; head with an
orange tint, but many of the hairs with black tips; supercilium and an area for the eyes to the ears more or less black, and the upper halves of the ears feebly black tufted, and their lower halves clad with grey hairs; under parts yellowish grey. The species is much larger than *M. rhesus* and more powerfully and more compactly built, and more like a pig-tailed monkey in these respects. The muzzle is long and the face pale fleshy. Obtained near Bhamo, Upper Burma, Second Expedition, Western Yunnan, 1875, and presented by Dr. J. Anderson to the Zoological Gardens, Calcutta, where it lived until the 19th January 1881.


43. *Macacus* leoninus.


*Macacus andamanensis, Bartlett, Land and Water, July 21, 1869, vol. viii, p. 57. §*


**Hab.** Arakan, and the valley of the Irrawadi.

43a. The skin of an adult male, No. 14A of Blyth's Catalogue, and the type of the species: a short-legged powerful monkey, with long hair on the shoulders and on the humeral portion of the fore limb, and much shorter hair on the postscapular area of the trunk; tail about one third the length of the trunk and head, and somewhat tufted at its tip; hair much annulated with brown and yellow, producing a yellowish brown tint, darkening on the hands and feet to brown, with but few annulations in these localities; hair on mesial line of head brown to the occiput, greyish external to this on the forehead and around the face and ears, but a pale brownish band passes down to the orbito-malar angle above the ear; whiskers, and pale brown of head, feebly annulated pale brown and greyish yellow; beard and whiskers well developed, especially the latter, which are continuous with the
long hair before the shoulder; belly and hind quarters clear pale yellowish with a tinge of grey; lower half of inside of limbs annulated as on the external surface; tail almost black above and with the tuft rich rusty yellow, its under surface concolorous with the hind quarters. Arakan. Presented by Sir Arthur P. Phayre, 1844.

b. The flat skin and the skeleton of an adolescent male: bright rusty rufous brown on the outside of the hind limbs and lower portion of the sides, which are but little annulated; tail brown above, no rufous. This specimen had lived some time in captivity. Purchased, December 1867.

c. The skin and skeleton of an adult female, with its foetus in utero in alcohol: like the male, but wanting the brown on the head, the hair of which is but little annulated pale greyish-brown; whiskers forming a ruff, continuous with the well-developed beard; tail pale yellowish-brown, under parts greyish. The skull figured as female of *M. assamensis*, Anat. and Zool. Resch., figs. 7 & 8, p. 66. Second defile of the Irrawadi below Bhamo, Upper Burma. Dr. J. Anderson, 3rd March 1875. Presented by the 2nd Expedition to Western Yunnan.

d. The skull of an adult male, regarded by Blyth as the skull of *M. rhesus*. No. 15 F of his Catalogue. This is probably the skull of the skin 43a.

e. The skin, skull, and bones of the trunk of a young male. Perak. Presented by O. L. Fraser, Esq., 6th January 1878.

44. *Macacus nemestrinus*.


Inuus (Rhesus) nemestrinus, Wagner, Schreber, Säugeth. Suppl. Bd. v, 1855, p. 57.

Hab. Malayan Peninsula, south of Tenasserim, Sumatra and Borneo.

44a. A stuffed adult male: deep black on the vertex and from the shoulder to the tail, the upper surface of which is also black: the black of the head extends in a narrow line downwards, before the ear; fur short on the shoulders. Purchased, 13th July 1867.

b. A stuffed adult male and its skull: fur rather long on the shoulders and wavy, and annulated with yellow and deep brown; dark brown on the top of the head; the dark-coloured line before the ear but little pronounced; no black on the back. Presented by Wm. Rutledge, Esq., 10th May 1870.

c. The skin and skull of an adult male, No. 13B of Blyth's Catalogue. Purchased, 1843.

d. A stuffed adult male, resembling b in the length and annulation of its fur, but nearly black on the back; stripe before the ear well marked. Presented by Wm. Rutledge, Esq., 27th September 1869.

e. A stuffed somewhat younger male than d, with its skeleton, No. 13A of Blyth's Catalogue: the fur on the shoulders shorter than d; hands and feet tending to dark brown. Purchased, 1843-52.

f. A stuffed much younger male: fur with only a trace of annulation; vertex brownish black; back washed with black; sides and limbs greyish yellow; band before the ear moderately defined. Purchased, 9th November 1866.

g. A stuffed still younger male: top of the head black, also the mesial line of the back from the shoulders along the upper surface of the tail; outside of the limbs brownish yellow. Purchased, 6th September 1866.

h. A stuffed somewhat younger male, intermediate between f and g. Presented by Wm. Rutledge, Esq., 10th March 1870.

i. A stuffed still younger male: head brown, no black on the back. Purchased, 28th August 1867.

j. The skin of an adult male. Purchased, 28th October 1869.


l. The skin of a young male. Purchased, 25th June 1869.
m. The skin and skull of a young female: dull fuliginous brown; black on the head and from behind the shoulders along the middle of the back. Presented by O. L. Fraser, Esq., 29th April 1876.


o. The skin and the skeleton of an adult male. The fore-arms are bent, although both are healthy hard bones. Presented by the Zoological Gardens, 17th March 1877.

p. The skeleton of an adult male. Purchased, 1865.

q. The skeleton of an adult male. Purchased, 1866.

r. The skeleton of an adult male. Purchased, 6th August 1866.

s. The skeleton of an adolescent male. Purchased, 17th September 1866.

t. The skull of an adolescent male. Purchased, 18th September 1866.

u. The skull of an adult male. No history.

v. The skeleton of a young male: 19 caudal vertebrae. Purchased, 27th December 1867.


y. The skeleton of an adolescent female. No history.

z. The skeleton of an adult male. No history.

aa. A skull. No history.

bb. The skull of an adolescent female. No history.

45. Macacus arctoides.


Inuus (Maimon) arctoides, Wagner, Schreber. Säugeth. Suppl. bd. 1, 1840, p. 146.


Inuus (Inuus) arctoides, Wagner, Schreber, Säugeth. Suppl. bd. v, 1855, p. 57.


Pithecus arctoides, Blainville, Ostéogr. Mamm. t. i, p. 44, 1839-64, atlas ii, pl. vii (skull).

Macacus melanotus, Gray, Cat. Monkeys and Lemurs, B. M., 1870, p. 29.


Hab. High country of Cochin China, north-west to Yunnan and Assam, and to Eastern Tibet (Moupin).

45a. The skin, skull, and bones of the trunk of a fine adult male. In life this animal was a dark rich brown, compact, powerful monkey, with rather short limbs, intensely scarlet face, rather long muzzle, rudimentary tail, short radiating hair on the forehead, and long hair on the rest of the head falling forwards over the forehead, the hair before the ears and behind the cheeks being also directed anteriorly; the hair on the neck especially long and also on the shoulders, 4½ inches to 3 inches on the hinder half of the body; the colour darkest on the head and neck, but a decided reddish tinge on the hinder half of the body and external to the callosities; the latter and the huge scrotum and much-spined penis were rich scarlet in life; the upper surface of the hands and feet tend to black; under parts pale rufous brown; the hair more or less annulated, the anulations being especially numerous on the long hairs of the anterior parts. The skull has the general features of the skull of M. nemestrinus, but with a less powerful and considerably shorter muzzle. Kakhyen Hills; Bhamo, Upper Burma. Presented to the Zoological Gardens by Dr. J. Anderson.

b. A stuffed young male, its skeleton and its entire viscera preserved in alcohol: dark brown, more or less blotched with blackish; hair laterally divided on the forehead and radiating on the crown; ears with long hair on the inner aspect, projecting a long way external to their margins. The type of M. brunneus, Anderson, Proc. Zool. Soc. Lond. 1871, p. 628. Kakhyen Hills, to the east of Bhamo, Upper Burma. Presented by Dr. J. Anderson, 4th December 1872.

c. A young male, in alcohol: brown, but with the sides of the head yellowish, said to have been procured at Sadiya, Assam. Presented by Dr. J. Anderson, 30th June 1876.

e. The skin and skeleton of a young female from Tipperah. Presented by the Zoological Gardens, 17th October 1878.


46. Macacus maurus.


Magus maurus, *Lesson, Man. de Mamm.* 1827, p. 44.


Macacus melanotus, *Schinz (partim), Syn. Mamm.* bd. i, 1844, p. 59,


*Hab.* North-West Borneo.

46a. A stuffed adolescent male, and its skull and bones of the trunk: brown, darkest on the forehead and on the hands and feet, which are darker than the body, but not black, and palest on the sides, back of the head and neck, which are pale yellowish-brown; tail very short; face and ears dusky black. Presented by Wm. Rutledge, Esq., 5th June 1871.

b. The skin, skull, and bones of the trunk of an adult male: dark ashy brown, paler on the head and sides of the neck, and palest on the back of the thighs, where the colour is ashy grey; face black; the skull has continuous suprerioriary ridges, and a very strong malo-temporal ridge; the upper canines have been either extracted or shed, but the canine eminences on the face remain; the bones of the trunk are much diseased, evidently affected by rickets, the pelvic bones being bent downwards to an extraordinary degree, also the lower margin of the scapula. This specimen lived long in confinement, notwithstanding these deformities. Presented by O. L. Fraser, Esq., 28th October 1880.

c. The skin, skull, and the bones of the trunk of an adult male: like the last, but slightly darker on the head; a ferine individual, showing supraorbital ridges, well-defined canine eminences, the muzzle being concave on each side from before the malar. Presented by Wm. Rutledge, Esq., 8th June 1881.

d. The skin, skull, and the bones of the trunk of an adult ferine male: like the last specimen. Presented by Wm. Rutledge, Esq., 20th August 1880.
e. The skin and skull of an adult female: like the preceding males; canines feeble, also their ridges. Presented by Wm. Rutledge, Esq., 4th June 1880.

f. The skin and skull of a nearly adult female: like the last. Presented by O. L. Fraser, Esq., 21st November 1880.

g. Skin and skull of an adult female: resembling preceding specimen. Presented by Wm. Rutledge, Esq., 2nd August 1880.

h. The skin and skull of a young male: pale brown, palest on the head and passing into dark brown on the hands and feet; skull with milk dentition. Presented by Wm. Rutledge, Esq., 4th July 1880.

i. Skeleton of a young male. Presented by Wm. Rutledge, Esq., 4th June 1880.


51. Macacus ochreatus.

Inus (Inusus) fusc-ater, Wagner, Schreber, Säugeth. Suppl. vol. v, 1855, p. 59.
Macacus ochreatus, Blyth, Journ. As. Soc. vol. xlv, 1875, ex. no. p. 7.

Hab. Celebes.

47a. A stuffed adolescent male and its skull, No. 16 of Blyth's Catalogue¹: dark brown, except on the forearm from below the elbow, the hind leg from below the knee, the inside of the limbs, and the buttocks, which are grey; chest and belly brown, face black; a considerable bare area around the callosities; tail about 2 inches long. Presented by the Maharajah of Burdwan, 1858.

b. The skin, skull, and bones of the trunk of an adolescent male: upper surface glossy black brown; the front of the brachium and the outer surface of the limbs from the elbow and knee ashy grey, also the back of the thighs and the insides of the limbs; throat and chest also ashy grey; the rest of the under surface of the body dull black-brown, the hair on the head tending to form a crest on the vertex; hairs along the

¹ This specimen was marked No. (10 Papio leucophaeus) and is evidently, from the way in which the skin has been prepared, a specimen from the Maharajah of Burdwan, but it is a male, whereas the Ape referred by Blyth to P. leucophaeus was a female.
upper lip and chin black; the upper milk canines are present, two permanent molars appearing; upper incisors large; a swelling over the region of the upper canines. Presented by W. Rutledge, Esq., 22nd February 1880.

c. The skin, skull, and bones of the trunk of an adolescent male: wholly black, with the exception of the back of the thighs, which are brownish grey; throat grey, and a tinge of grey down the inner aspect of the forearms and partially on the chest; a tendency to form a crest; face black; tail rudimentary.

The skull is distinguished by considerable rotundity and breadth across the orbits. M. ocreatus and M. maurus have a narrow interorbital region, and the facial (maxillary) portion of the skull is not raised over the canines as in C. niger; moreover, this species has a tendency to flattening of the suborbital maxillary area—a feature which is characteristic of the skull of Cynopithecus niger. The latter species, however, has a peculiar feature in the great narrowness across its orbits, the combined breadth of which is much less than the malar region: neither M. ocreatus nor M. maurus exhibits this feature. The nasals of this species are much smaller than those of M. maurus. Presented by the Zoological Gardens, 25th August 1878.


48. Cynopithecus niger.

Cynocephalus niger, Desmarest, Mamm. 1822, Suppl. p. 534.
Macacus maurus (?), Quoy & Gaimard, Voy. de l'Astrolabe Zool. t. i, 1831, p. 67.
Inuus (Maimon) niger, Wagner, Schreber, Säugeth. Suppl. bd. i, 1840, p. 147.
Cynocephalus (Cynopithecus) niger, Wagner, Schreber, Säugeth. Suppl. bd. v, 1855, p. 61.

Hab. Celebes.

b. A stuffed adult female, the bones of the trunk and the viscera in alcohol: tail half an inch long. Presented by Wm. Rutledge, Esq., 16th January 1872.

c. A stuffed adult female: tail a mere knob. Purchased, 12th January 1870.


f. The skin of a young female. Presented by Wm. Rutledge, Esq., 5th June 1871.

g. The skin, skull, and bones of the trunk of an adult male: the skull is very large and has enormous canines, with a very prominent canine eminence; the orbits are backwardly thrown, the facial portion of the skull elongated, forwardly projected, flat in front and laterally perpendicular and concave; the malar at its junction with the maxillary is swollen, and the nasal aperture is nearly as large as one half of an orbit. Presented by the Zoological Gardens, 9th August 1880.

h. The skin and skull of a young male: brownish-black trunk, passing into black on the limbs and head; the back of the thighs with a faint trace of grey. Presented by W. Rutledge, Esq., 8th September 1880.

i. The skeleton of an adult female. Presented by Wm. Rutledge, Esq., 9th January 1871.


l. The skeleton of a young male. Presented by Wm. Rutledge, Esq., 7th December 1871.

m. The ligamentary skeleton of an adult female. Presented by Wm. Rutledge, Esq., 29th October 1871.


r. The mounted skeleton of an adult female. Presented by Wm. Rutledge, Esq., 10th May 1871.

III.—Sub-Family CYNOCEPHALINÆ.

Genus CYNOCEPHALUS, Brisson, 1756.

49. Cynocephalus hamadryas.

Tartarin, F. Cuv., Hist. Nat. des Mammif. livr. v, Avril, 1819.
Simia hamadryas, Linn., Syst. Nat., 12th ed., 1766, p. 36; Schreber, Säugeth. bd. i (1774), p. 82, pl. x.
Simia aegyptica, Hasselquist, Reise nach Palaest. 1762-68, p. 194.
Hamadryas aegyptica, Gray, Cat. Monkeys & Lemurs, B. M., 1870, p. 34.

Hab. Abyssinia and Arabia.

49a. A stuffed adult male. Purchased, 6th October 1866.
b. The head of an adolescent male. Purchased, 29th January 1867.
f. A stuffed young female, apparently this species. Purchased, 7th February 1870.
g. The skin of a young female. Presented by Wm. Rutledge, Esq., 11th March 1877.
h. The skin, skull, and scapulae of an adolescent male. These bones are quite light and very friable, and the scapula is thrown into folds as if it had been a piece of papier-mâché. This diseased condition of the bones is not unfrequently observed among monkeys reared from an early age in captivity. Purchased, 5th January 1878.
i. The skeleton of an adult male. Purchased, 6th January 1880.

j. A stuffed young male and its skull, marked No. 16A of Blyth’s Catalogue, which is Macacus assamensis, McClelland, but in the Catalogue the species stands with a point of interrogation. Presented by the Maharajah of Burdwan, 1848.
50. Cynocephalus doguera.
Papio doguera, Schlegel, Mus. de Pays-Bas Simia, 1876, p. 126.

Hab. Abyssinia.

50a. A stuffed fully adult male, and the bones of the trunk: uniform yellowish olive on the whiskers and over all the body, above and below, except on the hands and feet, which are black, or nearly so; hair long (6 inches) and coarse on the front part of the body, basal portion (2 inches) ashy grey, the remainder banded nine times with orange and black, the first and last band the narrowest; 12 ribs; 25 caudal vertebrae. Purchased, 8th January 1870.

b. The skin of an adult male, its skull, and the bones of the trunk. Presented by Wm. Rutledge, Esq., 14th June 1876.

c. The skin and skeleton of an adult female: like the male, but smaller, and the feet uniform with the body. Presented by Wm. Rutledge, Esq., 30th June 1876.


51. Cynocephalus porcarius.
Cynocephalus ursinus, Schinz, Syn. Mamm. vol. i, 1844, p. 64.

Hab. South Africa.


b. A stuffed young male and its skull; No. 11B of Blyth’s Catalogue. Purchased, 1846.

c. The skin, skull, and bones of the trunk of an adolescent female. Although this animal was far from being adult, it had huge swellings around the vaginal orifice while alive. The bones of the skull are enormously thickened and heavy, but those of the face are softened. This animal lived in
the Zoological Gardens for some years and during that period appeared quite healthy. Presented by the Zoological Gardens, 29th October 1880.

d. A newly born male in alcohol: a hybrid between this species and *Macacus nemestrinus*. Presented by Raja Rajendra Mullick, Bahadur, 1862.

52. Cynocephalus maimon.


Hab. Western Africa.

52a. A stuffed adult male, No. 9A of Blyth's Catalogue. Presented by the Maharajah of Burdwan, 1858.

b. A stuffed adult female, No. 9B of Blyth's Catalogue. Presented by the Maharajah of Burdwan, 1858.

II.—SUB-ORDER PLATYRRHINI.

I.—FAMILY CEBIDÆ.

GENUS MYCETES, Illiger, 1811.

53. Mycetes ursinus.


Hab. Brazil.


54. Mycetes seniculus.


Mycetes seniculus, Kuhl, Beitr. 1820, p. 28.
Mycetes stramineus, Spix (neo Geoffroy), Sim. Brazil, p. 45, pl. 31.

Hab. Brazil, Guiana, and Bolivia.

54a. The skin of an adult female: reddish chestnut, golden yellow on the dorsal surface, from the shoulders to the root of the tail. By exchange, 21st January 1879.

55. Mycetes palliatus.


Hab. Nicaragua.

55a. The skin of an adult female: black throughout, with a few silvery hairs from the axilla along the side. Panama. By exchange, 21st January 1879.

Genus ATELES, Geoff., 1806.

56. Ateles ater.

Ateles ater, F. Cuv., Hist. Nat. des Mammif. livr°. xxxix, Mars, 1823.

Hab. Peru, between 2° and 14° S. Lat.


57. Ateles paniscus.

Simia paniscus, Linn. Gmelin, Syst. Nat. 1788, p. 36.

Hab. Guiana, Lower and Upper Amazon Valley, Rio Negro, banks of the Madeira, &c.


58. Ateles geoffroyi.

Ateles belzebuth var. trianguligera, Weinland, Zool. Garten, Bd. iii, 1862, pl. 207.

Hab. Central America, Southern Mexico to Verragua.

58a. The skin of an adult female: pale greyish-yellow, with a black forehead, hands, feet, and knees; with blackish under the antibrachium. Central America. By exchange, 21st January 1879.

58b. The skin of an adult: black above, with an intermixture of grey hairs, passing into yellowish grey towards the rump; under surface greyish yellow, golden on the insides of the thighs. By exchange, 21st January 1879.

58c. The skin, skeleton, and the viscera in alcohol of an adolescent female: black, with a few yellowish hairs scattered throughout. This skull has three ossa triquetra, a large one between the frontal and parietals, and two smaller ones between these latter bones and the occipital. Presented by Wm. Rutledge, Esq., 18th August 1878.

59. Ateles chuva.

Ateles chuva, Schlegel, Mus. d'Hist. Nat. des Pays-Bas, 1876, p. 175, et syn.

Hab. North-Eastern Peru, Ecuador and the mountains of Guiana.

59a. The skin of an adult male: black on the upper surface and along the outside of the humerus and the first half of the tail; outer side of the thigh blackish, with an intermixture of yellow; lower half of limbs yellowish, with intermixed black hairs; hands and feet yellowish, with intermixed black hairs; under surface of body yellowish; forehead golden yellow; ear black; whiskers and hairs on mouth white; eyebrows and hairs on the rest of the face black. By exchange, 21st January 1879.

Genus CEBUS, Erxleben, 1777.

60. Cebus flavus.

Simia flavia, Schreber, Säugeth., pl. 31B.
Cebus fulvus, Desm., Mamm. 1820, p. 83.
Cebus pallidus, Gray, Cat. Monkeys & Lemurs, B. M., 1870, p. 49.
Hab. Brazil and Bolivia.

60a. The skin of an adult male: pale brown, passing into black on the head and becoming paler on the fore limbs, and darker on the hands and feet, and on the upper surface of the tail; sides of the face greyish; under surface greyish, with a tinge of yellow. By exchange, 21st January 1879.

61. Cebus capucinus.


Hab. Guiana.


62. Cebus hypoleucus.

Simia capucina var. a, Audebert, Hist. des Singes et Makis, 1794, fam. 5, sect. ii, fig. 4.

Hab. Guiana.

62a. The skin of an adult male: black above; forehead, side of face, throat, chest, and front of shoulders yellowish white; belly pale brown. By exchange, 21st January 1879.

b. The skin and skeleton of a female. Purchased, 16th December 1878.

c. The skin and skull of a young male. Purchased, 23rd December 1879.

d. The skin, skull, and the bones of the trunk of a young male. Purchased, 27th November 1879.

Genus NYCTIPITHECUS, Spix, 1823.

63. Nyctipithecus felinus.

Nyctipithecus felinus, Spix, Sim. et Vesper Brazil, 1823 p. 24, pl. 18.

Hab. Bolivia, Paraguay, and Argentine Republic.

GENUS PITHECIA, Desmarest, 1804.

64. Pithecia nocturna.

Simia pithecia, Linn., Syst. Nat. 1766, p. 40; Schreber, Säugeth. Bd. i, 1774, p. 125, pl. xxxii.
Pithecia rufiventris leucocephala, Geoff. St.-Hil., t. xix, pp. 116-17, 1812.
Pithecia rufiventris, adusta, rufibarbata, et ochrocephala, Kuhl, Beitr. 1820, pp. 43, 44.
Pithecia capillamentosa, Spix, Sim. et Vesper Brazil, 1823, p. 16, pl. 11.

Hab. Guiana.

64a. The skin of an adult female: brownish black, the hairs with a subterminal white band; under surface rufous; moustache yellowish. Eriquito River, British Guiana. By exchange, 21st January 1879.

65. Pithecia satanas.

Cebus satanas, Hoffmannsegg, Ges. Naturforscher, Bd. x, p. 93, 1807.
Chiropotes aters, Gray, Cat. Monkeys & Lemures, B. M., 1870, p. 61.

Hab. Lower Amazon; near Pará, British Guiana.


GENUS CHRYSOThRIX, Kaup, 1835.

66. Chrysothrix sciurea.

Chrysothrix sciurea, Wagner, Schreber, Säugeth. Suppl. Bd. v, 1855, p. 120, tab. 9.
Chrysothrix sciurea, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 16.

Hab. Guiana and Brazil.
c. The skin and skeleton, and the visera in alcohol of an adult male. Presented by O. L. Fraser, Esq., 30th October 1878.
d. Skin of an adult male. By exchange, 1st January 1879.

II.—Family HAPALIDÆ.

Genus HAPALE, Kuhl, 1820.

67. Hapale jacchus.


Hub. Brazil.

b. The skull of a stuffed male, No. 41B of Blyth's Catalogue. Presented by E. Blyth, Esq., 1851.
f. The skin, skull, and bones of the trunk of an adult male. Presented by Wm. Rutledge, Esq., 5th October 1876.
g & h. Two young in alcohol, born in Calcutta. Nos. 41E and F of Blyth's Catalogue. Presented by E. Blyth, Esq., 1851.
i. The skeleton of a female, No. 41C of Blyth's Catalogue. Presented by E. Blyth, Esq., 1852.
68. Hapale penicillata.


*Hab.* Brazil.

68a. The skin of an adolescent male, its skull and viscera. Presented by Mr. H. Swaries, 15th January 1869.


69. Hapale pygmaea.

Jacchus pygmaeus, *Spix, Sim. et Veeper Brazil*, 1823, p. 32, pl. 24, fig. 2.
Cebuella pygmaea, *Gray, Cat. Monkeys & Lemurs*, B. M., 1870, p. 64.

*Hab.* Eastern Peru.


70. Hapale rosalia.


*Hab.* Brazil.

70a. The skin of an adult: pale golden yellow; rufous around the face and along the neck, on the under surface and the lower portion of the limbs, with the exception of the fore feet, which are black, with a tinge of rufous above, the hind feet being pale golden yellow; the tail slightly dusky. Brazil. By exchange, 21st January 1879.


c. The skeleton of an adult male. By exchange, 28th May 1880.

71. Hapale eedipus.

Simia oedipus, *Linn.*, *Syst. Nat.* 12th ed., 1766, p. 41; *Schreber, Säu-
geth.* pl. 34.
Mammif.* 1851, p. 62.
Hapale oedipus, *Schlegel, Mus. d Hist. Nat. des Pays-Bas*, 1876, 
p. 258.

**Hab. Columbia.**

71a. The skin of an adult: head, throat, and under parts white, also the lower half of the brachium, antibrachium, and thigh; upper half of the tail chestnut, lower half black: the remaining parts of the trunk brownish, with a greyish olive tint and an intermixture of black and chestnut, the latter on the sides of the neck and on the back of the thigh, the black occurring chiefly on the lower half of the trunk. By exchange, 21st January 1879.

d. The flat skin and skeleton of an adult female. Presented by Wm. Rutledge, Esq., 18th September 1880.
e. The skin and skull of an adult male. Presented by Wm. Rutledge, Esq., 28th October 1880.

72. Hapale leucopus.

pl. lxxii.

**Hab. Columbia.**

72a. The skin of an adult male: silvery grey above, with an intermixture of fuliginous, specially on the occiput, which is dark brown, and on the base of the tail, the tip of which is white; the lower half of the outside of the limbs silvery white; forehead and hairs of face short, sparse, and white; throat dusky fuliginous; chest and under parts rich rufous. Antioquia, U. S. of Columbia. By exchange, 21st January, 1879.


73. Hapale ursula.

6; *F. Cuv., Hist. Nat. des Mammif.* livr. ix, Sept. 1819.
Jacchus ursulus, Desmarest, Mamm. 1820, p. 94.
Hapale ursula, Wagner, Schreber, Säugeth. Suppl. Bd. i, 1840, p. 246.

Hab. Brazil.

73a. A stuffed nearly adult male, its skull and bones of the trunk: face and fur jet black, with the exception of the back, from the shoulders to the root of the tail, which is more or less transversely banded with ferruginous. In the skull there appears to be the permanent absence of the last molar on the right side. Presented by Wm. Rutledge, Esq., May 1879.

b. An adult female in alcohol: the back more or less banded with rufous. Presented by Wm. Rutledge, Esq., 14th May 1879.

II.—ORDER PROSIMIÆ.

1.—FAMILY LEMURIDÆ.

1.—SUB-FAMILY LEMURINÆ.

GENUS LEMUR, Linn., 1758.

74. Lemur catta.

Le Mococo, Buffon, Hist. Nat. t. xiii, 1765, p. 184, pl. 22; Audubert, Hist. Nat. des Makis, fig. 4; F. Cuv., Nat. Hist. des Mammif. livr. v, Avril 1819.


Hab. Central part of Madagascar to Mouroundava on the west coast and Andrahoumbe on the east coast.—Schlegel.


b. The skin and skeleton of a male. Presented by Wm. Rutledge, Esq., 4th February 1876.
75. Lemur varius.


Lemur Macaco, Schreber, Säugeth. Bd. i, p. 142, pl. xl, B ( nec Linn.)

Lemur varius, Is. Geoffroy St.-Hil., Cat. des Mammif, 1851, p. 71;
Schlegel, Mus. d’Hist. Nat. des Pays-Bas, 1876, p. 301.


Hab. North-East coast of Madagascar.

75a. A stuffed male. Purchased, January 1863.


d. The skeleton of a male. Presented by Wm. Rutledge; Esq., 18th January 1873.

e. A skeleton. No history.


g. The skull of No. 42A of Blyth’s Catalogue.

76. Lemur macaco.

The Black Maucauco, Edwards, Glean. vol. v, pl. 217.


Hab. North-West coast of Madagascar.


b. A stuffed young animal, No. 45B of Blyth’s Catalogue: the same as the last. Presented by Raja Rajendra Mullick, Bahadur, 1864.

c. The skin and skull of an adolescent male: wholly black. Purchased, 27th November 1879.
77. Lemur albifrons.


Prosimia albifrons. Gray, Cat. Monkeys & Lemurs, B. M., 1870, p. 73.

Hab. North-East coast of Madagascar.


78. Lemur collaris.

Maki à front blanc, ß et juv. (née ß), Hist. Nat. des Mammif: livr. iii, 19 Fév. 1819.
Maki à front noir, F. Cuv., l. c. livr. xxx, Juillet 1821.
Lemur brunneus, Van der Hoeven Tijdschr., v. N. G. Bd. xi, 1844, p. 35.
Lemur nigrifrons, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 17.
Cat. Monkeys & Lemurs, B. M., 1870, p. 74.
Lemur collaris, Schlegel, Mus. d'Hist. Nat. des Pays-Bas, 1876, p. 306.

Hab. North-West coast of Madagascar.


79. Lemur nigrifrons.

Lemur simia-sciurus, Petiv., Schreber, Säugeth. pl. 42.

Hab. Madagascar.

79a. The skin and skull of an adult male: rather pale ashy grey throughout, above and below, except on the front of the head and around the ears, which is tinged with reddish yellow; the sides of the face external to one-half of the eyes are grey, but the rest is jet black, extending on to the forehead, but not reaching the vertex. Presented by the Zoological Gardens, Calcutta, 28th October 1879.
This Lemur seems closely allied to the *L. flavifrons*, Gray, Proc. Soc. Lond. 1867, p. 566, pl. 31.

80. **Lemur mongoz**.

Le Mongous Audebert, Hist. Nat. des Makis, 1797, fig. 1.
Lemur nigrifrons, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 17.

*Hab.* West coast of Madagascar.

80a. A stuffed specimen and its skeleton, Nos. 43 A and B of Blyth’s Catalogue: much faded, but apparently agreeing with the characters of the female. The ashy grey on the shoulder and fore limb is much faded. Presented by Raja Rajendra Mullick, Bahadur, 1851.

b. A stuffed skin of a female: like the preceding, but with less white below the ear, and much faded. No. 44B of Blyth’s Catalogue, and the type of *L. flaviventer*, Blyth, Journ. As. Soc. Beng., vol. xxvii, p. 274, 1858. This specimen, however, does not differ specifically from the previous individual. Presented by the Maharajah of Burdwan, 1858.

c. The skin, skull, and bones of the trunk of an adult female. It differs from the previous specimens in having no white on the breast, throat, or sides of the face, all of these parts being dark ashy grey, except the chin, which is paler. Presented by Wm. Rutledge, Esq., 11th October 1880.

d. The skin of an adult male and its skull: the sides of the neck and of the face are rufous, front of face greyish. Purchased, 4th December 1880.

e. The skin of a young male and its skull: resembling e, but showing a tendency to rufous on the side of the neck; the face and forehead black. Presented by Wm. Rutledge, Esq., 17th August 1880.

II.—Sub-Family INDRISINÆ.

Genus PROPITHECUS, Lund, 1839.

81. **Propithecus diadema**.

Hab. The great forests of the eastern portion of Madagascar.—Schlegel.

81a. The skin of an adult. By exchange with the British Museum, 6th January 1879.

b. The skin of an adult female: darker than the last specimen. Purchased, 21st January 1879.

c. The skeleton of an adult. By exchange with the British Museum, 21st January 1879.

Genus INDRIS, Geoff., 1796.

82. Indris brevicaudatus.


Hab. Forests on the eastern side of the great mountains, between the bay of Antongil to the north, and the river Masora to the south.—Alph. Milne Edwards & Grandidier.

82a. The skin of an adult female, of the variety described by Professor Peters as Lichanotus mitratus.¹ By exchange with the British Museum, 6th January 1879.

II.—Family NYCTICEBIDÆ.

I.—Sub-Family NYCTICEBINÆ.

Genus NYCTICEBUS, Geoff., 1795.

83. Nycticebus tardigradus.

Le paresseux pentadactyle du Bengale, Vosmaer, Description Amsterd., 1770, pl. vi.

Le Loris paresseux, Audébert, Hist. des Singes et Makis, 1797, fig. 1.

Lemur tardigradus, Linn., Syst. Nat. 12th ed. 1766, p. 44.

Stenops tardigradus, Illiger, Prod. Syst. Mamm. 1811, p. 73.


¹ M. B. Akad. der Wiss. zu Berlin (1871), p. 360.
**Hab.** Assam and Eastern Bengal through Upper Burma and Arakan to Siam, and through the Malayan Peninsula to Sumatra and Java.

**Var. cinerea.**

Large race inhabiting Assam, Sylhet, and Cachar, and ranging eastwards through Upper Burma (Bhamo) to Siam. Clear greyish ashy, or silvery grey on the head and neck, with only a trace of the head markings so distinct in the Javan race; the rest of the trunk greyish, but washed with brownish and tending to reddish brown on the hind quarters. Dorsal band rich dark brown, fading away on the vertex; upper incisors two to four.


k. The skulls, Nos. 47 A to C of Blyth's Catalogue.


**Var. malaiana,**

A smaller variety, darker than the preceding, without the marked silvery grey; brownish, with a rusty hue; indistinct head markings as compared with var. javanica; dorsal line well defined to lumbar region; upper incisors 2 to 4; skull
smaller than the skull of the previous race. Occurs in Eastern Bengal (Chittagong) and extends through Arakan to Malacca.


o. A stuffed adolescent: brownish, with a dusky fuliginous or dusky tinge. Probably Nos. 47 B F of Blyth's Catalogue. Presented by Mr. Bell, 1857.

p. A stuffed adolescent female: brownish fawn; hairs on the back white-tipped, and markings on the trunk moderately well defined; one pair of upper incisors. Presented by Wm. Rutledge, Esq., 7th July 1870.

q. A stuffed young male: dusky brown, tipped with white; dorsal line nearly black; two pairs of incisors. Presented by Wm. Rutledge, Esq., 12th March 1870.

r. The skin, skull, and bones of the trunk of an adult male: two pairs of upper incisors. Presented by Wm. Rutledge, Esq., 3rd March 1877.

s. The skin, skull, and bones of the trunk of an adult male: two pairs of upper incisors. Penang. Presented by the Zoological Gardens, Calcutta, 26th May 1877.


u. The flat skin and skeleton of a male: like the last; head markings partially defined; two pairs of upper incisors. Presented by Wm. Rutledge, Esq., 13th February 1875.

v. The flat skin and skeleton of an adult male: like the last; upper incisors wanting. Presented by Wm. Rutledge, Esq., 22nd November 1875.

w. The skin of an adolescent female: dark fawn-brown; dorsal line nearly black; one pair of upper incisors. Presented by Wm. Rutledge, Esq., 22nd March 1876.

x. The flat skin and skeleton of an adult male: like the last; two pairs of upper incisors. Presented by Wm. Rutledge, Esq., 8th August 1876.


z. The skeleton of a male: two pairs of upper incisors. Presented by Dr. J. Anderson, 1st December 1872.
aa. The skeleton of an adult male: two pairs of upper incisors. Presented by Dr. J. Anderson, 7th July 1873.


ee. The skeleton of an adult male: two pairs of upper incisors. Purchased, 29th June 1869.

ff. The mounted skeleton of an adult: no history.

Var. javanica.

About the same size as var. malaiana, but much paler, especially on the head, which has the brown bands from above the eyes and ears well defined, and united to the dorsal line, which, like the head bands, is rich brown.


Genus Loris, Geoff., 1796.

84. Loris gracilis.

Le Loris grêle, Audebert, Hist. des Singes et Makis, 1797, pl. ii.
Stenops gracilis, Kuhl, Beitr. 1820, p. 37.

Hab. Ceylon; Southern India; (?) Shan States east of British Burma.


c. A stuffed young individual and its skull, Nos. 48 C and E of Blyth’s Catalogue: with shorter limbs than a & b.\(^1\) Presented by the Medical College, Calcutta, 1844.

\(^1\) Blyth: Journ. As. Soc. Beng. vol. xvi, p. 736.
d & e. The skin, skull, and bones of the trunk of a shorter-limbed young animal, and the imperfect skeleton of another. Both were received alive from Rangoon, where they had been purchased from a Shan, who had stated that he had obtained them in the Shan States to the east of British Burma. The skulls are distinguished by having smaller orbits and narrower and more pointed muzzles than those of animals from Ceylon and India. Presented by Dr. J. Anderson, 1870.

f. The skin and skeleton of an adult male. Presented by Wm. Rutledge, Esq., 30th April 1875.

g. The skeleton of an adult male. Presented by Wm. Rutledge, Esq., 21st July 1876.

h. The skeleton of an adult male. Ceylon. Presented by Dr. J. Anderson, 3rd February 1866.
i. The skeleton of an adult male. Presented by Wm. Rutledge, Esq., 21st June 1874.


II.—Sub-Family GALAGONINÆ.

GENUS GALAGO, Geoff., 1796.

85. Galago senegalensis.


Hab. West Africa; Senegal; Gambia.—Gray.

85a. The skin and skull of an adult in bad condition. Asiatic Society’s specimen. No history.

86. Galago garnetti.


Hab. Natal.

86a. The skin and skeleton of an adult male, both mounted.
Presented by His Excellency the Viceroy, Earl Northbrook, 14th January 1875.

III.—Family TARSIDÆ.

I.—Sub-Family TARSINÆ.

Genus TARSIUS, E. Geoff., 1812.

Tarsius spectrum.

Lemur spectrum, Pallas, nov. spec., Quad. e Glir. ord. 1778, p. 275, nt.
Tarsius spectrum, Geoff. St.-Hil., Ann. du Mus. t. xix, 1812, p. 168;

Hab. Malayan Archipelago (Philippines, Celebes, Java, and Sumatra).


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III.—Order CHIROPTERA.

I.—Sub-Order MEGACHIROPTERA.

I.—Family PTEROPODIDÆ.

I.—Group PTEROPI.

Genus PTEROPIUS, Brisson, 1756.

Pteropus poliocephalus.

Pteropus poliocephalus, Temm., Monogr. Mammal. t. ii, 1827, p. 179;
Dobson, Cat. Chiroptera, B. M., 1878, p. 31.

Hab. Australia.

89. Pteropus rodricensis.

Pteropus rodricensis, Dobson, Cat. Chiropt. B. M., 1878, p. 36.

Hab. Island of Rodriguez.


d & e. Two skulls, one of an adult and the other of a young animal. The former was found in a cave along with bones Pezophaps solitarius. Island of Rodriguez. Presented by J. Caldwell, Esq., 30th May 1881.

90. Pteropus edulis.

Pteropus edulis, Geoffroy, Ann. du Mus. t. xv, 1810, p. 92; Dobson, Cat. Chiroptera, B. M., 1878, p. 49.

Hab. Indo-Malayan Sub-region, extending also into some of the islands of the northern part of the Austro-Malayan Sub-region (Andaman and Nicobar Islands, Sumatra, Java, Borneo, Philippine Islands (Samar Island), Banda, Ternate, Timor).—Dobson.

90a. A stuffed adult female and its skull: the orbits of this skull are very perfect, the frontal, malar, and post-orbital processes having broadly united. No. 53A of Blyth’s Catalogue. Java. Presented by the Batavian Society, 1845.


d. The skin in bad condition and its skull, No. 53D of Blyth’s Catalogue. Tenasserim. Presented by Dr. Helfer, 1839.

e. The skin of an adolescent. South Australia. By exchange with the Adelaide Museum, 1875.

91. Pteropus medius.¹

Pteropus medius, Temminck, Monogr. Mammal. t. i, p. 76; Dobson, Cat. Chiroptera, B. M., 1878, p. 51.

_Hab._ India, Ceylon, Arakan, and Burma.


d. The skin of an adult male, No. 51D of Blyth’s Catalogue. Calcutta, 1842-43.

e. The skin of a young male, No. 51E of Blyth’s Catalogue. Calcutta, 1842-43.


g. A stuffed adult female and skull, No. 51G of Blyth’s Catalogue. Calcutta, 1842-43.

h. The skin and skull of an adult male, No. 51I of Blyth’s Catalogue. Mergui. Presented by Major Berdmore, 1855.


¹ In my note-book I find the following observation regarding this species:

"_August 23rd, 1866._—This species has been flying for the last few days from the north to the south of the city, in immense numbers, immediately after sun-down. The sky, from east to west, has been covered with them as far as the eye could reach, and all were flying, with an evident purpose, and making for some common feeding ground. Over a transverse area of 250 yards, as many as 70 bats passed overhead in one minute, and as they were spread over an area of great breadth and could be detected in the sky on both sides as far as could be seen, their numbers were very great, but yet they continued to pass overhead for about half an hour. This is not the first time I have observed this habit in this species; indeed, it was much more markedly seen in August 1864, while I was residing in the Botanical Gardens, Calcutta. The sky, immediately after sunset, was covered with this bat, travelling in a steady manner from west to east, and spread over a great expanse, all evidently making for one common goal, and travelling, as it were, like birds of passage with a steady purpose. I observed them, not only on one, but both sides of the river. But in the Botanical Garden I noticed that, whilst the great mass of bats passed on, a few were attracted by trees then in fruit and seemed to go no further. This continued for a number of successive nights, but I did not observe the bats returning."
m. The skin and skull of an adult male. Chutia Nágpur. Presented by V. Ball, Esq., 21st November 1868.

o. An adult female in alcohol. Calcutta. Presented by Dr. J. Anderson, 1866. The head of this specimen is figured in Dobson's Monograph of Asiatic Chiroptera, p. 18.
u. A skull. No history.

V. assamensis.


92. Pteropus nicobaricus.


Hab. Andaman and Nicobar Islands; Java; Pulo; Condor. —Dobson.


c. The skin and skull of an adult female, No. 52B of Blyth's Catalogue. Type of P. melanotus, Blyth. Nicobar Islands. Presented by Captain Lewis, 1846.
CYNONYCTERIS. 103

e. The skin and skull of an adult male: the same as the last. In the skull the frontal and post-orbital processes are nearly fully united. South Andamans. Presented by Lieut.-Colonel R. C. Tytler, 1864.
g. A mounted adult male and its skull. Nicobars. Bequeathed by Dr. F. Stoliczka, to the Asiatic Society of Bengal. 15th December 1875.
m & n. An adolescent and a young female in alcohol. South Andamans. Bequeathed by Dr. F. Stoliczka, to the Asiatic Society of Bengal, 15th December 1875.

93. Pteropus keradrenii.
Pteropus keradrenii (Quoy et Gaim.) Dobson, Cat. Chiropt. B. M., 1878, p. 63.

Hab. Polynesian Sub-region (except the Sandwich Islands, Gilbert’s Group, Ellice’s Group, and the Islands east of Samoa), apparently generally distributed, extending from the Mariana Islands to Savage Island, and from the New Hebrides to Samoa.—Dobson.


Genus CYNONYCTERIS, Peters, 1852.

94. Cynonycteris amplexicaudata.
Hab. From the Persian Gulf to the Philippine Islands; Bengal, Southern India, Ceylon, Burma, Celebes, Amboina, Timor, Aru Islands.—Dobson.


b. A stuffed adult male, No. 54B of Blyth’s Catalogue. Ceylon. Presented by Dr. E. F. Kelaart, 1851. Type of Pteropus seminudus, Kelaart.


g to i. Two adult males and one adult female in alcohol. Moulmain Caves. Presented by J. Armstrong, Esq., M.B., 29th August 1877.

95. Cynonycteris minor.

Cynonycteris minor, Dobson, Journ. As. Soc. Beng. 1873, p. 203, pl. xiv, fig. 9; ibid., Cat. Chiropt. B. M. 1878, p. 73.

Hab. Java.

95a. The skin and skull of an adult male, No. 55A of Blyth’s Catalogue. Presented by the Batavian Society, 1845. Type.

96. Cynonycteris collaris.


Cynonycteris collaris, Dobson, Cat. Chiropt. B. M. 1878, p. 75.

Hab. Equatorial and Southern Africa (West Africa, Gaboon; East Africa, Natal; South Africa, Cape of Good Hope).—Dobson.


Genus Cynopterus.

Sub-Genus Cynopterus.

97. Cynopterus marginatus.


Cynopterus marginatus, Dobson, Cat. Chiropt. B. M., 1878, p. 81.
Hab. India generally, from the Himalaya to Cape Comorin; Ceylon, Andaman Islands, Arakan, Burma, Malay Peninsula, Siam, Sumatra, Java, Billiton Island, Borneo, Celebes, Philippine Islands.—Dobson.

97a to g. Seven skins of males and females. Calcutta. Nos. 58 A to G of Blyth’s Catalogue, 1841-51.


m. The ligamentary skeleton of an adult: wanting the lower jaw. No. 58 (?) of Blyth’s Catalogue. Ceylon. Presented by Dr. Kelaart.


The foregoing specimens from the Andaman Islands are the types of C. marginatus, var. andamanensis, Dobson, Journ. As. Soc. Beng., vol. lxi, 1873, p. 201, pl. xiv, fig. 5, but which were placed by him under Gymopterus brachyoctus, Muller, in his Monograph of the Asiatic Chiroptera, 1876, p. 26, fig. of ear, and p. 190.


ii & jj. Two females in alcohol. Calcutta. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka. 15th December 1875.

kk. An adult male in alcohol. No history.


98. Cynopterus scherzeri.

Cynopterus scherzeri, Dobson, Cat. Chiropt. B. M. 1878, p. 84.

Hab. Car-Nicobar Island.


c to e. Two adult males and one young female in alcohol. Car-Nicobar Island. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka. 15th December 1875.

99. Cynopterus brachysoma.


Hab. Southern Andaman Islands.


II.—Group MACROGLOSSI.

Genus EONYCTERIS, Dobson, 1873.

100. Eonycteris spelæa.

Eonycteris spelæa, Dobson, Cat. Chiropt. B. M. 1878, p. 94.

Hab. Burma (Farm Caves, Moulmain).—Dobson.

100a to d. Four adult females, one gravid, in alcohol. Farm Caves, Moulmain. Presented by Wm. Theobald, Esq., 1872. a the Type.


Genus MACROGLOSSUS, F. Cuv., 1825.

101. Macroglossus minimus.

Pteropus minimus, Geoffroy, Ann. du Mus. t. xv, p. 97 (1810).
Macroglossus minimus, Dobson, Cat. Chiropt. B. M. 1878, p. 96.

Hab. From the Himalaya (Darjeeling) through Burma to the Malay Archipelago, and North and West Australia. Probably distributed throughout all the islands of the Malay Archipelago, and extending as far east as New Ireland.—Dobson.


b. The skin of an immature individual. Darjeeling. Presented by Dr. F. Stoliczka, 1871.


II.—Sub-Order MICROCHIROPTERA.

I.—Family RHINOLOPHIDÆ.

I.—Sub-Family RHINOLOPHINÆ.

Genus RHINOLOPHUS, Geoff., 1808.

102. Rhinolophus coelophyllus.


Hab. Moulmain; Tsagain, Upper Burma.

102a & b. An adult male and female in alcohol. Tsagain, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.

103. Rhinolophus luctus.

108 Mammalia.

Hab. India (Western Ghats; Himalaya, Nepal, Masuri, Darjeeling, Sikkim; Khási Hills); Ceylon; Java; Sumatra; Borneo; Philippine Islands.—Dobson.


104. Rhinolophus trifoliatus.
Rhinolophus trifoliatus, Temm., Monogr. Mamm. t. ii, 1835-41, p. 27, pl. 31; Dobson, Cat. Chiropt. B. M. 1878, p. 106.

Hab. India (Eastern Coast); Java; Borneo.—Dobson.


105. Rhinolophus mitratus.

Hab. Peninsula of India (Cháibása).


106. Rhinolophus euryotis.
Rhinolophus euryotis, Temminck, Monogr. Mamm. t. ii, 1835-41, p. 28, pl. 29 fig. 5; pl. 32 figs. 13, 14, 15; Dobson, Cat. Chiropt. B. M. 1878, p. 108.

Hab. Amboina; Aru Islands.—Dobson.

107. Rhinolophus pearsonii.


*Hab.* India (Masuri, Darjeeling, Khāsi and Gāro Hills, Tipai Mukh); Tibet; Yunuan (Hotha).—Dobson.

107a & b. Two adult males in alcohol, and the skull of b. Hotha, 4,500 feet, Yunuan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunuan, 1868.


108. Rhinolophus macrotis.


*Hab.* Himalaya (Nipal, Masuri).


109. Rhinolophus affinis.

Rhinolophus affinis, *Horsfield, Zool. Resch. in Java* (1824); *Temminck Monogr. Mamm.* t. ii, p. 31 (1835); *Dobson, Cat. Chiropt. B. M.* 1878, p. 112.

*Hab.* Peninsula of India from the Himalaya to Cape Comorin (inhabiting hill tracts); Ceylon; Burma; Sumatra; Java; Borneo.—Dobson.


g to i. Three skins of adults, Nos. 68 A to C of Blyth’s Catalogue. Barrackpore. Presented by Lieut.-Colonel R. C. Tytler, 1852-60.

j to l. One adult male and two females in alcohol, No. 67H of Blyth’s Catalogue. Ceylon. Presented by Dr. E. F. Kelaart, 1852.

m. An adult male in alcohol. No history. Of the last three specimens, and including this, “a male and female answer to Kelaart’s description of *R. rubidus*; the third, a female, to

n & o. Two adult females in alcohol. No history.


110. *Rhinolophus andamanensis.*


*Hab.* Southern Andaman Island.—Dobson.


111. *Rhinolophus petersii.*


*Hab.* Unknown.

111a & b. Two adult males in alcohol. No history. *Types.*

112. *Rhinolophus minor.*


*Hab.* Peninsula of India; Yunnan; Burma; Siam; Sumatra; Java; Borneo; Japan.—Dobson.

112a to c. Two adult females and one adult, sex undeterminable. No history. *Types.*

d. An adult female in alcohol. Tsagain, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.


113. *Rhinolophus garoensis.*

Rhinolophus.

Hab. Gáro Hills, Assam; Himalaya (Masuri).—Dobson.


114. Rhinolophus euryale.


Hab. Europe (south of the Alps); Asia Minor (Syria); Northern Africa.—Dobson.


b to f. Three males and two females in alcohol. Jerusalem, Palestine, 18th April 1880. Collected and presented by Dr. J. Anderson, 28th December 1880.

115. Rhinolophus hipposideros.

Rhinolophus hipposideros, Dobson, Cat. Chiropt. B. M. 1878, p. 117.

Hab. Palaearctic Region; Southern and Middle Europe; North-East Africa; Asia Minor; Java.

115a to c. Two adolescent males, and one adult female in alcohol. Europe. Presented by the Hungarian Museum, April 1863.

116. Rhinolophus ferrum-equinum.


Hab. Europe; Africa; Asia (Himalaya and Japan).


e. A skin in bad condition, No. 65A of Blyth’s Catalogue. Darjeeling. Presented by W. T. Blanford, Esq., 1857. Type of R. brevitarsus, Blyth. Dr. Dobson remarks, l.c., p. 197, that this may perhaps be R. minor.
f to h. Two adult males and one adult female. Europe. Presented by the Hungarian Museum, April 1863.

117. Rhinolophus capensis.

Dobson, Cat. Chiropt. B. M. 1878, p. 121.

Hab. South Africa (Zanzibar, Cape Colony).—Dobson.


118. Rhinolophus—(?).


Hab. Unknown.

118a. An adult male in alcohol. No history.

119. Rhinolophus—(?).


Hab. Unknown.

119b. An adult male in alcohol. No history.

II.—Sub-Family PHYLLORHININÆ.

Genus TRIÆNOPS, Dobson, 1871.

120. Triænops persicus.


Hab. Shiráz, Persia, 4,750 feet.

Genus Phyllorhina, Bonaparte, 1831.

121. Phyllorhina tridens.

Phyllorhina tridens (Geoffroy), Dobson, Cat. Chiropt. B. M. 1878, p. 131.

Hab. Africa (Egypt, Zanzibar); Persia (Bushire); Sind (Karachi).

121a to ff. Seventeen males and fifteen females in alcohol. From the temple of Denderah, Upper Egypt, 6th March 1880, where this bat occurs in immense numbers. Collected and presented by Dr. J. Anderson, 18th January 1881.

Var. muraiana.

Distinguished from typical P. tridens, by its somewhat shorter, broader, and less pointed ears, but which otherwise conform to the characters of the ears of P. tridens. The projections, from the upper nose leaf are more marked than in P. tridens from Egypt, but in other respects the nose leaf is exactly as in it. The interfemoral and wing membranes are prolonged somewhat further down the tibia than is the case in bats of this species from Egypt, and the former membrane reaches the proximal end of the penultimate osseous caudal vertebra.

It attains to a larger size than any of the foregoing bats from Egypt, and the following are the measurements of the adult female hh; total length of body, 2”’30; tail 1”; head 0”’80; ear 0”’70; breadth of ear 0”’68; fore-arm 2”’07; thumb 0”’32; third finger, metacarpal 1”’46; 1st phalanx 0”’64; 2nd phalanx 0”’66; fifth finger, metacarpal 1”’16; 1st phalanx 0”’60; 2nd phalanx 0”’45; tibia 0”’74; foot 0”’40.”


122. Phyllorhina tricuspidata.

Rhinolophus tricuspidatus, Temm., Monogr. Mamm. vol. ii, p. 26, pl. xxix fig. 4; pl. xxxii, figs. 11 and 12.

Phyllorhina tricuspidata, Dobson, Cat. Chiropt. B. M. 1878, p. 131.
Hab. Austro-Malayan Sub-region (Morty Island; Batchian Amboina; New Ireland).—Dobson.


123. Phyllorhina stoliczkana.

Phyllorhina stoliczkana, Cat. Chiropt. B. M. 1878, p. 132.

Hab. Penang.

123a. An adult male in alcohol. Penang. Presented by Dr. F. Stoliczka, 1871. Type.

124. Phyllorhina armigera.


Hab. Himalaya (Masuri; Darjeeling; Nepal; Khási Hills); Ceylon; China (Amoy).—Dobson.


125. Phyllorhina leptophylla.


Hab. Khási Hills; Eastern Bengal.—Dobson.

126. Phyllorhina diadema.

Hab. Peninsula of India generally; Ceylon; Burma; Sumatra; Java; Borneo; Timor; Batchian Island; Amboina; Aru Islands; Philippine Islands.—Dobson.


g to i. Three skins of adults. Udaipur. Presented by V. Ball, Esq., 1871.


k. The skull of an adult. No history.

Var. a.


Hab. Moulmain, Burma.


127. Phyllorhina nicobarensis.


Hab. Nicobar Islands.

128. Phyllorhina galerita.

Phyllorhina galerita, Dobson, Cat. Chiropt. B. M. 1878, p. 141.

_Hab._ Peninsula of India (Deccan); Penang; Java; Labuan.
—Dobson.


129. Phyllorhina speoris.

Vespertilio speoris, Schneider, Suppl. Schreber, Säugethr. Atlas, i, pl. 59 n.
Phyllorhina speoris, Dobson, Cat. Chiropt. B. M. 1878, pp. 143 et 553.

_Hab._ Oriental Region (Peninsula of India; Ceylon; Burma; Java and probably the other islands of the Malay Archipelago in the Indo-Malayan Sub-region).—Dobson.


d to g. Four skins of adults, Nos. 78 D to G of Blyth’s Catalogue. Ceylon. Presented by Dr. E. F. Kelaart, 1852.

i. Skull of an animal from the Deccan, No. 78K of Blyth’s Catalogue. No history.

j to n. An adult male and female, and one young male, and two young females in alcohol. Ceylon. Presented by E. L. Layard, Esq.
o. An adult male in alcohol. Prome, Burma. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

q to s. An adult male and female and young in alcohol. Trichinopoly. Presented by Lieut.-Colonel Beddome, 19th November 1877.
t to u. Two adult females in alcohol. Travancore. Presented by Lt.-Colonel Beddome, 9th September 1878.
130. Phyllorhina larvata.

Rhinolophus larvatus, vulgaris, insignis et deformis, Horsfield, Zool. Resch. in Java (1824).
Phyllorhina larvata, Dobson, Cat. Chiropt. B. M. 1878, p. 145.

Hab. Eastern Bengal (Khási hills; Sylhet, Goálpára, Arakan); Burma; Penang, Prome, Tenasserim; Siam; Java; Philippine Islands.—Dobson.


d to f. Three skins of adults; Nos. 77 D to G. The skull of d separate. Sylhet. Presented by F. Skipwith, Esq., C.S., 1853.


h to y. Six males and twelve females in alcohol. Caves on right bank of Irrawadi opposite to Prome, Burma. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868. The skull of m separate.


ii. The skeleton of an adult from the caves opposite to Prome, Burma. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

jj. An imperfect skull of an adult from the caves opposite to Prome, Burma. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.


oo. A female in alcohol. Prome. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.

131. Phyllorhina bicolor.

Rhinolophus bicolor, Temm., Monogr. Mammal. t. ii, p. 18.
Hab. The Oriental Region. Typical examples have been found chiefly in the Indo-Malayan Sub-region (Nicobar Islands, Java, Borneo, Philippine Islands). Two of the varieties (Phyllorhina amboinensis and P. aruensis) extend into the northern parts of the Australian Region.—Dobson.

131a to k. Seven adult females, and four newly-born females, reddish chestnut, in alcohol. Nicobar Islands. Presented by J. Wood-Mason, Esq., 1873.

V. a. Phyllorhina fulva.

Phyllorhina fulva, Dobson, Cat. Chiropt. B. M. 1878, p. 149.

Hab. The continental parts of the Oriental Region; India, Ceylon, Burma, China (Amoy).—Dobson.


m to o. An adult male and two adult females in alcohol: m and n are No. 79B of Blyth’s Catalogue, whereas o is No. 80A of Blyth’s Catalogue, and is a small specimen with the wings from the side of the tarsi: taken from an unlabelled bottle containing several species. m and n are from Pind Dádan Khán, Punjab Salt Range. Presented by W. Theobald, Esq., 1853. The history of o is unknown.

p to s. A young male and two adolescent males, and one adolescent female; probably No. 80B of Blyth’s Catalogue. No history.


w & x. Two adult males in alcohol and the skull of w. Ponsee. Kakhyen hills, 3,500 ft. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

y to cc. Five adult males in alcohol: fur bright golden yellow throughout. Cave No. 5, Tsagain, right bank of the Irrawadi, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.

dd to ee. An adult male and female in alcohol: fur white at the base, with dark-brown extremities. Cave No. 4, Tsagain, right bank of the Irrawadi, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.
ff to qq. Nine adult males and three adult females in alcohol; fur white at the base, with dark-brown extremities. Cave No. 8, Tsagain, right bank of the Irrawadi, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.


ww to yy. Two males and a female in alcohol. Kachhi. Presented by Dr. F. Stoliczka, 1872.

zz to add. Three females and two adult males. Prome, Burma. Presented by W. Theobald, Esq., 1872. The three females are pregnant, and the fur is bright golden yellow.


ooo. An adult in alcohol. Chárápunjí. Bequeathed by Dr. F. Stoliczka to the Asiatic Society of Bengal, 15th December 1875.

VAR. 3. Phyllorhina amboinensis.


Hab. Amboina; Peninsula of India.—Dobson.


182. Coelops frithii.

**Hab.** Bengal (Sundarbans) ; Java.


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**II.—** **FAMILY NYCTERIDÆ.**

**I.—** **SUB-FAMILY MEGADERMINÆ.**

**Genus** MEGADERMA, Geoffroy, 1810.

**Sub-Genus** LYRODERMA, Peters.

133. Megaderma lyra.


**Hab.** Peninsula of India (from Kashmir to Cape Comorin); Ceylon.—*Dobson.*

133a to c. The skins of two adult females and of one adult, Nos. 59 B, C, and D of Blyth's Catalogue, Calcutta.


f to h. Two adult females and one adult male in alcohol. No history.

i & j. Two imperfect skeletons, one wanting the skull; Nos. 59 I and J of Blyth's Catalogue. Presented by Mr. W. Masters, 1842.

k & l. An adult male and a foetus in alcohol. Ráníganj. Purchased.

m to p. The skins of three adult males and one female. An old Fort near Chanda, Central Provinces. Museum Collector, 1867.


s to u. Two males and one female in alcohol, one of the males newly born. No history.

v to aa. Five males, and one female in alcohol. These are all mature foetuses. Agra. Presented by the Trustees of the Riddell Museum, 1869.

MEGADERMA.


ff to qq. Five adult females, one young female, and four young males and two newly-born males. All of these specimens were obtained at the same time and place in an out-house at Mr. Shillingford's indigo factory near Purneah; all the young, even the largest, were adherent to the teats, some attached to the abdominal, and others to the pectoral nipples, and I observed that they moved about with great energy from one teat to another. Besides these I examined about forty other females, and each had only one young one with it. Presented by Dr. J. Anderson, 1873.


uu. A perfect skeleton prepared from an example without a history, 1872.


bbb & ccc. An adult male from Purneah and an adult female from Rániganj in alcohol. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka. 15th December 1875.

134. Megaderma spasma.


Hab. Malayan Peninsula, Malacca; Siam; Philippine Islands, Ternate, Celebes, Sumatra, Java (?), Ceylon.—Dobson.


II.—Sub-Family NYCTERINÆ.

Genus Nycteris, Geoffroy, 1803.

135. Nycteris javanica.

Hab. Java; Malayan Peninsula (Malacca).—Dobson.

b. The skin and skull of an adult, in bad condition; No. 82B of Blyth’s Catalogue. Malacca. Presented by Mr. W. G. Moxon, 1851.

Nycteris thebaica, Geoffroy, Descr. de l’Egypt, t. ii, p. 119, 1812, pl. 1, No. 2.
Nycteris thebaica et capensis, Dobson, Cat. Chiropt. B. M. 1878, p. 165.

Hab. South and East Africa.

136a. An adult female in alcohol. The minute second premolar is in the line of the other teeth, but in all its other characters this specimen corresponds to the figure and description of N. thebaica. There does not appear, in view of the relations of the second premolar in this specimen, to be any valid reason for separating N. thebaica as a species distinct from N. capensis. The ruins of Karnak, Upper Egypt, 23rd March 1880. Collected and presented by Dr. J. Anderson, 15th January 1881.

III.—Family VESPERTILIONIDÆ.

I.—Group Plecoti.

Genus Nyctophilus, Leach, 1822.

137. Nyctophilus timoriensis.
Nyctophilus timoriensis (Geoffroy), Dobson, Cat. Chiropt. B. M. 1878, p. 172.

Hab. The Australian Region; from the Island of Timor to Tasmania, from West Australia to the Fiji Islands.—Dobson.

Genus SYNOTUS, Keys & Blas., 1839.

138. Synotus dargelinensis.

Synotus dargelinensis, Dobson, Cat. Chiropt. B. M. 1878, p. 177.

Hab. India (Darjeeling, Khási Hills, Sikhim, Masuri, Simla); Yárkand.—Dobson.


d. An adult female in alcohol. Láchung; Sikhim, 8,000 ft. Presented by W. T. Blanford, Esq., 1872.


g. A skull. No history.

Genus PLECOTUS, Geoffroy, 1812.

139. Plecotus auritus.


Hab. The Palaearctic Region, extending from Ireland through Europe and North Africa to the Himalaya, and probably generally distributed throughout the temperate parts of Asia.—Dobson.


g to k. Two males and three adult females in alcohol. Leh. Dr. F. Stoliczka. Presented by the Second Yarkand Mission, 1874.

l to u. Three males and seven females in alcohol. From the tombs of the Kings, Babel Moulouk. Left bank of the Nile, Upper Egypt. Collected and presented by Dr. J. Anderson, 18th January 1881.

II.—GROUP VESPERTILIONES.

GENUS VESPERUGO, Keys and Blas., 1839.

SUB-GENUS VESPERUS.

140. Vesperugo serotinus.

Vesperilio serotinus, Schreber, Säugeth, Bd. i, p. 167, pl. 53.

Hab. The Palaearctic, Ethiopian, Oriental, Neartic, and Neotropical regions.—Dobson.


e to h. Two adult males, an adult female, and a young female. Kashmir. Dr. F. Stoliczka. Presented by the Second Yarkand Mission, 1874.


141. Vesperugo andersoni.


Hab. Teng-yue-chow, Yunnan.
VESPERUGO. 125

141a. An adult male in alcohol. Teng-yue-chow, Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868. Type.

b. The skeleton of an adult male. Teng-yue-chow, Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868. Type.

142. Vesperugo nasutus.


Hab. Shikárpur, Sind.


143. Vesperugo atratus.


Hab. Himalaya (Darjeeling).


144. Vesperugo discolor.


Hab. The Palaeartic Region. In Europe extending from England through Southern Sweden and Russia to the Ural Mountains, and southwards through France, Germany and Italy; chiefly found, however, in the mountain tracts of these countries. In Asia recorded as yet from Western Siberia (Barnaul) and Eastern Turkistan (Kizil, Yangihissar) only. —Dobson.


145. Vesperugo pachyotis.

Hab. Khâsi Hills, Assam.


146. Vesperugo pachypus.
Vespertilio pachypus, Temminck, Monogr. Mammal. vol. ii, p. 217, pl. 54, figs. 4—6.
Vesperugo pachypus, Dobson, Cat. Chiropt. B. M. 1878, p. 208.

Hab. Oriental Region; Peninsula of India (Darjeeling); Tenasserim Province; Andaman Islands; Sumatra, Java, Philippine Islands. —Dobson.

146a to e. An adult male and four females in alcohol, No. 103A of Blyth's Catalogue. Tenasserim. Presented by Major Berdmore, 1858. Types of Scotophilus fulvidus, Blyth.

f & g. Two adult females in alcohol. Darjeeling. Presented by Dr. F. Stoliczka, 1871.

h. The skin of an adult. Darjeeling. Presented by Dr. F. Stoliczka, 1871.

i to s. Nine adult females, and one adult and one adolescent male in alcohol. Audamans. Presented by J. Homfray, Esq., 1871.

i to ff. Seven females and six males in alcohol. Andamans. Collected by J. Wood-Mason, Esq., 1872.

gg. The skeleton of an individual from the Andamans. Collected by J. Wood-Mason, Esq., 1872.

hh. A skull. No history.

ii. An adult female in alcohol. Darjeeling. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka.

jj. An adult female in alcohol. Andaman Islands. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.

Sub-Genus VESPERUGO.

147. Vesperugo noctula.
Vespertilio noctula, Schreber, Sângeth. Bd. i, p. 166, pl. 52 (1775).
Vesperugo noctula, Dobson, Cat. Chiropt. B. M. 1878, p. 212.
Hab. Palaearctic, Ethiopian, and Oriental Regions, extending from England to Japan, and from the Scandinavian Peninsula to Southern Africa. In Europe generally distributed; in Asia extending from Western Turkestan along the Himalayas and other mountain ranges to Ceylon, and through the Malay Peninsula to Sumatra and Java; in Africa recorded from the northern parts, and from Mozambique.—Dobson.


148. Vesperugo leisleri.


Hab. Europe and the temperate regions of Asia, extending from the Azores to the Himalaya.


149. Vesperugo imbricatus.

Vespertilio imbricatus, Horsfd., Zool. Resch. in Java, 1874.

Hab. Malayan Peninsula (Malacca); Java.—Dobson.


150. Vesperugo maurus.


Hab. The Palaearctic and Oriental Regions, extending from the Canary Islands (Palma, Teneriffe) and Middle
Europe (Switzerland and Tyrol) to China (Pekin, Amoy, Cochin China), India (Khási Hills) and the Malay Archipelago (Java).—Dobson.


e. An adult male in alcohol. Sind. By exchange with the Karáchí Museum, 4th June 1878.

f. An adult female in alcohol. Assam. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka.

151. *Vesperugo affinis*.


*Hab.* Upper Burma (Bhamo, 450 feet).


152. *Vesperugo pipistrellus*.

*Vespertilio pipistrellus*, Schreb., *Säugeth.* i, p. 167, pl. 54 (1775).


*Hab.* The Palaearctic Region, apparently generally distributed.—Dobson.


c to f. Three adult and one adolescent male, and four adult females in alcohol. Yangihissar. Dr. F. Stoliczka. Presented by the Second Yárkand Mission, 1874.

VESPERUGO.

s. An adult female in alcohol. By exchange with the Berlin Museum, 1872. Labelled V. nathusii, Keys and Blas.

153. Vesperugo abramus.
Vesperugio abramus, Temm., l. c., p. 232, pl. 58; Wagner, l. c., p. 739.

Hab. Apparently generally distributed throughout the Oriental Region, extending from India through Burma and China to Southern Japan and the Islands of the Malay Archipelago; also to the northern part of the Australian Region (Celebes, New Guinea, North Australia); found during the summer months in the Palaearctic Region throughout middle Europe (Blasius) from the Rhine to Southern Russia, and from Northern Germany to the Mediterranean, even extending into Sweden (Nilsson).—Dobson.

153a to c. Three skins of adults in very bad condition, No. 105A of Blyth’s Catalogue, Calcutta. No history.
Scotophilus coromandelianus, F. Cuv., after Blyth.
d e. An adult male and female in alcohol; No. 105B of Blyth’s Catalogue, Calcutta. No history.
f to h. Three skulls in bad condition, No. 105C of Blyth’s Catalogue, Calcutta. No history.
i to l. One male and three females in alcohol. No history.
r to x. Four young males, one adolescent male and one adult, and one adolescent female. Shiráz, Persia. Museum Collector, 1871.

bb to mm. Two adult and one adolescent males, and eight adult and one adolescent females. Khási Hills. Presented by Lieutenant J. H. Bourne, 1872.


ss to vv. Four adolescent males in alcohol. Pachwára, Presented by H. Whitwell, Esq., 1872.


yy to bbb. One adult, one adolescent, and one young female, and one young male in alcohol. Goálpára, Assam. Presented by H. L. Houghton, Esq., 1872.


hhh to kkk. One adult male and three adult females. Sibságar, Assam. Presented by S. E. Peal, Esq., 1872.


ccee to mmmm. One adult, two adolescent, and one young male; and one adult, four adolescent, and two young females in alcohol. India, 1872. No history.


ssss to aaaaa. Two adult and three young males, and three adult and one young female, in alcohol. Darrang, Assam,


**d**d**d**d. An adult female in alcohol. Japan. By exchange with the Berlin Museum, 1872.

This specimen in the catalogue of the Asiatic Chiroptera was (p. 216) referred to \textit{V. akokumuli}, Temm.

**e**e**e**e. The skeleton of an adult female from the Khási Hills. Presented by Lieut. J. H. Bourne, 8th April 1873.

154. \textit{Vesperugo kuhlii}.


\textit{Hab.} Southern Europe, countries south of the Pyrenees, and the Alps; Northern Africa; Southern Asia, Palestine, Persia, Balúchistán, India; probably generally distributed throughout these countries.—\textit{Dobson}.


\textit{e} & \textit{f}. Two very young females in alcohol. Calcutta. Presented by Mr. Dillon, 1866.


\textit{i} & \textit{j}. An adolescent male and an adult female in alcohol. Dhappa, Calcutta. Presented by O. L. Fraser, Esq., 1872.


\textit{m} & \textit{n}. An adult male and female in alcohol. North Italy. By exchange with the Berlin Museum, 1872.


z to bb. An adult female with two fetuses. Calcutta. Presented by Mr. H. Phillip, 24th March 1875.


155. Vesperugo annectens.


Hab. Nágá Hills, Assam.


Sub-Genus HESPEROPTERUS, Peters.

156. Vesperugo tickelli.


Hab. Peninsula of India (Cháibásá, Jashpur, Sirguja); Ceylon.—Dobson.


e to g. An adult male and two females in alcohol. Andamans. Presented by Lt.-Colonel R. C. Tytler, 1864.

SCOTOPHILUS.

157. Vesperugo blanfordi.


Hab. Tenasserim.


Genus CHALINOLOBUS, Peters, 1866.

158. Chalinolobus gouldii.

Chalinolobus gouldii (Gray), Dobson, Cat. Chiropt. B. M. 1878, p. 250.

Hab. Australia (Queensland, New South Wales, Victoria, South Australia); Tasmania.—Dobson.


Genus SCOTOPHILUS, Leach, 1822.

Sub-Genus SCOTOPHILUS.

159. Scotophilus temminckii.


Hab. The Oriental Region (Peninsula of India, Ceylon, Burma; Southern China; Sumatra, Java, Borneo, and the Philippine Islands).—Dobson.

159a to l. Twelve skins of adults, Nos. 92A and 93A of Blyth's Catalogue: Calcutta. No history.

m to r. Three males and three females in alcohol, No. 93B of Blyth's Catalogue. Calcutta. No history. q, r, s are apparently fully grown (N. luteus, Blyth).
s to y. Seven skins. Asiatic Society of Bengal. No history.
bb. A skeleton, No. 92 of Blyth's Catalogue labelled N. flavescens, Blyth.
cc. A skull, No. 92C of Blyth's Catalogue labelled N. luteus.
gg to ii. Three adult males in alcohol. Kyndoolip, Burma. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunuan, 1868.
jj to ll. Three adult females. No history.
mm & nn. One mounted adult and one skin. Presented by V. Ball, Esq., labelled N. luteus.
oo to gg. One adolescent and one young male, and one adult female. Rániganj. Purchased, 1869.
rr to uu. Two adolescent and two adult males in alcohol. Calcutta. Purchased, 1870.
gg to ffff. One adult, three adolescent, and one young male, and two adults and one adolescent female. Calcutta. Presented by Dr. J. Anderson, 1867.
SOOTOPHILUS. 135


dddd to hhhh. Four females and one male in alcohol. No history.


The fur of iii & jjjj is reddish yellow and that of kkkk & llll is brown.

nnnn. An adolescent female in alcohol. No history.


wwww. An adolescent female in alcohol. Calcutta. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 6th December 1876.


to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.

aaaaa. An adult female in alcohol. Rániśganj. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.


**Var. a.**


*Hab.* Peninsula of India (Coromandel and Malabar coasts, Rájanpur, Punjab frontier, Karáchí); Ceylon.


**Sub-Genus SCOTEINUS.**

160. Scotophilus emarginatus.

SCOTOPHILUS. 137

Hab. India, precise locality unknown.—Dobson.

160a. An adult female in alcohol. No history. Type.

161. Scotophilus pallidus.


Hab. Peninsula of India (Mian Mir, near Lahore; Sind).—Dobson.


SUB-GENUS SCOTOMANUS.

162. Scotophilus ornatus.


Hab. India (Darjeeling, Khasi Hills); Burma (Ponsee and Kakhyen Hills); Yunnan (Nantin and Sanda Valley).—Dobson.

162a. A skin of an adult, No. 90B of Blyth's Catalogue. Purchased, 1858. Type.

b. An adult male in alcohol and its skulls. Manwyne, Sanda Valley, Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

c. An adult male in alcohol. Ponsee, 3,500 feet; Kakhyen Hills, Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

d. The skeleton of an adult female, procured by Dr. J. Anderson at Nantin. Presented by the 1st Expedition to Western Yunnan, 1868.


f & g. Two skins, one immature. Darjeeling. Presented by Dr. F. Stoliczka, 1872.


**Genus NYCTICEJUS, Rafnesque, 1819.**

163. *Nycticejus crespuscularis*.

*Nycticejus crespuscularis* (Leconte), *Dobson, Cat. Chiropt. B. M. 1878*, p. 266.

*Hab.* North America, from New York to the Rocky Mountains, and southwards to New Orleans and to the West Indian Islands (Cuba).—*Dobson*.


**Genus HARPIOCEPHALUS, Dobson, 1876.**

164. *Harpiocephalus suillus*.

*Harpiocephalus suillus* (Temm.), *Dobson, Cat. Chiropt. B. M. 1878*, p. 278.

*Hab.* Malayan Archipelago (Sumatra, Java, Flores).—*Dobson*.


165. *Harpiocephalus harpia*.

*Vespertilio harpia, Temminck, Monogr. Mammal. t. ii, p. 219, pl. 55* (1839).


*Hab.* Himalaya (Darjeeling, Khási Hills); Sumatra; Java; Amboina.—*Dobson*.


166. **Harpiocephalus cyclotis.**


*Hab.* Himalaya, Darjeeling; Ceylon.—*Dobson.*

166a. An adult female in alcohol. No history. *Type.*


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**Genus Vespertilio, Keys & Blas., 1839.**

**Sub-genus Leuconoe.**

167. **Vespertilio hasseltii.**


*Hab.* Malay Peninsula; Siam; Sumatra; Java.—*Dobson.*


168. **Vespertilio adversus.**


*Hab.* Siam; Java; Borneo; Gerontalo; Celebes; Australia (Port Essington, Brisbane, Swan River, South Australia).—*Dobson.*


169. **Vespertilio longipes.**


*Hab.* Caves of Bhima Devi, Kashmir (elevation about 6,000 feet).


170. Vespertilio dassyneme.
Vespertilio dassyneme (Boie), Dobson, Cat. Chiropt. B. M. 1878, p. 295.

Hab. From Southern England to Altai Mountains; probably generally distributed throughout the temperate regions of Europe and Asia. On the continent of Europe it is recorded from the Netherlands, France, Denmark, Prussia, Hungary, and Italy. — Dobson.


171. Vespertilio daubentonii.
Vespertilio daubentonii (Leisler), Dobson, Cat. Chiropt. B. M. 1878, p. 297.

Hab. From Ireland to the Altai Mountains; from Finland to Sicily; from the Altai Mountains to Tenasserim; probably generally distributed throughout Europe to the temperate regions of Asia north of the Himalayas, attaining the most northerly range of all the species of the genus. Found as far north as Banffshire in Scotland. — Dobson.


Sub-Genus Vespertilio.

172. Vespertilio nipalensis.

Hab. Katmandu, Nipal.


173. Vespertilio emarginatus.
VESPERTILIO. 141

Hab. Middle and Southern Europe, extending from France and Rhenish Prussia to Italy.—Dobson.

VAR. a. Vespertilio desertorum.


Hab. Baluchistán.


f. A skull marked V. lepidus, Blyth. Kandahar. No history.

174. Vespertilio nattereri.


Hab. Middle Europe, from Ireland to the Ural Mountains, and from Southern Sweden to the Alps.—Dobson.


175. Vespertilio murinus.

Vespertilio murinus, Schreber, Saugeth. i, p. 165; Dobson, Cat. Chiropt. B. M. 1878, p. 309.

Hab. Europe, Asia, Northern Africa, and Abyssinia, apparently almost limited to the Palaearctic Region, and not extending further north than Southern England and Denmark.—Dobson.


176. Vespertilio murinoides.


Hab. N.-W. Himalaya (Chamba), at an elevation of 3,000 feet.—Dobson.

177. Vespertilio formosus.


Hab. Himalaya (Nipal, Darjeeling); India (Cháibásá, Khási Hills); China (Shanghai, Kiang, Amoy); Island of Formosa.—Dobson.


d. A skin in alcohol. Darjeeling. Presented by Dr. F. Stoliczka, 1871. Type of V. auratus, Dobson.


178. Vespertilio montivagus.


Hab. Hótha, Yunnan.

178a to e. An adult male and four adult females in alcohol. Hótha, 4,500 feet, Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Yunnan. Types.

179. Vespertilio muricola.


Hab. Himalaya (Sikkim; Láchung, 8,000 feet; Simla; Dalhousie); Tibet; India (Chutia Nágpur); Arakan (Akyab); Malay Peninsula, Sumatra, Java, Borneo, Celebes, Amboina, and probably all the islands of the Malay Archipelago, within the Oriental Region.—Dobson.


VESPERTILIO. 143


180. Vespertilio dobsoni, nov. sp.

Hab. India (Purneah, Bengal).


A depression between the eyes; muzzle rather broad; nose slightly projecting beyond the upper lip; the two nostrils separated from each other by a marked furrow. The ears are rounded at the tip, with hardly any concavity below the tip, the external margin being slightly convex. The tragus is long, but a little tapering to its point, rounded off into the straight inner margin from the outer margin; which is convex, but deeply concave at its base. A small anteriorly curved lobule at its base. The first finger is about one-fourth as long as the forearm and is strongly developed. The feet are large, with rather powerful toes. The wing membrane is attached to the base of the toes; the wing membrane from the elbow forwards is brownish black, profusely spotted with yellow, much the same as in K. piola, while in the remainder of the membrane the yellow spots are confluent in lines from the elbow and humerus to the leg, almost replacing the hair, which is confined to narrow lines. The outer femoral membrane is yellowish orange, with parallel interrupted lines passing from the tail to the legs; fore arm and fingers yellow. The face is clad as in V. formosus, and the fur is distributed on the membranes in the same way as in that species. Dentine the same as in V. formosus, only the teeth are much larger in individuals of the same sex.

The measurements of an adult female preserved in alcohol.
Tip of snout to vent 2"-50, head 1"-89, tail 2", ear (attachment behind mouth) 0"-7, tragus 0"-35, fore arm 2"-15, index finger 2"-1, 2nd finger 3"-61, 3rd finger 3", 4th finger 2"-9, thumb 0"-50, tibia 1", foot 0"-6.

This species is distinguished from *V. formosus* by its greater size; by its much broader muzzle; larger teeth; broader and less pointed tragus; stronger and longer thumb; much larger feet; and by the uniform yellow dotting of the whole of the wing membrane.

181. *Vespertilio mystacinus*.


*Hab.* Palaearctic Region; Europe (from Finland to Spain; from Ireland to Middle Russia); in Asia, hitherto found in Syria, at Pekin, and in the Himalayas only.—*Dobson*.


**Genus Kerivoula**, Gray, 1842.

182. *Kerivoula picta*.

*Kerivoula picta*, *Pallas, Spicil. Zoolog. fasc. iii, p. 7.*

*Kerivoula picta*, *Dobson, Cat. Chiropt. B. M. 1878, p. 332.*

*Hab.* Peninsula of India; Ceylon; Burma; Sumatra; Java. Probably distributed generally throughout the Oriental Region.—*Dobson*.


f. The skeleton of an individual from Calcutta. Presented by Dr. J. Anderson.

g. The skin of an adult. Darjeeling. Bequeathed to the Asiatic Society in Bengal by Dr. F. Sjologt. 15th December 1875.
MINIOPTERUS.


183. Kerivoula hardwickii.

Vespertilio hardwickii, Horsfield, Zool. Resch. in Java (1825).
Kerivoula hardwickii, Dobson, Cat. Chiropt. B. M. 1878, p. 335.

Hab. Peninsula of India (Sibságár, Assam; Shillong, Khási Hills); Camboja; Java; Borneo; Duke of York Island.
—Dobson.


d. An adult male in alcohol. No history.

184. Kerivoula lanosa.


Hab. S.-E. Africa (Shupanga, near the Zambesi River, East Coast of Cape Colony).—Dobson.


III.—GROUP MINIOPTERI.

GENUS MINIOPTERUS, Bonaparte, 1837.

185. Miniopterus schreibersii.


Hab. Southern Europe and Asia, Africa, Madagascar, and Australia. In Europe, inhabiting Spain, Switzerland, Lower Austria, Italy, and Sicily; in Asia, Syria, India, Ceylon, Burma, Southern China (Amoy), Japan, Philippine Islands; extending through the Malay Archipelago to Australia; probably generally distributed throughout Africa and Madagascar.
—Dobson.

b to cc. Thirteen adult and four adolescent males, and eleven adult females in alcohol. Tsagain, Upper Burma. Dr. J. Anderson. Presented by the Second Expedition to Western Yunnan, 1875.

VAR. a.
Miniopterus pusillus, Dobson, Monogr. As. Chiropt. 1876, p. 162.
Miniopterus schreibersii var. a, Dobson, Cat. Chiropt. B. M. 1878, p. 351.

Hab. India (Madras); Andaman and Nicobar Islands, Philippine Islands (Erumango).—Dobson.


hh to vv. Nine adult males and six adult females in alcohol. Katchal, Nicobars. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka. 15th December 1875.

wv. An imperfect skeleton from the Nicobars. Presented by Dr. F. Stoliczka, 1871.

IV.—Family Emballonuridæ.

I.—Sub-Family Emballonurinæ.

1.—Group Emballonuræ.

Genus Taphozous, Geoff., 1812.

Sub-Genus Taphozous.

186. Taphozous melanopogon.


Hab. India (Lower Bengal, Madras, Malabar Coast); Burmah; Pinang; Pulo Tickus; Cochin-China; Java; Borneo; Philippine Islands.—Dobson.

186a to c. Three adult males in alcohol. No history.


187. Taphozous theobaldi.


_Hab._ Tenasserim Province.


c. An adult male in alcohol. Forearm 3'10". Bushire. By exchange with the Karachi Museum, 29th April 1879.

188. Taphozous longimanus.


_Hab._ Peninsula of India, Ceylon; Burma. Abundant about Calcutta, and in all the southern parts of the Indian Peninsula; not yet recorded from Northern India nor from the Himalayas.—_Dobson._

188a to f. Six skins, Nos. 85 A to F of Blyth's Catalogue. Calcutta. No history.

g. An imperfect skeleton, No. 85M of Blyth's Catalogue. _Travancore._ Presented by Dr. Coles, 1841, labelled *T. breviceaudus._

i & j. A skull labelled _Taphozous cantori_, Blyth, and *T. breviceaudus._

k to o. Two adult and one young male, the latter the young of _m_, and two adult females in alcohol. No. 85G of Blyth's Catalogue. Rangoon. Presented by Sir Joseph Fayrer, M.D., &c., 1852.


r. One adult male in alcohol. Presented by Dr. J. Anderson, 1870.


u to w. Two adult males and one adult female in alcohol. Pegu. Presented by W. Theobald, Esq., 1872.

x & y. An adult male in alcohol (Pegu), and an adult female (Calcutta). Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.


189. Taphozous nudiventris.


Hab. Africa (North Africa, Egypt, Nubia, Gambia); Asia Minor (Palestine, Euphrates).—Dobson.

189a to p. Eight adult males, and eight adult females in alcohol. Ruins of Karnak, Upper Egypt, 23rd March 1880. Collected, and presented by Dr. J. Anderson, 18th January 1881.

Var. a.


Hab. Kachh; North-West India.

i. An adult male in alcohol. Kachh. Presented by Dr. F. Stoliczka, 1872. Type.


Sub-Genus TAPHONYCTERIS.

190. Taphozous perforatus.


Hab. Egypt.

190a to c. Three males in alcohol. Temple of Karnak, Upper Egypt. Collected, and presented by Dr. J. Anderson, 17th January 1881.
191. Taphozous saccolemus.


_Hab._ Lower Bengal (Sylhet); Ceylon; Burma; Malay Peninsula; Sumatra; Java.—Dobson.

191a. One skin; No. 84A of Blyth’s Catalogue. Southern India. Presented by Sir Walter Elliot, 1843.
_b._ A skin; No. 84B of Blyth’s Catalogue. Java. Presented by the Batavian Society, 1845.

192. Taphozous affinis.


_Hab._ Labuan Island; Sumatra.


II.—Group RHINOPOMATA.

Genus RHINOPOMA, Geoff, 1812,

193. Rhinopoma microphyllum.

Rhinopoma microphyllum (Geoffr.), Dobson, Cat. Chiropt. B. M. 1878, p. 400.

_Hab._ Africa (Egypt, Kordofan); Asia Minor (Palestine); Indian Peninsula generally; Burma.—Dobson.

_g & h._ Two skulls. No history.
k & l. Two adult males in alcohol. Kachh. Presented by Dr. F. Stoliczka, 1872. Testicles enormously enlarged, and a layer of fat at their base.

m to q. Two adult males and three adult females. Fatehpur Sikri. Presented by Dr. J. Anderson, 19th November 1877.

II.—Sub-Family MOLOSSINÆ.

I.—Group MOLOSSI.

Genus CHEIROMELES, Horsfield, 1824.

194. Cheiromeles torquatus.


Hab. Malay Peninsula (Singapore); Sumatra; Java; Borneo.—Dobson.


Genus NYCTINOMUS, Geoffroy, 1812.

Sub-Genus NYCTINOMUS.


Hab. Europe (Madeira, Switzerland, Italy, Sicily, Greece); Africa (Egypt, Nubia); Asia (Amoy, China).—Dobson.


196. Nyctinomus tragatus.


Hab. Peninsula of India (Rajapunr, N. W. Frontier; Jashpur, near Chutia Nagpur; Calcutta).—Dobson.

197. Nyctinomus plicatus.

_Hab._ Peninsula of India (Calcutta, Ludhiána, Agra, Madras); Sumatra; Java; Borneo; Malay Peninsula (Singapore); Philippine Islands.—Dobson.

197a. An adult male in alcohol, No. 88E of Blyth’s Catalogue. No history.  
d & e. Two skins, Nos. 88 C & D of Blyth’s Catalogue. Calcutta.  
f. A skeleton, No. 88G of Blyth’s Catalogue. No history.  
g. A skin in very bad condition, No. 88H of Blyth’s Catalogue. Dark specimen (_N. tenuis_, Horsfl.), old collection.  

198. Nyctinomus johorensis.

_Hab._ Malay Peninsula (Johore).


199. Nyctinomus braziliensis.
Hab. Warmer regions of North and South America and their islands, extending from California to Chili; apparently everywhere distributed throughout the tropical and sub-tropical parts of America, where it is probably the most common species of the genus, as it has the widest range.—Dobson.


VI.—Family Phyllostomidae.

I. Sub-Family Phyllostominae.

I.—Group Stenodermata.

Genus Artibeus, Leach, 1822.

Sub-Genus Artibeus.

200. Artibeus perspicillatus.


Hab. Mexican, Antillean, and Brazilian Sub-Regions, apparently generally distributed throughout the two first named sub-regions, but in many parts of the Brazilian sub-region its place appears to be taken by A. planirostris.—Dobson.


IV.—Order Insectivora.

I.—Family Galeopithecidae.

Genus Galeopithecus, Pallas, 1780.

201. Galeopithecus volans.


Galeopithecus rufus, variegatus et ternatensis, pp., et 38, Geoff., Cours. 12me Lec. 1828, p. 37; Desm., Mammif. 1822, p. 108.


Galeopithecus rufus, undatus et macrurus, Wagner, Schreber, Säugeth. Suppl. Bd. i, 1880, pp. 324, 326 et 327.

Hab. Malacca, Sumatra, and Borneo.


b. A flat skin, mounted skeleton, and nearly mature fœtus, in alcohol, of an adult female. Sinkip Island, Sumatra. Museum Collector, 14th May 1874.

c to e. Three skulls, Nos. 49 C, D, & E of Blyth's Catalogue. Malacca. No history.


g to i. The skins of two males and one female. The males are dusky brown above, variegated with dark brown, and spotted with white. From the Indian Museum, London. Presented by the Trustees of the British Museum, 13th April 1880.


II.—Family TUPAIIDÆ.

I.—Sub-Family TUPAIINÆ.

Genus TUPAIA, Raffles, 1820.

202. Tupaia elliotti.


Hab. Southern and Central India (Madras, Gondulpudu, Godávari Valley) and extending northwards to Cuttack and to the Karakpur Hills, Monghyr, North-Western Bengal.


i. Contents of the stomach of one of the foregoing individuals from Monghyr, consisting chiefly of the remains of small beetles.

j to l. Two adult males and one adult female in alcohol. Monghyr. Presented by the Zoological Gardens, 1st and 13th May 1880.

203. Tupaia belangeri.


Tupaia belangeri, Anderson, Anat. & Zool. Resch. &c. 1878, p. 126, pl. vii, figs. 6 and 7 (skull).

Tupaia ferruginea, Blyth (partim), Cat. Mamm. As. Soc. Mus. 1863, p. 81.

Tupaia peguana, Jerdon, Mamm. Ind. 1867, p. 65.

Hab. Nepal; Eastern Himalaya (Kurseong, Darjeeling); Assam; Khasi Hills; Arakan, Island of Preparis, and Burma, and North Tenasserim.


f. An adult male in alcohol. No history.

g. A mounted skeleton, prepared from a specimen belonging to the Asiatic Society of Bengal. No history.

h. A skeleton of an adult. No history.

i. An adolescent male in alcohol without its skull. No history.


A skin. No history.


An adult female in alcohol. Tsagain, Upper Burma. Dr. J. Anderson. Presented by the 2nd Expedition to Western Yunnan, 1875.

Skin of an adult male. Assam. Purchased, 1876. An orange mesial line along the ventral aspect.

The skin of an adult. This specimen is darker than the generality of individuals from the mainland and approaches in this respect to T. ferruginea. Island of Preparis, off the coast of Arakan. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.


Two skulls without any history.

A skeleton of an adolescent. No history.

204. Tupaia chinensis.


Hab. China (high country of Western Yunnan).

204a. An adolescent male in alcohol, and its skull. Ponsee, Kakhyen Hills, 3,185 ft., Yunnan. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.

One skin of an adult and its skull. Muangla, Sanda Valley, Yunnan, 2,400 ft. Dr. J. Anderson. Presented by the 1st Expedition to Western Yunnan, 1868.
205. Tupaia ferruginea.
Sorex-glis, Diard & Duvaucel, As. Resch. vol. xiv, 1823, pp. 471 et 475, pl. ix.

Hab. Malayan Peninsula, Sumatra, Borneo, and Java.


f. A preparation showing the teeth removed from the skull, and set in position, in wax, illustrating the differences between the deciduous and permanent teeth in both jaws, before any of the deciduous teeth are lost. Prepared from the skull of No. 240F of Blyth's Catalogue, from Mergui. Presented by Major Berdmore, 1856.

g. A skull from Mergui. Presented by Major Berdmore, 1856. The roots of the teeth of both jaws exposed to show the relations between the permanent and deciduous teeth.

h. First, second, and third molars of the right upper jaw; second and third right upper deciduous premolars; and second and third deciduous premolars, right lower jaw.

206. Tupaia malaccana.
Cerp on Banxing, F. Cuv., Mammif. t. ii, livr. xxxv, Decembre 1821.
Tupaia javanica, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 82.

Hab. Malacca.

206a & b. Two stuffed adults and two skulls, Nos. 242 A and B. Malacca. Presented by R. W. G. Frith, Esq., 1846,
HYLOMYS.

207. Tupaia tana.


Hab. Borneo.


208. Tupaia nicobarica.


Hab. Nicobars.


b. An adult male in alcohol. Nicobar Islands. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 15th December 1875.

II.—Sub-Family HYLOMINÆ.

GENUS HYLOMYS, S. Muller.

209. Hylomys peguensis.


Hab. Kakhyen Hills, Western Yunnan; Tenasserim, Java and Borneo.


III.—FAMILY ERINACEIDÆ.

I.—SUB-FAMILY GYMNUMURINÆ.

GENUS GYMNUMURA, Horsfield, Vigors, 1827.


Echinosorex rafflesii, *Blainv., Ost. Atl. t. i, Insectiv. pl. 6. (skull) ; pl. 10 (teeth).

Hab. Malayan Peninsula (Sumatra, Borneo, and other Islands).


VAR. candida, Gunther.


II.—SUB-FAMILY ERINACEINÆ.

GENUS ERINACEUS, Linn., 1766.

211. Erinaceus europaeus, Linn.


Hab. Europe.


Two glass tubes containing two spines, and sections of the spines of this species. Dr. J. Anderson, 1878.


212. Erinaceus micropus.


Hab. Southern India.


e to g. Three adult males in alcohol and the skulls of f and g (the former figured J. A. S. B. vol. xlvii, pt. ii, 1878, pl. v A, figs. a to d). Trichinopoly. Presented by the Zoological Gardens, 5th December 1877.


i. Two tubes containing spines, and sections of spines of this species.

213. Erinaceus pictus.

Erinaceus indicus, Royle, Ill. Ind. Zool. 1839, p. 6; not described.


Hab. Western and North-Western India to Sind.

213a to h. Three adults, two adolescents, and three younger individuals, and the skulls of a, b, c, d, e, f, and g. Agra District. Presented by the Trustees of the Riddell Museum, 15th April 1870.


m. A young female in alcohol; with larger spines than the generality of specimens, and with the brown band near the apices of the spines absent, so that the animal appears white. Karachi. By exchange with the Karachi Museum, 19th November 1870.


o. An adolescent female in alcohol. Gunah, Central India. Presented by A. Barclay, Esq., M.B., 19th September 1878. Differing somewhat from the ordinary examples of *E. pictus* by its somewhat larger ears and finer spines, and by the dark brown below the eye passing downwards and under the neck as a lower collar.

p. Three tubes containing spines and sections of spines of this species.

q to s. Three adult males in alcohol. Karachi. By exchange with the Karachi Museum, 12th December 1879.


214. *Erinaceus grayi.*


Hab. North-Western India, Western India to Sind.

214 a to e. Three adult females, one young female and one adolescent male in alcohol, and the skulls of a and e, the former skull figured, Journ. As. Soc. Beng. vol. xlvii, 1878, pl. iv. Fathigarth. Presented by Andrew Anderson, Esq., 11th November 1872.

f. The newly-born young of b in alcohol: eyes closed; ear of right side imperforate, that of the left side widely open, the conch being folded down on both sides. The muscular mantle covering the dorsum has a thickened margin, corresponding to the downward distribution of the spines. The spines are prolonged forwards nearly in the same line with the eye. On the middle of the forehead there is a narrow area extending a short way backwards, perfectly free of spines. A few short spines occur behind this area on the vertex, but from the nape of the neck backwards to near the posterior end of the mantle there is a continuous, rather broad, linear bare space. The spines are of two kinds, coloured and uncoloured, and the latter are the larger, and doubtless become replaced by coloured spines. The spines are placed rather widely apart, and are not very numerous, and the shortest occur along the side of the back; the largest are about \( \frac{1}{4} \) of an inch in length. The whiskers "and the hairs along the upper lips are present" and a few short scattered hairs occur on the chin, but all the other portions of the animal are perfectly nude. The snout is short and broad, and the teeth are visible. Fathigarth. Presented by Andrew Anderson, Esq., 11th November 1872.

h. Six tubes containing spines and sections of spines of this species. Dr. J. Anderson.


l. A very young female in alcohol. By exchange with the Karachi Museum, 19th November 1877.


p to r. One male and two adult females. By exchange with the Karachi Museum, 12th December 1879.


215. Erinaceus auritus.


Erinaceus albulus, Stoliczka, Journ. As. Soc. Beng. vol. xli, 1872, pl. 2, fig. 2, p. 226; Blanford, 2nd Yarkand Mission, Mammalia, 1879, p. 14, pl. 1, fig. 2, and pl. 1a, fig. 1.

Erinaceus macracanthus, Blanford (partim), Eastern Persia, vol. ii, Zoology, 1876, p. 27, pl. 1, fig. 2, nec fig. 1.

Hab. Eastern Europe and Western Asia, as far south as Yarkand, and extending downwards to the Highlands of South-Eastern Persia.


c to e. The skins of two adult and one young and skulls of c and d. Yarkand. Dr. F. Stoliczka. Presented by the 2nd Mission to Yarkand, 1873-74.


g. The skin of an adult. Jigda, found dead on the road. Dr. F. Stoliczka. Presented by the 2nd Mission to Yarkand, 1873-74.
The skins of an adult and of another. Yangihissar.

Dr. F. Stoliczka. Presented by the 2nd Mission to Yárkand, 1873-74.


Dr. F. Stoliczka. Presented by the 2nd Mission to Yárkand, 1873-74.

Two tubes containing spines and sections of spines of this species.

The skin and skull of an adolescent male. Kármán.


The skin of this animal is inseparable from skins of *E. albílus*, which is apparently identical with *Erinaceus aurítus*. In the absence of a bare area on the forehead this hedgehog resembles *E. aurítus*, while in this important structural feature it differs essentially from *E. macracanthus*. The bare area is apparently not a variable feature in a species, neither is it sexual.

The skull also closely resembles the skull of *E. aurítus* and is inseparable from it.

216. *Erinaceus megalotis*.


Hab. Afghanistán.


The skin and skull of an adult. Purchased from a Kabul merchant, trading between Kabul and India, January 1870.

Five tubes containing spines of this species.

Ears very large and rounded; muzzle rather short and broad; feet large; inner hind toe well developed; claws large and strong. Tail short, moderately long, and nearly naked. The spines are rather long, but much shorter than in *E. macracanthus*, and they do not reach forwards to the ear, but nearly so, and they are not divided on the vertex by a bare space. The spines are covered with 28 raised ridges, rather strongly
marked by small tubercles, as in *E. macracanthus*. In the type, the spines have in some instances a narrow pale tip, somewhat as in *E. grayi*, hardly perceptible, however, in the great majority, and immediately succeeded by a broad pale-yellowish band, followed by a narrow dusky band, again succeeded by a pale band. In two specimens obtained from a native merchant trading between British territory and Kabul, and which seem to belong to this species, the spines are narrowly tipped with black, succeeded by a narrow blackish band, which is followed by a broad white band, in its turn succeeded by a narrow obscure dusky area, the base of the spine being white.

The type is in too poor a condition to gain a correct idea regarding the character of the fur, but Captain Hutton has described the face, inside of the ears, and chin, as far as the base of the ears, very pale cinereous, or nearly white; from thence all the under parts are sooty, or rusty black; head, limbs, and under parts clothed with soft hairs of a sooty black or fuliginous brown; feet darkest; tail black. In the two specimens purchased from the Kabul merchant the ears, the sides of the head from the ears to the chin, are white, while the front of the face is whitish, mixed with black hairs, giving a curious appearance, as described by Hutton; the under parts are rusty black; the limbs dark brown.

The skull of the type of *E. megalotis* was not in the collections made over by the Asiatic Society to the Government of India. The skulls, however, of the two other specimens, which may be regarded as examples of this species, present a close resemblance to the skull of *E. macracanthus*, but they are very much larger than the skulls of very old examples of that species, and the muzzle of the skull is shorter and broader, and there is relatively greater width of the post-orbital contraction. The teeth also are very much larger, but the species are undoubtedly very closely allied.

217. *Erinaceus macracanthus*.


*Hab.* Highlands of Persia.

217a. The skin of an adult female and its skull; free ends of spines broadly tipped with black. Mândūn, near Karmán, South-Eastern Persia, 6,000 feet, 3rd May 1872. W. T. Blanford, Esq. Presented by the Persian Boundary Commis
sion, 1872. One of the types of *E. macracanthus*, Blanford, figured in Eastern Persia, 1870-72, Zoology, vol. ii, pl. 1, fig. 1.


e. Three glass tubes containing the spines of this species.

218. Erinaceus jerdoni.


Hab. Eastern Afghanistán (Kurram Valley), North-Western Punjab (Pind Dádun Khán, Rájanpur), Sind.


c. A skull, No. 236C of Blyth’s Catalogue.


e. A gravid female with four foetuses, three in one, and one in the other horn of the uterus, in alcohol, and its skull, the latter figured in the Journal Asiatic Society, Bengal, vol. xlvii, 1878, pl. Va, figs. e to k. By exchange with the Karachi Museum, 4th June 1878.


g. A young male in alcohol. By exchange with the Karachi Museum, 19th August 1879.

h. A young male in alcohol. By exchange with the Karachi Museum, 12th December 1879.


j to m. The head and feet of an adult, a foetus and the heads of two young specimens in alcohol. Thull, Kurram Valley. Presented by A. Barclay, Esq., M.B., 7th February 1880.

n. Six tubes containing the spines of this species.
IV.—Family CENTETIDÆ.


219. Ericulus setosus:

Tendrac, Buffon, Nat. Hist. t. xii, 1764, p. 438, pl. 57.
Erinaceus setosus, Schreber, Säugeth. Bd. iii, 1778, p. 583, pl. 164; ibid. Wagner.
  p. 33, pls. 3 & 4; Mivart, Proc. Zool. Soc. 1871, p. 73, pl. v, (skeleton).
Ericulus spinosus, Is. Geoff. St. Hil., l. c., p. 34; Wagner, Schreber,
  Säugeth. Suppl. Bd. v, 1855, p. 584.

Hab. Madagascar.


Genus CENTETES, Illiger, 1811:

220. Centetes ecaudatus:

Le Taurec, Buffon, Nat. Hist. t. xii, 1766, p. 438, pl. 56.
Erinaceus ecaudatus, Gmelin, Linn. Syst. Nat. 13th ed. 1788, p. 117,
  partim, nec le jeune taurec, Buffon, = Hemicentetes.

Hab. Madagascar.


Genus HEMICENTETES, Mivart, 1871:

221. Hemicentetes madagascarensis.

Le jeune taurec, Buffon, Nat. Hist. Suppl. t. iii, 1776, p. 214, pl., xxxvii.
  548; Mivart, Proc. Zool. Soc. Lond. 1871, p. 58, figs. 1, 2, and 3
  (skull).
Ericius semispinosus, Giebel, Zeitsch. Ges. Natur, 1871, p. 57, pl. ii,
  figs. 1 to 3.

Hab. Madagascar.

V.—Family Chrysochloridae.

Genus Chrysochloris, Cuvier, 1800.

222. Chrysochloris rutilans.


Hab. South Africa.

222a & b. Two stuffed specimens, Nos. 266 A and B of Blyth’s Catalogue. Presented by E. L. Layard, Esq. 1859.

223. Chrysochloris damarensis.


Hab. Damarland, South Africa.


VI.—Family Talpidae.

Genus Rhinaster, Wagner, 1841.

224. Rhinaster cristatus.


Condylura cristata, Desm., Mamm. 1820, p. 157; Harlan, Fauna Amer., 1825, p. 36.

Condylura longicaudata, Desm., Mamm. 1820, p. 157; Richardson, Fauna Br. Amer. 1829, p. 13.

Condylura macroura, Harlan, Fauna Amer. 1825, p. 39.

Condylura prasinata, Harris, Taylor’s Phil. Mag. vol. 67, 1826, p. 191.


Astromydes cristatus, Blyth, Cat. Mamm. As. Soc. Mus. 1863, p. 87.

Hab. North America.

Genus TALPA, Linn., 1766.

225. *Talpa europea.*


*Hab.* Europe generally, extending to Northern Asia.


b & c. Two skeletons, Nos. 268 B & C of Blyth's Catalogue. One presented by Mr. W. Masters, 1844; the other no history.


226. *Talpa micrura.*


*Talpa cryptura,* Blyth, Journ. As. Soc. Beng. vol. xii, 1843, p. 928.

*Hab.* Nipal, Sikkim, and Assam.

Uniformly velvety-brown, with a silvery grey gloss. Snout almost nude, being sparsely clad on its sides with bristly hairs, each seated on an eminence, in the centre of a well-defined pit. A broad mesial linear tract on the upper surface of the snout, quite devoid of hairs. The extremity of the snout with a transverse furrow below the nostril, and a tumid fold of skin below the furrow. Eye very minute and covered with membrane; eyelids not defined. Claws stout on the fore feet, and moderately long. Tail about one-third of the greatest breadth of the manus, not knobbed at its end and only sparsely clad.

The skull of this species resembles the skull of the other Asiatic moles, with the exception of *T. vogura* and *T. insularis,* in having four pairs of inferior incisors, but differs from *T. leucura,* &c., in possessing four pairs of upper premolars, and in this respect it resembles *T. macrura* and *T. longirostris.*


c. A skull, probably that figured in Journal, Asiatic Society, Bengal, vol. xix, 1850, Plate IV, fig. 2, and possibly the skull of the foregoing specimen.


f to h. Three stuffed adults; Nos. 269 D, E & F of Blyth's Catalogue, p. 88. Assam. Presented by Colonel Jenkins, 1854.


l. A skeleton mounted; No. 269J of Blyth's Catalogue, p. 88, Darjeeling. Presented by W. T. Blanford, Esq., 1857. Vertebræ, c. 7; d. 13, l. 6; s. 3; p. c. 3; caudal 8.


x & y. Two adult males in alcohol. Sureil, British Sikkim, Presented by George King, Esq., M.B., 10th February 1879.


In the natural skeleton, the caudal vertebrae, 8 in number, measure 6-tenths of an inch in length.
227. Talpa leucura.


Hab. Sylhet, Khāsi Hills, and Tenasserim.

Wholly velvety black; considerably smaller than T. micrura and with the snout neither so long nor narrow. The snout is clad as in T. micrura, but the hair crypts are not so prominent. The manus is somewhat less broad than in T. micrura and the nails are not so long. The tail is considerably longer than in T. micrura, and it is dilated into a rounded knob, sparsely covered with longish white hair; its length exceeds two-thirds of the breadth of the manus. The eye is covered by a membrane, and there are no defined eyelids.

The skull is at once distinguished from the skull of T. micrura, by its much smaller size, and by the presence of only three pairs of premolars in the upper jaw. The adult skull is 1".2 long, whereas that of T. micrura measures 1".37. This difference of size is well marked in all the bones. The caudal vertebrae are longer, but feebler, than in T. micrura, and their number (8) is the same in both.


i. A skull: no history, apparently the skull figured by Blyth in the Journal, Asiatic Society, Bengal, vol. xix, 1851, pl. iv fig. 1.

j. Skin of an adult. Nāgā Hills, Assam, found at an elevation of nearly 10,000 feet above the sea-level. Presented by A. W. Chennell, Esq., 14th April 1875.
VII.—Family SORICIDÆ.

I.—Sub-Family ANUROSORICINÆ.

Genus ANUROSOREX, A. M. Edwards, 1870.

228. Anurosorex assamensis.


Hab. Assam.

Head large; eye excessively small; ear hidden under the fur, and valvular. Feet devoid of hairs, scaly and of nearly equal breadth, but the fore-feet the shorter. Tail rudimentary, almost completely hidden by the fur. Fur nearly erect, fine, dense and silky, longest on the rump: numerous long hairs project beyond the general mass of the fur, and are brown, with obscure pale tips: general colour of the fur dark slaty, faintly marked with brownish rusty on the long hairs on the rump. Whiskers well developed: shorter hair above and between the eyes: semi-nude parts of the snout, the scaly limbs, and tail are flesh coloured, and the claws are yellow. Snout to vent 2".92: fore-foot 0".50: hind foot 0".75: tail 0".50.


II.—Sub-Family CROCIDURINÆ.

Genus CROCIDURA, Wagler, 1832.

Sub-Genus PACHYURA, Séllys-Longchamps, 1839.

(Lateral gland.)

229. Crocidura caerulescens.


Perfuming Shrew, Pennant, Quadr. vol. ii, 1781, p. 477.

MAMMALIA.


Sorex myosurus, Grey & Shaw, Ill. Ind. Zool. vol. i, 1832, Mamm. pl. ix, nec C. myosurus, Pallas.


Crocidura (P.) waldemarii, Peters, Monatsb. K. P. Acad., 1870, p. 590.


Hab. India generally; Ceylon; Arakan and Burma.

The form is rather heavy in the fully adult, but in the adolescent it is less so: the limbs are short and stout. The head slopes gradually downwards and forwards from the vertex, and the snout, which varies in length, is long, but slightly depressed from beyond the moustachial swelling, which appears to gain in breadth as the animal advances in age, the head generally becoming much heavier than it is in the adolescent.

The snout terminates in two somewhat tubular nostrils, which are divided from each other by a sharp incision; their orifices look outwards and forwards. There is a slight contraction before the eyes, followed by the considerable moustachial swelling. The eyes are small. The ears are moderately large and rounded, but of varying dimensions. The hind feet and toes are rather short, but of variable size, and the claws are moderately developed. The snout and the chin are seminude, sparsely clad with short pale hairs, but the moustachial hairs are numerous and long. The ears also are only very sparsely clad along their margins, and over their external aspect, with short delicate hairs. The fore-limb is densely clad, almost to the wrist, but immediately above the joint the hairs are short and sparse, and this character is preserved by the pelage on the backs of the fore-feet, while on the toes the hairs are fewer, and occur only between the rings that mark their upper surface. The backs of the fore-feet are also scaly. The lower half of the tibial portion of the hind limb is almost nude, the hairs being few and short, and this character occurs also on the upper surface of the pes. The feet have thus the appear-
ance of being nearly nude. There is a seminude area around the urino-genital orifice continuous with the seminude skin of the under surface of the tail. The tail is very thick at the base in the males, and has the appearance of being round, while in reality it is broader than it is deep from above downwards; like the hinder feet it is somewhat variable in length. It is marked by fine, much interrupted concentric rings, 25 to 30 to half an inch, and between these short white hairs occur, but so sparsely as in no way to obscure the skin, and at intervals of about quarter of an inch, long, isolated, white hairs occur to within half an inch of the tip of the tail. The fur varies in length, probably according to climate and seasonal changes. It is generally pure grey, but the tips of the hairs in adults are generally yellowish grey, so that animals have not unfrequently a pale fawn tint mixed with greyish, and in Assam specimens the fur is marked with reddish brown. All the seminude parts are pinkish flesh-coloured. The colour, however, is darkest in youth, when it is dark slate-grey, and palest in adult life, when it appears to become more rufous. The female (5), killed along with the male (4), has a decided rufous tint all over the upper parts; so much so that the colour may be described as rufous fawn, with a slight greyish tint on the side, the under surface also being grey with a rufous tint. In this gravid female the fur is extremely short, while in the male it is much longer.

The following measurements may be given of both sexes:

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<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip of snout to vent</td>
<td>in.</td>
<td>in.</td>
<td>in.</td>
<td>in.</td>
<td>in.</td>
<td>in.</td>
<td>in.</td>
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<tr>
<td>Vent to tip of tail</td>
<td>6·35</td>
<td>5·15</td>
<td>5·90</td>
<td>7·00</td>
<td>6·30</td>
<td>6·07</td>
<td>4·35</td>
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<tr>
<td>Length of hind feet</td>
<td>3·65</td>
<td>3·05</td>
<td>3·50</td>
<td>4·00</td>
<td>3·50</td>
<td>3·90</td>
<td>2·83</td>
</tr>
<tr>
<td>Tip of snout to eye</td>
<td>1·03</td>
<td>0·90</td>
<td>1·03</td>
<td>1·03</td>
<td>1·00</td>
<td>1·00</td>
<td>0·82</td>
</tr>
<tr>
<td>Eye to ear</td>
<td>0·88</td>
<td>0·70</td>
<td>0·87</td>
<td>0·98</td>
<td>0·89</td>
<td>0·07</td>
<td>0·70</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0·51</td>
<td>0·41</td>
<td>0·51</td>
<td>0·65</td>
<td>0·54</td>
<td>0·57</td>
<td>0·35</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0·60</td>
<td>0·50</td>
<td>0·58</td>
<td>0·59</td>
<td>0·49</td>
<td>0·94</td>
<td>0·35</td>
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</tbody>
</table>

1 The height of the ear is taken in a straight line from below the orifice, and the breadth is measured from the centre of a straight line between the upper and lower ends of the conch, backwards to its free margin.
The following are the skull measurements:

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<tbody>
<tr>
<td><strong>No. 5.</strong></td>
<td><strong>No. 4.</strong></td>
<td></td>
</tr>
<tr>
<td>Inferior margin of foramen magnum to tip of premaxillaries between first incisors</td>
<td>1·40</td>
<td>1·26</td>
</tr>
<tr>
<td>Greatest breadth across molars</td>
<td>0·51</td>
<td>0·47</td>
</tr>
<tr>
<td>Breadth behind infraorbital foramen</td>
<td>0·28</td>
<td>0·28</td>
</tr>
<tr>
<td>″, anterior to expansion of brain case</td>
<td>0·35</td>
<td>0·35</td>
</tr>
<tr>
<td>″, external to glenoid articulation</td>
<td>0·51</td>
<td>0·55</td>
</tr>
<tr>
<td>″, to tympanic</td>
<td>0·67</td>
<td>0·62</td>
</tr>
<tr>
<td>Condyle of lower jaw to commencement of alveolar line</td>
<td>0·77</td>
<td>0·77</td>
</tr>
</tbody>
</table>

The skulls are from two specimens from Calcutta, the measurements of which are already given. The female skull is that of an old animal, as the teeth are considerably worn and the basi-occipital suture has wholly disappeared, while in the male skull there is still a trace of it, but in the male skull the teeth are also worn. The male is the larger, with much more posterior breadth and much more powerful first incisors than the female skull. Although sexual, the differences in dentition show themselves in the upper first incisors, and not in the canines, as in other mammals.

There are 14 dorsal, and 19 caudal vertebrae.

At first I was disposed to recognise two large shrews as existing in Calcutta, one with larger feet than the other, but on a more extended enquiry I had to abandon any such opinion because of the constant recurrence of intermediate individuals, leading from one extreme into the other. The variability of the tail in this, as in other shrews, was à priori to be looked for owing to the circumstance that the tails of the newly born of the same litter vary considerably, and are always very short. In two females of the same brood the tail in one measured 3·05, and in the other 3·44. In the same individuals the hind foot is also seen to be the subject of considerable variation.

There can be no doubt but that this species, as well as other species of shrews, breed before they are adult, long before the basi-occipital suture of the skull shows any sign of tending to become obliterated, and long before the cranial muscular
ridges become defined. This being the case, it will probably be found that the young of these adolescent mothers are smaller than those produced by the larger fully mature females.

The young of this large shrew are born with none of their teeth through the gums, but at the same time the teeth are well developed, the gum forming a sharp ridge over the incisors and intermediate teeth to the second premolar, the incisors rapidly piercing the gum, their tips showing before the eyes have opened, and the large cusp of the second pre-molar rapidly following them.

Even before the eyes are opened, the young shrew is most active in its movements, rushing about in a wild way and snapping at everything that may touch it, its mobile snout being in constant motion. The head in the young state bears a very large proportion to the size of the trunk.

The gland on the side is situated nearly half-way between the fore and hind limbs, in a line with the head of the humerus, or nearly so. Around the gland, the fur is rather sparse, but its position is indicated by the existence of narrow short hairs arranged in two lateral bands which arch inwards and meet over the middle of the gland, the two bands being continuous behind the gland, and their hairs at that point arching forwards. These glands are equally developed in the male and female. In the very young shrew the musky odour emitted by this gland is hardly perceptible, but it is overpowering in the adult. It is, therefore, probably a means of bringing the sexes of this nocturnal animal together, as their sight cannot be very keen, whereas it is evident that their sense of smell is acute, or it may protect them against their enemies.

There is a distinct sac beyond the true termination of the rectum, opening by a puckered orifice nearly ⅓ of an inch within the sac: on either side of the rectal orifice, but below it, there is a deep pit, doubtless the orifice of a compound anal gland.

The *Sorex cœruleascens*, Shaw (General Zoology, vol. 1, part. 2, 1800, p. 533), is founded on Pennant's shrew, or shrews from Java and the East India Islands, and on the *Musaraigne Musquée de l'Inde* of Buffon, which Shaw states was brought from Bengal by Sonnerat, whereas M. Geoffroy St. Hilaire, who also apparently described this species as *S. indicus*, informs us (Ann. du Mus. d'Hist. Nat., t. 17, 1811, p. 183) that his type had been originally described by Buffon as the *Musaraigne de l'Inde* (Hist. Nat. Suppl., t. vii,
MAMMALIA.

p. 281, pl. 7), and that it was founded on an individual brought from Pondicherry by Sonnerat. He also seemed disposed to regard S. marinus, Liun. as also identical with it.

In the same volume of the Annales du Muséum in which Geoff. St. Hilaire described S. indicus, he also described S. capensis, said to have been obtained at the Cape of Good Hope; and in the 1st volume of the Mémoires du Muséum, 1815, plate xv, fig. 1, he gave a good representation of the former from a specimen obtained at Tranquebar. In 1827, in the Mém. du Mus. d’ Hist. Nat., vol. xv, Is. Geoff. St. Hilaire disputed the correctness of his father’s views regarding the specific distinctness of S. indicus and S. capensis, and held them to be one and the same species, and he renamed it S. sonneratii. He doubted that the type of S. capensis had come from the Cape of Good Hope, as he considered it unlikely that such a mammal would have been overlooked by Kolbe, Sparrman, Levillant and Daniel, and that the expedition under Bandin, Quoy and Gaimard, Lesson and Garnot and Delalande, could have failed to discover it, if it existed.

Duvernoy regarded S. capensis as the same as S. serpentarius, Is. Geoff., and he pointed out that the type of S. capensis was an individual from the Isle of France, where it had been obtained in 1804 by Peron and Lesueur.


In 1827 Is. Geoff. St. Hilaire described a shrew which he said was found on the Continent of India, and probably also on the islands of the Archipelago, and which he identified with Mummy shrews from the Catacombs of Thebes and Memphis. Of this shrew he says two good figures had been published, being one by his father (Mém. du Mus., vol. i, plate xv, fig. 1) under the name of Musaraigne, S. indicus, and the other by F. Cuvier in the Histoire Nat. des Mammif., under the name of Monjournou, S. indicus. Geoff. St. Hilaire, however, states that this figure of S. indicus was, as I have already stated, taken from a Tranquebar individual. F. Cuvier’s figure is apparently from a Pondicherry animal obtained by Leschenault and is an example of the dark variety. This shrew Is. Geoff. named Sorex giganteus. Writing again, 1834 (Zool. Voy. de Belanger, p. 117), he gave a good description of the species founded on an individual from Bengal.

As there is no example of the large shrew of Egypt in this museum, I cannot say anything regarding its specific identity or distinctness from the giant shrew of India.
With regard to the food of this animal and of its allies generally, it is noteworthy that Is. Geoff. St. Hilaire states on the authority of Bélanger, that the large shrew at Pondicherry "ferait de grands dégâts dans les magasins de riz." Being aware that the natives of Bengal generally assert that the musk shrew is a great eater of rice and of pulse, I procured a few alive to watch their habits. I found them, as was to be expected, thoroughly nocturnal, spending the day in sound slumbers when undisturbed, but waking up at nightfall, when they became very restless. I placed rice beside them, but it was always left untouched, whereas cockroaches were eaten with avidity. I have examined the contents of the stomachs of a large number of specimens, and have found traces of hair, ants, larvae of flies, and flies themselves and bits of flesh, and a tapeworm. I am therefore disposed to believe that Bélanger was entirely wrong in ascribing to these animals depredations wholly attributable to rodents.

229a & b. Two stuffed adults, Nos. 244A & B of Blyth's Catalogue. Calcutta.

c. The skeleton of an adult female, No. 244C of Blyth's Catalogue. Calcutta.

d. The skull of a male, No. 244D of Blyth's Catalogue. Calcutta.


q & r. An adult male and an adult female in alcohol and the skull of q. Calcutta. Presented by Dr. J. Anderson, 22nd July 1872.


t. An adult male in alcohol and its skull. Colombo, Ceylon. Presented by Dr. J. Anderson, October 1872. The
skull of this specimen has only 28 teeth, the small intermediate tooth having disappeared.


v & w. Two adult males in alcohol and the skull of w. Calcutta. Presented by Mr. R. DeCruz, 6th February 1875.

x & y. An adolescent and a young male in alcohol, and the skull of x. Museum Offices, Kyd Street, Calcutta, 19th April 1875.

z. The skin of an adult female, and its skull and bones of the trunk. Circular Road, Calcutta. Purchased, 8th May 1876.


gg & hh. Two skins of adult males, their skulls and bones of the trunks. Calcutta. Purchased, 16th May 1877.

ii. The skin, skull, and bones of the trunk of an adult male. Calcutta. Purchased, 22nd May 1877.


kk. The skin, skull, and bones of the trunk of an adult female. Calcutta. Purchased, 30th May 1877.

ll. The skin, skull, and bones of the trunk of an adult female. Calcutta. Purchased, 31st May 1877.

mm. The skin and skeleton of an adult male. Calcutta. 5th June 1877.


pp. The skeleton of an adult male. Calcutta. 7th May 1877.

qq & rr. Two young animals in alcohol, eyes still closed. Museum Offices, Kyd Street, Calcutta. 17th July 1877.

V. A. fulvocinerea.

The skin of an adult and its skull. Gauhátí. Mu-
seum Collector, October 1872.

ww. An adult female in alcohol, No. 247C of Blyth’s Cata-

Var. sindensis.

vv. An adult female in alcohol and its skull. Karáchí. By ex-
change with the Karáchí Museum, 2nd April 1877. Type
of C. sindensis.

ww § xx. Two females in alcohol. Karáchí. By ex-
change with the Karáchí Museum, 19th March 1877.

yy to bbb. An adolescent and a young male and two
females in alcohol. Karáchí. By exchange with the Kar-
áchí Museum, 29th April 1879.

By exchange with the Karáchí Museum, 4th June 1878.

eee § ggg. Three specimens in alcohol. Karáchí. By ex-
change with the Karáchí Museum, 12th December 1879.

230. Crocidura beddomii, n. sp.

Hab. Southern India (Kollegál, Coimbatore).

Snout moderately long, rather abruptly and sharply point-
ed. The snout, feet and tail very pale flesh-coloured. Gen-
eral colour of fur dark grey, rather richly marked with rufous
in some. The tail is about half the length of the body, and
the hind feet are small. The tail is nearly nude and sparsely
covered with short white hairs, with a few long white hairs
intermixed.

The adult male and female have the following measure-
ments:—

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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Snout to vent</td>
<td>4.30</td>
<td>4.10</td>
</tr>
<tr>
<td>Tail, vent to tip</td>
<td>2.30</td>
<td>2.50</td>
</tr>
<tr>
<td>Hind foot</td>
<td>0.72</td>
<td>0.68</td>
</tr>
</tbody>
</table>

This species is closely allied to C. caeruleus, but it is very
much smaller with a proportionally less elongated snout. It
is separated from C. murina also by its shorter snout, the colour
of its nude parts, its sparsely clad tail and by the colour of
its fur.

a to d. An adult and two adolescent males and one adult
female in alcohol, and the skull of a. Kollegál hills, Coimba-
tore District. Presented by Colonel Beddome, 25th Novem-
ber 1878.

c. An adult female in alcohol. Russellkonda. Ganjam
District. Presented by Colonel Beddome, 25th March 1879.
231. Crocidura murina.

Sorex niger, Elliot, Horsfield, Cat. Mamm. E. Ind. Co's. Mus. 1851, p. 135; Blyth, op. cit., p. 84.

Hab. Eastern and Southern India; Himalayas (Nepal, Sikkim); Assam, Khâsi Hills; Arakan, Burma; Tenasserim, Malayan Peninsula, Sumatra, Java, China (Amoy).

Snout moderately long and pointed, not much swollen across the incisors. Lower lip sharp and pointed. Feet well developed, the hind feet being rather large. Fore-limb clothed to the wrist; tibial portion of hind limb in its lower half moderately clad with short brown hairs. Snout, ears, feet, and tail brown; claws moderate and yellow; tail somewhat swollen at the base, round, rather thickly clad with short dark brown hairs, and with long white and brownish hairs interspersed. Tail about the length of the trunk without the head, but varying much in its dimensions. General colour above brown, generally more or less washed with rusty or reddish, and sometimes with a faintly grizzled sheen in certain lights. Under surface dark mousey brown. Fur soft and silky, generally rather short, but longer in individuals from high localities.

♀ Tip of snout to vent 4:70 hind foot without claws 0:95 tail 3:00
♂ " " " " 4:15 " " " " 0:80 " 2:70

In this as in the former species and those which follow, the
male is considerably larger than the female, and, moreover, the individual differences in size in the sexes are considerable.

The first incisors above are rather long and the curve outwards from the base anteriorly is not so abrupt as in the previous species, but it is not a character calling for special remark, as the degree to which it occurs is variable.

The antero-posterior breadth of the posterior portion of the first incisor equals the same breadth across the base of the anterior portion of the tooth where it joins its posterior portion. The cusp of the posterior portion is not prominent, and there is only a very obscure process of the cingulum at its inner side. The second incisor is large and its breadth above equals the united breadth of the 3 incisors and eye tooth, and its point is above the level of the middle cusp of the false molar. The second premolar is smaller than the canine and lying immediately behind it, and in contact with it is the first premolar which is wholly visible from the outside of the jaw or nearly so. The cusp on the anterior border of the 1st premolar is well developed and in nearly the same line as the points of the 3 incisors, and above the point of the canines, which is at a lower level.

**Skull measurements. Male fully adult, and female nearly so.**

<table>
<thead>
<tr>
<th></th>
<th>No. 1</th>
<th>No. 2</th>
<th>No. 3</th>
<th>No. 4</th>
<th>No. 5</th>
<th>No. 6</th>
<th>No. 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>♂ Length of skull</td>
<td>1·0</td>
<td>0·49</td>
<td>0·31</td>
<td>0·32</td>
<td>0·51</td>
<td>0·59</td>
<td>0·74</td>
</tr>
<tr>
<td>♀ &quot; &quot;</td>
<td>1·05</td>
<td>0·43</td>
<td>0·25</td>
<td>0·30</td>
<td>0·48</td>
<td>0·56</td>
<td>0·63</td>
</tr>
</tbody>
</table>

Tomes describes the type of *S. griffithii* as characterised by the large size of its teeth, which exceeded, he states, those of any example of *S. caerulescens* he had ever seen. Such a description, however, is in no way applicable to the types of *S. griffithii* as understood by Blyth, and it is therefore perfectly evident, apart from external characters, that they are not the *S. griffithii* of Horsfield. Tomes, however, did not conceive with Horsfield in considering the fur as either short, close, or soft, but describes it as of medium length, deep blackish grey, glossy and rather coarse. The specimens from Arakan described by Blyth as *S. murinus* (Ann. and Mag. Nat. Hist., Vol. XVII, 1851, p. 15) were afterwards the types of Blyth's *S. griffithii*, but these specimens were regarded by Tomes as *S. caerulescens*, and one of them appears to be that species.

Blyth was under the impression that the type of *S. grif-fithii* was from the Khási Hills, although described from Afghánistán, because he saw a fine skin of a shrew be
believed to be *S. griffithii* from Chárápunjí in the possession of Griffith. This specimen had been forwarded to the India House by Dr. M'Clelland, and Blyth seems to have concluded that it was the type of *S. griffithii*, Horsfield; but the evidence is unsatisfactory, and, moreover, Blyth's specimens, as already observed, do not agree with the description of *S. griffithii*.

In the type of *C. heterodon*, beyond the inward folding of the hair on the sides of the heel, as occurs in shrews generally, I cannot detect the hairy patch mentioned by Blyth. The feet have had the tarsal bones removed, and the heel thus appears to begin at a bared portion of the leg, and in this way I think Blyth had been misled.

The type of *S. viridescens*, Blyth, was "a flat skin, tailless, and with only one hind foot attached."


g. The skin and skull of an adult female. Sibságar, Assam. Presented by S. E. Peal, Esq., February 1871.


m to o. One adult male, and one adult and one adolescent female in alcohol, and the skulls of m and o. Samaguting, Assam. Presented by Captain J. Butler, 1873.


y. A stuffed specimen. Tinnevelly. Presented by the Rev. H. Baker, 1859. This is the pale specimen mentioned by Blyth.¹


bb. Skin from Madras. Presented to the Museum of the East India Company by Colonel Sykes, and presented to the Indian Museum by the India Museum, London, through the Trustees of the British Museum, 13th April 1880. This is one of the types, if not the type, of S. niger, Sykes, and is probably the specimen mentioned in the Catalogue of the East India Company’s Museum (Horsfield), p. 135, No. 147.


Three adult males: no history; probably from British Sikkim.


Hab. China (Amoy).

Snout long and pointed. Ears rather large. Feet proportioned to body; claws rather strong and blunt. Lower half of limbs with short hair; upper surface of feet not seminude, but clad with short brownish-yellow hairs. Tail about the length of the trunk; long, and ringed, covered with short yellowish-brown hair, with long white and brownish hairs intermixed. Fur short, silky dark brown, with a glossy lustre; the under surface mousey brown.

Length of stuffed specimen 3'-60; fore-foot 0'-43; hind foot 0'-72; tail 2'-40.

Unfortunately the dental portion and the lower jaw are the only parts of the skull that have been preserved. The upper front incisors are short, convergent to their tips, but widely apart throughout. There is a well-developed tubercle on the inside of the basal eminence. The small front premolar is placed entirely within the line of the other teeth on the palatal surface. The tooth on either side occupies exactly the same position as its fellow, and this circumstance leads me to regard the arrangement as normal. Even supposing it were not, the general characters of the Shrew themselves separate it from C. murina, with which Blyth regarded it as identical. The second incisor is large and more
than exceeds the size of the united third incisor and canine. These two last mentioned teeth are rather small, and the canine slightly exceeds the size of the incisor. The tip of the chief cusp of the false molar is below the level of the point of the second incisor.


233. Crocidura bidiana.


IIab. Southern and Western India (Madras and Bombay).

Snout long and pointed. Ears moderately large and round, and rather well haired. Feet large and seminude; the lower halves of the radial and tibial portions are also seminude; claws with rather long sharp curved points. Tail not much swollen at the base, equalling the length of the trunk and one-half of the head, well covered with short brown hairs, with long whitish hairs intermixed, their bases being dark brown. Snout, ears, and feet pale reddish brown, tail darker. Fur long, fine, and dense, 0.35 in length, reddish brown above and below, the basal portion of the fur, as usual, being dark slaty. The under surface has also a greyish gloss.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length, tip of snout to vent</td>
<td>3.20 in</td>
</tr>
<tr>
<td>&quot; of tail</td>
<td>2.60 &quot;</td>
</tr>
<tr>
<td>&quot; of hind foot</td>
<td>0.80 &quot;</td>
</tr>
<tr>
<td>&quot; tip of snout to eye</td>
<td>0.70 &quot;</td>
</tr>
<tr>
<td>&quot; eye to ear</td>
<td>0.27 &quot;</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0.27 &quot;</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0.30 &quot;</td>
</tr>
</tbody>
</table>

The foregoing specimen is a male with nearly all the sutures of the skull obliterated. The upper incisors are not very prominent and but little curved, and there is a small but well-defined tubercle on the inner side of the posterior portion of these teeth forming a sharp conical cusp. The second incisor is large and nearly equals the length of the chief cusp of the first molar. The third incisor and canine are almost of equal size, but the latter, as is generally the case, is slightly larger than the former. The premolar is small and wedged in between the canine and the first molar, is sharply conical, and nearly wholly visible externally. The anterior cusp on the first molar is small and rather blunt, and
considerably above the level of the point of the canine. There is a minute eminence on the outside of the lower incisor near its tip. The total length of the upper line of teeth is 0.° 45.

The skull unfortunately met with an accident before it was measured. The smaller and more rounded ears, its larger size, and the presence of a lateral gland separate it from C. rubicunda.


234. Crocidura macrotis.

Sorex nudipes, Blyth, Journ. As. Soc. Beng., vol. xxiv, 1855, p. 34.

Hab. Lower Bengal (Calcutta), Assam (Goálpára), Tenasserim (Amherst).

Snout semi-acute, long, and somewhat swollen across the incisors, with the nasal portion attenuated. Ears moderately large and rather patulous, their antero-posterior breadth equalling two-thirds of the distance from their lower angles to the tip of the snout; sparsely covered with short brown hairs on their outer, and partially so, on their inner surface. Limbs rather feeble, shortly haired from the elbow and knee downwards. Feet only sparsely covered with short brown hairs which are paler on the toes; toes rather short; claws well developed. Tail equalling or not quite equalling the length of the trunk, rounded, tapering and ringed, nearly nude in appearance, owing to the shortness of the brown hairs which sparsely clothe it; moderately long white hairs interspersed as usual. Fur very short, shining brown or dark-brown above, which is also the colour of the upper sur-

1 Wagler in 1833 (Ibis, p. 54) named a red-toothed shrew S. melanodon = S. vulgaris.
faces of the snout and tail; lower half of ears, chin, and feet, yellowish brown.

<table>
<thead>
<tr>
<th></th>
<th>Adolescent ♂</th>
<th>Adult ♀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length, tip of snout to vent</td>
<td>1.67 in.</td>
<td>1.75 in.</td>
</tr>
<tr>
<td>&quot; of tail</td>
<td>1.08&quot;</td>
<td>1.27&quot;</td>
</tr>
<tr>
<td>&quot; hind foot</td>
<td>0.32&quot;</td>
<td>0.34&quot;</td>
</tr>
<tr>
<td>&quot; tip of snout to eye</td>
<td>0.27&quot;</td>
<td>0.30&quot;</td>
</tr>
<tr>
<td>&quot; eye to ear</td>
<td>0.17&quot;</td>
<td>0.14&quot;</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0.19&quot;</td>
<td>0.20&quot;</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0.15&quot;</td>
<td>0.24&quot;</td>
</tr>
</tbody>
</table>

The first upper incisors are rather widely apart, directed forwards and downwards. A well-developed tubercle on the inner side of the posterior portion, which is conically pointed. The second incisor is large, and more than equalling the longitudinal length of the third incisor and the canine; the third incisor is only a little smaller than the canine; the premolar is placed behind the canine, has a sharp point, and is visible externally, but its point is much above the level of the point of the anterior cusp of the first molar; the chief cusp of this last mentioned tooth is but little longer than the second incisor.

Blyth, in describing this species, stated that it was "remarkable for its naked feet and very large ears; also for the odorous glands on the sides being strongly developed; whereas we can detect them in no other of these minute species." The feet, however, of the type specimens, named in Blyth's own handwriting, appear to be quite as well haired, if not more so than in some other species, and, moreover, the glands on the sides are not peculiar to it as a small species. As the character assigned by Blyth, viz., naked feet, is misleading, I have re-named this species after its distinguishing feature, namely, its large ears.

It is closely allied to C. perrottetii from the Nilgiris, but is distinguished from it by its larger ears and by the character of its teeth, the first incisor being well curved, with a prominent eminence at the base, and the first intermediate tooth being large and conical.

234 a to e. Four adult males and one adult female, and the skulls of a, b and e. Nos. 254 A to E of Blyth's Catalogue. Amherst, Tenasserim. Presented by E. P. Reilly, Esq., 1847. Types of S. nudipes, Blyth.


235. Crocidura perrottetii.

Sorex perrottetii, Duvernoy, Mag. de Zool. Pl. 38 & 54; 1842, p. 89, Pl. 47.


Hab. Nilgiris (Utakamund).

Form small, slender. Head long, somewhat flattened; snout rather broad, but long and rather abruptly rounded towards the nostrils. Snout densely haired, and moustachial bristles rather numerous. Ears of moderate size and not hidden, rounded, and sparsely clad with short hairs. Limbs clad to the wrist and ankle, and the upper surface of the feet sparsely clad. Claws well developed and sharp; pads of feet rather prominent. Tail equals about the length from the vent to the front of the shoulder; not swollen at the base, rather slender; finely ringed, about 12 to 13 rings to the one-tenth of an inch; numerous short strong hairs between the rings, with scattered, long black hairs. Fur short, dense, and velvety; general colour, snout, ears, tail and upper surface of limbs, deep fuliginous, velvety black or dark brown, paler below with a silvery lustre. Claws yellowish.

**Adult male.**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length from tip of snout to vent</td>
<td>in.</td>
</tr>
<tr>
<td>&quot; of tail</td>
<td>&quot;</td>
</tr>
<tr>
<td>&quot; of hind foot</td>
<td>&quot;</td>
</tr>
<tr>
<td>Height of ear</td>
<td>&quot;</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

The skull proves this specimen to be fully adult, as the sutures on the base of the cranium are obliterated. A small portion of the occipital has been broken off, but sufficient remains on one side to indicate that the foramen magnum has been very large; measured from the inferior border of the foramen magnum to the end of the palate anteriorly, the total length of the adult skull is only 0.45. The condyles are
large, and there is a considerable concavity or depression immediately over the temporal fossa. The most marked feature of the skull is the character of the teeth, more especially of the first upper incisor, which is short and but little, if at all, hooked, and destitute of the marked eminence at its base posteriorly, which is so distinctive of the generality of shrews. There is a slight indication of the position of the eminence on the outer side of the tooth, but no more, and the tip of the first intermediate tooth is but little below the basal portion of the first incisor, and the immediately succeeding teeth gradually diminish in size to the fourth intermediate tooth, which is well developed, and in the line of the teeth before it, and almost wholly visible externally. The anterior portions of the crowns of these three teeth are rather sharply pointed. The apex of the crown of the first molar is on a level with the base of the first incisor. The last tooth has two distinct cusps. The condyle of the lower jaw is not divided by a notch.

Inferior border of foramen magnum to tip of premaxillæ... in. 0'45
Breadth across molars..." 0'17
" at posterior border of infraorbital foramen..." 0'16
" at middle of frontal contraction..." 0'13
" external glenoid fossæ..." 0'21
" to auditory canal..." 0'26
Length of upper row of teeth..." 0'21
" of lower..." 0'14


236. Crocidura (P.) travancorensis.


Hab. Southern India (Travancore).

Head more elongated before the ear than in P. macrotis; ears moderately developed and sparsely clad; feet seminude, with short white hairs, hardly hiding the scaly skin. Claws well developed, sharp. Tail equaling the length of the trunk without the head; not swollen at the base, tetragonal, scaly, ringed, 43 rings to the quarter inch and not obscured by the hairs, which are extremely few and short, those at the tip being longest; long white hairs interspersed.
MAMMALIA.

Fur very short, dense, and soft; reddish brown above, the under surface greyish, with a warm tint, silvery in certain lights. Feet yellowish brown. Tail above concolorous with the upper surface of the body.

Length from tip of snout to vent. in. 1'66
" of tail " 1'19
" of hind foot " 0'31
" from tip of snout to eye " 0'30
" eye to year " 0'14
Height of ear " 0'19
Breadth of ear " 0'21

The skull has the facial portion more elongated than in C. macrotis.

The front upper incisor is short and directed downwards, and the posterior portion of the tooth has a small tubercle on its inner side, and is large and rather sharply pointed. The second is considerably larger than the third incisor and the canine combined, and its apex reaches as far downwards as the anterior point of the first incisor. The third incisor and the canine are of equal breadth, the first of the two being the longer. The small premolar is largely visible externally, although it lies between the canine and first molar. There is a slight swelling on the outer border of the lower incisor near its free end.

Anterior border of foramen magnum to tip of premaxillae. in. 0'49
Breadth across maxillae " 0'18
" behind infraorbital foramen " 0'13
" before brain case " 0'15
" external to glenoid fossae " 0'20
" to tympanic " 0'26
Length from condyle of lower jaw to anterior end of alveolar length from condyle of lower jaw to anterior end of alveolar line " 0'25
Length of upper alveolar line " 0'20
" lower " 0'12


(No lateral gland.)

237. Crocidura rubicunda.

Hab. Western Bengal (Paresnáth).

Snout long and pointed, not much swollen across the moustachial region, well haired. Ears large, round, very sparsely haired; rather long white hairs on the flaps. Feet slender, covered with short, nearly white hairs, so as to obscure the skin and projecting over the yellow claws, which are rather large and curved at the points. Tail equaling the distance from the vent to the middle of the ear, measured along the side, slightly swollen at the base, round, and rather thickly clad with longish pale yellow, almost white hairs, with long white hairs intermixed. Muzzle, ears, feet and tail, pale yellowish. Fur rather long and soft, and pale rusty fawn. Under parts grey, suffused with fawn.

| Length, tip of snout to vent  | in. 3.40 |
|                              |          |
| " of tail                    | 2.30     |
| " of hind foot               | 0.64     |
| " tip of snout to eye        | 0.63     |
| " eye to ear                 | 0.36     |
| Height of ear                | 0.33     |
| Breadth of ear               | 0.40     |

The first upper incisors of this female are longer, stronger and more curved than in the adult male of *C. bidiana*, and there is no tubercle on the inside of the posterior portion of the tooth, which is not so sharply pointed as in that species. The second incisor is also a broader and more blunted tooth than in *C. bidiana*, and the third incisor is notably smaller than the canine. The premolar is largely visible externally. The lower incisors are notched in the middle, and their points are not so upwardly bent as in *C. bidiana*.

Anterior border of foramen magnum to tip of premaxillae, in 0.93
Breadth across maxillae, in 0.23
" behind infraorbital foramen, in 0.20
" before brain case, in 0.25
" external to glenoid fosse, in 0.39
" to tympanic, in 0.42
Length of upper alveolar line, in 0.49
" from condyle of lower jaw to anterior end of alveolar line, in 0.52


b. An adolescent female. Locality unknown. Bequeathed to the Asiatic Society of Bengal by Dr. F. Stoliczka, 6th March 1880.
Crocidura subfulva.


*Hab.* Kach.

Snout rather short and broad: ears moderately developed, rather flattened above and rounded posteriorly and sparsely clad with pale-coloured hairs. Feet moderately large, and tolerably well clad, with pale-coloured hairs hanging over the claws, which are yellow and strong. The tail equals the length of the trunk and is not swollen at the base, but it is rather thick throughout and somewhat abruptly tapers towards the point, and it is somewhat tetragonal. It is relatively well clad with short pale hairs which hide the rings, and at the point the hairs form an imperfect pencil, long white hairs are intermixed. The snout, ears, feet and tail are pale yellowish-brown; the tail paler on its under surface. General colour of the upper surface pale fawn; silvery grey on the under parts.

Tip of snout to vent, 1″ 90; tail, 1″ 30; hind foot, 0″ 42.

Front upper incisors directed forwards and downwards, posterior portion moderately developed and sharply conical, a very feeble but distinct tubercle on the inside. Second incisor large, sharply pointed and nearly equalling in length the first tooth, twice as broad as the third incisor and canine. The premolar is very minute and wedged in between the canine and first molar, and is partially visible externally.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior margin of foramen magnum to tip of premaxillae</td>
<td>0″ 62</td>
</tr>
<tr>
<td>Breadth across maxillae</td>
<td>0″ 23</td>
</tr>
<tr>
<td>&quot; behind infraorbital foramen</td>
<td>0″ 12</td>
</tr>
<tr>
<td>&quot; before brain case</td>
<td>0″ 20</td>
</tr>
<tr>
<td>&quot; external to glenoid fossae</td>
<td>0″ 26</td>
</tr>
<tr>
<td>&quot; to tympanic</td>
<td>0″ 30</td>
</tr>
<tr>
<td>Length of upper alveolar line</td>
<td>0″ 32</td>
</tr>
<tr>
<td>&quot; from condyle of lower jaw to anterior end of alveolar line</td>
<td>0″ 36</td>
</tr>
</tbody>
</table>

These are rather young shrews, but from the condition of the skull of which I have given the measurements, it is apparent that the animal does not attain to a much larger size. It might be mistaken for the young of *C. bidiana*, or *C. rubicunda*, but the teeth being complete it is evident from the measurements of the upper dental line that its teeth are considerably smaller than the teeth of either of these species.

239. Crocidura montana.

Sorex montanus, Kelaart, Prod. Fauna Zey. 1852, p. 31.

_Hab_. Ceylon Highlands.

Snout long and rather broad across the moustachial region. Ears round, full, and moderately large. Feet well developed, dull brown. Lower half of limbs short haired. Claws moderately strong and curved, yellowish. Feet sparsely clad with brown hairs, generally long and white at the base of the claws. Tail shorter than the trunk and rather thickly covered with short dark brown hairs, with long pale brown or greyish hairs intermixed. Fur full, soft, and deep slaty, the grey colour being almost obscured by dull dark brown. Under parts with a silvery sheen.

**Male.**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip of snout to vent</td>
<td>3'70</td>
<td>3'74</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0'30</td>
<td>0'37</td>
</tr>
<tr>
<td>Hind foot</td>
<td>0'74</td>
<td>0'78</td>
</tr>
<tr>
<td>Height of eye</td>
<td>0'72</td>
<td>0'78</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0'32</td>
<td>0'36</td>
</tr>
<tr>
<td>Tail</td>
<td>2'25</td>
<td>2'28</td>
</tr>
</tbody>
</table>

Upper front incisors well developed and close together anteriorly; a very prominent tubercle on the inner side of the posterior portion forms a distinct cusp, the posterior portion itself being only feebly developed. The second incisor large and conical, nearly equalling in length the great cusp of the false molar, and exceeding the longitudinal breadth of the third incisor and canine, which are well developed, the latter being only a little larger than the former. The second premolar is wedged in between the canine and false molar, and is wholly hidden externally. The small anterior cusp of the false molar is near the base of the tooth and is feebly, and its tip is only a short way below the level of the crown of the first premolar.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior border of foramen magnum to tip of premaxilla</td>
<td>1'02</td>
<td>1'00</td>
</tr>
<tr>
<td>Breadth of maxilla</td>
<td>0'40</td>
<td>0'40</td>
</tr>
<tr>
<td>&quot; behind infraorbital foramen</td>
<td>0'22</td>
<td>0'22</td>
</tr>
<tr>
<td>&quot; anterior to brain case</td>
<td>0'28</td>
<td>0'30</td>
</tr>
<tr>
<td>&quot; external to glenoid articulation</td>
<td>0'40</td>
<td>0'40</td>
</tr>
<tr>
<td>&quot; to tympanic</td>
<td>0'50</td>
<td>0'50</td>
</tr>
<tr>
<td>Length of lower jaw condyle to anterior end of alveolar line</td>
<td>0'60</td>
<td>0'60</td>
</tr>
<tr>
<td>&quot; upper alveolar line</td>
<td>0'50</td>
<td>0'50</td>
</tr>
<tr>
<td>&quot; lower &quot;</td>
<td>0'33</td>
<td>0'33</td>
</tr>
</tbody>
</table>

240. Crocidura pygmæoides.


Hab. Himalaya.

Snout rather long, narrow and pointed; well clad. Ears well developed and prominent, sparsely clad with short hairs. Feet well developed, rather long and slender, the hind foot being especially larger than in C. macrotis, Andr.; toes moderately long; claws strong and curved. Lower portion of both anterior and posterior limbs clad with short brown hairs. Feet rather sparsely clad with short brown hairs. Tail rather long, somewhat tetragonal, and nearly equalling the length of the trunk and half of the head, ringed, 35 rings to quarter of an inch, rather densely covered with short brown hairs, which nearly hide the rings; long white interspersed hairs. Fur rather short, soft, and silky. General colour rich, deep rusty brown. Snout pale rufous brown, feet yellowish brown. Under parts brownish, with a marked silvery sheen.

<table>
<thead>
<tr>
<th>Female</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length, tip of snout to vent</td>
<td>1'85</td>
</tr>
<tr>
<td>&quot; of tail</td>
<td>1'40</td>
</tr>
<tr>
<td>&quot; of hind foot</td>
<td>0'37</td>
</tr>
<tr>
<td>&quot; tip of snout to eye</td>
<td>0'31</td>
</tr>
<tr>
<td>&quot; eye to ear</td>
<td>0'15</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0'20</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0'23</td>
</tr>
</tbody>
</table>

Anterior incisors well developed; posterior portion with no internal process of the cingulum; conical point slightly directed backwards. Second incisor large, broader than the conjoint third incisor and canine, which have the usual relations; premolar placed behind the canine, visible exter-
nally. The anterior cusp of the first molar large, its point almost on the same level as the point of the canine; the point of the chief cusp of the first molar is nearly on the same level as the point of the first incisor.

| Anterior border of foramen magnum to tip of premaxillæ | 0·50 |
| Breadth across maxillæ | 0·19 |
| " behind infraorbital foramen | 0·14 |
| " before brain case | 0·15 |
| " external to glenoid fossæ | 0·23 |
| " to tympanic | 0·27 |

Length of lower jaw, condyle to anterior end of alveolar line | 0·26 |
| " of upper alveolar line | 0·13 |
| " of lower | 0·13 |

*Sorex hodgsoni*, Blyth, was founded on a shrew so young that the skull is almost membranous and the teeth so little advanced that they had not pierced the gums, and it is impossible, therefore, to determine the characters of the dentition. The shrew, named by Blyth *S. micronyx*, was a very young individual with the bones impartially ossified and the incisors only appearing through the gums, yet he derived the distinguishing character of the supposed species from its still imperfectly matured claws. As the claws, however, in the adult are strong and well developed, the term *micronyx* is a misnomer and cannot be accepted.

*Sorex atratus* was founded on a headless specimen.


c. An adult female in alcohol and a fragment of its skull. No. 258A of Blyth's Catalogue. Almora. Presented by Major R. Wroughton, 1846. The specimen is much shrivelled, &c., and in bad condition. The specimen is marked 258 of Blyth's Catalogue.


f. A headless specimen in alcohol. No. 256, p. 88 of Blyth's Catalogue. Chárápunjí. Presented by R. A. G. Frith, Esq., 1851. This specimen is transfixed on the spine of a shrub, and it was found in this condition. Type *S. atratus*. 
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MAMMALIA.

SUB-GENUS CROCIDURA, Wagler, 1823.

(Lateral gland.)

241. Crocidura rubricosa.


Hab. Northern Bengal (Purniah), and extending into the Himalaya (British Sikkim), Assam, Gáro Hills and Khási Hills.

Snout pyramidal, moderately broad, well clad, nostrils rounded, divided, but not much prolonged. Ears of moderate size, and sparsely clad. Limbs in their lower halves sparsely clothed, also the feet, which are, however, covered with short brown hairs, long over the claws, which are well developed, but not much curved. Tail mouse-like, equalling the distance from the vent to the angle of the mouth, somewhat tetragonal, not swollen at the base, ringed, covered with short brown hairs, the long white hairs confined to the basal third. Colour dark or reddish brown above, more rufous, on the head and snout; feet, and under surface of tail paler yellowish brown; under parts greyish brown, with a prevailing silvery sheen.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length, tip of snout to vent</td>
<td>3.20</td>
</tr>
<tr>
<td>&quot; of tail</td>
<td>2.42</td>
</tr>
<tr>
<td>&quot; of hind foot</td>
<td>0.76</td>
</tr>
<tr>
<td>&quot; tip of snout to eye</td>
<td>0.51</td>
</tr>
<tr>
<td>&quot; eye to ear</td>
<td>0.22</td>
</tr>
<tr>
<td>Height of ear</td>
<td>0.28</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0.30</td>
</tr>
</tbody>
</table>

The skull of this species is moderately elongated, with the upper front incisors close together anteriorly, but not touching, and there is a well-defined tubercle on the inside of the posterior portion of each tooth, narrow, sharp, and conical. The second incisor is large and equals the latter. The interior cusp on the first molar is sharply defined, but wholly developed from the cingulum. There is a marked tubercle on the outer margin of the lower incisor anterior to the middle.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior border of foramen magnum to premaxillae</td>
<td>0.73</td>
</tr>
<tr>
<td>Breadth across maxillae</td>
<td>0.27</td>
</tr>
<tr>
<td>&quot; behind infraorbital foramen</td>
<td>0.19</td>
</tr>
<tr>
<td>&quot; anterior to brain case</td>
<td>0.21</td>
</tr>
<tr>
<td>&quot; external to glenoid fossae</td>
<td>0.31</td>
</tr>
<tr>
<td>&quot; to tympanic</td>
<td>0.37</td>
</tr>
<tr>
<td>&quot; of upper alveolar line</td>
<td>0.36</td>
</tr>
<tr>
<td>&quot; of lower</td>
<td>0.21</td>
</tr>
</tbody>
</table>
241a to d. An adult male, two adolescent males, and one adolescent female, in alcohol, and their skulls. The female was impregnated, although the basi-occipital suture was perfectly intact, and her teeth surfaces unground. Sibságār, Assam. Presented by S. E. Peal, Esq., 1867. Type.
e. An adult female and portion of its skull (lower jaw.) Purniah. Presented by S. W. Shillingford, Esq., 28th August 1872.
i to k. Three adult males in alcohol and the skull of i. Mungpu (British Sikkim). Presented by G. King, Esq., M.B., 6th March 1877. Type S. kingiana. The lateral gland was so obscure in the type that I overlooked it, but other specimens have established its presence, and I have no hesitation in uniting this species with C. rubricosa.
l to n. Two adult males and one adult female in alcohol. The female has three pairs of inguinal teats. Mungpu, British Sikkim. Presented by J. L. Lister, Esq., 10th February 1879.

242. Crocidura fuliginosa.


Hab. Tenasserim.

Snout moderately long, not much pointed and not densely clad. Ears rather large, seminude. Lower portion of limbs only sparsely clad: feet nearly nude, large, and broad: claws short and deep. Tail as long as the interval between the vent and eye, rounded, and rather thick at the base, finely ringed, sparsely covered with very short dark brown hairs. A few long white hairs from its root, towards its middle. Snout, ears, and tail pale yellowish-brown. Fur dense, moderately long, velvety, dark slaty at the base, the root fuliginous brown,
with inconspicuous, dull, long tips: under part scarcely, if at all, paler, with silvery reflections.

\[\begin{array}{llll}
\hline
\text{Tip of snout to vent} & \text{?} & 2.46 & 2.90 \\
\text{Hind foot} & \text{?} & 0.50 & 0.60 \\
\text{Tail} & \text{?} & 1.85 & 2.30 \\
\text{Tip of snout to eye} & \text{?} & 3.43 \\
\text{Eye to ear} & \text{?} & 0.25 \\
\text{Height of ear} & \text{?} & 0.28 \\
\text{Breadth of ear} & \text{?} & 0.30 \\
\hline
\end{array}\]

In the female skull, the base of the incisor is much directed forwards, and the tooth is then abruptly bent downwards, the downwardly directed portion being rather short. The posterior portion of the tooth is not strongly developed, and the point is slightly directed backwards: the cingulum forms a strong ridge along the inside, but no tubercle. The second incisor is large and conically pointed, its points being nearly on the same level with the point of the chief cusp of the false molar. The third incisor and canine are more than the breadth of the second incisor. The small anterior cusp on the false incisor rises above the cingulum, but its point is above the level of the point of the canine. Two not very well marked depressions or notches occur on the lower incisors.

\[\begin{array}{llll}
\hline
\text{Anterior border of foramen magnum to tip of pre-maxillae} & \text{?} & 0.80 & 0.76 \\
\text{Breadth across maxillae} & \text{?} & 0.31 & 0.30 \\
\text{behind lachrymal canal} & \text{?} & 0.20 & 0.20 \\
\text{anterior to brain case} & \text{?} & 0.23 & 0.23 \\
\text{external to glenoid articulation} & \text{?} & 0.35 & 0.32 \\
\text{to tympanic} & \text{?} & 0.42 & 0.41 \\
\text{Length from condyle of lower jaw to anterior end} & \text{?} & 0.50 & 0.48 \\
\text{of alveolar line} & \text{?} & 0.40 & 0.38 \\
\text{of upper alveolar line} & \text{?} & C.23 & 0.25 \\
\hline
\end{array}\]


Crocidura (Cr.) retusa, Peters, Monatsber, der R. Akad. der Wissen. 1870, p. 585.

Hab. Highlands of Ceylon (Paradinia).

Snout rather long and pointed; partially haired; ears seminude, prominent. Limbs seminude in their lower halves; feet rather long and slender; claws well developed. Tail round, scaled, slender and tapering, almost equaling the length of the body and head. Fur moderately long, bright rusty red above, under parts pale silvery grey with a warm tint; ears, feet, and under surface of tail pale reddish-yellow.

<table>
<thead>
<tr>
<th>Tip of snout to vent</th>
<th>in.</th>
<th>2.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hind foot</td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td>Vent to tip of tail</td>
<td></td>
<td>1.95</td>
</tr>
<tr>
<td>Snout to eye</td>
<td></td>
<td>0.37</td>
</tr>
<tr>
<td>Eye to ear</td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>Height of ear</td>
<td></td>
<td>0.21</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td></td>
<td>0.24</td>
</tr>
</tbody>
</table>

The skull is almost fully adult, as the basi-occipital suture is partially closed. Upper anterior incisors close together, a well-marked tubercle on the inner side of the posterior portion. The third incisor and the canine are of nearly equal size. A very minute tubercle on the outer side of the first lower incisor about its middle. The lower incisors are rather short and more forwardly directed than is generally the case among shrews.

| Anterior border of foramen magnum to tip of premaxilla | in. | 0.60 |
| Breadth across maxillae                                |     | 0.20 |
| " behind lachrymal canal                               |     | 0.15 |
| " anterior to brain case                               |     | 0.20 |
| " external to glenoid articulation                     |     | 0.28 |
| " to tympanic                                         |     | 0.30 |
| Length from condyle to anterior end of alveolar line   |     | 0.34 |
| " of upper alveolar line                              |     | 0.30 |
| " of lower                                           |     | 0.17 |

The specimen agrees generally with the measurements given by Prof. Peters of his type, and apparently also with the characters assigned to the dentition of C. media.

Mammalia.

(No lateral gland.)

244. Crocidura kelaarti.


Hab. Ceylon (Galle).

A young shrew with the very short fur of youth. Tail short; ears small, little raised above the fur; feet well developed with longish claws. Lower half of limbs and the feet seminude. General colours above and below rich rusty brown; pale yellowish-brown on the feet. Snout well haired.

The shrew is evidently extremely young, probably little more than newly born, as the teeth have evidently only been piercing the gum.

Length, tip of snout to vent, in. 2.70
" tip of snout to eye, " 0.40
Hind foot, " 0.60
Eye to ear, " 0.20
Vent to tip of tail, " 1.15
Height of ear, " 0.23
Breadth of ear, " 0.15

All the sutures are intact, and the premaxillary suture is anterior to the third intermediate tooth.

It may prove to be the young of some other species already known. It is curious to observe, as Blyth remarks, that the inguinal teats of this shrew, although the animal is so very young, are well developed.

244a. A young female in alcohol and its skull, No. 252A of Blyth's Catalogue, p. 84. Galle, Ceylon. Presented by Dr. Kelaart, 1854. Type.

245. Crocidura myoides.

Sorex1 (Crocidura) myoides, W. T. Blanford, Sc. Results, 2nd Yarkand Mission, 1879, p. 16, pl. 1 fig. 1; pl. 1a fig. 2.

Hab. Ladák (Leh).

245a. An adult female in alcohol and its skull. Leh, Ladák. Dr. F. Stoliczka, 1873-74. Presented by the 2nd Yarkand Mission. Type figured and described by W. T. Blanford,

1 The teeth are white, and the front upper incisors have an obscure internal process. Teeth: \( \frac{2+1}{2} \times 2 \times \frac{8}{2+6} = 28. \)
SOREX.

Esq., F.R.S., Scientific Results of 2nd Yarkand Mission, 1879, p. 16, pls. 1 and 1a, figs. 1 and 2.


SUB-FAMILY SORICINÆ.

GENUS SOREX, Linnaeus, 1735.

246. Sorex alpinus.


Amphisorex alpinus, Duvernoy, Mém. de la Soc. d'Hist. Nat. de Strasb. t. ii, 3 Suppl., 1838, p. 4; Mag. de Zool., 1842, p. 31, tab. 49.


Corsira alpinus, Blyth, Cat. Mamm. As. Soc. Beng. Mus., 1863, p. 86 (partim); Jerdon, Mamm. of Ind. (partim), 1867, p. 61.

Hab. Europe (Alpine region).


247. Sorex vulgaris.


Hab. Europe.


248. Sorex pygmaeus.


Hab. Northern Europe and Asia.

Genus Soriculus, Blyth, 1855.

A small shrew with red-tipped teeth, and the following dentition: $\frac{2+4}{2} + \frac{2}{2} + \frac{3}{2} = 30$. The first upper incisors with a prominent cusp at their posterior portion, and a small cusp or talon internally on the vertical portion. Lower incisors with a prominent cusp over their base. Snout moderately long, and tapering: nostrils not prominent. Ear almost completely hidden: antitragus acting as a valve. Feet moderately or well developed, scaly, partially haired. Tail mouse-like, scaly, ringed, tetragonal, no long hairs, pencillated at the tip. No lateral gland. Fur dense and velvety. Skull with a short orbito-temporal fossa, and with two articular surfaces for the lower jaw, upper zygomatic, and a lower post-glenoid.

The skull of this genus is very different in form from the skull of Crocidura. It is a much lighter skull and without ridges, and has more the form of the skull of Talpa, but without the zygomatic arch and any trace of an orbital process. The temporal fossa is very short; and the preorbital foramen is spanned by a broad arch of bone. The occipital region is forwardly tilted, but not to the same extent as in Talpa. There is a prominent angle immediately external to the tympanic, and from this angle a feeble ridge runs forwards to the beginning of the temporal fossa, and bears on its under surface anteriorly a facet, which looks forwards, outwards, and downwards, and which receives the upper division of the condyle of the mandible. The foramen magnum is very broad from above downwards. The post-glenoid process is very large, convex posteriorly and marked by a large foramen (ovale ?). Its anterior surface is deeply concave and looks forwards and somewhat outwards, and bears an articular surface for the reception of the lower division of the condyle of the mandible, and this surface is in no way continuous with the upper surface, but widely separated from it by a deep notch. There is a minute foramen at the base of the post-glenoid process posteriorly. The posterior margin of the palate forms a thin fine convex ridge, a little behind the last molar.

The notches separating the articular surface of the divided condyle are not so deep as in Chimarrogale. The process of the angle is thin and moderately long, and directed backwards.
The first upper incisors are short and hooked, with a prominent cusp at their posterior portion, and a small cusp on the inner side of the vertical portion of the tooth, a little above the tip. Second, third, and fourth intermediate teeth conical, decreasing in size from before backwards. An extremely minute tooth, wedged in between the four intermediate teeth and the second premolar, and completely excluded from the general line of the teeth externally. Second premolar with one prominent external central cusp with a smaller cusp anterior to it, the former cusp being prolonged backwards as a ridge terminating as an obscure cusp. The basal portion of the second premolar internally has two pointed cusps, the anterior cusp the most downwardly prolonged, corresponding to the internal cusps occurring on the first two molars: the crown of each molar has three small external and two internal cusps connected to the internal cusps by a zigzag line. The third molar has four cusps arranged quadrangularly around a central depression with one external cusp. The first lower incisor has a marked cusp near its base. The third tooth has two cusps, and the molars are five-cusped, one anterior and two external and two internal, opposite to each other.

The transverse process of the atlas is not outwardly prolonged. The spinous process of the axis is large and halbert-shaped, but the remaining cervical vertebrae show no distinct spinous processes. The neural arches have considerable lateral breadth. There are well-developed hypapophyses on the 2nd and 3rd cervicals, and a trace of them on the 3rd and 4th. The transverse processes of the 3rd, 4th, 5th, and 6th cervicals overlap. The dorsal vertebrae are devoid of spinous processes, until about the 10th segment, when a trace begins to show itself and which becomes more strongly developed in the lumbar vertebrae. In Crocidura the first dorsal vertebrae have short spinous processes, and all of them have their processes more or less developed, whereas in Talpa they are, as in Soriculus, almost obsolete. Five vertebrae are united in the sacrum, which has a prominent keel-like crest, and, instead of a symphysis, the pubic bones are much more widely apart than in Crocidura. The caudal vertebrae increase in length to the 8th, and then diminish. The vertebral formula is C. 7, D. 13, L. 6, Sacral and P. Sacral 5, Caudal 17.

The shoulder girdle is rather far forwards, as in Talpa, and from the neck being short, the head is brought near the shoulder, but not to the marked degree as in the mole. The scapula is short and narrow as in Crocidura, but the humerus is relatively very much shorter and stouter than in that
genus, and approaches in this respect to the humerus of *Talpa*. The external tuberosity is hook-like and large, and there is a prominent ridge from the head of the humerus dividing the front of the bone in two, and terminating on its external margin near the middle of the bone. Opposite to this point, on the inner border of the bone, is a large, somewhat anteriorly directed process, prolonged downwards from the inner tuberosity of the head of the bone. The lower end of the bone is very broad, and the inner condyle is widely prolonged. The character of the humerus indicates a burrowing habit of life, which seems probable from the long and nearly straight claws, which have none of the hooked, grasping character of an arboreal mammal. Radius and ulna distinct. The manubrium is T-shaped with a sharp ridge down its centre. There are five mesosternal pieces. As in Shrews generally, the clavicle does not articulate with the humerus. Tibia and fibula united.

It is evident that its affinities are markedly soricine, but at the same time it shows a few in the direction of *Talpa*.

| Length of vertebral column, atlas to last sacral | in. 3·70 |
| " of caudal vertebrae | 1·57 |
| " of scapula | 0·43 |
| " of humerus | 0·38 |
| " of ulna | 0·51 |
| " of manus | 0·40 |
| " of os inominatum | 0·40 |
| " of femur | 0·45 |
| " of tibia | 0·60 |
| " of pes | 0·60 |

249. Soriculus nigrescens.


Hab. Himalaya (Sikkim).

Body rather abruptly terminated posteriorly; snout short,
but sharply pointed, densely haired; nostrils not deeply
divided. Ear almost hidden, but rather large and generally
bordered with a dense fringe of fur, like that clothing the
body. Limbs short. Fore-limb with a very narrow bare
area above the wrist; lower half of tibial portion of hind
leg seminude. Feet strong, especially the front pair, which
are rather broad, with the toes inwardly bent, with long sharp
claws: the 3rd and 4th slightly exceeding the length of their
respective toes. Hind feet narrower than the front feet, and
with shorter claws. Upper surface of both feet scaly, sparsely
clad with short brown hairs. Tail short, equalling the distance
from the vent to the shoulder; somewhat tetragonal, scaly,
ringed, covered with short brown hairs forming a short pencil
at the tip; no long hairs. Fur moderately long, soft, and
lustrous. Blackish brown, tinged with rufescent, becoming
rich rufous brown in alcohol. Under surface almost con-
colorous with the upper surface, but of a pale reddish-brown,
with distinct greyish tinge.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip of snout to vent</td>
<td>3.20</td>
<td>2.20</td>
</tr>
<tr>
<td>Eye to ear</td>
<td>0.54</td>
<td>0.56</td>
</tr>
<tr>
<td>Length of ear</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td>Breadth of ear</td>
<td>0.25</td>
<td>0.27</td>
</tr>
<tr>
<td>Vent to tip of tail</td>
<td>0.30</td>
<td>0.30</td>
</tr>
<tr>
<td>Hind foot</td>
<td>1.74</td>
<td>1.70</td>
</tr>
<tr>
<td>Breadth across maxillae</td>
<td>0.55</td>
<td>0.55</td>
</tr>
<tr>
<td>Anterior border of foramen</td>
<td>0.78</td>
<td>0.79</td>
</tr>
<tr>
<td>Anterior maxillaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of lower jaw condyle</td>
<td>0.27</td>
<td>0.30</td>
</tr>
<tr>
<td>Condyle to anterior end of</td>
<td>0.22</td>
<td>0.21</td>
</tr>
<tr>
<td>Alveolus</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>External to tympanic</td>
<td>0.47</td>
<td>0.48</td>
</tr>
<tr>
<td>Length of upper alveolar line</td>
<td>0.45</td>
<td>0.44</td>
</tr>
<tr>
<td>Length of lower alveolar line</td>
<td>0.40</td>
<td>0.41</td>
</tr>
</tbody>
</table>

The incisors are moderately long and curved, the posterior
portion well developed and sharply conical. The second and
third incisors, and the canine, have all the same form, but
the third incisor is somewhat larger than the second, and the
latter larger than the canine, the tips of the canine being on
nearly the same level with the point of the posterior portion
of the first incisor and with the anterior cusp of the first
molar. The minute premolar is in the same line with the
other teeth, but wholly excluded from being visible externally.
There is occasionally no trace of pigment on the teeth of
adults, as it is restricted to the tips of the teeth and dis-
appears with their points.


\(g\) & h. Two adult females in alcohol and the skull of \(g\). Darjeeling. Presented by W. S. Atkinson, Esq., November, 1869.


l to n. An adult female, an adolescent male, and an adolescent female in alcohol. No history.

o. A skeleton. No history.

250. Soriculus caudatus.


*Hab.* Himalaya (Sikkim).

Snout rather sharply pointed, but not very long: well haired. Ears moderately large, partially hidden and well clad with long hairs on their outer surfaces, and along their margins, and tragus, amalgamating with the general fur, so that the ears are not prominent. Limbs slender, the lower half of the ante-brachium, and of the ante-femoral portion of the limb, nearly nude. Fore feet small. Hind feet rather long and slender, with a prominent white tubercle over the distal end of the 5th metatarsal. Feet scaly above, very sparsely covered with brown hairs, fewer on the toes: claws compressed, but little pointed. Tail long and slender, tetragonal, tapering to a fine, compressed, pencillated point, very
slightly exceeding the length of the body and head. Tail rather coarsely scaly, ringed, 25 rings to quarter of an inch, sparsely covered with very short dark brown hairs, arising between the rings and with long brownish yellow hairs at the tip, forming a kind of pencil. No long white hairs. Fur long, dense, and soft; the under or hidden parts being deep slaty, the exposed portion being tipped with rufous or golden brown; under parts greyish brown. Feet pale brown.

- Tip of snout to vent: 2-46
- Eye to ear: 0-30
- Vent to top of tail: 2-57

The posterior portion of front upper incisor conically pointed, reaching about half-way down the anterior portion: second incisor moderately large and acutely pointed: third incisor slightly larger than the canine, the tip of the latter being level with the point of the small anterior external cusp of the first molar.

This shrew was referred to by Blyth as *S. alpinus*, Schinz, from which, however, it is at once distinguished by the character of its dentition, as it has only 30 teeth, whereas *S. alpinus* has 32.

I have examined the type of this species in the India Museum. It came from Sikkim.

In its rather broad anterior extremities, it approaches *C. nigrescens*, and the character of its limbs suggests that it is partially of a burrowing habit.


**Genus CROSSOPUS, Wagler, 1832.**

251. **Crossopus fodiens.**

*Crossopus fodiens,* (Pallas) Blasius, Naturg. der Säugenth. Deutschlands, 1857, p. 120.

*Hab.* Europe (Northern), and Asia (Siberia).

251a. An adult male in alcohol, No. 263A, p. 87 of Blyth's
Catalogue. Norway. Presented by the Christiana University, 1846.

b & c. Two adults in alcohol. No history.

**Sub-Family CROSSOPINÆ.**

**Genus CHIMARROGALE, Anderson, 1877.**

252. Chimarroga himalaica.


**Hab.** Himalaya (Sikkim); Yunnan (Ponsee).

Body elongated; snout moderately long and pointed; broader across the moustachial area in the male than in the female. Fur soft, dense and velvety. The general colour of the upper parts is dark grey, richly washed with a dark brown, almost black, fuliginous, or blackish brown, almost obscuring the grey colour, and the fur generally has a finely dotted appearance, due to the presence of longer scattered hairs with white tips. When the fur is pulled aside, it is seen to be uniformly slaty, but all the hairs terminate in fine brown, or blackish longer brown tips, with the exception of scattered, stronger, and longer hairs, which have broad white tips. These hairs are especially numerous on the hind quarters, where they are much longer than on the other parts of the body, and they correspond to the white tipped hairs of *Nectogale.* Under surface greyish, with a silvery sheen, washed with earthy brown on the throat, and the middle of the belly. Whiskers blackish or even white. Hind feet large, but relatively smaller than in *Nectogale:* the fore limb is clothed to the wrist: the hind limb, in the lower half of the tibia, is scaly and partially clad with short hairs. The upper surfaces of the feet are naked, with the exception of the metacarpus and metatarsus, which are sparsely covered with short, flattened, stiff, adpressed hairs, almost white. The upper surfaces of the toes are scaly and bare, with the exception of from one to six broad, stiff,
rather long hairs, at the base of the claws, above. Toes ciliated along each of their sides, with a line of broad stiff hairs of equal length, forming a dense short fringe. The line, along the outer margin of the internal and external toes, is continued along the sides of the feet as a strongly ciliated line, or fringe of white hairs: the claws are yellowish, moderately long, and curved. From the vent to the tip of the tail equals the distance from the vent to nearly the eye. Tail long, quadrangular in transverse section: under surface and sides densely covered with longish adpressed, broadish, coarse, rigid hairs of the same character as those on the sides of the toes, and feet, but longer: upper surface in its two upper thirds is only sparsely covered with short strong ciliated hairs not so obscuring the scaly rings as in the lower third, where it is clad much as on the under surface and sides. The hairs on the under surface of the tail are white, and on the sides and upper surface dark brown.

The eye is small, almost hidden, and the ear almost completely so by the fur. The ear is a transversely oval slit 0.26 in length; the lower margin of the lower posterior half of the ear covered with fine microscopic hairs. The portion above the antotragus is covered on its inner surface with ordinary fur, except at a small spot at its upper extremity.

Length, tip of snout to vent ........................................... 3.83
Vent to tip of snout .................................................. 3.00
Length of hind foot ................................................... 0.87

Measurements of skull.

Anterior border of foramen magnum to tip of premaxillae .. 0.90
Breadth across maxillae .............................................. 0.34
" behind preorbital foramina ...................................... 0.26
" at posterior end of temporal fossa ............................ 0.28
" at posterior end of upper articular surface from lower jaw .................................................. 0.43

Length of lower jaw .................................................. 0.59

Front incisors moderately large and not much curved. The posterior eminence low, but little pointed. The intermediate teeth of nearly equal size, the middle tooth being the largest, and the third the smallest, all being conical. The central external cusp of the first molar is not very strong or long, while its rather obtuse anterior cusp is on a level with the third intermediate tooth.

It is closely allied to, if not identical with, Sorex (Crosopus) *platycephalus*, Temminck, of Japan.
Mammalia.


c & d. An adult male and female in alcohol. Ryang, British Sikkim, 4,000 feet. Purchased for the Museum by G. King, Esq., B.M., 10th February 1879.
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[Recognised names of genera, species, and varieties are printed in italics; synonyms, in Roman characters.]

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ERRATA.

Page 45.—For Einiger affenarten, read Beschreibung einiger Affenarten.

99, lines 3 and 4, for Tarsiidae and Tarsinae, read respectively Tarsiidae and Tarsiinae.

119, after line 38, insert Genus Cœlops, Blyth, 1849.

123, lines 4, 5 and 6, for darjelinensis, read darjelingensis.

123, line 37, for Melherbe, read Malherbe.

140, lines 6 and 7, for dasycneme, read dasycneme.

157, line 19, for Hylomina, read Hylomyina.

159, line 4, for 1881, read 1880.

176, line 38, omit one an.

184, line 14, for Blandford, read Blanford.

201, lines 17, 25, and 28, for Melherbe read Malherbe.

204, line 31, for Corsisa, read Corsira.
CATALOGUE

OF

MAMMALIA

IN THE

INDIAN MUSEUM,

CALCUTTA.

BY

W. L. SCLATER, M.A., F.Z.S.,
DEPUTY SUPERINTENDENT OF THE INDIAN MUSEUM.

PART II.

Rodentia, Ungulata, Proboscidea, Hyracoidea, Carnivora, Cetacea,
Sirenia, Marsupialia, Monotremata.

CALCUTTA:
PRINTED BY ORDER OF THE TRUSTEES OF THE INDIAN MUSEUM.
1891.

Price: Three Rupeer.
INTRODUCTION.

Dr. Anderson, the late Superintendent, who was the author of the first part of the Catalogue of the Mammalia, which was published in 1881, was never able to complete the work; the second half is therefore issued after a considerable number of years' delay.

It has been thought desirable to alter the form of the Catalogue somewhat from that of the first part, in which very nearly each specimen was separately described, sometimes at greater, sometimes at lesser, length. This course seemed to unduly swell the bulk of the work; it was therefore decided to approximate the form of the Catalogue somewhat more to those of the British Museum without full descriptions of each species, but with such remarks as might be thought necessary to assist the identification of the purely Indian species. A key of Genera and Species has been added, and all the Indian species, whether the Museum contains examples of them or not, are included in the Catalogue.

The synonymy has not been worked out quite completely, but all the more important references, especially those found in Indian works, are given, and every reference, except those asterisked, has been carefully verified.

The total number of species included in the Catalogue amounts to 590, of which 276 are found within the Indian Empire and 314 are exotic. These 590 species are represented by 4,872 specimens, of which 1,330 belonged to the old Asiatic Society's collection and are to be found mentioned in Mr. Blyth's Catalogue, published in 1863, and the remaining 3,542 specimens have been added since that time.

Following the introduction will be found a separate list of the type specimens possessed by the Museum, which number 55, and also a list of Donors and Contributors, both before and since the year 1863.
LIST OF DONORS AND CONTRIBUTORS TO THE INDIAN MUSEUM, CALCUTTA, MENTIONED IN THIS CATALOGUE.

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Williamson, Capt.
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### Division Myomorpha

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| Family Hyaenidae        |                   |         |      |
| 69 Hyaena striata       | 4                   | 17                  | 21    | 258   |
| 70 Hyaena crocuta       | 1                   | 1                   | 2     | 259   |

| Division Cynoidea       |                   |         |      |
| Family Canidae          |                   |         |      |
| 71 Cuon dakhunensis     | 5                   | 10                  | 15    | 260   |
| 72 Cuon alpinus         | 1                   | 0                   | 1     | 261   |
| 73 Canis lupus          | 0                   | 11                  | 11    | 262   |
| 74 Canis laniger        | 7                   | 2                   | 9     | 262   |
| 75 Canis pallipes       | 2                   | 20                  | 22    | 263   |
| 76 Canis lagopus        | 2                   | 3                   | 5     | 264   |
| 77 Canis aureus         | 9                   | 20                  | 29    | 264   |
| 78 Canis mesomelas      | 0                   | 1                   | 1     | 266   |
| 79 Canis variegatus     | 0                   | 1                   | 1     | 266   |
| 80 Canis procyonides    | 7                   | 14                  | 21    | 266   |
| 81 Canis familiaris     | 2                   | 2                   | 4     | 266   |
| 82 Canis dingo          | 5                   | 0                   | 5     | 268   |
| 83 Vulpes alopecx       | 1                   | 2                   | 3     | 268   |
| 84 Vulpes fulvus        | 6                   | 43                  | 49    | 268   |
| 85 Vulpes montanus      | 7                   | 19                  | 26    | 270   |
| 86 Vulpes leucopus      | 5                   | 19                  | 25    | 271   |
| 87 Vulpes bengalensis   | 3                   | 0                   | 3     | 272   |
| 88 Vulpes ferrilatus    | 0                   | 0                   | 0     | 272   |
| 89 Vulpes cana          | 5                   | 1                   | 1     | 273   |
| 90 Vulpes caama         | 1                   | 1                   | 1     | 273   |

| Division Arctoidea      |                   |         |      |
| Family Mustelidae       |                   |         |      |
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| 93 Mustela martes       | 1                   | 2                   | 3     | 274   |
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### Summary.

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### List of types in the Indian Museum.

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*Co-types in the British Museum.
Described as *M. erythronotus*; name afterwards changed.
List of types in the Indian Museum—contd.

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* Described by Blyth as Phoamys leucurus; name altered by Blanford.
CATALOGUE OF MAMMALIA.

INDIAN MUSEUM.

PART II.

Order RODENTIA.

The Rodentia are Mammals characterized by the following points of structure:—a middle pair of long, curved, rootless, persistent incisors; no canines; three molars above and below [except Hydromys]; temporal and orbital fossae of skull confluent, the lacrimal foramen opening within it; a distinct interparietal present; scapula narrow, with a deep notch and a well developed acromion; manus, five or four digits; pes, three to five digits; placenta deciduate and discoidal.

A general account of the classification and of the genera of the group by E. R. Alston will be found in P. Z. S., 1876, p. 61; it is mainly on this paper that the following key of the Indian Genera is based.

Key of the Indian Genera.

a. Only one pair of incisors above; skull with a true alisphenoid canal; optic foramina rarely confluent; bony palate well developed; fibula never articulates with the calcaneum; testes abdominal, descending periodically. [=Simplicidentata.]

b. Two premolars above and below; post-orbital processes present; infra-orbital opening very small; zygomatic arch mainly composed of the malar bone, not supported below by a process of the maxilla; mandible with the angular portion springing from the lower edge of the bony covering of the lower incisor; fibula separate through life; upper lip cleft; muffle small, naked; nostrils comma-shaped; tail cylindrical and hairy. [=Sciuridæ.]

c. Incisors compressed.

d. Limbs united by a flying expansion; form slender; tail long.
MAMMALIA.

e. Dentition hypsodont, i.e., molar teeth with vertically lengthened crowns. . . . Eupetaurus, p. 40.

e². Dentition brachyodont, i.e., molar teeth with short crowns.

f. An interfemoral membrane present; tail generally bushy. . . . Pteromys, p. 32.
f². No interfemoral membrane; tail distichous. Sciuropterus, p. 37.

d². Limbs free; form agile; tail long, bushy; no cheek pouches; parietals broad, ankylosed to the frontals. Sciurus, p. 4.

c². Incisors not compressed; form thick-set; tail short; pollex rudimentary; parietals narrow, parallelogrammatic. Arctomys, p. 41.

b³. Premolars present or absent; no post-orbital processes; zygomatic arch slender, chiefly formed by the zygomatic processes of the maxillae and squamosal bones; mandible with the angular portion springing from the lower edge of the bony covering of the lower incisor; tibia and fibula completely ankylosed in the adult; upper lip usually cleft; muffle small, naked; nostrils comma-shaped; tail cylindrical. [=Myomorpha.]

f. Lower incisors generally compressed; no premolars; infra-orbital opening generally high, wide above, narrow below, with the maxillary process forming a perpendicular plate; tail generally naked. [=Muridae.]

g. Molars rooted.

h. Molars transversely laminated; incisive foramen and auditory bulla very small; palate imperforate; form myoxine; fur mixed with scattered spines; tail densely haired. . . Platacanthomys, p. 46.

h². Incisors narrow, upper ones grooved; molars transversely laminated; auditory bulla large; hind limb elongated; tail long and hairy. Gerbillus, p. 46.

h³. Incisors not grooved; molars generally tuberculate; tail scaly, and generally more or less naked.

j. Only the pollex provided with a nail, all other digits clawed.

k. Lower incisors broad; molars of transverse
laminae; palate narrow; muzzle blunt; form stout; tail shorter than the head and body.

**Nesokia**, p. 53.

$k^a$. Incisors narrow; molars tubercular.

**Mus**, p. 59.

$k^a$. Like Mus, but with an extra anterior tubercle to the anterior upper molar.

**Leggada**, p. 79.

$j^a$. Pollex and hallux provided with a flat nail; tail very long, with a pencil of long hairs at the tip; skull very short and rounded.

$l$. Dentition normal; incisors narrow.

**Chiropodomys**, p. 81.

$p$. Molar teeth with cusps arranged perfectly regularly, those of the lower jaw arranged in transverse rows of three instead of two as in all other Muridæ; incisors broad. **Hapalomys**, p. 82.

$j^a$. 1st and 5th digit of each limb with a flat nail; size small; form slender and agile.

**Vandeleuria**, p. 82.

$h^4$. Upper incisors grooved, otherwise as in Mus.

**Golunda**, p. 83.

$h^a$. Upper incisors smooth; molars tuberculate; infra-orbital opening not much narrowed below, and with the perpendicular plate little developed; tail short, not scaled, sparsely haired; with large cheek-pouches.

**Cricetus**, p. 85.

$g^a$. Molars rootless or semi-rooted, composed of triangular prisms placed alternately.

$m$. Infra-orbital opening murine; tail short and hairy; ear-conch present; anterior palatine foramen long. . . . . **Arvicola**, p. 87.

$m^a$. Infra-orbital opening small and sub-triangular; ear-conch absent; anterior palatine foramen rudimentary. . . . . **Ellobius**, p. 94.

$f^a$. Incisors large and broad; no premolars; molars rooted and with re-entering enamel folds, not tuberculate; infra-orbital opening sub-triangular, with no perpendicular plate; eyes very small; ears very short; tail rather short-haired. . . . . **Rhizomys**, p. 95.
MAMMALIA.

3. Incisors compressed; one small upper premolar; infra-orbital opening very large and rounded; metatarsal bones greatly elongated; hind-feet with five digits, of which the first and fifth do not reach the ground; tail long, cylindrical and tufted. . Alactaga, p. 101.

3. One premolar above and below; molars with re-entering enamel folds and semi-rooted; no post-orbital processes to frontals; mandible with the angular portion springing from the outer side of the bony covering of the lower incisor; fibula a distinct bone throughout life; muffle hairy; fur modified into spines and quills. [=Hystricidae.]

n. Spines cylindrical; tail short, covered with spines and hollow quills. . . . . Hystrix, p. 104.

3. Spines flattened and channelled; tail long, scaly, with a tuft of bristles. . . . . Atherura, p. 104.

3. Two pairs of incisors above; optic foramina confluent; no alisphenoid canal; bony palate much reduced; fibula and tibia ankylosed below and articulating with the calcaneum; testes always external. [=Duplicidentata.]

o. Two premolars above and below; frontals with no post-orbital process; ears and hind limbs short; no external tail. Lagomys, p. 109.

o. Three premolars above, two below; frontals with two wing-like processes; ears and hind limbs elongated; tail short, bushy, and recurved . . . . Lepus, p. 112.

Genus SCIURUS.


The Museum collection of the squirrels of the Oriental Region is a very complete one and formed the basis of Anderson's monograph of the group in his Anatomical and Zoological Researches. In the Catalogue below Anderson has, except in one or two trifling instances, been followed, though it seems that still further reductions will have to be made in the number of species, more especially in the group of grizzled squirrels.

The synopsis or key is not intended to apply to geographical varieties of Indian species not found within the limits of the Indian empire, so that the numerous pale varieties of Sciurus bicolor and the curiously coloured varieties of Sciurus ferrugineus, which are none of them found within the limits of the Indian empire, are not included in the key.
The key is more or less an artificial one and must not be taken as exhibiting the real affinities of the different species.

Key of the Indian Species.

a. Squirrels of large size; length without tail more than 12 inches; skull over two inches in length; the anterior upper premolar constantly absent.

b. Black or dark-brown above, yellow below; outside of the shoulders and thighs, legs and feet constantly of the same colour as the back.

c. Ears not tufted

d. Dorsal surface grizzled, either gray, yellow or red and black; no ventral stripes.

e. Slightly smaller skull, averaging 1·6 inch.

f. With a black tip to the tail; ventral surface pale.

f². Tail-tip not black; ventral surface pale; a bright red patch frequently present on the thighs (seasonal?)

S. lokroides, p. 18.

f³. Tail-tip not black; ventral surface bright orange; a white patch of hairs behind the ear; head with a somewhat elongated muzzle compared with S. lokroides.

S. lokriah, p. 20.

e³. Skull somewhat larger, from 1·85 to 2·0 inches in length.

g. Tail-tip black; feet yellow; below orange.

S. blanfordi, p. 12.

g² Tail-tip black; feet yellow; a black lateral patch
separates the yellow ventral from the grizzled dorsal surface. . . . S. phayrei, p. 12.

g^3. Below gray; during the cold weather the grizzled fur of the back is replaced by brilliant orange.
S. caniceps, p. 13.

g^4. Below dark chestnut, generally with a patch of brilliant black on the dorsal surface; probably not seasonal. . . . S. atrodorsalis, p. 15.

g^5. Feet, ventral surface and upper surface of the head chestnut. . . . S. sladeni, p. 18.

g^6. Below deep chestnut, above varying from yellow grizzled to almost black; tail-tip red, black, or same colour as the back. S. erythraeus, p. 15.

g^7. Below white, cheeks ferrugineous; tail chestnut below; a white spot behind the ear; head with elongate muzzle resembling S. lokriah.
S. rufigenis, p. 21.

d^2. Ventral surface marked by five stripes, a central and two lateral nearly black, two intermediate yellowish white. S. quinquestriatus, p. 21.

d^3. Dorsal surface not grizzled; whole squirrel entirely ferrugineous . . . . S. ferrugineus, p. 22.

a^3. Squirrels of small size under eight inches in length without the tail; always marked with dorsal stripes varying in number; skull of varying shape and size, with the anterior premolar present (except S. layardi).

h. Median dorsal stripe black.

j. Larger, about seven inches in length without the tail; stripes barely reaching from the shoulders to the thighs, 5 black and 2 light ones; skull very long and narrow, 1.75 inches long by 1.05 inches across at the widest part. . . . . . . S. berdmorei, p. 26.

f^2. Smaller, about five inches in length without the tail; ears tufted with white tips; stripes varying in length and distinctness; skull very short and rounded, 1.05 long by .85 across the broadest part.
S. maclellandi, p. 27.

h^2. Median dorsal stripe white or yellow.

k. Rump and under side of the tail with a distinct tinge of red.
Sciurus bicolor.

Var. A. — typicus.


Sciurus leschenaltii, Desmarest Mamm., p. 335 (1820); Horsfield Zool. Res.


Sciurus epiphippium, Müller and Schlegel Tem. Verhandl., p. 91, pl. xiii (1838-44); Blyth Cat., no. 311, p. 100.

Sciurus rubiventer, Müller and Schlegel Tem. Verhandl., p. 86 (1838-44).


Mammalia.

Var. B.—giganteus.


Sciurus bicolor, Wagner Schreber Säugeth. Suppl., iii, p. 191 (1843); Blyth J. A. S. B., xvi, p. 870; id. ibid., xxiv, p. 472; id. ibid., xxxi, p. 334; Blyth Cat., p. 99, no. 309. [pt.]


The Black Hill Squirrel; Bhotia, Shingsham; Lepcha, Le-hyuk; Arakan, Leng-thet; Burmese, Sheng.

Distribution.—The typical variety is found in Lower Burma, all through Tenasserim and the Malayan peninsula, and in the islands of Sumatra, Java and Borneo.

The variety giganteus is found in the Himalayas from Nepal eastward to Assam, the hills between Assam and Burm and Upper Burma.

This species varies in colour to a large extent, a fact which has been the cause of the long list of synonyms above recorded; in the list of specimens below, “a” to “l” inclusive are specimens of the typical black and yellow variety, in which the black extends down the outside of the legs and the toes are black, the ears are untufted and there is a cheek and chin spot.

The specimens “m” to “q” only differ in having the back of a decidedly more rufous tinge.

The specimens “s” to “z” differ in having the feet light-coloured, not black as in the typical form; the back varies from a light rufous to the same yellow as the ventral surface; this is the variety separated by Jentink under the name of Sciurus albiceps.

The specimen “r” is again curiously intermediate: from the crown of the head to the root of the tail it is a bright grizzled yellow, each hair being brown, with a bright yellow tip; the head, cheeks and throat are whitish, the end of the nose and chin alone being dark; the tail and feet are almost as dark as in the typical black and yellow variety.

The two specimens from Borneo “z” and “a” are somewhat different again, being very dark grizzled above, but with yellowish not blackish feet.

It seems impossible therefore at present to separate into even geographical races this very varying species, except in the case of the large squirrel of the Eastern Himalayas and Assam, which forms a well-marked geographical race of Sciurus bicolor. It was first described by McClelland as a distinct species (S. giganteus) in his paper on the Mammals of Assam.

This race is at once distinguished from the true S. bicolor by its tufted ears; it also seems to be very constant in colour, and never varies as S. bicolor does.
### Var. A.—typicus.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Location</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Skin, skull</td>
<td>Yé, Tenasserim, 11-86</td>
<td>G. M. Giles</td>
</tr>
<tr>
<td>b.</td>
<td>Skin</td>
<td>Pilai, Mergui, 6-3-82</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>c.</td>
<td>Skin♀</td>
<td>Thaing, Mergui, 31-1-82</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>d.</td>
<td>Skin</td>
<td>Mergui, 14-12-82</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>e.</td>
<td>Skin, skull</td>
<td>Amherst, Tenasserim</td>
<td>J. Armstrong</td>
</tr>
<tr>
<td>f.</td>
<td>Skin</td>
<td></td>
<td>J. Armstrong</td>
</tr>
<tr>
<td>g.</td>
<td>Skin♀</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>Skin, skull</td>
<td></td>
<td>Purchased, 1877</td>
</tr>
<tr>
<td>i.</td>
<td>Stuffed</td>
<td></td>
<td>Purchased, 1878</td>
</tr>
<tr>
<td>j.</td>
<td>Skin, skull</td>
<td></td>
<td>No history, A.S.B</td>
</tr>
<tr>
<td>k.</td>
<td>Stuffed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l.</td>
<td>Stuffed skull♀</td>
<td>Malay peninsula</td>
<td>W. Rutledge, 1870</td>
</tr>
<tr>
<td>m.</td>
<td>Skin, skull</td>
<td>Tenasserim</td>
<td>A.S.B</td>
</tr>
<tr>
<td>n.</td>
<td>Stuffed juvenilis</td>
<td></td>
<td>Major Berdmore, A.S.B</td>
</tr>
<tr>
<td>o.</td>
<td>Stuffed, skull</td>
<td>Pegu</td>
<td>W. T. Blanford, 1863, A.S.B</td>
</tr>
<tr>
<td>q.</td>
<td>Stuffed skull</td>
<td>Tenasserim</td>
<td>F. Jenkins, 1845, A.S.B</td>
</tr>
<tr>
<td>r.</td>
<td>Skin♀</td>
<td>Taping R., Perak</td>
<td>Mus. Coll. [Jaffa], 1889</td>
</tr>
<tr>
<td>s.</td>
<td>Skin</td>
<td>Malacca</td>
<td>E. R. Alston [P]</td>
</tr>
<tr>
<td>t.</td>
<td>Stuffed skull♀</td>
<td>Singapore</td>
<td>W. Rutledge, 1872</td>
</tr>
<tr>
<td>u.</td>
<td>Stuffed skull</td>
<td>Malay peninsula</td>
<td>E. Lindstedt, 1846, A.S.B</td>
</tr>
<tr>
<td>w.</td>
<td>Stuffed skull</td>
<td>Java [Horsfield]</td>
<td>Mrs. Turnbull, 1857, A.S.B</td>
</tr>
<tr>
<td>x.</td>
<td>Skin♀</td>
<td></td>
<td>India Mus., London</td>
</tr>
<tr>
<td>y.</td>
<td>Stuffed skull♀</td>
<td>Borneo</td>
<td>Batavian Soc. (1844) A.S.B</td>
</tr>
<tr>
<td>z.</td>
<td>Skin</td>
<td></td>
<td>E. R. Alston [P]</td>
</tr>
<tr>
<td>a²</td>
<td>Skin</td>
<td></td>
<td>E. R. Alston [P]</td>
</tr>
<tr>
<td>b²</td>
<td>Skeleton</td>
<td>Tenasserim</td>
<td>J. Wood Mason</td>
</tr>
</tbody>
</table>

### Var. B.—giganteus.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Location</th>
<th>Collector</th>
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</thead>
<tbody>
<tr>
<td>a-h. 8</td>
<td>Skins and skulls</td>
<td>Sikkim</td>
<td>L. Mandelli</td>
</tr>
<tr>
<td>j.</td>
<td>Skin</td>
<td>Sikkim</td>
<td>L. Mandelli</td>
</tr>
<tr>
<td>k.</td>
<td>Skin♀</td>
<td>nr. Darjeeling, 6000 ft.</td>
<td>W. G. Masson [P]</td>
</tr>
<tr>
<td>l.</td>
<td>Skin♀</td>
<td></td>
<td>W. G. Masson [P]</td>
</tr>
<tr>
<td>m.</td>
<td>Skin</td>
<td>Sikkim</td>
<td>H. J. Elwes [Ex]</td>
</tr>
<tr>
<td>n.</td>
<td>Skin, skull</td>
<td>Darjeeling terai, 4-69</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>o.</td>
<td>Skin</td>
<td>Sikkim</td>
<td>W. T. Blanford</td>
</tr>
<tr>
<td>p.</td>
<td>Skin</td>
<td>Assam</td>
<td>E. F. Smith (1859), A.S.B</td>
</tr>
<tr>
<td>q.</td>
<td>Skin</td>
<td>Garo hills, 7-69</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>r-o. 5</td>
<td>Skins and skulls</td>
<td>Samagooting, Assam</td>
<td>J. Butler</td>
</tr>
<tr>
<td>w.</td>
<td>Skin</td>
<td>Naga hills, Assam</td>
<td>A. W. Chennell</td>
</tr>
<tr>
<td>x.</td>
<td>Skin</td>
<td>&quot;Telbongo Peak,&quot; Naga hills</td>
<td>A. W. Chennell</td>
</tr>
<tr>
<td>y.</td>
<td>Skin</td>
<td>Dunsiri Valley, Assam</td>
<td>H. H. Godwin Austen</td>
</tr>
<tr>
<td>z²</td>
<td>Skin</td>
<td>Dirjunj R., &quot;N. Cachar&quot;</td>
<td>H. H. Godwin Austen</td>
</tr>
<tr>
<td>b²</td>
<td>Skin</td>
<td>Sibsagar, Assam, 7-68</td>
<td>S. E. Peel</td>
</tr>
<tr>
<td>a²</td>
<td>Skin</td>
<td>&quot;7-68</td>
<td>S. E. Peel</td>
</tr>
<tr>
<td>e²</td>
<td>Skin</td>
<td>juv. Goalpara, Assam, 8-68</td>
<td>H. L. Haughton</td>
</tr>
<tr>
<td>j²</td>
<td>Skin</td>
<td>Momein, Yunnan, 6,000 ft., 21-5-68</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>g²</td>
<td>Skin</td>
<td>7-68</td>
<td>J. Anderson</td>
</tr>
</tbody>
</table>
Sciurus indicus.


Sciurus bombayanus, Boddaert *Elench. Anim.*, p. 117 (1785)*.


The Indian Red Squirrel; Bengali, Kat beral; Hindustani, Jungli gilheri; Kols, Kondeng; Gonds, Perwarsti; Hindi, Karrat; Monghyr, Rasu or Ratuphar; Telegu, Bet-üdatá; Mahrratta, Shekra; Canarese, Kesannalu.

*Distribution.*—The Indian peninsula generally, south of the Gangetic plains from Cuttack to Travancore; has also been recorded from the Nepal Terai (Hodgson) and Manipur (Thomas).

| a. Skin, ♂ | nr. Cuttack | V. Ball [Ex.] |
| b. Skin | Travancore | Purchased |
| c. Skin, skull | S. Malabar | Rev. J. Baker (1859), A.S.B. |
| d. Skin | Malabar | Rev. J. Baker (1859), A.S.B. |
| e. Skin | Travancore | E. R. Alston [P.] |
| f. Skin | Deccan [Sykes] | Purchased |
| g. Skin | India Mus., London. |
| h. Skin, skull ♀ | No history, A. S. B. |
| j. Skin, skull | No history A. S. B. |
| k. Skin | J. Anderson. |
| l. Skin | J. Anderson. |
| m. Skin | Lord Northbrook. |
| n-q. 4 Skins ♂ | W. Rutledge. |
| r. Skin ♀ | W. Rutledge. |
Sciurus macrourus.


Sciurus ceylonensis, Boddaert Elench. Anim., p. 113 (1785)*.

Sciurus maximus, Wagner Schreber Säugeth. Suppl., iii, p. 188 (1843) [pt.]


Sciurus albipes, Blyth J. A. S. B., xxviii, p. 287 (1859); Blyth Cat., no. 314, p. 100.

Sciurus zeylanicus, Ray apud. Jentink Notes Leyd. Mus., v, p. 113 (1883).

The Grizzled Squirrel; Cingalese, Rookeeah or Dandoleyna.

**Distribution.**—The hill ranges of Southern India, Nilgiris, Shevaroys, and Ghauts of Travancore and Ceylon.

- **a.** Skin ♂ Shevaroy hills
- **b.** Skin Nilgiris
- **c.** Skin Ceylon
- **e.** Stuffed, skull
- **f.** Stuffed, skull

- **g.** Stuffed Ceylon
- **h.** Stuffed
- **j.** Stuffed
- **k.** Stuffed, juv.
- **l.** Stuffed
- **m.** Skull
- **n.** Skin ♂

-[2 types of Sciurus tennentii, Blyth.]

Sciurus pygerythrus.

**Var. A.—typicus.**


**Var. B.—blanfordi.**


**Var. C.—phayrei.**


**Var. D.—griseimanus.**

Sciurus inornatus
Sciurus leucopus


**Distribution.**—The typical variety is found in Lower Burma and is apparently confined to the country round Rangoon and the Pegu revenue division; it is replaced in Upper Burma by two varieties, one distinguished by its very pale yellow ventral surface, which has never been named, and the other by its larger size, and its ventral surface of the same bright red as the typical variety (S. blanfordi); in Siam and Cambodia a third form is found of the same size as S. blanfordi but with a pale yellow ventral surface and markedly pale feet (S. griseimanus); a fourth form (S. phayrei) distinguished by the possession of a lateral black streak between the grizzled dorsal and yellow ventral surfaces is confined to the country between the Sittang and Salween apparently rivers in the Tenasserim division of Lower Burma.

**Var. A.—typicus.**

| a. Skin, skull | Burma | C. Williams (1865). |
| b. Skin | " | C. Williams (1865). |
| c. Skin | Rangoon | Sir J. Fayrer (1857), A.S.B. |
| d. Skin | " | Sir A. Phayre, A.S.B. |
| e. Skin | ♂ | 9-1-76. |
| f. Skin | " | J. Armstrong. |
| g. Skin | Rangoon, 9-1-76. | J. Armstrong. |
| h. Skin | Lower Pegu | J. Armstrong. |
| j. Stuffed | Lower Pegu | Major Berdmore (1847), A.S.B. |
| k. Stuffed | Upper Burma | Sir J. Fayrer (1857) A.S.B. |
| l. Skin, skull | Sagaing, Upper Burma, 3-10-68. | C. Williams (1865). |
| m. Skin | Ava, Upper Burma, 4-10-68. | J. Anderson. |
| n. Skin | 3-10-68. | J. Anderson. |
| o. Skin | 3-10-68. | J. Anderson. |
| p. Skin | 3-10-68. | J. Anderson. |
| q. Skin | 4-10-68. | J. Anderson. |
| r. Skin, skeleton | Kabwet, Upper Burma, 9-1-75. | J. Anderson. |

**Var. B. — blanfordi.**

| a. Stuffed, skull Ava | W. T. Blanford (1862), A.S.B. |
| Skeleton | 10-1-75. |

**Var. C. — phayrei.**

| a. Skin, skull | Martaban | E. Blyth (1861), A.S.B. |
| b. Stuffed, skull | | E. Blyth (1861), A.S.B. |
| c. Stuffed | | E. Blyth (1861), A.S.B. |
| d. Skull | | No history, A.S.B. |
| e. Skeleton | Upper Burma | J. Anderson. |

**Var. D. — griseimanus.**

| a. Skin, skull | Cochin China | Paris Mus. [Ex.]
| [Jullien 1874]. |
| b. Skin | Cochin China, 8-67. | Paris Mus. [Ex.]. |

**Sciurus caniceps.**


**Distribution:**—Tenasserim, from the Moulmein district in the north through the Malay peninsula to Malacca.

This species, like the other Burma squirrels, varies considerably; the specimens from about Moulmein, whence came the original type of *Sciurus chrysonotus*, have the back suffused with bright orange yellow during the breeding season, which takes place during the cold months from October to February; the specimens from Mergui further south do not seem to undergo a seasonal change, but have the sides of the neck instead of the back tinged with bright yellow; further south still the specimens from Perak have only a slight tinge of orange on the back and no cheek patches, and this form agrees very well with the specimen from Malacca, the type of *S. concolor*.

*a.* Skin, skull ♂ Moulmein dist. T. H. Hood.

*b.* Skin " " " T. H. Hood.

*c.* Skin " " " T. H. Hood.

*d.* Skin ♂ " " T. H. Hood.

*e.* Skin " " " T. H. Hood.

*f.* Skin " " " T. H. Hood.

*g.* Skin ♂ " " T. H. Hood.

*h.* Skin " " " T. H. Hood.

*i.* Skin " " " T. H. Hood.

*j.* Skin " " " T. H. Hood.

*k.* Skin Mergui Major Berdmore (1854), A.S.B.

*l.* Skin Lampee, Mergui. J. Anderson.

10-1-82

*m.* Skin ♂ Pilai, Mergui, 7-3-82. J. Anderson.

*n.* Skin ♂ Tiboo Padan, Mergui. J. Anderson.

8-2-82

*o.* Skin ♂ Pilai, Mergui, 6-3-82. J. Anderson.

*p.* Skin ♂ Pilai " 7-3-82. J. Anderson.

*q.* Skin ♂ Mergui, 23-3-82. J. Anderson.

*r.* Skin ♂ " 13-12-81. J. Anderson.

*s.* Skin skull ♂ " 13-12-81. J. Anderson.

*t.* Skin " 14-10-81. J. Anderson.


*w.* Skin, skull Malacca G. Moxon (1847), A.S.B.

[Type of *S. concolor* of *Blyth.*]

*x.* Skin No history A.S.B.

*y.* Stuffed Amherst, Tenasserim J. Armstrong (1877)

*z.* Stuffed, skull. " " J. Armstrong (1877).

*a*2. Stuffed Tenasserim J. Armstrong (1877).

*b*2. Stuffed " E. O'Reilly (1850), A.S.B.

*c*2. Stuffed " E. O'Reilly (1850), A.S.B.

*d*2. Stuffed " Rev. J. Barbe (1846), A.S.B.

[e*2. Stuffed " Rev. J. Barbe, (1846), A.S.B.

[The above four specimens were the types of *S. chrysonotus*, *Blyth.*]

*e*3. -f*3. 2 Alc. Moummein dist. T. H. Hood (1872)

*g*3. -k*3. 4 Alc. Moummein J. Wood Mason.
Sciurus atrodorsalis.


Distribution.—This squirrel has only been found in North Tenasserim, and apparently only to the east of the Salween river; the localities given in the list below “Lower Pegu” and “east of the Irrawaddy river” are somewhat vague and do not seem to be quite reliable.

<table>
<thead>
<tr>
<th>a-e.</th>
<th>5 Skins</th>
<th>South of Irrawaddy</th>
<th>T. H. Hood and Mus. Coll.</th>
</tr>
</thead>
<tbody>
<tr>
<td>f-l.</td>
<td>6 Skins</td>
<td>Moulmein dist.</td>
<td>T. H. Hood</td>
</tr>
<tr>
<td>n-n.</td>
<td>2 Skins</td>
<td>Moulmein dist.</td>
<td>T. H. Hood</td>
</tr>
<tr>
<td>o-φ.</td>
<td>2 Skins</td>
<td>Moulmein dist.</td>
<td>T. H. Hood</td>
</tr>
<tr>
<td>q-α.</td>
<td>11 Skins</td>
<td>Moulmein dist.</td>
<td>T. H. Hood</td>
</tr>
<tr>
<td>b².</td>
<td>Skin</td>
<td>Moulmein dist.</td>
<td>J. Armstrong</td>
</tr>
<tr>
<td>c².</td>
<td>Skin</td>
<td>Moulmein dist.</td>
<td>Purchased</td>
</tr>
<tr>
<td>d².</td>
<td>Skin</td>
<td>Moulmein dist.</td>
<td>Purchased</td>
</tr>
<tr>
<td>e².</td>
<td>Skin</td>
<td>Moulmein dist.</td>
<td>J. Anderson (1870)</td>
</tr>
<tr>
<td>f².</td>
<td>Stuffed</td>
<td>Moulmein dist.</td>
<td>S. R. Tickell, A. S. B.</td>
</tr>
<tr>
<td>g².</td>
<td>Stuffed</td>
<td>Moulmein dist.</td>
<td>W. S. Atkinson, A. S. B.</td>
</tr>
<tr>
<td>l².</td>
<td>Stuffed</td>
<td>Moulmein dist.</td>
<td>J. Armstrong</td>
</tr>
<tr>
<td>l-n²</td>
<td>2 Stuffed</td>
<td>Lower Pegu.</td>
<td>J. Armstrong</td>
</tr>
</tbody>
</table>
| o².  | Stuffed | Tenasserim.         | Major Berdmore (1852), A. S. B.

[Type of S. hyperythus, Blyth.]

Sciurus erythræus.

**Distribution.**—Assam from the Garo hills eastwards, Cachar, Manipur, and Upper Burma.

This species, like the other grizzled squirrels, is an exceedingly variable one, so that it is difficult to say whether it should be treated as a single or as several species; the form in the Garo hills is distinguished at once by its bright red tail of the same colour as the ventral surface (S. erythrogaster Pallas apud Blyth) in the list of specimens "a" to "h" and "z". Eastwards in the Naga hills and about Samagooting the red tail-tip becomes black, specimens "j" to "u" in the list; southward a little in Cachar and Manipur the whole dorsal surface becomes very much darker, so that the extreme forms are almost black, this form was named S. erythrogaster by Blyth and Macroxus punctatissimus by Gray, the specimens are lettered from "v" to "a"; in Assam proper, the valley of the Brahmapootra, the original Garo hill form is found without any trace of the black tail at all, specimens "b" to "g"; finally, in Upper Burma a form is found resembling the Assam variety, but distinguished by generally possessing a narrow median line of the same colour as the back running between the bright chestnut of the rest of the ventral surface; this was described by Anderson as a distinct species under the name of S. gordoni, and is represented in the list by specimens lettered "h" to "r". As in several of the Assam specimens there are traces of this ventral line, there does not seem to be any reason why S. gordoni should remain distinct.

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**Notes.**—S. erythrogaster Dorengo, Garo hills; S. erythrogaster Dimapur, Naga hills; S. erythrogaster Cherrapoonjee, Khasia hills; S. erythrogaster Samagooting, Assam; S. erythrogaster Naga hills.
SCIURUS.

Phyllostomus stygiosus, W. Chennell.

Skin, *A. W. Chennell.

Skin, skull.

Zoological Gardens.

2 Skins, † Sylhet 1 skull.

J. M. Lister.

Chittagong 2 skins.

C. S. Guthrie (1842).

A. S. B.

[Type of S. erythrogaster of Blyth.]

Dikrang, Assam 2 skins.

H. H. Godwin Austen.

Toruputu, Duffla hills 2 skins.

H. H. Godwin Austen.

Assam 2 skins.

J. Anderson.

Skull.


L. skin.

Toruputu, Duffla hills 2 skins.

H. H. Godwin Austen.

Upper Burma 2 skulls.

J. Anderson.

East Naga hills 2 skulls.

H. H. Godwin Austen.

3 skulls, Assam 2 skins.

F. Day [P.], 1876.

Skins, factory.

[Four last are types of S. gordoni of Anderson.]

Bago, Burma, 3-3-75 J. Anderson.

Sawaddy, Burma, 2 skins.

J. Anderson.

J. Anderson.

Skeleton.

Bhamo, Burma, 31-1-75 J. Anderson.

2nd Defile, Irrawaddy and skulls.

J. Anderson.

Bhamo, Burma 3 skulls.

J. Anderson.

Burma.

J. Anderson.

Burma.

J. Anderson.

Shillong, Upper Burma 2 skulls.

F. Jenkins (1847), A.S.B.

Bago, Burma 3 skulls.

T. la Touche.

Sciurus castaneoventris.


Distribution.—Western China and the islands of Formosa and Hainan.

This form does not seem in any way separable from *S. erythrogaster*; it more especially resembles the Assam variety of the preceding species.

a. Stuffed China Rajah R. Mullick (1847), A.S.B.

[Type of S. griseopectus of Blyth.]

b. Stuffed, skull Amoy, China. R. Swinhoe (1860), A.S.B.
Sciurus sladeni.


Sciurus atrodorsalis, apud Jentink Notes Leyd. Mus., v, p. 122 (1883).

Distribution.—Upper Burma; the type was from Thigyain, a town on the Irrawaddy between Mandalay and Bhamo.

   18-1-68.
   [Type of S. sladeni, Anderson.]

b. Stuffed
   Thigyain, Upper Burma J. Anderson.

c-d. 2 Stuffed
   Upper Burma C. Williams (1864), A.S.B.

Sciurus hippurus.


Distribution.—The Malay peninsula from Klang southwards, Sumatra, Java and Borneo; Müller and Schlegel also give Canton, but this is probably a mistake.

a. Skin Borneo E. R. Alston [P.]

b. Stuffed Malacca R. W. G. Frith (1844), A.S.B.

c. Stuffed

Sciurus lokroides.


Distribution.—From Nepal eastwards through the Himalayas to Assam and southwards through Manipur to Arakan, Preparis Island and Upper Burma.


b. Skin Hetoua, Nepal, 17-12-77 J. Scully.

c-d. 2 Skins and skulls Sikkim H. J. Elwes [Ex.]
Sciurus chinensis.

Distribution—South China.

Sciurus tenuis.
Sciurus tenuis, Horsfield Zool. Res. (1824); Cantor J. A. S. B., xv, p. 250;
E. I. Mus., p. 153; Blyth J. A. S. B., xxiv, p. 476; id. Cat., no. 329,
v, p. 125; Thomas P. Z. S., 1886, p. 76.
Sciurus affinis, Horsfield (nee Raffles) Zool. Res. (1824); id. Cat. E. I.
Mus., p. 156.
Sciurus modestus, Müller and Schlegel Tem. Verhandl., p. 96, pl. xxiv
p. 253.

Distribution.—The Malayan peninsula and the islands of
Sumatra, Java, Borneo and Pulo Panjang in the Gulf of Siam;
Müller and Schlegel recorded it from China: this, however, is
probably a mistake.

a. Skin, skull, ♂ Perak, Mus. Collector (Jaffa).
b. Skin, skull Malacca [A. R. Wallace] British Mus. [Ex.]
c. Skin, skull Java Batavian Soc. (1844), A.S.B.

Sciurus lokriah.
Sciurus lokriah, Hodgson J. A. S. B., v, p 232 (1836); McClelland P.Z.S.,
1839, p. 151; Ogilby Royle’s Himal. Bot., p. lxvi; Hodgson J. A. S. B.,
x, p. 915; Gray Cat. Hods. Coll., 1st ed., p. 23; Blyth J. A. S. B., xvi,
p. 873; Horsfield Cat. E. I. Mus., p. 153; Blyth J. A. S. B., xxiv,
p. 475; id. Cat., no. 327, p. 104; Jordon Mamm., p. 169; Blyth J. A. S. B.,
Notes Leyd. Mus., v, p. 120; Thomas P. Z. S., 1886, p. 61.
Sciurus subflaviventris, Gray List Mamm. E. M., p. 144 (1843); Horsfield
Cat. E. I. Mus., p. 152

Nepalese, Lokria; Bhotea, Zhamo; Lepecha, Killi tingdong.
Distribution.—From Nepal eastwards to the Naga hills and
Assam; is also found in the Arakan hills; it is found at a higher
elevation apparently than Sciurus lokroides.

This species can be at once distinguished from Sciurus lokriah
by the white tuft of hair behind the ear-conch and by its brighter
ventral surface.

Valley, 19-6-78.
b-c. 2 Skins, ♂ Sheopuri Ridge, Nepal J. Scully.
Valley, 14-2-78.
d. Skin, Sisasgutu, Nepal J. Scully.
27-12-77.
e. Skin, skull Nepal (Hodgson) India Mus., London.
f. Skin, Darjeeling J. Anderson.
g. Skin, ♂ Sikkim L. Mandelli.
h. Skin, juv. Darjeeling Mrs. Oakes (1843), A.S.B.
Sciurus rufigenis.

Sciurus lokriah, aqūd Jentink Notes Leyd. Mus., v, p. 120 (1883).

Distribution.—This species has only been found hitherto on the slopes of Mt. Mooleyet to the east of Moulmein in Tenasserim at an elevation of about 5,000 ft.
[No specimens in the Museum.]

Sciurus alstoni.


Distribution.—The type and only specimen known is said to have come from Borneo.

a. Skin Borneo? Purchased.

[Type of S. alstoni, Anderson.]

Sciurus melanotis.

Sciurus melanotis, Müller and Schlegel Tem. Verhandl., p. 98, pl. xiv, figs. 4, 5 (1839-44).

Distribution.—Java, Borneo, Sumatra, and Banka.
Müller's name is the correct one for this squirrel since Waterhouse gave no description, but only named it in his catalogue of the Museum of the Zoological Society.

a. Skin Sarawak (Wallace) E. R. Alston [P.]

Sciurus quinquestriatus.


Distribution.—This species has been found only in the Kakhyen hills in Yunnan on the Burmese border.

a-b. 2 Skins, Ponssee, Kakhyen hills, J. Anderson. 2 skulls, 3,200 ft., 4-3-68.
SCIURUS FERRUGINEUS.

Sciurus keraudrenii, Lesson, Cent. Zool., p. 11, pl. i (1830); Blyth J. A. S. B., xvi, p. 872; id. J. A. S. B., xxiv, p. 474; Horsfield Cat. E. I. Mus., p. 156.
Sciurus splendens, Gray P. Z. S., p. 137 (1861).

Distribution.—Arakan and Pegu eastwards; is spread through Siam and Cambodia to the Island of Pulo Condor.

All the specimens in the Museum, except one of the entirely black variety [S. germani Milne Edwards], belong to the typical S. ferrugineus of a pure red colour with black feet and a white tail-tip; the various other forms of the species to which the larger number of the synonyms above have been applied are all Siamese and Cambodian forms; the types of these supposed species were examined by Anderson, who came to the conclusion that they were all accidental or geographical varieties.

| a. Skin | Arakan | Museum Collector, |
| c-d. 2 Skins, skull | Burma | C. Williams (1865), A.S.B. |
| e. Skin | | E. R. Alston [P.] |
| f. Skin, skull | | No history, A. S. B. |
| g-h. 2 Stuffed | Arakan | Sir A. Phayre (1845), A. S. B. |
| j-k. 2 Stuffed | Syriam, Pegu. 1-76 | J. Armstrong |

Var. germani.

| a. Skin | Pulo Condor Isle, Paris Mus. [Ex.] |
|         | Cambodia. |
|         | [M. Germain, Col.] |
Sciurus badging.

? Sciurus notatus, Boddaert Elemch. Anim., p. 119 (1785)*

Distribution.—The Malay peninsula and the Islands of Sumatra, Java and Borneo; also Canton according to Müller.

a. Skin, 9 Taping River, Perak Mus. Collector.
d. Skin, * West Java Purchased.
[Wallace, 1861].
e. Skin, * Purchased.
f. Skin, * Sarawak [Wallace, 1854].
g. Skin, * E. R. Alston [P.]
h. Skin, skull, * W. Rutledge.
j. Skin, skeleton * Zoological Gardens.
k. Skull, skull. * A. S. B.
l-n. 3 Stuffed. * Malay peninsula.
o-p. 2 Stuffed. * G. Moxon, A. S. B.
" " Purchased.
q. Skin, skeleton * E. Lindstedt, A. S. B.
" " Zoological Gardens.

Sciurus prevostii.

Sciurus prevostii, var. sumatrana, var. bangkana and var. bornensis, *S. atricapillus*, and *S. erythrogenys*, *Schlegel Nederl. Tijdsch*, i, pp. 25-29, pl. i, ii (1863).


**Distribution.**—The Malay peninsula, Sumatra, Banka, Billiton, Borneo and Celebes.

| a. Skin | Malacca | E. R. Alston [P.]
| b. Skin | Matang, 9-70 | E. R. Alston [P.]
| c-d. 2 Skins | Borneo | E. R. Alston [P.]
| e. Skin, skeleton | Zoological Gardens.
| f. Stuffed and skull | Malacca | A. Charlton, A. S. B.
| g. Stuffed and skull | R. W. G. Frith, A. S. B.
| h. Stuffed | Borneo | Batavian Soc. (1844) A.S.B.
| j. Alc. | ... | Zoological Gardens.
| k. Alc. | ... | O. L. Fraser.

**Sciurus palmarum.**


The Palm squirrel; Hindustani, Gilheri; Bengali, Beral or Lakki; Maharatta, Kharri; Canarese, Alalu; Telugu, Vodata; Waddurs, Urta.

**Distribution.**—The Palm squirrel is found all over the peninsula of India from the terai region of the Himalayas southwards; westwards it has been got by Blanford at Pishin in Persian Baluchistan, and eastwards it does not seem to occur beyond Calcutta; it is also said to be absent from the east coast country about the Northern Circars and from Malabar.

| b. Skin | Bichiakoh, Nepal terai, 21-12-77. | J. Scully.
| c-d. 2 Skins | Manbhoom | Mus. Collector (1866).
| e. Skin | Calcutta | E. Blyth (1842), A. S. B.
| f-g. 2 Skins | Botanical Gardens | J. Anderson (1870).
| h. Skin, skull. | | |
Sciurus tristriatus.

Sciurus palmarum, apud Elliot, Madr. Journ., x, p. 216 (1839) [pt.]

Cingalese, Leyna.

Distribution—Sikkim Himalayas, Midnapore and through Central and Southern India and Ceylon, especially in forest country; it does not appear to be found in the low country round Madras.

The specimens lettered “a,” “g,” and “h” in the list below from Sikkim and Travancore respectively, differ considerably from the rest of the specimens, and perhaps might be considered to form a distinct variety; the dorsal stripes which are particularly conspicuous in all the other specimens in these above-mentioned ones are reduced to insignificance.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>k. Skin, skull</td>
<td>Hyderabad</td>
<td>H. Gould (1855), A. S. B.</td>
</tr>
<tr>
<td>l. Skin</td>
<td>...</td>
<td>E. R. Alston. [P.]</td>
</tr>
<tr>
<td>m. Stuffed</td>
<td>Calcutta</td>
<td>E. Blyth (1842), A. S. B.</td>
</tr>
<tr>
<td>o. Alc.</td>
<td>...</td>
<td>O. L. Fraser.</td>
</tr>
</tbody>
</table>

(white var.)

Sciurus tristriatus.

Sciurus palmarum, apud Elliot, Madr. Journ., x, p. 216 (1839) [pt.]

Cingalese, Leyna.

Distribution—Sikkim Himalayas, Midnapore and through Central and Southern India and Ceylon, especially in forest country; it does not appear to be found in the low country round Madras.

The specimens lettered “a,” “g” and “h” in the list below from Sikkim and Travancore respectively, differ considerably from the rest of the specimens, and perhaps might be considered to form a distinct variety; the dorsal stripes which are particularly conspicuous in all the other specimens in these above-mentioned ones are reduced to insignificance.

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<tr>
<th>Specimen</th>
<th>Location</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Sikkim</td>
<td>H. J. Elwes [Ex.]</td>
</tr>
<tr>
<td>b-c. 2 Skins</td>
<td>Midnapore, Bengal</td>
<td>E. Blyth, A. S. B.</td>
</tr>
<tr>
<td>e. Skin, skull</td>
<td>Trombay Isle, Bombay, 21-1-75</td>
<td>H. H. Godwin Austen.</td>
</tr>
<tr>
<td>g-h. 2 Skins</td>
<td>Travancore.</td>
<td>Purchased.</td>
</tr>
<tr>
<td>j. Skin</td>
<td>Ceylon.</td>
<td>R. Templeton, A. S. B.</td>
</tr>
<tr>
<td>k. Skin</td>
<td>&quot;</td>
<td>E. L. Layard (1845), A. S. B.</td>
</tr>
</tbody>
</table>

[The above two are types of S. kelaarti, Layard.]

m. Skin  | "        | No history. |
| n-q. 4 Skins, skull | ...... | F. Day [P.] |
r. Skin  | ...... | No history. |
s. Stuffed | Ceylon | E. L. Layard, A. S. B. |

[Type of S. brodei, Blyth.]

1-w. 2 Stuffed | ...... | No history, A. S. B. |
v. Skull       | ...... | No history. |
Sciurus sublineatus.


Distribution.—The hills of Southern India and Ceylon.

a. Skin Nilgiris T. C. Jerdon (1844), A.S.B.
b. Skin Malabar Rev. J. Baker (1859), A.S.B.
c. Skin, skull Ceylon E. F. Kelaart (1857), A.S.B.

Sciurus layardi.


Distribution.—Travancore hills and the highlands of Ceylon.

This squirrel is considered by Jentink to be identical with S. tristriatus, from which it differs however markedly in that the yellow dorsal streak extends a very much shorter distance both anteriorly and posteriorly, and the ventral surface is a bright chestnut instead of a very pale yellow, so that unless intermediate forms are found it would certainly be better to keep them apart.

a. Skin skull Ambegama hills, Ceylon E. L. Layard (1843), A.S.B.

[Type of S. layardi, Blyth.]

Sciurus berdmorei.


Sciurus mouhotii, Gray P. Z. S., p. 137 (1861); Blanford J. A. S. B., xlvi, p. 162.


Distribution.—Tenasserim from Martaban to Mergui; also Cambodia and Cochin China.

a-b. 2 Skins ♂♀ nr. Martaban, Tenasserim E. Blyth (1861), A.S.B.
c. Skin Thaing, Mergui, 28-1-82 J. Anderson.
Sciurus macclelandii.


Lepcha, Kalli gangdin.

**Distribution.**—Sikkim and Assam, extending eastwards through Tibet and the Chinese provinces of Kiangsi, Fokien, and Kwangtung to Formosa and Hainan, and southwards through Manipur to Burma, Tenasserim, the Malay peninsula, Cambodia and Cochin China.

<table>
<thead>
<tr>
<th>a-d.</th>
<th>4 Skins</th>
<th>Sikkim</th>
<th>L. Mandelli,</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-f.</td>
<td>2 Skins</td>
<td>Rinok, Sikkim, 5,000 feet, 17-8-70.</td>
<td>H. J. Elwes [Ex.]</td>
</tr>
<tr>
<td>g.</td>
<td>Skin</td>
<td>Naga, 7,000 feet</td>
<td>W. T. Blanford</td>
</tr>
<tr>
<td>h.</td>
<td>Skin</td>
<td>Darjeeling, 7,000 feet</td>
<td>W. G. Masson [P.]</td>
</tr>
<tr>
<td>j-k.</td>
<td>2 Skins</td>
<td>Naga hills</td>
<td>Mrs. Oakes A. S. B.</td>
</tr>
<tr>
<td>l-m.</td>
<td>2 Skins</td>
<td>East Naga hills, 4-8-75</td>
<td>H. H. Godwin Austen.</td>
</tr>
<tr>
<td>n-p.</td>
<td>3 Skins</td>
<td>E. Naga hills, 2-75</td>
<td>H. H. Godwin Austen.</td>
</tr>
<tr>
<td>q.</td>
<td>Skin</td>
<td>Chota Naga hills, 16-12-75</td>
<td>A. W. Chennell.</td>
</tr>
<tr>
<td>r.</td>
<td>Skin</td>
<td>Naga hills, 17-4-76</td>
<td>A. W. Chennell.</td>
</tr>
<tr>
<td>s.</td>
<td>Skin</td>
<td>Asalu, North Cachar</td>
<td>H. H. Godwin Austen.</td>
</tr>
<tr>
<td>t-u.</td>
<td>2 Skins</td>
<td>Duffa hills, Assam</td>
<td>H. H. Godwin Austen.</td>
</tr>
<tr>
<td>v-w.</td>
<td>2 Skins</td>
<td>Ponsee, Kakhyen hills, 3,500 ft.</td>
<td>J. Anderson (1868)</td>
</tr>
<tr>
<td>x.</td>
<td>Skin</td>
<td>Moulemin</td>
<td>Museum. Collector.</td>
</tr>
<tr>
<td>y-b.</td>
<td>4 Skins</td>
<td>Yè, Tenasserim</td>
<td>Rev. J. Barbe (1843), A.S.B.</td>
</tr>
<tr>
<td>c-d.</td>
<td>2 Skins</td>
<td>2 Types of S. barbei, Blyth.</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Skin</td>
<td>Tenasserim</td>
<td>Major Berdmore (1846), A.S.B.</td>
</tr>
<tr>
<td>f.</td>
<td>Skin</td>
<td>Moupin, Thibet</td>
<td>Paris Museum [Ex.]</td>
</tr>
<tr>
<td>g.</td>
<td>Skin</td>
<td>Miwan, E. Kiangsi</td>
<td>Paris Museum [Ex.]</td>
</tr>
</tbody>
</table>
Sciurus insignis.


Distribution.—Malay peninsula from Selangore southwards, Sumatra, Java and Borneo; Anderson gives Canton, but this is somewhat doubtful.

\( a \). Skin, skull \( \sigma \) Malacca

E. R. Alston [P].

Sciurus vulgaris.

Sciurus alpinus, F. Cuvier Hist. Nat. Mamm., livr. xxiv, with plate (1821).

Distribution.—Europe and Northern Asia, as far south as the Caucasus, Thibet and Northern China.

\( a \). Stuffed England Cornish Institution (1842), A.S.B.
\( b \). Stuffed „ A. D. Bartlett (1840), A.S.B.
\( c \). Stuffed „ W. Davison (1846), A.S.B.
\( d \). Skull „ A. D. Bartlett, A.S.B.
\( e \). Alc. „ Zoological Gardens.

Sciurus fulvus.


Distribution.—South Persia.

This species will probably turn out to be identical with Sciurus syriacus of Ehrenberg, and has in fact been already considered so by Jentink; the types, however, have not been compared, as the only specimen of S. fulvus is the one now in the Museum here, so that for the present it has been left as a distinct species.

\( a \). Skin \( \sigma \) nr. Shiraz, 4,000 feet Sir O. St. John (1870).

[Type of Sciurus fulvus, Blanford.]
The Grey Squirrel.

*Distribution.*—Southern Canada; the United States east of the plains, South Mexico and Guatemala.

a. Skin Ontario, Canada
   b. Skin ♂
   c. Skih
   d. Aec. ♀ North America
   e. Aec.
   f. Skin, ske-leton.
   g. Stuffed North Carolina


Sciurus vulpinus, Gmelin *Syst. Nat.*, i, p. 147 (1788).


Sciurus texianus, Bachman *P. Z. S.*, p. 86 (1835).

The Fox Squirrel.

*Distribution.*—Eastern United States westward to the plains.

a. Skin North America
Sciurus annulatus.


**Distribution.**—Northern Africa from Senegal to Abyssinia.

1. Skin

   Anseba valley, Abyssinia, 4,000 ft., 28-7-68. W. T. Blanford.

2. Skin

   Anseba valley, Abyssinia, 4,000 ft., 4-8-68. W. T. Blanford.

Genus RHINOSCIURUS.


**Rhinosciurus laticaudatus.**


**Distribution.**—The Malay peninsula from Klang southwards and the Island of Borneo.

1. Stuffed

   Malay peninsula

   G. Moxon (1851) A.S.B.

Genus TAMIAS.


Tenotis, *Rafinesque Am. Month. Mag.*, i, p. 302 (1817)*.

**Tamias striatus.**


Tamias striatus, *Baird. N. Amer. Mamm.*, p. 292, pl. xlvi, fig. 2 (1857)*;


The Chipmunk.

**Distribution.**—Canada and the States east of the Rocky Mountains.

1-a. b. 2 Skins

   Ontario

   J. H. Garnier [Ex.]

c. Skin

   ...... No history.
Genus XERUS.


Xerus rutilus.

Sciurus rutilus, Cretschmar Rüppell's Atlas, p. 59, pl. xxiv, (1826); Blanford Abyssinia, p. 278; Jenkinson Notes Leyd. Mus., iv, p. 41.
Xerus dabagala Heuglin Peters. Mitth., p. 17 (1861).
Xerus fuscus Huet Arch. Mus. Paris (2), iii, p. 139, pl. vi, fig., i (1880).

Distribution.—Abyssinia and Somali land across to Gaboon?

b. Skin 1-6-68 W. T. Blanford.
c. Skin Annesley Bay, Massowah 4-1-68 W. T. Blanford.

Xerus erythropus.

Sciurus leuco-umbrinus, Rüppell N. Wirbelth., p. 38 (1835); Blanford Abyssinia, p. 279.

Distribution.—Africa from Senegal to Abyssinia and from Egypt to Zanzibar.

a. Skin Adigrat-Tigré, Abyssinia 8,000 ft., 3-4-68. W. T. Blanford.
b. Skin Adigrat-Tigré, 8,000 ft., 31-3-68. W. T. Blanford.
d. Skin Adigrat-Tigré, 8,000 ft., 5-5-68. W. T. Blanford.
e. Skin Bedjuk, Anseba valley 4,500 ft., 16-7-68. W. T. Blanford.
g. Skin Senafé-Tigré, 7,500 ft., 27-3-68. W. T. Blanford.
h. Skin Adigrat-Tigré, 8,000 ft., 21-4-68. W. T. Blanford.

Distribution.

Xerus capensis.

Sciurus namaquensis, Lichtenstein Cat. Rerum Nat. Rariss, p. 2 (1793)*.
MAMMALIA.


*Distribution*.—South Africa.
a. Stuffed South Africa E. L. Layard (1859), A.S.B.

Genus **PTEROMYS**.

*Pteromys*, *G. Cuvier Tableau Gen. in Leçons d'Anat. Comp.*, i, tabl. i (1800*).

The following key is constructed to enable the reader to distinguish the typical forms only. All the species of this genus resemble one another so closely and so run into one another that it is impossible to construct a key into which every specimen will fit.

*Key of the Indian Species.*
a. Dorsal surface dark brown or black; no tinge of reddish.

b. Hairs of dorsal surface but slightly tipped with white.

\[P. \text{oral}, \text{p. 33}.\]

b\(^2\). Hairs strongly tipped with white, giving the dorsal surface a hoary grizzled appearance. \[P. \text{cinereus}, \text{p. 33}.\]

a\(^2\) Dorsal surface with a reddish or yellowish tinge, never black or brown.

c. No shoulder patch; dorsal surface comparatively uniform.

d. Fur of dorsal surface red, with well-developed white tips producing a hoary red appearance; tail longer than head or body . . . \[P. \text{alborufus}, \text{p. 34}.\]

d\(^2\). Fur of dorsal surface dark maroon with but slight traces of the white tips to the hairs.

\[P. \text{yunnanensis}, \text{p. 35}.\]

d\(^3\). Dorsal fur grizzled gray, more reddish on the parachute, tail shorter than the head and body together, body about 16, tail about 12 inches.

\[P. \text{albiventer}, \text{p. 35}.\]

c\(^3\). Dorsal fur generally dark maroon and forming a strong contrast to that of the shoulders and parachute, which is yellow, usually but slight traces of grizzling.

\[P. \text{magnificus}, \text{p. 35}.\]

c\(^3\). Resembling *P. albiventer*, but somewhat smaller (body about 13, tail about 13 inches), with the top of the head
of a pure grey colour, contrasting with the colour of the rest of the body.  

P. caniceps, p. 36.

Pteromys oral.

Var. A.—typicus.

Sciurus petaurista, Pallas Miscell., p. 54, pl. vi. figs. 1, 2 (1766) [pt.]*.
Pteromys petaurista, Müller and Schlegel Tem. Verhändl., p. 106 (1839-44);  
Blyth f. A. S. B., x, p. 919; id. f. A. S. B., xvi, p. 865; Horsfield Cat.  
E. I. Mus., p. 159; Blyth f. A. S. B., xxviii, pp. 276, 286; id. Cat., no. 291,  
p. 94; Jerdon Mamm., p. 174.
Pteromys philippensis, apud Elliot Madras Journ., x, p. 217 (1839).  
Pteromys oral, Tickell Calc. Journ. N. H., ii, p. 401, pl. xi (1842); Blyth  
Pteromys griseiventer, Gray List Mamm. B. M., p. 133 (1843); Blyth  

Var. B.—cineraceus.

Pteromys petaurista, apud Walker Cat. Journ. N. H., iii, p. 266 (1843);  
Horsfield Cat. Mamm. E. I. Mus., p. 159 [pt.]
Pteromys petaurista var. cineraceus, Blyth f. A. S. B., xvi, p. 865 (1847).  
Pteromys cineraceus, Blyth f. A. S. B., xxviii, p. 276 (1859); id. Cat.,  
no. 292, p. 94; id. f. A. S. B., xlv, Burma List, p. 35; Blanford  
P. Z. S., 1886, p. 67.

Distribution.—The typical variety is found all over the peninsula of India and Ceylon wherever there are forests; it is specially abundant in the Malabar country. The var. cineraceus is apparently only found in Arakan.

This species including P. cineraceus and the following ones, namely, P. alborufus, P. yunnanensis, P. magnificus, P. albiventer and P. caniceps, all seem very closely allied to one another, and it is perhaps more as a matter of convenience than as a representation of their true relationship to one another that they should be kept separate; as far as their skulls are concerned it is impossible to separate them, and although typical specimens of these several so-called species are easily distinguished from one another, there are in the Museum collections intermediate forms between most of them.

The prevailing colour of Pteromys oral is dark brown or black, with only slight traces of white tips to the dorsal fur. These white tips are much more developed in P. cineraceus, the typical forms of which seem to be confined to Arakan. Southwards in Burma and Tenasserim, and northwards in Assam, the dark brown or black ground colour is replaced by bright red, and this variety seems to correspond to the species described by Milne Edwards from Moupin in Thibet (P. alborufus). The species described by Anderson from Momien in Yunnan resembles P. alborufus, but is
of a darker colour and has lost the white tips to the fur; this form is also distinguished by its long and very dark tail.

Pteromys magnificus from Nepal and Sikkim seems at first to be a well marked species with its very dark maroon dorsal surface, with hardly any trace of the white tips to the fur; there is however a specimen (P. magnificus, "g" in the list below) which is quite intermediate between the typical P. magnificus and the typical P. alborufa; in this specimen the maroon of the back is much lighter and the white tips to the fur producing the grizzled appearance so characteristic of P. alborufa are present, though in not so marked a form.

Pteromys caniceps seems constantly smaller than P. magnificus and P. albiventer, and since the skulls in the Museum are all immature, there is a strong suspicion that this will turn out to be the young of P. magnificus or of P. albiventer, but this will have to be proved by further investigations.

In Pteromys albiventer the contrast between the colour of the back and the colour of the parachute is not so marked as in P. magnificus: the shoulders, however, are somewhat yellow and traces of the white tips to the fur begin to appear: this latter feature is most marked in the Kashmir and Gilgit specimens.

Var. A.—typicus.

- **a.** 2 skins and skull. Travancore Purchased.
- **b.** Skin Ceylon Columbo Museum.
- **c.** 2 skins and skeletons. W. Rutledge.
- **d.** Stuffed Travancore Marquis of Tweedale (1846), A.S.B.
- **e.** Stuffed Midnapore P. Homfray (1843), A.S.B.
- **f.** 3 skulls Manbhum A.S.B.
- **g.** Ale. juv. W. Theobald.

Var. B.—cinereus.

- **a.** Skin and skull. Arakan Sir A. Phayre (1844), A.S.B.
- **b.** Skin skull. [Type of Pteromys cinereus, Blyth.]
- **c.** Skin juv. Arakan Museum Collector (1871).
- **d.** Stuffed Arakan W. Rutledge (1870).

Pteromys alborufus.


Distribution.—Assam and Burma southwards to Tenasserim; also obtained from Moupin in Eastern Thibet.
PTEROMYS.

a. Skin Assam
b. Skin Naga hills
c. Skin skull, Samagooting, Assam
d. Skin juv. Cherrapoonjee, Assam
e. Skin Pegu
f. Skin ♀ Mergui, 21-1-82
g. Skin, skeleton Arakan
h. Skin Arakan?
j. Stuffed ♀ Tenasserim
k. Stuffedj Lampnee, Mergui, 13-1-82.

Pteromys yunnanensis.


Distribution.—Has been got hitherto only from Momien in Yunnan.

a-d. 4 Skins, Momien, Yunnan, J. Anderson: 5,000 ft., 6-8.

[Types of Pteromys yunnanensis, Anderson.]

Pteromys magnificus.

Sciuropterus nitidus, apud Hodgson, P. Z. S., p. 98 (1835).

Sciuropterus chrysothryx, Hodgson J. A. S. E., xili, p. 67, with plate (1844).

Distribution.—Himalayas from Nepal to Sikkim; has also been got on the Khasia hills.

a. Skin Nepal (Hodgson)
b. Skin, skull Sikkim
c. Skin, juv. 


Pteromys albiventer.


**Distribution.**—The North-west Himalayas from Ladak to Nepal.

| a. Skin, skull | Ladak | J. Biddulph. |
| b. Skin | Sonamarg, Kashmir, 18-8-72. | F. Stoliczka. |
| d-f. 3 Skins | Kashmir | Purchased. |
| g. Stuffed | Simla | J. N. Thomas (1845), A.S.B. |

**Pteromys caniceps.**


**Distribution.**—Himalayas from Gurwhal to Sikkim.

| b-d. 3 Skins | Sikkim | L. Mandelli. |
| e. Skin | Gumphar, Darjeeling, J. Knight, 2,000 ft. |
| f. Stuffed | Darjeeling | Mrs. Oakes (1842), A.S.B. |

**Pteromys nitidus.**

Sciurus petaurista, *Pallas Miscell. Zool.,* p. 56 (1766) [pt.]*.


**Distribution.**—The Malay peninsula from Klang in Selangore
southwards, the islands of Sumatra, Java and Borneo, also Siam and Formosa.

a-b. 2 Skins Siam [Finlayson] Malacca India Mus., London. Rev. F. Lindstedt (1845), A.S.B.
c. Stuffed Malacca Rev. F. Lindstedt (1845), A.S.B.
e. Stuffed

Genus SCIUROPTERUS.


Key of the Indian Species.

a. Larger forms, length without tail more than 7½ inches.

b. Pale grayish above; outer edge of hind-foot provided with a thick brush of hairs extending from the tarsal joint to the base of the 5th toe; skull long and narrow, 1'95 inches long by 1'55 inches broad.  

S. fimbriatus, p. 37.

b². Rather darker above; no brush to the hind-feet, which are much smaller than in S. fimbriatus; skull smaller and broader, 1'45 inches long by 1'15 inches broad.

S. alboniger, p. 38.

b³. Grayish above, with black tufts of hair at the base of the posterior margin and the external surface of the upper angle of the ear; teeth ridged.  

S. fuscocapillus, p. 39.

b⁴. Above rufus; tail short, 5 inches; ears with tufts of long hair at the anterior and posterior angles of the ear-conch; tail rather bushy.  

S. pearsoni, p. 38.

b⁵. Resembling the last in size, but of a lighter grayish colour, with markedly distichous tail and no ear tufts.

S. sagitta, p. 39.

a². Much smaller, about 5½ inches long with tail; above rufus; tail above brown, below at base rufous.

S. spadaceus, p. 40.

Sciuropterus fimbriatus.


Distribution.—North-west Himalayas from Gilgit to Kumaon.
a. Skin, skull Chitral, 5,000 ft. G. M. Giles.
b. Skin ♀ Naltar valley, Gilgit, J. Scully.

Sciuropterus alboniger. 


Distribution.—Himalayas, Nepal to Bhootan, Assam, Yunnan and Cambodia.

a. Skin. Darjeeling Mrs. Oakes (1842) A.S.B.
b. Skin, skeleton and visera in alc. Garo hills H. L. Haughton (1867).
d-e. 2 Skins Momien, Yunnan, 6-68 J. Anderson (1870).
g-h. 2 Skins ♀ Cachar hills W. Rutledge.
j. Stuffed Darjeeling J. Grace (1853) A.S.B.
k. Skull Naga hills A. W. Chennell.
l. Skin Shillong T. la Touche.

Sciuropterus pearsonii. 


Distribution.—Sikkim, Assam, Munipur and Yunnan; it has been also recorded from Formosa and Sumatra.

a. Skin Assam A. W. Chennell.
b. Skin Naga hills H. H. Godwin Austen.
Sciuropterus fuscocapillus.


Distribution.—The Nilgiri hills, Travancore and the highlands of Ceylon.

[No specimen in the Museum.]

Sciuropterus sagitta.


Distribution.—Burma, Pegu and Tenasserim, Malay peninsula, Cambodia, and the islands of Java and Banka.

The above synonymy is given under the authority of Anderson, who identified S. phayrei with S. horsfieldii of Waterhouse, and of Thomas, who identifies S. horsfieldii with S. sagitta of Linnaeus, but it does not seem unlikely that S. phayrei may be really an independent species: it certainly seems much smaller than the common squirrel, to which as to size S. sagitta is compared by Linnaeus.

a-b. 2 Skins Burma Sir A. Phayre and Major Berdmore.
c-d. 2 Stuffed " Sir A. Phayre and Major Berdmore.

[Types of S. phayrei, Blyth.]
**Sciuropterus spadaceus.**


**Distribution.**—Only known from Arakan. It has been supposed by Thomas that this species is identical with *S. lepidus* of Horsfield, but until further evidence can be adduced by the comparison of specimens it may as well remain distinct.

<table>
<thead>
<tr>
<th>a-c. 3 Skins</th>
<th>Arakan</th>
<th>Sir A. Phayre. A.S.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. Skin</td>
<td>Moulmein</td>
<td>J. Davis,</td>
</tr>
<tr>
<td>e. Alc.</td>
<td>Burma</td>
<td>J. Wood Mason (1872).</td>
</tr>
</tbody>
</table>

**Sciuropterus volucella.**

*Sciurus* volans, *Linneus Syst. Nat.*, 12th ed. i, p. 88 (1766) [pt.].


**Distribution.**—The whole of North America southwards to Guatemala.

| a. Skin | Ontario, Canada | J. H. Garnier [Ex.] |

**Genus EUPETAURUS.**

*Eupetaurus*, *Thomas J. A. S. B.*, lvii, p. 257 (1888). *Type* *E. cineraceus.*

**Eupetaurus cineraceus.**


**Distribution.**—Thibet; has been procured at Gilgit and also in Eastern Thibet north of Sikkim.

| a. Skin and skull | Gilgit valley | G. M. Giles. |
| [Co-type of *E. cineraceus*, *Thomas.*] |
| b. Skin and skull | ...... | Purchased. |
Genus **SPERMOPHILUS.**


**Spermophilus bactrianus.**

*Spermophilus bactrianus*, *Scully* *J. A. S. B.*, lvi, p. 70 (1887).

*Distribution.*—Afghan Turkestan.

- Skin, skull ♀ Khamiab, Oxus R., C. E. Yate.
- 12-6-86.

[Type of *Spermophilus bactrianus*, *Scully.*]

Genus **ARCTOMYS.**

Arctomys, *Schreber Säugeth.*, iv, p. 721 (1792).

In the following catalogue of the Marmots of Central Asia, Blanford's paper (*J. A. S. B.*, xliv, p. 113) has been followed. All the species found in Central Asia are represented in the Museum collections with the exception of *Arctomys robustus* of Milne Edwards (see below under *A. himalayanus*).

**Key of the Indian Species.**

*a.* Tail less than one-third of the length of the head and body; colour grayish yellow with diffused black tips to the hairs; length 22 to 24 inches.  

- **A. himalayanus**, p. 41.

*a³.* Tail one-third or more than one-third of the head and body.

- **b.** Smaller, length 14 to 16 inches; colour grayish yellow.  
  - **A. hodgsoni**, p. 42.

- **b³.** Larger, length about 25 inches; colour rufous yellow with a black patch on the back and ferrugineus below.  
  - **A. caudatus**, p. 43.

**Arctomys himalayanus.**


*Arctomys himalayanus* *potitus tibetensis* *hodie*, *Hodgson* *J. A. S. B.*, xii, p. 409 (1843).


*Arctomys tataricus*, *Jameson L'Instit.*, xv, p. 384 (1847)*.

*Arctomys tibetanus*, *Adams P. Z. S.*, p. 521 (1858).

*Distribution.*—The Himalayas and Thibet from Western Ladak eastwards, the Kuenlun Mountains south of Yarkand, and the
Keria Mountains, which form the barrier between the valley of Tarim and the plateau of north Tibet.

Arctomys robustus of Milne Edwards (Rech. Mamm., p. 309) was given by Blanford in his paper on Himalayan Marmots as a synonym of A. himalayanus; Buchner in his accounts of Przewalski's Mammals holds a contrary opinion and distinguishes A. robustus by its larger size, its darker back and sides, and the patch of rusty brown at the sides of the snout and round the ears; none of these characters are very decisive ones, but for the present A. robustus is left separate.

*a-b.* 2 Skins, skulls.  
♂ Kitchik Yilak, Sanju G. Henderson.  

c. Skin  
Changchenmo valley, R. Lydekker.  
Ladak.

d. Skin  
Tibet  
B. H. Hodgson (1845), A.S.B.

e. Skin  
juv.  
B. H. Hodgson (1845), A.S.B.

f. Stuffed, skulls.  
♀ Kitchik Yilak, Sanju G. Henderson.  
Pass, Kuenlun Mts, 17-9-70.

**Arctomys hodgsoni.**


Arctomys bobac, apud Blyth, Cat., no. 348, p. 108 (1863) [pt.]

Arctomys hodgsoni, Blanford Yarkand Mammals, p. 35 (1876).

**Distribution.**—Himalayas of Nepal, Sikkim and Bhootan.

Blanford's name has been adopted in preference to A. hemachalanus, which is synonymous with A. himalayanus and cannot therefore stand.

It is a curious fact that no truly feral example of this species has yet been obtained; all the specimens mentioned below were caged.

*a.* Skin juv.  
♂ Bhootan  
J. Wood Mason.

*b.* Skin, skeleton  
"  
W. Rutledge [P.]

c. Skin, skeleton  
"  
W. Rutledge [P.]

d-e. 2 Skins, 2 skulls.  
♂  
W. Rutledge.

*f-j.* 4 Skins, 4 skulls.  
♀  
W. Rutledge.

*k.* Stuffed  
♂  
G. A. Bushby (1848), A.S. B.

*l.* Skeleton  
♂  
W. Rutledge.

*m.* Skeleton  
Darjeeling  
Mrs. Turnbull.

*n.* Skin, skeleton  
♂  
Zoological Gardens.

o. Alc.  
♀  
W. Rutledge.

*p.* Skeleton  
♂  
W. Rutledge.
Arctomys caudatus.


Arctomys bobac, apud Adams, P. Z. S., p. 521 (1858); Blyth Cat., no. 348, p. 182.

Arctomys tibetana, apud Falconer Palaont. Memoirs, i, p. 583 (1868).

The Red Marmot; Drowne or Drim of Kashmir; Pya of Ladak, Distribution.—The north-western parts of Kashmir in the Deosai, Dras, and Astor districts.

a. Skin, skull ♀ Matayon, Zogi-la Pass, G. Henderson.†
   nr. Dras, Kashmir, 20-6-70.

   Kashmir, 11,000 ft., 20-5-80.

   Kashmir, 12,000 ft., 7-80. [J. Biddulph.]

d-h. 5 Skins Kaskasu Pass, between F. Stoliczka.
   Pamir and Yarkand, 13,000 ft., 15-5-74. [Type of A. aureus, Blanford.]

j. Skin Kashmir
   T. C. Jerdon.

k. Skull T. Brownlow, A. S. B.

Arctomys aureus.


Distribution.—The Pamir and country between the Pamir and Yarkand.

a. Skin, skull Kaskasu Pass, between F. Stoliczka.
   Pamir and Yarkand, 13,000 ft., 15-5-74.
   [Type of A. aureus, Blanford.]

b-c. 2 Skins Kaskasu Pass, between F. Stoliczka.
   Pamir and Yarkand, 13,000 ft., 15-5-74.

da. Skin, skull Little Pamir, 13,000 ft., 5-86.

e-f. 2 Skulls Kaskasu Pass. F. Stoliczka.

Arctomys dichrous.


† See Henderson and Hume, Lahore to Yarkand, p. 83.

Distribution.—Hills north of Kabul (Anderson), Thian Shan (Severtzoff) and the Juldus valley (Przewalski).

a. ? Skull Afghanıstan. Sir A. Burns, A.S.B.

Arctomys marmota.
Arctomys marmota, Schreber Säugeth., iv, p. 722 (1792); Blasius Säugeth. Deutsch., p. 280.

Distribution.—The higher regions of the Alps, Pyrenees and Carpathians.
a. Stuffed ..... Mrs. Turnbull (1867).

Arctomys monax.
Arctomys monax, Schreber Säugeth., iv, p. 737 (1792); Allen Monographs N. Amer. Rodents, p. 911.
Arctomys empetra, Sabine Linn. Trans., xiii, p. 584 (1822).

Distribution.—North America from Hudson’s Bay to the Carolinas and from the Atlantic to Minnesota.
a-b. 2 Skins Ontario, Canada J. H. Garnier [Ex.]
c. Skin, skull ♀ ...... W. Rutledge.

Genus CASTOR.


Castor fiber.
Castor canadensis, Kuhl Beitr. Zool., p. 64 (1820).
Castor americanus, Richardson Back’s Arctic Exped., p. 494 (1836)*.
Castor europaeus, Owen Brit. Foss. Mamm., p. 190 (1846); Blyth Cat., no. 404, p. 123.

The Beaver.

Distribution.—Europe, Siberia and North America, though now extinct in the greater part of Europe and also in the Eastern States of North America.
a. Stuffed Norway. Christiania University (1844), A. S. B.
Genus **MYOXUS.**

Myoxus, Schreber Säugeth., iv, p. 824 (1792).

**Myoxus pictus.**

Myoxus pictus, Blanford Ann. Mag., N. H. (4) xvi, p. 311 (1875); id. Persia, p. 51, pl. iv, fig. 2.

**Distribution.**—Persia north of Ispahan.


[Co-type of M. pictus, Blanford.]

**Myoxus glis.**


**Distribution.**—Central and Southern Europe.

a. Stuffed. France A. Malherbe (1854), A.S.B.

Genus **MUSCARDINUS.**

Muscardinus, Kaup Entw. Europ. Thierw., p. 139 (1829)*.

**Muscardinus avellanarius.**


**Distribution.**—The whole of Europe, including the British Islands.


Genus **HYDROMYS.**


**Hydromys chrysogaster.**

Distribution.—Queensland, New South Wales and Tasmania.

a. Stuffed. Tasmania. C. G. T. Lloyd (1860), A.S.B.

Hydromys fulvolavatus.

Hydromys fulvolavatus, Gould Mamm. Austr., iii, pl. xxv (1863).
Hydromys leucogaster, apud Blyth, Cat., no. 399, p. 122 (1863).

Distribution.—Southern and South-eastern Australia.

| a-b. 2 Stuffed | Port Philip, Melbourne | Mr. Benson (1849), A.S.B. |
| c-d 2 Skins  | South Australia | Adelaide Mus. [Ex.] |
| e. Skin | Australia | Adelaide Mus. [Ex.] |

Hydromys leucogaster.


Distribution.—Australia, New South Wales, and Queensland.

a. Alc. Queensland Brisbane Mus. [Ex.]

Genus PLATACANTHOMYS.


Platacanthomys lasiurus.


Distribution.—South Malabar and Travancore.

| a-m. 12 Skins | Travancore | Rev. H. Baker (1870). |
| n-g. 4 Stuffed | South Malabar | Rev. H. Baker, (1859) A.S.B. |
| r. Skeleton | Travancore | Rev. H. Baker. |
| s. Skeleton mtd. | | |
| t-u. 2 Alc. 2 skulls | | Rev. H. Baker. |
| v-a. 6 Alc. ♂♀ | Trevandrum | H. S. Ferguson. |
| and 4 juv. | | |

Genus GERBILLUS.

Psammomys, Cretzschmar Rüppell's Atlas, p. 56 (1826). Type, G. obesus.
Key of the Indian species.

a. Larger, head and body 5 to 7 inches in length.

b. With large ears; tail dark banded above and below; above rufous brown, below white; feet naked below; outer wall of the antorbital foramen rounded and projecting in front; bullæ moderate. . . . . G. indicus, p. 47.

d. Ears moderate; tail dark banded above, light below; feet thickly haired anteriorly; outer wall of antorbital foramen perpendicular; bullæ much inflated.

G. erythrurus, p. 49.

c. Tail without hair, more than 1½ times head and body.

d. Proximal half of the sole naked; six distinct distinct planta pads. . . . . . G. nanus, p. 51.

d. Sole hairy throughout; no distinct pads.

G. gleadowi, p. 52.

c. Tail without hair, shorter than the head and body.

G. swinhoei, p. 52.

Gerbillus indicus.

*Dipus indicus*, Hardwicke Linn. Trans., viii, p. 279, pl. vii (1804).


*Gerbillus cuvieri*, Waterhouse *P. Z. S.*, p. 56 (1838); *Hutton and Blyth J. A. S. B.*, xv, p. 139.


Distribution.—Found throughout India from the Himalayas southward, including Ceylon, in sandy and dry places; extending eastwards as far as Lower Bengal only and westwards to Baluchistan (Blanford).

The southern form is distinguishable as a well marked geographical race, which was described by Waterhouse in 1838 as *G. cuvieri*; it is distinguished from *G. indicus* by its longer tail,
its longer tarsus, and by the colour of the tarsus, which is blackish; the differences of the tarsus and tail of the two races are shown in the accompanying measurements. It is not easy to separate the synonymy of the two races, as the southern variety has been almost entirely overlooked hitherto; this was in consequence of the fact that Blyth's specimens from Midnapur, which he naturally considered belonged to the northern race, were really more nearly allied to the southern race.

As will be seen by the accompanying table, the varieties run into one another in the Centra Provinces.

<table>
<thead>
<tr>
<th>Lettering of specimen</th>
<th>Tarsus</th>
<th>Tail with hairs</th>
<th>Body and head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern race var. typicus.</td>
<td>t. Allahabad</td>
<td>1'07</td>
<td>6'80</td>
</tr>
<tr>
<td></td>
<td>u. Berhampore</td>
<td>1'10</td>
<td>6'75</td>
</tr>
<tr>
<td></td>
<td>p. Baluchistan</td>
<td>1'05</td>
<td>6'80</td>
</tr>
<tr>
<td>Southern race var. cuvieri.</td>
<td>oo. Columbo</td>
<td>1'25</td>
<td>8'30</td>
</tr>
<tr>
<td></td>
<td>dd. Poona</td>
<td>1'25</td>
<td>8'50</td>
</tr>
<tr>
<td>Intermediate.</td>
<td>a. Goona</td>
<td>1'07</td>
<td>7'20</td>
</tr>
<tr>
<td></td>
<td>b. Banda</td>
<td>1'20</td>
<td>7'10</td>
</tr>
</tbody>
</table>

**Var A.—typicus.**

| a-b. 2 Skins | " | Pishin, Persian Baluchistan, 10-2-72. |
| c-d. 2 Skins, 2 skulls | | Agra district |
| e-g. 3 Skins, 1 skull | | Maunbhoom |
| h-l. 4 Skins juv. | | Mus. Collector (1866). |
| m. Skin | | R. C. Beavan. |
| n. Skin | | W. Theobald, A.S.B. |
| o-q. 3 Alc. 2 | | W. T. Blanford. |
| r. Alc. | | E. Saunders. |
| s. Alc. | | F. Stoliczka. |
| u. Alc. 1 skull | | W. Theobald, A.S.B. |
| v. Skeleton | | W. Theobald, A.S.B. |
| w-x. 2 Skulls | | | |
| y. Skull | | | |
| s. Skull | | | |
| a-b. 2 Alc. 2 | | | |
| c-d. 2 Alc. 2 | | | |
| e. 2 Alc. | | | |
| f. 2 Alc. | | | |
| g. 2 Alc. | | | |

**Var B.—cuvieri.**

| 1-b. 2 Skins, 2 skulls | | Nilgiris, Madras |

W. T. Blanford.  
Agra Museum.  
Mus. Collector (1866).  
R. C. Beavan.  
W. Theobald, A.S.B.  
W. T. Blanford.  
E. Saunders.  
F. Stoliczka.  
J. Cockburn (1872).  
W. Theobald, A.S.B.  
W. Theobald, A.S.B.  
A.S.B.  
A.S.B.  
W. T. Blanford.  
A. Barclay.  
A. Barclay.  
J. A. Murray.  
J. A. Murray.  
J. A. Murray.  
R. H. Beddome.
GERBILLUS.

Gerbillus persicus.

Gerbillus persicus, Blanford Ann. Mag. N. N. (4), xvi, p. 312 (1875); id. Persia, p. 66, pl. vii, fig. 1.

**Distribution.**—Persian plateau north and south.

This species is allied to G. indicus; it is distinguished by its dusky greenish soles, the absence of the dark line below the tail, and by its skull. In G. indicus the part of the skull above the foramen magnum when viewed from behind exceeds in height the vertical extent of the foramen magnum itself; in G. persicus the reverse holds good. The specimen "c" in the list below has a hairy tarsus and is doubtfully referred to G. persicus.

  [Type of the G. persicus, Blanford.]

- **b. Alc. juv.** Karman, S. Persia W. T. Blanford.

- **c. Alc. skull juv.**,,,,,, W. T. Blanford.

**Gerbillus erythrousus.**


**Distribution.**—Afghan Turkistan and Afghanistan proper extending south to Kandahar and west to South Persia.

There seems to be no reason why the Balkh Gerbille should not be referred to G. erythrousus; the skin agrees very well with those of this species in the Museum and the skull has the same extraordinarily inflated tympanic bulla so characteristic of G. erythrousus, and also resembles it in other respects.


- **b. Skin** Afghanistan (Griffiths) India Mus., London.
GERBILLUS MERIDIANUS.

Mus meridianus, *Pallas Reise*, ii, p. 702 (1773)*.
Dipus longipes, *Schreber Säugeth.*, iv, p. 856 (1792).

**Distribution.**—The whole desert region of Central Asia from the north of Pekin to Yarkand; also the country round the Caspian sea.

The above synonymy is copied from Bächner’s account of Przewalski’s Mammals; Bächner believes that the curious semi-circular flap over the nose which was the character chiefly relied on by Blanford in distinguishing the Yarkand species, *G. cryptorhinus*, is purely artificial and can be easily produced by immersing the fresh animal in alcohol (cf. Lateste *Actes Soc. Linn. Bordeaux*, xxxix, p. 267, 1885); he therefore identifies *G. cryptorhinus* with *M. meridianus* of *Pallas*.

\[
\begin{align*}
a. \text{ Skin} & \quad \text{Kargalik, Yarkand} & \quad \text{F. Stoliczka.} \\
& \quad \text{[Type of G. cryptorhinus, Blanford.]} \\
\text{[Type of G. cryptorhinus, Blanford.]} & \quad \text{[Type of G. cryptorhinus, Blanford.]} \\
b-e. \text{ 4 Skins, 2 skulls} & \quad \text{Kargalik, Yarkand} & \quad \text{F. Stoliczka.} \\
& \quad 5-11-73. \\
f. \text{ Skin} & \quad \text{Yarkand, 20-5-74} & \quad \text{F. Stoliczka.} \\
g-j. \text{ 3 Skins} & \quad \text{Yangthissar, Yarkand} & \quad \text{F. Stoliczka.} \\
& \quad 4-74. \\
k. \text{ Skin} & \quad \text{Yarkand} & \quad \text{F. Stoliczka.} \\
l. \text{ Alc. skull} & \quad \text{Yarkand} & \quad \text{F. Stoliczka.} \\
& \quad \text{[Co-type of G. cryptorhinus, Blanford.]} \\
m-n. \text{ 2 Alc.} & \quad \text{Turkestan} & \quad \text{C. Ellis.} \\
\end{align*}
\]

**Gerbillus hurrianae.**


*Gerbillus erythrourus*, *apud Jerdon Mamm.*, p. 185 (1867).
GERBILLUS.

Distribution.—Afghanistan and Baluchistan, extending eastwards into Sind and the Punjab as far as Agra.

a. Skin Afghanistan (Griffith) India Mus., London.
b. Skin ① Dasht, Baluchistan, W. T. Blanford.
30-1-72.
c-d. 2 Skins ① Bahu Kalat, Baluchistan, W. T. Blanford.
2-2-72.
e-f. 2 Skins N. W. of Sehwan, Sind, W. T. Blanford.
14-2-75.
g. Skin Hissar dist., Punjab T. C. Jerdon.
h-j. 2 Skins Agra dist., N.-W. P. Agra Mus.
k-l. 2 Alc. ① skull Dasht R., Baluchistan W. T. Blanford.
m. Alc. skull ① Afghan. "(Griffith)
A. Belletty.

Distribution.—Baluchistan and Abyssinia.

Mr. Thomas has kindly examined the Abyssinian specimens named by Blanford, Dipus gerbillus Oliv., and has pronounced them indistinguishable from Gerbillus nanus of Persia also discovered and named by Blanford.

[Type of G. nanus, Blanford.]

b-e. 4 Alc. & skulls Zoulla, Annesley Bay, W. T. Blanford.
2 ① ① Abyssinia.

Gerbillus nanus.

Dipus gerbillus, Blanford Abyssinia, p. 284 (1870).
Gerbillus nanus, Blanford Ann. Mag. N. H. (4), xvi, p. 312 (1875); id. Persia, p. 72, pl. v, fig. 1.

Distribution.—Baluchistan and Abyssinia.

Mr. Thomas has kindly examined the Abyssinian specimens named by Blanford, Dipus gerbillus Oliv., and has pronounced them indistinguishable from Gerbillus nanus of Persia also discovered and named by Blanford.


b-e. 4 Alc. & skulls Zoulla, Annesley Bay, W. T. Blanford.
2 ① ① Abyssinia.
Gerbillus gledoawi.


Distribution.—Sind and Rajputana.

The first examples of this species were collected in the Rohri District of Upper Sind; the species appears to be closely allied to G. nanus from which it differs chiefly in having hairy instead of naked palms and soles.

a-b. 2 Alc. Rajputana N. Belletty.

Gerbillus swinhoei.


Distribution.—Afghanistan, between Kandahar and the Khojak Pass.

This species resembles G. nanus of Blanford; it seems however to be distinguished by its tail, which is much shorter, 3.1 inch, instead of 4.5 as in G. nanus, and by possessing a black pencil which is not present in the other species.

[No specimens in the Museum.]

Gerbillus pyramidarum.


Distribution.—Egypt.

a. Alc., skull & Heluan, Egypt Purchased.

Gerbillus obsesus.

Psammomys obsesus, Cretzschmar, Räppell's Atlas, p. 58, pls. xxii, xxiii, (1826); Blyth Cat. no. 355, p. 111.

Gerbillus robustus, Loche Cat. Mamm. Ois. Alg., sp. 57 (1858)*.

Gerbillus savii, Loche Expl. se. de l'Aig. Mamm., sp. 62 (1867)*.

Gerbillus elegans, Heuglin Reise N. O. Afrika, ii, p. 80 (1877)*.

Psammomys rouderei, Lataste, Le Nat., p. 492 (1881).


Distribution.—North Africa, from Algeria to Egypt and possibly southwards to Senaar and Senegal.

a. Stuffed Egypt E. Rüppell, A.S.B.
Genus **ISOMYS**.


**Isomys variegatus.**


*Distribution.*—North-East Africa.

 a. Alc. 8 Cairo, Egypt Purchased.

Genus **NESOKIA**.

Nesokia, Gray Ann. Mag. N. H., x, p. 265 (1842); Type, N. hardwickii.


The genus was first put into its present form by Anderson (J. A. S. B., xlvii, p. 214), the number of species, however, recognised by Anderson were subsequently considerably reduced by Thomas (P. Z. S., 1881, p. 521), and it is the latter author who has been followed in compiling this catalogue.

**Synopsis of Indian species.**

a. Anterior palatine foramen shorter than the molar series; mammae, 8; tail, about equal to body without head; head and body, 6 to 7 inches long.  

N. hardwickii, p. 53.

a². Anterior palatine foramen equal to the molar series and considerably narrowed posteriorly; mammae, 14-18; head and body 7 to 8 inches long.  

N. bengalensis, p. 55.

a³. Anterior palatine foramen as in N. bengalensis, but rather more open behind; mammae, 12.

b. Head and body about 12 inches; back with long harsh black piles.  

N. bandicota, p. 57.

b². Head and body 9 to 11 inches; black piles not so numerous or conspicuous.  

N. nemorivagus, p. 58.

**Nesokia hardwickii.**

Arvicola indica, Gray Illustr. Ind. Zool., i, pl. xi (1832) [nec Mus indicus Back.]


*Mus* (Nesokia) hardwickii, *Anderson J. A. S. B.*, xlvi, p. 221 (1878);


**Distribution.**—The north-western part of India, extending westwards through Sind to Baluchistan, Afghanistan and Transcaspia, and eastwards as far as Purnea in Bengal.

An examination of the examples of this species in the Indian Museum shows that it is not possible to separate the two so-called species *Nesokia* hardwickii and *Nesokia* huttoni even as geographical races; of the specimens in the Museum from Sind, some have the soft fur of the typical *N. huttoni* form, some the harsh fur of *N. hardwickii*; it is perhaps possible that this character may be due to the season, and that the animal acquires the soft woolly fur in the winter and the harsh fur in the summer; in the localities where this species is found, the extremes of heat and cold are very great, and this would perhaps favour this suggestion.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Collection</th>
<th>Description</th>
<th>Collector</th>
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</thead>
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<tr>
<td>b-d. 3 Skins, 2 skulls.</td>
<td>Sitapur, Oudh</td>
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<tr>
<td>e. Alc., skull</td>
<td>Shahbandar, Sind, 3-5-76.</td>
<td>W. T. Blanford.</td>
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<tr>
<td>g'j. 3 Alc.</td>
<td>Karachi</td>
<td>Karachi Mus. [Ex.]</td>
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<tr>
<td>k-u. 11 Alc., 7 skulls</td>
<td>Fatehgarh, N.-W. P.</td>
<td>A. Anderson, 1872.</td>
<td></td>
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<tr>
<td>x. Skin, skull</td>
<td>Kalagan, Baluchistan, 12-3-72.</td>
<td>R. C. Tytler.</td>
<td></td>
</tr>
<tr>
<td>y. Skin, skull</td>
<td>Umballa, Pjb.</td>
<td>R. C. Tytler.</td>
<td></td>
</tr>
<tr>
<td>z. Stuffed, skull</td>
<td>Umballa, Pjb.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a²-d². 4 Alc., 1 skull</td>
<td>Dakka, Afghan</td>
<td>A. Barclay.</td>
<td></td>
</tr>
<tr>
<td>e². Alc.</td>
<td>Thal, Kurram Valley, Afghan</td>
<td>A. Barclay.</td>
<td></td>
</tr>
<tr>
<td>g². Alc.</td>
<td>Quetta</td>
<td>Sir O. St. John.</td>
<td></td>
</tr>
<tr>
<td>h²-m². 5 Alc 1 skull</td>
<td>Kalagan, Baluchistan</td>
<td>W. T. Blanford.</td>
<td></td>
</tr>
</tbody>
</table>

**Nesokia scullyi.**

*Nesokia scullyi*, *Wood Mason, P. A. S. B.*, p. 80 (1876); *Anderson J. A. S.B.*, xlvi, p. 224; *Blanford Yarkand Mammals*, p. 49, pl. viii, and xa, fig. 2.
Nesokia brachyura, *Büchner Result. Wiss. Preuss. Reisen, Rodentia* p. 82, pls. x, xi, fig. 1-9 (1889).

**Distribution.**—Has been found hitherto only in Kashgaria, at Sanju, to the south of Yarkand.

This species is distinguished from *Nesokia hardwickii* only by its much longer hind-foot and its somewhat larger skull; another species has been recently described by Buchner (see above) as *Nesokia brachyura*; it is distinguished from *N. sculiyi* and *N. hardwickii* by its size, its very short tail and its small hind-foot, notwithstanding this it is very possible that they would be found to be the same species on comparison of the types.

*Sanju, E. Turkestan, J. Scully.*

11-8-75.

[Type of *N. sculiyi*, Wood Mason.]

b-c. 2 Skins

*E. Turkestan C. Ellis.*

### Nesokia bengalensis.

**Var. A.—typicus.**


*N. (Nesokia), barclayanus Anderson *J. A. S. B.*, xlvi, p. 229, pl. xiii, figs. i-l (1878); *Blanford Yarkand Mamm.*, p. 46, pl. xi, fig. 1.


**Var. B.—kok.**


*N. (Nesokia) providens*, *Anderson *J. A. S. B.*, xlvi, p. 225, pl. xiii, figs. e-h (1878).

The Mole Rat; Canarese, Kok; Telegu, Golatta koku; Bengali, Yenkrai.
Distribution.—This rat is found over the whole of India, from Kashmir and Sind in the north-west and from Cachar in the north-east southwards; it is also recorded from Ceylon and Tenasserim, and probably occurs throughout Burma.

Anderson considered that the forms from North-Western India and from Southern India and Ceylon, were both specifically distinct from the form found in Bengal and Cachar; Thomas has shewn rightly that there are no reasonable grounds for such subdivision. As, however, the southern from is considerably smaller, it has been kept separate both in the synonymy and list as a geographical race.

Var. A.—typicus.

| a. | Skin | Srinagar, Kashmir. | P. Stoliczka. |
| b. | Skin, skull | " | " | 4-8-73 | P. Stoliczka. |
| c. | Skin | " | " | 2-8-73 | P. Stoliczka. |
| d. | Skin | " | " | 2-8-73 | P. Stoliczka. |
| e. | Skin | " | " | 2-8-73 | P. Stoliczka. |
| g. | Skin, skull | Ahmednagar, Bm. | ? |
| h. | Skin, skull | Manbhoom, 28-12-64 | R. C. Beavan |
| k. | Skin, skull | Calcutta, 1-6-76 | O. L. Fraser. |
| l. | Skin, skull | " | 30-5-76 | O. L. Fraser. |
| m. | Skin, skull | " | 7-6-76 | O. L. Fraser. |
| n. | Skin, skull | " | 5-5-76 | O. L. Fraser. |
| o. | Skin, skull | " | 31-5-76 | O. L. Fraser. |
| p. | Skin, skull | Gauhati 7-70 | Mus. Coll. |
| q. | Skin, skull | Cachar | Mus. Coll., 1867. |
| r. | Skin | " | Mus. Coll., 1867. |
| s. | Skin | " | Mus. Coll., 1867. |
| t. | Skin | Mergui 14-12-81 | J. Anderson. |
| u. | Skin, skull | " | 17-12-81 | J. Anderson. |
| v. | Skin, skull | " | 14-12-81 | J. Anderson. |
| w. | Skin, skull | " | 14-12-81 | J. Anderson. |
| x. | Skin | " | 17-12-81 | J. Anderson. |
| y. | Skin, skull | " | 12-12-81 | J. Anderson. |
| z. | Skin, skull | " | 13-12-81 | J. Anderson. |
| a²-b² | 2 Stuffed, | Manbhoom | Mus. Coll. |
| 2 skulls. | | | |
| c²-d² | 3 Stuffed | Calcutta | E. Blyth, A.S.B. |
| f²-g² | 4 Stuffed | Midnapore | E. Blyth, A.S.B. |
| m² | Skull | Howrah, Calcutta | J. F. Simmons. |
| n² | Alc. skull | Khairpur, Sind | W. T. Blanford. |
| o²-² | 17 Alc., | Fattehgarh, N.-W.P. | A. Anderson. |
| 6 skulls. | | | |
| g³-h³ | 2 Alc., | Ghazipur, N.-W.P. | H. Whitwell. |

[Types of N. barclayana, Anderson.]
Nesokia.

Goona, C. I. A. Barclay.

Sitapur Oudh A. Barclay.

Purneah Mus. Coll. (1872)

Calcutta J. Anderson.

Purchased E. Blyth, A.S.B.


Zoological Gardens, Babu Sanyal.

Calcutta.


Calcutta.

Alipur nr. Calcutta J. Anderson.

Botanical Gardens, J. Anderson,

Calcutta.


Mus. Coll.

Bogdanga, nr. Calcutta.

N. Belletty.

Cherrapoonjee, Assam J. H. Bourne.

Silcar, Cachar J. Wood Mason (1881).

Hailakandi, Cachar C. H. Dreyer.

Moulmein Mus. Collector, 1872.

Calcutta Purchased.

Var. B.— kok.

a. Skin, skull Nilgiri hills R. H. Beddome.

b-c. 2 Stuffed South India Sir W. Elliot (1842), A.S.B.

2 skulls.

d-e. 6 Alc. 3 3 Nilgiris G. Bidie.

f. Madras G. Bidie.

k-m. 2 Alc. Madras Pres.

. 3 Alc., skull juv. Trichinopoly R. H. Beddome.

o. Alc., skull Nilgiris R. H. Beddome.

p. Stuffed, skull Ceylon E. F. Kelaart (1853), A.S.B.

Nesokia bandicota.


Mus indicus, Bechstein Allgem. Ubers. der vierfüssige Thiere, ii, p. 714 (1800)* [ nec Geoff.]


Mus (Neotome) giganteus Elliot, Madras Journ., x, p. 209 (1839).

Mus (Nesokia) giganteus, Anderson J. A. S. B., xlviii, p. 292, pl. xiv, figs. a-d (1875).

Mus (Nesokia) bandicota, Thomas, P. Z. S., p. 528 (1881); Murray Zool. Sind., p. 45; Thomas P. Z. S., 1866, p. 56.
The Bandicoot or Pig Rat; Sanscrit, Indur; Hind., Ghaus or Ghus; Canarese, Heggin; Telegu, Pandikoku; Singalese, Oora Meeyo.

Distribution.—This rat is apparently restricted to the Indian peninsula strictly speaking (i.e., south of the great alluvial plains); it also occurs commonly in Ceylon; it has frequently been reported from Calcutta, but on investigation it is usually found to be the large Mus decumanus or perhaps the rarer Nesokia nemorivagus that has been mistaken for the true bandicoot.

a. Skin  
♀ Bradachellum S. of W. T. Blanford.
Godavery dist. 7-2-71.
b. Skin  
♀ Ceylon (J. Mortimer, Columbo Mus. 29-10-81).
c. Skin  
♀ Juv. Ceylon  
♂ Manboon skull.
d-e.  
♀ 2 Stuffed, 1 Manboon skull.
♀ 2 Stuffed, 1 Ceylon skull.
e.  
♀ Alc. 2 " Goona, C. I.
♀ Alc. skull"
♂ Madras
♀ Goona "  
♂ 4 Alc. "  
♀ Goona "
♂ 4 Alc. juv. "
♂ 4 Alc. " Zoological Gardens.
♀ 3 Skulls " Goona
♀ 2 Skulls "

Nesokia nemorivagus.

Mus (Nesokia) elliotanus, Anderson J. A. S. B., xlvii, p. 231, pl. xiv, figs. e-h (1878).
Mus (Nesokia) nemorivagus, Thomas P. Z. S., p. 528 (1881).

Distribution.—This form seems to replace Nesokia bandicota in Nepal, Sikkim, Bengal and Assam; it is also recorded from Formosa, and probably extends through Burma to the Malay Peninsula and some of the islands.

a. Alc. skull  
♀ Purneah, 28-5-72  
♂ Anderson.
b. Alc. skull  
♀ juv. "  
♂ Anderson.
c. Alc. skull  
♀ Alipur nr. Calcutta  
♂ Anderson.

[The above three are co-types of Mus (Nesokia) elliotanus, Anderson.]
d. Alc. skull  
♀ Sibsagar, Assam  
♂ S. E. Peal.
**Nesokia sp.?**


*Distribution.*—Muscat.


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**Genus MUS.**

*Mus, Linnaeus Syst. Nat., 12th ed., i, p. 79 (1766).*

In the following account of the Indian rats and mice Thomas’ paper (P. Z. S., 1881) has been followed with such additions as are necessary to include the few Assamese and Burmese forms not found in India proper. The key is also founded on Thomas’ key.

**Key of the Indian Species.**

*a.* Hind-foot with six well defined foot-pads.

*b.* Large four to nine inches in length, except *M. erythrotis*; proximal hind-foot pad elongated.

*c.* Whole tail covered with short hairs, upper side of tail dark; mammae 8 to 12 in number.

*d.* Tail dark above and below.

*e.* Tail shorter than the head and body; 10 to 12 mammae; hind-foot 1'5 to 1'7 in. *M. decumanus,* p. 61.

*e².* Tail longer than the head and body.

*f.* Anterior edge of zygoma-root with a rounded angle above; 10 to 12 mammae.

*g.* Large, head and body about 9 inches. *M. bowersii,* p. 62.

*g².* Medium, head and body from 5 to 8 inches; hind-foot, 1'2 to 1'4 in. *M. rattus and its allies,* p. 62.

*g³.* Small, head and body between 4 and 5 inches; hind-foot, '90 in. *M. concolor,* p. 68.

*f².* Anterior edge of zygoma-root nearly perpendicular; hind-foot '95 to 1'05. *M. fulvescens,* p. 69.

*d³.* Tail sharply bicolor, dark above, white below; mammae 8 in number.
h. Back rufous; tail much longer than the head and body; hind-foot, 1'0 to 1'15.  
M. jerdoni, p. 69.

h². Back yellowish grey; tail as long as head and body; hind-foot, 1'c.  
M. niviventer, p. 70.

h³. Back grizzled grey; rufous on rump; tail shorter than the head and body; ears tufted; hind-foot, about 1'0.  
M. humei, p. 70.

h⁴. Like M. humei but smaller, with tail longer than the head and body; head and body 2'85 inches; hind-foot, 68.  
M. erythrotis, p. 70.

c². Distal third of tail pure white, with longer hairs.

d. Proximal part of tail unicolorous; six mammae; hind-foot, 1'2; tail longer than the head and body.  
M. blanfordi, p. 70.

d². Proximal part of tail bicolor; hind-foot, 1'45; tail shorter than the head and body.  
M. berdmorei, p. 71.

b². Small 2 to 4 inches in length; last hind-foot pad circular.

k. Anterior edge of zygoma root perpendicular or rounded.

l. Ten mammae.

m. Tail as long as or longer than the head and body.

n. Below dark, like the back; zygomatic arches arched normally; hind-foot, 62 to 70.  
M. urbanus, p. 71.

n². Below dark like the back; zygomatic arches incurved; hind-foot, 83.  
M. sublimis, p. 73.

n³. Below white; zygomatic arches normal; hind-foot, 65 to 75.  
M. bactrianus, p. 74.

m². Tail shorter than the head and body.

M. cervicolor, p. 75.

p. Six mammae; tail about as long as the head and body; hind-foot, 82 to 88.  
M. arianus, p. 75.

p². Anterior edge of zygoma-root slanting forwards; tail rather longer than the head and body; hind-foot 75 to 80.  
M. nitulidus, p. 76.

a². Hind-foot with only 4 or 5 properly developed foot-pads.
MUS.

Larger, head and body, 4 to 5 inches; hind-foot, 1\(^{1/2}\); generally five pads on hind foot; mammae 8 in number.

**M. mettada**, p. 76.

Smaller, head and body, 3 to 4 inches; hind-foot 7\(^{1/2}\); generally four pads on hind-foot; mammae 6 in number.

**M. gleadowi**, p. 77.

**Mus. decumanus.**


Mus decumanoides, *Hodgson, J. A. S. B.*, x, p. 915 (1841) [pt.]


The Norway or Brown Rat; Canarese, Manei ilei; Hind., Chooha or Ghurka chooha; Malay, Tikus; Singalese, Gaval Meeyo; Bengalee, Demsa indur.

**Distribution.**—This almost universally distributed rat has not apparently made its way very far from the coast as yet. With the exception of some from Samagooting in Assam, and the identification of these seems a little doubtful, all our specimens are from sea coast towns

- **a.** Skin $\delta$ Bushire, Persian Gulf
- **b.** Skin, skull $\delta$ Calcutta, 3-6-76
- **c.** Skin, skull $\varphi$ 8-5-76
- **d-f.** 3 Skins, skulls $\varphi$ $\delta$
- **g-j.** 3 Skins, 2 skulls.
  - **k.** Alc. $\varphi$ Gwadar, Baluchistan
  - **l.** Alc., skull $\varphi$ Karachi
  - **m.** Alc. $\delta$ Sind
  - **n.** Alc. $\delta$ Sind
  - **o.** Alc. $\delta$ Karachi
  - **p.** Alc. $\delta$ Kyd Street, Calcutta
  - **q.** Alc., skull $\delta$ Wood Street, Calcutta
  - **r.** Alc., skull $\delta$ Park Street, Calcutta
  - **s.** Alc. $\delta$ juv. Calcutta
  - **t.** Alc., skull $\delta$ Calcutta
  - **u.** Alc. juv. 8-5-76
  - **v.** Alc., skull $\varphi$ 8-5-76
  - **w.** Alc., skull $\varphi$ 8-5-76
  - **x.** Alc. $\varphi$
  - **y.** Alc., skull $\varphi$

J. Butler, 1872.

W. T. Blanford.

O. L. Fraser.

O. L. Fraser.

O. L. Fraser.

O. L. Fraser.

O. L. Fraser.

J. A. Murray.

J. A. Murray.

Karachi Mus.

Karachi Mus.

J. Anderson.

J. Anderson.

J. Anderson.

O. L. Fraser.

Purchased.

Purchased.

Purchased.
Mammalia.

62

2. Alc.  ♯ Calcutta

C2. 9 Alc. foetal Calcutta
D2. Alc.  ♯ [with distorted teeth] Madras
E2-F2. 2 Alc., 2 skulls.

G2. Alc., skull  ♯ Andaman Isles
H2-J2. 2 Alc.  ♯ London
I2. 1 skull.

K2-M2. 3 Alc.  ♯ London
L2. 1 skull.

N2-P2. 3 Stuffed  ♯ Calcutta
Q2. Stuffed  ♂
R2. Stuffed  "
S2. Stuffed skull  [albino].
T2. Stuffed  "
U2. 2 Stuffed, 1 skull  ♯ Andaman Isles

[Types of Mus tytleri, Tytler.]

V2. Stuffed  China
W2. Skull  "
X2-Y2. 2 Alc.  ♯ juv. Andamans
Z2. Skelet. mtd.  "
A2. Skin  Deccan (Sykes)
B2. Alc.  ♯ Kobe, Japan, 3-7-84
C2-D2. 2 Alc.  ♯ Yezo, Japan, 9-84
E2. Alc.  ♯ Kiga, Japan, 5-84

Purchased.
J. Anderson.
J. Anderson.
J. Morgan (1863), A.S.B.
Madras Mus.
G. E. Dobson.
A. D. Bartlett.
A. D. Bartlett.
E. Blyth, A.S.B.
E. Blyth, A.S.B.
W. Rutledge, 1870.
Mus. Coll., 1873.
R. C. Tytler, 1874.
R. Swinhoe, A.S.B.
A.S.B
J. Anderson, 1867.
No history, A.S.B.
India Mus., London.
J. Anderson.
J. Anderson.

Mus bowersii.


Distribution.—Kakhyen hills near Bhamo in Upper Burma, also recorded from Munipur by Thomas.

[Type of Mus bowersii, Anderson.]

Mus rattus.

Var. A—typicus.


Var. B—alexandrinus.

p. 733, Atlas, pl. v, fig. i (1812); Scully P. Z. S., 1881, p. 204; Thomas P. Z. S., 1881, p. 533; Murray Zool. Syst. ed. p. 46.
Mus arboresus, Horsfield Cat. E. I. Mus., p. 141 (1851).
Mus crassipes, Blyth J. A. S. B., xxvii, p. 295 (1859); Jerdon Mamn. p. 204.

**Var. C—nitidus.**

Mus alexandrius nitidus, Thomas P. Z. S., p. 533 (1881).

**Var. D—rufescens.**

Mus indicus, Desmarest Mamn., ii, p. 299 (1822) [nec Bechstein].
Mus flavescens, Elliot Madras Journ., x, p. 214 (1839) [nec Waterhouse].
Mus decumanoideaes, Hodgson J. A. S. B., x, p. 915 (1841) [pt.]
Mus infraelineatus, Elliot, Blyth J. A. S. B., xxxii, p. 348 (1863); id. Cat. no. 371, p. 116.
Mus alexandrinus rufescens, Thomas, P. Z. S., p. 533 (1881).
Mus rattus rufescens, Thomas P. Z. S., pp. 57, 71 (1886).

**Var. E—andalamanensis.**

Mus palmarum, Zelebor Sängeuth, Novara Reise, p. 26 (1868).
The Black Rat or Tree Rat; Bengalee, Gachua indur; Singalese, Ghasmeeyo.

Distribution.—The typical Black Rat is found all over Northern Europe and Western Asia; it has been, however, almost entirely displaced by the Brown Rat (Mus decumanus) in England and on those parts of the continent which are within easy access of the sea; it is also found in most of the seaport towns all over the world, but here also the Brown Rat struggles for existence with it.

The Alexandrine Rat (Mus rattus alexandrinus) is merely a southern variety of the Black Rat, distinguished by its softer and reddish or greyish fur, and usually by its white belly; it is found in southern Europe, Egypt and Palestine and specimens identical with it have been got from Gilgit.

The Tree Rat (Mus rattus rufescens) is a smaller variety of the Alexandrine Rat and is spread all over India, Ceylon, Assam and Burma, extending as far south as Mergui at any rate.

The Hill Rat (Mus rattus nitidus) is a rather short-tailed variety which is found in Nepal and Sikkim only.

The Andamanese variety of Mus rattus is distinguished from the ordinary Mus rattus rufescens of India by its spiny fur, a character which has been shown by Thomas not to be of even specific value, and also by its slightly larger size as is shown by the following measurements taken from the two original skins:—head and body: 7.10 to 7.30; tail, 6.65; hind-foot, 1.40; a typical Mus rattus rufescens measures, head and body, 5.70; tail, 6.70; hind-foot, 1.20.

No distinction except that of size can be found between the skulls of the several varieties of Mus rattus, and it is often difficult without a knowledge of the locality to say to which variety a particular individual of this species should be referred so much do they run into one another.

Var. A.—typicus.

| a. Skin | ♀ | Resht on Caspian sea | Sir O. St. John. |
| b. Skin | ♀ | " | " |
| c. Skin | ♀ | " | " |
| e. Skin | " | " | Oxford Mus. Ex. |
| f. Skin | " | " | Oxford Mus. Ex. |
| g-h. 2 Stuffed | " | From a ship in the Hooghly. | Capt. Godfrey, A.S.B. |
| j-l. 3 Stuffed | France | A. Malherbe (1849), A.S.B |

Var. B.—alexandrinus.

| a. Skin, skull | Gilgit | 4-78 | J. Biddulph. |
| b. Skin, skull | Chitral | 5.000 ft., | G. M. Giles. |
| c. Skin | ♀ | Gilgit, 17-4-79 | J. Scully. |
| d. Skin, skull | ♀ | 10-5-79 | J. Scully. |
| e. Skin | ♀ | 15-8-79 | J. Scully. |
| g. Skin | 16-4-79 | J. Scully. |
| h. Skin | 8-4-79 | J. Scully. |
| j. Skin | 15-8-79 | J. Scully. |
| k-o. 5 Alc, 1 skull | Galari, Alexandria (Tristram) | J. Hand. |
| t. Skin juv. | " | J. Scully. |

**Var C.,—rufescens.**

| a. Skin, skull | Agra | A. C. Carlyle. |
| b. Skin, skull | Khandala, Bm. | Mus. Coll. |
| c. Skin | Chanda, C. P., 16-12-69 | W. T. Blanford, |
| d. 2 Skins, 1 skull | " | W. T. Blanford. |
| e. Skin | nr. Chanda, C. P., 18-12-69 | W. T. Blanford. |
| g. Skin, skull | " | W. T. Blanford. |
| h. Skin, skull | Singabhoom | V. Ball, 1868. |
| j-k. 2 Skins | Manbhoom, 1-65 | R. C. Beavan |
| l-o. 4 Skins, 2 skulls. | Manbhoom | Mus. Coll., 1866, |
| p. Skin, skull | Gauhati, Assam, 7-70 | Mus. Coll. |
| q. Skin | Munipur | R. D. Oldham. |
| r-s. 2 Skins, 1 skull. | Naga hills | A. W. Chennell. |
| t. Skin, skull | " | H. H. Godwin Austen. |
| u. Skin, skull | Mergui, 13-12-81 | J. Anderson. |
| v. Skin | 19-12-81 | J. Anderson. |
| w. Skin | 6-2-80 | J. Anderson. |
| x. Skin | 16-2-82 | J. Anderson. |
| y. Skin | 6-2-82 | J. Anderson. |
| s-a². 2 Alc., 2 skulls. | Rajanpur Pjb. | E. Saunders. |
| b².a². 2 Alc. | Karachi | E. Saunders. |
| d².s². 2 Alc., 1 skull | Sind | Karachi Mus. [Ex.] |
| f². Alc. | Fattegharh, N.-W. P. | Karachi Mus. [Ex.] |
| g². Alc., juv. | " | A. Anderson. |
| h².l². 4 Alc., 3 skulls | " | A. Anderson. |
| m².s². 8 Alc., 2 skulls | Ghazipur | H. Whitwell. |
| n². Alc., skull | Sitapur, Oude | A. Barclay. |
| w².s². 4 Alc., 2 skulls | Chanda, C. P., 1867 | Mus. Coll. |
| b³.s³. 2 Alc. | Poona dist., Bm. | G. W. Vidal. |
| d³.s³. 4 Alc. | Madras | Madras Mus. [Ex.] |
| h³.s³. 3 Alc., 3 skulls. | " | G. Bidie. |
| l³.s³. 4 Alc. | " | F |
MAMMALIA.

66


ø. Alc. ♂ juv.    " "   "

ø. 3 Alc. ♂ ♀ ♀ Ceylon
3 skulls.

X₃. ø. 4 Alc., 4 skulls Nepal
3. ø. 2 Alc., 1 skull
♀ & juv.

24. ø. 1 Alc., ♀ Calcutta  J. Anderson.
1 skull.

f₄. 4 Alc. ♂ Purchased.
1 skull.

2 ø. 2 Alc. ♀ Wood St., Calcutta  J. Waterhouse.
1 skull.

m₄. Alc., skull ♀ Kyd St., Calcutta  Mus. Coll.
♀ Dappa, Calcutta, 1-81
♀ R. deCruz.

ø₄. Alc. ♂

prü. 3 Alc., 1 skull juv.
Botanical Gardens, Calcutta.

s₄. ø. 2 Alc., ♀ Zoological Gardens, Calcutta.
♀ J. Anderson.
1 skull.

w₄. 2 Alc. ♀ Zoological Gardens, Calcutta.
♀ J. Anderson.
1 skull.

x₄. ø. 1 Alc., 7 skull ♂ Samagooting, Assam  J. Butler.
♀ Narainpur  H. H. Godwin Austen.
♀ H. H. Godwin Austen.
♀ Cherrapoonjee  J. H. Bourne.
1 skull.

e₅. ø. 1 Alc. ♀ Pegu  W. Theobald.
♀ Lower Pegu  W. T. Blanford.
♀ Shwegoyn, Tenasserim  Major Berdmore, A.S.B.

[Type of Mus robustulus, Blyth.]

ø. 3 Alc., ♂ ♀ Shwegoyn, Tenasserim  Major Berdmore.
1 skull.

k₅. 3 Alc., ♂ ♀ " "  "
2 skulls.

n₅. Alc. ♀ Taing, Mergui  J. Anderson.
♀ Hotha, Yunnan  J. Anderson.
♀ Hotha, Yunnan  J. Anderson.
1 skull.

s₅. ø. 4 Alc. ♀ Hotha, Yunnan  J. Anderson.
♀ " 2 skulls.

[The above eight specimens are types of Mus sladeni, Anderson.]

ø₅. Alc., skull ♂ Momein, Yunnan  J. Anderson.
♀ Hotha, Yunnan  J. Anderson.
1 skull.

[The above three are types of Mus yunnanensis, Anderson.]

s₅ Stuffed, ♂ nr. Chanda, C. P.  W. T. Blanford.
a. Stuffed skull
b. 2 Stuffed, 2 skulls
c. Stuffed
d. Stuffed
é. 5 Stuffed
m. 4 Stuffed
q. 2 Stuffed

Singhbhoom
Manbhoom
nr. Calcutta
n.

Ceylon

[Types of Mus. nemoralis, Blyth.]

s. Stuffed skull
i. Stuffed skull
u. 4 Stuffed
y. 2 Skins

Trincomali, Ceylon
Newera Elia, Ceylon, (1851)
Shwegyin, Tenasserim.
Manbhoom

[? Type of Mus. infralineatus, Elliot MSS.]

l. 3 Alc. 1 skull
3. juv.

Nepal

G. King.

Darjeeling, 22-1-72
J. Gammie.

G. King.

Rungbee, Darjeeling
G. King.

G. King.

G. King.

G. King.

Sibsagar, Assam
S. E. Peal.

Munipur
R. D. Oldham.

Ling Ling, Bt. Sikkim
T. Johnston.

Darjeeling
W. S. Sherwill, A.S.B.

N. Belletty.

Var. D.—nitidus.

l. 2 Alc.

Rungbee, Darjeeling
G. King.

1 skull.

2 skulls

Sibsagar, Assam
S. E. Peal.
Mus rubricosa.


Distribution.—Kakhyen hills of Upper Burma.
This species is closely allied to M. rattus nitidus; it seems to be distinguished only by its very dark ventral surface; whether this is a constant character or not, can only be proved by further specimens.

a. Alc. skull ♂ Hotha, Yunnan J. Anderson.
[Type of M. rubricosa, Anderson.]

Mus concolor.


Distribution.—Burma, Upper and Lower, extending southwards to Mergui and the Malay peninsula.
A very closely allied species Mus ephippium of Jentink (Notes Leyd. Mus., ii, p. 15) has been recorded from Sumatra and Kina Balu in Borneo.

a. Skin Malacca. R. W. G. Firth (1846), A.S.B.
b. Skin ♂ Mergui, 17-12-81 J. Anderson.
c. Skin ♂ " " J. Anderson.
d. Skin ♂ " " J. Anderson.
e. Alc. ♂ Shwegyin, dist., Tenasserim. Major Berdmore (1859), A.S.B.
f. Alc., skull ♂ Shwegyin, dist., Tenasserim. Major Berdmore (1859), A.S.B.
Mus fulvescens.


**Distribution.**—Nepal and Sikkim Himalayas extending to the Tenasserim hills.

- Skin, skull | Shwegyin, Tenasserim | Major Berdmore (1859), A. S. B. | a.
- Alc., skull | Shwegyin, Tenasserim | Major Berdmore (1859), A. S. B. | b.

[Types of Mus cinnamoneus, Blyth.]

Mus jerdoni.


**Distribution.**—Sikkim and Assam hills; Java (Thomas) and probably the intervening countries.

- Alc. | | J. H. Bourne. | h.
- Skin, skull | Darjeeling | W. G. Masson. | m.

[Type of Leggada jerdoni, Blyth.]
MAMMALIA.

Mus niviventer.

Mus (Rattus) niviventer, Hodgson J. A. S. B., v, p. 234 (1835).
Mus niviventer, Hodgson Ann. Mag. N. H., xv, p. 267 (1845); Gray Cat.
Hodgs. Coll., 1st ed., p. 18; Blyth J. A. S. B., xxviii, p. 295; id., J. A. S. B.,

Distribution.—North-West Himalayas.
[No specimens in the Indian Museum.]

Mus humei.

Mus humei, Thomas P. Z. S., p. 63, pl. v (1896).

Distribution.—Munipur.

a. Skin ♀ Moirang, Munipur British Mus. [Ex.]
   (A. O. Hume, 2-3-81.)
   [One of the type specimens.]

Mus erythrotis.

Mus erythrotis, Blyth J. A. S. B., xxiv, p. 721 (1855); id. J. A. S. B.,
xxxii, p. 348; id. Cat. No. 397, p. 120.

Distribution.—The Khasia hills of Assam.
The type, of which unfortunately the skull appears to have been lost, seems to be immature; there is however another specimen in the Museum from the same place, Cherrapoonjee, which agrees with the type in every way except that it is slightly larger. The measurements of this specimen are as follows:—Head and body, 2'85; tail, 3'25; hind-foot, without claw, '68; fore-arm and hand, '83; ear conch, '32; nose to ear (skull extracted), '82.
The ear is very small and has a thin tuft of long hairs springing from the middle of the conch; there are eight mammae, and in these points and in the reddish hairs about the posterior part of the back and arms, this species seems to be allied to Mus humei; in size, however, this species differs considerably from Mus humei which is described as 125 mm. or nearly 5 inches long; there is also no sign of the reduction of the 5th toe which is so characteristic of Mus humei.

a. Alc. juv. Cherrapoonjee F. Skipwith (1855), A. S. B.
   [Type of Mus erythrotis, Blyth.]
cf. 4 Alc. juv. Cherrapoonjee J. H. Bourne (1871).
g. Skin juv. Nil Valley, South Mani-
   pur. H. H. Godwin Austen.

Mus blanfordi.

P. Z. S., 1881, p. 541, pl. l.
Distribution.—Southern India, Cuddapah district and Shevaroy hills.

a-b. 2 Skins, Shevaroy Hills, Mdr. W. Daly.

Mus berdmorei.


Distribution.—Munipur and Mergui.

This species was first described by Blyth from a single specimen from Mergui; but he afterwards merged the species with his Mus robustulus which is doubtless the same as Mus rattus rufescens; Thomas (supra) has resurrected Blyth's old name for a peculiar rat forming part of the Hume Munipur Collection, which rat, according to Thomas, agrees remarkably with the original description of Blyth.

The skull, which is still in the collection, agrees with Thomas' description of the skull of the Munipur specimen, the flat skin has unfortunately dissappeared.

This rat is allied to Mus blanfordi and to Mus confucianus of Milne Edwards, from China, all of which are distinguished by their parti-coloured tails with the terminal half white.

a. Skull Mergui Major Berdmore.

[Type of Mus berdmorei of Blyth.]

Mus urbanus.

Mus musculus, apud Elliot Madr. Journ., x, p. 214 (1839); Cantor f. A. S. B., xv, p. 254
Mus rama, Cantor apud Blyth f. A. S. B., xxxiv, p. 194 (1865).

**Distribution.**—The whole of India and Ceylon, except in Sind and the Punjab, where it is replaced by the next species, *Mus bactrianus*; it extends into the Himalayas and over Assam, Cachar, Burma, the Andamans and Nicobars; Thomas also gives Malacca.

This species is very doubtfully distinct from the almost universally distributed *Mus musculus*; it has however been treated by Thomas (*l.c.*) as a distinct species, and it has accordingly been left so for the present; Blyth states that *Mus musculus* has larger ears, smaller eyes, and broader paws, and the tail one-fourth shorter; none of these differences seem to hold good for a large number of specimens.

<table>
<thead>
<tr>
<th>a-b.</th>
<th>2 Alc.</th>
<th>♀</th>
<th>♀</th>
<th>Calcutta</th>
<th>J. Anderson.</th>
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</thead>
<tbody>
<tr>
<td>c-d.</td>
<td>2 Alc.</td>
<td>♀</td>
<td>♀</td>
<td>Darjeeling</td>
<td>G. King.</td>
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<td>f-g.</td>
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<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>W. Masson.</td>
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<tr>
<td>h-k.</td>
<td>3 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Ling Ling, Brit. Sikkim</td>
<td>T. Johnston (in jungle).</td>
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<tr>
<td>m.</td>
<td>Alc., skull ♀</td>
<td>&quot;</td>
<td>&quot;</td>
<td>Karachi</td>
<td>Karachi Mus. [Ex.]</td>
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<tr>
<td>n-q.</td>
<td>4 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Fatehgarh, N.-W. P.</td>
<td>A. Anderson.</td>
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<tr>
<td>s-u.</td>
<td>3 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Benares, N.-W. P.</td>
<td>G. W. Vidal.</td>
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<td>v-w.</td>
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<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>R. H. Beddome.</td>
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<tr>
<td>x-y.</td>
<td>2 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Collagelly hills, Trich. dist., Md.</td>
<td>G. Bidie.</td>
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<tr>
<td>a²-b².</td>
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<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>G. Bidie.</td>
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<tr>
<td>d².</td>
<td>Alc., skull ♀</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
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<tr>
<td>e²-f².</td>
<td>2 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Vizagapatam, Md.</td>
<td>Mus. Coll.</td>
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<tr>
<td>g²-f².</td>
<td>3 Alc., 1 skull</td>
<td>♀</td>
<td>♀</td>
<td>Ceylon</td>
<td>E. F. Kelaart.</td>
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<tr>
<td>h²-m².</td>
<td>3 Alc., 2 skulls</td>
<td>♀</td>
<td>♀</td>
<td>Raniganj, Bg.</td>
<td>Purchased.</td>
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<td>n²-p².</td>
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<td>♀</td>
<td>♀</td>
<td>Purneas, Bg.</td>
<td>J. Anderson.</td>
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<tr>
<td>q²-s².</td>
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<td>♀</td>
<td>♀</td>
<td>Calcutta</td>
<td>E. Blyth.</td>
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<tr>
<td>e²-o².</td>
<td>3 Alc.</td>
<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>J. Anderson.</td>
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<tr>
<td>w².</td>
<td>Alc.</td>
<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>R. deCruZ.</td>
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<td>x²-s².</td>
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<td>♀</td>
<td>♀</td>
<td>&quot;</td>
<td>Mus. Coll.</td>
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<tr>
<td>a²-b².</td>
<td>2 Alc.</td>
<td>♀</td>
<td>♀</td>
<td>Dhappa, Calcutta</td>
<td>Mus. Coll. (1881).</td>
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<tr>
<td>c²-s².</td>
<td>3 Alc., 2 skulls</td>
<td>♀</td>
<td>♀</td>
<td>Botanical Gardens, Calcutta</td>
<td>J. Anderson.</td>
</tr>
</tbody>
</table>
Mus. 73

Dacca  N. Belletty.
Purchased.

H. L. Haughton (1868).

Sibsagar, Assam  S. E. Peal.

Capt. Williamson.

H. H. Godwin Austen (1870).

Sileuri, Cachar  J. Wood Mason.

Mus. Collector (1867).

Cachar  M. J. Ogilie.

J. T. Jarbo.

Capt. Hodge, A.S.B.

J. Homfray.

G. E. Dobson.

Chittagong Hill Tracts  J. Wood Mason.

Andamans  J. Homfray.

G. E. Dobson.

Nicobars  F. A. de Rœpstroff.

Ponsee, Kakhyen hills, J. Anderson.

Burma.

[Type of Mus of kakhyensis, Anderson.]

Ponsee Kakhyen hills, J. Anderson.

Burma.

[Types of Mus viculorum, Anderson.]

Calcutta  E. Byth, A.S.B.

Sirguja, 6-71  V. Ball.

Burma  J. Wood Mason.

Major Berdmore, A.S.B.

Nicobars, 7-81  H. H. Godwin Austen.

Mus sublimis.

Mus crassipes, apud Blanford J. A. S. B., xliii, p. 108 (1875).

Distribution.—This mouse has only been found in the higher regions of Central Asia, once by Stoliczka, west of the Pan-
kong Lake in Ladak, at 13,000 feet, and once by Colonel Biddulph in the Astor district of Kashmir, at a height of 11,000
feet.

The species is nearly allied to Mus urbanus, but differs in having
a slightly longer hind-foot with the tubercles very far apart; the
skull differs from that of M. urbanus and M. bactrianus in having the
zygomatic arches incurved, the palate also is peculiar, the posterior
nasal opening being particularly wide, and the pterygoid short and
very considerably thickened.

Tanksee W. of Pankong  F. Stoliczka.

Lake, Ladak, 13,000 ft.

[Type of Mus sublimis, Blanford.]
MAMMALIA.

Mus bactrianus.


Mus gerbillinus, Blyth J. A. S. B., xxii, p. 410 (1853); id. Cat. no. 382, p. 119.

Mus theobaldi, Blyth J. A. S. B., xxii, p. 583 (1853).

Distribution.—The Punjab and Sind, extending northwards to the Himalayas, at Simla and to Ladak, and westward through Afghanistan and Baluchistan to the Euphrates, Palestine and Egypt.

This species seems to replace the last in desert and dry countries, it resembles it in every particular except in its very pale colour and distinctly white ventral surface.

c. Skin ♂ Maimanah, 4-4-86. C. E. Yate.
d. Skin ♂ Pind Dadan Khan W. Theobald, A.S.B.

[type of Mus gerbillinus, Blyth.]

e-g. 3 Alc. ♂ ♀ Pishin, Baluchistan W. T. Blanford.
h-m. 5 Alc. ♂ 4 ♂ Kalagan, Baluchistan W. T. Blanford.
v-r. 3 Alc. ♂ Bampur, Beluchistan W. T. Blanford.
g-t. 4 Alc. ♂ nr. Karman, S. Persia W. T. Blanford.

w-x. 2 Alc. ♂ Rajanpur, Punjab E. Saunders.
y-z. 5 Alc. ♂ Shahpur, Punjab G. Henderson.

a. 3 Alc., 1 skull ♂ Pind Dadan Khan, Pun- jab

juv. ♂ Karachi W. Theobald, A.S.B.

b. 4 Alc. 2 ♂ 2 ♂ Karachi Mus.

b. 2. 2 Alc. ♂ Clifton, Karachi Karachi Mus. [Ex.]

2. ♂ Acacia Forest, Kotri, Sind. Karachi Mus. [Ex.]

2. 2 Alc. ♂ Sind Karachi Mus.


2. ♂ Pir Pinjol W. Theobald, A.S.B.

2. 4 Alc. 3 ♂ 1 ♂ Ladak G. Henderson.

2. 4 Alc. 2 ♂ Simla R. A. Sterndale.


4. ♂ Suleiman Mts., 10-74 V. Ball.


Mus cervicolor.


Mus cunicularis, Blyth J. A. S. B., xxiv, p. 721 (1855); id. J. A. S. B., xxxii, p. 348; id. Cat. no. 384, p. 119.


Mus cunicularis, Blyth J. A. S. B., xxiv, p. 721 (1855); id. J. A. S. B., xxxii, p. 348; id. Cat. no. 384, p. 119.

Distribution.—Nepal and the Eastern Himalayas, extending through Assam and Munipur.

There does not seem to be any true distinction between this species and Leggada buduga; Thomas (l. c.) allows that they are nearly allied but asserts that they can be distinguished by the length of their ears; this distinction does not seem to hold good when measurements of many individuals are taken. As this catalogue has been founded on Thomas’ monograph on the Indian Mice, the two species have been kept apart, being merely distinguished by their geographical origin.

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**Mus arianus.**

Mus arianus, apud Filippi Viaggio Persia, p. 344 (1865).

Mus erythronotus, Blanford Ann. Mag. N. H. (4) xvi, p. 311 (1875); id. Persia, p. 54, pl. v, fig 3; id. Yarkand Mammals, p. 54; id. J. A. S. B., xlviii, p. 97 [nee. Temminck].


Distribution—Northern Persia, Gilgit, and the Pamir, extending to the Thian Shan (Przewalsky).

This species is closely allied to Mus sylvaticus which it seems to replace in Asia; the distinctions between the two species are clearly pointed out by Thomas (l.c.) and the persistence of these differences seem to be confirmed by the examination of the specimens in the Indian Museum. 
MAMMALIA.

a. Skin Kashgar, 14-2-74 F. Stoliczka.
   (Biddulph).

b-e. 4 Skins, 2 skulls. Panjah, Wakhan, 4-74 F. Stoliczka.

f-g. 2 Skins, 1 skull. Gilgit J. Biddulph.

h. Skin, skull Hunza J. Biddulph.

j-k. 2 Skins, 2 skulls. Chitral, 10-85, 5,000 ft. G. M. Giles.

l. Skin, skull Gilgit, 1-86, 6,000 ft. G. M. Giles.

m. Skin 8-79 J. Scully.

n. Skin 2-79 J. Scully.


q. Alc. 9 Gilgit J. Scully.

Mus nitulidus.


Distribution.—District of Shwegyin in Burma and Sikkim, and probably the intervening country.

The type of this species is missing; it perhaps disappeared during the transference of the Asiatic Society’s collections to the present Museum; it is therefore impossible ever to be certain as to whether Thomas’ identification of this species is correct or not. The following specimens agree fairly well with Thomas’ description:

a. Alc., skull 8 Darjeeling G. King.
   b-e. 4 Alc., 1 skull Rungbee, Darjeeling G. King.

f-h. 3 Alc., 1 skull 8 G. King.

j-n. 5 Alc. juv. 8 G. King.

Mus mettada.


Mus lanuginosus, Elliot Madras Journ., x, p. 212 (1839).

Mus mettada, Blanford J. A. S. B., xlv, p. 209, pl. 1, figs. 1-9 (1877); Thomas P. Z. S., 1881, p. 550; Murray Zool. Sind, p. 47.

Distribution.—This species seems to be confined to the western and southern parts of India, extending eastward as far as the North-West Provinces only.

a-c. 3 Alc, 2 skulls Etawah dist., N.-W. P. A. Anderson.
   8 2 8
Mus. 77

J. Cockburn.

Alc. head and Banda dist., N.-W. P. J. A. Murray.

Karachi Mus.

foot only.

Sind

5 juv.

G. Bidie.

juv.

No history.

Mus gleadowi.

Mus gleadowi, Murray P. Z. S., p. 809, pl. li (1885).

Distribution.—Western India; the type was described from Karachi, and the Indian Museum has specimens from Goona and Kutch.

This species seems to be very closely allied to M. mettada, from which it is however distinguished by its considerably smaller size and by its very much shorter and narrower tarsus; this species too seems never to possess more than 4 pads on the hind-foot, while all the specimens of M. mettada in the Museum possess the proximal 5th pad.

The measurements of the three specimens compare very well with the measurements given by Blanford in a note appended to the original description, i.e.:—Head and body, 3'40; tail, 2'80; hind-foot, '70; forearm and hand, '80; ear conch, '61; auditory meatus to muzzle, '91.

Goona, C. I.

A. Barclay.

Kutch

F. Stolizeka.

Mus wagneri.


Mus pachycercus, Blanford J. A. S. B., xliv, p. 108 (1873); id., Yarkand Mamm., p. 53, pl. ix, fig. 2, pl. xb, fig. 4.

Distribution.—The house-mouse of Central Asia, described as a new species by Blanford, has been since identified by Buchner (l.c.) as a species of Eversmann's, described long ago from a specimen collected on the steppes between the Volga and the Ural. It has been got by Przewalsky from a large number of localities throughout Turkestan and Mongolia, and seems to be the common house-mouse of all Central Asia.

Yarkand, 11-73 F. Stoliczka.

Sanju, 10-73 F. Stoliczka.

Kargalik, 11-73 F. Stoliczka.

5'74 F. Stoliczka.

Yangihissar, 4-74 F. Stoliczka.
MAMMALIA.

h. Skin
i- m. 2 Alc., 1 skull Yarkand, 11-73

[Types of Mus pachy cercus, Blanford.]

? o. Skin, skull Resht, Caspian W. T. Blanford.

Mus musculus.


Distribution.—Cosmopolitan, if as Thomas (Encycl. Brit., xvii, p. 5) believes to be the case, Mus urbanus is indistinguishable from this species; the original home of Mus musculus was probably in India.

a. Stuffed England Mr. Kirtland (1845), A. S. B.
b. Stuffed N. Carolina, U. S. A. Rev. F. Fitzgerald (1852), A. S. B.
c - d. 2 Alc., 1 skull London A. D. Bartlett.
d - e. 2 Alc., 1 skull " A. D. Bartlett.

Mus sylvaticus.


Distribution.—The whole of Europe, eastwards it is replaced by Mus arianus.

a - d. 4 Alc., 1 skull London A. D. Bartlett.
ed - f. 2 Alc., 1 skull " A. D. Bartlett.
g. Stuffed Switzerland A. Malherbe (1842), A. S. B.
h - j. 2 Stuffed England A. D. Bartlett, A. S. B.

Mus minutus.

Mus minutus, Pallas Nov. Spec. Quad. e Glir., p. 345 (1778); Blasius Säugeth. Deutschl. p. 326; Blyth Cat. no. 375, p. 117.

Distribution.—The Palaeartic region.


Mus abyssinicus.

Mus abyssinicus, Käppler Mus. Senck. iii, p. 104, pl. vii fig. i (1845); Blanford Abyssinia, p. 283.
LEGGADA.

Distribution.—Abyssinia.

a. Stuffed  
Wandash Pass, Abyssinia  
W. T. Blanford.  
4-68.

b-c. 2 Skins  
Wandash Pass, Abyssinia  
W. T. Blanford.  
4-68.

Mus pumelio.

Mus pumelio, Sparrman Kongl. Vetens. Akad. Handl., v, p. 236, pl. vi, (1784); A. Smith S. African Zool, pl. xlvii, fig. 1; Blyth Cat. no. 388, p. 120.

Distribution.—South Africa.

a-b. 2 Stuffed  
South Africa  
E. L. Layard.

Mus longipilis.

Mus longipilis, Gould Mamm. Australia, iii, pl. xiii (1863).

Distribution.—New South Wales, Australia

a. Skin  
Australia  
Melbourne Mus. [Ex.]

Mus assimilis.


Distribution.—New South Wales to Western Australia.

a-b. 2 Skins  
Western Australia  
No history.

Mus gouldi.


Distribution.—Australia.

a. Stuffed  
Australia  
Sydney Institution (1846), A.S.B.

b. Skin  
Plains of West Australia  
Brit. Mus. [Ex.]

Genus LEGGADA.

Leggada, Gray Charlesw. Mag. N. H., i, p. 586 (1837);  

Two species only are found in the Indian Empire; three others have been described from Africa.
Key of the Indian Species.

a. Larger, 3 to 4 inches; tail as long as the body only; extra cusp on the anterior molar well developed.

L. platythrix, p. 80.

a². Smaller, 2 to 3 inches; tail about equal to the head and body; extra cusp on the anterior molar variable.

L. buduga, p. 80.

Leggada platythrix.

Mus platythrix, Bennett P. Z. S., p. 121 (1832); Elliot Madras Journ, x, p. 215.
Mus spinulosus, Blyth J. A. S. B., xxiii, p. 734 (1854).
Leggada spinulosa, Blyth J. A. S. B., xxii, p. 349 (1863); id. Cat. no. 394, p. 121; Jerdon Mamm., p. 208.
Mus (Leggada) platythrix, Thomas P. Z. S., p. 553 (1881).

Distribution.—This rat seems to have much the same distribution as Mus mettada, being confined to Western, Central and Southern India.

Leggada buduga.

Mus cervicolor, apud Kelaart Prodr. Faun. Zeylan., p. 64 (1852); Blyth J. A. S. B., xxxii, p. 349; id. Cat. no. 384, p. 119; Jerdon Mamm. p. 206. [pt.]
Mus beavani, Peters P. Z. S., p. 559 (1866); Blyth J. A. S. B., xlvii Burma List, p. 42.
Mus (Leggada) buduga, Thomas P. Z. S., p. 553 (1881).
**Distribution.**—All over India except in the Punjab, Himalayas, and Assam, in which latter it is replaced by the closely allied Mus cervicolor.

- **a-b.** 2 Skins nr. Calcutta E. Blyth, A.S.B.
- **c-f.** 4 Skins Midnapore jungles E. Blyth, A.S.B.
- **g.** Skin, skull N. of Chanda, C. P. W. T. Blanford.
- **h.** Skin and skull Sirguja, Chota Nagpur V. Ball, 1871.
- **j.** Skin South India Sir. W. Elliot, 1843, A.S.B.
- **k.** Skin South Malabar Rev. J. Baker, A.S.B.
- **l.** Skin Trincomali E. F. Kelaart, A.S.B.

**Typical of Mus lepidus, Elliot.**

- **m.** Alc., skull Fattegharh, N.-W.P. A. Anderson.
- **s.** Alc., skull Allahabad, N.-W.P. J. Cockburn.
- **v-w.** 2 Alc. juv. Karachi Karachi Mus. [Ex.]
- **x.** Alc., skull Poona, Bm. F. Stoliczka.
- **y.** Alc., skull Shevaroy Hills, Mdr. F. Stoliczka.
- **z.** Alc. Madras G. Bidie.
- **a².** Alc., skull " " J. Anderson.
- **b²-c².** 2 Alc., " Madras Mus. [Ex.]
- **d²-e².** 2 Alc., 1 sk., " " Madras Mus. [Ex.]
- **f².** Alc., juv. " " Madras Mus. [Ex.]
- **g²-h².** 2 Alc., juv. Trichinopoly dist. R. H. Beddome.
- **j²-k².** 2 Alc., Hills, 4,000 ft., Ganjam R. H. Beddome.
- **l²-m².** 2 Alc. Lower forests, Ganjam dist. R. H. Beddome.
- **n³-o³.** 2 Alc. Calcutta E. Blyth, A.S.B.

[with "n", "j", "z," see above, types of Mus. terricolor, Blyth.]

- **p²-q².** 2 Alc. Calcutta E. Blyth.
- **r²-s².** 2 Alc. juv. Garden Reach, Calcutta Mus. Coll.
- **t²-w².** 4 Alc., 2 skulls Bodanga, nr. Calcutta Mus. Coll.
- **x²-y².** 2 Alc. Bally, nr. Calcutta Mus. Coll.
- **z².** 3 Alc. 2 juv. " " Mus. Coll., 1866.
- **a³.** Skin, skull. Mānbhoom E. Blyth.
- **b³.** Alc. nr. Calcutta E. Blyth.
- **c³.** Alc. Dhappa, Calcutta Mus. Coll.

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**Genus CHIROPOMOMYS.**

MAMMALIA.

Chiropodomys gliroides.

Mus gliroides, *Blyth* *J.* *A.* *S.* *B.*, xxiv, p. 721 (1855); id. *J.* *A.* *S.* *B.*, xxxii, p. 345; id. *Cat.* no. 390, p. 120.

Mus peguensis, *Blyth* *J.* *A.* *S.* *B.*, xxviii, p. 295 (1859); id. *J.* *A.* *S.* *B.*, xxxii, p. 345; id. *Cat.* no. 372, p. 116; id. *J.* *A.* *S.* *B.*, xxxiv, p. 193; id. *J.* *A.* *S.* *B.*, xlv, *Burma List*, p. 40.


Chiropodomys gliroides, *Thomas P.* *Z.* *S.*, p. 78 (1886); id. *P.* *Z.* *S.*, 1889, p. 235.

**Distribution.**—Assam, Burma, the Malay peninsula, Java, Borneo and the Philippine Islands; it probably also occurs in Sumatra and other islands of the East Indies, but has only been recorded from the places above mentioned.

The unique type of *Mus gliroides* of *Blyth* has unfortunately disappeared from the Museum, so that it is not possible to be absolutely sure as to whether *Mus peguensis* is identical with it or not, there seems, however, to be no reasonable doubt on the subject; there is in the Museum a mouse from Cherrapoonjee whence the type specimen originally came which entirely agrees with the description of *Mus gliroides*, and this specimen is certainly identical with *Mus peguensis*.

a. Skin, skull Sitang Valley, Burma Major Berdmore, A. S. B.
b. Alc., skull Cherrapoonjee, 12-7-71 J. H. Bourne.
d. Alc., skull Sitang Valley, Burma Major Berdmore, A. S. B.

[With "a" the type of *Mus peguensis*, *Blyth.*]

e. Alc. skull Sitang Valley ? Major Berdmore, A.S.B.

Genus HAPALOMYS.

Hapalomys, *Blyth* *J.* *A.* *S.* *B.*, xxviii, p. 296 (1859). **Type**, *H. longicaudatus*

**Hapalomys longicaudatus.**

Hapalomys longicaudatus, *Blyth* *J.* *A.* *S.* *B.*, xxviii, p. 295 (1859); id. *J.* *A.* *S.* *B.*, xxxii, p. 353; id. *Cat.* no. 359, p. 112; id. *J.* *A.* *S.* *B.*, xlv, *Burma List*, p. 38.

**Distribution.**—Is known only from the three specimens mentioned below procured in Tenasserim.

a. Skin Sitang Valley, Burma Major Berdmore, A. S. B.
b. Alc. skull Cherrapoonjee, 12-7-71 Major Berdmore, A. S. B.

Genus VANDELEURIA.


Vandeleuria oleracea.


Mus dumecolus, Hodgson J. A. S. B., x, p. 915 (1841).


Mus nilagricus, Jordan Mamm., p. 203 (1867).


Distribution.—The whole of India from the Himalayas to the South, extending eastwards through Assam to Burma; recently it was received from Ceylon with a collection of rats and mice sent to the Indian Museum for identification.

<table>
<thead>
<tr>
<th>Location</th>
<th>Specimen Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>g. Darjeeling</td>
<td>Alc. 1 skull</td>
</tr>
<tr>
<td>h. Allahabad</td>
<td>2 Alc. 1 skull</td>
</tr>
<tr>
<td>l. S. E. Berar, 4-8-70</td>
<td>Alc. 2 skulls</td>
</tr>
<tr>
<td>m. Khandala, Bm.</td>
<td>Alc. 2 skulls</td>
</tr>
<tr>
<td>r-t. Cherrapoonjee, Assam</td>
<td>3 Alc. 1 juvenile</td>
</tr>
<tr>
<td>w-x. South India</td>
<td>2 Stuffed</td>
</tr>
<tr>
<td>y. Assam</td>
<td>1 Stuffed</td>
</tr>
</tbody>
</table>

Genus GOLUNDA.


Golunda elliotti.

Golunda elliotti, Gray Charlesw. Mag. N. H., i, p. 586 (1837); id. List Mamm. B. M., p. 113; Blyth J. A. S. B., xxxii, p. 350; id. Cat. no. 397.
MAMMALIA.

p. 121; Jerdon Mamm., p. 212; Blanford J. A. S. B., xlv, p. 165, pl. x; id. ibid, xlvi, p. 292, pl. i, fig. 10.

Mus hirsutus, Elliot Madras Journ., x, p. 213 (1839).


Distribution.—The western and southern parts of India and Ceylon; it is recorded from Sind by Blanford.

e-f. 2 Alc. juv. Madras Museum.
g-j. 3 Alc. ♂ 2 juv. South India Sir W. Elliot, A. S. B.
h. Skin Satpura Hills, C. P. V. Ball.
i. Skin, skull South India Sir W. Elliot, A. S. B.
m. Skin Ceylon E. F. Kelaart, A. S. B.

Genus UROMYS.


Uromys macropus.

Mus macropus, Gray P. Z. S., p. 221 (1866).
Hapalotis caudimaculata, Krefft P Z. S., p. 316 (1867).
Gymnomys macropus, Gray P. Z. S., p. 597 (1867).

Distribution.—Northern territory and N. Queensland, Australia.
a-b. 2 Alc. ♂ Cardwell, Queensland, Brisbane Mus. [Ex.] 9-80.

Genus HAPALOTIS.

Hapalotis, Lichtenstein Darstel. pl. xxix (1829). Type, H. albipes.

Hapalotis apicalis.

Hapalotis apicalis, Gould P. Z. S., p. 126 (1851); Gould Mamm. Austr., iii, pl. ii; Blyth Cat. no. 356, p. 111.

Distribution.—South Australia.
a-b. 2 Stuffed South Australia Melbourne Mus., A. S. B.

Hapalotis conditor.

Mus conditor, Gould Sturt's Narr. Expd. Centr. Austr., i, p. 120; ii, app., p. 7*.

**Distribution.**—Australia.

*a-b 2 Skins*  
Gwaler ranges, South Australia.  
No history.


**Distribution.**—Australia.

Hapalotis mitchelli.

*Dipus mitchelli, Ogilby Linn. Trans., xviii, p. 130 (1841).*


**Distribution.**—Australia.

*a. Skin*  
Western Australia  
No history.  
Canada.

*c-d. Stuffed*  
South Australia  
Melbourne Mus., 1861, A.S.B.

Genus HESPEROMYS.


Hesperomys leucopus.


*Musculus leucopus*, *Rafinesque Am. Month. Mag.*, iii, p. 446 (1818)*.


**Distribution.**—North America, from the Arctic regions to the northern parts of Mexico.

*a-b. 2 Skins*  
Huron County Ont., J. H. Garnier [Ex.]

*c. Skin, skull*  
Gainsville Flor., U.S.A. Brit. Mus. [Ex.]

(F. M. Chapman, 14-2-89).

Genus CRICETUS.


Cricetus phæus.


*Cricetus isabellinus*, *Filippi Viaggio Persia*, p. 344 (1865); *Blanford Persia*, p. 59; *Scully P. Z. S.*, 1881, p. 205.
Cricetus fulvus, *Blanford* *J. A. S. B.*, xlv, p. 108 (1875); *id*. *Yarkand Mammals*, p. 45, pl. ix, fig. 1, pl. xb, fig. 3; *id* *J. A. S. B.*, xlviii, p. 96; *Scully P. Z. S.*, 1881, p. 205.

**Distribution.**—Central Asia extending westwards to the Caspian and Asia Minor; it has been obtained within the limits of the Indian Empire at Gilgit only.

The three so-called species, Cricetus phæus, *C. fulvus*, and *C. isa bellinus* do not differ from one another except in size, and even this distinction breaks down when a large series of skins and specimens in alcohol are examined; below are given the measurements in inches of four specimens, the first “g” named isabellinus by Scully, the second “k” fulvus of Scully, the third “h” phæus of Scully; it is, however, due to Scully to add that he himself in his paper was evidently of opinion that the three forms could not be specifically distinguished from one another:—

<table>
<thead>
<tr>
<th></th>
<th>“g”</th>
<th>“k”</th>
<th>“h”</th>
<th>“d”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head and body</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tail</td>
<td>1'20</td>
<td>1'30</td>
<td>1'20</td>
<td>1'30</td>
</tr>
<tr>
<td>Hind-foot</td>
<td>65</td>
<td>67</td>
<td>62</td>
<td>60</td>
</tr>
<tr>
<td>Muzzle to ear</td>
<td>1'10</td>
<td>1'05</td>
<td>95</td>
<td>98</td>
</tr>
</tbody>
</table>

| a-c. 3 Alc. | 5 Kohrud, North Persia | W. T. Blanford. |
| d. Alc. skull | 9            | W. T. Blanford. |
| e-f. 2 Alc. | 5 Shiraz      | W. T. Blanford. |
| g-j. 3 Alc. | 5 Gilgit      | J. Scully.     |
| h. Alc. | 9              | J. Scully.     |
| l-m. 2 Alc. | juv           | J. Scully.     |
| n-q. 4Skins | 3 5 Kohrud, North Persia, 20-7-72, 7,000 feet. | W. T. Blanford. |
| r-t. 3 Skins | 9 Shiraz, Persia | Museum Collector. |
| u. Skin | Mashish, South Persia | W. T. Blanford. |
| v-w. 2 Skins | 5 skul        | F. Stoliczka.  |
| x. Skin, skull | Sirikol, 1-4-74 | F. Stoliczka.  |
| y. Skin | Kashgar, 17-12-73 | F. Stoliczka.  |

[Type of Cricetus fulvus, *Blanford*.]

| s. Skin | North of Sanju Pass | F. Stoliczka. |
| a-s. Skin | Sirikol, 1-4-74 | F. Stoliczka. |
| b-s. Skin | 5 Panjah, 21-4-74 | F. Stoliczka. |
| c-s. 2 Skins | Yarkand, 20-5-74 | F. Stoliczka. |
| e-s. Skin | Yangihissar, 4-74 | F. Stoliczka. |
| f-j-s. 4 Skins | 5 Nultar valley, Gilgit, 7-79 | J. Scully. |
| k-s. 2 Skins | 9 “7-79 | J. Scully. |
| m-s. 2 Skins | 5 Yarkand, 4-75 | J. Scully. |
| e-s. Skull | Kohrud, North Persia | W. T. Blanford. |
| p-s. Skeleton | 5 “7-79 | W. T. Blanford. |
Genus **CRICETOMYS**.

*Cricetomys*, *Waterhouse P. Z. S.*, p. 2 (1840). *Type*, *C. gambianus*.

*Cricetomys gambianus*.


**Distribution.**—Western and Central Africa.

- Skin ♀ Gadda Monbattu, Brit. Mus. [Ex.]
  - C. Africa (Emin Pasha, 8-2-84.)

Genus **FIBER**.

*Fiber*, *Cuvier Tableau Gen. in Leçon d'Anat. Comp.*, 1st ed. (1800)*.

*Type*, *F. zibethicus*.

*Fiber zibethicus*.


**Distribution.**—North America.

- Skin ♀ Huron Co. Out., Canada. [Ex.]
- Skull Upton, Maine, U.S.A. [Ex.]
- Skull Massachusetts, U.S.A. [Ex.]
- Stuffed N. America [Ex.]

Genus **ARVICOLA**.

*Microtus*, *Schränk Faun. Boic.*, i, p. 66 (1789)*.

*Arvicola*, *Lacépède Tableau*, p. 10 (1803)*.


*Hypudefius*, *Illiger Prodr.*, p. 87 (1811).

*Myodes*, *Pallas Zoog.*, Ross, As., i, p. 172 (1831).


The oldest name for this genus is undoubtedly Microtus, a name which has recently been re-discovered by Lataste who has paid considerable attention to this group of Mammals; this same author has recently proposed a new set of subgenera for the Palaearctic species which do not seem to differ very essentially from those proposed by Blasius, and since Lataste has not taken the Himalayan forms into consideration and Blanford's excellent paper on the Himalayan forms was founded on Blasius' scheme, this latter has been adopted in the catalogue of the specimens enumerated below.

The Himalayan voles are scarce in collections owing doubtless to the fact that they only occur in very remote and inaccessible places and at great heights above the sea, and it seems probable that the number of species may be reduced when a larger number of specimens are obtained.

The following synopsis of the Indian species is adopted from Blanford's paper before quoted.

**Key of the Indian Species.**

a. The anterior upper molar has three angles in, and outside, the 2nd two inside and three out. The ant. lower m. has normally seven spaces.

b. The post. upper m. terminates in a narrow longitudinal process. (=Sub-genus Alticola).

c. The post. upper m. has two strong internal angles and four weak outer angles; thumb rudimentary and clawless.

d. The post. lobe of the post. upper m., behind the second inner angle, is less than half the length of the tooth.

A. stoliczkanus, p. 89.

d'. The post. lobe of the post. upper m., behind the second inner angle, is half the length of the tooth.

A. stracheyi, p. 90.

c'. The post. upper m. has two internal and two external angles, the thumb is clawed and the ears are short.

A. wynnei, p. 90.

c'. The post. upper m. has three angles on either side; the thumb is clawed.

e. In the ant. upper m. the first inner angle is proximal to the first outer; ears short.

A. roylei, p. 91.

e'. In the ant. upper m. the first inner angle is distal to the first outer; ears large and projecting; tail half the length of head and body.

A. blanfordi, p. 91.
b². The post. upper m. does not terminate behind in a longitudinal process, but is somewhat transversely elongated; thumb clawed and ears small. [=Sub-genus Paludicola].

f. The post. upper m. has three external angles and the first lower m. four. A. blythi, p. 91.

a². The ant. upper m. has four angles inside and three out, the 2nd three inside and out; the ant. lower m. with normally nine spaces; thumb clawed; ears projecting. [=Sub-genus Neodon]. A. sikimensis, p. 93.

Sub-genus MYODES.

Arvicola glareolus.

Mus glareolus, Schreber Säugeth., Atlas, pl. ecxrb (1792).
Arvicola fulvus, Millet Faune de Mainf et Loire (1828)*.
Lemnis rubidus, Baillon Mem. Soc. Abbeville (1830)*.
Hypudacus hercynicus, Meilis Isis, p. 874, pl. vii, fig. 8 (1831).
Arvicola rufescens, Selys-Longchamps Campagnos de Liège, p. 13, pl. iv (1836).
Hypudius nageri, Schins Synops, Mamm., ii, p. 237 (1845).
Arvicola glareolus, Blasius Säugeth. Deutschl., p. 337 (1857); Blyth Cat. no. 408, p. 124.

Distribution.—Central Europe from England to Russia.

<table>
<thead>
<tr>
<th>a-c</th>
<th>3 Skins, 1 skull</th>
<th>France.</th>
<th>A. Malherbe (1844), A.S.B</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>Aec. and skull</td>
<td>Norway.</td>
<td>Christiania Univ. (1846), A.S.B</td>
</tr>
</tbody>
</table>

Sub-genus ALTICOLA.

Arvicola stoliczkanus.

Arvicola stoliczkanus, Blanford Æ. A. S. B., xiv, p. 107 (1875); id. Yarkand Mamm., p. 42, pl. viii, fig. 1, pl. xB, fig. 2; id. Æ. A. S. B., l, p. 97.

Distribution.—Only known from the two specimens mentioned below from the Kuenlun mountains in Northern Ladak.

<table>
<thead>
<tr>
<th>a</th>
<th>Skin, skull</th>
<th>Aktagh, Yarkand R., F. Stoliczka</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>Skin.</td>
<td>Nubra Valley Dr. Bellew.</td>
</tr>
</tbody>
</table>

[Co-types of A. stoliczkanus, Blanford.]
Arvicola stracheyi.


**Distribution.** — The type specimen was procured by General Strachey in the Kumaon, and the specimen catalogued below was procured in the Kangra district in the Punjab Himalayas; no other specimen has been recorded.

The only specimen in the collection, which was obtained from the stomach of a snake (Halys himalayanus) is a young one as is proved by the teeth; it agrees best with the description given of A. stracheyi but differs even from this in certain particulars; the ventral surface is brown like the dorsal surface, whereas in A. stracheyi the ventral surface is said to be gray; the ears are but sparsely covered with hair except at their tips where the hair certainly is thicker; the tail is also the same colour as the body; with these exceptions the specimen is in entire harmony with the description of A. stracheyi given by Blanford (*l. c.*); there does not therefore seem to be any justification for describing a new species.

The following are the measurements: — head and body, 3'2; tail, '77; tarsus, '55.

There are only five tarsal pads as is A. wynnei, one at the base of each toe and one proximal one on the inner side, at the edge of the hairs which cover the posterior portion of the tarsus.

*a. Alc. skull. ♀ Dharmalsa, Himalayas, H. Mostyn Clark. 16,000 ft.*

Arvicola wynnei.

Arvicola wynnei, Blanford *J. A. S. B.*, xlix, p. 244 (1880); id. *J. A. S. B.*, i, p. 99, pl. i, fig. b.


**Distribution.** — Only known with certainty from Murree in the North-West Himalayas, and from Sonemarg in Kashmir.

The specimen below is said in Blyth’s Catalogue to have come from Pind Dadun Khan in the Punjab; a reference, however, to J. A. S. B., xxxii, p. 89, shows that the specimen came from the “Bala” Pass, probably the same as the Babeh Pass in Spiti; this specimen was identified by Blyth with A. roylei of Gray; the skull on examination, however, shows that it is certainly not A. roylei, but one of those forms in which the posterior upper molar possesses two, not three, internal angles, and as the thumb is distinctly clawed, it must be identified rather with A. wynnei than with A. stracheyi or A. stoliczkana which are the other two forms in which the posterior upper molar has two internal angles.

*a. Skin, skull "Bala Pass" W. Theobald (1853), A.S.B.*
ARVICOLA.

9

\textit{Arvicola roylei}.

\textit{Arvicola roylei}, \textit{Gray Ann. Mag. N. H.}, x, p. 265 (1842); \textit{Jerdon Mamm.}, p. 216?; \textit{Blanford J. A. S. B.}, 1, p. 102, pl. i, fig. d.

\textit{Distribution}.—The type and only other specimen known were both obtained in Kashmir.

The specimen catalogued below agrees fairly well with the description of \textit{A. roylei} as given by Blanford (\textit{l. c.}), unfortunately the hinder part of the skull is wanting and with it the posterior upper molar which is so important for the discrimination of the species of this genus; it is not therefore absolutely certain that the specimen should be referred to this species.


\textit{Arvicola blanfordi}.


\textit{Distribution}.—This species has only been found in the Gilgit district at an elevation of from 9,000 to 10,000 feet.

a-b. 2 Alc., \( \varphi \) \( \varphi \) Gilgit, 7-79. J. Scully.

2 skulls.

[Co-types of \textit{A. blanfordi}, Scully.]

e-d. 2 Skins \( \varphi \) Nultar Valley, Gilgit, J. Scully.

18-7-79.

\( e \). Skin skull " " J. Scully.

Sub-genus \textit{PALUDICOLA}.

\textit{Arvicola blythi}.

\textit{Phaiomys leucurus}, \textit{Blyth J. A. S. B.}, xxxii, p. 89 (1863); \textit{Theobald J. A. S. B.}, xxxi, p. 519; \textit{Blyth Cat.} no. 412, p. 125. [\textit{nec Gerbe}.]

\textit{Arvicola blythi}, \textit{Blanford J. A. S. B.}, xlv, p. 107 (1875); \textit{id. Yarkand Mammals}, p. 39, pl. viii, fig. 2, pl. xb, fig. i; \textit{id. J. A. S. B.}, 1, p. 106, pl. ii, fig. b.

\textit{Distribution}.—Western Thibet.

a. Alc. skull. \( \varphi \) Tsomoriri, Western W. Theobald, A.S.B. Ladak, 14,000 ft. 17-8-61.

[Type of \textit{Phaiomys leucurus}, Blyth.]
b. Alc., skull ♀ Tanksee, Thibet
   13,000, ft. 17-9-73.  
F. Stoliczka.

a. Alc.  ♀ Pankong Lake, Thibet
   20-9-73.              
F. Stoliczka.

d-e. 2 Skins.  
Tanksee, 17-9-73  
F. Stoliczka.

f. Skin.  
Pankong Lake, Thibet
   20-9-73.              
F. Stoliczka.

g. Skin, skull. Yarkand Exped.  
F. Stoliczka.

Arvicola amphibius.

Arvicola argentoratensis, Desmarest Mamm., p. 281 (1820).
Arvicola pertinax, Savi. Mem. scientif. Pisa (1828)*.
Arvicola destructor, Savi Giorn. Lett. Pisa, p. 102 (1839)*.
Arvicola amphius, Blasius Sângeth. Deutsch., p. 344 (1857); Blyth Cat. 
no. 406, p. 124.

The Water Rat.

Distribution.—The whole Palæartic region.

a. Skin
   r. C. Tytler, A.S.B.

b-c. 2 Skins and Cambridgeshire
   Brit. Mus. [Ex.] 
   skulls.

d. Alc., skull ♀ Norway
   Christiania Univ. (1856), A.S.B.
e-f. 2 Stuffed England
   A. D. Bartlett (1842), A.S.B.
g. Stuffed
   Montrose Museum, A.S.B.
h. Skeleton
   England  
   J. H. Gurney (1860), A.S.B.

Arvicola nivalis.

Arvicola nivalis, Martins Rev. Zool. Soc. Cuv., p. 331 (1842); Blasius 
Sângeth. Deutsch., p. 359; Blyth Cat., no. 407, p. 124.

Arvicola lebrunii, Crespon, Faune Merid., i, p. 77 (1844)*.
Arvicola leucurus, Gerbe Rev. Mag. Zool., p. 260, pl. xi (1852)*.


Distribution.—The Alpine regions of Europe, including the 
   Pyranees.

a. Skin
   Mt. St. Gothard
   A. Malherbe, A.S.B.

Sub-genus AGRICOLA.

Arvicola agrestis.

Mus agrestis, Linnaeus Faun. Suec., p. 11, no. 30 (1761).
Arvicola baillonii, Selys-Longchamps Act. Congrèes Turin (1840)*.
Arvicola arvalis, apud Blyth Cat., no. 409, p. 125 (1863).

**Distribution.**—Northern Europe.

- a. Skin, skull England A. D. Bartlett (1843), A.S.B.
- c. Skin, skull England A. D. Bartlett, A.S.B.

Sub-genus ARVICOLA.

**Arvicola guentheri**.

Arvicola guentheri, Danford and Alston P. Z. S., p. 62, pl. v (1880); Scully J. A. S. B., lvi, p. 72.

**Distribution.**—The type was obtained at Marash in the Taurus of Asia Minor; the specimen in the collection is from Afghan-Turkestan, the species is therefore probably to be found in the intervening country.

- a. Skin, skull Afghan-Turkestan C. E. Yate.

Sub-genus NEODON.

**Arvicola sikimensis**.

Arvicola sikimensis, Blanford J. A. S. B., l, p. 110, pl. i, fig. a (1881).

**Distribution.**—Sikkim from 7,000 to 10,000 ft. in the forests.

- a. Alc., skull & Darjeeling G. King.

Genus HYPUDAUEUS.

Hypudaeus, Illiger Prodr., p. 87 (1811).

**Hypudaeus lemmus**.

Hypudaeus lemmus, Illiger Prodr., p. 87 (1811); Blyth Cat. no. 413, p. 126.
Lemnus norvegicus, Desmarest Mamm., p. 287 (1820).

The Lemming.
Distribution.—Scandinavia.

Genus ELLOBIUS.

Ellobius, *Fischer Zoognosia*, iii, p 72 (1814)*. Type, E. talpinus.

**Ellobius fuscocapillus.**

Ellobius fuscocapillus, *Blanford J. A. S. B.*, i, p. 119, pl. ii, fig. d (1881); *Thomas Linn. Trans.* (2), v, p. 59.

The Quetta Mole.

Distribution.—Afghanistan, has been obtained from various places in Afghan-Turkistan and from Quetta.

Thomas, after examining the Afghan boundary specimens of Ellobius, has come to the conclusion that the characters whereby it was distinguished as a separate species by Scully do not hold good when a considerable number of specimens are examined; *E. intermedius* has therefore been merged with *E. fuscocapillus*.

Besides the original type of the genus, *E. talpinus*, a second Central Asiatic species has recently been described, *Ellobius tancrei* from the Altai by Blasius (*Zool. Anz.*, vii, p. 197).

**Spalax.**

Distribution.—Scandinavia.

Genus SPALAX.


**Spalax typhlus.**

Spalax xanthodon, Nordmann in Demidoff Voyage dans la Russie.*
Spalax typhlus, Blasius Säugeth. Deutsch., p. 400 (1857); Blyth Cat. no. 415, p. 126; Radde Zool. Jf. B., iv, p. 1044.

Distribution.—South-Eastern Europe and Western Asia, extending to the eastern shores of the Caspian Sea, and to Mesopotamia and Syria.

a. d. 2 Alc. i skull Hungary and juv. Hungarian Mus., A.S.B.
   c. Skin Sarepta, Russia Brit Mus., [Ex.]
   d. Stuffed Beyrout J. C. Parker (1855), A.S.B.

Genus RHIZOMYS.

Rhizomys, Gray P. Z. S., p. 95 (1831); Type, R. sinensis.
Nyctocletes, Temminck Monogr. Mamm., ii, p. 42 (1835-41); Type, R. sumatrensis.

Anderson has monographed this genus in his Anatomical and Zoological Researches, and his account, which is illustrated by plates of several of the species, is so complete that there is nothing additional to be added; representatives of all the species except Rhizomys minor from Siam and Rhizomys sinensis from China, will be found catalogued below.

Key of the Indian Species.

a. Somewhat larger, head and body from 9 to 12 inches in length.

   b. Fur soft, thick and brown with longer white-banded hairs causing a grizzled appearance; sides of the face pale.
      R. pruinosus, p. 96.

   b. Fur harsh, no under fur, with a dark median streak on the top of the head; cheeks and sides of the head bright red.
      R. erythrogenys, p. 96.

a. Somewhat smaller, head and body about 7 inches in length, fur very soft and thick, the basal two-thirds uniformly gray the apical third bright chestnut, most intense on the head.
      R. badius, p. 97.

Rhizomys sumatrensis.

Mus sumatrensis, Raffles Linn. Trans., xiii, p. 258 (1822).
Nyctocleptes dekan, Temminck Monogr. Mamm., ii, p. 44, pl. xxxiii (1835-41); Gervais Voyage Bonite Zool., i, p. 54, pls. x, xi, figs. 1-3*.

**Distribution.**—The Malay peninsula and Sumatra (Jentink); there is no record of its occurrence in Tenasserim; the species occurring there being R. erythrogenys.

| a. Skin |  ♂  Malacca | India Mus., London |
| c. Skin skeleton | ♂  ...... | W. Rutledge. |
| d-e. 2 Stuffed, 1 skull | Malacca | Messrs. Frith and Lindstedt, A.S.B. |
| f-g. 2 Stuffed | „ | Messrs. Frith and Lindstedt, A.S.B. |
| h-j. 2 Alb.  ♀  ...... | Zoological Gardens. |
| k. Skin juv. Malacca (Cantor) | India Mus., London. |

**Rhizomys erythrogenys.**


Red-cheeked Bamboo Rat; Pwai of Tenasserim.

**Distribution.**—Shan States of Upper Burma and Mergui.

This species resembles R. sumatrensis, from which it is distinguished by its red cheeks, the dark occipital line extending forwards to between the eyes, and the absence of any trace of the white mark characteristic of the young and adolescent R. sumatrensis; the skull is intermediate in character between R. sumatrensis and R. badius.

| a. Skin in bad condition and skeleton | Salween Hill Tracts (A. H. Hildebrand) | Zoological Gardens. |
| b. Stuffed | Tenasserim | S. R. Tickell, A. S. B. |
| [Co-types of R. erythrogenys, Anderson.] |
| c-d. 2 Skins, ♂ juven. Mergui, 1-82 | J. Anderson. |
| 2 skel. ♀ juven. tons. |

**Rhizomys pruininosus.**


Bamboo Rat.

**Distribution.**—This species is found in the Kashia and Naga hills of Assam, whence it extends through the Munipur hills to the
Kakhyen hills in Upper Burma where it was procured by Anderson.

a-c. 3 Skins Kashia hills, Assam T. laTouche.
d. Skin ♯ Naga hills A. W. Chennell.
e. Skin Tellizo Peak, Naga hills H. H. Godwin Austen.
f. Skin, skeleton.
g. Skin, skeleton & juv. Iril R.; Munipur H. H. Godwin Austen.
h. Skin, skeleton ♯ Pouline, Kakhyen hills, J. Anderson.
k. Skin, skeleton ♯ 17-2-75 nr. Tsitkaw, Kakhyen hills, J. Anderson.
l-n. 3 Stuffed Cherrapoonjee, Assam F. Skipwith, A. S. B. [Types of Rhizomys pruinosus, Blyth.]
g-t. 4 Alc. ♯ J. Anderson.
u-y. 5 Alc. ♯ Kakhyen hills J. Anderson.
α. Viscera in alc.
β. Skull juv.
γ. Skin, skeleton.
δ. Skin
ε. Skin
θ. Skin,
ι. Skin
κ. Skin,
λ. Skin, skeleton
μ. Skin, skeleton, mtd.
ν. Stuffed Prome, Pegu W. T. Blanford, A. S. B. [Types of Rhizomys castaneus, Blyth.]

Rhizomys badius.

Rhizomys castaneus, Blyth J. A. S. B., xii, p. 1007 (1843); id. Cat. no 403, p. 123; Blanford J. A. S. B., xxxvi, p. 198; Blyth J. A. S. B., xiv, Burma List, p. 41; Blanford J. A. S. B., xlvii, p. 165.

Distribution.—This species has a somewhat wider range than the last. It is found in the Himalayas from Nepal eastwards and extends through Assam, Munipur, Arakan, and Burma, but does not seem to be found further south than the northern part of Tenasserim.

a. Skin
b-c. 2 Skins Nepal (Hodgson) India Museum, London.
d. Skin Naga hills J. Butler.
e-f. 2 Skins ♯ Tsitkaw, Kakhyen hills A. W. Chennell.
g. Skin Kakhyen hills J. Anderson.
h. Skin,
ι-k. 2 Stuffed, Sikkim Terai W. T. Blanford, A. S. B.
λ. Skull
μ. Stuffed, Arakan Sir A. Phayre (1843), A. S. B.
ν. Stuffed, skeleton, mtd.
MAMMALIA

v. Skeleton mted nr. Bhamo
φ
J. Anderson.

q-r. 2 Alc. φ
Sikkim
.......
Zoological Gardens.

s. Alc. φ
Lingling, Bt. Sikkim
G. King.

t. Alc. φ
Cherrapoonjee, Assam
T. Johnston.

u. Alc., skull φ
Cachar
H. H. Godwin Austen.

v. Alc. φ
Munipur
J. Wood Mason.

w. Alc. φ
Kakhyen hills
Col. Johnston.

x. Alc. φ
Shwegyin, Tenasserim
J. Anderson, Major Berdmore, A. S. B.

Genus BATHYERGUS.

Bathyergus, Illiger Prodr., p. 86 (1811). Type, B. maritimus,

Bathyergus maritimus.

Mus maritimus, Gmelin Syst. Nat., i, p. 140 (1788).
Mus suillus Schreber Säugeth., iv, p. 715, pl. ccivb (1792).
Bathyergus maritimus, Illiger Prodr., p. 86 (1811); Elyt Cat. no. 416, p. 126.

Distribution.—South Africa.

a-c. 3 Stuffed
.....
W. S. Sherwill, A.S.B.

Bathyergus splendens.

Bathyergus splendens, Rüppell N. Wirbelth., p. 36, pl. xii (1835); Blanford Abyssinia, p. 279.

Distribution.—North-East Africa (Abyssinia).

a-b. 2 Skins φ
Lake Ashangi, Abyssinia
W. T. Blanford.

C. Skeleton
Lake Ashangi, Abyssinia
W. T. Blanford.

Genus GEORYCHUS.

Georychus, Illiger Prodr., p. 87 (1811). Type, G. capensis.

Georychus caecutiens.

Bathyergus caecutiens, Brants Muisen, p. 37 (1827).
Georychus caecutiens, Schins Synops. Mamm., ii, p. 127 (1843); Elyt Cat. no. 418, p. 127

Distribution.—South Africa.

a-c. 3 Stuffed
.....
W. S. Sherwill and E. L. Layard, A. S. B.
ZAPUS.

Georychus capensis.
Georychus capensis, Illiger Prodr., p. 87 (1811); Blyth Cat., no. 417, p. 127.

Distribution.—South Africa.

a. Skin

.......

E. L. Layard (1860), A. S. B.

Genus GEOMYS.

Geomys, Rafinesque, Am. Month. Mag., ii, p. 45 (1817)*.
Diplostoma, Rafinesque, Am. Month. Mag., ii, p. 45 (1817)*.

Geomys bursarius.

Mus bursarius, Shaw Linn. Trans., v, p. 227, pl. viii (1809).
Geomys cinereus, Rafinesque Am. Month. Mag., ii, p. 45 (1817)*.


The Pocket Gopher.

Distribution.—Central States of North America, the valley of the Mississippi in a broad sense.

a-b. 2 Skins 3♀ Texas, 2-84  J. H. Garnier [Ex.]

Genus ZAPUS.


Zapus hudsonius.

Dipus canadensis, Davies Linn. Trans., iv, pl. viii, figs. 5-6, p. 157 (1798).
Dipus labradorius, Turton, Syst. Nat., i, p. 99 (1806)*.
**Mammalia.**

**Distribution.**—North America generally from lat. 62° southwards.

a. Alc. Pelee Ont., Canada J. H. Garnier [Ex.]

Genus **Dipus.**

Dipus *Schreber, Säugeth.*, iv, p. 840 (1792).

**Dipus lagopus.**


**Distribution.**—Western and Eastern Turkistan.

a. Skin, skull Yarkand, 20.5-74 F. Stoliczka.
b. Skin Yangihissar, 4-74 F. Stoliczka.
c. Skin Koshtak, 24-73 F. Stoliczka.
d. Skin, skull Yarkand, 28-7-75 J. Scully.
e-f. 2 Skins, 1 skull Kilian, Turkestan C. Ellis.
g. Alc. Turkestan C. Ellis.

**Dipus blanfordi.**

Dipus macrotarsus, *apud Blanford, Persia*, p. 74 (1876).


**Distribution.**—Persia generally.

The specimen below was identified with considerable doubt by Blanford with Dipus macrotarsus of Wagner; since that time several more specimens exhibiting the peculiar colouration of Blanford's specimen have been procured for the Karachi Museum, and Murray has given the species a new name; whether it will really turn out to be distinct from the true *D. microtarsus* which was got from Sinai, can only be settled by a comparison of the specimen below with Wagner's type now probably in the Berlin Museum.


**Dipus jaculus.**


Dipus gerboa, *Olivier Bull. Soc. Philom.*; ii, p. 121 (1800)*.


**Distribution.**—From North Arabia westwards through Lower Egypt as far as the province of Oran in Algeria.
PECTINATOR.

The specific name ægyptius was first used by Hasselquist, a pre-Linnean writer and is therefore incorrect; as is pointed out by Thomas (Ann. Mag. N. H. (5), viii, p. 14), the proper name for this species is Dipus jaculus of Linnaeus.

a-d. 4 Alc., 1 skull nr. Alexandria, Egypt Purchased.  
2 3 2.

e. Alc. skull Heluan, Egypt Purchased.
f. Stuffed, skull Algeria A. Malherbe, A.S.B.

Genus ALACTAGA.


Alactaga decumana.


Distribution.—Central Asia extending southwards to Bushire.


Alactaga indica.


Alactaga bactriana, Blyth Cat. no. 352, p. 110 (1863).

Distribution.—Afghanistan from the Simkoh hills southwards to Baluchistan and eastwards to Shiraz.


b. Skin Afghanistan (Griffith) India Mus., London.

c. Stuffed Afghanistan Old Collection, A. S. B.

Genus PECTINATOR.


Pectinator spekii.

**Distribution.**—North-east Africa, the Somali country and Abyssinia,

- **a. Skin** Somali country  
  J. H. Speke, A. S. B.  
  [Type of Pectinator spekii, Blyth.]

- **b. Skin** Senafe Pass, Abyssinia, 2-68.  
  W. T. Blanford.

- **c-d. 2 Skins** Undul weles, Abyssinia, 4-68.  
  W. T. Blanford.

- **e-f. 2 Skins** Sooroo Pass, Abyssinia, 6-68.  
  W. T. Blanford.

- **g. Skin** Abyssinia  
  W. T. Blanford.

- **h-l. 4 Alc.** Undul weles, Abyssinia  
  W. T. Blanford.

- **m. Skeleton** Abyssinia  
  W. T. Blanford.

- **n. Skeleton** in alc.  
  W. T. Blanford.

**Genus SCHIZODON.**


**Schizodon fuscus.**


**Distribution.**—Chili.

- **a. Stuffed** Chili  
  Brit. Mus. [Ex.]

**Genus SPALACOPUS.**


**Spalacopus poeppigii.**


**Distribution.**—Chili.

- **a. Stuffed** Chili  
  C. T. Eyton (1849), A. S. B

**Genus OCTODON.**

*Octodon*, *Bennett, P. Z. S.*, p. 46 (1832). *Type*, O. degus.

Octodon degus.

Octodon degus, Waterhouse Nat. Hist. Mamm., ii, p. 253 (1848); Blyth Cat. no. 419, p. 127.

*Distribution.*—Chili.
a. Stuffed Chili C. T. Eyton (1846), A. S. B.

Genus SYNETHERES.


Genus SYNETHERES.

Synetheres prehensilis.

Hystrix cuandu, Desmarest Mamm., p. 345 (1820).

*Distribution*—The Brazilian region of South America.
a. Alc. 2 Purchased.

Genus ERETHIZON.


Erethizon dorsatus.

Erethizon dorsatus, F. Cuvier Mem. Mus., Paris, ix, p. 425, pl. xx ter, figs. 1, 2 & 8 (1822); Allen Monographs N. Amer. Rodents, p. 388
Hystrix hudsonius, Dekay New York Zool., i, p. 77, pl. xxvi, fig. 1, pl. viii, fig. 2 (1842).

*Distribution.*—Middle and northerly portions of the North American Continent.
a-b. 2 Skulls Upton, Maine, U. S. A. W. Theobald.
Genus **ATHERURA**


The skull of the African species of Atherura is distinguishable at once from that of the Asiatic species by the fact that the posterior nasal opening is in the former species opposite the last molar, whereas in the latter, it is extended forward to opposite the penultimate molar.

Besides the two species mentioned below, there is a third, the true *A. fasciculata* of Shaw, found only in Siam, in which the cuudal bristles are simple and flattened, and not twisted and irregularly dilated.

Atherura macroura.


Brush-tailed Porcupine.

**a.** 2 Skins, ♂ ♀ Tiboo Padan, Mergui, J Anderson.

2 skeletons. 7-2-82.

c. Skin

d. Stuffed, skull Tipperah No history, A. S. B.

e. Stuffed, skull Malacca R. W. G. Frith, A. S. B.

f. Skeleton, mted. Rev. F. Lindstedt, A. S. B.

Zoological Gardens.

Atherura africana.


**Distribution.**—Western Africa.

a. Skin, skull, and bones ♂ W. Rutledge.

Genus **HYSTRIX**.


**Cedocephalus, Gray P. Z. S.,** p. 308 (1866). *Type*, H. cristata.

Key of Indian Species.

a. Crest well developed; skull with enormously inflated nasal region; the frontal processes of the premaxillae wide, truncated, and extending back as far as the nasals.


a'. Crest but slightly if at all developed; skull with the nasals not inflated, and the nasals extending further back than the frontal processes of the premaxillae.

b. Nasal bones expanded behind and extending back to a level with the middle of the orbits; frontal processes of the premaxillae narrow and almost pointed.

**H. longicauda**, p. 106.

b'. Nasal bones of equal width throughout, and hardly extending backwards to a level with the lacrymal bones; frontal processes of the premaxillae wide and truncated.


**Hystrix cristata.**


The European Porcupine.

*Distribution*—Southern Europe and Northern Africa, ranging as far as Zanzibar?


**Hystrix leucurus.**


The Indian Crested Porcupine; Sahi, Sayal, Sirsel, Hind.; Saori, Guzerat; Salendra, Mahrathi; Yed, Canarese; Yeddu-pandi, Tamil; Heetava, Cingalese.

Distribution.—India from Sind and the Himalayas southwards to Ceylon; Baluchistan; eastwards not extending to Lower Bengal.

The Baluchistan skull (c.f. Blanford’s Persia) seems to agree much better with the Indian skulls than with that of H. cristata, of which however there is only one specimen in the Museum, the skull of which exactly agrees with the skull of H. cristata as figured in Waterhouse’s Mammalia, being distinguished from H. leucura by its posteriorly broadened nasals and by its much narrower nasal process of the premaxillae.

a-b. 2 Skins Jemper, Sind Karachi Mus. [Ex.]
c. Skin, juv. " " Karachi Mus. [Ex.]
d. Skin Ceylon? Zoological Gardens.
e. Staffed, juv. " E. F. Kelaart, A.S.B.

[Type of Hystrix zeylonensis, Blyth.]
f. Skin, juv. ...... A.S.B.
g. Skull Pind Dadan Khan W. Theobald, A.S.B.
h. Skull Ceylon E. F. Kelaart, A.S.B.
j. Skull ...... E. L. Layard, A.S.B.
k. Skull Allahabad J. Cockburn.
l. Skull No history A.S.B.
m. Skin, skull ♀ Jalk, Baluchistan, 15-3-72. W. T. Blanford.
n. Skin ♀ Agra dist. Agra Mus.
o. Skin of head South India Sir W. Elliot, A.S.B.

Hystrix longicauda.


Hystrix fasciculata, Müller Over de Zoogdieren in Tem. Verhandl., p. 36 (1839).


Hystrix alophus, Hodgson, J. A. S. B., xvi, p. 771, pl. xxxii (1847); Gray Cat. Hodg’s Coll., 2nd ed., p. 11.

Hystrix hodgsoni, Waterhouse Nat. Hist. Mamm., p. 461, pl. xx, fig. 3 (1848).

Hystrix bengalensis, Blyth J. A. S. B., xx, p. 170 (1851); Blyth Cat. no. 422, p. 128; Jerdon Mamm., p. 220.

Acanthochœrus grotei, Gray P. Z. S., p. 310, pl. xxxi (1866).

The Crestless Porcupine; Sajru, Bengal; Anchotia Dumsi; Nepal; Sathung, Lepch; Phyoo, Tenasserim.

Distribution.—Himalayas from Nepal eastwards, Lower Bengal,
Hystrix. Assam, Burma and the Malay peninsula, extending to the islands of Sumatra and Borneo.

All the skulls in the Museum of the crestless type of Porcupine with one exception are of the type figured by Waterhouse (l. c.) distinguished by their long posteriorly rounded and expanded nasal bones, the other type figured by Waterhouse as H. javanica is distinguished by its short truncated nasals which do not reach as far back as the level of the lacrymal bone; there is one skull of this type in the Museum—see below under H. yunnanensis; there does not seem to be any real difference between the three so-called species H. longicauda, H. bengalensis and H. hodgsoni, unless it is that in the last named there is no trace of a crest, whereas a small crest is present in H. bengalensis and H. longicauda; the skulls of these species vary enormously and no distinctions can be found which do not break down when a series are examined.

a. Skin, skull  
Nepal Valley, 4-78  
J. Scully.

b. Skin, skull  
Nepal  
B. H. Hodgson, A.S.B.

c. Skin, skull  
Darjeeling  
E. Blyth (1832) A.S.B.

d. Skin, skull  
Sikkim  
L. Mandelli.

e. Skin, juv  
Arakan  
L. Mandelli, A.S.B.

f. Stuffed skull  
E. Lindstedt, A.S.B.

[Type of H. bengalensis, Blyth.]

g. Stuffed, juv.  
A.S.B.

h. Stuffed skull,  
Malacca  
A S B.

j. Stuffed skull,  
Rajah R. Mullick  
29-12-71

k. Skeleton, mtd.  
Rajah R. Mullick, A.S.B.

l. Skeleton  
Babu H. M. Roy, A.S.B.

m. Skeleton  
No history.

n. Skull  
Assam  
F. Jenkins, A.S.B.

o-s. 5 Skulls  
No history.

Hystrix yunnanensis.


Distribution.—Kakhyan hills of Upper Burma.

The skull of this species, as is pointed out by Anderson, (l. c.) resembles very closely that of H. javanica, described and figured by Waterhouse (Mamm., ii, p. 465, pl. xx, fig. 4), the great feature of the skull being the short nasals which do not extend back as far as the anterior level of the lacrymal bones and the consequent increase in size of the frontals. Günther (P. Z. S., 1876, p. 737) has described a species of Hystrix from Borneo as H. crassispinus, the skull of which (woodcut fig. 1), also agrees very closely with the Yunnan skull; the Borneo species, judging from the plate, does not appear to be crested, in this resembling H. javanica, but it is distinguished by its very large and thick spines, some of which
are twice as thick as an incisor tooth; the Yunnan species on the
other hand, has a small crest and the spines are of a moderate size,
least none are as large as the incisor teeth.

The skull of H. javanica, which was figured by Cuvier (Mem.
Mus. Paris, ix, pl. ix, figs. 3-4) seems to be of the same type as
H. longicauda with posteriorly extended and swollen nasals.

a. Skin, skull Kakhyen hills J. Anderson.
   [Type of Hystrix yunnanensis, Anderson.]

Genus LAGOSTOMUS.

Lagostomus, Brookes Linn. Trans., xvi, p. 102 (1828).

Lagostomus trichodactylus.

Lagostomus trichodactylus, Brookes Linn. Trans., xvi, p. 102, pl. ix (1828);

The Viscacha.
Distribution.—The open plains of the southern part of South
America.

a. Skeleton ...... W. Rutledge.

Genus CŒLOGENYS.

Cœlogenys. Illiger Prodr., p. 92 (1811).

Cœlogenys pacæ.

Cœlogenys fulvus Cœlogenys pacæ, Blyth Cat. no. 420, p. 128 (1863); Alston Biol. Centr.
Amer. Mamm., p. 174.

Distribution.—From Vera Cruz in Mexico southwards through
Central and South America to Paraguay.

a. Skin ...... No history.
b. Skin ...... W. Rutledge.
d. Stuffed South America. E. Blyth, A.S.B.
e. Stuffed Purchased.
f. Skeleton mtd. E. Blyth, A.S.B.
g-h. 2 Skulls E. Blyth, A.S.B.

Genus CAVIA.

Cavia, Pallas Miscell. Zool., p. 30 (1766)*.
Cavia porcellus.


The Guinea Pig. 
*Distribution.*—South America, only known domesticated.

a. Skin ♂ ...... Purchased.
b. Skin, skull ♀ ...... Purchased.
c. Skin ♀ ...... Zoological Gardens.
d. Stuffed ...... A. D. Bartlett (1849), A.S.B.
e. Skeleton ♀ ...... W. Rutledge.

Cavia australis.


*Distribution.*—Patagonia.

a. Stuffed ...... C. T. Eyton, A.S.B.

Genus HYDROCHÆRUS.


Hydrochærus capybara.


*Distribution.*—South America from Guiana to Paraguay.

b. Skull ...... E. Blyth, A.S.B.

Genus LAGOMYS.


*Key of the Indian Species.*

a. Larger forms generally over 7 inches in length.

b. Fur sandy rufous; skull very narrow between the orbits.

c. Ear long about 1 inch; no white nuchal patch; skull with the anterior palatine foramen divided into an anterior and posterior portion by the inwardly projecting palatal plates of the premaxillae. *L. ladacensis*, p. 110.

c*2*. Ear shorter, only about '75 inch; a large conspicuous white
patch at the back of the neck; the anterior palatine foramen not divided as above.

*L. rufescens*, p. 111.

*δ*. Fur grayish; skull not contracted between the orbits, but with a pair of foramina at the narrowest point at the anterior ends of the frontal bones; the anterior palatine foramen not divided. *L. macrotis*, p. 110.

*α*. Smaller, generally under 7 inches in length; fur very long, soft, and rufous; skull broad between the orbits; and the anterior palatine foramen not divided. *L. roylei*, p. 112.

### Lagomys ladacensis.


*Distribution*.—The higher regions of Eastern Ladak from 15,000 feet to 19,000 feet.

| a-d. | 4 Skins ♀ | Chagra, Ladak, 15-7-70 | G. Henderson. |
| f-g. | 2 Skins ♀ and juv. | Luksung, Ladak, 24-6-70 | G. Henderson. |
| h-k. | 3 Skins ♂ | Ladak | 7-70 | G. Henderson. |
| m. | Skin, skull | Chagra, Ladak, 21-9-73 | F. Stoliczka. |
| n-o-p. | 3 Skins | Rimdi, Ladak. | 17,000 feet, 22-9-73 | F. Stoliczka. |
| q. | Skin | Kazijilga, Ladak | 17,000 feet, 22-9-73 | F. Stoliczka. |
| r-s. | 2 Skins, 1 skull | Gogra, Ladak. | F. Stoliczka. |
| t. | Skin | Ladak | F. Stoliczka. |
| u-v. | 2 Skins ♂ | Kizitlagh Karakorum | F. Stoliczka. |
| w. | Skin, skull | Pass, 17.500 ft. 24-7-83 | C. Ellis. |
| x. | Skeleton | Karakorum Brangsa, 23-7-83 | C. Ellis. |
| y. | Stuffed | Rimdi, Ladak | 17,000 ft. 22-9-73 | F. Stoliczka. |

### Lagomys macrotis.


*Lagomys griseus*, *Blanford* *f. A. S. B.*, xliv, p. 111 (Oct. 1875); id. *Yarkand Mammals*, p. 77, pl. vii, fig. 1, pl. viia, fig. 3.
LAGOMYS

Distribution.—Ladak more especially the western part; has a somewhat more extended distribution than the last species.

The additional number of specimens received since the publication of Blanford’s Yarkand Mammals confirms what Blanford hinted at in that work that Lagomys macrotis, L. auritus and L. griseus are conspecific. There is no distinction to be found between the skulls of these three so-called species, and the colour and degree of harshness of the fur varies considerably in each individual.


[Type of Lagomys auritus, Blanford.]

b. Skin and skeleton. Lukong F. Stoliczka.


[Type of Lagomys griseus, Blanford.]

e. Skin, skull. Duba, Kuenlun Mts. ? F. Stoliczka. 6-6-74.

f. Skin. Above Kharbu, Ladak. F. Stoliczka. 14,000 ft., 22-8-73

g. Skin. Leh, Ladak, 21-9-73 F. Stoliczka.

h-j. 2 Skins. 27-9-73 F. Stoliczka.

k. Skin. 30-9-73. F. Stoliczka.

l. Skin, skull. Kishengunga Valley, Kashmir, 7,500 ft., 21-5-76.

m. Skin. Gilgit dist., 10,000 ft., J. Biddulph. 23-6-76.

n. Skin &. Gilgit, 12,000 ft. J. Scully.

u. Skin, skull. Dayoor, Gilgit, J. Scully. 7,500 ft.

Lagomys rufescens.


Distribution.—Persia and Afghanistan extending to Afghan-Turkestan and parts of Transcaspia.

a-b. 2 Skins &. Kohrud, Persia, 9,000 ft., 7-72. W. T. Blanford.

c-e. 3 Skins &. Kohrud, Persia, 9,000 ft., 7-72. W. T. Blanford.

f-h. 3 Skins &. Kohrud, Persia, 9,000 ft., 7-72. W. T. Blanford.
Lagomys roylei.


**Distribution.**—The Himalayas generally from Kashmir to Sikkim.

Two other species of Lagomys, allied to L. roylei, have been described, whether they are identical with L. roylei cannot be decided without an examination of the types; one is L. curzonii of Hodgson (J. A. S. B., xxvi, p. 207) procured from the Chumbi Valley of Tibet; this is asserted by Günther (Ann. Mag. N. H. (4), xvi, p. 230) to be quite distinct from the other Himalayan species, the other is L. tibetanus of Milne Edwards from Moupin in Tibet, and this seems to be closely allied to L. roylei.

**a.** Skin, skull Mataian, Dras valley, Kashmir, 12,000 ft., 15-873.

**b.** Skin, skull Deosai plain, Kashmir (Biddolph) 11,000 to 12,000 ft.

**c.** Skin Sango-Pir, above Astor, Kashmir, 15,000 ft.

**d.** Skin, skull Kashmir

**e.** Skin, skull Nepal (Hodgson)......

**f-l. 6 Stuffed**

**m-n. 2 Alc. 1 skull** Native Sikkim

**Genus LEPUS.**

*Lepus, Syst. Nat., 12th ed., i, p. 77 (1766).*

Key of the Indian Species.

a. Ears longer than the head.

b. Fur distinctly curly; tail white.

c. Rump grayish; ears posteriorly brown.  
   L. hypsibius, p. 113.

c’. Rump french gray, contrasting strongly with the colour of the back; ear posteriorly white.  L. pallipes, p. 114.

b’. Fur straight; tail never wholly white.

d. Tail black above; nape never black.

e. Fur very soft and thick; ear about 4.5 inches; tarsus about 4.75 inches in the dry skin; nasals rounded or truncated posteriorly; posterior wing of postorbital process of the frontal bone free.  L. tibetanus, p. 114.

e’. Fur not so soft; ear about 5.5 inches; tarsus 4.25 inches; nasals as in L. tibetanus; posterior wing of postorbital process of the frontal bone meeting the squamosal.  L. dayanus, p. 115.

e”. Fur coarse; ear about 4 inches; tarsus 4.25 inches; nasals acutely pointed posteriorly and externally; posterior wing of postorbital process free.  L. peguensis, p. 117.


d”. Tail red above.  L. ruficaudatus, p. 116.

a”. Ears shorter than the head; fur very coarse.  L. hispidus, p. 117.

Lepus hypsibius.

Lepus oistolus, apud Adams P. Z. S., p. 520 (1858).
Lepus pallipes, apud Blyth Cat. no. 433, p. 131 (1863); Blanford f. A. S. B., xliv, p. 109.
Lepus hypsibius, Blanford f. A. S. B., xlv, p. 214 (1875); id. Yarkand Mammals, p. 60, pl. iii, fig. i, pl. iva, fig. i.

Distribution.—Northern Ladak.

b. Skin, skull  Kium, N. Ladak  F. Stoliczka.  [Co-types of Lepus hypsibius, Blanford.]
c. Skin  West Thibet?  E. Smyth, A. S. B.
Lepus pallipes.


Lepus tibetanus, apud Anderson P. Z. S., p. 563 (1871); Blanford J. A. S. B., xli, p. 34.

Distribution.—Thibet from the north of Sikkim extending westwards to Eastern Ladak.

Lepus tibetanus.

"Hare of Little Thibet," Vigne Travels in Kashmir, ii, p. 268.


Lepus biddulphi, Blanford J. A. S. B., xli, p. 324 (1877).

Distribution.—Ladak from the Nubra Valley westward through Gilgit and Afghan and Russian-Turkestan and North Persia.

Lepus pamirensis.

LEPUS.

Blanford & A. S. B., xlv, p. 110; id. Yarkand Mammals, p. 67, pl. v, fig. 1, pl. va, fig. 1.

Distribution.—The Pamir.

a-b. 2 Skins  Lake Sarikul, Pamir  F. Stoliczka.

Lepus stoliczkanus.

Lepus stoliczkanus, Blanford & A. S. B., xlv, p. 110 (1875); id. Yarkand Mammals, pl. v, fig. 2, pl. va, fig. 2.

Distribution.—Mountains north of Kashgar.

There does not seem to be any very great distinction between this species, L. pamirensis and L. tibetanus, either in the skins or skulls, and when more specimens are procured, it will probably be found that they are all identical with one another.

a-b. 2 Skins  Jigda, Altum Artush,  F. Stoliczka.

n. of Kashgar,  20-2-74.

[Types of Lepus stoliczkanus, Blanford.]

Lepus yarkandensis.

Lepus yarkandensis, Günther Ann. Mag. N. H. (4), xvi, p. 229 (1875); Blanford & A. S. B., xlv, p. 109; id. Yarkand Mammals, p. 65, pl. iv, fig. 1, pl. iva, fig. 2.

Distribution.—The plains of Eastern Turkestan round Yarkand and Kashgar.

a-b. 2 Skins  Katti-ilak, Fyzabad,  E. Turkestan, 1-3-74  F. Stoliczka.

c. Skin  Yangihissar,  2-12-73  F. Stoliczka.

d-e. 2 Skins  Yarkand,  22-4-73  F. Stoliczka.

f. Skin  Beshkant, Yarkand  2-75  J. Scully.

g. Skin juv.  Yarkand,  5-6-75  J. Scully.

h. Skin juv.  "  31-5-75  J. Scully.


Lepus dayanus.


Lepus dayanus, Blanford P. Z. S., p. 663 (1874); Murray Zool. Sind, p. 50.


Lepus joongshaiensis, Murray Zool. Sind, p. 51 (1884).

Distribution.—Throughout Sind and Baluchistan.
There does not seem to be any distinctions of importance between the Sind and Baluchistan hares, and the description of the third species, L. joongshaiensis, agrees entirely with the type of L. craspedotis and a specimen labelled L. dayannus in the Indian Museum.

   8-2-72.
   [Type of Lepus craspedotis, Blanford.]

b. Skin, skull Nara Nai w. of Sehwan, W. T. Blanford.
   Sind, 11-2-75.

e. Skull Kandahar T. Hutton, A. S. B.

Lepus ruficaudatus.


Lepus orientalis, Brown Bengal Sporting Mag. (1836)*.


The Indian Hare; Khargosh, Hind.; Kharra, Central India; Sasru, Lamma, Hind.; Moiol, Gonds.

Distribution.—Northern India, from the Punjab to Bengal, extending from the lower ranges of the Himalayas to the Taptee and Godavery Rivers.

a. Skin ♂ Agra dist. Agra Mus.
b-c. 2 Skins Manbboom R. C. Beavan (1865).
d. Skin Thankot, Nepal, 9-12-77 J. Scully.
e. Skin Naga Hills A. W. Chennell.
g. Skeleton [Calcutta bazaar] Purchased.
h. Stuffed [Calcutta bazaar] Purchased, A. S. B.
j-k. 2 Stuffed juv. [Calcutta bazaar] Purchased, A. S. B.
l. Stuffed juv. Alipore, Calcutta A. Grote, A. S. B.
m. Skeleton mtd. [Calcutta bazaar] Purchased, A. S. B.

Lepus nigricollis.

LEPUS.

The Black-naped Hare; Malla, Canarese; Sassa, Mahr.; Musal, Tamil; Kundeli, Tel.; Hava, Cingalese.

Distribution.—Southern India; from the Taptee and Godavery rivers southwards; Ceylon, Sumatra, Java, and Mauritius where perhaps introduced by human agency.


Lepus peguensis.

Lepus peguensis, Blyth J. A. S. B., xxiv, p. 471 (1855); id. Cat. no. 433, p. 132; id. J. A. S. B., xliv, Burma List, p. 43.

Distribution.—The open country of Upper Pegu in Burma.

Lepus sinensis.


Distribution.—China, from Peking to Canton and the Island of Formosa.

Lepus hispidus.


Ilg

MAMMALIA.

Distribution.—The Terai at the base of the Himalayas from Nepal to Assam, extending southwards to Dacca; said to be found in the Rajmahal hills.

A closely allied species (Lepus netcheri) has recently been described by Schlegel (Notes Leyd. Mus., ii., p. 59) from Sumatra.

a-c. 3 Skins Dacca F. B. Simson (1870).

d. Head and skull.

e. Skin

f. Stuffed and Assam.

skull.

g. Skeleton Rajmahal?

W. S. Sherwill, A. S. B.

Lepus europæus.


The Hare.

Distribution.—Europe generally, except the more northern parts.

a. Stuffed England A. D. Bartlett, A. S. B.

Lepus cuniculus.


The Rabbit.

Distribution.—Southern and Western Europe and North Africa; has been introduced into many places, such as the Falkland Islands, Australia and New Zealand.

a-b. 2 Stuffed England A. D. Bartlett, A. S. B.

c. Stuffed [Lop-eared var.] Rajab R. Mullick, A. S. B.

d-e. 4 Skulls ......... A. D. Bartlett, A. S. B.

Lepus timidus.


Lepus arcticus, Leach in Ross’ Voyage, 2nd ed., append., p. 151 (1819)*.

Lepus glacialis, Leach in Ross’ Voyage, 2nd ed., append., p. 170 (1819)*.


Lepus hibernicus, Bell Brit. Quad., 1st ed., p. 341 (1837)*.


Lepus canescens

*
LEPUS.

The Polar Hare.

Distribution.—The northern regions of both hemispheres, Scotland and Ireland, and the Alps and elevated regions of Central Europe.

a. Skin (summer) Norway Christiania Univ., A.S.B.
b. Skin (winter) Scotland Sir W. Jardine, A.S.B.
c. Stuffed (winter) Norway Christiania Univ., A.S.B.
d. Stuffed (winter) Scotland Sir W. Jardine, A.S.B.
e. Stuffed (summer) and skull Ireland A. D. Bartlett, A.S.B.
f. Stuffed (winter) No history A.S.B.
g-j. 3 Skulls ...... A. D. Bartlett.

Lepus aegyptius.


Lepus aegyptiacus, Hempr & Ehr. Symb. Phys., pl. xv, fig. i (1828).

Lepus habessinicus, Brehm Habesch., p. 64 (1863).

Distribution.—North-East Africa.
a. Skin § Koomeylee, Abyssinia, W. T. Blanford. 400 ft., 2-6-68.
b. Skin § Zoulla, Annersley Bay, W. T. Blanford. Abyssinia, 6-2-68.

Lepus tigrensis.


Lepus abyssinicus, apud Lefebre Voyage Abyssinie, vi, Atlas, pl. v, fig. i.*

Distribution.—Hill country of Abyssinia,
a-b. 2 Skins Takonda, Abyssinia, W. T. Blanford. 7,500 ft., 27-1-68.
c. Skins nr. Tigré, Abyssinia, W. T. Blanford. 7,500 ft., 1-3-68.

Lepus capensis.


Lepus ochropus, Wagner, Schreber's Säugeth. Suppl., iv, p. 96 (1844).

Distribution.—South Africa.
a. Stuffed South Africa E. L. Layard, A.S.B.
Lepus saxatilis.


Distribution.—South Africa.

a. Stuffed South Africa E. L. Layard, A.S.B.

Lepus americanus.

Lepus bairdi, *Hayden Amer. Nat.*, iii, p. 115 (1869)*.

The Varying Hare.

Distribution.—The wooded portion of the northern half of North America.

a. Skin (winter) Lucknow Ont., Canada J. H. Garnier [Ex.]
  25-12-84.
b. Skin (winter) Gatineau R. Queb., J. H. Garnier [Ex.]
  Canada.
c. Skull Massachusetts, U.S.A. W. Theobald.

Lepus sylvaticus.

Lepus nanus, *Schreber Säugeth.*, iv, p. 881 (1792) [in part.]

Wood Hare or Wood Rabbit.

Distribution.—The greater part of the southern half of North America.

a. Skin Nuces, Texas, 3-84 J. H. Garnier [Ex.]
b. Skin Texas J. H. Garnier [Ex.]
c. Skull Massachusetts W. Theobald.

Lepus callotis.

Lepus nigricaudatus, Bennett P. Z. S., p. 41 (1833).

The Jackass Hare.

Distribution.—Southern parts of the United States and Mexico to the isthmus of Tehuantepec.

a. Skin Nuces Valley, Texas, 2-84 J. H. Garnier [Ex.]

Order UNGULATA.

Placental Mammals with no clavicles; with limbs for progression only; the 1st digits of all recent forms wanting; ungual phalanges hoofed; metacarpals and metatarsals vertically elongated or sharply inclined; teeth covered with enamel and molars generally complex.

Key of the Indian Genera.

a. Digits of manus and pes equal or even in number; the 3rd digit of each foot asymmetrical in itself, but forms with the 4th digit a symmetrical pair; no 3rd trochanter to the femur, posterior premolars smaller and simpler than the molars; stomach complex; caecum small; horns when present paired. [=Artiodactyla.]

b. Ulna and fibula incomplete, confluent with radius and tibia, manus and pes functionally didactyle; incisors rarely present in the upper jaw; lower canines incisiform; premolars and molars with unii- or biconcrescent ridges; stomach complex, four-chambered and ruminating. [=Selenodontia.]

c. Horns generally present; the third and fourth metacarpals and tarsals fused to form a cannon bone; digits two and five, incomplete and wanting. [=Cotylophora.]

d. Horns hollow and persistent; digits two and five represented by hoofs only; no upper canines; gall bladder present. [=Bovidæ, see key below.]

d'. Horns solid and deciduous; digits two and five have distinct metacarpals and phalanges; no gall bladder. [=Cervidæ.]

e. Horns small; upper canines well-developed; distal tarsal elements all united except an ectocuneiform. Cervulus, p. 172.
MAMMALIA.

c2. Horns generally large; the navicular and cuboid elements of the tarsus usually distinct; canines only moderately developed. . . .  Cervus, p. 174.

c3. Horns absent; canines very large.  Moschus, p. 171.

c2. Horns absent; 3rd and 4th metacarpals unite late or not at all; 2nd and 5th digits complete on each foot; canines present in both jaws; placenta diffuse.  Tragulus, p. 188.

b2. Non-ruminant hornless forms with tarsals and carpals, ulna and fibula distinct and complete; manus and pes tetradactyle; incisors present in upper jaw, molars with tuberculate or transversely ridged crowns; canines present in both jaws; stomach simple; placentation diffuse.  [=Bunodontia.]

Sus, p. 192.

a2. Digits of the pes odd in number; median or 3rd digit symmetrical bilaterally; femur with a 3rd trochanter; tympanic bone small and solid; stomach simple, caecum long; no gall bladder; placentation diffuse; horns when present unpaired.  [=Perissodactyla.]

c. Forms with soft hairy skin; nose proboscidiform; radius and ulna, tibia and fibula complete, the two latter distinct; manus with four, pes with three digits.  Tapirus, p. 198.

c2. Forms with thick skin and scanty hair; radius and ulna, tibia and fibula complete; manus and pes tetradactyle; orbits incomplete; canines absent; one or two coreless epidermic mesial horns on the snout formed of fused hair. . .  Rhinoceros, p. 201.

c3. Specialized forms; ulna and fibula incomplete distally, confluent proximally with the radius and tibia; 3rd digit on each foot functional only, the 2nd and 4th rudimentary and represented by splint bones; orbits complete. . . .  Equus, p. 198.

Key of the Genera of Indian Bovidae.

a. Horns always present in both sexes, and set wide apart; occipital and frontal planes form an acute angle; muzzle large; no antorbital pits; four mammae; large and massive animals.  Bos, p 123.
a	extsuperscript{3}. Horns present in both sexes, but often markedly smaller in the females, set with their bases close to one another; the occipital and frontal planes form an acute angle.

b. Horns wrinkled and forming circles; no muffle; small feet pits on all four feet; antorbital pits present (except O. nahoor); basioccipital oblong with the posterior tubercles larger (except O. nahoor); four mammae. Ovis, p. 131.

c. Horns smooth and angular; no muffle; no antorbital pits; feet-pits if present, only on the fore-feet; basioccipital wider in front, and the anterior tubercles larger; two mammae (except C. jemlaica.) . . . . Capra, p. 142.

d. Horns rounded and small; a small muffle present; antorbital pits present; feet-pits large; four mammae. Nemorhaedus, p. 147.

e. Horns not always present in the females, placed on the crest of the frontals but generally some way apart at their bases; the frontal and occipital planes hardly form an angle but a rounded surface; generally four mammae; antorbital pits always present.

f. Of large size; horns short recurved; a short erect mane, and a throat tuft in the male. . Boselaphus, p. 154.

g. Of small size; horns four in number; canines present in the males. . . . . Tetracerus, p. 168.

h. Horns ringed; no muffle; mammae two in number.

i. Horns straight, long, annulated, in males only; no muffle; no canines. . . . . Antilope, p. 162.

j. Horns ringed, generally lyrate; if present in female, small.

k. An intermaxillary pouch present; no horns in females; no knee tufts. . Pantholops, p. 163.

l. No intermaxillary pouch; females often horned; knee tufts generally present. Gazella, p. 157.

m. Horns gnu-like, springing close together; muzzle bovine, no antorbital pits or feet-pits. . Budorcas, p. 151.

Genus BOS.

MAMMALIA


**Key of the Indian Species.**

*a*. With smooth flattened horns never exceeding 3 feet in length; legs white; hair always short; frontal bones concave.

*b*. White of hind legs extends to rump, forming an anal patch; tail long; premaxillary bones reach and touch the nasals; dorsal ridge not marked. . . . *B. sondaicus*, p. 127.

*b*. White colour confined to the legs, premaxillary bones do not reach the nasals; dorsal ridge marked.

*c*. No dewlap; tail long; skull elongated.
*B. gaurus*, p. 124.

*c*. Dewlap present; tail short; skull markedly triangular.
*B. frontalis*, p. 126.

*a*. Horns cylindrical; nose hairy; no dewlap, hump or dorsal ridge; body clothed in parts with very long hair; frontals convex. . . . . . *B. grunniens*, p. 128.

*a*. Horns very large and flattened, generally exceeding 3 feet in length; body very sparsely covered with hair; hoofs very large; thirteen pairs of ribs. . . . *B. bubalus*, p. 129.

**Bos gaurus.**

Bibos frontalis, *apud Thompson, P. Z. S.,* p. 96 (1852).
Gavæus gaurus, *Blyth J. A. S. B.,* xxix, p. 282 (1860); *Blyth Cat.,* p. 161;
Jerdon *Mamm.,* p. 301; *Maingay P. A. S. B.,* 1868, p. 194; *Sterndale Mamm. Ind.,* p. 481.

The Bison or Gaur; Gaur or Gourigai, Hind.; Gaviya, Mahrathi; Jungli Khoolga, Deccan; Kar-kona, Canarese; Bod at Seone; Banparra at Mundlah; Vanago, Bengali; Katnyeni, Tamil; Raspado, Guzerati; Ran Hila, Bheels; Payong, Burma.

*Distribution.*—The peninsula of India in forest tracts, from the Vindhyan Hills along the north of the Nerbudda (Jerdon); southward through Kandeish and the Western Ghats to Tinnevelly (Elliot); eastward through the Central Provinces and Chota Nagpore almost to Midnapore (Jerdon); the Nepal terai (Hodgson); Assam; Tipperah and Chittagong Hills; southwards through Burma (Blyth) to Malay peninsula (Cantor and Maingay) but not recorded from any of the Islands.

It doubtless formerly occurred in Ceylon, since the Guavera of Knox’s description of Ceylon is doubtless the Gaur, and Major Forbes (Journal of Eleven Years’ residence in Ceylon, ii, p. 159) asserts that it was only at the beginning of the present century that it was exterminated.

| a. Skull, horns | ...... | W. T. Blanford (1868). |
| b. Skull, horns | Assam | F. Jenkins (1844), A.S.B. |
| c. Skull, horns | ...... | No history. |
| d. Skull, horns | Gauhati, Assam | F. T. Pollock (1870). |
| e. Skull, horns | Chybasa. | S. R. Tickell (1840), A.S.B. |
| f. Skull, horns | Malacca | Dr. Maingay, (1863). |
| g. Skull, horns | Gauhati, Assam | F. T. Pollock (1870). |
| k. Skull, horns | Burma | Sir A. Phaye, A.S.B. |
| j. Skull, horns | ...... | C. S. Guthrie (1862), A.S.B. |
| k. Skull, horns | Tipperah hills | Rev. J. Barbe, (1846) A.S.B. |
| l. Frontlet | Chittagong hill tracts | J. T. Jarbo (1879). |
| m. Skull, horns | Chittagong dist. | J. A. Campbell (1879). |
| n. Frontlet | Chittagong hill tracts | J. T. Jarbo (1879). |
| o. Skull, horns | Chittagong hill tracts | Zoological Gardens (1883). |
| p. Skeleton, juv. | ...... | Zoological Gardens (1883). |
| q. Skeleton, juv. | ...... | W. T. Blanford (1867). |
| r. Stuffed | Chanda | A. A. Kinloch (1883). A.S.B. |
| s. Stuffed | Chota Nagpore | Major Ousley (1840). |
| t. Skeleton | ...... | Purchased, 1847, A.S.B. |
| u. Skeleton | Chota Nagpore | A. A. Kinloch, 1892. |
| w. Skull and | Bhutan Doors | No history, A.S.B. |
| x. Skull and | Chittagong hill tracts | ...... |
| y. Pr. of horns | ...... | ...... |
MAMMALIA.

Bos frontalis.


Bos sylhetanus, *F. Cuvier Hist. Nat. Mamm.*, livr. 41, 42, with plate (1824); [hybrid with B. taurus].


The Gayal; Gayaye, Hind.; Gayal, Beng.; Shio of the Mughs of Chittagong; Mithana or Mithun of the Kookies; Johnguna, Burma.

Distribution — From Akyab northwards through the Arakan and Chittagong hills, extending through Tipperah and Munipur to the Naga hills; also found in the Duffla hills north of the Brahmapostra.

The Gayal is distinguished from the Gaur (B. gaurus) by its heavier and more clumsy build, by the possession of a well-developed dewlap and shorter tail; the horns of the Gayal are horizontal and very nearly straight; they are quite black, contrasting with the greenish horns of the Gaur; the skull too of the Gayal contrasts strongly with that of the Gaur by its very much more triangular shape; the concavity of the frontal bones, which is so marked a feature in the Gaur's skull, exists also in the Gayal though not nearly in so marked a way; in the median line of the skull between the horns there is in the Gaur a distinct ridge which is quite unrepresented in the Gayal.

The Banteng (B. sondaicus) is at once distinguished from the Gayal and the Gaur by the extension of the white of the hind legs up to the rump; it has a moderate dewlap and a long tail, and the dorsal ridge so conspicuous a feature of the Gaur and Gayal is much less developed in the Banteng.

The Gayal is always found in a semi-domestic state belonging to different villages of the numerous hill tribes on the Assam frontier, such as the Nagas and Kookies; they roam about the forest all day but always return to the hill tribes' villages at night, and there is considerable doubt as to whether the Gayal ever occurs in a true feral state.

The older writers seem to have had no doubt on the subject. Colebrooke (see above) says it is found wild in the Chittagong, Tipperah and Sylhet hills, and he also mentions that the animal is brown and has a well-developed dewlap, thus showing that he was not confusing the Gayal with the Gaur which also occurs in the
same country, and one of whose distinguishing features is the absence of a dewlap; Blyth in his earlier writings also seems to have believed in the wild Gayal; later, however, (Mammals of Burma) he seems to have come to the conclusion that the Gayal was a purely domestic race, in which view he is supported by Jarbo and Anderson.

| a. | Skull, horns | ..... | No history. |
| b. | Skull, horns | ..... | No history. |
| c. | Skull, juv. ♀ | ..... | E. Blyth, 1857, A.S.B. |
| d. | Skull, horns ♂ | ..... | W. Hodge, 1870. |
| e. | Skull, horns ♀ | ..... | R. W. G. Frith, 1850, A.S.B. |
| f. | Skull, horns | | R. W. G. Frith, 1851, A.S.B. |
| g. | Skeleton, ♀ | ..... | Zoological Gardens, 1880. |
| h. | Skeleton ♂ | Chittagong | Zoological Gardens, 1878. |
| i. | Stuffed juv. | ..... | W. Rutledge. |
| j. | Skull, horns | | E. Blyth, 1857, A.S.B. |
| k. | Skin, skull | | No history, A.S.B. |

**Bos sondaicus.**

"Banteng" Raffles Hist. of Java, i., p. 111 (1817).

Bos leucopyrnum, Quoy et Gaimard Asirolope Zoologie, i., p. 140 (1830) [hybrid with B. taurus].


Bibos banteng, Gray Knowsley Menagerie, p. 48 (1850)*; Horsfield Cat. E. I. Mus., p. 183; Gray Cat. Mamm. B. M., iii, p. 35.

Gavæus sondaicus, Blyth, J. A. S. B., xxix, p. 296 (1860); id. Cat., p. 160; McMaster Notes on Jerdon, p. 131; Sterndale Mamm. Ind., p. 482.

The Banteng; Tsoing, Burmese.

*Distribution.*—From Arrakan (Blyth) southwards though Burma (Pollok) to the Malay peninsula, and in the Islands of Java, Bali (Raffles) and Borneo (Müller).

The horns of the Banteng are more rounded in section than those of the Gaur and Gayal, and their circumference is much less in proportion to their length as will be seen by the table of measurements below; the colour of the horns are greenish with black tips. The skull is long, resembling that of the Gaur in general shape rather than that of the Gayal; the forehead is much flatter than that of the Gayal and Gaur, and the premaxillary bones reach and touch the nasals, while in the Gaur and Gayal there is a gap of about an inch between these two bones.
**Measurements in inches of Skulls and Horns of adult Gaur, Gayal and Banteng.**

<table>
<thead>
<tr>
<th></th>
<th>Gaur</th>
<th>Gayal</th>
<th>Banteng</th>
</tr>
</thead>
<tbody>
<tr>
<td>Across the forehead from bases of the horns</td>
<td>9</td>
<td>11</td>
<td>11½</td>
</tr>
<tr>
<td>From frontoparietal ridge to tip of nasals</td>
<td>19</td>
<td>15</td>
<td>14½</td>
</tr>
<tr>
<td>Across from orbit to orbit</td>
<td>11</td>
<td>9½</td>
<td>8¼</td>
</tr>
<tr>
<td>Horns, circumference at base</td>
<td>17</td>
<td>16½</td>
<td>11½</td>
</tr>
<tr>
<td>Horns, outside curve</td>
<td>31</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Horns, inside curve</td>
<td>22</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

a. Skull and horns.  
b. Skull and horns.  
c. Skull and horns.  
d. Skull and horns.  
e. Skull and horns, juv.  
f. Skin, skeleton, juv.  
g. Skin, skeleton.  
h. Skull and horns.  
j. Skin, skeleton, juv.  
k. Skin, skeleton, juv.

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**Bos grunniens.**


The Yak; Donkh, Tibetan; Bunchowr, Hind.

**Distribution.**—The Mountains of Central Asia, seldom descending much below 6,000 ft. Hodgson describes it as being found from the Altai to the Himalayas.
The domestic variety is found in Transbaikalia (Radde), Turkestan (Severtzoff), and all through Mongolia and Thibet whence it is used for bringing marchandize across the high passes of the Himalayas to India.

The wild variety is recorded by Horsfield as having been shot by Captain (now General) Strachey in Ladak. Adams also gives an account of shooting wild yaks on the southern slopes of the Karakorum Mountains, i.e., in Ladak; Kinloch gives the valley of the Chang Chenmo as the most likely locality for a sportsman to kill yak; Przewalsky records wild yaks on the northern part of the Thibetan plateau and they probably occur all over the higher parts of Thibet.

a. Skull and horns
   Sikkim
   .....  No history, A.S.B.

b. Skull and horns
   (dom. var.)
   .....  W. Rutledge, 1870.

c. Skeleton
   (dom. var.)
   .....  Rajah R. Mullick.

d. Skeleton
   (dom. var.)
   .....  Rajah R. Mullick.

e. Stuffed
   (wild var.)
   .....  E. Smyth, 1862, A.S.B.

f. Skull and horns
   (wild var.)
   .....  No history, A.S.B.

g. Skull and horns
   (wild var.)
   .....  Purchased at Almora, 1888.

h. Skull and horns
   (dom. var.)
   .....  W. Rutledge, 1889.

**Bos bubalus**


The Buffalo; Bhainsa (Domestic Race), Arna, Urna or Jangli bhyns (Wild Race), Hind.; Mung at Bhagulpore; Geraerumi, Gond; Mee harak, Singalese; Kywai, Burmese.

**Distribution.**—In low lands and swampy places, never in mountains; Assam and Ganges valley including the Nepal terai (Hodgson) and the Sunderbunds. In the peninsula of India from the Ganges southwards to the Godavery River (Jerdon), and westwards to the Weinagunga River and Mandla (Blanford); it is also
found in the northern and eastern districts of Ceylon (Kelaart). It seems very doubtful whether the wild buffalo of Burma and Indo-China is truly feral or merely the escaped domestic animal.

Domesticated, the buffalo is found in Italy, Hungary, Turkey, Egypt, and all through Western Asia to Afghanistan, all over India, Burma, the Malay peninsula and in most of the Islands where an Albino variety is often met with.

d. Skull, horns ♂
   No history.

b. Skull, horns ♂
   F. Mouat, 1859, A.S.B.

c. Skull, horns ♂
   N. Wallich, 1816, A.S.B.

d. Skull, horns ♂
   N. Wallich, 1816, A.S.B.

e. Skull, horns ♂
   No history.

f. Skull, horns ♂
   No history.

g. Skull, horns ♂
   No history.

h. Skull, horns ♂
   No history.

j. Skull, horns ♂
   Sir J. Barlow, 1856, A.S.B.

k. Skull, horns ♂
   No history.

l. Skull, horns ♂ Kalihar, Central Assam J. Hamilton, 1879.

m. Skull, horns ♂
   N. Wallich, 1816, A.S.B.

n. Skull, horns ♂ Assam Major Brodie, 1848, A.S.B.

o. Skull, horns ♂ Assam Major Brodie, 1848, A.S.B.


q. Skeleton ♂ Purneah J. L. Shillingford, 1881.

r. Head, horns ♂
   No history.

s. Head, horns ♂ Sudiya, Assam Col. Graham, 1877.

t. Head, horns ♂
   No history.

u. Head, horns ♂
   No history.

Bos depressicornis.

Anoa depressicornis, H. Smith in Griffith An. Kingd., iv, p. 293 (1827); Gray Cat. Mamm. B. M., iii, p. 29; Everett P. Z. S., 1878, p. 792; Meyer ibid, p. 881; Bartlett, ibid, p. 882.

Antelope depressicornis, Quoy et Gaimard Ann. Sci. Nat. (i), xvii, pl. xx; p. 423 (1829); id. Astrolabe Zoologie, i, p. 136, pl. xxvi.

Distribution.—The Island of Celebes.

a. Skin, skull ♂ juv.
   Zoological Gardens (1881).
   and bones

b. Skin, skull ♂ juv.
   Celebes Zoological Gardens (1880).
   and bones.

c. Skin, skull ♂ juv.
   Zoological Gardens (1880).
   and bones.

d. Skin, skull ♂
   Zoological Gardens (1882).
   and body.

Bos caffer.


Distribution.—South Africa replaced in West Africa by B. pumilus and in East and Central Africa by B. aequinoctalis of Blyth to which perhaps specimens "b" and "c" should be referred.

a. Skull and horns ...... E. Blyth, 1864, A.S.B.
b. Horns ♀ juvenilis ...... W. S. Sherwill, 1844, A.S.B.
c. Skeleton ♀ juvenilis ...... Zoological Gardens, 1878.

Bos americanus.

Bos americanus, Gmelin Syst. Nat., i., p. 204 (1788).
Bison americanus, H. Smith Griffith An. Kingd., iv, p. 401, with plate (1827);

The American Buffalo.

Distribution.—Formerly spread over the plains of North America from the Alleghanies to the Rocky Mountains, now nearly extinct and confined to the remoter districts of Saskatchewan, Montana, and perhaps Texas.

a. Skeleton, skin ♀ ...... W. Rutledge (1881).
b. Skeleton, skin ♀ ...... Babu H. M. Roy (1881).
c. Skull (no horns) ...... H. A. Ward [Ex.] (1889).

Bos taurus.

Bos taurus, Linnaeus Syst. Nat., 12th ed., i., p. 98 (1766); Blyth Cat., p. 159.
Zebus gibbosus, Blyth f. A. S. B., xxix, p. 282 (1860); id. Cat., p. 159.

Distribution.—The Indian humped race are unknown in an aboriginal state, but are suspected by Blyth to have originated in South Africa rather than in Asia; they are found in a domestic state all over the hotter parts of Africa as far as Natal, in Madagascar, Arabia, South Persia (Blanford), Beluchistan, all over India, and through Indo-China as far as Japan; also in many of the Islands.

a. Skeleton ♀ ...... "Australian dom. race."
b. Skeleton ♀ ...... No history.
c. Skull ♀ ...... "English polled race."

Genus OVIS.

Ammotragus, Blyth P. Z. S., p. 13 (1840). Type, O. tragelaphus.

The Wild Sheep may be divided into three groups, the larger sheep of Central Asia which also reach North America, and the
smaller sheep distributed through Western Asia and the Mediterranean regions, and thirdly, two forms forming a link with the Goats, Ovis nahoor and Ovis tragelaphus.

Of the larger group the Museum possesses examples of three distinct species, i.e., Ovis poli, O. hodgsoni, and O. canadensis.

Besides these three the following have been described:

1. Ovis ammon, Linnaeus (=Ægoceros argali, Pallas.)
2. Ovis nivicola, Eschscholtz.
3. Ovis jubata, Peters.
4. Ovis heinsii, Severtzoff.
5. Ovis nigrimontana, Severtzoff.
6. Ovis karelini, Severtzoff.
7. Ovis brookei, Ward.

Ovis ammon is found in Eastern Siberia, but is apparently very rare in Siberia itself, having been driven southwards by the Cossack sportsmen; it is very nearly allied to Ovis hodgsoni of Thibet from which it seems to be distinguished only by the entire absence of a mane or fringe of long hair on the neck, while O. hodgsoni has a well developed white mane on either side and below the neck, and a short gray mane along the dorsal surface of the neck; the anal patch affords no distinguishing character.

Ovis jubata, from Mongolia north of Pekin, seems very nearly allied to O. ammon. Ovis nigrimontana seems to belong to the same type as O. ammon.

Ovis karelini and O. heinsii both seem to resemble O. poli of Blyth very strongly.

Ovis nivicola from Kamschatska is nearly allied to the American species, Ovis canadensis from the northern form of which it seems doubtfully distinct. It is quite distinct from O. ammon. Finally, Ovis brookei might well be a young O. hodgsoni of perhaps a hybrid between O. hodgsoni and O. vignei as suggested by Sterndale (Journ. Bomb. N. H., Soc. i, p. 35).

There seem to be, therefore, three different types of large wild sheep in Asia with several geographical races:—

1. Ovis ammon from East Siberia represented in Mantchuria by O. jubata, in Thibet by O. hodgsoni, and in Turkestan by O. nigrimontana?
2. Ovis poli of the Pamir represented by O. karelini in the Thian Shan.
3. Ovis nivicola of Kamschatska.

**Key of the Indian Species.**

- A distinct antorbital pit present.
b. Large forms with enormous horns of which the points are always directed more or less horizontally away from each other; with antorbital pit very shallow.

c. Space between the horn cores flat; the horns describe a complete circle at least; and the proportion of their basal circumference to their total length is as 1-3.

O. poli, p. 133.

c². Space between the horn cores concave; the horns seldom describe a complete circle and are very massive at the base, i.e., the proportion of the basal circumference to the total length of the horn is as 1-2. O. hodgsoni, p. 136.

b. Smaller forms with smaller horns, with generally converging points and a deep antorbital pit.

d. Horns with points hardly converging, with the fronto-orbital edge much rounded; beard and mane very small; animal more or less reddish. O. vignii, p. 139.

d². Horns with converging points, fronto-orbital edge sharp; beard and mane markedly developed.

O. cycloceros, p. 138.

a². No antorbital pits . . . . . O. nahoor, p. 140.

Ovis poli.


Distribution.—This large sheep was first found on the Pamir where its occurrence is mentioned by Marco Polo (Yule's edition, i, pp. 18, 185, 2nd ed, 1875); it was first obtained by Wood near the sources of the Amu Daria and has also been obtained thence by Lockhart (I. M.) and Charles Ellis (Blanford); it also occurs in the Thian Shan Range and all round Lake Issyk (Stoliczka and Severtzoff). It is noted from the Juldus valley on the north and the Altynag on the south of the Gobi by Przewalsky. Scully asserts that it must be considered an Indian animal since it occurs as far south as the Shimshal Pamir just north of Gilgit and south of the Mustagh Range.
There are, as can be seen from the list below in the Museum collection, examples of both the typical *Ovis poli* from the Pamir, and also of the smaller form from the Thian Shan, described as *Ovis karelini* by Severtzoff.

After reading Severtzoff's description of the two species (*O. poli* and *O. karelini*) and comparing the descriptions with the specimens in the Museum, it is impossible to make out any real differences between the two except that of size.

Below is a summary of the chief differences between *Ovis poli* and *Ovis karelini* as given by Severtzoff *loc. cit.*:

<table>
<thead>
<tr>
<th><em>Ovis poli.</em></th>
<th><em>Ovis karelini.</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horns.</strong> — Nuchal edge not rounded.</td>
<td>All edges rounded.</td>
</tr>
<tr>
<td>Orbital surface concave.</td>
<td>Orbital surface flat.</td>
</tr>
<tr>
<td>Horns four times the length of the skull.</td>
<td>Horns only three times the length of the skull.</td>
</tr>
<tr>
<td>Terminal axis of horns more or less horizontal.</td>
<td>Terminal axis of the horns parallel to the basal axis.</td>
</tr>
<tr>
<td>Cone formed by the horn-spiral, narrowing towards the skull, <em>i.e.</em>, base outwards.</td>
<td>Cone formed by the horn-spiral with its base towards the skull.</td>
</tr>
<tr>
<td><strong>Skulls.</strong> — Premaxillae do not articulate with the nasals and the maxillae are separated by small bones.</td>
<td>Neither premaxillae, maxillae or lacrymals articulate with the nasals.</td>
</tr>
<tr>
<td>Lacrymals protrude forward beyond the malars, and both articulate with the maxillae by serrated sutures.</td>
<td>Lacrymals very large and square, wider than the malars.</td>
</tr>
<tr>
<td><strong>Skins.</strong> — Mane pure white.</td>
<td>Mane white, shaded with gray.</td>
</tr>
<tr>
<td>Light brown of back shades into the white of belly.</td>
<td>Light brown of back separated from the white of belly by a dark line.</td>
</tr>
<tr>
<td>White patch of tail marked and separated from the light brown of back by a dark line.</td>
<td>Light brown of back shades off to tail, forming a not well defined patch.</td>
</tr>
</tbody>
</table>

Taking these characters one by one in our specimens—

1. The nuchal edge is most rounded in the largest specimen
"m" in the list, in the other skulls it seems to get rather sharper as the skull gets younger, so that the sharpness or roundedness of the nuchal edge appears to be a character due purely to age.

(2) In all the Museum specimens the orbital surface is flat or even rather convex, never concave.

(3) In the two Pamir specimens the length of the horns are in both cases considerably more than four times the length of the skull, and in the Thian Shan specimens the largest is considerably less. This character, however, seems to be due to the fact that both the Pamir specimens were selected; being chosen from among many others seen lying about on the Pamir on account of the size of their horns, while the specimens from the Thian Shan were shot and brought into the mission so that heads of only average size were got.

(4) The axes of the horns can hardly be considered a character of much value as has also been shown by Blanford *tom. cit.*, since in the case of one head from the Thian Shan range the horn on one side is very much more horizontal than that on the other.

(5) With regard to the cones formed by the horn spiral as far as it is possible to judge, in both Pamir and Thian Shan species, the cone has its base towards the skull.

(6) Neither premaxillæ, maxillæ or lacrymals really articulate with the nasals, in all cases they are separated by a small piece of bone which generally drops out of the skull.

(7) The lacrymals are not square nor arc they wider than the maxillæ in any of the skulls in the Museum Collection.

There are only skins of the Thian Shan form in the Museum; there are no skins of the true Pamir forms, as far as I am aware, in any European or other Museum; with regard to our skins—

(8) The mane is pure white below and laterally; dorsally, in all cases but one, it is mixed with gray; the one exception being what appears to be the oldest animal.

(9) In none of the skins can a dark brown lateral line be seen separating the light brown of the back from the dirty yellow of the belly.

(10) The white patch on the tail is very well marked in all the skins except the old male mentioned above, where the change of colour is not so abrupt.

In the females there is little or no mane and the anal patch neither marked nor large.

The above I think is sufficient to justify the combination of the Pamir typical forms and Thian Shan specimens brought back
by the Yarkand Expedition, under the name of Ovis poli, even if the sheep described by Severtzoff as Ovis karelini should turn out to really differ from the typical Ovis poli of the Pamir.

a. Skin, skull, $\varphi$ nr. Kashgar. 
   horns. 
   F. Stoliczka, 1877.

b. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

c. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

d. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

e. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

f. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

g. Skin, skull, $\varphi$ " " " 
   horns. 
   F. Stoliczka, 1877.

h. Skin, $\varphi$ " " " 
   (no head.) 
   F. Stoliczka, 1877.

i. Stuffed $\varphi$ " " " 
   F. Stoliczka, 1877.

j. Head stuffed. 
   F. Stoliczka, 1877.

k. Skeleton $\varphi$ " " " 
   F. Stoliczka, 1877.

l. Skull and $\varphi$ Hunza, nr. Gilgit 
   horns. 
   J. Biddulph, 1879.

m. Skull and $\varphi$ Tagdanbash, Pamir 
   horns. 
   Sir W. S. A. Lockhart, 1886.

n. Skull and $\varphi$ nr. Gilgit 
   (no skull.) 
   No history, A. S. B.

o. Skull and $\varphi$ " " " 
   horns. juv. 
   No history, A. S. B.

p. Skull and $\varphi$ " " " 
   horns. juv. 
   No history, A. S. B.

q. Skin and $\varphi$ nr. Kashgar 
   skull. 
   F. Stoliczka, 1877.

Ovis hodgsoni.

Ovis ammonoides, Hodgson J. A. S. B., x, pp. 230, 913 (1841); id. ibid, xv, p. 338; Hutton J. A. S. B., xvi, p. 568.
Caprovis argali, var 2, Gray Cat. Mamm. B. M., iii, p. 174 (1852); Adams P. Z. S., 1858, p. 527.
Ovis ammon, apud Horsfield Cat. E. I. Mus., p. 176 (1851); Blyth Cat., p. 177; Kinloch Large Game Shooting, i, p. 19 with plate of head; Blanford J. A. S. B., xli, p. 40.

The Ammon; Nyan or Gnow, Tibetan.  
**Distribution.**—The Nyan has been got chiefly from Ladak (Kinloch) and the country north of Gurwhal, and by Hodgson from the higher region of the Himalayas north of Nepal and Sikkim.
With regard to the distinctions between this species and the other two of which there are examples in the Museum, the skull differs from that of O. poli but slightly, in O. hodgsoni there is a very marked depression between the bases of the horn cones on the forehead, while the space is quite flat in O. poli; the great difference, however, is in the horns, while those of O. hodgsoni are enormousy massive at the base, they are never very long, i.e., they describe a little more than half a circle when viewed laterally, while those of O. poli are considerably more slender at their bases and the older ones describe a complete circle when viewed laterally; the proportions of the circumference at the base to the total length measured along the frontal surface is as follows in typical specimens: — O. hodgsoni, circumference of the horn at the base, 17 inches; length of horn, 30 inches; O. poli, circumference, 15 inches; length, 50 inches.

The horns of Ovis canadensis are of much the same external form as those of O. hodgsoni as far as the curves are concerned, they differ, however, markedly in being almost smooth and not marked by the very conspicuous transverse furrows and ridges present in the horns of both O. poli and O. hodgsoni; the nuchal edge, in O. canadensis is very much rounded, much more so than in the largest and oldest horns of O. poli, and the nuchal surface is also markedly rounded instead of being flat as in O. hodgsoni and O. poli; in the skull the premaxillæ and nasal bones are much shorter than in those of the Asiatic Argalis and they are distinctly articulated the one with the other, which is not the case with the Asiatic forms.

Altogether the Asiatic and American forms seem very distinct.

| a. Skull and horns | ...... | G. T. Lushington? A. S. B. |
| b. Skull and horns | ...... | No history. |
| c. Skull and horns | ...... | No history. |
| d. Skeleton | ...... | G. T. Lushington, A. S. B. |
| e. Stuffed | ...... | G. T. Lushington, A. S. B. |
| f. Head and horns | ...... | No history. |
| g. Skin and skull | ...... | W. T. Blanford, 1870. |
| h. Skull Thibet? | ...... | No history, A. B. S. |
| j. Skeleton | ...... | No history, A. B. S. |
| k. Head and horns | ...... | Capt. Michell. |

| l. Skin, skull btw. Ladak and Kukchu | 15,000 ft. |

Ovis canadensis.

Ovis canadensis, Shaw Nat. Misc., xv, pl. 610 (1804); Biddulph P. Z. S., 1885, p. 678.

The American Bighorn.

Distribution.—The American Bighorn is found along the whole range of the Rocky Mountains on both the eastern and western slopes, from 68° N. as far as Sonora about 31° N.; it is also found in all the lesser ranges along the Eastern Pacific coast from Alaska to California.

It seems probable that there are two species, or, at any rate, races of bighorns; the northern one much resembling *O. nivicola*, the Kamchatkan wild sheep, and a southern one. (See Guillimard *P. Z. S.*, 1885, p. 675. and Biddulph l. c.)

b. Skin, skull and horns. H. A. Ward [Ex.], 1887.

Ovis cycloceros.


The Oorial; Guch, Mish, Persian; Huriar, or Orial, Punjab; Kuch in Suliman range; Koh-i-poombur, Afghan.

Distribution.—From the Punjab Salt Range and the Suleiman Range, especially round Peshawur, southwards to Sind and westwards to the Parapamisus Range, and to Gwadar in Beluchistan and possibly to Shiraz (Blanford); Astrabad in Northern Persia (Beresford Lovett); this sheep is generally found at lower elevations than the other wild sheep and in places where the heat is very excessive in summer.

a. Skull, horns Astrabad, N. Persia B. Lovett, 1885.
c. Skull, horns and skin Astrabad, N. Persia W. Theobald, A. S. B.
d. Skull, horns W. Theobald, A. S. B.
e. Skull, horns Punjab W. T. Blanford.
f. Skull, horns A. S. B.
g. Skull, and horns Afghanistan W. Theobald, A. S. B.
h. Skull, horns Afghanistan Purchased, 1871.
Ovis vignii.


Ovis montana, apud Cunningham Ladak, p. 199, pl. vii (1854).

Shapoo, Ladak; Sha, Thibet; Oorin, Astor district.

Distribution.—Western Thibet and Ladak (Kinloch) extending to Gilgit (Scully). There was formerly considerable confusion with regard to the distinctions between this sheep and the Oorial; for some time they were considered identical until Sclater l. c. showed the distinctions between the two; the one (Ovis vignii) occurring only, as far as is known, in Ladak and the upper valley of the Indus; the other having a wider distribution extending from the Punjab throughout Afghanistan.

a. Skin, skull ♀ Ladak (Strachey)? India Mus., London.

? b. Skull ♀ ...... A. S. B.

Ovis gmelini.

Ovis gmelini, Blyth P. Z. S., p. 69 (1840); Blanford Persia, p. 87; Danford and Alston P. Z. S., 1877, p. 276; id. P. Z. S., 1880, p. 55, with 6 figs.

Ovis orientalis, apud Kemserling and Blasius Wirbelth. Europ., pp. 5, 29 (1840); Gray Cat. Mamm. B. M., iii, p. 172.

? Ovis anatolica, Valenciennes Comptes Rend., xliii, p. 65 (1856).

Distribution.—The Elburz Mountains (Blanford), Erzeroom (Blyth), the northern slopes of the Taurus, and central parts of Asia Minor (Danford).

a. Frontlet ...... No history, A. S. B.

b. Skull and horns ...... No history, A. S. B.


horns. Teheran.

d. Stuffed ♀ ...... W. Rutledge (1869).
Ovis nahoor.

? Ovis nayaur, Hodgson As. Res., xviii, p. 135, with plate (1833) [ pt. ]
Ovis nahoor, Hodgson P. Z. S., p. 197 (1834); Bicheno P. Z. S., 1838, p. 79;
Blyth P. Z. S., 1840, p. 66; Hodgson J. A. S. B., x, pp. 231, 913; id. ibid.,
xi, p. 283; P. L. Sclater P. Z. S., 1860, p. 129; Blyth Cat., p. 178; Jerdon
Mamm. p. 296; Kinloch: Large Game Shooting, i, p. 25; with plate; Blanford
xviii, lxix; Blanford Yarkand Mamm., p. 85. pl. xiv.
Ovis burchel, Blyth P. Z. S., p. 67 (1840); id. Ann. Mag. N. H., vii, pl. v,
fig. 7.

Pseudois nahoor, Hodgson J. A. S. B., xv, p. 343 (1846); Gray Cat. Mammm.
B. M., iii, p. 177; Horsfield Cat. E. I. Mus., p. 176; Adams P. Z. S., 1858,
p. 527; Prewalski Peters. Mitth. Engb., xii, 1878, p. 17; Lydekker J. A.
S. B., xlix, p. 131.

The Burrhal; Na, Sna or Gnao in Western Thibet; Nirvati,
Nepal; Wa in Sutlej district.

Distribution.—Himalayas from the Nubra Valley, Ladak,
(Adams) to Sikkim (Hodgson); also the Kuenlun (Stoliczka) Alty Tagh south of Lob Nor (Prewalski) and Monpin, Eastern Tibet
(Père David); it is generally found high up, seldom descending
to the level of the forests.

This is a very interesting form since it is in many ways a link
between the genera Capra and Ovis; this has been specially
noticed by Lydekker (I. c.)

Among its Caprine characters are the absence of any trace
of the antorbital pits, the shape of the basioccipital which resem-
bles that of a goat in that the anterior tubercles are the larger than
the posterior ones, while in the case of the sheep the reverse is the
case, and the horns which have a slight tendency to the upward
spiral so characteristic of the Markhor.

Among the Ovine characters are the absence of any odour, no
trace of a mane or beard, and presence of interdigital pores on
all the feet.

Ovis cylindricornis, which was described by Blyth (P. Z. S., 1840,
p. 68) many years ago from a single head from the Caucasus, has
recently been redescribed at length by Dennik in Proceedings of
the Society of Naturalists in St. Petersburg (translated by Delmar
Morgan, Ann. Mag. N. H. (5) xix, p. 450) as Capra pallassii and
by Eug. Buchner (Memoirs of the Imperial Academy of Sciences
at St. Petersburg (7), xxxv, no. 8) as Capra cylindricornis of Blyth.

Judging from the descriptions and figures given by these two
Russian Naturalists, the Goat in question seems to be very nearly
allied to Ovis nahoor and is probably its representative in the
Caucasus.


Ammotragus tragelaphus, _Gray Cat. Mamm., B. M.,_ iii, p. 179 (1832).

The Aoudad or Barbary Wild Sheep.

**Distribution.**—The mountains of North Africa from Barbary to Tunis.

Genus CAPRA.

Hircus, Boddart Elench. Anim. (1785)*.

Out of the ten recognized species of wild goats no less than five are found in India, all of which are represented in the Museum Collection, of the others Capra pyrenaica and C. ibex are found in the Pyrenees and Alps respectively; Capra caucasica in the Caucasus and Capra sinaica and C. walie in Palestine, Egypt, and Abyssinia.

Sterndale (J. Bomb. Soc., i, p. 26) has recently described a head of an ibex from the Kishengunge country to the west of Kashmir, which seems to differ considerably from the ordinary C. sibirica, but until a little more is known about it, it seems rash to add it to the list of Indian Mammals; Sterndale has named it Capra duvergni.

Key of the Indian Species.

a. Goats with long scimitar-shaped horns with knots at intervals along their length.

b. Horns with a sharp anterior edge; the side of the horns being convex; very slight traces of the knots.

C. aegagrus, p. 142.

b'. Horns with a flat anterior surface with distinct knots at regular intervals . . . C. sibirica, p. 143.

a'. Goats with spirally twisted horns, the spiral being from right to left, beginning from the base . C. falconeri, p. 145.

a". Goats with short horns never exceeding 18 inches.

c. Horns set very parallel to one another; the fronto-nuchal edge sharp, the fronto-orbital edge rounded off so that the frontal and nuchal surfaces form a continuous curve.

C. hylocrius, p. 146.

c'. Horns very divergent, forming about a right angle, but with the tips again converging; horns two-sided with a sharp anterior edge; flat orbital and rounded nuchal surface . . . . C. jemlaica, p. 146.

Capra aegagrus.

CAPRA.


Aegoceros aegagrus, Pallas Zoog. Ross. As., i, p. 226, pl. xvi, figs. 3, 4, 5 (1831).

Capra caucasica, apud Gray List Mamm. B. M., p. 167 (1834); Adams P. Z. S., 1858, p. 525.


The Sind Ibex: Pasang ♂, Boz ♀, Persia; Surrah, Beluchi.

Distribution.—From Crete and several of the Cyclades eastward through Asia Minor, occurring on the Taurus (Danford), Mount Ararat and the Little Caucasus and sparingly on the southern slopes of the Great Caucasus, all over Persia, Trans-caspie, Beluchistan and Afghanistan to the borders of India where it is found in the Pubb and Suleiman ranges, probably as far north as the Khyber Pass.

\[ \text{Table} \]

| a. Stuffed ♂ Sind | A. E. Watson, 1876. |
| b. Stuffed ♀ Sind | A. E. Watson, 1876. |
| c. Skin, skull, ♂ Sind horns. | Karachi Mus. [Ex.], 1879. |
| d. Head stuffed ♂ Sind | Karachi Mus. [Ex.], 1878. |
| e. Skull, horns ♂ | J. A. Murray, 1882. |
| f. Skull, horns ♀ | Sheikh Hari, 1878. |
| g. Horns ♀ nr. Shiraz | Sir O. St. John. |
| h. Skull, horns ♂ Afghanistan | Sir A. Burns, A. S. B. |
| l. Skin ♂ | No history. |
| m. Skin ♀ juv. E. of Bampur, Baluch., 4,000 ft., 30-3-72. | W. T. Blanford. |
| n. Skeleton, skin ♀ | Karachi Mus. [Ex.], 1879. |
| o. Skull, horns ♀ | No history. |

Capra sibirica.


Capra himalayana, Gray Cat. Mamm. B. M., iii, p. 150 (1852); Adams P. Z. S., 1858, p. 523.


Capra pallasii, apud Schinz N. Denkschr. all. Schweitz. Gesellsch., ii, p. 9*

The Himalayan Ibex; Skyn & l'Danma & of Little Thibet; Kyl, Kasimir; Buz on the Upper Sutlej; Tangrol of Kulu.

Distribution.—The Himalayas from the Gilgit district (Scully), eastwards to Nepal, but not east of Nepal, also the higher ranges of Thibet (Hodgson), the Thian Shan (Severtzoff) and the Altai and Sajan Ranges, but not extending east of Lake Baikal (Radde); it frequents the higher ranges seldom descending to the tree level. It was also got by the Afghan Boundary Commission in the Parapomus Mountains.

a. Stuffed & Kalsi, Ladak N. Elias, 1879.
b. Flat skin Gilgit J. Scully, 1888.
c. Flat skin & Gilgit, 27-4-79 J. Scully, 1888.
e. Skin, skull, & nr. Kashgar horns.
f. Skin, skull, & nr. Kashgar F. Stoliczka, 1874.
g. Skin, skull, & Tam, Sanju, Kuenlun Mts., 28-10-73 F. Stoliczka, 1874.
h. Skin and & juv. nr. Kashgar horns.
i. Feet nr. Kashgar F. Stoliczka, 1874.
m. Stuffed head & nr. Kashgar F. Stoliczka, 1874.
o. Skull, horns & F. Stoliczka, 1874.
p. Skull, horns & Purchased 1871.
q. Skull, horns & Purchased 1871.
r. Frontlet, & horns. No history, A. S. B.
s. Frontlet, & horns. No history, A. S. B.
t. Frontlet, & horns. No history, A. S. B.
u. Skeleton, no skull.

Capra sinaitica.


Capra arabica, Rupell N. Wirbelth., p. 17 (1835).


Distribution.—Mountains of Upper Egypt, Sinai and Palestine.
a. Skull, horns & Sinaic peninsula B. M. P. Carter [Ex.]
Capra falconeri.

Aegoceros (Capra) falconeri, Wagner Munch, Gel. Ans., ix, p. 430 (1839).
Capra megaceros, Cunningham Ladak, p. 200, pl. vii (1854).
Hircus megaceros, Adams P. Z. S., p. 525 (1858).
Capra jerdoni, Hume P. A. S. B., 1874, p. 240; Kinloch Large Game Shooting, ii, p. 15 [with plate].

The Markhor; Markhor (Snake-eater) of the Afghans; Rap-hochhe ♂ Ramochehe ♀ of Ladak.

Distribution.—The Pir Pinjal range to the south of Kashmir extending northwards to Gilgit (Scully), eastwards to the Beas River (Adams), and southward through the Suleiman Range as far as Mittun Kote (Adams).

There are certainly two varieties of Markhor, whether they can be considered as two different species or not still remains undecided; the scantiness of the Museum collections of these animals prevents my forming an opinion on the subject, I have, therefore, followed Blanford, who is of opinion that the two forms run into one another and cannot be therefore separated as two species.

In the Kashmir variety, which is found in the Pir Pinjal and also in the Gilgit district, the horns are spirally twisted about an imaginary axis, the spiral being very open in some cases as in the one figured in "Hugel's Kaschmir."

In the Suleiman variety the horns are perfectly straight, but a spiral ridge runs round the horn which gives the horn a very different appearance; both varieties are very well figured by Colonel Kinloch in his book on the Large Game of the Himalayas.

Should the Suleiman variety prove to be sufficiently distinct to be considered a separate species, it would be called Capra megaceros of Hutton.

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<tr>
<td>d. Skull and ♂</td>
<td></td>
<td>J. Scully, 1888.</td>
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<tr>
<td>e. Skull and ♂</td>
<td></td>
<td>W. T. Blanford, 1879.</td>
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<tr>
<td>g. Frontlet ♂</td>
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<td>W. Theobald, A.S.B.</td>
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<td>h. Skin and juv.</td>
<td></td>
<td>W. Rutledge, 1868.</td>
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Capra jemlaica.


Distribution.—The Himalayas, from 6,000 ft. or 7,000 ft. upwards; not recorded west of the Pir Pinjal (Adams) and eastwards, occurs doubtfully in Sikkim.

a. Stuffed 
head and
skin.

b. Stuffed

nr. Mussooree

Miss Milman (1873).

c. Skull and
horns.

B. H. Hodgson, A.S.B.

d. Skull and
horns.

A.S.B.

e. Skull and
horns.

A.S.B.

f. Skull and
horns.

B. H. Hodgson, A.S.B.

g. Frontlet
and horns.

A.S.B.

h. Skeleton

No history, A.S.B.

Capra hylocrius.


Hemitragus hylocrius, *Blyth Cat.*, p. 175 (1863); *Jerdon Mamm.*, p. 288; *McMaster Notes on Jerdon*, p. 117.


The Nilgiri Ibex; Warra-ardu or-artu, Tamil.

Distribution.—This goat is entirely confined to the hills in Southern India, i.e., the Nilgiris and Cardamums or Ghats of Travancore and Cochin.

a. Skin
Nilgiri hills
Madras Mus., 1872.
b. Skull and horns
Nilgiri hills
Madras Mus., 1879.
CAPRA.

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e. Skull and ♂ ........ T. C. Jerdon, A.S.B.
f. Skull and ♂ ........ L. C. Stewart, A.S.B.
g. Skull and ♂ Deviculam, Travancore A. W. Turner, 1889.

Capra hircus.


The Domestic Goat.

a. Head stuffed ........ No history.
b. Head stuffed ........ No history.
d. Head stuffed ........ W. Rutledge, 1864.
e. Head stuffed ........ Mrs. Turnbull, 1875.
f. Skull and Sikkim breed A.S.B.
g. Skin and Sikkim skull. W. T. Blanford, 1869.
h. Skin of ♂ [which gave milk] Zoological Gardens, 1878.

Genus NEMORHÆDUS.

Nemorhædus, H. Smith, Griffith An. Kingd., v, p. 352 (1827); [as a sub-genus.]
Capricornis, Ogilby P. Z. S., p. 139 (1836). Type, N. bubalina.

This genus is rather in confusion in consequence of the large number of species that have been described, but which are doubtfully distinct from one another. The type of the genus is Nemorhædus sumatrensis; N. goral is certainly distinct, but N. bubalina seems to differ from N. sumatrensis only in being a little larger; N. rubida described by Blyth seems to be only a very reddish form of M. sumatrensis; N. crispus from Japan appears to be distinct; N. swinhoei from Formosa was considered by Blyth to be, like N. rubida merely a variety of N. sumatrensis; finally Milne Edwards in his Recherches Mammiferes described four new species (1) N. caudatus which seems to most resemble N. goral but has a very long tail; (2) N. griseus and (3) N. cinereus which seem somewhat intermediate between the goral and serow type; and finally (4) N. edwardsii which M. Milne Edwards allows is very nearly allied to N. bubalina from which it differs only in

L. 2
being somewhat smaller and redder; since these are exactly the
differences between N. sumatrensis and bubalina as pointed out
by Blyth, the inference is obvious that N. edwardsii is merely the
same reddish variety of N. sumatrensis as that described by Blyth
as N. rubida.

The skull of the true N. sumatrensis has been compared with
the description and figure in M. Milne Edwards' work and agrees
with it very well.

**Key of the Indian Species.**

a. Smaller, (head and body 50 inches); skull with a distinct ridge
across the check in front of the eye; no antorbital depres-
sion.  
N. goral, p. 148.

a'. Larger, (head and body 60 to 66 inches); skull with a shallow
depression in front of the eyes for the reception of the ant-
orbital gland.

b. Larger, (head and body generally over 5 feet); black; legs
white.  
N. bubalinus, p. 149.

b'. Smaller, (head and body generally under 5 feet); black or
red; legs the same colour as the body.  
N. sumatrensis, p. 150.

**Nemorhædus goral.**

Antilope goral, Hardwicke Linn. Trans., xiv, p. 518, pl. xiv (1823); Wagner
Hugel's Kaschmir, iv, p. 578.
Antilope (Nemorhædus) goral, H. Smith, Griffith An. Kingd., iv, p. 279,
(1827); Hodgson, P. Z. S., 1834, p. 85; id. T. A. S. B., iv, p. 488.
279 (1827).
Kemas goral, Ogilby P. Z. S., p. 138 (1836).
Nemorhædus goral, Hodgson T. A. S. B., x, p. 913 (1841); Gray P. Z. S.,
1859, p. 196; Horsfield Cat. E. I. Mus., p. 168; id. P. Z. S., 1856, p. 493;
Adams P. Z. S., 1858, p. 523; Blyth Cat., p. 175; Jerdon Mamm., p. 285;
Blanford T. A. S. B., xli, p. 40; Lydekker T. A. S. B., xlvi, p. 280; Kinloch
Large Game Shooting, ii, p. 21, [plate of head]; Atkinson N. W. P. 
Gazett., xi, p. 33.

The Goral or Himalayan Chamois; Goral or Bund-buckree of
Paharias; Pijur Rein or Rom of Kashmir; Sah of the Sutlej val-
ley; Peij of Chumba; Suhging, Lepch.; Ragiyu, Bhotea.

**Distribution.**—The southern ranges of the Himalayas, from
4,000 feet to 10,000 feet; Pir Pinjal (Adams) to Sikkim (Blanford),
Kinloch gives also the Siwaliks.

a. Skin and ? Mussoorie horns.  
Miss Milman, 1873.
NEMORHÆDUS.

b. Skin and horns. Mussoorie Miss Milman, 1873.
c. Skin, skull & Native Sikkim W. T. Blanford, 1870.
d. Skin and horns. Sikkim L. Mandelli, 1877.
e. Skin and horns. Sikkim L. Mandelli, 1877.
f. Skin, skull & Native Sikkim W. Rutledge, 1883.
and bones.
g. Skull & No history.
h. Frontlet & B. H. Hodgson, A.S.B.
j. Frontlet & B. H. Hodgson, A.S.B.
k. Stuffed & B. H. Hodgson, A.S.B.
l. Stuffed & F. Stoliczka.
and skin.
m. Skeleton & W. Rutledge, 1881.
& North of Simla
n. Skull & B. H. Hodgson, A.S.B.
and horns.

Nemorhædus caudatus.

Antilope crispa, apud Schrenck Amurland Sænæth, p. 158 (1859); Radde Ost Siberien, i, p. 262, pl. xii.

Distribution.—Amurland (Radde) and the mountains to the north of Pekin (Père David.)

a. Stuffed North of Pekin Paris Mus. [Ex.]

Nemorhædus bubalinus.

Antilope bubalina, Hodgson P. Z. S., p. 12 (1832).
Antilope thar, Hodgson P. Z. S., p. 105 (1833); id. ibid, 1834, p. 86; id. f. A. S. B., iv, p. 489.
Capricornis thar, Ogilby P. Z. S., p. 139 (1836).

The Serow; Thar of Nepal; Ramoo, Kashmiere; Eimu of Sutlej valley; Gya, Bhotea; Lichi, Lepcha.

Distribution.—From Kashmir all through the Himalayas to Sikkim (Blanford), also in the mountains of Upper Burma (Anderson).

a. Skin, skull Sikkim L. Mandelli, 1877.
and horns.
b. Flat skin Sanda valley, Yunnan J. Anderson, 1868.
c. Flat skin Sandy valley, Yunnan, J. Anderson.
7.1-68, 6,000 ft.
d. Stuffed "...... J. Biddulph.
e. Frontlet Naini Tal, Purchased.
1888.
4,000 ft.
g. Frontlet Sandy valley, Yunnan, J. Anderson, 1868.
4,000 ft.
h. Skull "...... No history.

Nemorhæodus sumatrensis.

Antilope sumatrensis, Shaw Gent. Zool., ii, pt. 2, p. 354 (1800); Raffles Linn. Trans., xiii, p. 266; Ogilby P. Z. S., 1836, p. 121; Muller Over de Zoogdieren Tem., Verhandl., p. 45.
Nemorhæodus sumatrensis, Gray List Mamm. B. M., p. 166 (1843); Beavan P. Z. S., 1866, p. 2; Cantor F. A. S., xv, p. 272.
Capricornis sumatrensis, Gray P. Z. S., p. 135 (1850); Blyth Cat., p. 174; id. F. A. S., xiv, Burma List, p. 46.
Capricornis rubida, Blyth Cat., p. 174 (1863).
Capricornis swinhoei, Gray P. Z. S., p. 263, pl. xxxv (1862); Swinhoe P. Z. S., 1862, p. 361 and 1870, p. 647.

Thorsek of Burmese.

Distribution.—Assam, Burma, Arakan (Blyth), Moulmein (Beavan), Tenasserim, Malay peninsula(Cantor), and Sumatra(Raffles), also Formosa (Swinhoe), if N. edwardsii is identical with this species, its range extends northwards to Eastern Thibet.

d. Skull, one Tenasserim horn. Major Berdmore, 1861, A.S.B.
e. Skull and Tenasserim horns. Major Berdmore, 1861, A.S.B.
f. Skull (imper- Tenasserim Major Berdmore, 1861, A.S.B.
fact).
g. Skull (no Sumatra horns). A.S.B.
h. Skull and Sumatra horns. No history.
i. Frontlet Arakan Sir A. Phayre, A.S.B.
j. Frontlet horns. No history.
k. Frontlet ...... No history.
BUDORCAS.

m. Odd horn ....... J. T. Jarbo, 1879.
u. Skull Wellesley Province India Mus., London.

Genus HAPLOCEROS.

Haploceros montanus.
Ovis montana, Ord Guthrie’s Geograph., 2nd Amer. ed., ii, pp. 293, 309 (1815)*.
Antilope (Rupicapra) americana, Blainville Bull. Soc. Philom., p. 80 (1816)*.

Distribution.—The Rocky Mountains of North America.

Genus RUPICAPRA.
Rupicapra, Blainville Bull. Soc. Philom., p. 75 (1816)*.
Capella, Keyserling and Blasius Wirbelth. Europ., p. 28 (1840). Type, R. tragus.

Rupicapra tragus.
Antilope (Rupicapra) rupicapra, Blainville Bull. Soc. Philom., p. 75 (1816)*.

Distribution.—The Alps of Central Europe, the Carpathians, the Pyrenees and the Caucasus.
a. Stuffed ♂ Alps of Aosta, Italy Prof. Giglioli, 1881.
b. Skeleton Alps of Aosta, Italy Prof. Giglioli, 1881.

Genus BUDORCAS.
Budorcas, Hodgson J. A. S. B., xix, p. 65 (1850).

Only one species known.

Budorcas taxicolor.
Budorcas taxicolor, Hodgson J. A. S. B., xix, p. 65, [3 plates] (1850); Blyth J. A. S. B., xix, p. 348; Gray F. Z. S., 1853, p. 192, pl. xxxvi; Blyth Cat.
Takin, Mishmis of Assam frontier; Khing, Khamtees.

**Distribution.**—The hills at the head of the Assam valley whence it is brought down by the Mishmi tribes; it has also been got by Père David from Moupin in Eastern Thibet.

The Takin has never yet, as far as I am aware, been seen wild or shot by Anglo-Indian sportsmen, in fact the only man who has been actually in the country of the “Takin” is Père David the celebrated French Missionary.

The Takin is a generalized type exhibiting many intermediate characteristics, so that it is difficult to say whether it should be included among the sheep, oxen, antelopes or goats; Milne Edwards considers that it is rather more allied to the antelopes, and I have followed him in placing it here at the beginning of the antelopes.

Hume in his recent paper has shown that all previous writers have been mistaken with regard to the horns of the female, which are long straight and ox-like without the characteristic gnu-like twist of the male.

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**Genus OREAS.**

*Oreas, Desmarest Mamm., p. 471 (1822).*

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**Oreas canna.**

*Antilope canna, *Pallas* Spic. Zool., i, p. 15 (1767).*

*Antilope canna, Pallas* Spic. Zool., xii, pp. 5 and 17 (1777).

*Antilope (Oreas) canna, Desmarest Mamm., p. 471 (1822).*
STREPSICEROS.

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Damalis (Boselaphus) canna, H. Smith Griffith An. Kingd., iv, p. 357 (1827).
Boselaphus oreas, Harris Wild Game S. Africa, pl. vi (1840); A. Smith S. Africa Zool., pls. xi and xii.
Oreas canna, Blyth Cat., p. 164 (1863); Selous P. Z. S., 1881, p. 749.

The Eland.

Distribution — South Africa generally; extending north to the Kilimanjaro district; now extinct in Cape Colony.

a. Frontlet ♂ ...... W. S. Sherwill (1843), A.S.B.
b. Skeleton ♂ ...... Zoological Gardens (1885).

Genus STREPSICEROS.


The Abyssinian specimens of Kudu got by Blanford seem to be examples of the Lesser Kudu of Blyth, easily distinguished from the Greater Kudu by the closed spiral of its horns.

Strepsiceros kudu.

Antilope (Tragelaphus), strepsiceros, Desmarest Mamm., p. 468 (1822).
Damalis (Strepsiceros) strepsiceros, H. Smith, Griffith An. Kingd, iv, p. 359 (1827).
Strepsiceros kudu, Gray List Mamm. B. M., p. 155 (1843); Blyth Cat., p. 165; Selous P. Z. S., 1881, p. 751.
Strepsiceros capensis, Harris Wild Game S. Africa, pl. xx (1840); A. Smith S. Africa Zool., pls. xlii, xliii.

The Kudu.

Distribution. — South Africa, but nearly extinct in Cape Colony; found in abundance between the Limpopo and Zambesi Rivers, and extending northwards as far as the Kilimanjaro district

a. Frontlet ♂ ...... A. S. B.

Strepsiceros imberbis.

Strepsiceros kudu, apud Blanford Abyssinia, p. 270 (1870).

Lesser Kudu.

Distribution. — Central and Eastern Africa from Abyssinia in the north to Somaliland, and down to the Equator.

a. Stuffed, ♂ Anseba valley, Abyssinia, W. T. Blanford, 4,000 ft.
b. Skin, ♀ juv. Anseba valley, Abysinia, 4,000 ft., 14-7-68.

**Genus TRAGELAPHUS.**

*Tragelaphus, Blainville Bull. Soc. Philom., p. 75 (1816)*.

**Tragelaphus sylvaticus.**


The Bosch-bok.

**Distribution.**—South Africa, extending north to the Kilimanjaro district.

a-b. 2 Prs. horns South Africa W. Irving.

**Genus BOSELAPHUS.**

*Boselaphus, Blainville Bull. Soc. Philom.*, p. 75 (1816)*.


This genus contains only one species, the Nilgai, which is entirely confined to India.

**Boselaphus tragocamelus.**


*Antilope (Boselaphus) pica, Blainville Bull. Soc. Philom.*, p. 75 (1816)*.


*Tragelaphus hippocampeus, Ogilby P. Z. S.*, p. 138 (1836).


*Portax tragocamelus, Gray P. Z. S.*, p. 146 (1850); *Adams P. Z. S.*, 1858, p. 523; *Blyth Cat.*, p. 165.

The Nilgai; Roz Roee, Hind.; Maravi, Canarese; Gurayi, Gond; Manupotu, Telegu.

**Distribution.**—The peninsula of India generally; not north of Lahore (Adams), but common about Cawnpore and Umbala and southwards to the Deccan (Sykes), and to Coimbatore and Salem (Jerdon); not found in Ceylon or Lower Bengal.

a. Stuffed ♂ Barrackpore, Menagerie, (1842), A.S.B.
ORYX.

b. Stuffed ♀ ...... Barrackpore, Metagerie, 1842, A.S.B.
c. Skeleton ♂ ...... A.S.B.
e. Skull, horns ♀ Cawnpore dist. J. Cockburn, 1872.
f. Skull, horns ♀ ...... A.S.B.
g. Skull, horns ♂ (castrated) ...... A.S.B.
h. Skull ♂ ...... W. Rutledge, 1881.
i. Skull ♀ Alwar, Jumna River J. Cockburn, 1881.
j. Skull ♀ Banda district J. Cockburn, 1881.
k. Skull ♀ ...... A.S.B.
l. Skeleton ♀ ...... Zoological Gardens, 1880.
m. Skeleton ♀ and skin juv. ...... Zoological Gardens, 1878.

Genus ORYX.

Oryx, Blainville Bull. Soc. Philom., p. 75 (1816)*.

Oryx gazella.

Antilope oryx, Pallas Spic. Zool., xii, p. 17 (1777).
Antilope (Oryx) oryx, Blainville Bull. Soc., Philom., p. 75 (1816)*.
Oryx capensis, Ogilby P. Z. S., p. 139 (1836) ; Harris Wild Game S. Africa, pl. ix.
Oryx gazella, Byth Cat., p. 169 (1863) ; Selous P. Z. S., 1881, p. 755.

The Gemsbok.
Distribution.—South Africa; principally in the deserts of the south-west, i.e., Kalahari and Damara land.

a. Frontlet ♂ South Africa A.S.B.

Oryx beisa.

Antilope beisa, Rüppell N. Wirbelth., p. 14, pl. v (1835).

Beisa Antelope.
Distribution.—North-East Africa; desert country round Suakim and Massowah and southward to Somali land (Phillips) and Kilimanjaro.

b. Skeleton $\varphi$ nr. Massowa, Abyssinia, 8-68.  W. T. Blanford.
c. Skin, $\varphi$ skeleton.  Zoological Gardens, 1883.
d. Skin, $\varphi$ juv. skeleton.  Zoological Gardens, 1878.

**Oryx beatrix.**


*Distribution.*—Arabia, one specimen was got from near Mecca, the other from Bushire.

A skull identified by Blyth as O. leucoryx seems to be rather referable to O. beatrix than to O. beisa; the horns are quite straight, so that it is certainly not O. leucoryx.

a. Skull  A. S. B.

**Oryx leucoryx.**

Antilope (Oryx) leucoryx, *Blainville Bull. Soc. Philom.*, p. 75 (1816).*


White Oryx.

*Distribution.*—North and West Africa, Nubia, Senear and Senegal.

a. Skeleton $\varphi$  W. Rutledge, 1881.
b. Skull and $\varphi$ horns  W. Rutledge, 1889.

**Genus HIPPTOTRAGUS.**


**Hippotragus equinus.**


The Equine Antelope.

*Distribution*—Throughout Central and South Africa; it has also been got from West Africa, but is replaced in Central Africa.
by an allied species Hippotragus bakeri of Heuglin. (See Sclater
If H. leucophaeus of Pallas is considered merely as a smaller
or younger specimen of H. equinus, the former name has many
years priority and will of course stand.

a. Frontlet  ♂

Genus GAZELLA.

Gazella, Blainville Bull. Soc. Philom. p. 75 (1816)*.
Antidorcas, Sundevall Kongl. Vetens Akad. Handl. (1844)*. Type, G.
euchore.
Tragops, Hodgson J. A. S. B., xvi, p. 695 (1847). Type, G. bennetti.

Key of the Indian Species.

a. Females horned; horns of males not lyrate.
Gazella bennetti, p. 159.

a². Females hornless.
b. Horns lyrate, a distinct antorbital pit to the skull.
Gazella subgutturosa, p. 160.

b². Horns scimitar-shaped; no trace of antorbital pit.
Gazella picticaudata, p. 161.

Gazella dorcas.

(1812)*; Blyth Cat., p. 172; Tristram P. Z. S., 1866, p. 86; Danford
and Aiston P. Z. S., 1877, p. 276; Brooke P. Z. S., 1873, p. 537.

Distribution.—Asia Minor near Tarsus (Danford), Syria, Egypt,
and Algeria.

a. Skin, skull ♂ and horns
b. Skin ♂ juv.

Egypt

R. A. Turnbull, 1881.
No history.

Gazella picticaudata, apud Blanford Abyssinia, p. 261 (1870).

Distribution—The Egyptian Soudan up to the coast at Mas-
sowah.
MAMMALIA.

a. Stuffed ♂ Ain nr. Massowah, 16-8-68, 12,000 ft. W. T. Blanford.
b. Stuffed ♀ Abyssinia W. T. Blanford.
c. Stuffed ♀ Abyssinia W. T. Blanford.
d. Skull and horns Somali land J. H. Speke, 1855, A.S.B.

Gazella spekii.


Distribution.—Somali land (Speke, Phillips and Menges).

a. Stuffed ♂ Somali land J. H. Speke, 1855, A.S.B.
b. Stuffed ♀ Somali land J. H. Speke, 1855, A.S.B.

Gazella arabica.

Gazella arabica, Lichtenstein Darstell., pl. vi (1827); Hempr. & Ehr. Symb. Phys., pl. v; Blanford Abyssinia, p. 261, pl. i, fig. 3; Brooke P. Z. S., 1873, p. 544.
Gazella vera, Gray Knowsley Menagerie (1850)*.
Gazella dorcas, apud Blyth Cat., p. 172 (1863).

Distribution.—South Arabia.

a. Skin and ♀ skeleton. ...... Zoological Gardens, 1878.
b. Skin and ♀ skeleton-juv. ...... W. Rutledge, 1878.
c. Skin and ♂ skeleton-juv. ...... Zoological Gardens, 1878.
d. Skin (with ♀ horns), juv. ...... Purchased, 1864.
e. Skin and skull, juv. ...... Zoological Gardens, 1881.
f. Skin, ♀ ...... Zoological Gardens, 1877.
g. Skin and ♂ skeleton. ...... Zoological Gardens, 1877.
h. Skin and ♂ skull. ...... "Bushire" Zoological Gardens, 1882.
i. Skin and ♀ skeleton. ...... Zoological Gardens, 1882.
j. Skin and ♀ skull. ...... Zoological Gardens, 1882.
k. Skin ...... No history.
l. Skull ♂ ...... A.S.B.
m. Skull ♂ ...... A.S.B.
Gazella bennetti.

Antelope bennetti, Sykes P. Z. S., p. 104 (1831); Blanford J. A. S. B., xxxvi, p. 196.
Antelope arabica, apud Elliot Madr. Journ., x, p. 223 (1839).
Gazella christi, Gray List Mamm. B. M., p. 161 (1843); Jerdon Mamm., p. 280; McMaster Notes on Jerdon, p. 115; Kinloch Large Game Shooting, i, p. 57, with plate; Stoliczka J. A. S. B., xli, p. 229; Blanford P. Z. S., 1873, p. 315; Brooke P. Z. S., 1873, p. 544; Blanford Persia, p. 91; Sterndale Mamm. Ind., p. 463; Murray Zool. Sind, p. 56.
Tragops bennetti, Hodgson J. A. S. B., xvi, p. 695 (1847); Adams P. Z. S., 1858, p. 522; Blyth Cat., p. 173.

The Indian Gazelle, Ravine Deer in North India; Goat Antelope in South India; Chikara, Kalpunch, Kalsip, Hindustani; Budari, Mudari; Tiska, Canarese; Hūrnee in Punjab; Ast in Beluchistan; Burudnjinka, Telugu.

Distribution.—Found throughout the western parts of India in suitable localities and extending westwards through Beluchistan as far as Bushire, not found on the Malabar Coast, south of the Kistna River, in Ceylon, or in Lower Bengal.

| a. | Skin ♂ | ....... | A. S. B. |
| b. | Skin ♂ | ....... | A. S. B. |
| c. | Skin and ♀ | ....... | A. S. B. |
| d. | Skin ♂ | Bampur, Beluchistan | W. T. Blanford. |
| e. | Skin ♀ | ....... | W. T. Blanford. |
| f. | Skin juv. | ....... | Karachi Mus. [Ex.], 1879. |
| g. | Head ♂ | Sind, 17-5-75 stuffed. | W. T. Blanford. |
| i. | Head ♂ | stuffed, juv. | W. T. Blanford. |
| m. | Head ♂ | Pubb Hills, Sind stuffed. | Karachi Mus. [Ex.], 1879. |
| o. | Skull ♂ | Allahabad district | J. Cockburn, 1879. |
MAMMALIA.

Gazella fuscifrons.

Gazella fuscifrons, Blanford P. Z. S., p. 317 (1873); Brooke P. Z. S., 1873, p. 545; Blanford Persia, p. 92.

Distribution.—Desert of Jalk, north of Beluchistan.

Only one specimen, the one mentioned below, is known and this is a female; the species is certainly very nearly allied to Gazella bennetti, but pending the collection and examination of more specimens it seems better to keep it separate.

a. Skin and ♀ Jalk, Beluchistan, 3,000 ft. W. T. Blanford, 13-3-72.

[type of Gazella fuscifrons, Blanford.]

Gazella subgutturosa.


Gazella subgutturosa, Blainville Bull. Soc. Philom., p. 75 (1816) ♀; Hutton, J. A. S. E., xv, p. 151; Blyth Cat., p. 172; Blanford P. Z. S., 1873, p. 313; Brooke P. Z. S., 1873, p. 545; Blanford Persia, p. 91; Seversoff Ann. Mag. N. H. (4), xvii, p. 170; Pervaldsky Peters, Mitth., Erbsl., xii, p. 9; Scully J. A. S. B., i, p. 76; Thomas Linn. Trans. (2), v, p. 64.

Gazella subgutturosa var. yarkandensis, Blanford Yarkand Mamm., p. 88, pl. xv (1879).

The Persian Gazelle; Ahu, Persian.

Distribution.—The highlands of Persia and Afghanistan extending westward as far as Tiflis, northwards all over Russian-Turkest-an, and eastwards to Yarkand; not found on the shores of the Persian Gulf being there replaced by G. bennetti.
Gazella picticaudata.


The Tibetan Ravine Deer.; Goa of Thibetans.

Distribution.—Upper part of Ladak and Western Thibet (Kinloch). Sir J. Hooker also observed it over the Thibetan frontier to the north of Sikkim.

a. Skin and horns  ♂  .....  Purchased at Naini Tal, 1888.
b. Skull and horns  ♂  .....  F. Jenkins, 1846, A.S.B.
c. Skull, horns and skin  ♂  Kukchu nr. Ladak, 15,000 ft.  N. Elias, 1879.
d. Frontlet  ♂  .....  F. Jenkins, 1846, A.S.B.
e. Frontlet  ♂  .....  F. Jenkins, 1846, A.S.B.
f. Frontlet  ♂  .....  No history.

Gazella sœmmerringi.

Distribution.—North-East Africa from near Suez southward to Somali land (Phillips); always near the sea (Blanford).

c. Frontlet. No history.

Gazella euchore.

Antidorcas euchore, Gray P. Z. S., p. 116 (1850); Blyth Cat., p. 171.

The Springbok.
Distribution.—South Africa; the north-western parts of Cape Colony, Orange Free State, Transvaal and Grimqualand west.

a. Frontlet. A.S.B.

Genus ANTILOPE [restricted].

Antilope, Pallas Spic. Zool., i, p. 3 (1767).

The genus Antilope, which formerly included the whole sub-family of Antelopes, was first restricted to the following species by Ogilby P. Z. S., 1836, p. 137.

Antilope cervicapra.

Antilope bezoartica, Gray P. Z. S., p. 117 (1850); Adams P. Z. S., 1858, p. 522; Blyth Cat., p. 171; Jerdon Mamm., p. 275; Blanford J. A. S. B., xxxvi, p. 196; MacMaster Notes on Jerdon, pp. 109, 210; Kinloch Large Game Shooting, i, p. 59 [with plate]; Stoliczka J. A. S. B., xli, p. 229; Pollok Sport in Brit. Burma, i, p. 150; Sterndale Mamm. Ind., p. 472.

The Black Buck or Indian Antelope; Mriga, Sanscrit; Kalwit Haran and Mirga Φ Harna Harin Φ Hind.; Harin, Bengalce; Kalsar Φ Baoti Φ in Behar; Kala Φ Guria Φ in Tirhut; Barout or Sasin in Nepal; Bureta in Bhagulpore; Chigri, Canarese; Φ Ledi; Φ or Jinka in Telegu.

Distribution.—The whole Indian peninsula from the Punjab to Cape Comorin, except the Malabar Coast, the Eastern Ghats, and
PANTHOLOPS. 163

Lower Bengal; it is most abundant in the North-West Provinces and the Deccan. It is recorded from the banks of the Manass River, a northern tributary of the Brahmaputra, in Assam by Pollok (l. c.)

e. Skull, horns Banda dist. J. Cockburn, 1881.
g. Skull, horns Banda dist. J. Cockburn, 1881.
h. Skull, horns Banda dist. J. Cockburn, 1881.
j. Skull, horns A.S.B.
k. Skull, horns J. J. Athanass, 1842, A.S.B.
l. Skull, horns A.S.B.
m. Skull, horns A.S.B.
n. Skull, horns J. Cockburn, 1872.
o. Skull, horns Rajab R. Mullick, 1870.
p. Skull, horns No history.
q. Skull, horns A.S.B.
r. Skull, horns [castrated.] J. J. Athanass, A.S.B.
s. Skull, horns [one horn deformed.] W. Rutledge, 1870.
t. Skull J. J. Athanass, A.S.B.
u. Head stuffed J. Armstrong, 1869.
v. Head stuffed A.S.B.
w. Frontlet, Banda J. Cockburn, 1881.
x. Frontlet, Doon of Assam F. Jenkins.
y. Stuffed Chanda W. T. Blanford, 1867.
z. Stuffed Purchased, 1869.
\(a\). Stuffed Purchased, 1869.
\(c\). Stuffed juv. Zoological Gardens, 1881.
\(d\). Skeleton Mrs. Turnbull, 1837, A.S.B.
\(e\). Skull [horns deformed] A.S.B.
\(f\). Head stuffed A.S.B.

Genus PANTHOLOPS.

Pantholops, Hodgson P. Z. S., p. 80 (1834).

This genus also contains only one species, the Thibetan Antelope, which has been shot just within the boundaries of the Indian Empire and which must therefore be included in the Indian Fauna.

Pantholops Hodgsoni.

MAMMALIA.


Antilope (Oryx) kemas, H. Smith, Griffith An. Kingd., v, p 328 (1827).
Pantherolops hodgsoni, Hodgson, P. Z. S., p. 80 (1834); id. J. A. S. B., iii, p. 134; id. J. A. S. B., x, p. 913; Adams P. Z. S., 1858, p. 521; Blanford Yarkand Mammm., p. 89, pl. xvi.
Kemas hodgsoni, Gray List Mammm. B. M., p. 157 (1843); Horsfield Cat. E. I. Mus., p. 166; Blyth Cat., p. 173; Kinloch Large Game Shooting, i, p. 6, [with plate]; Blanford J. A. S. B., xli, p. 39.

Isoors or Choors of West Thibet; Chiru of East Thibet.
Distribution.—Apparenty throughout Thibet; was seen by Hooker just over the pass to the north of Sikkim and has been shot by Kinloch in Changchenmo in the eastern part of Ladak.

a. Skin ♂ Kium, Ladak, 4-8-73 J. Biddulph.
b. Skin ♀ Thibet F. Stoliczka, 1874.
c. Stuffed ♂ Thibet L. Mandelli, 1877.
d. Skull, horns ♂ Thibet A.S.B.
e. Skull, horns ♀ Thibet A.S.B.
f. Frontlet ♂ Yarkand A.S.B.
g. Skull ♂ Yarkand F. Stoliczka, 1874.

Genus KOBUS.


Kobus ellipsiprymnus.

Antilope ellipsiprymnus, Ogilby, P. Z. S., p. 47 (1833)*.

The Water Buck.
Distribution.—South Africa, principally found about the Zambezi and Limpopo Rivers, and extending northwards to the Kilimanjaro district.

a Skeleton ♂ E. S. Gerrard [P.], 1881.

Genus CERVICAPRA.

Cervicapra, Blainville Bull. Soc., Philom., p. 75 (1816)*.
Redunca, H. Smith, Griffith An. Kingd., v, p. 337 (1827) [as a sub-genus].

Cervicapra arundinacea.

Antilope (Cervicapra) eleotragus, Blainville Bull. SOC., Philom., p 75 (1816)*.

The Rietbok.

*Distribution.—*Central South Africa, especially about the tributaries of the Zambesi and Limpopo Rivers.

- Frontlet ...... No history.

### Genus NEOTRAGUS.


### Neotragus saltianus.


The Beni Israel.

*Distribution.—*Shores of the Red Sea, in the neighbourhood of Abyssinia; replaced by allied species in Somaliland and Damara-land.

<table>
<thead>
<tr>
<th>Item</th>
<th>Location Details</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Anseba valley, Abyssinia, 4,000 ft., 27-7-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>b. Skin</td>
<td>Anseba valley, Abyssinia, 4,000 ft., 2-8-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Anseba valley, Abyssinia, 4,000 ft., 5-8-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Anseba valley, Abyssinia, 4,000 ft., 13-7-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>e. Skin</td>
<td>Abyssinia</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>f. Skin</td>
<td>Anseba valley, 4,000 ft., 29-7-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>g. Skin</td>
<td>Anseba valley, 4,000 ft., 25-7-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>h. Skin</td>
<td>Suru, Abyssinia, 2,500 ft., 17-2-68.</td>
<td>W. T. Blankford.</td>
</tr>
<tr>
<td>j. Skin</td>
<td>Samhar, Abyssinia, 700 ft., 28-6-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>k. Skin</td>
<td>Koomeyloo, Abyssinia, 300 ft., 1-68.</td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>l. Head</td>
<td>Anseba valley</td>
<td>W. T. Blanford, 1868.</td>
</tr>
<tr>
<td>m. Stuffed head</td>
<td>Anseba valley</td>
<td>W. T. Blanford, 1868.</td>
</tr>
<tr>
<td>n. Stuffed head</td>
<td>Anseba valley</td>
<td>W. T. Blanford, 1868.</td>
</tr>
<tr>
<td>o. Skeleton</td>
<td>Anseba valley</td>
<td>W. T. Blanford, 1868.</td>
</tr>
</tbody>
</table>
Neotragus kirki.

Neotragus saltiana, *apud* Blyth Cat., p. 168 (1863).
Neotragus kirkii, Günther *P. Z. S.*, p. 17, figs. 1-10 (1880).

*Distribution.*—Somaliland, extending southwards to the Kilimanjaro country.

* a. Stuffed ♂ Somaliland J. H. Speke, 1855, A. S. B.

Genus NANOTRAGUS.


_Type*, N. moschatus.


Nanotragus tragulus.


Antilope (Gazella) tragulus, Lichtenstein *Mag. Gäs. naturf. Freunde*, vi, p. 176 (1814)*.

Antilope (Cervicapra) stenbock, Blainville *Bull. Soc. Philom.*, p. 75 (1816)*.

Antilope (Tragulus) rupestris, H. Smith, Griffith *An. Kingd.*, iv, p. 248 (1827); Harris *Wild Game of S. Africa*, pl. xxv, fig. 2.


Pediotragus campestris, Gray *Cat. Rum. B. M.*, p. 31 (1872).


The Steinbock.

*Distribution.*—All over South Africa from the Cape to the Zambesi, extending northward to the Kilimanjaro district.

* a. Skin ♂ South Africa E. L. Layard (1860), A. S. B.

Nanotragus montanus.

Antilope montana, Cretschmar Rüppell’s *Atlas*, p. 11, pl. iii (1826).


Nanotragus montanus, Brooke *P. Z. S.*, p. 632 (1872).

*Distribution.*—Eastern Africa, Abyssinia, West Africa?

* a. Skin Dolo, Abyssinia, 7,500 ft., W. T. Blanford.

27-3-68.
CEPHALOPHUS.

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Nanotragus melanotis.

Calotragus melanotis, *Gray Cat. Mamm. B. M.*, iii, p. 72 (1852); *Blyth Cat.*, p. 166.

The Grysbok.

*Distribution.*—Central South Africa, north of the Limpopo River.

♀ Stuffed ♀ South Africa E. L. Layard (1860), A.S.B.

Nanotragus oreotragus.

Antilope saltatrix, *Boddaert Elench. Anim.*, p. 141 (1785).*

The Klipspringer.

*Distribution.*—East and South Africa from Abyssinia in the north to Cape in the south, wherever there are stony hills.

♀ Stuffed ♀ South Africa E. L. Layard (1860), A.S.B.
♀ Stuffed head ♀ Senafe Tigré, Abyssinia, 6-68.
♀ Stuffed head ♀ Somaliland J. H. Speke, 1855, A. S. B.
♀ Skin ♀ Senafe Tigré, Abyssinia, 7,500 ft., 11-3-69.

Genus CEPHALOPHUS.

Cephalophorus, *H. Smith, Griffith An. King.*, v, p. 344 (1827); [as a subgenus];

Cephalophorus mergens.

Antilope (Cephalophorus) mergens, *H. Smith, Griffith An. King.*, iv, p. 264 (1827); *Harris Wild Game S. Africa*, pl. xv, fig. 2.


The Duiker.

Distribution.—South Africa extending northwards to the Kilimanjaro district.

a. Stuffed ♂ South Africa E. L. Layard (1860), A. S. B.

Cephalophus natalensis.


Rhoodebok.

Distribution.—South Africa, more especially Natal.

a. Stuffed ♂ ....... A. Malherbe (1859), A. S. B.

Cephalophus madoqua.

Antilope madoqua, *Rüppell N. Wirbelth.*, p. 22, pl. vii, fig. 2 (1835).


Distribution.—Eastern Africa, Abyssinia.

a. Skin ♂ Didi, Abysinia, 7,000 W. T. Blanford. ft., 23-4-68.

b. Skin ♂ Dongolo, Abysinia, 6,500 W. T. Blanford. ft., 17-5-68.

Genus TETRACERUS.


This genus contains one species only and is entirely confined to India.

Tetracerus quadricornis.


Antilope sub-4-cornutus, *Elliot Madr. Journ.*, x, p. 225, pl. x, fig. 2 (1839); *Sclater P. Z. S.*, 1875, p. 527.


Tetracerus quadricornis, *Gray List Mamm. B. M.*, p. 159 (1843); *Blyth J. A.*

The four-horned Antelope; Chouka, Chousinga, Hind.; Benkara or Bekra of Mahrattas; Kondguri, Canarese; Kondagori, Telegu. Distribution.—India generally, more especially in the Central Provinces; is not found in the Ganges valley itself, but to the north in the terai is fairly common, it doubtfully extends into the Punjab and Sind, and does not occur in Ceylon.

a. Skin and skull ♂ Raneegunge Babu Rameshur Mullick, 1872.
b. Skin and skull ♂ Raneegunge Babu Rameshur Mullick, 1872.
c. Skin and skeleton ♂ ...... Zoological Gardens, 1878.
e. Skeleton ♂ ...... Zoological Gardens, 1880.
f. Stuffed ♂ ...... Rajah R. Mullick, A. S. B.
g. Stuffed ♂ ...... Rajah R. Mullick, A. S. B.
h. Stuffed juv ...... W. Rutledge, 1873.
l. Skull ♂ ...... A. S. B.
m. Skull ♂ ...... A. S. B.
n. Skull ♂ ...... A. S. B.
o. Skull ♂ ...... A. S. B.
p. Skull ♂ South India Sir W. Elliot, 1845, A. S. B.
q. Skull ♂ South India Sir W. Elliot, 1845, A. S. B.
r. Skull ♂ South India Sir W. Elliot, 1845, A. S. B.
s. Skull ♂ ...... J. Cockburn, 1866.
t-u. 2 Skulls ♂ ...... J. Cockburn [P.], 1866.

Genus Æpyceros.


Æpyceros melampus.


The Mpallah or Roodebok. Distribution.—Central South Africa, especially about the Upper Waters of the Limpopo River, extending northwards to the Kilimanjaro district.
a. Frontlet ...... Purchased (1861), A. S. B.
Mammalia.

Genus Alcephalus.

Alcephalus, Blainville Bull. Soc. Philom., p. 75 (1816)*.

Alcephalus caama.

Damalis (Acronotus) caama, H. Smith, Griffith Ann. Kingd., iv, p. 348, with plate (1827); Harris Wild Game S. Africa, pl. vii.

The Hartebeest.

Distribution.—South Africa; Grimqualand and the Kalahari Desert.

a. Frontlet ...... W. S. Sherwill (1843), A.S.B.
b. Skeleton, $\delta$ juv ...... Zooloogical Gardens, 1881.

Genus Connochaetes.

Connochaetes, Lichtenstein Mag. Ges. naturf. Freunde, vi, p. 165 (1814)*.

Connochaetes gnu.

Antilope (Connochaetes) gnu, Lichtenstein Mag. Ges. naturf. Freunde, vi, p. 165 (1814)*.
Antilope (Boselaphus) gnu, Blainville Bull. Soc. Philom., p. 75 (1816)*.
Catoblepas gnu, H. Smith, Griffith Ann. Kingd., iv, p. 367 (1827); Harris Wild Game S. Africa, pl. 1.

The White-tailed Gnu.

Distribution.—South Africa, extending northwards to the Kilimanjaro district.

a. Frontlet ...... No history.
b. Skeleton $\delta$ juv ...... Berlin Mus. [Ex.] 1878.
c. Skeleton and skin $\delta$ ...... Babu H. M. Roy, 1885.

Genus Antilocapra.

Antilocapra Ord Journal de Physique, lxxxvii, p. 149 (1818)*; id. Isis, 1819, p. 1106.
Antilocapra americana.


The Prong Buck.

*Distribution.*—North America, west of the Missouri from the Saskatchewan southwards to Northern Mexico.

- Stuffed: North America
- Skeleton: North America
- Skull: Montana, N America
- Skin: Montana, N America

Genus GIRAFFA,


Giraffa camelopardalis.

Camelopardalis camelopardalis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 92 (1766);

*Distribution.*—Africa south of the Atlas.

- Skeleton mted.: 
- Skull: ..............................................
- Skin: ..............................................
- Skin, skeleton: ......................................
- Skin, skeleton (juv.):
- Skeleton: .............................................
- Skeleton: .............................................

Genus MOSCHUS.


The genus Moschus is now generally allowed to consist of a single species only, though others have been from time to time described on mere colour variations and on other insufficient grounds.
Moschus moschiferus.


Moschus chrysogaster
Moschus leucogaster
Moschus saturatus

Genus CERVULUS.


Prox, *Ogilby P. Z. S.*, p. 135 (1836). Type, C. muntjac

The genus Cervulus is confined to the Indian and the south-eastern parts of the Palearctic regions. Besides the species mentioned below, there exists C. sclateri (= C. lacrimans) and C. cri-nifrons, both from China.

The Indian form of Cervulus muntjac was at one time thought to differ specifically from the Sumatra and Javan form, and the point does not yet seem to be quite satisfactorily decided. I have, however, followed Sir V. Brooke (P. Z. S., 1874, p. 33) in uniting the two forms under the name of C. muntjac.

**Cervulus muntjac.**


*Cervus vaginalis*, Boddaert Elench. Anim., i, p. 136 (1785)*.

*Cervus moschatus*, Blainville Bull. Soc. Philom., p. 77 (1816)*.


Prox moschatus, Ogilby P. Z. S., p. 135 (1830).


*Cervus vaginalis*, Adams P. Z. S., p. 530 (1858); Blyth Cat., p. 154; Swinhoe P. Z. S., 1869, p. 652.

*Cervus aureus*, Jerdon Mamms., p. 264; McMaster Notes on Jerdon, p. 94; Blyth J. A. S. B., xlv, Burma List, p. 46; Kinloch Large Game Shooting, ii, p. 25 [ plate of head].


The Kakur, Barking Deer or Rib-faced Deer of North India; the Jungle sheep of South India; and the Red Hog Deer of Ceylon; Kakur, Hind.; Maya, Bengalee; Ratwa of Nepanlese; Bekra, Mahratti; Kankuri, Canarese; Jungli bukra of South India Mus-salman; Karsiari of Bhootees; Sikkhu of Lepchas; Gutra of Gonds; Kuka gori, Telegu; Welly or Hoola Morba of Singalese; Hoogeree of Assam; Ge of Burma.

**Distribution.**—The Kakur is found all over India, Burma, Indo-China, the Malay peninsula and the Islands of Sumatra, Java, Banka, Borneo and Hainan (Swinhoe). In India proper it is found from Kashmir (Hugel) in the north to Ceylon (Kelaart) on the south; it is replaced in Eastern Thibet and South China by the next species and by C. sclateri.

- **a.** Skin (flat) ....... India Mus., London, 1880.
- **b.** Skin (flat) Nepal (Hodgson) India Mus., London, 1880.
- **c.** Skin (flat) Sanda Valley, Yunnan, J. Anderson.
  7-68.
- **d.** Skin (flat) Sanda Valley, Yunnan, J. Anderson.
  7-68.
e. Skin (flat) Sanda Valley, Yunnan, J. Anderson. 7-68.

f. Skin (flat) juv. Sanda Valley, Yunnan, J. Anderson. 7-68.

g. Skin (flat) juv. Sanda Valley, Yunnan, J. Anderson. 7-68.

A. Skin $\delta$ Ceylon Columbo Museum, 1888.

f. Skin, skelet. $\delta$ ....... Rajah R. Mullick, 1877.

k. Skin $\delta$ juv. Zoological Gardens, 1878.

l. Skin $\delta$ juv. Zoological Gardens, 1880.

m. Skull $\delta$ ....... A.S.B.

n. Skull $\delta$ ....... P. Homfray (1843), A.S.B.

p. Skull and skin $\delta$ Shevaroy Hills, Madr. Mrs. W. King, 1888.

of head.

q. Skull $\delta$ ....... A.S.B.

r. Skull $\delta$ ....... A.S.B.

s. Skull $\delta$ Nepal B. H. Hodgson, 1844, A.S.B.

t. Skull, skelet. $\delta$ ....... Rajah R. Mullick, A.S.B.

u. Skull $\delta$ ....... A.S.B.

v. Frontlet $\delta$ Sanda Valley, 7-68 J. Anderson.

w. Frontlet $\delta$ Sanda Valley, 7-68 J. Anderson.

x. Frontlet $\delta$ ....... A. Masters, 1842, A.S.B.

y. Frontlet $\delta$ Arakan Sir A. Phayre, 1846, A.S.B.

z. Frontlet $\delta$ Arakan Sir A. Phayre, 1846, A.S.B.

a'. Stuffed $\delta$ zooological Gardens, 1877.

b'. Skeleton $\delta$ ....... No history.

c'. Flat skin ....... India Mus., London, 1880.

d'. Skeleton $\delta$ juv. Zooological Gardens, 1880.

Cervulus reeevesi.

Cervus reecevesi, Ogilby P. Z. S., p. 105 (1838); Blyth f. A. S. B., xxix, p. 93; Swinhoe P. Z. S., 1862, p. 361; Blyth Cat., p. 155; Swinhoe P. Z. S., 1870, p. 644; Brooke P. Z. S., 1874, p. 41, pl. ix; Sclater P. Z. S., 1875, p. 422, pl. li, fig. 2.

Cervulus micrurus, Sclater P. Z. S., p. 421, pl. li (1875).

Distribution.—Southern China from Canton northwards to Ningpo and Formosa.

a. Skin skull $\delta$ zooological Gardens, 1879.

b. Skull $\delta$ Formosa. R. Swinhoe, 1860.

Genus CERVUS.


Dama, H. Smith, Griffith An. Kingd., v, p. 306 (1827) [as a sub-genus].

Type, C. dama.

Rusa, H. Smith, Griffith An. Kingd., v, p. 309 (1827) [as a sub-genus].

Type, C. aristotelis.

Axis, H. Smith, Griffith An. Kingd., v, p. 312 (1827) [as a sub-genus].

Type, C. axis.

CERVUS. 175


An excellent account of the genus Cervus, which has been followed in the catalogue below, will be found in the Proceedings of the Zoological Society for 1878, by Sir Victor Brooke.

**Key of the Indian Species.**

a. With only one brow antler; rhinarium extensive, completely surrounding the nostrils, the upper margin being slightly concave.

b. Brow antler forms an acute angle with the beam which bifurcates to form two strong tines only. 

[=sub-genus Rusa.]

c. Of large size, from 4 to 5 ft. high at the shoulder.

C. aristotelix, p. 176.

c*. Of small size, about 2 ft. to 2 ft. 6 in. at the shoulder; the outer tine always surpasses the inner tine in length.

C. porcinus, p. 178.

c*. Brow antler at right angles to the beam sometimes forked and sometimes developing supplemental tines; adults unspotted. . . . [=sub-genus Recurvus.]

d. Beam bifurcates very early within a few inches of the basal tine and forms a crown of very long tines far surpassing the undivided beam in length.


d*. Undivided beam much longer, so that the crown is formed of short tines which are much shorter than the undivided beam. . . . C. duvaucelii, p. 179.

d*. Brow antler forms with the beam a continuous curve; a supplemental tine frequently developed at the junction of the beam and brow antler; adults unspotted [=sub-genus Recurvus, pt.] . . . . . . C. eldi, p. 180.

d*. Brow antler at right angles to the beam, which forms two tines only above; adults constantly spotted.

C. axis, p. 181.

a*. With two brow antlers; rhinarium not extensive, the infranarial portion completely absent, and the prenarial portion much constricted. 

[=sub-genus Elaphus.]

e. The two brow antlers of approximately the same length. . . . . . . C. affinis, p. 184.
The second brow antler considerably exceeds the first in length. . C. cashmerianus, p. 184.

Cervus aristotelis.


Cervus leschenaultii, G. Cuvier Oss. foss., 2nd ed., iv (1823)*.


Cervus jarai, Hodgson Gleanings in Science, iii, p. 321, pl. xxi (1831); id. J. A. S. B., i, p. 66, pl. v.

Cervus equinus, apud Sykes P. Z. S., p. 104 (1831).

Rusa jaraya
Rusa napalensis
Rusa heterocurvus ḍ Hodgson J. A. S. B., x, p. 914 (1841).

Sambur in the plains; Gerow in the Himalayas, and Elk in Southern India and Ceylon; Sambur, Hind. and Mahratta; Jarai or Jarao of the Paharris of the Himalayas; Maha in the Terai; Mahao of the Gonds; Cadavi, Canarese; Kannadi, Telegu; Ghous or Gaoj in Eastern Bengal; Gona Rusa, Cingalese; Khatkhowah; Pohoo, Assamese; Schap, Burmese.

Distribution.—India generally from the Himalayas to the extreme south and Ceylon; not found west of the Sutlej (Kinloch), but extending eastward through Assam, Burma and Siam to Hainan ?

Cervus equinus is said by Brooke (l. c.) to come from Borneo and Sumatra, and he also suggests that it may possibly turn out to be indistinguishable from the true Cervus aristotelis. In the Museum collection all the heads coming from Assam and Burma differ markedly from the true Indian heads, in that the outer tine always surpasses the inner time in length, while in the true Indian forms the outer and inner tines are of approximately equal length; this is the difference as noted by Brooke between Cervus aristotelis and C. equinus; it is therefore quite possible that it is not the true Cervus aristotelis that is found in Assam and Burma, but the allied species Cervus equinus.

♀ Skull and horns. ♂ Assam
♀ Skull and horns. ♂ Assam
♀ Skull and horns. ♂ Arakan

F. Jenkins (1846), A.S.B.
E. V. Westmacott (1866), A. S. B.
Sir A. Phayre (1847), A.S.B.
d. Skull and horns. ........ Rajah R. Mullick (1846), A.S.B.
e. Skull and horns. ........ A.S.B.
f. Skull and horns. Rewah, N.-W. P. Dr. Waller [Ex.], 1879.
g. Skull and horns. Rewah, N.-W. P. Dr. Waller [Ex.], 1879.
h. Skull and horns. ........ No history.
i. Skull and horns. ........ No history.
j. Skull and horns. ........ No history.
k. Skull and horns. ........ No history.
m. Skull and horns (deformed). ........ A.S.B.
n. Skull, pt. and horns. ........ No history, A.S.B.
o-p. 2 Frontlets 
med. Arakan Sir A. Phayre, 1847, A.S.B.
q-r. 4 Frontlets 
med. Assam H. Butcher, 1879.
u. Frontlet 
med. Assam No history, A.S.B.
v-f. 11 Frontlets 
med. ........ No history, A.S.B.
w. 2 Frontlets 
vjuv. Cast horns 
med. Cuttack dist. 'Purchased 1848, A.S.B.
x-y. Cast horns 
med. .......... R. C. Beavan.
b-p. 5 prs. cast horns mted. ........ No history, A.S.B.
c. 1 pr. horns Mirzapur dist. J. Cockburn [P.], 1886.
d. 1 pr. horns Mirzapur dist. J. Cockburn [P.], 1886.
e. 1 pr. horns Mirzapur dist. J. Cockburn [P.], 1886.
f. 1 Horns [Cast, 11-3-82] Zoological Gardens, 1882.
g. Horns " 2-3-81 Zoological Gardens, 1882.
h. Horns " 27-4-81 Zoological Gardens, 1882.
j. 3 Single horns A.S.B.
k. 2 Single horns .......... R. C. Beavan 1865, A.S.B.
m. Skull and skin of head. Rajah R. Mullick, 1880.
o. Skull and skin of head. Rajah R. Mullick, 1883.
MAMMALIA.


Cervus swinhoii, Brooke, P. Z. S., p. 901 (1878).

Distribution.—Formosa.

u. 1 pr. horns [Cast, 29-4-82 ] Zoological Gardens.

Cervus porcinus.


Axis porcinus, Jerdon Manm., p. 262 (1867) ; McMaster Notes on Jerdon, p. 91 ; Kinloch Large Game Shooting, ii, p. 32 (with plate of head).

The Hog Deer; Para, Hindustani; Khar laguna and Leghuna in the Nepal terai; Nuthrini haran in parts of Bengal; Weel mooha, Cingalese; Drai, Burmese.

Distribution.—From Punjab and Sind through the Gangetic valley and Assam to Burma; it is said to be found in Central India, but this seems doubtful; is not found in Malabar but occurs in the lower parts of Ceylon whither possibly it may have been imported. This deer is confined to the low lands near the rivers and never ascends into the hills.

a. Skin ♂ Tsitkaw, nr. Bhamo J. Anderson, 1875
b. Skin skelet. ♂ Rajah R. Mullick, 1876.
c. Skeleton ♂ Rajah R. Mullick, 1876.
d. Skeleton ♂ Zoological Gardens, 1877.
e. Skeleton ♂ Zoological Gardens, 1878.
f. Skeleton ♂ H. P.vierre, 1868.
Cervus

Cervus hippocarpus.


Cervus russa, Müller and Schlegel Tem. Verhandl., p. 217, pls. xliii and xlv, figs. 1-6 (1844); Blyth J. A. S. B., xxiv, p. 480 [foot-note.]

Cervus tunjac, apud Blyth Cat., p. 151 (1863).

Distribution.—Java and several other islands into which it has probably been introduced by human agency; it is still a question as to whether the Timor and Molucca Deer are distinct; it has also been introduced into Mauritius (see Blyth J. A. S. B., xxiv p. 480).

All the specimens of this deer in the Museum were in the old Asiatic Society’s Collection and have lost their labels, so that it is impossible to identify the specimens with the list given in Blyth’s catalogue, but I suspect that the two of the small frontlets are those catalogued by Blyth at “h” and “i,” coming from Timor, in which case they are representatives of the form described by Blainville as Cervus timoriensis.

a-b. 2 Skulls and horns.
cvf. 7 Frontlets
2. Horns 1 pr. Moluccas
1. Skin, skeleton
m. Skull and horns.

Cervus duvaucelii.


Cervus elaphoides, Hodgson J. A. S. B., iv, p. 648, pl. lxi, fig. 4, (1835).
**Cervus (Recurvus) elaphoides**, Hodgson Ann. Mag. N. H., i, p. 154 (1838); id. J. A. S. B., x, p. 914.

Recurvus duvauceli, Gray Cat. Mamm., B. M., iii, p. 203 (1852); Blyth Cat., p. 150; id. P. Z. S., 1867, p. 835, figs. 1—5; Blanford, J. A. S. B., xxxvi, p. 197; Jerdon Mamm., p. 254.

The Swamp Deer; Barasingha, Hind.; Baraya or Maha in the Nepal terai; Jhinkar in the Kyarda Doon; Potiya haran & Gaoni in Central India.

Distribution.—The Terai from the Kyarda Doon in the west to Bootan and Assam in the east, also along the Brahmapootra to the Sunderbunds. In Upper Bengal from Midnapore to the Mandla district in the Central Provinces, confined to low marshy country.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Zoological Gardens, 1877.</td>
<td></td>
</tr>
<tr>
<td>b. Skeleton</td>
<td>Rajah R. Mullick.</td>
<td></td>
</tr>
<tr>
<td>c. Skeleton</td>
<td>Zoological Gardens, 1877.</td>
<td></td>
</tr>
<tr>
<td>d. Skeleton</td>
<td>Rajah of Kuch Behar, 1879.</td>
<td></td>
</tr>
<tr>
<td>e. Skull, horns</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>f-g. 2 Skulls</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>h. Skull</td>
<td>Rajah R. Mullick, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>i. Frontlet</td>
<td>Assam, H. Butcher, 1879.</td>
<td></td>
</tr>
<tr>
<td>J. Frontlet</td>
<td>Tezpur, Assam, H. Butcher, 1879.</td>
<td></td>
</tr>
<tr>
<td>m. Frontlet</td>
<td>Shillong, Assam, Purchased, 1879.</td>
<td></td>
</tr>
<tr>
<td>n. Frontlet</td>
<td>T. Hardwicke, 1822, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>o. Frontlet</td>
<td>R. W. G. Frith, 1842, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>p-u. 6 Frontlets</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>w. 1 pr. horns</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>x. 1 pr. horns</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>y-c. 5 single horns</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>d. Skull</td>
<td>Rajah R. Mullick, A.S.B.</td>
<td></td>
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</tbody>
</table>

**Cervus schomburgkii.**

Recurvus schomburgki, Blyth P. Z. S., p. 155 (1863); id. P. Z. S., 1867, p. 835, figs. 6-12; Swinhoe P. Z. S., 1872, p. 798.


Distribution.—Northern Siam and the Shan States.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Sanda Valley, Yunnan, J. Anderson, 1878.</td>
<td></td>
</tr>
<tr>
<td>b. Frontlet</td>
<td>No history, A. S. B.</td>
<td></td>
</tr>
</tbody>
</table>

**Cervus eldi.**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervus smithii, Gray P. Z. S., p. 45 (1837).</td>
<td></td>
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</tr>
</tbody>
</table>
Cervus.


Cervus dimorpha, Hodgson, J. A. S. B., xii, p. 897, with plate (1845).

Panola eldi, Gray P. Z. S., p. 229 (1850); Blyth, J. A. S. B., xxxi, p. 334;

Blyth, Cat., p. 149; Blyth, P. Z. S., 1867, p. 835; Beavan, J. A. S. B., xxxvi, p. 175; Blyth, J. A. S. B., xiv, Burma List, p. 45.

Thamine of Burmese; Sungnai of Muniporees.

Distribution.—From Munipur in the north through Burma to the northern part of the Malay peninsula (Cantor) and through Cambodia to Hainan (Swinhoe); is common in the Pegu and Martaban plains of Lower Burma (Beavan).

a. Skull and ♀ Munipur horns. J. McClelland (1844), A.S.B.
b. Skull and ♀ Munipur horns. J. McClelland (1844), A.S.B.
c. Skull and ♀ Munipur horns. J. McClelland (1844), A.S.B.
d. Skull and ♀ Munipur horns. Purchased (1861), A. S. B.
e. Frontlet ♀ Munipur Purchased (1861), A. S. B.
f. Frontlet ♀ Munipur C. S. Guthrie (1861), A. S. B.
g-h. 2 Skulls ♀ Pegu Sir A. Phayre (1847), A.S.B.
j. Frontlet ♀ Pegu Sir A. Phayre (1847), A.S.B.
k. Skull, ♀ Rangoon Bazaar Dr. Pritchard (1861), A. S. B.
l. Skull, ♀ Sitang River, Tenasserim Major Berdmore (1856), A. S. B.
m. Frontlet ♀ Martaban, Tenasserim R. C. Beavan (1865).
n. Frontlet ♀ "brought from Penang" H. Lewis (1845), A. S. B.
o-p. Stuffed ♀ Rangoon Bazaar E. Blyth (1861), A. S. B.

Cervus axis.


Axis major ♀ Hodgson, J. A. S. B., x, p. 914 (1841).

Axis minor ♀ Hodgson, J. A. S. B., x, p. 914 (1841).

The Spotted Deer; Chital, Chitra, Chitri or Jhank, Hindustani; Chatidah of Bhagulpore; Boro khotiya of Rungpore; Buriya in Goruckpore; Saraga, Canarese; Dupi, Telegu; Lopi, Gond; Tie mooha, Sinagalese.

Distribution.—Indian peninsula and Ceylon, not recorded from the Punjab or to the east of the Bay of Bengal. It is said by Cantor to be common in Sumatra and the Malay peninsula, but is probably introduced there, is also mentioned by Radde as occurring in the Amoor district north of China, but this is probably a mistake. It occurs in the Sunderbunds and is recorded by Pollok from the Manass river and the Durrung both north of the Brahmapootra in Assam.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Collector</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Skin and ♂ skeleton</td>
<td>J. Anderson</td>
<td>1878</td>
</tr>
<tr>
<td>b</td>
<td>Skin ♂ juv.</td>
<td>W. Rutledge</td>
<td>1873</td>
</tr>
<tr>
<td>c</td>
<td>Skin juv. Purneah, Bengal</td>
<td>J. Shillingford</td>
<td>1871</td>
</tr>
<tr>
<td>d</td>
<td>Skin ♂</td>
<td>Zoological Gardens, 1877.</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Skeleton ♂</td>
<td>Rajah R. Mullick, 1875.</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Skull and ♂ Manbhoom, Bengal horns</td>
<td>R. C. Beavan, 1865, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>g</td>
<td>Frontlet ♂</td>
<td>R. C. Beavan, 1865, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>j-m</td>
<td>4 Skulls ♂ and horns.</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>n-r</td>
<td>5 Frontlets ♂</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>s-t</td>
<td>2 Skulls ♂ (castrated)</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>u</td>
<td>Stuffed head</td>
<td>E. Higgins, 1846, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>w</td>
<td>Horns 1 pr. ♂ [Shed, 10-2-77]</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>Horns 1 pr. ♂ [Shed, 7-1-78]</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>y</td>
<td>Horns 1 pr. ♂ [Shed]</td>
<td>Zoological Gardens, 1879.</td>
<td></td>
</tr>
<tr>
<td>z</td>
<td>Skull and ♂ horns.</td>
<td>Lord Mayo, 1870.</td>
<td></td>
</tr>
<tr>
<td>a²</td>
<td>Skull ♂</td>
<td>A.S.B.</td>
<td></td>
</tr>
<tr>
<td>b²</td>
<td>Horns 1 pr. ♂ [Shed, 18-3-82]</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>c²</td>
<td>Horns 1 pr. ♂ [Shed, 27-12-81]</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>d²</td>
<td>Horns 1 pr. ♂ [Shed, 31-2-80]</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>e²</td>
<td>1 horn ♂</td>
<td>No history, A.S.B.</td>
<td></td>
</tr>
</tbody>
</table>

Cervus dybowskii.


Cervus dybowskii, Taczanowski P. Z. S., p. 123, with fig. (1876); Brooke P. Z. S., 1878, p. 909; W. L. Sclater & A. S. B., lviii, p. 186, pl. xi.
CERVUS.

Distribution.—Mantchuria extending to Thibet?

a. Skull and skin ♂ “Darjeeling bazaar” A. M. Dunne [Ex.], 1888.

Cervus sika.


Distribution.—Japan.

a. Skull and ♂ Japan Hakodate Mus. [Ex.] 1884.

Cervus taëvanus.


Distribution.—The Mountains of Formosa.

a. Skull ♂ Formosa R. Swinhoe (1860), A. S. B. [Type of Cervus taiouanus, Blyth.]

Cervus elaphus.


The Red Deer.

Distribution.—The British Isles and Europe generally, Corsica, Sardinia, Algeria, Asia Minor and the Caucasus; is replaced in Northern and Eastern Asia by an allied species; distinguished as C. xanthopygus by Milne-Edwards.

a. Stuffed head ♂ Scotland H. R. H. Prince Consort 1861, A.S.B.

b. Skull and ♂ Great Britain W. Davison, 1846, A.S.B.

c. Skull and ♂ Great Britain W. Davison, 1846, A.S.B.

d-e. 2 Frontlets ♂ Great Britain W. Davison, 1846, A.S.B.

f. Horns 1 pr. ♂ Great Britain C. Darwin, 1846, A.S.B.

g. Skeleton ♂ Scotland J. Struthers [Ex.] 1881.

h. Odd horn ♂ No history.
Mammalia.

Cervus eustephanus.

Cervus eustephanus, Blanford P. Z. S., p. 637 (1875); id. Yarkand Mamm., p. 90; Brooke P. Z. S., 1878, p. 912.


Distribution.—Thian Shan and Altai Mountains.

a. 1 pr. horns Thian Shan Mts. F. Stoliczka, 1874.

[Type of Cervus eustephanus, Blanford.]

Cervus affinis.


Cervus elaphus, apud Hodgson J. A. S. B., iv, p. 648, pl. liii, fig. 5 (1835).

Cervus affinis, Hodgson J. A. S. B., x, p. 721, with plate (1841); id. ibid., p. 914; id. J. A. S. B., vix, with plate of horns, p. 466; Gray P. Z. S., 1859, p. 228; Hodgson J. A. S. B., xx, p. 368, pl. vii; Blyth J. A. S. B., xxx, p. 188; id., Cat., p. 146; Jerdon Mamm., p. 251; Blanford J. A. S. B., xii, p. 39; Brooke P. Z. S., 1878, p. 913.

The Shou of Tibetans.

Distribution.—Eastern Tibet; this stag has been only got through native collectors and it seems probable that it has never occurred on the Indian side of the passes or indeed any nearer India than in the Chumbi Valley.

a. Skin
b. Skin, skull and horns.
c. Stuffed

Cervus affinis

d. Skull and horns.

Cervus affinis

e. 1 pr. horns
f. 1 pr. horns

L. Mandelli, 1877.
Sir A. Eden, 1882.
L. Mandelli, 1877.
A. Campbell, 1851, A. S. B.

No history.

Barackpore Menagerie, A. S. B.

[Type of C. wallichii, Cuvier.]

Cervus cashmeerianus.


Cervus wallichii, apud Wagner Hugel's Kaschmir, iv p. 576 (1849); Blyth J. A. S. B., xxx, p. 188; id. Cat., p. 146; Jerdon Mamm., p. 250; Kinloch Large Game Shooting, i, p. 44.

CERVUS. 185

The Kashmir Stag; Barasingha, Hind.; Hangul or Honglu of Kashmir.

Distribution.—The Kashmir Valley, not extending eastwards; a single horn was procured by Major Yate near Balkh in Afghan-Turkestan.

Sir V. Brooke's nomenclature has been followed for this and the preceding species and Cuvier's name Cervus wallichii has been ignored since it seems impossible to decide with any certainty to which species the specimen described by Baron Cuvier refers. The pair of horns shed by the animal whose portrait appears in M. F. Cuvier's Histoire Naturelle des Mammiferes is still here in the Museum, C. affinis "f", they are the horns of a young stag probably in its third year, the right-hand antler is a simple beam with a brow and bez antler only, the brow being considerably the longest; the left-hand antler bears, in addition to the brow and bez antlers, a third the royal, but in this case the bez surpasses the brow in length; in the case of the Tibetan stag (Cervus affinis), the brow and bez are approximately of the same length, whereas in the case of the Kashmir stag the bez is generally considerably the longer of the two; so that, as far as the respective lengths of the brow and bez antlers are concerned, there is no ground for considering C. wallichii to be either the Kashmir or Tibetan stag.

The antlers present no other points of note which throw any light on their affinity.

The stag which bore the antlers in question is said to have been brought from near Mt. Dhoulagiri to the north of Nepal on the further side of the snowy range, and it therefore seems probable that the animal really was, as Jerdon thought, a deformed young specimen of Cervus affinis.

<table>
<thead>
<tr>
<th>a. Skull and horns</th>
<th>b-c. 2 Frontlets</th>
<th>d. 1 pr. horns</th>
<th>e-f. 2 horns</th>
<th>g. Single horn</th>
<th>h. Single horn</th>
<th>r. Lydkekker [Ex.], 1878</th>
<th>No history.</th>
<th>No history.</th>
<th>Purchased, 1872</th>
<th>R. C. Beavan</th>
<th>C. E. Yate, 1887</th>
</tr>
</thead>
</table>


Cervus wapiti, Leath Journal de Physique, lxxxv, p. 66 (1818)*.

The Wapiti. Distribution.—Alleghanies, Minnysota, Dakota, Nebraska, Washington, Oregon and California, northwards to 57°, N Lat.
MAMMALIA.

a. Skin and ♀ skeleton  
  b. Skin ♂ North America  
  c. Skull, horns ♂  
  d. Frontlet ♂  
  e. Frontlet ♂  
  f. Skin juv. ♂  

   Zoological Gardens, 1882.  
   Brit. Mus. [Ex.] 1879.  
   No history.  
   Purchased, 1859, A. S. B.  
   No history.  
   Zoological Gardens, 1881.

Cervus dama.


Cervus (Dama) dama, H. Smith Griffith An. Kingd., iv, p. 84 (1827).

Dama vulgaris, Gray List Mamm. B. M., p. 181, (1843); Blyth Cat., p. 148.

The Fallow Deer.

Distribution.—Circum-Mediterranean, i.e., Greece, Spain, Asia Minor, Sardinia, Algeria and Northern Palestine, introduced into England.

a. Skull ♂ Great Britain  
  b. Frontlet ♂  
  c. Frontlet ♂  
  d. Skull ♂  
  e.f. 2 Skeletons ♂  
  g. Skull ♂  
  h. Skull ♂  
  i. Skull ♂  
  k. 1 pr. horns ♂  
  l-n. 3 odd horns ♂  

   W. Davison, 1846, A.S.B.  
   C. Darwin, 1857, A.S.B.  
   E. Blyth, A.S.B.  
   No history.  
   Rajah R. Mullick.  
   Rajah R. Mullick.  
   No history, A.S.B.  
   W. Rutledge. 1881.  
   No history. A.S.B.  
   C. Darwin, A.S.B.

Genus ALCES.

Alces, H. Smith, Griffith An. Kingd., v, p. 303 (1827) [as a sub-genus].

Alces machlis.


Alces machlis, Ogilby P. Z. S., p. 135 (1836); Blyth Cat., p. 145; Brooke P. Z. S., 1878, p. 916.


The Elk or Moose.

Distribution—Sweden, Northern Russia, Siberia and North America from the Columbia river on the west and Maine on the east coast northwards (Brooke).

a. Skull ♂ Scandinavia.  
  b. Frontlet ♂  

   Christiania Univ., 1846, A.S.B.  
   No history, A.S.B.
CARIACUS.

\[187\]


U. S. A.


Genus CAPREOLUS.

Capreolus, *H. Smith, Griffith An. Kingd., v,* p. 313 (1827) [as a sub-genus.]

Capreolus capraea.


The Roe Deer.

Distribution.—Europe generally, Northern Palestine, and the Elburz Mountains.

\[\text{a-b. 2 Skulls ♂} \quad \text{...} \quad \text{Purchased, 1860, A.S.B.}\]

\[\text{c. Skull ♂} \quad \text{...} \quad \text{No history.}\]

\[\text{d. Skull ♂ Hungary?} \quad \text{Hungarian Mus., A.S.B.}\]

\[\text{e-g. 3 Frontlets ♂} \quad \text{Great Britain} \quad \text{W. Davison, 1844, A.S.B.}\]

\[\text{h. Skull ♂ Scotland} \quad \text{Sir W. Jardine, 1850, A.S.B.}\]

\[\text{j. Skull ♂ Astrabad, N. Persia} \quad \text{B. Lovett, 1883.}\]

\[\text{k. Skin ♂ Astrabad, N. Persia,} \quad \text{B. Lovett, 1883.}\]

Genus CARIACUS.

Mazama, *H. Smith, Griffith An. Kingd., v,* p. 314 (1827) [as a sub-genus].

Cariacus virginianus.

Cervus mexicanus, *Gmelin Syst. Nat.,* i, p. 179 (1788); *Baird N. Amer. Mamm.,* p. 653*.

Distribution.—North America from Canada and British Columbia, southwards to Panama,* perhaps to Peru.*

\[\text{a. Skull ♂} \quad \text{Upton, Maine, U. S. A. W. Theobald, 1868.}\]

\[\text{b. Skull ♂ juv.} \quad \text{...} \quad \text{A. D. Bartlett, 1849, A. S. B.}\]

\[\text{c-d. 2 Frontlets ♂} \quad \text{...} \quad \text{A. S. B.}\]

\[\text{e. Frontlet ♂} \quad \text{...} \quad \text{No history.}\]
Genus RANGIFER.

Rangifer, *H. Smith, Griffith An. Kingd.*, v, p. 304 (1827) [as a sub-genus].

**Rangifer tarandus.**


**Distribution.**—Circumpolar, *i.e.*, Northern Europe, Asia and America.

| a. Frontlet | Scandanavia |
| b. Frontlet | ....... |
| c. Skull    | Scandanavia |
| d. Skull    | North America |
| e. Skull    | ....... |

Genus TRAGULUS.

*Tragulus, Pallas Spic. Zool.* xiii, p. 27 (1778).
*Meminna, Gray Ann. Philos.* xvi (1825)*.

There has been a great deal of confusion in the synonymy of this genus; Milne Edwards published in 1864 a monograph on the subject and first elucidated matters. Besides *T. memminna*, which is quite distinct, there seem to be two well-marked forms and several varieties which are doubtfully worthy of specific distinction; the typical *T. napu* is of a grayish tinge and has two varieties, one unnamed, reddish with a strongly marked nuchal stripe, the other called *T. stanleyanus* of Gray, a still brighter red without any trace of the nuchal stripe; of the smaller forms, the one best known is *T. kanchil*, the other *T. javanicus*, is said to be distinguishable from *T. kanchil*, but is apparently confined to the island of Java and there is no representative of it in the Museum.

**Key of the Indian Species.**

| a². Body not spotted | |
| b. Larger, tarsus and hind-foot, 5'8 inches, with 5 white throat stripes | *T. napu*, p. 190. |
189. Smaller, tarsus and hind-foot, 4.8 inches, with 3 white throat stripes.

**Tragulus memminna.**


Tragulus mimenoides, Hodgson J. A. S. B., x, p. 914 (1841).


The Mouse-deer; Pisuri, Hindu; Burka, Canarese; Mugi of Central India; Yar of the Kols; Gandwa, Ooriah; Jitri Haran, Bengali; Kurupandi, Telegu; Walmoocha, Cingalese.

**Distribution.**—The large forests of the Indian peninsula and Ceylon; it is said to have occurred in the Himalayan Terai.

a. Skin ♂

b. Skin, ♀ juv.  

Skull  

c. Skin ♀ juv.  

d. Skin Ceylon  

e. Skin, skeleton ♀  

f. Skin, skeleton ♀  

g. Skin, skeleton ♀ Ceylon  

h. Skeleton ♂  

j. Stuffed ♂ India  

k. Stuffed ♀ Ceylon  

l. Stuffed juv. India  

**Tragulus kanchil.**


**Distribution.**—Tenasserim, Siam and Cambodia, the Malay peninsula and Sumatra.

This species is represented in Java by nearly allied species *Tragulus javanicus* of Pallas, which seems to differ from *Tragulus kanchil* merely in the absence of the nuchal streak so con-
spicuous in *Tragulus kanchil*; *Tragulus affinis* described by Gray from Cambodia, *P. Z. S.*, 1861, p. 138, also seems to be merely a geographical variety of *T. kanchil*.

| a. Skin | ♀  | A.S.B. |
| b. Skin | ♂  | A.S.B. |
| c. Skin | ♀  | Thaing, Mergui, 31-1-82 J. Anderson. |
| d. Skin | ♂  | Pilai, Mergui, 3-3-82 J. Anderson. |
| e. Skin | ♀  | Thaing, Mergui, 31-1-82 J. Anderson. |
| f. Skin | ♂  | Thaing, Mergui, 27-1-82 J. Anderson. |
| g. Skin | ♀  | Pilai, Mergui, 7-3-82 J. Anderson. |
| h. Skin | ♂  | Mergui, 24-2-82 J. Anderson. |
| j. Skin | ♀  | Mergui, 21-1-82 J. Anderson. |
| k. Skin | ♀  | Zoological Gardens, 1877. |
| l. Skin, skull | ♀  | W. Rutledge, 1878. |
| m. Skin | ♂  | W. Rutledge, 1877. |
| n. Skin | ♂  | W. Rutledge, 1877. |
| o. Skin | ♂  | Zoological Gardens, 1880. |
| p. Skin | ♀  | W. Rutledge, 1877. |
| q. Skin | ♀  | W. Rutledge, 1877. |
| r. Stuffed | ♂  | No history. |
| s. Stuffed | ♀  | Maharajah of Burdwan, (1858), A.S.B. |
| u. Skin, skeleton | ♂  | W. Rutledge, 1877. |
| v. Skin, skeleton | ♀  | W. Rutledge, 1875. |
| w. Skin, skeleton | ♂  | W. Rutledge, 1877. |
| x. Skin, skeleton | ♀  | W. Rutledge, 1877. |
| y. Skin, skeleton | ♂  | W. Rutledge, 1877. |
| z. Skin, skeleton | ♀  | W. Rutledge, 1875. |
| a2. Skin, skeleton | ♀  | W. Rutledge, 1877. |
| b2, c'. 2 Skulls | ♂  | No history, A.S.B. |

**Tragulus napu.**


*Moschus javanicus,* *apud Raffles Linn. Trans.,* xiii, p. 261 (1822); *Gray P. Z. S.*, 1836, p. 64.


**Distribution.**—From Tenasserim (Blanford), southwards through the Malay peninsula, Sumatra (Raffles), Java (Blyth), Banka and Borneo (Jentink).
Genus CAMELUS.


Camelus bactrianus.


Distribution.—The Bactrian Camel has been recently discovered in a feral state by Przewalsky (loc. cit.) in the region of Lob Nor in Central Asia; it is found in a domesticated condition in Turkestan and Central Asia generally; it appears to be but rarely seen in Afghanistan and Persia.

a. Skeleton mted. ♂ ..... W. Rutledge, 1877.
b. Skeleton ♂ ..... W. Rutledge, 1877.
c. Skeleton ♀ ..... W. Rutledge, 1877.
Camelus dromedarius.


Distribution.—The One-humped Camel has never been found in a truly feral state; it is found domesticated in India, Afghanistan and Western Asia generally, and also in Northern Africa.

a. Skin and skeleton. ..... Karachi Museum, 1877.
c. Skeleton ♂ ..... King of Oude, 1839, A. S. B.
d. Skull ♀ ..... R. C. Tytler, 1861, A. S. B.
e. Skull ..... No history.
f-g. 2 skulls Jeysulmere, Rajputana N. Belletty, 1890.

Genus AUCHENIA.


Auchenia glama.


Distribution.—The Andes of South America, only known in a domestic state.

a. Skin, skeleton ♂ ..... W. Rutledge, 1881.
b. Skin ♀ ..... W. Rutledge, 1881.
c. Skin ..... W. Rutledge, 1881.
d. Skeleton ♂ ..... W. Rutledge, 1881.
e. Skeleton ♂ ..... W. Rutledge, 1881.
f. Skeleton ♀ ..... W. Rutledge.
g. Skeleton ♀ ..... W. Rutledge, 1879.
h. Skeleton ..... Earl of Derby, 1859.
i. Stuffed ..... No history.

Genus SUS.


† Afterwards abandoned by the author in favour of Auchenia.
Sus cristatus.


Sus scrofa, apud Sykes, P. Z. S., p. 104 (1831); Elliot Madr. Journ., x, p. 219; McClelland P. Z. S., 1839, p. 150; Adams P. Z. S., 1858, p. 531; Blyth Cat., p. 139 [divided into several races]; Blanford J. A. S. B., xxxvi, p. 197; Anderson J. Linn. Soc. xxI, p. 341.


Sus aper var., aipomous et isonotus, Hodgson J. A. S. B., x, p. 911 (1841).


The Indian Wild Boar; Sur, Suwar, Bura janwar or Bud janwar, Hindustani; Dukar, Mahratti; Handi, Mikka or Jeverdi, Canarese; Pandi, Telegu; Paddi of the Gonds; Waloora, Cingalese; Taunet, Burmese.

Distribution.—All over India, from the Himalayas to Cape Comorin, Ceylon and Burma, but possibly replaced by another species in Tenasserim.

It has always been a question as to whether the Indian and European Wild Boars differ sufficiently from one another to warrant their separation as distinct species; Blyth finally considered them merely as geographical varieties of one species, Jerdon separated them entirely.

On comparing the skulls of the two, slight differences are to be found, but it is a question if they would be constant if a larger series of skulls were examined.

In the European form the parietal region of the skull above the eyes is flat or almost concave, not convex, as in the Indian boar; behind this region the skull is much reduced, so that it forms a narrow ridge barely an inch across, while in the Indian boar, although this part of the skull is reduced, it is very much wider than in the European boar.

In the European boar, again, the nasals are longer than the rest of the skull measured from the naso-frontal suture to the occipital ridge; in the Indian boar they are generally, though not invariably, shorter.

The anterior palatine foramen in the European boar is pear-shaped, tapering to a point posteriorly, while in the Indian boar it is somewhat oval-shaped and ends in a blunt point posteriorly. The European boar is said to have small warts under the eye while the Indian boar has none.

There are in the Museum two specimens of the Yarkand wild boar collected by Stoliczka and described by Blanford in the Yarkand Mission report; the skulls of these specimens agree
with that of the European form (S. scropha) except that the nasals are short and the anterior palatine foramina agree with those of the Indian form (Sus cristatus). Blyth in his catalogue further distinguished no less than four different Indian races, (1) the typical Indian race, with the narrow occipital vertex, about 1 1/2 inches wide at the narrowest point, found all over India and Ceylon, (2) the Bengal race, with the wide occipital plane, about 2 3/4 inches across, (3) the Tenasserim race considerably smaller; (4) a distinct Ceylonese race, with a very large posterior molar.

On comparing the skulls, which have been acquired by the Museum since Blyth's time with Blyth's original specimens, the distinction between the Bengal race and the typical Indian race breaks down, and the width of the occipital plane seems to be merely an individual peculiarity; the Ceylonese skull must be regarded as an abnormal one; the Tenasserim skulls, however, resemble that of a specimen, acquired thence more recently, which may possibly be identical with Sus leucomystax of China and Japan; it is possible that this latter race may have been imported from China and have run wild in Tenasserim.

b. Skelet. mtd [domestic var.] A. R. Jackson (1837), A.S.B.
c. Skull 3 Gorruckpore terai, J. C. Peppé (1847), A.S.B.
d. Skull 3 Arakan Sir A. Phayre (1846), A.S.B.
e-h. 4 Skulls Gorruckpore terai, J. C. Peppé (1862), A.S.B.
f. Skull 3 Cuttack, Bengal T. Shawe (1845), A.S.B.
{k-l. 2 Skulls 3 Punjab Salt Range W. Theobold (1853), A.S.B.
m. Skull 3 Akyab bazaar E. Blyth (1861), A.S.B.
n. Skull 3 Ceylon E. F. Kelaart (1851), A.S.B.
o. Skull 3 Ceylon E. F. Kelaart (1851), A.S.B.
p. Skull 3 Ceylon E. F. Kelaart (1850), A.S.B.

[Type of Sus zeylonensis, Blyth]

q. Skull 3 Purneah dist. J. L. Shillingford, 1881.
r. Skull 3 Eastern Bengal J. Biddulph, 1877.
s-t. 2 Skulls 3 Central India? J. Cockburn [P.], 1886.
Tu-v. 2 Skulls 3 Central India? J. Cockburn [P.], 1886.
w. Skull [dom. Soonderbunds A. M. Nicholetts, 1866.

x. Skull [dom. Nicobars W. Hodge, 1860, A.S.B.
var.?]
y. Skeleton 3 Purneah J. L. Shillingford, 1881.
z. Skull ....... No history, A.S.B.
a². Skin, 3 juv. Padow, Mergui, 8-2-82 and skull. J. Anderson.
b². Skin 3 juv. King Isla, Mergui, 27-1-82 J. Anderson.

d². Skull ....... No history, A.S.B.
². Skull ....... No history, A.S.B.
Sus andamanensis.

Sus andamanensis, Blyth J. A. S. B., xxvii, p. 267 (1858); id. ibid. xxviii, p. 271; id. ibid. xxix, p. 103; id. Cat., p. 141; Grey P. Z. S., 1868, p. 29.

Distribution.—The Andamans and possibly the Nicobars.

- Stuffed $\varphi$ Andamans
- Skeleton med. $\varphi$ Andaman Islands
- 14 Skulls Andaman Islands
- 3 Skulls juv. Andaman Islands
- 2 Skulls Port Blair, Andamans
- 2 Skulls Andamans
- Lower jaw Preparis Island

Sus scrofa.


Sus scrofa var. nigripes, Blanford J. A. S. B., xlv, p. 112 (1875); id. Yarkand Mamm., p. 79.

The Wild Boar.

Distribution.—Europe and North Africa, Asia Minor (Danford), Persia (Blanford), and Northern Asia generally.

- Skull Europe Hungarian Museum, A.S.B.
- Skull and $\varphi$ Thian Shan Mts. F. Stoliczka, 1874.
- Skull and $\varphi$ Thian Shan Mts (Capt. F. Stoliczka, 1874. Chapman)

[Types of Sus scrofa var. nigripes, Blanford.]

Genus PORCULA.


Porcula salvania.


The Pigmy Hog; Chota suwar, Hindus; Sano banel of Nepalese.

Distribution.—Confined to the Terai at the base of the Himalayas from Nepal, probably to Assam, but is apparently rare.
MAMMALIA.

d–e. 2 skins Darjeeling terai, J. Anderson. 19-5-70.
f. Skin Neora Karanti Douars F. A. Möller, 1883.
g. Skin Dam Dim, Douars F. A. Möller, 1883.
h. Skin ...... No history.
i. Skeleton ...... Zoological Gardens, 1883.
j. Skeleton ...... Zoological Gardens, 1883.
k. Skeleton ...... Zoological Gardens, 1883.
l. Skeleton ...... Zoological Gardens, 1883.
m. Skull pt. ? Sikkim Terai (Hodgson) India Mus., London.

Genus BABIRUSSA.


Babirussa alfurus.

Babirussa alfurus, Lesson Man. Mamm., p. 338 (1827); P. L. Sclater P. Z.S., 1860, p. 443, pl. lxxxiii; Blyth Cat., p. 142; Gray P. Z. S., 1868, p. 43.

Distribution.—Celebes and Borneo.

a. Skin and skeleton ...... Zoological Gardens, 1885.
b-c. 2 skulls ... Amboyna? A.S.B.

Genus DICOTYLES.


Dicotyles tajacu.


Dicotyles torquatus, G. Cuvier Regne Anim., 1st ed. i, p. 237 (1817); Baird N. Amer. Mamm., p. 627*.


The Peccary.

Distribution.—North America from the Red River of Arkansas, southwards through Central and Southern America to Patagonia.

a. Skin ... Nuces valley, Texas J. H. Garnier [Ex.] U. S. A., 9-3-84.
HIPPOPOTAMUS.

b. Skin juv. Nueces valley, Texas, J. H. Garnier [Ex.]
   U. S. A., 9-3-84.

c. Skull South America E. Blyth, 1865, A.S.B.

Genus PHACOCHÆRUS.


Phacochoerus aethiopicus.


Distribution.—South Africa.

a. Skull impf. ♂ Port Natal W. S. Sherwill (1843), A.S.B.
b. Tusk.

c. Skull A.S.B.

Phacochoerus africanus.

Phacochoerus æbiani, Cretzschmar Rüppel's Atlas, p. 61, pls. xxv, xxvi (1826); Blanford Abyssinia, p. 241; P. L. Sclater P. Z. S., 1869, p. 276, pl. xx; id. ibid., 1871, p. 236.

Distribution.—Africa south of the Sahara generally.

a-b. 2 skulls ♂ Abyssinia, 28-6-68 W. T. Blanford.

d. Skin juv. skeleton.......

Genus HIPPOPOTAMUS.


Hippopotamus amphibius.

Hippopotamus capensis, Desmoulins Journal de Physique, v, p. 354 (1826)*; Blyth Cat., p. 142.
Hippopotamus senegalensis, Desmoulins Journal de Physique, v, p. 354 (1826)*.

a. Skin ♂ juv. skeleton.......

b. Skull ♀...

c. Skull impf. ♂...
d. 7 teeth...
e. Lower tusk ♂.....

Zoological Gardens, 1887.

N. Wallich, 1844, A.S.B.

W. S. Sherwill, 1843, A.S.B.

W. S. Sherwill, A.S.B.

No history, A.S.B.
Genus TAPIRUS.


Rhinochoerus, Wagler Syst. Amphib., p. 17 (1830).

Tapirus indicus.


Tapirus sumatranus, Gray Med. Repos. (1821)\*.

Distribution.—In Tenasserim from the latitude of Yè southwards through the Malay peninsula; Sumatra. It is also said to occur in Borneo and Southern China, but this is very doubtful.

- a. Skeleton $\text{\&}$
- b. Skeleton $\text{\&}$
- c. Skeleton $\text{\&}$ juv.
- d. Skeleton, $\text{\&}$
- e. Skeleton $\text{\&}$ juv.
- f. Skeleton $\text{\&}$
- g. Skeleton $\text{\&}$
- h. Stuffed $\text{\&}$
- i. Skeleton mtd.
- j. Skull $\text{\&}$ Malacca
- k. Skull juv.
- m. Skin and skull Malacca

Genus EQUUS.


Asinus, Gray Ann. Philos., xxvi, p. 337 (1823)\*.

The two Indian wild asses, the Kiang of Thibet and the Ghor-khur of Cutch, resemble each other very closely, and there does not seem to be, judging either by the descriptions published of the two animals or by examination of the few skulls in the Museum, any real distinction between the two. For convenience however, the synonymy of the two forms has been separated under the headings of Equus haemionus var. indicus and E. haemionus var. kiang.

Equus hemionus.

Var. A.—typicus.


Var. B.—indicis.


Asinus onager, Gray Cat. Mamm. B. M., iii, p. 269 (1852); Murray Zool. Sind p. 54.

Equus onager, Blyth J. A. S. B., xxviii, p. 229; id., Cat., p. 135; Jerdon Mamm., p. 236; Stoliczka J. A. S. B., xii, p. 228; Sterndale Mamm. Ind., p. 399.


Var. C.—kiang.

Equus kiang, Moorcroft's Travels, i, p. 312 (1841); Hodgson J. A. S. B., xi, p. 386; Gray P. Z. S., 1849, p. 29; Hay P. Z. S., 1859, p. 333, pl. lxxiii; Kinloch Large Game Shooting, i, p. 13.

Asinus polyodon, Hodgson Calc. Journ. N. H., vii, p. 469, pl. vi (1847); id. ibid, viii, p. 98.


The Wild Ass; Kiang of Thibet; Ghorkhur, Hindustani; Ghour, Persia.

Distribution.—The typical variety originally described by Pallas is found all over the Southern Siberian steppes and was got by Radde from the Trans-baikal province, and also in the Trans-caspian region.

The Kiang is found plentifully in Western Thibet, extending over the Cashmir frontier in the upper valley of the Indus.

The Ghorkhur (var. indicus) is found in Cutch and Rajpootana, west of Long. 75°, and extends through Afghanistan and Beluchistan to Persia, and is finally replaced by a fourth sub-species from which it is barely distinguishable, E. hemippus of Geoffroy.

Var. B.—indicis.

| a. Skull | Kandahar | H. B. Lumsden, 1859, A.S.B.
| c. Skull, ske-ęp leton, skin. | ..... | Zoological Gardens, 1877.
| d. Skull, ske-ęp leton. | ..... | Zoological Gardens, 1877.
| e. Skull, ske-ęp leton. | ..... | Zoological Gardens, 1878.
MAMMALIA.

Var. C.—kiang.

a. Stuffed Thibet A. Campbell, A.S.B.
b. Stuffed juv. Thibet A. Campbell, A.S.B.
c. Skeleton Thibet G. T. Lushington (1838), A.S.B.
d. Skull Thibet No history, A.S.B.
e. Skeleton Thibet

Equus burchelli.


Burchell’s Zebra.

Distribution.—South Africa, extending northwards to the Kilimanjaro district.

a. Stuffed W. Rutledge, 1884.
b. Skull Babu H. M. Roy, 1883.

e. Skeleton

Equus asinus.


The Ass.

Distribution.—Cosmopolitan in a domestic state.

a. Stuffed J. Anderson, 1867, A.S.B.
b. Skull [Indian domestic race.] Zoological Gardens, 1879.
c. Skull and skeleton

Equus caballus.


The Horse.

Distribution.—Cosmopolitan in a domestic state; a closely allied truly feral form (Equus przewalskii) has been recently discovered by Przewalsky in the deserts of Central Asia and has been described by Poliakov, of whose paper a translation will be found in the Ann. Mag. N. H. (5), viii, p. 16.

a-g. 7 Skulls No history, A.S.B.


l. Skull [Pony "Lucknow"] Sir J. Fayrer.

m. Skull ♀ [Iceland pony] W. Rutledge, 1870.

n. Skull juven. ... ... A.S.B.

o. Skull, ♂ ...... Rajah R. Mallick, 1876.


r. Feet of an Arab with extra toes ...... Purchased, 1870.


Genus RHINOCEROS.


Key of the Indian Species.

a. With one horn only, skull with the post-tympanic and post-glenoid processes of the squamosal bone united for a considerable extent below the meatus auditorius.

b. Upper lip rounded off; the posterior neck-fold does not unite with the anterior one to form a saddle; skull with the vomer ankylosed to the skull, and with basi-sphenoid and basi-occipital bones wide and flattened.


b². Upper lip produced into a short proboscis; the posterior neck-fold unites with the anterior one to form a saddle on the neck; skull with the vomer ending freely posteriorly in a jagged point frequently broken off; the basi-sphenoid and basi-occipital very much narrowed and steep at the sides; an ossified mesethmoid present.


a². With two horns, skull with the post-tympanic and post-glenoid processes of the squamosal separated so as to form an open groove.

c. Ears hairy inside; no long fringe of hairs along the ear conch; skull narrow and tooth row short.

**R. sumatrensis**, p. 204.

c². Ears not hairy inside, a long fringe of hairs along the edge of the ear conch; skull broader and with a longer tooth row.

**R. lasiotis**, p. 204.
Rhinoceros unicornis.


Rhinoceros stenocephalus, Gray P. Z. S., p. 1018 (1867).

The Indian Rhinoceros; Genda or Gonda, Hind.; Gor in Assam.

**Distribution.**—The Terai and the country between the Himalayas and the Ganges; from Rohilkund (Jerdon) in the west to Assam; it was formerly plentiful in the Purneah district, but now seems to be almost confined to the Doars to the east of the Teesta River.

a. Stuffed and ♂ Purnea dist.
   bones of
   feet.
   G. W. Shillingford, 1871.

b. Skeleton ♀ "Barrackpore Park"
   Medical College Mus. [Ex.],
   med.
   1879.
c. Skull/skeleton Gauhati, Assam
   F. T. Pollok, 1870.
   incomplete.
d. Skull skeleton,
   Assam
   Zoological Gardens, 1880.
e. Skull skeleton,
   Assam
   Rajah of Kuch Behar, 1879.
f. Skull
   A.S.B.
g. Skull
   A.S.B.
h. Skull ♀ Nepal Terai
   Sir E. Baring, 1875.
i. Skull ♀ Nepal Terai
   Sir E. Baring, 1875.
j. Skull
   No history.
k. Skull
   W. T. Blanford, 1879.
l. Skull
   A.S.B.
m. Skull
   A.S.B.

Rhinoceros sondaicus.


Rhinoceros floweri, Gray P. Z. S., p. 1015 (1867).
Rhinoceros nasalis, Gray P. Z. S., p. 1012 (1867).

The Sondaic Rhinoceros.

Distribution.—The Sunderbunds and formerly the Rajmahal hills in Bengal; Assam, south of the Brahmaputra and Burma, extending southwards through Tenasserim and the Malay peninsula to Sumatra, Java and Borneo.

The comparison of the very fine collection of skulls in the list below, shows that there is no discernable distinction between the Sondaic Rhinoceros of the Sunderbunds, of Tenasserim, and of Java; the skull from Java, though very aged, shows no points of distinction from that of the Sunderbunds. The ossified mesethmoid (c. f. Fraser J. A. S. B., xliv, p. 10) is present in only two of the skulls in the collection; in one or two others, however, there are traces of where it should have been, but it has evidently dropped off in the cleaning of the skull; there can be little doubt that it will be found in all carefully cleaned skulls.

The mesethmoid does not appear ever to be ossified in Rhinoceros unicornis.

The large stuffed female "a" in the list below shows no trace of a horn, whether this is a constant characteristic of the female of this species or not, it is impossible to state without further evidence; several people, however, who have seen this species alive, confirm this; Blyth asserted that there was no sexual differences in R. unicornis and R. sondaicus; if therefore the female of R. sondaicus has no horn this is not correct.

| d. | Skeleton ♂ …… | Purchased, 1880. |
| e. | Skeleton, ♂ juv. skin. | W. Rutledge, 1881. |
| g. | Skeleton, ♂ juv. skin. | W. Rutledge, 1880. |
| h. | Skeleton, ♀ juv. skin. | |
| j. | Skull ♂ juv. …… | W. Rutledge, 1875. |
| k. | Skin ♂ juv. …… | No history. |
| l. | Skull …… | N. Wallich, A.S.B. |
| m. | Skull Tenasserim | Sir T. H. Maddock, 1842, A.S.B. |
| n. | Skull Tavoy Point | Genl. Fytche, 1861, A.S.B. |
| o. | Skull …… | A.S.B. |
| p. | Skull Java …… | Batavian Soc., 1846, A.S.B. |
| q. | Skull Sundarbunds | W. W. Shepperd, 1867. |
| r. | Skull ♂ juv. …… | Zoological Gardens. |
MAMMALIA.

s. Skull and feet bones of Matabangah R., Sunder. Purchased, 1875.

Chillichang Creek, Sun Capt. Charling. 

u. Skeleton

v. Lower jaw

w. Lower jaw

Rhinoceros lasiotis.


Rhinoceros sumatrensis, apud Anderson P. Z. S., p. 129 (1872).


\* Ceratorhinus crossii, Blyth J. A. S. B., xiv, Burma List, p. 51 (1875)

The Hairy-eared Rhinoceros.

Distribution.—The Chittagong and Tipperah Hills; this species is replaced by the next in the Malay peninsula and the line of division between the two is not actually made out, but probably this species will be found to be the one distributed all over Burma.

[No specimen in the Museum.]

Rhinoceros sumatrensis.

"Double-horned Rhinoceros of Sumatra," Bell Phil. Trans., p. 3, pls. ii, iii, iv (1793).


Rhinoceros sumatranus, Raffles Linn. Trans., xiii, p. 268 (1829); Müller and Schlegel Tem. Verhandl., p. 190, pl. xxxiv; Blyth J. A. S. B., xxxi, p. 151; id. Cat. p. 137.

Rhinoceros sondaicus, apud F. Cuvier Hist. Nat. Mamm. livr. 47, with plate (1825).


Ceratorhinus sumatrensis, Garrod P. Z. S., p. 92 (1873); Flower P. Z. S., 1876, p. 455; Blyth J. A. S. B., xiv, Burma List, p. 52; Flower P. Z. S., 1880, p. 69.


The Two-horned Rhinoceros.

Distribution.—The Malay peninsula and South Tenasserim?; the islands of Sumatra, Java and Borneo.

The skulls of the two-horned Rhinoceros in the Museum do not show any very appreciable variation with the exception of two formerly in the collection of the Asiatic Society; these two skulls,
however, have no recorded history and it is, therefore, impossible to say whence they came.

One of these skulls is remarkable for being much broader than all the others; the other, which, although narrower than the first, is still broader than all the others, is more remarkable still for the extreme length of the tooth row.

As these are the differences specially pointed out by Prof. Flower (P. Z. S., 1878, p. 634) between the Tipperah skull which was supposed to have belonged to an example R. lasiotis and the typical Sumatran skulls, it seems probable that these two skulls may also be referable to R. lasiotis.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Reference</th>
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<tbody>
<tr>
<td>b.</td>
<td>Skeleton ♀ Malacca mated.</td>
<td>Purchased, 1875.</td>
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<tr>
<td>d.</td>
<td>Skeleton ♀ juv. Malacca</td>
<td>Purchased, 1875.</td>
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<tr>
<td>e.</td>
<td>Skeleton</td>
<td>Zoological Gardens, 1889.</td>
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<td>f.</td>
<td>Skeleton (skull Malacca imp.</td>
<td>Dr. Maingay, 1887.</td>
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<td>g.</td>
<td>Skull (with ♀ Tenasserim limb bones).</td>
<td>E. O'Reilly, 1847, A.S.B.</td>
</tr>
<tr>
<td>h.</td>
<td>Skull ♀ Tenasserim</td>
<td>Sir T. H. Maddock, 1842, A.S.B.</td>
</tr>
<tr>
<td>j.</td>
<td>Skull Tenasserim</td>
<td>Sir T. H. Maddock, 1842, A.S.B.</td>
</tr>
<tr>
<td>k.</td>
<td>Skull</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>l.</td>
<td>Skull</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>m.</td>
<td>Skull</td>
<td>No history.</td>
</tr>
<tr>
<td>n.</td>
<td>Skull</td>
<td>No history.</td>
</tr>
<tr>
<td>o.</td>
<td>Skin, skull ♀ &quot;Singapore&quot; juv.</td>
<td>W. Rutledge, 1885.</td>
</tr>
<tr>
<td>p.</td>
<td>Pt. of skull Upper Martaban</td>
<td>E. Blyth, 1861, A.S.B.</td>
</tr>
<tr>
<td>r.</td>
<td>Two horns Akyab attached.</td>
<td>Sir P. Sladen, 1877.</td>
</tr>
<tr>
<td>s.</td>
<td>Skeleton</td>
<td>Zoological Gardens (1889).</td>
</tr>
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Rhinoceros bicornis.

Rhinoceros africanus, Desmarest, Mamm., p. 400 (1820); Blyth Cat., p. 138.
Rhinoceros keitloa, A. Smith S. African Zool., pl. i (1849); Blanford Abyssinia, p. 243.

Distribution.—South Africa, extending northwards to Abyssinia.

a-b. 2 Anterior horns W. S. Sherwill, 1843, A.S.B.
Rhinoceros simus.


Distribution.—South Africa.

a. Anterior horn ...... W. S. Sherwill, 1843,
A. S. B.

Order PROBOSCIDEA.

Animals of large size provided with a long flexible proboscis with finger-like prehensile tip; no clavicles; radius and ulna permanently crossed; tibia and fibula complete; hind-legs pillar-like, femur vertical when standing; manus and pes each consisting of five digits united but separately hoofed; in the skull the jugal bones form the middle of the zygoma only; nasals very short; large and extensive frontal sinus present; tusks are permanent incisors with persistent pulps, but with no enamel; placenta deciduate and zonary.

Genus ELEPHAS.


Elephas indicus.

Elephas maximus, Linnaeus Syst. Nat., 12th ed, i, p. 48 (1766) [pt.]

The Indian Elephant; Hasti or Gaja, Sanscrit; Gaj, Bengali; Hati, Hind.; Ani in South India; Allia, Cingalese; Shanh, Burmese.

Distribution.—The peninsula of India, especially the Western Ghats; the Terai region of the Himalayas, Assam, Cachar, Burma and Siam, extending southwards to the Malay peninsula. In Ceylon and Sumatra elephants are also found, but it seems doubtful whether they are a distinct species or not.

Professor Schlegel in a paper published in the Academy of Sciences of Holland (Verslagen en Med, der Koninklj. Acad. van Vetens, Afd. Natuurkunde, 1861, p. 101) a translation of which appeared in the Natural History Review, II, p. 72, 1862, has pointed out the distinctions between the true Indian Elephant and that inhabiting the Islands of Ceylon and Sumatra.
The differences seem to resolve themselves into the two following points of distinction: the laminae of the molar teeth are wider in E. sumatranus and approach those of E. africanus; there are in E. sumatranus 20 dorsal vertebrae and 19 pairs of ribs, while in E. indicus the numbers are respectively 19 and 18.

With regard to the size of Elephants, Sanderson has maintained both in his book "Thirteen Years among the Wild Beasts" and elsewhere that no elephant has ever exceeded 11 feet when measured in the ordinary way at the shoulder.

The largest ever measured by Sanderson, who has certainly had vast experience, was one belonging to the Sirmoor Rajah, which was 10 feet 7½ inches at the shoulder.

The elephant, whose skeleton is mounted in the Museum Gallery ("a" in the list) certainly exceeds this limit; a plumb line dropped from a bar placed on the anterior dorsal vertebra just above the scapula makes him no less than 11 feet 3 inches, so that in life he must have measured several inches more.

Flower mentions in his "Catalogue of the Osteological Specimens in the Royal College of Surgeons," Part II, Mammalia, p. 443, a very large femur and humerus, measuring respectively 112 c.m. and 90 c.m., which is roughly equal to 43 and 35 inches; the femur and humerus of the large elephant "a" in the list measure respectively 47½ and 39 inches.

| b. | Skeleton ♂ | ... | King of Oude, 1839, A.S.B. |
| c. | Stuffed, juv. skeleton | ... | Commissariat Department, 1877. |
| d. | Skeleton ♂ | Garo Hills | Purchased, 1877. |
| e. | Skeleton ♂ | ... | W. Rutledge, 1874. |
| f. | Skeleton ♂ | ... | W. Rutledge, 1881. |
| g. | Skeleton ♂ | ... | G. P. Sanderson [Ex.], 1881. |
| h. | Skin, skull ♂ | Tikri Killah, Garo Hills | Zoological Gardens, 1877. |
| i. | Skin ♂ | ... | G. P. Sanderson, 1886. |
| j. | Skull ♂ juv. | ... | W. Rutledge, 1874. |
| k. | Skull ♂ | ... | G. P. Sanderson, 1885. |
| l. | Skull ♂ juv. | ... | G. P. Sanderson, 1885. |
| m. | Skull ♂ | ... | W. Rutledge, 1876. |
| n. | Skull ♂ | ... | Capt. Johnstone, 1868. |
| o. | Skull foetal | ... | A.S.B. |
| q. | 2 Tusks | ... | R. Home, A.S.B. |
MAMMALIA.

| t. | Tusk (gnawed by Porcupines) | H. B. Medlicott, 1878. |
| u-x. | 4 Tusks | Capt. Johnstone, 1868. |
| y. | Tusk | A.S.B. |
| z. | Milk tusk | A.S.B. |
| a. | Tusk | G. P. Sanderson, 1879. |
| b. | Pr. of tusks (Mukna) | A. J. Shillingford, 1888. |
| c. | Concretion in tusk. | A.S.B. |
| d. | Pt. of tusk with rifle ball imbedded. | A.S.B. |
| e. | Several molar teeth. | No history. |
| f-g. | 2 Molars | Babu S. Banerjee, 1888. |
| h. | Molar teeth of a foetal specimen. | No history. |

Elephas africanus.


*Distribution.*—Africa generally, south of the Sahara.

| a. | Skeleton | W. Rutledge, 1883. |
| b. | Skull | W. T. Blanford, 1867. |
| c. | Tusk | W. T. Blanford, 1867. |
| d. | 4 Molars | No history, A.S.B. |

Order HYRACOIDEA.

There are no representatives of this order in the Indian Region, so no definition is given.

Genus HYRAX.

Hyrax, *Hermann Tab. Affinit. Anim., p. 115 (1783).*

**Hyrax capensis.**

Cavia capensis, *Pallas Spic. Zool., ii, p. 16 (1767).*
Hyrax capensis, *Hermann Tab. Affinit. Anim., p. 115 (1783); Blyth Cat. p. 138.*

*Distribution.*—South Africa.
HYRAX.

a-b. Stuffed, ♂ & ♀ ...... W. S. Sherwill, A.S.B.
c-d. Stuffed juv. ...... W. S. Sherwill, A.S.B.
e. Skull Spitz-koff Mt., S. W. S. Sherwill, A.S.B.
    Africa.
f. Skull ...... W. S. Sherwill, A.S.B.
g. Skull juv. ...... W. S. Sherwill, A.S.B.
h. Skin ...... No history, A.S.B.

Hyrax brucei.


Distribution.—The Abyssinian Highlands.

u. Skin ♀ Adigrat, Abyssinia, W. T. Blanford.
   8,000 ft., 26-4-68.

b. Skin Anseba valley, Abyssinia, 4,000 ft., 7-08.
   W. T. Blanford.

c. Skull Abyssinia W. T. Blanford, 1868.
e. Skin Adigrat Abyssinia, 8,000 ft., 7-4-68.
   W. T. Blanford.

f. Skin Adigrat, Abyssinia, 8,000 ft., 24-4-68.
   W. T. Blanford.

g-k. 2 Skins juv. ♂ & ♀ Adigrat, Abyssinia, W. T. Blanford.
   8,000 ft. 24-4-68.

f. Skin Abyssinia W. T. Blanford.

♀. Skin Somali land J. H. Speke, 1855, A.S.B.

Order CARNIVORA.

Mammalia with hairy bodies; with clavicles incomplete or wanting; radius and ulna, tibia and fibula complete; radiale and intermedium fused; no centrale; manus and pes with five digits; thumb never opposable; terminal phalanges armed with sharp claws; skull with strong occipital ridges, wide zygomatics, and generally incomplete orbital ring; nasals large and thin; glenoid cavity transversely elongated to which the mandibular condyle corresponds, thus limiting the motion of the lower jaw to a vertical movement; dentition heterodont and diphysodont; teeth simply coated with enamel, not compound; incisors § generally; in some forms the last enlarged premolar of the upper jaw and the first molar of the lower have trenchant edges and act as a pair of scissors and are called the sectorials; placentation zonary.

Sub-order I. FISSIPEDIA.

Terrestrial carnivora with manus and pes rarely webbed but bearing well-developed claws; hind-limbs and tail free; pinnae of ear well developed; incisors §.
Synopsis of Indian Genera.

a. Digitigrade with retractile or partially retractile claws; skull with the condylar foramen confluent with the foramen lacerum posterius; the paroccipital process applied to the bulla; mastoid process obsolete; last upper premolar and first lower molar generally sectorial. [=Aeluroidea.]

b. With only 2 lower premolars; no alisphenoid canal; bulla not externally constricted or internally divided; metatarsus hairy. [=Felidae.]


c'. Claws incompletely retractile; inner cusp of upper sectorial rudimentary. Cynaelurus, p. 235.

c''. With 3 lower premolars; alisphenoid canal present (except Viverricula); bulla externally constricted and internally divided; metatarsus hairy or naked. [=Viverridae.]

d. Claws strongly curved and more or less retractile; bulla not posteriorly everted; prescrotal glands present; anus not generally opening into a sac.

e. Tarsus and metatarsus entirely hairy; ears never tufted.

f. A second upper molar present.


g'. Alisphenoid canal absent. Viverricula, p. 238.

f'. No second upper molar. Prionodon, p. 239.

e'. Tarsus and metatarsus half bald; ears not tufted.

h. Teeth small; hinder part of the alveolar margin of the mandible crested. Arctogale, p. 241.

h'. Teeth large; hinder border of mandible not crested. Paradoxurus, p. 242.

e''. Tarsus absolutely naked; ears tufted; tail prehensile. Arctictis, p. 249.

f'. Claws elongated, not retractile; bulla posteriorly everted; canines large; no prescrotal glands; anus opening into a sac. Herpestes, p. 25c.
CARNIVORA. 211

b^3. With 3 lower premolars; no alisphenoid canal; bulla not divided or constricted, with only a rudiment of a septum; metatarsus hairy; claws blunt and not retractile.

[=Hyaenidae.]

Hyæna, p. 258.

a^2. Digitigrade, with non-retractile claws; condylar foramen distinct from the foramen lacerum posterius; paroccipital process closely applied to the bulla; clavicles rudimentary; last upper premolar and first lower molar sectorial.

[=Cynoidea.]

h. A sinus in the frontal bone, postorbital process large, thick and swollen and bent down at the tip.

j. With only two true molars in the lower jaw, i.e., the lower sectorial and one other; contour of facial line convex.

Cuon, p. 260.

j^2. With a complete set of three true molars in the lower jaw; contour of the facial line generally concave.

Canis, p. 261.

h^2. No sinus in the frontal bone; skull slight and elongate; postorbital processes thin, concave above, spread out more or less horizontally.

Vulpes, p. 267.

a^3. Plantigrade with generally non-retractile claws; skull with the condylar foramen distinct from the foramen lacerum posterius; paroccipital process widely separated from the bulla; mastoid process very large; auditory bulla not rounded or divided; no caecum.

[=Arctoidea.]

k. With no alisphenoid canal; molars ½ or ¾.

[=Mustelidae.]

l. Kidneys simple; feet short, digitigrade partially webbed; claws short, often semi-retractile; dentition, sectorial.

m. Premolars four above and below; lower sectorial with an inner tubercle; habits arboreal.

Mustela, p. 273.

m^2. Premolars three above and below; lower sectorial with no inner tubercle; habits terrestrial.

Putorius, p. 276.

p^2. Kidneys simple; feet elongated; toes straight; claws non-retractile, blunt; habits terrestrial and fossorial.
First upper molar as broad as long; with pig-like snout; palate produced back, level with the glenoid surface. **Arctonyx**, p. 290.

First upper molar much broader than long.

- **Helictis**, p. 284.
- No external ear; molars, p. m. \( \frac{3}{4} \) m. \( \frac{1}{4} \). **Mellivora**, p. 287.

Kidneys conglomerate; feet short and rounded; toes webbed; claws small, curved and blunt; upper posterior molar large and quadrate; habits aquatic. **Lutra**, p. 291.

With an alisphenoid canal; true molars \( \frac{3}{4} \) obtusely tuberculated; dentition not sectorial. **Aelurus**, p. 300.

With an alisphenoid canal; kidneys conglomerate; true molars \( \frac{1}{4} \) longer than broad; dentition not sectorial; feet completely plantigrade. \( [=\text{Ursidæ}] \)

Six incisors in upper jaw; snout not much produced. **Ursus**, p. 301.

Four incisors in upper jaw; snout considerably produced. **Melursus**, p. 306.

**Genus FELIS.**


**Key of the Indian Species.**

- **a.** Cats proper with three upper premolars generally present, with a rounded ear-conch, and with a long tail.

- **b.** Cats with a concolorous coat, neither spots or stripes.

- **c.** Of large size; up to 10 feet in length; tail with a black brush; nasal bones short, flat and not reaching so far back as the frontal processes of the maxillae.

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*F. leo*, p. 214
c². Of moderate size; colour varies from bright red to dark brown; tail short, not brushed; cheeks and forehead horizontally streaked with white and brown; faint traces of spots sometimes present on the flanks and abdomen.

F. temminckii, p. 222.

c³. Of small size; resembles the last, but is half the size; skull of different shape, having narrow nasals, forming a ridge as in F. viverrina; anterior upper premolar large and two-rooted.

F. planiceps, p. 222.

F. tigris, p. 216.

F. marmorata, p. 221.

F. nebulosa, p. 220.
MAMMALIA.

the length of the head and body; skull with nasal region very much attenuated; orbits generally complete.  
F. viverrina, p. 225.

**g**\(^a\). Moderate size; markings very variable, ground colour yellowish gray or bright yellow to white on abdomen, with irregular dark brown blottches; tail spotted and long, about \(\frac{1}{2}\) the length of head and body; skull shorter and rounder and with only slightly attenuated nasals; three upper premolars present; orbits incomplete behind.  
F. bengalensis, p. 223.

**g**\(^b\). Small; colour grizzled gray with reddish-brown spots; tail unspotted; skull short and rounded as in F. bengalensis, but with the nasals considerably more attenuated; orbit complete behind; only two upper premolars.

F. rubiginosa, p. 225.

**a**\(^a\). Lynxine group with pencilled ear-conch; generally only two upper premolars; a short tail; orbits incomplete behind.

**h**. Tail extremely short, one-quarter of length of head and body and black tipped, not reaching the hocks; ears strongly pencilled; skull with posterior nares very wide; no trace of the anterior premolar; inner lobe of upper sectorial tooth small.  
F. lynx, p. 229.

**h**\(^a\). Tail reaching the hocks.

**j**. Unspotted; red with black ears, strongly pencilled; skull with small lobe to upper sectorial; nasal area flat; anterior premolar absent.  
F. caracal, p. 230.

**j**\(^a\). Unspotted; ears yellow, black-pencilled, colour tawny; legs with indications of transverse bars; skull with inner lobe of sectorial well developed; anterior premolar present or absent.  
F. chaus, p. 227.

**j**\(^b\). Spotted; pale yellow with regular small black spots; tail ridged with black posteriorly; ears with small brown pencil; skull resembles F. chaus.  
F. ornata, p. 226.

Felis leo.

The Lion; Hindustani, Sher, Singha; Persian, Shir; Bengali, Shingal; Guzerat, Untia bag; Kattywar, Sawach.

Distribution.—Africa from Algeria to the Cape; Mesopotamia on the west flanks of the Zagros range and Persia south of Shiraz, but not on the tableland; India (see notes below).

The Lion was formerly more widely spread in India than it is at the present day. The districts in which it occurs or has occurred are Guzerat in the extreme west of India, Central India and Bundelcund. Blanford in the journal As. Soc., vol. xxxvi, p. 189, gives accounts of a lion shot near Rewah in 1866; also of a lion stoned to death by a Mr. Arratoon of the Police at Sheorajpur, 25 miles west of Allahabad; in the Asian newspaper of June 30th, 1885, Colonel Martin, of the Central India Horse, mentions that he and General Travers killed in 1860 two lions on a hill to the west of Goona in Gwalior; and in 1862 he, with Colonel Beadon, Deputy Commissioner, turned out and killed no less than eight lions at a place called Patulghur, 70 miles north-west of Goona. The last lion in Central India, of which I can find any record, was shot by Colonel Hall near Goona in 1873.

Of the Lions of Guzerat, an exceedingly good account is given by Major General Rice in a book called "Indian Game," published in 1884. I have heard too of a lion being killed in 1888 in Guzerat, so that it is evident that the lion is not extinct in India yet, although it seems probable that he soon will be.

An account of the lion of Mount Abu (a skull of which is in the collection) is given by Dr. G. King (l. c.).

The skull of the lion is easily distinguished from that of the tiger by the two following points:—

1. In the lion the posterior processes of the nasal bones do not extend so far back as the frontal processes of the maxilla; in the tiger the posterior processes of the nasals extend back far beyond the frontal processes of the maxilla.

2. In the lion the distance between the anterior parietal suture and the postorbital processes is much shorter than in the tiger, so that the former may be called a short-waisted skull as compared with the latter.

There does not seem to be any differences in the teeth.

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</thead>
<tbody>
<tr>
<td>a. Skin, skull</td>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td>Babu H. M. Roy.</td>
</tr>
<tr>
<td>b. Skin, skull</td>
<td>8</td>
<td>juv.</td>
<td>Kattywar</td>
<td></td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>c. Skin, skull</td>
<td>8</td>
<td>juv.</td>
<td></td>
<td></td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>e. Skeleton</td>
<td></td>
<td></td>
<td>Algeria</td>
<td></td>
<td>A. D. Bartlett, 1849, A.S.B.</td>
</tr>
<tr>
<td>f-h. 3 skulls</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Skull</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>E. Blyth, A.S.B.</td>
</tr>
<tr>
<td>k. Skull</td>
<td>8</td>
<td>juv.</td>
<td>Mount Abu, Rajputana</td>
<td></td>
<td>People's Park, Madras.</td>
</tr>
<tr>
<td>l. Skeleton</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>G. King, 1868.</td>
</tr>
<tr>
<td>m. Skeleton</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>Woombell's Menagerie.</td>
</tr>
<tr>
<td>n. Skull juv. (newborn)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Zoological Gardens.</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>O. L. Fraser.</td>
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</table>
Felis tigris.


The Tiger; Hind., Bagh, Pantayat bagh or Sher; Bengali, Gowagh or Salawagh; Marhatta, Wahag, Pultite wagh; Bundelcund, Nahar; Telugu, Puli; Canarese, Huli; Lepch., Suhtong; Bhot., Tukh; Gonds, Publiab; Sind, Sheendh; Tibet, Tagh; Burmese, Kya.

Distribution.—From the Caucasus through Northern Persia (Blanford), Turkestan and Afghanistan, India, Assam, Lower and Upper Burma, Malay Peninsula (Cantor), Sumatra, Java (Temminck), Borneo? extending through China (Swinhoe) and Manchuria to Amurland (Schrenck).

In India found nearly everywhere from the Himalayas to Cape Comorin, but is not known from Ceylon.

The largest skull in the collection is the one marked "z" from the Purneah District, presented by Mr. J. Shillingford; this skull measures 15 inches from the premaxillae to the posterior end of the supraoccipital; across the zygomata 103 inches; and in height with the lower jaw 7.5 inches; the largest skin is "a" from Barrackpore Park which, from the tip of the nose to the end of the tail, measures 10 feet 1 inch or, without the tail, 7 feet; these of course are measurements from the dried skin and are probably therefore considerably larger than measurements taken from the animal in the flesh would have been.

The size of tigers has been a source of much discussion, some authors, i.e. Mr. G. P. Sanderson and Dr. Jerdon believe that the tiger fairly measured never exceeds 10 feet and perhaps a few inches; others maintain that 11 and 12 feet tigers are by no means uncommon. Sir J. Fayer (Nature, xviii, p. 219) gives a good many well-authenticated cases of tigers well over 10 feet, among them is included the tiger, the measurement of whose skull is given above; this, the Purneah large tiger measured 10 feet 8 inches according to Sir J. Fayer; Sterndale discusses the question at some length in his book on the Indian Mammalia, he has worked
out a formula by means of which the total length of a tiger can be calculated from the skull measurements; from the formula Mr. Sterndale calculates the length of the Purneah tiger to be 10 feet 10 inches.

There seems to be no doubt that the Bengal tiger is a larger and more lanky animal than the tiger of the Central Provinces and Southern India, though in an all round measurement (Sterndale, p. 167), the Southern Indian tiger sometimes has the advantage.

The tiger of Central Asia and of Amurland is generally of a much richer colour with darker stripes, and the fur is very much more woolly, this can be seen very clearly in the case of the Afghan tiger brought home by Dr. Aichison of the Afghan Boundary Commission now or lately living in the Zoological Society's Gardens in London.

\[ \text{FELIS.} \]

<table>
<thead>
<tr>
<th>a.</th>
<th>Skin, skull</th>
<th>♂</th>
<th>Barrackpore Menagerie.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Skin ♂ juv.</td>
<td></td>
<td>W. Rutledge, 1875.</td>
</tr>
<tr>
<td>c.</td>
<td>Skin ♂</td>
<td></td>
<td>W. Rutledge, 1875.</td>
</tr>
<tr>
<td>e.</td>
<td>Skin, skull ♂ juv.</td>
<td></td>
<td>W. Rutledge, 1882.</td>
</tr>
<tr>
<td>f.</td>
<td>Skin, skeleton ♂</td>
<td>Sunderbuns, Bengal</td>
<td>Purchased.</td>
</tr>
<tr>
<td>g.</td>
<td>Skin ♂ juv.</td>
<td></td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>h.</td>
<td>Stuffed head</td>
<td></td>
<td>Barrackpore Menagerie.</td>
</tr>
<tr>
<td>k.</td>
<td>Skeleton ♂ juv.</td>
<td></td>
<td>No history.</td>
</tr>
<tr>
<td>l.</td>
<td>Skeleton ♂</td>
<td>Jessore, Bengal</td>
<td>O. L. Fraser.</td>
</tr>
<tr>
<td>m.</td>
<td>Skeleton</td>
<td>Mergui, Tenasserim</td>
<td>J. Anderson.</td>
</tr>
<tr>
<td>n.</td>
<td>Skeleton ♂</td>
<td></td>
<td>Barrackpore Menagerie.</td>
</tr>
<tr>
<td>o.</td>
<td>Skull ♂ juv.</td>
<td></td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>r.</td>
<td>Skull ♂</td>
<td></td>
<td>Barrackpore Menagerie.</td>
</tr>
<tr>
<td>s.</td>
<td>Skull ♂</td>
<td></td>
<td>A.S.B.</td>
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<tr>
<td>t.</td>
<td>Skull ♂</td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>u.</td>
<td>Skull</td>
<td></td>
<td>Barrackpore Menagerie,</td>
</tr>
<tr>
<td>v.</td>
<td>Skull</td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>w.</td>
<td>Skull</td>
<td></td>
<td>A.S.B.</td>
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<tr>
<td>x.</td>
<td>Skull</td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>y.</td>
<td>Skull</td>
<td>Dehing, Assam</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>z.</td>
<td>Skull ♂</td>
<td>Purneah, Bengal</td>
<td>J. Shillingford.</td>
</tr>
<tr>
<td>w²</td>
<td>Bones of feet</td>
<td>Gandhara, Rohtak</td>
<td>Lahore Museum.</td>
</tr>
<tr>
<td>b²</td>
<td>Skull</td>
<td></td>
<td>E. Blyth, 1855, A.S.B.</td>
</tr>
<tr>
<td>c²</td>
<td>Alc., ♂ juv. (1 day old)</td>
<td></td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>d²</td>
<td>Alc., foetus</td>
<td>Assam</td>
<td>Purchased.</td>
</tr>
<tr>
<td>e²</td>
<td>Alc., foetus</td>
<td>Assam</td>
<td>A.S.B.</td>
</tr>
</tbody>
</table>

**Felis uncia.**

MAMMALIA.

Felis pardus, *apud* Pallas Zoog. Rosso As., i., p. 17 (1811).
Ounce or Snow Leopard; Simla, Burrel hay; Bhotea, Sah; Lepcha, Pâhte; Tibetan, Iker.

**Distribution.**—All the high regions of Central Asia, Gilgit, Hunza (Scully), Turkestan, Trans-Baikalia, Amuraland, Persia (Blanford), Western China (Milne Edwards).

In India the ounce has only been got in the higher ranges of the Himalayas, and, as a rule, not below an elevation of 8,000 feet.

b. Skin Leh Ladak H. J. Elwes, 1879.
c. Skin Yarkand F. Stoliczka, 1873.
d. Skin Yarkand F. Stoliczka, 1873.
e. Stuffed ...... G. T. Lushington, 1845.
g. Skin, skull Chaprot, Gilgit, 4-4-79 J. Scully.
h. Skull Chaprot, Gilgit J. Scully.

Felis pardus.


The Leopard or Panther; Tendwa, Chita, Chitabagh, Sher, Gorbacha, Hind; Beyhewe, Tahirthay, Segabaga, Ghurbag, Dheerhay, in the Himalayas; Asnee, Beebeerbagh, Mahrat.; Honiga, Kogkal, Canarese; Chinnapulli, Telegu; Burkel bille of Gonds; Sik, Tibetan; Cooteal, Singalese; Kyamai, Keythit, Burmese.

**Distribution.**—Africa generally, Asia Minor (Alston), Persia (Blanford), Baluchistan (Murray), India, Assam, Ceylon (Kelaart), Lower Burma, Upper Burma (Anderson), Malay Peninsula (Cantor), Sumatra and Java (Temminck), South China (Swinhoe); North China (Swinhoe, Gray and Milne Edwards).

In India the leopard seems to be generally distributed from Sind (Murray) and the Himalayas throughout at moderate elevations to the extreme south.

There is a very large series of leopards' skulls in the Museum, and from an examination of these it is manifest that no real specific distinction can be drawn between the so-called Leopard and Panther.

The skulls of the Leopard differ enormously in size, so that at first it seemed possible to separate them into two groups, a larger and smaller; further examination, however, showed that there was a perfect gradation between the two extremes as the following measurements will show; Nos. 1 and 2 were the two extremes of the panthers, i.e., larger variety, Nos. 3 and 4 of the leopard or smaller variety:

**Measurements in inches.**

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Palate length</th>
<th>Width of brain-case</th>
<th>Lower jaw</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. &quot;r&quot;</td>
<td>7.70</td>
<td>3.75</td>
<td>3.10</td>
<td>5.90</td>
</tr>
<tr>
<td>2. &quot;u&quot;</td>
<td>6.95</td>
<td>3.50</td>
<td>2.70</td>
<td>5.23</td>
</tr>
<tr>
<td>3. &quot;f&quot;</td>
<td>6.40</td>
<td>3.30</td>
<td>2.50</td>
<td>4.75</td>
</tr>
<tr>
<td>4. &quot;e&quot;</td>
<td>5.80</td>
<td>2.80</td>
<td>2.45</td>
<td>4.20</td>
</tr>
</tbody>
</table>

These measurements on being reduced to a common base, i.e., the total length of the skull being taken as 100, show that there is a progressive increase in the width of the brain-case, as the skull decreases in length, which is the character that has been given for the leopard's skull as opposed to the panther.

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<tr>
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</thead>
<tbody>
<tr>
<td>1. &quot;r&quot;</td>
<td>100</td>
<td>48</td>
<td>27</td>
</tr>
<tr>
<td>2. &quot;u&quot;</td>
<td>100</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>3. &quot;f&quot;</td>
<td>100</td>
<td>51</td>
<td>39</td>
</tr>
<tr>
<td>4. &quot;e&quot;</td>
<td>100</td>
<td>48</td>
<td>41</td>
</tr>
<tr>
<td>a. Skin, skull ♂</td>
<td>...</td>
<td>Zoological Gardens, 1878.</td>
<td></td>
</tr>
<tr>
<td>b. Skin ♂ juv.</td>
<td>...</td>
<td>W. Rutledge, 1873.</td>
<td></td>
</tr>
<tr>
<td>c. Skin ♂ juv.</td>
<td>...</td>
<td>W. Rutledge, 1873.</td>
<td></td>
</tr>
<tr>
<td>e. Skin</td>
<td>Muangla, Sanda Valley, J. Anderson, Yunan.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Skin, skull ♀</td>
<td>...</td>
<td>Zoological Gardens, 1879.</td>
<td></td>
</tr>
<tr>
<td>g. Skin, skeleton</td>
<td>♀</td>
<td>W. Rutledge.</td>
<td></td>
</tr>
<tr>
<td>h. Skin</td>
<td>...</td>
<td>W. Rutledge.</td>
<td></td>
</tr>
<tr>
<td>j. Stuffed</td>
<td>...</td>
<td>No history, 1867.</td>
<td></td>
</tr>
<tr>
<td>k. Stuffed</td>
<td>...</td>
<td>Barrackpore Menagerie, 1869.</td>
<td></td>
</tr>
<tr>
<td>l. Skin and skull [Black var.]</td>
<td>...</td>
<td>W. Rutledge, 1883.</td>
<td></td>
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<tr>
<td>m. Skin and skull ♀ [Black var.]</td>
<td>...</td>
<td>Zoological Gardens, 1880.</td>
<td></td>
</tr>
<tr>
<td>n. Stuffed [Black var.] Assam.</td>
<td>...</td>
<td>F. Jenkins, 1844.</td>
<td></td>
</tr>
<tr>
<td>o. Skeleton ♂</td>
<td>...</td>
<td>Zoological Gardens.</td>
<td></td>
</tr>
<tr>
<td>p. Skeleton ♀</td>
<td>...</td>
<td>No history.</td>
<td></td>
</tr>
<tr>
<td>q. Skeleton</td>
<td>...</td>
<td>Barrackpore Menagerie, 1847, A. S. B.</td>
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<td>r-f.</td>
<td>3 Skulls</td>
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<td>No history, A. S. B.</td>
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<td>u. Skull</td>
<td>...</td>
<td>W. Rutledge.</td>
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<td>v. Skull, skeleton Purneah, Bengal</td>
<td>...</td>
<td>J. Shillingford.</td>
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<td>w. Skull</td>
<td>...</td>
<td>Zoological Gardens, 1882.</td>
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<td>x. Skull</td>
<td>...</td>
<td>Rajah Rajendra Mullick.</td>
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<td>...</td>
<td>W. Rutledge.</td>
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<td>z. Skull</td>
<td>...</td>
<td>Zoological Gardens.</td>
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<tr>
<td>a₂. Skull</td>
<td>...</td>
<td>A. S. B.</td>
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<tr>
<td>b₂. Skull juv.</td>
<td>...</td>
<td>A. S. B.</td>
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<td>c₂. Skeleton [Black var.]</td>
<td>...</td>
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<td>d₂. Skeleton</td>
<td>&quot; &quot;</td>
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<td>&quot; &quot;</td>
<td>G. King.</td>
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<td>f₂. Skull</td>
<td>&quot; &quot;</td>
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<td>g₂. Alc. still horn.</td>
<td>...</td>
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<td>h₂. Alc. juv.</td>
<td>&quot; &quot;</td>
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<td>i₂. Skull juv. Muangla, Yunan</td>
<td>...</td>
<td>J. Anderson.</td>
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**Felis nebulosa.**


Leopardus brachyurus, Swinhoe P. Z. S., p. 352 (1862).

The Clouded Tiger; Tungmar, Lepch.; Zik, Bhotea.; Lamchitta, Khas tribe of Nepal; Thit-kyoung, Burmese.

Distribution.—The Himalayas from Nepal (Hodgson) to Sikkim and Assam, hills of Burma and Siam, Malay Peninsula, Sumatra Java, Borneo (Müller), Formosa (Swinhoe).

This species has received a great many different names; the name used here, i.e., F. nebulosa, which is apparently the oldest, was recently rediscovered by Mr. Blanford, and, as he has adopted it in his hand-book on Indian Mammals, it has been used here.

Felis marmorata.

Felis marmorata, Martin P. Z. S., p. 107 (1836); Cantor f. A. S. B., xv, p. 244; Blyth Cat., no. 177, p. 59; id. P. Z. S., 1863, p. 183; Jerdon Mamm. p. 104; Elliot Monog. Felidæ, no. 8; Sterndale Mamm. Ind., p. 188; Blanford Mammals, p. 74.


Felis longicaudatus, Blainville Osteog., ii, Felis, p. 47 (1839-64).


Felis chaltoni, Gray Ann. Mag., N. H., xviii, p. 311 (1846); Blyth Cat., p. 59, no. 176.


Catolynx chaltoni, Gray P. Z. S., p. 268 (1867); id. Cat. Carn. Mamm., p. 16.


Distribution.—Himalayas from Sikkim to Assam, Burma to Malay Peninsula (Cantor), Sumatra (Haagen), Java? and perhaps is the same as Milne Edwards' Felis scripta from East Thibet.
The Marbled Cat; Bhotea, Sikmar; Lepcha, Dosal.

a. Skin .... W. Rutledge, 1881.
b. Skin, skull ♂ Bhootan W. Rutledge, 1874.
c. Skin, skelet. .... W. Rutledge, 1882.
d. Skin, skull ♂ .... W. Rutledge, 1881.
e. Skin, skelet. ♂ .... W. Rutledge, 1885.
g. Stuffed Malacca Rev. F. J. Lindstedt, 1845, A.S.B.
h. Stuffed Malacca Rev. F. J. Lindstedt 1845, A.S.B.
i. Skin, skull ♂ .... Zoological Gardens.

Felis temmincki.

Felis temmincki, Vigors and Horsfield Zool. Journ., iii, p. 451, pl. xxii sup. (1828); Elliot Monog. Felidae no. 15; Spearman Burma Gazett., p. 551; Blanford Mammals, p. 75.

Felis moermensis, Hodgson Gleanings in Science, iii, p. 177 (1831); id. P. Z. S., 1832, p. 10; Horsfield Cat. E. I. Mus., p. 49.


The Golden or Fire Cat; Nepal, Murmi.

Distributions.—Himalayas at moderate elevations from Nepal and Sikkim to the Tipperah hills, Burma, the Malay Peninsula and Sumatra?

a. Skin, skull ♂ .... O. L. Fraser, 1880.
c. Skin Sikkim L. Mandelli, 1877.
e. Stuffed Malacca Dr. Mainga, 1867.

Felis planiceps.

Felis planiceps, Vigors and Horsfield Zool. Journ., iii, p. 450, pl. xxii (1828); Müller Ouer de Zoogdieren in Tem. Verhandl., p. 29; Cantor J. A. S. B., xv, p. 245; Blyth Cat. no. 180, p. 62; id. P. Z. S. 1863, p. 185; Elliot Monog. Felidae no. 16.

Ailurina planiceps, Gereais Hist. Nat. Mamm., ii, p. 87 (1855)*.


The Little Fire Cat.

Distribution.—Malay Peninsula, Sumatra and Borneo (Müller) perhaps extending into Tenasserim.

a. Skin, skelet. ♂ .... W. Rutledge.
b. Stuffed, skull .... Purchased, 1869.
c. Stuffed Malacca C. Huffnagle, 1846, A.S.B.
Felis bengalensis.


Felis minuta, Temminck Monogr. Mamm., i, p. 130 (1827); Müller Over de Zoogdieren in Tem. Verhandl., p. 29; Günther P. Z. S., 1879, p. 75; Štěnínk Notes Leyd. Mus., v, p. 177.


Leopardus javanensis, id. ibid, p. 43 (1843).

Leopardus sumatrana, id. ibid, p. 43 (1843).

Leopardus chinensis, id. ibid, p. 43 (1843).

Leopardus reevesii, id. ibid, p. 44 (1843).


Felis jerdoni, Blyth P. Z. S., p. 185 (1863); Jerdon Mamm., p. 107.

Felis servalina, Gray P. Z. S., p. 401 (1867).

Felis tenasserimensis, id. ibid, p. 400 (1867).

Felis wagati, id. ibid, p. 400 (1867).

Viverriceps elliotti, id. ibid, p. 260 (1867).

Felis herschellii, Gray Cat. Carn. Mamm., p. 28 (1869).

Felis undata, apud Blyth J. A. S. B., xlv, Burma List, p. 27 (1873); Radde Ost Siberien, p. 106; Spearman Burma Gazett., p. 551.

Leopard Cat; Chita billa, Hindi; Bun beral, Bengali; Wagati, Shan-rahu-manjur, Mahrattas; Theet-kyoung, Arakan; Khyetith, Burmese.

Distribution.—India from the Himalayas to the extreme south (not including Ceylon), Assam, Upper and Lower Burma, Malay Peninsula, Java, Sumatra and Borneo (Müller), Philippines (Günther), South China and Formosa (Swinhoe), North China (Milne Edw.) and Amurland (Radde).

This species, as is evident from the number of synonyms which have been applied to it, is a very variable one; the three chief forms beside the typical F. bengalensis are Felis pardochroa of Hodgson, F. javanensis of Desmarest and F. sumatrana of Hors-
field; there are in the Museum typical specimens of all these three varieties.

F. pardochroa ("w") differs from the ordinary F. bengalensis merely in having the ground colour a bright yellow instead of the ordinary gray or grayish yellow; the skull, however, resembles in every respect the typical F. bengalensis.

Felis javanensis ("k") has some resemblance to F. viverrina in having a grizzly gray ground and in the spots being arranged to a certain extent in straight lines instead of irregularly.

Felis sumatrana ("I") resembles the ordinary F. bengalensis in every way. There does not seem to be any differences in the skulls of these three forms.

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<td>a. Skin, skull ♂</td>
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<td>W. Rutledge, 1875.</td>
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<td>c. Skin, skull ♀</td>
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<td>d. Skin, skull ♀</td>
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<td>e. Skin, skull ♀</td>
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<td>W. Rutledge, 1881.</td>
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<td>f. Skin, skeleton ♀</td>
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<td>g. Skin, skeleton ♀</td>
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<td>Zoological Gardens.</td>
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<td>h. Skin, skeleton ♀</td>
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<td>j. Skin</td>
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<td>Momien, Yunan, 6,000 ft.</td>
<td>J. Anderson.</td>
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<td>k. Skin</td>
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<td>Momien, Yunan, 6,000 ft.</td>
<td>J. Anderson.</td>
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<td>l. Skin</td>
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<td>Momien, Yunan, 6,000 ft.</td>
<td>J. Anderson.</td>
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<td>m. Skin</td>
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<td>Kakhyen Hills</td>
<td>J. Anderson.</td>
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<td>n. Skin</td>
<td></td>
<td>Chittagong</td>
<td>E. R. Shopland, A. S. B.</td>
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<td>o. Skin</td>
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<td>Sir W. Elliot, A. S. B.</td>
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<td>q. Skin</td>
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<td>L. Mandelli.</td>
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<td>L. Mandelli.</td>
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<td>s. Skin</td>
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<td>L. Mandelli.</td>
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<td>v. Skin</td>
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<td>w. Skin, skull</td>
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<td>India Mus., London.</td>
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<td>y. Stuffed</td>
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<td>Barrackpore Menagerie.</td>
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<td>z. Stuffed</td>
<td>Assam</td>
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<td>F. Jenkins, 1842, A. S. B.</td>
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<td>a². Stuffed</td>
<td>Sikkim</td>
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<td>Dr. Brougham, 1871.</td>
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<td>b². Stuffed</td>
<td>Sikkim</td>
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<td>Dr. Brougham, 1871.</td>
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<td>c². Stuffed</td>
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<td>d². Skeleton</td>
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<td>A.S.B.</td>
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<td>m.t.d.</td>
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<td>e². Skull</td>
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<td>f². Skeleton</td>
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<td>Zoological Gardens.</td>
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<td>g². Skeleton</td>
<td></td>
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<td>W. Rutledge.</td>
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<td>h². Skin</td>
<td>Sikkim</td>
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<td>Purchased.</td>
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<td>f². Skin</td>
<td>Sikkim</td>
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<td>Purchased.</td>
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<td>k². Skin, skull</td>
<td>Java (Horsfield)</td>
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<td>l². Skin, skull</td>
<td>Sumatra (Sir S. Raffles)</td>
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<td>India Mus., London.</td>
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Felis viverrina.

Felis viverrina, Bennett P. Z. S., p. 68 (1833); Horsfield Cat. E. I. Mus., p. 49; Blyth P. Z. S., 1863, p. 184; Jerdon Mamm., p. 103; McMaster Notes on Jerdon, p. 28; Swinhoe P. Z. S., 1870, p. 628; Blyth J. A. S. B., xiv, Burma List, p. 27; Atkinson N. W. P. Gazett., xi, p. 17; Spearman Burma Gazett., p. 551; Elliot Monog. Felidae, no. 21; Murray Zool. Ind., p. 28; Blanford Mammals, p. 76.


Leopardus viverrinus, Gray List Mamm. B. M., p. 43 (1843).


Felis celidogaster, Blyth Cat. no. 179, p. 61 (1863).


The Large Tiger Cat or Fishing Cat; Bunbiral, Kupya-bagh, Hindi; Machbagrul, Bagh-dasha, Bengali; Handoon deeva, Cingalese.

Distribution.—India, Ceylon (Kelaart); Lower Burma (Mc Master), Tenasserim (Spearman), and Formosa (Swinhoe).

In India is recorded from the banks of the Indus (Murray), Lower ranges of the Himalayas, Nepal Terai (Hodgson), Assam and Bengal; Jerdon also gives Travancore and the Malabar coasts. It does not seem to be found in Central India.

a. Skin, skeleton
b. Skin, skeleton
c. Skin

The Rusty Spotted Cat; Namali pilli or Verewa puni, Tamil; Coolla-deeva, Cingalese.

Distribution.—Madras coasts, hills of Southern India, Ceylon (Kelaart), and perhaps Central India, Seonee (Sterndale).

a. Skin, skull ☐
   Zoological Gardens.
b. Skin, skull ☐
   Zoological Gardens.
c. Stuffed skeleton ☐
   Zoological Gardens.
d. Skin Ceylon
   Colombo Museum, 1887.
e. Skin ☐ Bangalore
   Museum Coll. (Jaffa).

Felis manul.


Pallas’ Cat.

Distribution.—Central Asia generally from Mongolia and Thibet to the Transcaspian region, extending to within the Indian Empire at Ladak.

[No specimen in the Indian Museum.]

Felis ornata.
Felis ornata, *Gray Illustr. Ind. Zool.*, i, pl. ii (1830); *Blyth Cat.* no. 184, p. 63; *Elliot Monog. Felidae* no 31; *Murray Zool. Sind*, p. 29; *Thomas P. Z. S.*, 1886, p. 55; *Blanford Mammals*, p. 84.

Chaus servalinus, id. ibid.


Distribution.—The dry rocky countries of North-West India, from Banda, North-Western Provinces (Cockburn), thence westward through Agra, Sambhar (Thomas), to Sind where common (Murray).

This species and the next three, i.e., F. shawiana, F. chaus and F. caudata, all appear to be very nearly allied forms, all four have a slight pencil of hairs on their ears; F. chaus can be distinguished at once by its black pencil, its pepper-and-salt colour with no trace of lines or spots on the body; F. caudata is very indistinctly spotted, but has a very long tail, twice the length of that of F. chaus; F. ornata and shawiana seem to resemble each other in every respect; Blanford (Yarkand Mammals, p. 19) distinguishes F. shawiana from F. ornata by (1) its shorter tail, (2) its more rufous colouration, (3) distinct black spots on the abdomen.
With regard to the first distinction, the tails of the two specimens of *F.* shawiana are certainly shorter than those of the specimens of *F.* ornata; but the skins are furrier, skins, both having been bought in the bazaars at Yarkand and Kashgar, and the tails in both cases seem mutilated, the tails, too, of *F.* ornata in the Museum collection vary considerably in length, from 8 to 13 inches in specimens of approximately the same size; with regard to the second point, that of colour, the difference of shade is so slight that it is only perceptible in a strong light; finally, there are in the Museum collection many specimens of *F.* ornata with quite as distinct spots on the abdomen as *F.* shawiana.

With regard to the skulls of *F.* ornata, *F.* chaus and *F.* shawiana [there is no skull in the only specimen of *F.* caudata], there does not seem to be any real substantial difference, although there are minor differences which have been pointed out by Mr. Blanford, yet it does not seem that any of the differences are sufficiently important to be due to anything but individual variations.

\[
\begin{array}{|l|l|l|}
\hline
a-b. & 8 skins & Banda, N.-W. P. & J. Cockburn. \\
\hline
j. Skin & f & Agra dist., N.-W. P. & Lucknow Mus. [Ex.] \\
\hline
k. Skin & f & Agra dist., N.-W. P. & Lucknow Mus. [Ex.] \\
\hline
l. Skin & & Hazara Hills, Punj, & T. Hutton, 1845, A.S.B. \\
\hline
m. Skin & & Hansi, Punjub & D. Scott, A.S.B. \\
\hline
n. Skin & & Hansi, Punjub & D. Scott A.S.B. \\
\hline
o. Skin & & nr. Karachi, Sind & Karachi Museum. \\
\hline
p. Skin & & Mullier, Sind & Col. Meurant. \\
\hline
g-t. & 4 Skulls & Banda dist., N.-W. P. & J. Cockburn. \\
\hline
u. Skull & & Karachi, Sind & Karachi Museum. \\
\hline
\end{array}
\]

Felis shawiana.

Felis shawiana, Blanford ʃ. A. S. B., xlv, p. 49 (1876); id. Yarkand Mamm., p. 17, pls. ib, ic; Elliot Monog. Felidæ no. 34.

Distribution.—Eastern Turkestan (Yarkand and Kashgar).

\[
\begin{array}{|l|l|}
\hline
a. Skin, skeleton & Yarkand & W. B. Shaw. \\
\hline
 & [Type of F. shawiana, Blanford]. & \\
\hline
b. Skin & Yarkand bazaar & F. Stoliczka. \\
\hline
c. Skin & Kashgar, 11-74 & J. Scully. \\
\hline
\end{array}
\]

Felis chaus.


Q 2
Felis catulynx, *Pallas Zoog. Rosso As.* i, p. 23 (1811).
Lynx chaus, *Fischer Zoognosie.* p. 230 (1814)*.
Felis affinis, *Gray Illustr. Ind. Zool.* i, pl. iii (1832)*.
Chaus lybicus, *Fischer Zoognosie.* p. 230 (1814)*.
Chaus lybicus, *Fischer Zoognosie.* p. 230 (1814)*.
Chaus lybicus, *Fischer Zoognosie.* p. 230 (1814)*.
Chaus lybicus, *Gerrard Cat. Bones B. M.* p. 66 (1862); *Gray Cat. Carn. Mamm.* p. 34.
The Jungle Cat; Gurba-i-kuhi, Persian; Jangli billi, Deccani and Hindustani; Ban billi, in Kumaon; Katas, Banberal, Bengali; Hoppa, Assamese; Maut bek, Kadu bek, Bella bek, Canarese; Mota rahu, Manjur, Mahratta; Bhooga, Mahrattas (Ghats); Birka, Bhagulpore Hills; Jurka pilli, Telegu; Cherru pilli, Malay-alim; Kyoung tsek-koon, Arakan.

**Distribution.**—Throughout North Africa, Egypt, Nubia and Barbary, Asia Minor (Alston), Palestine (Tristram); shores of Caspian, West and Southern Persia (Blanford), Afghanistan and Candahar, India, Ceylon (Kelaart), Assam and Burma (Spearman). In India universally distributed from the Himalayas and Sind to the extreme south extending eastwards to Assam.

| d. Skin | Punjab Salt Range | W. Theobald, A. S. B. |
| e. Skin | Kishit, nr. Burnhuris (2,000 ft.) | Sir O. St. John. |
| f. Skin | Cachar | Sir O. St. John. |
| g. Skin | Banda, N.-W. P. | J. Cockburn. |
| h. Skin | Travancore | Purchased. |
| j. Skin | …… | J. E. T. Aitchison. |
| k. Skin juv. | …… | Zoological Gardens. |
| l. Stuffed | …… | No history, A.S.B. |
| m. Stuffed | …… | W. Rutledge. |
| p. Stuffed | Raneegunge, Bengal | J. Diveria, 1867. |
| q. Stuffed | Simla | T. Hutton, A.S.B. |
| r. Stuffed | Calcutta | Purchased. |
| s. Skull | …… | Purchased. |
| t. Skull | Kabul | Sir A. Burnes, A.S.B. |
| u. Skull | Kandahar | T. Hutton, A. S.B. |
| v. Skull | Ceylon | E. F. Kelaart, A.S.B. |
| w.² Skin | Banda, N.-W. P. | J. Cockburn. |
| e¹. Skull juv. | …… | Zoological Gardens. |
| d². Skeleton | …… | A.S.B. |
| e². Skin, skull | Kendrapara, Bengal | A. J. Fraser. |
| f².². 6 Skulls | Banda, N.-W. P. | J. Cockburn. |
| m². Skin, skull | Shevaroy Hills, Mdr. | Mrs. W. King. |
Felis caudata.


Chaus caudatus, Gray P. Z. S., p. 31, pls. vi, vii, (1847).

Felis caudata, Elliot Monog. Felidae, no. 33 (1878-83); Scully J. A. S. B., i(6), p. 69; Thomas Linn. Trans. (2), v, p. 57; Radde Zool. f. B., iv, p. 1014.

Distribution.—Transcaspian region eastwards to Afghan and Russian Turkestan.

a. Skin Maimanah, Afghanistan C. E. Yate, 1887.

Felis lynx.

Felis lynx, Linnaeus Syst. Nat., 12th ed., i, p. 62 (1766); Blyth Cat. no. 189, p. 64; Radde Ost Siberien, p. 89; Schrenck Amurland Säugenth., p. 87; Severtzoff Ann. Mag. N. H. (4), xviii, p. 49; Alston P. Z. S., 1877, p. 272; id. 1880, p. 52; Scully P. Z. S., 1881, p. 201; Blanford Varkand Mammals, p. 19; Elliot Monog. Felidae no. 38; Blanford Mammals, p. 89.


Felis virgata, Nilsson Illum. Fig. till Faun., pls. iii and iv (1829)*; id. Skand. Faun., p. 126*.


Felis isabellina, Blyth J. A. S. B., xvi, p. 1178 (1847); id., Cat., no. 183, p. 64; id. P. Z. S., 1863, p. 186; Kinloch Large Game Shooting, i, p. 18, with plate.


Distribution.—Northern Europe, Siberia, Baikal (Radde); Amur-land and Sachalin (Schrenck); Turkestan (Severtzoff); Eastern Turkestan (Blanford), Gilgit (Scully), Western Thibet (Kinloch) and Eastern Thibet (Blyth).

a. Skin "" Kashgar bazaar F. Stoliczka, F. Stoliczka.

b. Skin Norway Christiania Univ., A. S. B.

c. Stuffed Norwegian Christiania Univ., A. S. B.

d. Stuffed "" G. T. Lushington, 1845, A. S. B.

e. Stuffed Thibet C. S. Bonnevie, 1850, A. S. B.

f. Stuffed ""

g. Stuffed juv. Norway No history, A. S. B.

h. 2 Skulls "" J. Scully.

k. Skin, skull Kashgar, 11-74 J. Scully.

l. Skin, skull Bagrot, Gilgit, 5,000ft., 10-4-79 J. Scully.

m. Skin Bargo, Gilgit J. Scully.
Felis caracal.


Lynx caracal, Fischer Zognosie, p. 200 (1814)*.


Siahgosh, Persian and Hind.

Distribution.—Africa generally, Palestine (Tristram), Arabia, Smyrna and Taurus (Danford); Mesopotamia, Persia (Blanford), and Transcaspia. In India proper is generally distributed but found more abundantly in the west, i.e., Sind (Murray), Cutch (Stoliczka), Dehra Dun? (Atkinson), and Nepal terai (Hodgson).

The anterior upper premolar present in the skull of specimen "a" is a rather uncommon variation.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin, skull</td>
<td>( \varphi )</td>
</tr>
<tr>
<td>b. Skin, skull</td>
<td>( \Phi )</td>
</tr>
<tr>
<td>c. Skin, skull</td>
<td>( \varphi )</td>
</tr>
<tr>
<td>d. Skin, skull</td>
<td>( \Phi )</td>
</tr>
<tr>
<td>e. Skin, skull juv.</td>
<td>( \varphi )</td>
</tr>
<tr>
<td>f. Stuffed</td>
<td></td>
</tr>
<tr>
<td>g. Skeleton</td>
<td></td>
</tr>
<tr>
<td>h. Skeleton</td>
<td>( \Phi )</td>
</tr>
<tr>
<td>i. Skeleton</td>
<td>( \varphi )</td>
</tr>
</tbody>
</table>

W. Rutledge.

Zoological Gardens.

W. Rutledge.

Zoological Gardens.

W. Rutledge.

No history.

Babu H. H. Roy.

W. Rutledge.

Felis concolor.

Felis concolor, Linnaeus Mantissa, p. 522 (1771)*; Elliot Monog. Felidae no. 2.


Felis couguar, Lesson Man. Mamm., 190 (1827).

Felis unicolor, Lesson Man. Mamm., p. 190 (1827).


The Puma.

Distribution.—North and South America from 45° N. lat. to the Straits of Magellan.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin, skull</td>
<td>( \varphi )</td>
<td>South America</td>
</tr>
<tr>
<td>b. Skin</td>
<td></td>
<td>Mexico</td>
</tr>
<tr>
<td>c. Skin, skull</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Skull</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

W. Rutledge, 1883.

W. Jamrach [P.]

British Mus. [Ex.]

E. Blyth, 1865.
Felis yagouarondi.

Felis yagouarondi, Lacepede Œuvres d'Asara Atlas, pl. x*; Fischer Zoognose, p. 228 (1814)*; Elliot Monog. Felidae no. 12.
Felis darwinii, Martin P. Z. S., p. 3 (1837).
Felis calomithi, Baird N. Amer. Mamm., p. 74 (1859)*.

Distribution.—From Mexico through Central and South America as far as Southern Paraguay.

Felis pardalis.

Felis canescens, Swainson Anim. Menag., p. 118 (1838)*.
Leopardus pictus, Gray List Mam. B. M., p. 43 (1843).

The Ocelot.

Distribution.—Arkansas, Louisiana, Texas, Mexico, Central America, and South America, East of Andes.

Felis serval.

Felis galéopardus, Desmarest Mam., p. 227 (1820).
Felis senegalensis, Lesson Mag. de Zool., x (1839)*.
Felis servalina, Ogilby P. Z. S., p. 94 (1839).

Distribution.—Africa from Algiers to the Cape.

a. Stuffed Cape Colony E. L. Layard, 1858, A. S. B
Felis caffra.

Felis caffra, Desmarest Mamm. Suppl., p. 540 (1822); Blyth Cat., no. 185, p. 63; Elliot Monog. Felidae, no. 30.
Felis obscura, Desmarest Mamm., p. 230 (1820).
Felis nigripes, Burchell's Travels., ii, p. 502 (1824).
Felis maniculata, Cretzschmar Ruppell's Atlas, i, pl. i (1826).
Chaus caffer, Gray List Mamm. B. M., p. 45 (1843).
Leopardus inconspicuus, Gray List Mamm. B. M., p. 44 (1843).

Distribution—Africa from Algeria to the Cape.

 Felis catus.

Felis sylvestris, Schreber Säugeth., iii, p. 397 (1778); Blyth Cat., no. 182, p. 62.

Distribution—Europe generally, extending eastwards into Persia (Blanford) and Asia Minor (Alston).

 Felis pardina.

Felis pardina, Temminck Monogr. Mamm., i, p. 116 (1827); Elliot Monog. Felidae no. 37.

Distribution—Portugal, Spain, Sardinia, Sicily, Turkey and Asia Minor.

 Felis canadensis.

Lyncus canadensis, Rafinesque Amer. Month. Mag., ii, p. 46 (1817)*.

Lyncus canadensis, Rafinesque Amer. Month. Mag., ii, p. 46 (1817)*.

Lyncus borealis, Daly New York Zool., p 5 (1842).
**Distribution**—Northern Europe, Scandanavia, Russia, and Siberia, North America, as far south as Pennsylvania and California.

- a. Skin
  - Hudson's Bay
- b. Skin
  - Alumette Isle, Ottawa
- c. Skull
  - Upton, Maine, U.S.A.
- d. Skull
  - Umbagog Lake, Maine, U.S.A.

**Felis rufa.**


Felis carolinensis, Desmarest *Mamm.* p. 234 (1820).

**Distribution**—North America to Mexico.

- a. Skin
  - Lake Amhee, Ontario
- b. Skin
  - juv. Blue Ridge, Ontario
- c. Skull
  - North Carolina

**Felis domestica.**

Felis domestica, Gmelin *Syst. Nat.*, i, p. 80 (1788); *Elliot Monog. Felidae* no. 41; *Thomas Linn. Trans.* (2), v, p. 57.


**The Domestic Cat of India differs considerably from the English domestic cat; Blyth distinguishes two races of Indian domestic cats—(1) the spotted type in which the spots tend to form themselves into streaks, especially on the anterior parts of the body; the tail of this form is slender and of uniform thickness, with a series of black rings; this form is frequently found in a feral state and it is probable that it was from an animal of this kind that Felis torquata of F. Cuvier was originally described; (2) the other form was called by Blyth the Chaus-coloured cat; it is of a uniform fulvous colour with barred legs and a ringed tail, resembling F. chaus; in its proportions, however, it differs from**
F. chaus considerably, its legs and ears are much shorter and its tail much longer, this Blyth suspects to be derived from the domestic cat with an admixture of chaus blood.

The two examples of this latter form are "e" and "j" of the list below; "e" is specially to be noticed since it was shot in the town of Banda, round which F. chaus abounds.

The English tabby is never seen in India; this may possibly be due to the fact that the tabby markings of the English domestic cat are due to an admixture of the blood of the wild cat (F. catus). Evidence to show that domestic cats breed with some of the different species of wild cats will be found in Pennant where, after the description of F. bengalensis, he mentions that the specimen from which the description was drawn up, coupled with female domestic cats and produced offspring; Blyth also quotes the evidence of Sir Walter Elliot on the subject (vide J.A. S. B., xvii, pp. 247 and 559) in the cases of F. chaus and F. rubiginosa.

There are also in the collection two skins which seem to require further remark, these are "f", the skin procured by Dr. Scully at Kashgar, and "g" one procured by the Afghan Boundary Commission at Wen Male.

The former, which is a flat skin without a skull, was described by Mr. Blanford in the Yarkand Mammals as F. catus, but it differs from F. catus in having a slender and tapering tail instead of a clubbed one which is so characteristic of the true F. catus of Europe. The other skin from Afghanistan also has a slender tapering tail; a comparison of the skull of this specimen with a skull of an English F. catus, and with the skulls of several specimens of F. domestica shows that this Afghan cat agrees with the domestic cat in the several points in which the latter differs from F. catus, i.e., in F. domestica, the frontal and squamosal bones are separated from one another by the parietals and alisphenoids, the nasals are not produced posteriorly beyond the frontal processes of the maxillae, and, finally, the teeth are small as compared with F. catus. In all these points the Afghan cat agrees with the domestic cat and not with Felis catus.

<table>
<thead>
<tr>
<th>a. Skin</th>
<th>Punjab Salt Range</th>
<th>W. Theobald, A.S.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Skin</td>
<td>Hansi, Punjab</td>
<td>D. Scott, A.S.B.</td>
</tr>
<tr>
<td>c. Skin</td>
<td></td>
<td>E. Blyth, A.S.B.</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Deccan (Col. Sykes)</td>
<td>India Mus., London.</td>
</tr>
<tr>
<td>e. Skin, skull</td>
<td>Banda (town), N.-W.P.</td>
<td>J. Cockburn (1881).</td>
</tr>
<tr>
<td>f. Skin</td>
<td>Kashgar</td>
<td>J. Scully.</td>
</tr>
<tr>
<td>g. Skin</td>
<td>Wen Male, Afghanistan</td>
<td>J. E. T. Aichison.</td>
</tr>
<tr>
<td>h. Stuffed (tabby)</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>j. Stuffed, skull</td>
<td>Calcutta</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>k. Stuffed</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>l. Skull</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>m. Skeleton</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>n. Skeleton</td>
<td>Calcutta</td>
<td>Purchased.</td>
</tr>
</tbody>
</table>
Genus CYNAELURUS.


Cynaelurus jubatus.

Cyanaelurus jubatus. Wagler Nat. Syst. Amphib., p. 30 (1830); Blyth Cat., no. 191, p. 65; Elliot Monog. Felidae no. 42; Blanford Mammals, p. 91.
Cyanaelurus guttata, id. ibid.
Felis megabalia, Huglin Zeitschr. Allg. Erdkunde, iii, p. 53 (1868)*.

The Cheetah or hunting leopard; Yuz palang, Persian; Yuz- cheetah bagh, Hindustani; Kendua bagh, Bengali; Cheeta, Deccani; Chircha, Sivungi, Canarese; Chita puli, Telegu.

Distribution.—Africa generally; has been recorded by Alston from Euphrates valley, Transcaspia, Western Turkestan (Severtsoff) and Persia, (Blanford). In India it is found in the Central and western districts, i.e., Deccan (Sykes), Saugor, Central India (Jerdon), the Punjab, Sind (Murray), Cutch (Stoliczka), and has been procured as far as east as Deogurh in the Sonthal Pergunnahs (Blanford).

- Skin, skull ខ  ...... Babu H. M. Roy.
- Skin, skeleton ♀ ...... Zoological Gardens.
- Skin ♀ juv. ...... W. Rutledge.
- Skin ♂ ...... W. Rutledge.
- Skeleton ♀ ...... W. Rutledge.
- Skull ♀ juv. ...... W. Rutledge.
- Stuffed ...... E. Blyth, 1857, A. S. B.
- Skeleton ...... E. Blyth, 1857, A. S. B.

Genus VIVERRA.


Key of the Indian Species.

- Tail with complete light and dark rings; body markings indistinct and cloudy, not spotty; size large; anterior upper molars distinctly triangular.
  V. zibetha, p. 236
a. Tail with light and dark rings incomplete.

b. Large size; black rings all complete, light rings just broken by the dorsal black band of the tail; flanks distinctly spotted with large spots.

c. Mane commencing between the ears; skull with anterior upper molars quadrangular as compared with V. zibetha.  

V. civettina, p. 237.

c. Mane commencing between the shoulders.  

V. megaspila, p. 237.

c. Smaller; only a few of the posterior black rings of the tail complete, and the dorsal black band broad.

V. tangalunga, p. 237.

Viverra zibetha.


Viverra civettoides, Hodgson id. ibid.


The Indian Civet Cat; Katas, Hindustani; Machbhondar, Bagdos, and Pudgaula, Bengali; Bhras, Nepal terai; Nit biralu, Nepal; Kung, Bhoitea; Saphiong, Lepcha; Kyung-myeng, Burmese; Hagah gendrah, Assamese.

Distribution.—Bengal, extending northwards to the Nepal Terai and southwards to Cuttack, Assam, Burma, Southern China and Hainan (Swinhoe); its occurrence in the Malay Peninsula seems doubtful since it has been so often confused with V. megaspila and V. tangalunga.

| a. Skin, skull | ...... | No history. |
| b. Skin, skull | ...... | No history. |
| c. Skin, skull | ...... | No history. |
| d. Skin, skull | ...... | No history. |
| e. Skull | ...... | No history. |
| f. Skin, skull | ...... | No history. |
| g. Skin | ...... | No history. |
| h. Skull | ...... | No history. |
| i. Skull | ...... | No history. |
| k. Stuffed |...... | No history. |
| l. Skeleton |...... | No history. |
| m. Skull |...... | No history. |
| n. Skull |...... | No history. |
Viverra civettina.


**Distribution.**—Malabar Coast, Wynnaad and Coorg.

This species, described first by Blyth from Southern India, seems to differ in several respects from *V. zibetha*; instead of the indefinite stripy markings of *V. zibetha*, the hinder part of the body of *V. civettina* is covered with distinct large black spots and the ground colour is distinctly yellow; the yellow rings on the tail are broken by the longitudinal dorsal black band down the tail, whereas in *V. zibetha* the yellow rings completely surround the tail.

The skulls too, differ in several respects; the large upper molar of *V. civettina* is much more quadrangular and its length bears a much greater ratio to its breadth than in *V. zibetha*, in which the tooth is almost triangular; the postorbital processes of the frontal bones are almost absent in *V. civettina*, whereas in *V. zibetha* they are quite distinct.

- **a.** Skin, skeleton
- **b.** Skin, skull
- **c.** Skin
- **d.** Skin

W. Rutledge.

Lord A. Hay, 1845, A.S.B.

[Type of *V. civettina* of Blyth.]

Purchased.

Purchased.

Viverra megaspila.


**Distribution.**—Burma and the Malay Peninsula, Cochin China and Sumatra.

[No specimens in Indian Museum.]

Viverra tangalanga.


**Distribution.**—Malay Peninsula, Sumatra (Raffles), Borneo Celebes and Amboyna (Müller), Philippines (Gunther).
Viverra civetta.

Viverra civetta, Schreber Säugeth., iii, p. 418, Atlas, pl. cxi (1778); Gray Cat. Carn. Mamm., p. 46.

Distribution—Africa generally.


Viverricula malaccensis.


Viverra leveriana, Shaw Mus. leverianum (1792)*.


Viverra bengalensis, Gray Illustr. Ind. Zool., i, pl. iv (1832).


Viverricula indica, Hodgson J. A. S. B., x, p. 909 (1841).


The Small Civet; Mushak billi, Deccani and Hindustani; Gandha gokul, Bengali; Kasturi, Juwadee manjar, Mahraata; Punaginbekh, Canarese; Punagu pilli, Telegu; Saiger, Bugmyal, Terai of Nepal; Ooralawa, Cingalese; Wa-young-kyong-bonk, Arakanese; Kyoung kado, Burmese.

Distribution.—Comoro Isles, Socotra and Madagascar (Thomas),
Linsang, Müller Over de Zoogdieren in Tem. Verhändl., p. 28 (1839). Type, P. gracilis.

**Key of the Indian Species.**

a. Large, about 35 inches, including the tail; dorsal surface covered with large patches of black.  

P. maculosus, p. 239.

a². Smaller, about 30 inches, including the tail; back with broad transverse bands.

P. pardicolor, p. 240.

Prionodon maculosus.


Distribution.—Known only from Tenasserim.  

[No specimen in the Museum.]
Prionodon pardicolor.


The Tiger Civet; Zik-chum, Bhotea; Suliyu, Lepcha.


a. Skin, skull Darjeeling E. R. Henry.
b. Skin Sikkim L. Mandelli.
c. Skin, skull Gumpah, Sikkim J. Knight.
d. Skin Kakhyan Hills J. Anderson.
e. Skin ...... No history, A.S.B.
f. Skin ...... No history, A.S.B.
g. Stuffed Darjeeling Mrs. Saxon, A.S.B.

Genus GENETTA.


Genetta vulgaris.


Genetta afra, *F. Cuvier Nat. Hist. Mamn.*, livr. lii, with plate (1825); *Blyth Cat. no. 144*, p. 46.


*Distribution.*—South Europe, i.e., France, Spain and Turkey, North Africa and Palestine.

a. Stuffed Algeria A. Malherbe, 1848, A.S.B.

Genetta tigrina.


Genetta tigrina, *Gray Cat. Mamn. B. M.*, p. 49 (1843); *Blyth Cat. no. 145*, p. 46.

Viverra genetta, *Peters Reise nach Mossambique*, i, p. 113 (1852)


*Distribution.*—South Africa and up through Mosambique to Abyssinia.

a. Stuffed South Africa E. L. Layard, 1859, A.S.B.
b. Stuffed South Africa E. L. Layard, 1859, A.S.B.
HEMIGALE.

Genus HEMIGALE.

Hemigalus, Jourdan Comptes Rend., v, p. 442 (1837). Type, H. hardwickii.
Hemigalea, Gray P. Z. S., p. 524 (1864).

Hemigale hardwickii.

Hemigalus zebra, Jourdan Comptes Rend., v, p. 442 (1837).
Hemigalea derbiana, Blyth Cat. no. 147, p. 46 (1863); Jentink Notes Leyd. Mus., xi, p. 23.
Hemigalea hardwickii, Gray P. Z. S., p. 524 (1864); id. Cat. Carn. Mamm., p. 57; Thomas P. Z. S., 1886, p. 73.

Distribution.—Malay Peninsula, Sumatra, and Borneo.

a. Stuffed Malacca M. de Stow, 1843, A.S.B.

Genus ARCTOGALE.

Arctogale, Gray P. Z. S., p. 542 (1864).

Arctogale trivirgata.

Paradoxurus trivirgatus, Gray P. Z. S., p. 68 (1832); Temminck Monogr. Mamm., ii, p. 333, pl. lxiii.
Arctogale trivirgata, Blyndford P. Z. S., p. 789 (1885).

Distribution.—Java only.
The single specimen A. trivirgata is from Java, and seems to differ from A. leucotis in being smaller, having the three dark lines down the back much more distinct, and wanting the dark patch at the base of the ear. The skull also differs in being smaller, and the palate is not produced back so far as in A. leucotis.

a. Stuffed, skull Java W. Rutledge, 1870.

Arctogale leucotis.

Paradoxurus stigmaticus, Temminck Esquis. Zool., p. 120 (1853); Jentink Notes Leyd. Mus., vii, p. 35; id. ibid, xi, p. 23.
Paradoxurus trivirgata, apud Blyth Cat. no. 150, p. 47 (1863).
p. 75.
Arctogale leucotis, Blanford P. Z. S., p. 789 (1885); Thomas P. Z. S., 1886,
p. 73; Blanford Mammals, p. 115; Anderson F. Linn. Soc., xxi, p. 338.

Small Palm Civet; Na-zwet-phyoo, Arakan; Kyoung-na-ga in Tenasserim, Kyoung-na-rwek-phyoo, Burmese.

Distribution.—Sikkim, Arakan, Burma, Malay Peninsula, Sumatra and Borneo.

There has been some confusion with regard to the species of Arctogale which, according to Blanford (P. Z. S., 1885, p. 789), are two in number, Arctogale trivirgata, Gray, confined to Java, and Arctogale leucotis, Horsf. (= A. stigmatious of Temminck), found in the Malay Peninsula, Borneo, Sumatra and stretching up through Arakan to Darjeeling, whence there is a skin in the Museum “a” which is probably referable to this species though, in the absence of the skull, it is not possible to make an authoritative assertion.

The specimens “f,” “g” and “h” were all identified by Blyth as A. trivirgata, of these “g” and “h” seem to accord better with A. leucotis and have been re-named so; the third “f” is from Malacca and is larger and of a darker colour, and wants the black patch at the base of the ear, so that it is possible that it will turn out to be a new species.

<p>| | | | | | | | |</p>
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Skin</td>
<td>Darjeeling</td>
<td>Dr. Stewart 1856, A. S. B. Museum Collector, 1873.</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>b.</td>
<td>Skin, skull</td>
<td>Moulmein dist.</td>
<td>No history.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>c.</td>
<td>Skin, skull</td>
<td>...</td>
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<td>d.</td>
<td>Stuffed, skull</td>
<td>...</td>
<td>F. Skipwith, 1845, A. S. B.</td>
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<tr>
<td>e.</td>
<td>Stuffed, skull</td>
<td>Arakan</td>
<td>Sir A. Phayre, 1846, A. S. B.</td>
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<tr>
<td>f.</td>
<td>Stuffed, skull</td>
<td>Malacca</td>
<td>Rev. F. T. Lindstedt, 1846, A. S. B.</td>
<td></td>
<td></td>
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<tr>
<td>g.</td>
<td>Stuffed</td>
<td>Rangoon</td>
<td>Zoological Gardens, 1878.</td>
<td></td>
<td></td>
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<tr>
<td>h.</td>
<td>Stuffed, skull</td>
<td>Malacca juv.</td>
<td>Rev. F. T. Lindstedt, 1847, A. S. B.</td>
<td></td>
<td></td>
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<tr>
<td>i.</td>
<td>Skull</td>
<td>...</td>
<td>No history, A. S. B.</td>
<td></td>
<td></td>
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<tr>
<td>k.</td>
<td>Skeleton</td>
<td>...</td>
<td>Zoological Gardens.</td>
<td></td>
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<tr>
<td>l.</td>
<td>Skin</td>
<td>King Isle, Mergui</td>
<td>J. Anderson. 7-2-82.</td>
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</tbody>
</table>

Genus PARADOXURUS.

Paguma, Gray P. Z. S., p. 95 (1831). Type, P. larvatus.
Type, P. hermaphroditus.

Key of the Indian Species.

a. The bony palate extends less than 2½ inches behind the posterior molars; vibrissae in general dark coloured.
b. Colour fulvous, ashy or black; the anterior palatine foramina, only extending as far as the canines.

c. Teeth moderate; upper sectorial '30 inches long by '25 inches wide.  

c². Teeth very large; upper sectorial '39 inches long by '33 inches wide.  
**P. macrodus**, p. 246.

b². Colour dark brown, fur grizzled, not glossy, with brown tips; anterior palatine foramina extending to opposite the anterior premolars.  
**P. jerdoni**, p. 246.

b³. Colour rusty red throughout.  

a² The bony palate extends more than '25 inches behind the posterior molars; vibrissae in part at least conspicuously white.

d. Colour gray or fulvous; head markings indistinct; skull 4'5 to 4'75 inches long.  

d². Colour brown or rufous; head markings generally distinct brown and whitish, a broad pale band across forehead or whole face whitish; skull about 5 inches long.  
**P. leucomystax**, p. 248.

Paradoxurus hermaphroditus.

*Var A.—typicus.*

Viverra hermaphroditica, Schreber Säugeth., iii, p. 426 (1778).
MAMMALIA.

Paradoxurus fasciatus, Gray P. Z. S., p. 536 (1864).

Var. B.—strictus.


Var. C.—niger.

Viverra niger, Desmarest Mamm., p. 208 (1820).
Paradoxurus pennanti, Gray P. Z. S., p. 66 (1832).
Paguma bondar, Horsfield Cat. Mamm. E. I. Mus., p. 68 (1851).
Paradoxurus hermaphroditus, apud Gray P. Z. S., p. 532 (1864).
Paradoxurus musanga, apud Blyth Cat. no. 148, p. 46 (1863); Jerdon Mamm., p. 125 [pt.]

The Toddy Cat or Palm Cat; Lakati also Jharka kutta, Hindustani; Bhondor, Bengali; Menuri, Deccan; Ud, Maharrat; Kera bek, Canarese; Manu pilli (tree cat), Telegu; Marra pilli, Malayalam; Oogoodova, Cingalese; Kyoung woon bouk, Arakan and Burmese; Jymabel (Walker), Assamese.

Distribution.—The typical variety is found throughout Burma, Siam, the Malay Peninsula, and the Islands of Sumatra, Borneo and Java; var. strictus seems to be confined to the Sikkim Terai and Assam; var. niger is found throughout India proper, from the Himalayas southwards, including Ceylon, becoming rarer towards the north-west and in the east in Lower Bengal, where it mixes with the typical variety.

Blanford in his monograph of the genus Paradoxurus (P. Z. S., 1885, p. 780) divided the common toddy cat into two distinct species; it seems however more in accordance with the facts to recognize the two species only as geographical races; since,
although the toddy cat of Southern India is fairly distinguishable from that of the Malay Peninsula, the forms met with in Lower Bengal are intermediate between the two.

The typical variety is distinguished by the marked longitudinal stripes down the back; the hill variety (var. strictus), by its darker colour, more distinct spots, and smaller size, the Indian variety (var. niger) by the absence of definite stripes and spots which are replaced by dusky patches.

### Var. A.—typicus.

| a. | Skin | ...... | W. Rutledge. |
| b. | Skin, skeletal | Calcutta | H. Philips. |
| c. | Skin, skull | Midnapore jungles | Zoological Gardens. |
| d. | Skin, skeletal | ...... | W. Rutledge. |
| e. | Skin, skull | Calcutta | Rajah R. Mullick. |
| f. | Skin, skeletal | Calcutta | Rajah R. Mullick. |
| g. | Stuffed | Calcutta | Purchased, 1870. |
| h. | Stuffed | Calcutta | J. Hinder, 1868. |
| k. | Skin, skull | Calcutta | Purchased, 1870. |
| l. | Skin, skull | Calcutta | Purchased, 1870. |
| m. | Stuffed | Calcutta | Purchased, 1870. |
| n. | Skin, skull | King Isle, Mergui, 31-1-82 | J. Anderson. |
| o. | Skin | King Isle, Mergui, 10-2-82 | J. Anderson. |
| p. | Skin | King Isle, Mergui, 1-2-82 | J. Anderson. |

### Var. B.—strictus.

| a. | Skin | ...... | Zoological Gardens. |
| b. | Skin | Dikrang, Assam | H. H. Godwin Austen. |
| c. | Stuffed | Assam | J. Anderson, 1870. |

### Var. C.—niger.

| a. | Skull | ...... | No history. |
| b. | Skin, skull | Calcutta | Purchased. |
| c. | Skin, skull | (Kitten of "b"). | T. Galaffe. |
| d. | Skin, skull | ...... | E. V. Westmacott, 1868. |
| e. | Skin | Paresnath, Bengal | A. Barclay, 1878. |
| f. | Skin | Goona, C. I. | C. Horne, 1864, A.S.B. |
| g. | Skin | Benares, N.-W.P. | Zoological Gardens. |
| h. | Skin, skeletal | Kolla Ghat, Bengal | Museum Coll. |
| j. | Skin, skull | Museum compound | W. Rutledge. |
| k. | Skin, skull | Calcutta. | Babu P. K. Shaw, 1863, |
| l. | Skin, skull | Rangoon ? | A.S.B. |
Paradoxurus macrodus.


Distribution.—Malay Peninsula.

Among the specimens of Paradoxurus belonging to the old collection of the Asiatic Society are four obtained from Malacca, identified by Blyth as Paradoxurus musanga, on examining the skulls, however, it was at once seen that these specimens were really Paradoxurus macrodus of Gray, only known hitherto from a single skull in the British Museum (Blanford P. Z. S., 1885, p. 801). In external characters this species does not differ appreciably from Paradoxurus hermaphroditus, but the skulls are at once distinguished by the large size of the teeth.

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Museum</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stuffed, skull</td>
<td>Malacca</td>
<td>E. Lindstedt, A.S.B.</td>
</tr>
<tr>
<td>b. Stuffed, skull</td>
<td>Malacca</td>
<td>E. Lindstedt, A.S.B.</td>
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<tr>
<td>c. Stuffed, skull</td>
<td>Malacca</td>
<td>E. Lindstedt, A.S.B.</td>
</tr>
<tr>
<td>d. Stuffed, juv.</td>
<td>Malacca</td>
<td>E. Lindstedt, A.S.B.</td>
</tr>
<tr>
<td>e. Skeleton</td>
<td>Shevaroy hills</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>f. Skeleton</td>
<td>Shevaroy hills</td>
<td>Zoological Gardens.</td>
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</tbody>
</table>

Paradoxurus jerdoni.


Distribution.—Southern India, Madura Hills (Blanford), and Nilgiris.

This species of Paradoxurus lately described by Blanford (P. Z. S., 1885, p. 613), is at once distinguished from P. hermaphroditus by the length of the anterior palatal foramina which extend back to a line drawn through the middle of the 1st pair of pre-
molars. The tip of the tail in the single specimen in the Museum is black, not white as described and figured by Blanford.

\[ a. \text{ Skin, skull} \quad \text{Ootacamund, 2-88} \quad \text{J. Ross.} \]

**Paradoxurus aureus.**


Coolla wedda, Cingalese.

**Distribution.**—Ceylon.

\[ b. \text{ Skin} \quad \text{Ceylon (West Prov.)} \quad \text{Colombo Museum.} \]

\[ c. \text{ Skin} \quad \text{Ceylon} \quad \text{E. L. Layard, 1849, A.S.B.} \]

\[ d. \text{ Skin} \quad \text{Ceylon} \quad \text{E. L. Layard, 1849, A.S.B.} \]

\[ \text{E. L. Layard, 1849, A.S.B.} \]

**Paradoxurus grayi.**

*Paradoxurus grayi*, Bennett P. Z. S., p. 118 (1835); Blyth *Cat.* no. 154, p. 48; Jerdon Mamm., p. 128; McMaster Notes on Jerdon, p. 37; Blyth *J. A. S. B.*, xlv, Burma List, p. 26; Spearman Burma Gasett., p. 549; Sterndale Mamm. Ind., p. 217; Ball Stray Feathers, ii, p. 369; Blanford P. Z. S., 1885, p. 803; id. Mammals, p. 112.


*Paradoxurus tytleri*, Tytler *J. A. S. B.*, xxxiii, p. 188 (1864).


**Distribution.**—The Himalayas from Simla to Assam, Arakan and the Andamans; Chota Nagpore? (Ball) Northern Circars? (Masters).

*Paradoxurus tytleri* was described by Tytler as the species of Palm Cat inhabiting the Andamans, it is represented in the Museum collection by several specimens, i.e., “1,” “m,” “n,” “p,” “q;” these specimens confirm, what has been already shown by Blanford, that this insular form in no way differs from the ordinary *P. grayi*.

Blyth named one of the specimens below “o” *P. laniger* of Hodgson, it does not agree, however, with the description of *P. laniger*, in which the tail is said to be \(\frac{1}{2}\) the length of the body and tapering; the tail of specimen “o” is quite as long as the body, and approximately of the same width throughout, and the
whole appearance of the skin accords with that of P. grayi; un-
fortunately the skull is missing.

a. Skin, skull .......................... No history.
b. Skin, skull .......................... Assam, A. W. Chennell, 1875.
c. Skin ................................. India Mus., London.
d. Skin ................................. Sikkim (Hodgson), India Mus., London.
e. Skin ................................. Sikkim, L. Mandelli, 1877.
f. Skin ................................. Sikkim, L. Mandelli, 1877.
g. Skin ................................. Chota Nagpore, V. Ball, 1876.
h. Stuffed ............................ Arakan, Sir A. Phayre, 1844, A.S.B.
i. Stuffed ............................ Arakan, Sir A. Phayre, 1844, A.S.B.
j. Stuffed ............................ Arakan, Sir A. Phayre, A.S.B.
k. Stuffed ............................ Andamans, R. C. Tytler, 1864, A.S.B.
l. Stuffed, skull ............................ Andamans, R. C. Tytler, 1864, A.S.B.
m. Stuffed, skull ............................ Andamans, Maharajah of Burdwan, 1858, A.S.B.

Paradoxurus leucomystax.

Distribution.—Malay Peninsula, Sumatra, Borneo and probably other islands but not Java (Blanford).

a. Skin, skeleton .......................... W. Rutledge, 1875.
b. Skin, skeleton .......................... India Mus., London.
c. Skin, skull .......................... Malacca (Cantor), Messrs. Lindstedt and Frith, 1843, A. S. B.
d. Stuffed, skull .......................... Malacca, Messrs. Lindstedt and Frith, 1843, A. S. B.
e. Stuffed, skull .......................... Malacca.
j. Stuffed, skull .......................... Malacca.
Paradoxurus laniger.


Distribution.—Thibet?

[No specimen in the Museum]

Genus ARCTICTIS.


Arctictis binturong.

Viverra binturong, Raffles Linn. Trans., xiii, p. 253 (1822).


Arctictis binturong, Temminck Monogr. Mamm., ii, p. 308 (1835); Cantor J. A. S. B., xv, p. 192; Horsfield Cat. E. I. Mus., p. 94; Gray Cat. Carn. Mamm., p. 58; Blyth Cat. no. 157, p. 49; Jerdon Mamm., p. 130; Mc Master Notes on Jerdon, p. 37; Blyth J. A. S. B., xlv, Burma List, p. 26; Spearman Burma Gazett., p. 550; Sterndale Mamm. Ind., p. 221; Blanford Mammals, p. 118.

Arctictis pencillatus, Müller Oor de Zoogdieren in Tam. Verhandl., p. 32 (1839).

The Binturong or Bear Cat; Myouk kya, Burmese.

Distribution.—The Himalayas from Simla to Assam, Burma, Siam, Malay Peninsula (Cantor), Java and Sumatra (Muller).

a. Skin Chittagong E. Sanders, Purchased, 1870.
b. Skin, skelet. ......... ......... Purchased, 1879.
c. Skin, skull ......... Zoological Gardens.
d. Skin, skull ......... W. Rutledge, 1878.
e. Skin juv. ......... W. Rutledge, 1882.
f. Skin, skull ......... Rajah R. Mullick, 1873.
h. Skin, skelet. ......... .........
i. Skeleton Arakan Sir A. Phayre, A. S. B.
j. Skeleton ......... .........
k. Skull ......... H. Falconer, 1854, A. S. B.
l. Skin, skull ......... Purchased, 1879.
m. Skeleton ......... Purchased, 1879.
n. Skull ......... No history, A. S. B.

Genus CYNOGALE.

Cynogale, Gray P. Z. S., p. 88 (1836).

Cynogale bennetti.


Distribution.—Malay Peninsula (Cantor), Sumatra and Borneo.

\[ a. \] Stuffed, skull Malayan Peninsula Rev. F. J. Lindstedt, 1845, A. S. E.

\[ b. \] Skin, skelet. W. Rutledge, 1882.

Genus EUPLECTES.


Eupleres goudoti.


Distribution.—Madagascar.

\[ a. \] Skin Madagascar Brit. Mus. [Ex.]

\[ b. \] Skelet. Madagascar Brit. Mus. [Ex.]

Genus HERPES.


Herpestes, Illiger Prodr., p. 135 (1811). Type, H. ichneumon.

Mangusta, Olivier apud Fischer Syn. Mamm., p. 162 (1829).

Mungos, Ogilby P. Z. S., p. 103 (1835). Type, H. vitticollis.


Calogale, Gray t. c., p. 560 (1864). Type, H. auropunctatus.

Calictis, Gray t. c., p. 564 (1864). Type, H. smithi.

Taeniogale, Gray t. c., p. 569 (1864). Type, H. vitticollis.

Ouychogale, Gray t. c., p. 570 (1864). Type, H. maccartiae.

Key of the Indian Species.

\[ a. \] No bands or stripes on the body; colour more or less concolorous.

\[ b. \] Small (skull under \( \frac{1}{2} \) inches long), fur adpressed; hairs
on the posterior part of the back and commencement of the tail not longer than those of the rest of the body.


b². Large (skull over 3 inches long), fur not adpressed; hairs on the posterior part of the back considerably elongated.

c. Tail black tipped.  

c². Tail without black tip.

e. Hair with 3 very narrow light bands, about $\frac{3}{4}$ the length of the dark bands.

f. Very dark, under-fur dark-brown.  
   **H. fuscus**, p. 255.

f². Light yellowish; tail-tip pure yellow.  
   **H. fulvescens**, p. 255.

e². Hair with light and dark bands of equal length.  

a². With streaks behind the ears.

h. Black streak behind the ear; limbs dark; tip of tail black; red on hind-quarters.  
   **H. vitticollis**, p. 256.

h². White streak behind the ear; tail not black tipped; back with white tips to the fur; below chest and limbs reddish brown.  
   **H. urva**, p. 256.

**Herpestes auropunctatus.**

*Var. A.—typicus.*


*Herpestes pallipes,* Blyth *J.* A. S. B., xiv, p. 346 (1845).


*Herpestes javanicus,* Blyth *J.* A. S. B., xxi, p. 349 (1852).


*Calogale nepalensis,* Gray *Cat.* Carn. Mamm., p. 158 (1869).
MAMMALIA.

Var. B.—birmanicus.

Herpestes birmanicus, Blanford Mammals, p. 122 (1888).

Mush-i khourma, Persian.

Distribution.—South-west Persia (Blanford), Sind (Blanford), Kandahar (Hutton), and the lower ranges of the Himalayas and their neighbouring plains from Kashmir to Sikkim, including Lower Bengal.

The Burmese variety is found in Assam, Upper and Lower Burma and perhaps the Malay Peninsula.

There is now in the Museum a very fair series of Herpestes persicus of Gray; Anderson in his Zoological Researches seems to doubt whether this species is separable from H. auropunctatus; he, however, asserts that the skull of Herpestes persicus is less elongated with a broader and shorter muzzle, wider palate and broader frontal area between the orbits; all these differences seem to break down on examining a larger series of skulls, such as the Museum now possesses, and it is quite impossible to find any point of distinction between these two so-called species.

Thomas has also separated the Assamese and Burmese small mongoose as a distinct geographical race, and Blanford has raised this race to the dignity of a species.

There seems no ground for specifically separating these two races, as the distinction seems to rest merely on the slightly larger size and darker colour of the Burmese race; the hind-foot and tarsus of the four representatives of this race in the Museum varies from 1'95 to 2'05 inches, while those of the typical race run up to 2'05 as well.

Var. A.—typicus.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Scientific Authority</th>
<th>Year</th>
<th>Other Information</th>
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<tbody>
<tr>
<td>a. Skin</td>
<td>Pind Dadan Khan, Punjab</td>
<td>W. Theobold, 1867, A.S.B.</td>
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<tr>
<td>e. Skin, skull</td>
<td>Agra, N.-W. P.</td>
<td>F. Day [P.], 1876.</td>
<td>No history.</td>
<td></td>
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<tr>
<td>g. Skin</td>
<td>Agra, N.-W. P.</td>
<td>F. Day [P.], 1876.</td>
<td>No history.</td>
<td></td>
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<tr>
<td>l. Skin</td>
<td>Calcatta</td>
<td>F. Day [P.], 1876.</td>
<td>J. Anderson, 1869.</td>
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<tr>
<td>m. Skin, skull</td>
<td>Calcatta</td>
<td>F. Day [P.], 1876.</td>
<td>J. Anderson, 1869.</td>
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<tr>
<td>n. Skin</td>
<td>Calcatta</td>
<td>F. Day [P.], 1876.</td>
<td>J. Anderson, 1869.</td>
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</table>
HERPESSTES.

o. Skin Mutlah, Bengal Mus. Coll., 1870.
q. Skull Manbhoom, Bengal J. Anderson, 1877.
r. Skeleton ♂ ...... Calcutta Zoological Gardens, 1877.
s. Skeleton ♂ ...... J. Anderson.
t. Skeleton ♂ ...... J. Anderson.
u. Skeleton ...... Purchased.
w. Skeleton ♂ Calcutta J. Anderson, 1865.
x. Stuffed Calcutta E. Blyth, 1843, A.S.B.
y. Stuffed Calcutta E. Blyth, 1843, A.S.B.
z. Stuffed juv. Calcutta E. Blyth, 1843, A.S.B.
a2. Stuffed juv. Calcutta E. Blyth, 1843, A.S.B.
b2. Stuffed Middapore R. Rolle, A.S.B.
c2. Stuffed Middapore R. Rolle, A.S.B.
d2. Stuffed Agra, N.-W. P. Dr. Stewart, A.S.B.
e2. Stuffed Agra, N.-W. P. Dr. Stewart, A.S.B.
f2. Alc. skull ♂ Rajanpur, Punjab E. Sanders.
g2. Alc. skull ♂ Sind Karachi Museum.

Var. B.—birmanicus,

a. Skin Cachar Mus. Coll.
b. Skull Cachar Mus. Coll.
c. Skin, skull Chittagong D. Thorburn, 1864, A.S.B.
d. Skin, skull Sawaddy, Burma J. Anderson.

Herpestes mungo.

Viverra mungo, Gmelin Syst. Nat. i, p. 84 (1788).
Herpestes griseus, Desmarest Mamm., p. 212 (1820).
Mangusta grisea, id. ibid.
Mangusta mungos, Elliot Madras Fourn., x, p. 102 (1839).

Herpestes andersoni, Murray Zool. Sind, p. 34 (1884).
Herpestes mungo, Blanford P. Z. S., p. 631 (1887); id. Mammals, p. 123.

The Gray Mongoose; Mungli, Canarese; Mongus, Mahratti; Moogatea, Cingalese; Nyul, Hindustani; Benji, Bengali; Mungi, Mungisu-yentawa, Telegu; Koral, Gonds; Baj or Bijn, Behar; Newera, Nore, Sind.

Distribution.—India generally, from the Himalayas southwards, i.e., Kashmir (Hugel), Punjab (I. M.), Deccan (Sykes), Cutch (Stoliczka), Sind (Murray), Travancore (I. M.), Assam also Ceylon (Kelaart) and has been recorded from the Malay Peninsula, but was probably imported there.

b-d. 3 Skins *Agra, N.-W. P.* Agra Museum, 1870.
e-g. 3 Skins Travancore Purchased.
h. Skin Travancore Rev. T. Baker, A.S.B.
j-m. 4 Skulls Banda, N.-W. P. J. Cockburn, 1881.
o. Stuffed ..... No history, A.S.B.
p. Stuffed ..... No history, A.S.B.
q. Stuffed *Bengal* G. Finch, 1848, A.S.B.
r. Stuffed ..... No history, A.S.B.
s. Stuffed *Calcutta* Purchased.
t. Stuffed Assam H. P. Pierre.
u. Skin Deccan (Sykes) India Mus., London.
v. Skin Shevaroy Hills, Md. Mrs. W. King.
w-x 2 Skins *Bangalore* Mus. Coll., Jaffa.

Var. — ferrugineus.

a. Skin, skull Larkhana, Sind, F. Day [P ], 1876.
   [Type of H. ferrugineus, Blanford.]

b. Skin, skull Bushire, Persian Gulf Karachi Mus. [Ex.]
c. Stuffed ..... No history, A. S. B.

Herpestes smithi.

Herpestes eliotii, Blyth J. A. S. B., xx, p. 162 (1851).
HERPESTES.


Herpestes monticolus, Jerdon Mamm., p. 135 (1867).

The Ruddy Mongoose; Konda yentava, Telegu; Erima-kiri-pilai, Tam.; Deeto, Cingalese.

Distribution.—Over the whole of India but rare, from Kashmir southwards, also Ceylon.

c. Stuffed & Singhbhoom V. Ball, 1869.

Herpestes fuscus.


Distribution.—Travancore and Nilgiri Hills (Jerdon); stated by Anderson to be found also in Ceylon.

a. Stuffed Ootacamund, Md. T. C. Jerdon, 1842, A.S.B.

Herpestes fulvescens.

Herpestes fulvescens, Blyth J. A. S. B., xx, p. 162 (1851); id. ibid, xxi, p. 348; id Cat., p. 52; Blanford Mammals, p. 127.

Herpestes flavidens, Blyth J. A. S. B., xx, p. 184 (1851); Kelaart Prodr. Faun. Zeylan., p. 44.

Cynictis maccarthiae, Gray P. Z. S., p. 131, pl. xxxi (1851).

Onychogale maccarthiae, Gray P. Z. S., p. 570 (1864).


Herpestes ceylanicus, Nevill Taprobanian, i, p. 62 (1885).

Ram-mugatea, Cingalese.

Distribution.—Ceylon.

a. Stuffed, skull Ceylon E. F. Kelaart, 1852, A.S.B.
b-c. 2 Skulls.............. No history, A.S.B.
c. Skin, skull Ceylon Colombo Mus., 1888.

Herpestes brachyurus.


Distribution.—Malay Peninsula and Borneo.

a. Stuffed Malay Peninsula C. Huffnagle, 1846, A.S.B.
b. Skull Malay Peninsula C. Huffnagle, 1846, A.S.B.
c. Skin ......... Zoological Gardens, 1882.
Herpestes vitticollis.


Loco moogatea, Cingalese.

Distribution.—Southern India, Malabar Coast (Jerdon), and Ceylon (Kelaart).

a. Skin Travancore Purchased.
b. Stuffed, skull Malabar T. C. Jerdon, 1846, A.S.B.
c. Stuffed Ceylon E. L. Layard, 1848, A.S.B.
d. Skull, juv. No history, A.S.B.
e. Skin Ceylon Colombo Museum.

Herpestes urva.

Mesobema cancivora, Hodgson J. A. S. B., x, p. 910 (1841).

The Crab-eating Mongoose; Urva, Nepalese; Mywe-ba, Burmese.

Distribution.—Himalayas from Nepal (Hodgson) to Assam, Arakan, Burma, to North Tenasserim and South China (Swinhoe).

b. Skin, skelet. .... Zoological Gardens, 1881.
c. Skin .... G. King, 1878.
d. Skin, skelet. .... Zoological Gardens, 1878.
e. Stuffed, skull Arakan Sir A. Phayre, 1843, A.S.B.
h. Skin Assam O. L. Fraser.

Herpestes caffer.

Herpestes caffer, Blyth Cat. no. 169, p. 52 (1893); Thomas P. Z. S., 1882, p. 66.
HERPESTES. 257

**Distribution.**—Africa, south of the Sahara.

1. Stuffed South Africa E. L. Layard, 1859, A.S.B.
2. Stuffed South Africa E. L. Layard, 1859, A.S.B.
3. Skull, skeleton ... No history.

**Herpestes galera.**

Athylax vangire et paludus, *Gray P. Z. S.*, p. 557 (1864)*.
Herpestes paludus, *Blyth Cat. no. 160, p. 52 (1863).

**Distribution.**—Africa, south of the Sahara.

1. Stuffed South Africa E. L. Layard, 1859, A. S. B.

**Herpestes gracilis.**

Herpestes gracilis, *Rüppel N. Wirbelth.*, p. 29, pl. viii, fig. 2 (1835); *Thomas P. Z. S.*, 1882, p. 68.
Herpestes muttigel, *Rüppel t. c.*, p. 29, pl. ix, fig. 1 (1835); *Blanford Abyssinian*.
Herpestes mutschellschela, *Heuglin Reise N. O. Afrika*, ii, p. 43 (1877)*.

**Distribution.**—Africa, south of the Sahara.

1. Skin female Adegraf Tigre, Abyssinia, W. T. Blanford, 1868. 8,000 ft.
b. Skin ♀ Adegrat Tigre, Abyssinia, W. T. Blanford, 1868. 8,000 ft.
c. Skin ♀ Senafé Tigre, Abyssinia, W. T. Blanford, 1868. 7,500 ft.
d. Skin, skelet. ♀ Senafé Tigre, Abyssinia, W. T. Blanford, 1868. 8,000 ft.

Genus CROSSARCHUS.


Crossarchus fasciatus.

Viverra ichneumon, pt. Schreber Säugeth., iii, p. 430, pl. cxvi (1778).
Herpestes mungo, Desmarest Mamm., i, p. 211 (1820).
Ichneumon tenionotus, A. Smith S. African Quart. Journ., ii, 114 (1835)*.
Mungos fasciatus, Blyth Cat. no. 160, p. 50 (1863).

Distribution.—South-East Africa, Caffiraria to Mozambique.

a. Skin, skelet. ♀ ...... Zoological Gardens, 1883.
b. Stuffed Somali land Messrs. Burton and Speke, 1855, A.S.B.

Genus PROTELES.


Proteles cristatus.

Viverra cristata, Sparman Resa till Gota Hopps Udden, p. 581 (1783)*.
Proteles cristatus, Blyth Cat. no. 139, p. 44 (1863); Flower P. Z. S., 1869,
p. 474, pl. xxxvi.

Distribution.—South Africa, Cape of Good Hope.

a. Skin, skull South Africa E. L. Layard, 1859, A.S.B.

Genus HYAENA.

Crocuta, Gray P. Z. S., p. 525 (1868). Type, H. crocuta.

Hyaena striata,

Hyaena striata, Zimmermann Geogr. Geschichte, ii, p. 256 (1780); Adams P. Z. S., 1858, p. 514; Blyth Cat. no. 138, p. 44; Tristram P. Z. S.,
1866, p. 91; Jerdon Mamm., p. 118; Gray Cat. Carn. Mamm., p. 212;
HYAENA.


Hyaena orientalis, Tiedemann Zool., i, p. 350 (1808).


The Striped Hyaena; Kirba, Kutkirba, Canarese; Turras, Mahrathi; Hondar, Lakrabagha, Jhirak, Bhagiah, Hindustani; Lankrabagh, Bengali; Renhra, Central India; Cherrag, Sind.

Distribution.—North Africa as far as the Senegal. Asia Minor, Palestine (Tristram), Euphrates valley, Baluchistan, Persia (Blanford), and Transcaspia. In India common in dry open country, i.e., Sind (Murray), Kutch (Stoliczka); Kumaon submountain tracts (Atkinson), Southern India (Sykes and Elliot), and Assam? (Walker). Not found in Ceylon or east of the Bay of Bengal.

| a. Skin, skull | ....... | Zoological Gardens, 1876. |
| b. Skin | ....... | Purchased, 1879. |
| c. Stuffed | ....... | Barrackpore Menagerie, 1869. |
| e. Stuffed | juv. | L. C. Mullins, 1867. |
| f. Stuffed, skull | Midnapur, Bengal | W. Rutledge, 1874. |
| g. Skeleton | ....... | Zoological Gardens, 1878. |
| h. Skeleton | ....... | No history. |
| j-l. 3 Skulls | ....... | A. S. B. |
| m. Skull | Agra, N.-W. P. | J. Cockburn, 1881. [P.] |
| n-o. 2 Skulls | Banda, N.-W. P. | J. Cockburn, 1881. |
| p. Skull | Manbhoom, Bengal | R. C. Beavan, 1865, A.S.B, |
| r. Skin | nr. Beares, N.-W. P. | No history. |
| s-v. 4 Skulls | Banda dist., N.-W. P. | J. Cockburn, 1881. |

Hyaena crocuta.


Hyaena capensis, Desmarest Mamm., p. 216 (1820).


Distribution.—Africa, south of Sahara.

| a. Skin, skull | Abyssinian Highlands | W. T. Blanford. |
| b. Skull | Somali land | Messrs. Speke and Burton, A.S.B. |
Genus **CUON.**


The species of the family Canidae have been arranged as far as possible according to the system adopted by Prof. Huxley in his paper on the Canidae (P. Z. S., 1880, p. 238); beginning with the higher Thoids, the Wild Dogs and Wolves, then follow the Jackals and their allies, Canis procyonides being the lowest true Thoid represented; the Alopecoid Series follows, beginning with the most highly developed foxes, Vulpes alopec and Vulpes fulvus and gradually descending to the microdont V. bengalensis and V. caama.

**CUON dukhunensis,**  
*Canis javanicus, Desmarest Mamm.,* p. 198 (1820).  
*Canis familiaris, var. sumatrensis, Hardwicke Linn. Trans.,* xiii, p. 235, pl. xxiii (1829).  
*Canis dukhunensis, Sykes P. Z. S.,* p. 100 (1831); Blyth *J. A. S. B.,* xi, p. 591.  
*Canis familiaris var., Elliot Madr. Journ.,* x, p. 100 (1839).  
*Chrysaeus scylax,* id. *ibid,* p. 179 (1839).  
*CUON dukhunensis, Horsfield Cat. E. I. Mus.,* p. 73 (1851); *Gray Cat. Carn. Mamm.,* p. 186; *Blanford Mammals,* p. 143.  
*CUON sumatrensis, Horsfield Cat. E. I. Mus.,* p. 79 (1851); *Gray Cat. Carn. Mamm.,* p. 184.  
*CUON rutilus,* *Blyth Cat.,* p. 37 (1861); *Jerdon Mamm.,* p. 145; *Blanford J. A. S. B.,* xxxvi, p. 191; *McMaster Notes on Jerdon,* p. 42; *Atkinson N. W. P. Gazette,* xi, p. 21; *Lydekker J. A. S. B.,* xlii, p. 285; *Sterndale Mamm. Ind.,* p. 239; *Spearman Burma Gazette,* p. 547; *Kinloch Large Game Shooting,* i, p. 17, with plate.

The Indian Wild Dog; Kohiya, Dhole, Jungli kutta, Hindustani; Kolsa, Mahratti; Buansu, in the Himalayas; Tawkhwe, Burmese; Ram hun, Kashmir; Sona kutta, Central India; Ban kutta, North India; Réza kutta, Adavi kutta, Telegu; Shennai, Malayalam; Eram naiko, Gond; Saddaki, Tibetan (Ladak); Suhutum, Lepcha; Paoho, Bhotea; Konaug, Assamese.

**Distribution.**—India generally, i.e., Gilgit (Scully), West Himalayas (Adams), Central and Southern India (Jerdon), Nepal (Hodgson), Assam (Walker), Burma (Spearman), Malay Peninsula (Cantor), Sumatra (Hardwicke), Java and Borneo (Temminick).
There are said to be three varieties of Red wild dogs, which have been all classed together in the genus Cuon, i.e., C. dakhunensis (=primævus), C. javanicus (=C. familiaris var. sumatrensis and C. rutians), and finally, C. alpinus.

Following Scully, C. alpinus has been separated since it has a short upper sectorial compared with C. dakhunensis. The Malayan form is considered distinct by Mr. Blanford in his recent work on Indian Mammals; it is said to be smaller and rather darker coloured. The above synonymy, however, refers to the Malay as well as the Indian variety.

Cuon alpinus.


Distribution.—Siberia, Turkestan (Severtzoff), Amurland (Schrenck) and Thibet (I. M.), in fact the highlands of Central Asia. The specimen below may possibly be referred to Cuon dakhunensis.

a Stuffed Thibet Capt. Munro., 1845, A. S. B.

Genus CANIS.


Oxygous, Hodgson J. A. S. B., x, p. 908 (1841). Type, Canis aureus.

Key of the Indian Species.

a. Skull generally exceeds 7½ inches in length; head and body 3 ft. to 3 ft. 6 in.; legs long.
b. The carnassial tooth exceeds in length the two posterior molars, a black stripe down the forelegs.

**C. lupus**, p. 262.

b². The carnassial is either of the same length or else shorter than the two posterior molars.

c. Fur smooth, thin and fulvous, little or no under fur.

**C. pallipes**, p. 263.

c². Fur soft and woolly, colour pale and isabelline, owing to the absence of black-tipped hairs on the flanks.

**C. laniger**, p. 262.

a². Skull generally less than 6 inches in length; head and body about 2 feet 6 inches; legs short.

**C. aureus**, p. 264.

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**Canis lupus.**


**Distribution.**—The Palaearctic region generally, from France to Amurland, extending to Persia, Afghanistan, Baluchistan and Gilgit, and probably found in Western Sind and the Punjab.

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**Canis laniger.**


Chanko and Chanko nagpo, (black var.) Thibetan.

*Distribution.*—Eastern (Hodgson) and Western Thibet (Kinloch) including Ladak.

Mr. Blanford in his recent work on Indian Mammals considers Canis laniger to be conspecific with Canis lupus; the differences as described are certainly not striking, but probably as marked as the differences between other species; the difference formerly pointed out by Blanford, with regard to the sectorial being shorter than the two molars, is now said by him to be not constant.

The skin "h", which is in a very bad state of preservation, is the skin of the black wolf of Thibet (c. f. *Blyth J. A. S. B.*, xvi, p. 1176,) which was afterwards described by Mr. Sclater as *Canis niger*, from living specimens in the London Zoological Gardens.

It is probable that this black form is merely a variety of the typical form, similar to that of the European wolf which was described as Canis lycaon by Schreber.

| a. Skin, skull | Nanskar, Thibet | J. B. Lee. |
| b. Skin       | Thibet         | G. T. Lushington, A. S. B. |
| c. Stuffed    | Thibet         | G. T. Lushington, A. S. B. |
| d-g. 4 Skulls | Thibet         | G. T. Lushington, A. S. B. |
| h. Skin       | Thibet         | R. Strachey, 1847, A. S. B. |
| (black var.)  |               | S. J. Stone. |

**Canis pallipes.**


The Indian wolf; Tola, Canarese; Landga, Deccani; Bheryanekra, Hundar, Hurar, Hindustani; Bigana, Bundelcund; Torala, Telegu; Buggyar, Sind.

*Distribution.*—The Indian wolf is generally distributed over the whole of the Indian peninsula south of the Himalayas, more especially in the open country. Is recorded from Sind (Murray), Sambhar Lake (Thomas), Cutch (Stoliczka), Central Provinces (Jerdon) and South India (Elliot and Sykes).

| a. Skin, skull | Zoological Gardens. |
| f juv.        |                  |
MAMMALIA.

b. Skin ....... Purchased, 1870.
c. Skin Pind Dadun Khan, Punj. W. Theobald, 1854, A. S. B.
d. Skin Chymbassa, Bengal S. R. Tickell, 1848, A. S. B.
e. Skin ....... J. Anderson.
f. Stuffed ....... Purchased, 1870.
g. Stuffed ....... J. Anderson.
k. Skin, skull, ....... Zoological Gardens.
l. Skin, skull, ....... Zoological Gardens.
m. Skin & Juv. Shiurajpur, N.-W.P. J. Cockburn [P.]
o. Skull ... Banda, N.-W. P. J. Cockburn.
r. Skin & Purneah, Bengal ... Zoological Gardens.
s. Skin ....... Purchased, 1870.
t. Afc, & Motihari dist., Behar L. Cameron, 1882.
x. Skull ....... Agra Museum [Ex.]

Vulpes lagopus, Audubon and Bachman Quad. N. Amer., ii, p. 89 (1829)*; Blyth Cat. no. 129.

Distribution.—Arctic regions of both continents,
a. Skin, skull ....... W. Rutledge 1874.
b. Stuffed Arctic regions Christiania University, 1844, A. S. B.
c. Skull ....... Royal Acad. Copenhagen, 1839, A. S. B.
d. Skull & Arctic regions W. Rutledge.
e. Skull & Lapland Stockholm Mus. [Ex.]

The Jackal; Nari, Canarese; Kolah, Shighal, Deccani and Mahratt; Nareeia, Cingalese; Gidhur, Hindustani; Sheal, Sial, Shialu, Bengali; Srigal, Sanskar, Syar, Nepalese; Nakka, Telegu; Nerka, Gond; Amu, Bhotea; Tholuk, Mekranees; Mye-khwe, Burmese.

_Distribution._—South-East Europe, North Africa and Egypt, Asia Minor (Alston), Persia (Blanford), India, Assam, Burma (Blyth and Spearman); in India is found everywhere from the Himalayas to Cape Comorin and also in Ceylon; in Burma it has been recorded as far south as Moulmein.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Location</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Agra, N.-W. P.</td>
<td>Agra Mus. 1870 [Ex.]</td>
</tr>
<tr>
<td>b. Skin</td>
<td>Agra, N.-W. P.</td>
<td>Agra Mus. 1870 [Ex.]</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Manbhoom</td>
<td>R. C. Bavan</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Babu H. Mullick</td>
<td></td>
</tr>
<tr>
<td>e. Skin</td>
<td>Zoological Gardens</td>
<td></td>
</tr>
<tr>
<td>f. Skin</td>
<td>Barrackpore Menagerie</td>
<td></td>
</tr>
<tr>
<td>g. Skin</td>
<td>Burma</td>
<td>J. Anderson</td>
</tr>
<tr>
<td>h. Skin</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>i. Skull</td>
<td>Nepal</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>j. Skull</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>k. Skull</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>l. Skull</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>m. Skull</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>n. Skull</td>
<td>Sadiya, Assam</td>
<td>J. Cockburn [P.]</td>
</tr>
<tr>
<td>o. Skull</td>
<td>Botanical Gardens, Calcutta</td>
<td>J. Anderson, 1873</td>
</tr>
<tr>
<td>p. Skull</td>
<td>Agra, N.-W. P.</td>
<td>J. Cockburn [P.]</td>
</tr>
<tr>
<td>q. Skull</td>
<td>Banda dist., N.-W. P.</td>
<td>J. Cockburn</td>
</tr>
<tr>
<td>r. Skeleton</td>
<td>No history</td>
<td></td>
</tr>
<tr>
<td>s. Stuffed</td>
<td>Calcutta</td>
<td>Purchased, 1870</td>
</tr>
<tr>
<td>t. Stuffed</td>
<td>Calcutta</td>
<td>W. Stalkart, 1843, A. S. B.</td>
</tr>
<tr>
<td>u. Stuffed</td>
<td>Calcutta</td>
<td>Maharaja of Burdwan, 1859, A.S.B.</td>
</tr>
<tr>
<td>v. Stuffed</td>
<td>Maharaja of Burdwan, 1859, A.S.B.</td>
<td></td>
</tr>
<tr>
<td>w. Skeleton</td>
<td>No history</td>
<td></td>
</tr>
<tr>
<td>x. Stuffed</td>
<td>Calcutta</td>
<td>No history, A. S. B.</td>
</tr>
<tr>
<td>y. Skeleton</td>
<td>Purchased</td>
<td></td>
</tr>
<tr>
<td>z. Skin</td>
<td>No history, A. S. B.</td>
<td></td>
</tr>
<tr>
<td>a. Skin</td>
<td>Shiraz, Persia</td>
<td>Sir O. B. C. St. John</td>
</tr>
<tr>
<td>b. Skin</td>
<td>Bampur, Baluchistan, 2,000 ft.</td>
<td>W. T. Blanford, 1872</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Ceylon</td>
<td>Colombo Museum</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Nepal</td>
<td>J. Scully</td>
</tr>
</tbody>
</table>
Canis mesomelas.

Canis mesomelas, Schreber Säugeth., iii, p. 370, pl. xcv (1778); Blanford Abyssinia, p. 237.

Distribution.—South and East Africa, Abyssinia and the Cape of Good Hope.

a. Skin, skull $\phi$ ...... Zoological Gardens.

Canis variegatus.

Canis variegatus, Cretzschmar Rüppell’s Atlas, p. 31, pl. x (1826); Blyth Cat., p. 40; Blanford Abyssinia, p. 238.

Distribution.—Upper Egypt, Nubia, and Abyssinia to Somaliland.

a. Skin $\phi$ Hulai, Abyssinia W. T. Blanford,
b. Stuffed Somaliland Messrs. Burton and Speke, 1855, A. S. B.

Canis procyonoides.

Canis procyonoides, Gray Illustr. Ind. Zool., ii, pl. i (1833); Schrenck Amurland Säugeth., p. 53.

Distribution.—Eastern Asia from Amurland to Canton, Japan (Temminck), but not Formosa.

a. Skin, skull $\phi$ ...... Zoological Gardens.

Canis familiaris.


Var.—dingo.

Canis familiaris var. australasiae, Esmaeust Mamm., p. 191 (1820).
Chrysaeus australiæ, H. Smith Jard. Nat. Libr., ix, p. 188, pl. x (1839).

Distribution.—Cosmopolitan in a domestic state; the dingo is confined to Australia, and may perhaps be considered a distinct species.
a. Skin Yunnan J. Anderson.
b. Skin Kashgar F. Stoliczka.
c. Skin ♀ Japan Dr. Tonnerre.
d. Skull India (pariah) G. T. Lushington, A. S. B.
e. Skull India (pariah) G. T. Lushington, A. S. B.
f. Skull India A. Masters, 1845, A. S. B.
g. Skull India (spaniel) A. Masters, 1845, A. S. B.
h. Skull Formosa R. Swinhoe, 1859, A. S. B.
i. Skull Amoy R. Swinhoe, 1859, A. S. B.
j. Skull (Bulldog ?) A. S. B.
l. Skin, skull ♀ India (Greyhound) J. Cockburn [P.]
m. Skull Allahabad, N.-W. P. J. Cockburn [P.]

Genus VULPES.


Key of the Indian Species.

a. Of large size, fur soft and thick, ears black, skull with large carnaisial teeth, brush white-tipped.

b. Large, tarsus about 6 inches; skull about 5½ inches in length, carnaisial teeth long.

V. alopex var. montanus, p. 268.

d². Smaller, tarsus 4 to 5 inches, skull about 4½ inches in length, carnaisial teeth short.

V. leucopus, p. 270.

a². Of small size, skull about 3½ inches, brush black-tipped, ears grey outside.

V. cana, p. 274.
MAMMALIA.

Vulpes alopex.

Var. A.—typicus.

Vulpes melanogaster, Pr. *Bon parte Iconog. Faun. Ital.* no. 1, pl. i (1832).

Var. B.—fulvus.


Var. C.—montanus.


The Mountain Fox; Loh of Kashmir; Wamu of Nepal.

*Distribution.*—The typical variety is found throughout the Palaearctic region from England to Siberia; var. fulvus is found throughout the Nearctic region in the States and Canada; and var. montanus is distributed over the Himalayas from Sikkim to Kashmir, Eastern Turkestan (Blanford), Candahar (Scully), Upper Burma (Anderson)?

The skulls of Indian foxes present little or no points of difference except in actual size, and in the proportions of the teeth, thus in a series formed by V. bengalensis and passing up through V. leucopus and V. griffithii to V. montanus there can be traced
(1) a gradual increase in size of the upper and lower sectorial, 
(2) a decrease in length and increase in breadth of \( m^1 \); this is 
well shown in the following table of measurements of 4 typical 
skulls of the four species, the total length of the skull being re-
duced in each case to 1,000 after Huxley’s method:—

<table>
<thead>
<tr>
<th>Species</th>
<th>Total length</th>
<th>p.m. 4 length</th>
<th>Length m.</th>
<th>Width m.</th>
<th>Length m.</th>
<th>Length of skull in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. montanus</td>
<td>1,000</td>
<td>110</td>
<td>70</td>
<td>96</td>
<td>128</td>
<td>5'50</td>
</tr>
<tr>
<td>V. griffithii</td>
<td>1,000</td>
<td>100</td>
<td>76</td>
<td>92</td>
<td>116</td>
<td>4'95</td>
</tr>
<tr>
<td>V. leucopus</td>
<td>1,000</td>
<td>96</td>
<td>75</td>
<td>88</td>
<td>117</td>
<td>4'70</td>
</tr>
<tr>
<td>V. bengalensis</td>
<td>1,000</td>
<td>86</td>
<td>77</td>
<td>86</td>
<td>106</td>
<td>4'10</td>
</tr>
</tbody>
</table>

**Var. A.—typicus.**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Country</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stuffed</td>
<td>England</td>
<td>A. D. Bartlett, 1843, A.S.B.</td>
</tr>
<tr>
<td>b. Skeleton</td>
<td>England</td>
<td>J. H. Gurney, 1860, A. S. B.</td>
</tr>
<tr>
<td>c-e. 3 Skulls</td>
<td>England</td>
<td>A. D. Bartlett, A. S. B.</td>
</tr>
</tbody>
</table>

**Var. B.—fulvus.**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Country</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td>Lucknow Ont., Canada</td>
<td>J. H. Garnier.</td>
</tr>
<tr>
<td>b. Skin</td>
<td>Lucknow Ont., Canada</td>
<td>J. H. Garnier.</td>
</tr>
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</table>

**Var. C.—montanus.**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Country</th>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Skin</td>
<td>Yarkand bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Kashgar bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Kashgar bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>e. Skin</td>
<td>Kashgar bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>f. Skin</td>
<td>Kashgar bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>g. Skin, skull</td>
<td>Kashgar bazaar</td>
<td>F. Stoliczka, 1873.</td>
</tr>
<tr>
<td>h. Skin, skull</td>
<td>Gilgit</td>
<td>J. Biddulph.</td>
</tr>
<tr>
<td>j. Skin, skull</td>
<td>Gilgit</td>
<td>J. Biddulph.</td>
</tr>
<tr>
<td>k. Skin, skull</td>
<td>Moralbashi</td>
<td>J. Biddulph, 1874.</td>
</tr>
<tr>
<td>l. Skin, skull</td>
<td>Chenab poel, Ramban</td>
<td>J. Biddulph.</td>
</tr>
<tr>
<td>m. Skin</td>
<td>Afghan Turkestan</td>
<td>C. E. Yate.</td>
</tr>
<tr>
<td>n. Skin</td>
<td>Afghan Turkestan</td>
<td>C. E. Yate.</td>
</tr>
<tr>
<td>o. Skin</td>
<td>Turkestan</td>
<td>C. Ellis.</td>
</tr>
<tr>
<td>p. Skin, skull</td>
<td>Gilgit, 5,000 ft.</td>
<td>G. M. Giles.</td>
</tr>
<tr>
<td>q. Skin, skull</td>
<td>Gilgit, 5,000 ft.</td>
<td>G. M. Giles.</td>
</tr>
<tr>
<td>r. Skin</td>
<td>Leh</td>
<td>No history.</td>
</tr>
<tr>
<td>s. Skin</td>
<td>Leh</td>
<td>No history.</td>
</tr>
<tr>
<td>t. Skin, skull</td>
<td></td>
<td>Purchased, 1871.</td>
</tr>
<tr>
<td>w-y. 5 Skins</td>
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<td>Purchased, 1871.</td>
</tr>
<tr>
<td>z. Skin, skull</td>
<td>Yarkand</td>
<td>J. Biddulph.</td>
</tr>
<tr>
<td>Sex</td>
<td>Type</td>
<td>Location</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>♂</td>
<td>Stuffed</td>
<td>Thibet</td>
</tr>
<tr>
<td>♂</td>
<td>Stuffed</td>
<td>Thibet</td>
</tr>
<tr>
<td>♂</td>
<td>Stuffed, skull</td>
<td>North-West Himalayas</td>
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<tr>
<td>♂</td>
<td>Stuffed</td>
<td>Purchased</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 25-12-79</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 4-3-80</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 8-12-79</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 4-4-80</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 7-4-79</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit dist., 15-11-78</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Shaiot, Gilgit, 1-80</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Chaprot, Gilgit, 1-80</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Chitral (J. Biddulph), 4,000 ft., 7-1-78</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Bunji, Indus valley, 4,000 ft., 1-79</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Sinjah, Punjab, 29-5-79</td>
</tr>
<tr>
<td>♂</td>
<td>Skull</td>
<td>Gilgit, 4-4-80</td>
</tr>
</tbody>
</table>

**Vulpes leucopus.**

*Vulpes flavescens, apud Blyth f. A. S. B., xiv, p. 344 (1845).*

*Vulpes leucopus, Blyth f. A. S. B., xxiii, p. 729 (1854); id. ibid, xxv, p. 443; id. ibid, xxvi, p. 239; id. Cat., p. 43; Jerdon Mamm., p. 151; Stoliczka f. A. S. B., xii, p. 238; Murray Zool. Sind, p. 37; Thomas P. Z. S., 1886, p. 56; Blanford Mammals, p. 151.*

*Vulpes pusillus, Blyth f. A. S. B., xxiii, p. 729 (1854); Blyth Cat. no. 133, p. 43; Jerdon Mamm., p. 153; Adams P. Z. S., 1858, p. 516.*


*Distribution.—The dry parts of North-West India, i.e., the Punjab, Rajputana, Sind and Cutch, extending through Afghanistan and Baluchistan to Persia; Blanford also records it from Arabia.*

*This species, from which V. pusillus, V. griffithii and V. persicus cannot be separated, is closely allied to the foregoing V. mon-
Vulpes.

Vulpes bengalensis.


Cynalopex bengalensis, Bluth Cat. no. 126, p. 41 (1863).
The Indian Fox; Lomri, Hind.; Lomer in Nepal; Lokerie in Central India; Khek-siyal, Bengali; Khekar in Behar; Kokree, Mahratti; Konk, Kempnari or Chandak nari, Canarese; Konka nakka or Gunta nakka, Telugu.

*Distribution.*—Found throughout India in the open country from the Himalayas to Cape Comorin. Not found west of Sind, rare in Assam; not known from Burma or Ceylon.

<table>
<thead>
<tr>
<th>a.</th>
<th>Skin</th>
<th></th>
<th></th>
<th></th>
<th>Agra Mus. [Ex.], 1870.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>c.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Base of Sehwan hills, W. T. Blanford, 1877.</td>
</tr>
<tr>
<td>d.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Agra Mus. [Ex.], 1870.</td>
</tr>
<tr>
<td>e.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Purchased, 1869.</td>
</tr>
<tr>
<td>f.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Manbhoom, Beng. R.C. Beavan, 1869.</td>
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<tr>
<td>g.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>W. T. Blanford.</td>
</tr>
<tr>
<td>h.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Sehwan, Sind vortex.</td>
</tr>
<tr>
<td>j.</td>
<td>Skin juv.</td>
<td></td>
<td></td>
<td></td>
<td>S. F. Holquette.</td>
</tr>
<tr>
<td>k.</td>
<td>Skin juv.</td>
<td></td>
<td></td>
<td></td>
<td>S. F. Holquette.</td>
</tr>
<tr>
<td>n.</td>
<td>Stuffed, skull</td>
<td></td>
<td></td>
<td></td>
<td>Calcutta dist. A.S.B.</td>
</tr>
<tr>
<td>o.</td>
<td>Stuffed, skull</td>
<td></td>
<td></td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>p.</td>
<td>Skeleton</td>
<td></td>
<td></td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>q.</td>
<td>Skull</td>
<td></td>
<td></td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>r.</td>
<td>Stuffed juv. Calcutta</td>
<td></td>
<td></td>
<td></td>
<td>A.S.B.</td>
</tr>
<tr>
<td>s.</td>
<td>Skin, skull</td>
<td></td>
<td></td>
<td></td>
<td>Agra dist., N.-W.P. A.C. L. Carlyle, 1870.</td>
</tr>
<tr>
<td>t.</td>
<td>Skin, skull</td>
<td></td>
<td></td>
<td></td>
<td>Deoli, Rajputana J. Biddulph, 1887.</td>
</tr>
<tr>
<td>u.</td>
<td>Skin, skull</td>
<td></td>
<td></td>
<td></td>
<td>Deoli, Rajputana J. Biddulph, 1887.</td>
</tr>
<tr>
<td>w.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Residency Katmandu, 14-11-77. J. Scully.</td>
</tr>
<tr>
<td>x.</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td>Ranijangal, Nepal valley, 28-2-78. J. Scully.</td>
</tr>
<tr>
<td>y-s. 2 Skins</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shahpur, Punjab, 10-88 G. Henderson.</td>
</tr>
</tbody>
</table>

**Vulpes ferrilatus.**

*Vulpes ferrilatus, Hodgson* *f.* *A. S. B.,* xi, p. 278, with plate (1842); *Gray Cat. Hodgs. Coll.,* 1st ed., p. 12; *Gray Cat. Carn. Mamm,* p. 204; *Stolica* *f.* *A. S. B.,* xxxvii, p. 5; *Blanford Mammals,* p. 155.

*Cynalopex ferrilatus,* Blyth *Cat.* no. 127, p. 41 (1863).

*Distribution.*—Thibet near Lassa; has been recorded by Stolica from the Upper Sutlej valley.

| a. | Skin juv. Thibet? |  |  |  | A. Campbell, 1853, A.S.B. |
| b. | Skin |  |  |  | No history, A.S.B. |
| c. | Stuffed Thibet? |  |  |  | A. Campbell, 1853, A.S.B. |

**Vulpes cana.**

MUSTELA.

273

Distribution.—Baluchistan and Southern Afghanistan, possibly extending to Sind.

[No specimen in the Museum.]

Vulpes caama.

Canis caama, A. Smith S. African Quart. Journ. (1833)\(^*\).
Megalotis caama, H. Smith Jard. Nat. Libr., ix, p. 236 (1879); Blyth Cat. no. 128, p. 41.
Vulpes caama, Gerrard Cat. Bones B. M., p. 87 (1862).

Distribution.—South Africa.

a. Stuffed South Africa E. L. Layard, 1859, A. S. B.

Vulpes virginiana.

Canis virginianus, Gmelin Syst. Nat., i, p. 74 (1788).
Canis cinereo-argentatus, Schreber Säugeth., iii, p. 365 2: 1 (776).
Vulpes virginiana, Dekay New York Zool., p. 45 (1842); Blyth Cat. no. 136, p. 43.

Distribution.—North America, from New England to Costa Rica.


Genus MUSTELA.


Key of the Indian Species.

a. Blackish brown, with very thick under fur; throat white; tail without hair, one half the length of the head and body.

M. foina, p. 275.

a². Yellowish; head, neck, rump and legs black; tail without hair, three-fourths the length of the head and body.

M. flavicula, p. 273.

Mustela flavicula.

MAMMALIA.


The Indian Marten; Mul sumpra, Nepal; Tutural or Chitrala, in Kumaon; Huniah, Bhotea; Sekku, Lepcha; Surmar, Khasia hills; Takere Mahee in Assam.

Distribution.—The Himalayas from Kashmir (Adams), to Assam, Southern India on the Nilgiris and Travancore hills; the hills of Burma, Tenasserim and the Malay Peninsula and the islands of Java? and Sumatra, it has also been procured from Amurland by Radde and from Formosa by Swinhoe, and is therefore probably found throughout China.

The Malayan race is very much paler than the common Indian race; the head being very little darker than the back; in the Indian race the head is very dark and contrasts strongly with the back and throat; the skulls present no points of difference.

<table>
<thead>
<tr>
<th>a. Skin</th>
<th>Sikkim</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Skin</td>
<td>Sikkim</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Sikkim</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Sikkim</td>
</tr>
<tr>
<td>e. Skin</td>
<td>Sikkim</td>
</tr>
<tr>
<td>f. Skin</td>
<td>Sikkim</td>
</tr>
<tr>
<td>g. Skin</td>
<td>Samagooting, Assam</td>
</tr>
<tr>
<td>h. Skin</td>
<td>Samagooting, Assam</td>
</tr>
<tr>
<td>j. Skin</td>
<td>Assam</td>
</tr>
<tr>
<td>k. Skin</td>
<td>Sibsagar, Assam</td>
</tr>
<tr>
<td>l. Skin</td>
<td>Naga hills, Assam</td>
</tr>
<tr>
<td>m. Skin</td>
<td>Kashmir</td>
</tr>
<tr>
<td>n. Skin</td>
<td>Salt Range, Punj.</td>
</tr>
<tr>
<td>o. Skin</td>
<td>Mussoorie, N.-W. P.</td>
</tr>
<tr>
<td>p. Skin, skull</td>
<td>Malacca</td>
</tr>
<tr>
<td>q. Skin</td>
<td>Malacca</td>
</tr>
<tr>
<td>r. Stuffed</td>
<td>Himalayas</td>
</tr>
<tr>
<td>s. Stuffed</td>
<td>Arakan</td>
</tr>
<tr>
<td>t. Skull</td>
<td>Assam</td>
</tr>
<tr>
<td>u. Skull</td>
<td>West Himalayas</td>
</tr>
<tr>
<td>w. Skull</td>
<td>Nepal, 26-7-79</td>
</tr>
<tr>
<td>x. Skin</td>
<td>Nimbotor, Nepal, 16-12-77</td>
</tr>
</tbody>
</table>

s-a2. 2 Skins Simla E. C. Cotes, 1888.

Mustela martes

MUSTELA.


The Pine Marten.
Distribution.—England and Northern Europe, Northern Asia, i.e., Turkestan (Severtzoff), and Amurland (Schrenck).

a. Skin ............... British Mus. [Ex.]
b. Stuffed, skull Norway Christiania University, 1846, A.S.B.
c. Skin, skelet. ............... W. Rutledge.

Mustela foina.

Martes toufaeus, apud Blyth f. A. S. B., xvi, p. 353 (1847) [pt.]; Blyth Cat. no. 194, p. 66.
Martes abietum, apud Horsfield Cat. E. I. Mus., p. 101 (1851); Adams P. Z. S., 1858, p. 517.
Martes leucolachnaea, Blanford Yarkand Mammals, p. 26 (1879).


The Beach Marten.
Distribution.—Northern Europe (except England), Asia Minor (Alston), Turkestan (Severtzoff), Eastern Turkestan (Blanford), and Afghanistan. In the Himalayas from Gilgit eastwards as far as Sikkim or the country to the north of Sikkim.

b. Skeleton Germany W. T. Blanford, 1879.
c. Skin, skull Yarkand F. Stoliczka, 1874.

[Type of M. leucolachnaea, Blanford.]

d. Skin, skull Gilgit, 5,000 ft. G. M. Giles.
e. Skin Leh, Kashmir No history.
f. Skin Yarkand H. H. Godwin-Austen.
g. Skin Yarkand J. Scully.
h. m. 5 Skins Kabul? Purchased, 1872.
a. Stuffed Thibet G. T. Lushington, A.S.B.
p. Stuffed Thibet G. T. Lushington, A.S.B.
g. Stuffed Thibet G. T. Lushington, A.S.B.
r. Skull Thibet G. T. Lushington, A.S.B.
s. Skull Afghanistan? Sir A. Burnes, A.S.B.
t. Skin, skull Gilgit, 5,000 ft., 8-10-80 J. Scully.
u. Skin Gilgit, 5,000 ft., 24-10-79 J. Scully.
v. Skin Gilgit, 5,000 ft., 5-79 J. Scully.
w. Skin Nagar, Gilgit, 2-79 J. Scully.
Mustela zibellina.


**Distribution.**—Northern Europe, Northern Asia, Saghalien Isle (Radde) Amurland, (Schrenck) and Thibet (I.M.)

- Stuffed Thibet Purchased, 1855, A.S.B.

Mustela pennanti.


Mustela canadensis, *Schreber Säugeth.*, iii, p. 492, pl. cxxxiv (1778).

Mustela melanorhyncha, *Boddaert Elench. Anim.*, p. 188 (1784)*.


Mustela nigra, *Turton Syst. Nat.*, i, p. 60 (1806)*.


**The Pekan.**

**Distribution.**—North America between 35° and 65° N. lat. in wooded parts of the country.

- Skull Umbagog Lake, Maine, W. Theobald [P.], 1868.
  U.S.A. (A. F. Verril, Col.)

Mustela americana.


Mustela vulpina, *Rafinesque Am. J. Sc.*, i, p. 82 (1819)*.


**Distribution.**—Northern parts of North America as far south as California in the west and Pennsylvania in the East.

- Skull Upton, Maine, U.S.A. W. Theobald, 1868.
  (J. G. Rich.)

Genus PUTORIUS.


Key of the Indian Species.

a. Limbs and lower surface darker than the upper parts; skull large and thick; the bulla connected with the hamilier process of the pterygoids by a narrow bridge of bone.

b. Back fulvous, longer hairs black-tipped.  
   P. larvatus, p. 278.

c. Limbs and lower surface not darker than the back.

d. In winter pure white; in summer dark brown above; yellowish white below; bulla not very flat, rounded in front.  
   P. erminea, p. 278.

e. A pale yellow median dorsal stripe present; the yellow of the ventral surface not extending further than the breast.  
   P. strigidorsus, p. 282.

f. Nose white, above chestnut.  
   P. canigula, p. 280.

Putorius foetidus.

Mustela putorius, Linneus Syst. Nat., 12th ed., i, p. 67 (1766); Blyth Cat. no. 197, p. 67.

Mustela furo, id. ibid, p. 68 (1766) [ dom. var].

Putorius vulgaris, Griffith Anim. King., v, p. 120 (1827).


The Pole Cat.

Distribution.—Middle and Northern Europe, Asia, Northern and Central regions?

a. Skin, skull ♂  ........  Purchased.

b. Skin, skull ♂  ........  Purchased.

c. Stuffed Scotland  Sir W. Jardine, 1852, A.S.B.

d. Stuffed  Sir W. Jardine, 1852, A.S.B.

e. Skeleton England  J. H. Gurney, 1860, A.S.B.
Putorius larvatus.

Putorius larvatus, Hodgson f. A. S. B., xviii, p. 447, pl. xi (1849); Blanford Mammals, p. 163.

Putorius tibetanus, Horsfield Cat. E. I. Mus., p. 105 (1851).

The Thibetan Pole Cat.

Distribution.—Thibet; the type was procured in the Utsany district north of Sikkim, another specimen in the British Museum was obtained from Ladak by General Strachey.

[No specimens in the Indian Museum.]

Putorius sarmaticus.


Potorius sarmaticus, Keyserling and Blasius Wirbelt. Europa., p. 68 (1840); Blasius Säugeth. Deutschl., p. 226.


Distribution.—Eastern Europe, Poland and Russia, Western Asia from Asia Minor (Alston) to Kandahar (Hutton and Scully); also throughout the Transcaspian region.

a. f. 6 Skins Afghanistan Purchased, 1872.
g. Stuffed,, " T. Hutton, 1845. A.S.B.
h. Skull,, " Sir A. Burnes, 1841, A.S.B.

Putorius erminea.


*Putorius* agilis, *Audubon and Bachman Quad. N. Amer.*, iii, p. 184 (1853)*.  

The Ermine or Stoat.

*Distribution.*—Northern Palearctic region and America as far as the southern border of the States; it extends to the Himalayas whence it was got by Dr. Henderson (see below) and is also recorded from Afghanistan by Griffith.

<table>
<thead>
<tr>
<th>a. Skin (winter dress)</th>
<th>Hudson's Bay, 1883</th>
<th>J. H. Garnier. [Ex.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Skin (summer dress)</td>
<td>Hyde Park, Ont., D. C.</td>
<td>J. H. Garnier [Ex.]</td>
</tr>
<tr>
<td>c. Skin</td>
<td>Europe</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>d. Skin</td>
<td>Europe</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>e. Skin</td>
<td>Europe</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>f. Skin</td>
<td>Hungary</td>
<td>Hungarian Mus., A.S.B.</td>
</tr>
<tr>
<td>g. Stuffed</td>
<td>Europe</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>h. Stuffed</td>
<td>Europe</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>j. Stuffed</td>
<td>Dras, Kashmir</td>
<td>G. Henderson. †</td>
</tr>
<tr>
<td>k. Skull</td>
<td>......</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>l. Skull</td>
<td>......</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>m. Skull</td>
<td>Upton, Maine, U. S. A.</td>
<td>W. Theobald, 1868.</td>
</tr>
</tbody>
</table>

**Putorius vulgaris.**

Mustela gale, *Pallas Zoog. Rosso As.*, i, p. 94 (1834).
Mustela pusilla, *Dekay New York Zool.*, p. 34 (1842); *Blyth Cat.* no. 205, p. 69.
*Putorius* pusillus, *Audubon and Bachman Quad. N. Amer.*, ii, p. 100 (1851)*.

The Weasel.

*Distribution.*—North Europe and America (Northern States and Canada), Asia, Siberia, Amurland, and Yezzo.

| a. Skin | Hungary | Hungarian Museum, 1863, A. S. B. |
| b-d. 3 skins | England | A. S. B. |

† See *Henderson Lahore to Yarkand*, p. 42.
**Putorius stoliczkanus.**


*Distribution.*—Eastern Turkestan.

<table>
<thead>
<tr>
<th>no.</th>
<th>Description</th>
<th>Location</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Skin</td>
<td>Yarkand</td>
<td>F. Stoliczka, 1873</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Type of <em>M. stoliczkanus</em>, Blanford.]</td>
</tr>
<tr>
<td>b.</td>
<td>Skin, skull</td>
<td>nr. Yarkand, 29-6-75</td>
<td>J. Scully</td>
</tr>
</tbody>
</table>

**Putorius subhemachalanus.**


Putorius subhemachalanus, Blanford Mammals, p. 166 (1888).

Bhotea, Zimiong; Lepcha, Sang king.

*Distribution.*—The Himalayas of Nepal and Sikkim (Hodgson), possibly extending through the North-West Himalayas to Kashmir.

<table>
<thead>
<tr>
<th>no.</th>
<th>Description</th>
<th>Location</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Skin</td>
<td>Landour, Mussoorie</td>
<td>L. C. Stewart, A. S. B.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Stuffed</td>
<td>Darjeeling</td>
<td>J. T. Pearson, 1842, A. S. B.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Type of *M. humeralis*, Blyth.]

**Putorius canigula.**


*Distribution.*—Thibet and the North-West Himalayas, probably extending to Kashmir.

<table>
<thead>
<tr>
<th>no.</th>
<th>Description</th>
<th>Location</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Skin</td>
<td>Bagee, nr. Simla</td>
<td>J. Biddulph, 1875</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Stuffed</td>
<td>......</td>
<td>No history</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Putorius alpinus.


Putorius alpinus, Blanford Mammals, p. 168 (1888).

**Distribution.**—Central Asia, the Altai mountains and Amurland, extending southwards to Thibet and the Himalayas, whence it has been recorded from Gilgit, the Kumaon and the Sikkim frontier.

Mr. Blanford remarks on the difference in size of the examples of this species and suggests that the larger individuals may be males, the smaller females, that this is the case is shewn by the following measurements of the individuals in the flesh taken from the tickets of Dr. Scully's specimens, the individuals were also sexed by Dr. Scully himself:

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>170</td>
<td>174</td>
<td>150</td>
</tr>
<tr>
<td>Head and body</td>
<td>100</td>
<td>98</td>
<td>87</td>
</tr>
<tr>
<td>Tail</td>
<td>57</td>
<td>62</td>
<td>50</td>
</tr>
<tr>
<td>Hair at end of tail</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Height at shoulder</td>
<td>325</td>
<td>36</td>
<td>—</td>
</tr>
<tr>
<td>“ ” rump</td>
<td>390</td>
<td>40</td>
<td>—</td>
</tr>
<tr>
<td>Palm</td>
<td>0 95</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>Sole</td>
<td>0 75</td>
<td>0 75</td>
<td>—</td>
</tr>
<tr>
<td>Ear in front</td>
<td>0 9</td>
<td>1 0</td>
<td>—</td>
</tr>
<tr>
<td>“ ” breadth</td>
<td>1 1</td>
<td>1 1</td>
<td>65</td>
</tr>
</tbody>
</table>

Weight 8 3 oz.  
Weight 4 0 oz.

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin, skull</td>
<td>2-11-79</td>
<td>J. Scully.</td>
<td></td>
</tr>
<tr>
<td>Skin, skull</td>
<td>Farfu, Bagrot, nr. J. Scully.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Gilgit, 6-11-79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin, skull</td>
<td>Chashi Yassin, nr. J. Scully.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin, skull</td>
<td>Gilgit, (J. Biddulph, 8-8o, 9.500ft).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Putorius kathiah.


Mustela auriventer, Hodgson Y. A. S. B., x, p. 909 (1841); id. ibid, xi, p. 280.


Putorius cathia, Blanford Mammals, p. 169 (1888).
Nepal, Kathiah nyul; Assam, Darrup.

_Distribution._—The Himalayas from Mussoorie to Sikkim, and the Khasia hills in Assam.

a. Skin Assam F. Jenkins, 1846, A.S.B.
b. Skin Shillong, Assam J. Cockburn [P.]
c. Alc., skull Darjeeling Zoological Gardens.
d. Alc., skull Darjeeling, 5,000 ft. G. King; 1871.
e-f. 2 Skins Shillong T. la Touche, 1889.

_Putorius strigidorsus._


_Putorius strigidorsus._ _Blanford Mammals,_ p. 170 (1888).

_Distribution._—Only known from the Sikkim Himalayas.

b. { Skin in alc. } { Skull, part } Darjeeling G. B. Mainwaring.

_Putorius sibericus._

Mustela siberica, _Pallas Spic. Zool.,_ xiv., p. 86 (1780); _Blyth Cat. no. 200,_ p. 68; _Radde Ost Siberiens, i,_ p. 45; _Schrenck Amurland Säugeth.,_ p. 37; _Swinhoe P. Z. S.,_ 1870, p. 624.


Mustela itatsi, _Temminck and Schlegel Faun. Japan Mamm.,_ p. 34, pl. vii (1850).

Vison sibirica, _Gray P. Z. S.,_ p. 117 (1865).

_Distribution._—Siberia generally, Amurland (Schrenck); Japan (Temminck) and China (Swinhoe).

a. Stuffed Amoy, China R. Swinhoe, 1859, A.S.B.
b. Skull Amoy, China R. Swinhoe, 1859, A.S.B.

_Putorius vison._

Mustela lutreola, _Forster Phil. Trans._ lxii., p. 371 (1772); _Blyth Cat. no. 199,_ p. 68.


Mustela vison, _Schreber Säugeth.,_ iii, p. 463, pl. cxxviib (1778).

_Lutra vison._ _Shaw Genl. Zool._, i, p. 448 (1800).

Mustela winingus, _Barton Am. Phil. Trans.,_ vi, p. 70. (1804).

Mustela minx, _Turton Syst. Nat.,_ i, p. 58 (1806)*.

Mustela lutreoecephala, _Harlan Faux. Amer.,_ p. 63 (1825).

GULO.

Putorius nigrescens, *Audubon and Bachman Quad. North Amer.*, iii, p. 104 (1853)*.

The Mink.
Distribution.—North America generally; from the Arctic Ocean to the southern part of the States.

1. Skin ♂ Ontario, Canada
2. Skull ♂ N. Carolina
3. Skull ♂ Upton, Maine, U. S. A.  

Genus GULO.


Gulo luscus.

Ursus gulo, *Schreber Säugeth.*, iii, p. 525, pl. cxxiv (1778).
Meles luscus, *Boddart Elem. Anim.*, i, p. 80 (1784)*.
Gulo luscus, *Sabine Franklin’s Journ.*, p. 650 (1823)*; *Blyth Cat. no. 192, p. 65*; *Cones Fur-bearing Animals of North America*, p. 34.

The Wolverene.
Distribution.—Circumpolar, i.e., the northern parts of both continents.

1. Stuffed Siberia
2. Skull Norway

Genus GALICTIS.


Galictis barbara.


Distribution.—From Mexico southwards to the Rio de la Plata.

a. Skin, skull ♂ ...... Zoological Gardens.

Galictis vittata.

Viverra vittata, Schreber Säugeth., iii, p. 447, pl. cxxiv (1778).
Gulo vittatus, Desmarest Mamm., p. 175 (1820).

Distribution.—South America.

a. Skin ♂ ...... W. Rutledge.
b. Skin ♂ ...... W. Rutledge.

Genus ICTONYX.

Ictonyx, Kaup Thierreich, i, p. 352 (1835)*.
Zorilla, Lieblein Grunds. Uebers. Thierreichs (1839)*.

Ictonyx zorilla.

Mephitis zorilla, Lichtenstein Darstell., pl. xlviii (1827-34).
Ictonyx capensis, Kaup Thierreich, i, p. 353 (1835)*.
Zorilla striata, Gray List Mamm. B. M., p. 67 (1843); Blyth Cat. no. 206, p. 69; Gray Cat. Carn. Mamm., p. 140.

Distribution.—Africa, Senegal and the Cape.

b. Skeleton ♂ ...... Purchased.

Genus HELICTIS.

Helictis, Gray P. Z. Š., p. 94 (1831). Type, H. moschata.

The species of this genus seem to require revision; Anderson (Anat. Zool. Res., p. 193) recognized four species, H. nepalen-
sis from Nepal, H. orientalis from Java and Sumatra, H. subaurantiaca from Formosa and the allied H. moschata (of which he considered H. personata of Geoffroy as a synonym) from China and Yunnan.

Thomas (P. Z. S., 1886, p. 62), states that H. personata of Geoffroy cannot be considered a synonym of H. moschata, as its teeth are of large size as is shown by Blainville’s figure (Osteographie, II), and that it belongs to the large-toothed section of the genus; he also remarked that he could perceive no distinction between H. orientalis and H. nepalensis from Java and Nepal respectively.

Blanford (Mammals, p. 172) practically adopts Thomas' views on this subject, and distinguishes only two species from the Indian Empire: H. orientalis from Nepal, Sikkim and Java of a dark-brown, almost chocolate colour, with the upper sectorial tooth of moderate size, of which the outer lobe projects anteriorly and posteriorly beyond the inner lobe, and the anterior inner cusp considerably exceeds the posterior inner cusp in size; and H. personata with brownish gray fur and a trapezoidal upper sectorial with the two inner cusps almost equally developed.

The specimens in the Indian Museum cannot in any way be fitted to these two descriptions, as the following brief characters show:

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Colour</th>
<th>Sectorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin, skull, juv.</td>
<td>Reddish brown</td>
<td>Outer lobe not projecting,</td>
</tr>
<tr>
<td>Darjeeling</td>
<td></td>
<td>inner cusp subequal</td>
</tr>
<tr>
<td>Skin, Arakan</td>
<td>Pale brown</td>
<td>Very worn, but with outer lobe</td>
</tr>
<tr>
<td>Stuffed, skull,</td>
<td>Pale brown</td>
<td>projecting and inner cusps very</td>
</tr>
<tr>
<td>Arakan</td>
<td></td>
<td>unequal.</td>
</tr>
<tr>
<td>Stuffed, Tippera</td>
<td>Pale brown</td>
<td>Outer lobe projecting slightly</td>
</tr>
<tr>
<td>Skeleton, Rangoon</td>
<td></td>
<td>in front, more behind; inner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lobes unequal.</td>
</tr>
<tr>
<td>Skin, skull,</td>
<td>Blackish-gray, no</td>
<td>Outer lobe markedly projecting in</td>
</tr>
<tr>
<td>Shillong</td>
<td>reddish tinge;</td>
<td>front and behind; inner lobes very</td>
</tr>
<tr>
<td></td>
<td>head almost black.</td>
<td>unequal.</td>
</tr>
</tbody>
</table>

From this it will be seen that the Darjeeling specimen, though of the colour of H. orientalis, has a skull resembling that of H. personata, while the Shillong specimen, with the colouring of H. personata, has a skull resembling that of H. orientalis. In the list below all the specimens have been identified as H. personata, except the Darjeeling one, as until more specimens are examined, it is impossible to correctly determine the limits of the species.
The following key is adopted from Blanford:—

**Key of the Indian Species.**

*a.* Forms with large teeth.

*b.* Colour brown or yellowish brown, not gray.

<table>
<thead>
<tr>
<th>Helictis orientalis, p. 286</th>
</tr>
</thead>
</table>

**Helictis orientalis.**


Oker, Nepal.

**Distribution.—**Nepal, Sikkim and Java.

*a.* Skin, skull juv. nr. Darjeeling, 9-65 J. Anderson.

**Helictis personata.**


**Distribution.—**Assam, Manipur (Thomas); Tippera, Arakan and Lower Burma.

<table>
<thead>
<tr>
<th>Skin, skull Arakan</th>
<th>Sir A. Phayre, 1843, A.S.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuffed, skull Arakan</td>
<td>Sir A. Phayre, 1843, A.S.B.</td>
</tr>
<tr>
<td>Stuffed Tippera dist., Beng.</td>
<td>F. Skipwith, 1845, A.S.B.</td>
</tr>
<tr>
<td>Skeleton Rangoon, Burma</td>
<td>Sir A. Phayre, 1843, A.S.B.</td>
</tr>
<tr>
<td>Skin, skull Shillong, Assam</td>
<td>T. laTouche.</td>
</tr>
</tbody>
</table>

**Helictis moschata.**

Distribution.—Yunnan (Anderson); China from Shanghai southwards and Hainan (Swinhoe); in Formosa replaced by H. aurantiacca.

a. Skin Teng ye chew, Yunnan, J. Anderson. 7-58.

b. Skin Mormien, Yunnan, 4500ft., J. Anderson. 7-68.

Genus MELLIVORA.

Mellivora, Storr Prodr. Method. Mamm., p. 34 (1780)*.
Ursitaxus, Hodgson As. Res., xix, p. 60 (1836); Type, M. indica.

Mellivora indica.

Meles indicus, Boddart Elench. Anim., i, p. 80 (1785)*.
Ursus indicus, Kerr Linn. Anim. Kingd., p. 188 (1792)*.
Meles indica, Fischer Syn. Mamm., p. 151 (1829).
Mellivora ratel, Gray Cat. Hodgs. Coll., 1st ed., p. 13 (1846); Horsfield Cat. E. I. Mus., p. 120; Blyth Cat. no. 297, p. 69.

The Indian Ratel; Biju or Bijru Bhal, Hind.; Biyu kharwar, Telegu; Tava karadi, Tamil; Gore pat, Sind; Bhassiar, Nepal.

Distribution.—India generally from the base of the Himalayas southwards, but does not seem to occur in Lower Bengal or on the Malabar Coast; is recorded from Sambar Lake (Thomas), Sind (Murray), the Deccan and Northern Circars (McMasters) and Goona, C. I. (I. M.)

The distinctness of the African and the Indian Ratels has never been satisfactorily settled; Blyth believed them to be the same when he wrote his catalogue, afterwards (cf. Jerdon’s Mammals) he believed them to be different from one another, and distinguished the African form by the possession of a white stripe along the cheeks which does not occur in the Indian form. P. L. Sclater (P. Z. S., 1870, p. 232) says that the animal which he described as M. leuconota could not when adult be distinguished from the Indian Ratel; and as there was no reasonable doubt that the type of M. leuconota came from Africa, he came to the conclusion that there was no specific distinction between the Indian and African Ratels.

Two fossil species (M. sivalensis and punjabensis) have been described from the Siwalik beds [Pal. Ind. (10), ii, p. 180].
There are apparently several species of Badger in Central Asia; besides Hodgson's Tumpha (Meles leucura) there is Blyth's Meles albogularis (J. A. S. B., xxii, p. 590); Blanford's unnamed species from Kashgar, and Milne-Edward's Meles leptorhynchus (Recherches Mammifères, p. 190).

M. leucura is said to have a very distinct skull, the lower part of the hind-feet covered with hair, and it is also distinguished by its fur, which is longer, thicker and more flaccid than that of M. taxus.

M. albogularis is apparently distinguished by its white throat with a very narrow band of black only separating it from the white cheek.

M. leptorhynchus (M. chinensis of Gray) from China resembles the European badger externally and differs from it only in certain cranial characters.

Finally, the unnamed species from Kashgar differs from M. taxus only in that the median white mark in the middle of the face does not extend back further than the ears.

**Meles taxus.**

_Ursus meles, Linnaeus Syst. Nat., 12th ed., i, p. 70 (1766)._  

_Taxus vulgaris, Tiedemann Zool., i, p. 376 (1808)._  
_Meles vulgaris, Desmarest Mamm., p. 173 (1820)._  
_Meles canescens, Blanford Persia, p. 44, pl. iii (1876); Alston P. Z. S., 1877, p. 274._
**MYDAUS.**

*Distribution.*—Europe, Northern Asia, Turkestan (Severtzoff), Persia (Blanford), and Asia Minor (Alston).

|   | Skin, skelet. |   | Skin, skull |   | Skin, skull |   | Skin, skull |   | Stuffed |   | Skeleton |   | Skull |   | Skin, skull |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | × Spain? |   |   |   |   |   |   |   |   |   |   |   |   |   |
| b | × Spain? |   |   |   |   |   |   |   |   |   |   |   |   |   |
| c | × Spain? |   |   |   |   |   |   |   |   |   |   |   |   |   |
| d | × Spain? |   |   |   |   |   |   |   |   |   |   |   |   |   |
| e | × Spain? |   |   |   |   |   |   |   |   |   |   |   |   |   |
| f | × England |   |   |   |   |   |   |   |   |   |   |   |   |   |
| g | × England |   |   |   |   |   |   |   |   |   |   |   |   |   |
| h | × France |   |   |   |   |   |   |   |   |   |   |   |   |   |
| i | × England |   |   |   |   |   |   |   |   |   |   |   |   |   |
| j | × Ispahan |   |   |   |   |   |   |   |   |   |   |   |   |   |
| k | × Ispahan |   |   |   |   |   |   |   |   |   |   |   |   |   |

[Type of M. canescens, Blanford.]

**Meles leucura.**

*Taxidea leucura,* Hodgson 1847; *Blyth Cat.* no. 209, p. 70; *Gray Cat.* Hodg. Coll., 2nd ed., p. 7.


**Tibetan, Tumpha.**

*Distribution.*—Thibet.

<table>
<thead>
<tr>
<th></th>
<th>Skeleton</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Thibet</td>
</tr>
</tbody>
</table>

**Meles sp.?**

*Meles sp., Blanford Yarkand Mammals,* p. 25.

<table>
<thead>
<tr>
<th></th>
<th>Skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Kashgar</td>
</tr>
</tbody>
</table>

**Genus MYDAUS.**


**Mydaus meliceps.**


*Mephitis javanensis,* Desmarest Mamm., p. 187 (1820); *Raffles Linn. Trans.*, xiii, p. 251.

*Distribution.*—Java (Horsfield), Sumatra (Raffles), Borneo (I.M.)

<table>
<thead>
<tr>
<th></th>
<th>Skeleton</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Borneo</td>
</tr>
</tbody>
</table>

J. Anderson.
Genus **ARCTONYX**.

*Arctonyx*, *F. Cuvier Hist. Nat. Mamm. livr. li (1825).*

Besides the two Indian species mentioned below, Milne Edwards (Recherches Mamm., p. 195) has described two other species: *Arctonyx leucolaemus* from the neighbourhood of Pekin, and *A. obscurus* from Thibet.

**Key of the Indian Species.**

a. Skull about 6 in. in length; 4th upper premolar with two internal cusps and with the larger external cusp about equidistant from the anterior and posterior ends of the tooth, which is of a distinctly triangular shape. **A. collaris**, p. 290.

a². Skull about 4 in. in length; size about half that of *A. collaris*; 4th upper premolar with no internal cusps, the large external cusp being at the anterior end of the tooth, and the tooth itself approaching a quadrangular form. **A. taxoides**, p. 291.

**Arctonyx collaris.**


The Hog Badger; Bhalu sur (= bear pig), Hind.; Hunteree bora, Assamese; Khway-htoo-wet-htoo, Arakan; Khwe-ta-tek-ta-tek, Burmese.

**Distribution.**—Lower ranges and bases of the Himalayas, from Nepal to Assam, Sylhet, Arakan, both Upper and Lower Burma, not apparently found south of Tenasserim.

| a. Skin     | Motmein, Yunnan, 6000ft. 7-68. | J. Anderson. |
| b. Skin    | Chittagong hills | J. T. Jarbo. |
| c. Skin    | Purchase. | J. Butler. |
| d. Skin    | Darjeeling | E. R. Shopland. |
| e. Skin    | Assam | C. Huffnagle, A.S.B. |
| f. Skin    | Chittagong |   |
| g. Stuffed | Sylhet |   |
### Lutra

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Collector</th>
<th>Year</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuffed</td>
<td>Captain Paterson, 1838</td>
<td>A.S.B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skull juv.</td>
<td>No history</td>
<td>A.S.B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skull juv.</td>
<td>No history</td>
<td>A.S.B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skeleton</td>
<td>F. Skipwith, 1847</td>
<td>A.S.B.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Lutra.**

**Arctonyx taxoides.**


**Distribution.**—Probably the same as the last. Assam, Sylhet, Arakan and possibly China, if *Meles leucolsemus*, Milne Edw. is indistinguishable from this species as suggested by Blanford.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Collector</th>
<th>Year</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuffed</td>
<td>Assam</td>
<td>J. McClelland</td>
<td>1843</td>
<td>A.S.B.</td>
</tr>
<tr>
<td>Skull juv.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skeleton</td>
<td>Arakan</td>
<td>Sir A. Phayre</td>
<td>1848</td>
<td>A.S.B.</td>
</tr>
</tbody>
</table>

**Genus Mephitis.**


**Mephitis mephitica.**


*Viverra mephitica*, *Schreber Säugeth.*, iii, p. 444, pl. cxxi (1778).

*Viverra mephitica*, *Shaw Mus. Levedianum*, p. 171 (1792)*.


**Distribution.**—North America, from Hudson’s Bay and Great Slave Lake to Guatemala.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Collector</th>
<th>Year</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>nr. Lake Scugog, Canada</td>
<td>J. H. Garnier</td>
<td>(Ex.)</td>
<td></td>
</tr>
<tr>
<td>Skelet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skull</td>
<td></td>
<td>W. Theobald</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alc.</td>
<td></td>
<td>W. Rutledge</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Genus Lutra.**


Mammalia.

Key of the Indian Species.

a. Claws well developed; tail about \( \frac{2}{3} \) of length of body.

b. Teeth moderate; portion of frontals behind the postorbital processes decreasing regularly in width to constriction in front of brain case; fur longish and loose; upper border of naked nose-pad forming a salient angle.

\[ L. \ varia, \ p. \ 292. \]

b\(^1\). Teeth large; portion of frontals behind the postorbital process of equal width as far as the constriction in front of the brain case; fur short and adpressed; upper border of naked nose-pad straight.

\[ L. \ ellioti, \ p. \ 294. \]

b\(^2\). Rich chestnut-brown above, golden red below and on the extremities (skull not known).

\[ L. \ aurobrunnea, \ p. \ 295. \]

a\(^2\). Claws in adults rudimentary; tail not more than half the length of the head and body.

\[ L. \ leptonyx, \ p. \ 295. \]

Lutra varia.


Lutra roensis, Ogilby P. Z. S., p. 111 (1834).

Lutra nudipes, Melchior Säugeth. des Danisch. Staats (1834)*.


Lutra \? Blyth Cat. no. 215, p. 73 (1863).
The Common Otter: Udbilao, Panikutta, Hind; Sag-i-ab, Punjab; Nirunei, Tam.; Niru-kuka, Telegu; Deeya balla, Cingalese.

**Distribution.**—The typical variety is found throughout the Palaearctic region from England to Japan, it extends to the Himalayas from Gilgit to the Brahmapootra, at elevations of from 4,000 ft, to 12,000 ft. The var. nair is found throughout Assam and the eastern half of the Indian peninsula from the foot of the Himalayas to Pondicherry, and also probably throughout the western half, but this is uncertain.

The var. chinensis is found throughout South China, extending as far as Yunnan and Upper Burma about Bhamo, and another variety unnamed is found in Ceylon.

| c. Skin juv. | Gilgit, 5,000 ft., 3-6-80 J. Scully. |
| d. Skin | Gilgit, 16-6-79 J. Scully. |
| e. Skin, skull | Gilgit, 10-2-80 J. Scully. |
| f. Skin | Gilgit J. Biddulph. |
| g. Skin | Rungbee, Darjeeling J. Munro. |
| h. Skull | Himalayas A.S.B. |
| j. Skin, skull juv. | Assam A.S.B. |
| k. Stuffed | Neuralia, Ceylon E. E. Kelaart, A.S.B. |
| l. Stuffed | Neuralia, Ceylon E. L. Layard, A.S.B. |
| m. Skin, skull | Ceylon Colombo Mus. |
| n. Stuffed | Calcutta, 4-4-70. No history. |
| o. Stuffed | Calcutta. W. H. Greenfield, 1848, A.S.B. |
| q. Skeleton | J. Armstrong. |
| r. Skin, skull | Balligunge, Calcutta Purchased. |
| s. Skin, skeleton | Behala nr. Calcutta Zoological Gardens. |
| t. Skin, skull | Baraipore S. of Calcutta Purchased. |
| u. Skin, skull | Boitakkhana, Calcutta Purchased. |
| v. Skin juv. | Bengal No history. |
| w. Skin | Sibsagar, Assam, S. E. Peal. 14-6-70. |
| x. Skull | Assam Zoological Gardens. |
| y. Skin, skull | Deccan (Sykes) India Mus., London. |
| z. Skin juv. | Bhamo, Upper Burma, J. Anderson. 2-68. |
| a². Skin | Bhamo, Upper Burma J. Anderson. 2-68. |
| b². Skin | Momien, Yunnan, J. Anderson. 6,000 ft., 6-68. |
| c². Skin | " " J. Anderson. |
| d². Skin | " " J. Anderson. |
| e². Skin | " " J. Anderson. |
| f². Skin | " " J. Anderson. |
| g². Skin | " " J. Anderson. |
Mammalia.

94. Skin Momein, Yunnan 6,000 ft., 6-68. J. Anderson.
93. Skin Momien, Yunnan 4,300 ft. 6 68.
92. Stuffed Malay Peninsula No history.
81. Stuffed England W. Davison, 1844, A.S.B.
71. Skull Derbyshire, England D. Scott, A.S.B.
61. Stuffed Europe Christiania University, 1846, A.S.B.
52. Skull europe Hungarian Mus., 1863, A.S.B.
42. Skull Europe Christiania University, A.S.B.
32. Skull Algeria A. Malherbe, A.S.B.
22. Skin juven. Purchased, 1871.
21. Skull No history.
11. Skin, skull No history.
12. Skull Calcutta O. L. Fraser.
12. Skin, skull No history, 1869.
11. Skin, skull No history.
11. Skin No history.
12. Skin, skull Purchased.
11. Skin No history.
12. Skin No history.
11. Skeleton No history.
11. Skull No history.
11. Skull A.S.B.

Lutra ellioti.

Lutra barang, apud Thomas P. Z. S., p. 195 (1889).

Distribution.—Throughout the Indian Peninsula, from the foot of the Himalayas to Travancore, and from the mouths of the Ganges to the river Indus in Sind; but not found in the hills in any part of its range, extending eastwards through Burma to the Malay Peninsula.

a. Skull s Dehra Dun. L. C. Stewart, A.S.B.
b. Skull Jumna River, N.-W. P. J. Cockburn [P.]


| c. Alc. | ❀ | Sind | Karachi Mus. [Ex.]. |
| d. Skin | ❀ | Goona, C. I. | Zoological Gardens. |
| e. Skin, skull | ❀ | " | A. Barclay. |
| f. Skeleton | ❀ | " | A. Barclay. |
| g. Skeleton | ❀ | " | A. Barclay. |
| h. Skull | ❀ | " | A. Barclay. |
| j. Skull | ❀ | " | A. Barclay. |
| k. Skull | ❀ | " | A. Barclay. |
| l. Skull | ❀ | " | A. Barclay. |
| m. Skin, skull | South India | Sir W. Elliot, A.S.B. |
| n. Skull | South India | Sir W. Elliot, A.S.B. |
| o. Skin | Travancore | Purchased. |
| p. Skull | " | Purchased. |
| q. Skull | " | Rev. H. Baker, A.S.B. |
| r. Skull | " | G. W. Shillingford. |
| t. Skull | Alipore, Calcutta | Zoological Gardens. |
| u. Skeleton, | Salt Water Lakes, Calcutta. | O. L. Fraser. |
| w. Skin, skeleton | juv. | " | Zoological Gardens. |
| y. Skull | " | Bengal | A.S.B. |
| z. Skin, skull | Assam | Zoological Gardens. |
| a². Skull | Arakan | Sir A. Phayre, 1845, A.S.B. |
| b². Skin | Momien, Yunnan, 6,000 ft., 66°. | J. Anderson. |
| d². Stuffed juv. | " | No history. |
| e². Skull | juv. | " | A.S.B. |

**Lutra aurobrunnea.**


**Distribution.**—Upper Hill Region of Nepal (Hodgson).

[No specimens in the Indian Museum].

**Lutra leptonyx.**

| a. Stuffed | N. W. Himalayas  | Purchased, 1831, A. S. B. |
| b. Skull   | Mussoorie       | L. C. Steuart, 1843, A.S.B. |
| c. Skin    | Sikkim          | L. Mandelli. |
| d. Stuffed, skull | Darjeeling | Mrs. Saxon 1844, A.S.B. |
| e. Skull   | Cochin, South India | Rev. J. Baker. |
| g. Skin    | Travanore, 9-70 | Rev. J. Baker. |
| h. Skin    | ''              | Rev. J. Baker. |
| j. Skull   | Calcutta        | R. C. Beavan, A.S.B. |
| k. Skeleton & | Calcutta | Zoological Gardens. |
| l. Skin, skull | 24-Pergunnahs, Bengal | Zoological Gardens. |
| m. Skin, skull | ''         | A. W. Chennell. |
| n. Skin    | Assam           | A. W. Chennell. |
| o. Skin    | Naga Hills, Assam | Sir A. Phayre 1844, A.S.B. |
| q. Skin    | Ponsee, Yunnan, 6,000ft., 7-58 | J. Anderson. |
| r. Skin    | Momien, Yunnan, 4,500ft, 6-68 | R. W. G. Frith, 1847, A.S.B. |
| s. Skin    | ''              | R. W. G. Frith, 1847, A.S.B. |
| t. Stuffed | Malacca         | A.S.B. |
| u. Stuffed juv. | Malacca | A.S.B. |
| v. Skin    | ''              | No history. |
| w. Skin    | ''              | No history. |
| x. Stuffed | ''              | No history. |
| y. Skull   | ''              | A.S.B. |
| z. Skull   | ''              | A.S.B. |
Lutra canadensis.

Mustela (Lutra) canadensis, Kerr Linn. Anim. Kingd., i, p. 173 (1792)*.
Lutra brasiliensis, Desmarest Mamm., i, p. 188. (1820) [in part].
Lutra hudsonica, F. Cuvier Suppl. Buffon, i, p. 194 (1792)*.
Lataxina mollis, Gray List Mamm. B. M., p. 70 (1843).
Lutra californica, Baird N. Amer. Mamm., p. 187 (1857)*.
Latax canadensis, Gray P. Z. S., p. 133 (1865); id. Cat. Carn. Mamm.,
p. 112.

Distribution.—The whole of North America.


Lutra brasiliensis.

Lutra brasiliensis, Zimmerman Geogr. Geschichte., ii, p. 316 (1786); Thomas
P. Z. S., 1889, p. 197.
Lutra lupina et paraguensis, Schins Cuv. Thierr., i, p 213 (1821).

Distribution.—The Guianas and Brazil.

da. Skin Surinam Oxford Museum, 1870 [Ex.]

Genus ENHYDRA.

Pusa, Oken Lehrb. Naturg. (1816)*.

Enhydra lutris.

Pusa orientalis, Oken Lehrb. Naturg., iii, p. 980 (1816)*.
Lutra stelleri, Lesson Man. Mamm., p. 156 (1827).
Enhydra lutris, Dekay New York Zool., p. 41 (1842); Coutes Fur-bearing
Animals of North America, p. 336.
Enhydris lutris, Gray P. Z. S., p. 136 (1865); id. Cat. Carn. Mamm.,
p. 119.
The Sea Otter.

**Distribution.**—Shores of North Pacific, north of 50°, extending on the American side as far as Lower California.

b. Skeleton ...... New York Mus.

**Genus PROCYON.**


**Procyon lotor.**

Meles lotor, BoddaertElemch. Anim., i, p. 80 (1784)*.
_Lotor vulgaris_, Tiedemann Zool., i, p. 380 (1808).
_Procyon hernandezii_, Wagler Isis, p. 514 (1831).

The Racoon.

**Distribution.**—North America from Alaska southward to Costa Rica in Central America.

a. Skin juv. Bruce Co., Ont., Canada J. H. Garnier [Ex.].
b. Skin Texas, U.S.A. J. H. Garnier [Ex.].
c. Skin Ontario J. H. Garnier [Ex.].
d. Skin, skelet. ♂ ...... Purchased.
e. Skin, skelet. ♂ ...... W. Rutledge.
f. Skin, skelet. ♂ ...... Purchased.
g. Stuffed ♂ America No history, 1872.
h. Skull North America A. D. Bartlett, 1849, A.S.B.
j. Skull ...... Rev. F. Fitzgerald, 1853, A.S.B.

**Genus NASUA.**

_Nasua_, Storr Prodr. Method. Mamm., p. 35 (1780)*.

**Nasua rufa.**

CERCOLEPTES. 299

Ursus nasua, G. Cuvier Tabl. Elément. d' Hist. Nat., p. 113 (1798)*
Nasua fusca, Desmarest Mamn., p. 170 (1820).
Nasua montana, id. ibid, p. 102, pl. v (1844).
Nasua narica, Gray List Mamm. B. M., p. 74 (1843) [pt.]
Nasua olivacea, Gray P. Z. S., p. 703 (1864).
Nasua dorsalis, Gray P. Z. S., p. 169, pl. xvii (1866).

The Ring-tailed Coati.
Distribution.—South America from Surinam to Paraguay and from the Atlantic to the Andes.

b. Skin, skelet. .......... Purchased.
c. Skin, skelet. .......... Purchased.
e. Stuffed Brazil Rajah R. Mullick, 1866.
f. Skull Surinam A. D. Bartlett, 1849, A.S.B.

Nasua nasica.
Nasua leucorhynchos, Tschudi Faun. Peruan., p. 100 (1844).
Nasua solitaria var. mexicana, Weinland Zool. Gart., i, p. 191 (1860)*.
Nasua socialis, De Saussure Zool. Gart., iii, p. 53 (1862)*.

The White-nosed Coati.
Distribution.—Central America, Texas and California southwards as far as the Isthmus of Panama.
a. Skin and Q .......... Purchased, 1878.
b. Stuffed America W. Rutledge, 1870.

Genus CERCOLEPTES.
Potos, G. Cuvier Tableau Gen. in Leçons, d'Anat. Comp., 1st ed. i, (1800)*.
Cercoleptes, Illiger Prod., p. 127 (1811).

Cercoleptes caudivolvulus.
Viverra caudivolvula, Schreber Säugeth., iii, p. 453, pl. cxxv (1778)
Lemur flavus Schreber Säugeth., i, p. 145, pl. xlii 1778).
Potos caudivolvulus, *Desmarest Mam.*, p. 171, pl. xlii (1820).

The Kinkajou.

*Distribution.*—From Mexico southwards to the Rio Negro and Peru.

a. Stuffed, skull Tropical America Zoological Gardens, 1878.
b. Skeleton ❖

A. D. Bartlett, 1849, A.S.B.

Genus AELURUS.


Aelurus fulgens.


The Cat-bear or Panda; Wah, Nepal; Wahdonka, Bhotea; Suknarn, Lepcha.

*Distribution.*—Himalayas at 7,000 to 12,000 ft. from Nepal eastwards through Assam to Yunnan.

This peculiar animal is very distinct from all other carnivora and forms a distinct genus, and according to some views a distinct family; recently, Prof. Boyd Dawkins (Quat. Journ. Geol. Soc., xlv, p. 230) has described a new species (Ailurus anglicus) from the New Crag of Norfolk and Suffolk which is of pliocene age, this is a very interesting discovery since it extends the range of the genus Aelurus considerably and offers fresh evidence in support of the view that the pliocene Mammalia of Europe are closely related to those of the Oriental Region now living.

a. Skin Momien, Yunnan, J. Anderson, 4,600 ft., 7-68.
b. Momien, Yunnan, J. Anderson, 4,600 ft., 6-68.
Genus AILUROPUS.


Ailuropus melanoleucus.


Distribution.—Mountains of Eastern Thibet.

a. Skull (cast) ...... Paris Museum [Ex.]

Genus URSUS.


Key of the Indian Species.

a. Upper molar equal in length to the two premolars immediately in front of it.

b. Forehead concave; fur generally whitish or grayish to brown; claws white or brown.  
   U. isabellinus, p. 302.

b². Forehead flat; fur generally black with a broad white mark on the chest; claws black.  
   U. torquatus, p. 303.
a2. Upper molar equal in length to the one premolar immediately in front of it; skull with a very short nasal portion, the nose ferrugineus and the chest with a semi-lunar yellow patch.


**Ursus isabellinus.**


The Snow or Brown Bear also the Blue Bear (= var. pruinosus; Lal Bhalu, or Barfkarich, Hind.; Harpat of Kashmir; Drinmor of Ladak.

**Distribution.**—The higher ranges of the Himalayas, both north and south of the watershed, from Gilgit, eastwards to Assam.

On comparing the skulls of Ursus isabellinus with those of the European and Northern Asiatic bear (U. arctos), the only apparent point of difference is that the forehead of the former species is distinctly concave, while that of the latter is flat, i.e., the line between the postorbital processes and the nasal opening is in the case of U. arctos a straight one, and in the case of U. isabellinus a curved one, beyond this there does not seem to be any difference between the two species, and Blanford has in his Mammals of India combined the two under the name of Ursus arctus.

In the Eastern Thibetan variety (U. pruinosus), the hair is blackish or bluish, but it is hardly worthy of separation even as a geographical race.

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<tbody>
<tr>
<td>a. Skin</td>
<td>G. T. Lushington, 1847, A.S.B.</td>
</tr>
<tr>
<td>b. Skin, skull</td>
<td>Maharajah of Burdwan, 1858, A.S.B.</td>
</tr>
<tr>
<td>c. Skin, skull</td>
<td>Maharajah of Burdwan, 1858, A.S.B.</td>
</tr>
<tr>
<td>d. Skin juv.</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>e. Skin, skeleton.</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>f. Skin, skull</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>g. Stuffed, skull</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>h. Stuffed juv.</td>
<td>Rajah R. Mullick.</td>
</tr>
<tr>
<td>j. Skull</td>
<td>A. Campbell, 1856, A.S.B.</td>
</tr>
<tr>
<td>k. Skull</td>
<td>T. Brownlow, 1856, A.S.B.</td>
</tr>
<tr>
<td>l. Skull</td>
<td>Purchased, 1858, A.S.B.</td>
</tr>
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<td>Kashmir</td>
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</tbody>
</table>
m. Skeleton 9
n. Skull 8
o. Skull 8
q. Skin, skull 9 Gakuch, nr. Gilgit, 22-10-79.
r. Skull 8 Sharot, nr. Gilgit

Var.—pruinurus.
a. Skin Thibet A. Campbell, A.S.B.

[Type of U. pruinurus, Blanford.]

Ursus torquatus.


Helaarctos malayanus, apud Hodgson J. A. S. B., i, p. 340 (1832).


Ursus ferox. Robinson Assam, p. 96 (1841).


Ursus formosianus, Swinhoe P. Z. S., p. 380 (1864).


The Black Bear; Harpat in Kashmir; Mumph in Baluchistan; Bhalu Reench or Reech, Hind.; Thom, Bhoeta; Sona, Lepcha.

Distribution.—From Baluchistan and the Khirthar hills in Sind (Blanford) to Kashmir (Hugel) and so along the entire range of the Himalayas to Assam, extending southwards through Burma as far as Mergui; and eastwards through China to Shantung and the Islands of Hainan and Formosa (Swinhoe) and South-Eastern Siberia.

a. Skin 9 Zoological Gardens.
b. Skin 8 Sanda Valley, Yunnan, J. Anderson.
c. Skin Assam, 27-6-72 1,700 ft.
d. Skin, skull 9 8 S. E. Peak.
e. Staffed L. C. Griesbach.
f. Skeleton No history.
g. Skull Assam F. Jenkins, 1847, A.S.B.
h. Skull No history, A.S.B.
j. Skull 8 H. H. Godwin Austen.
MAMMALIA.

| k. Skull | Skull | Mundi Hills, Baluchistan | Karachi Mus. [Ex.] |
| l. Skull | Skull | Mundi Hills, Baluchistan | Karachi Mus. [Ex.] |
| m. Skull | Skull | Mundi Hills, Baluchistan | Karachi Mus. [Ex.] |
| n. Skull | Skull | Himalayas | Rajah R. Mullick. |
| o. Skeleton | Skull | Himalayas | Zoological Gardens. |
| p. Skull | Skull | Mundi Hills, Baluchistan | Zoological Gardens. |
| q. Skull | Skull | Mundi Hills, Baluchistan | Zoological Gardens. |
| r. Skin, skull | Skull | Mundi Hills, Baluchistan | No history. |

Ursus malayanus.

Ursus malayanus, Raffles Linn. Trans., xiii, p. 254 (1820); Blyth Cat. no. 226, p. 76; Müller Over de Zoogdieren in Tem. Verhandl., p. 32; Master Notes on Jerdon, p. 10; Blanford Mammals, p. 199.

Prochilus malayanus, Gray Ann. Phil., p. 61 (1825)*.


The Malayan Bear; Wetwoon, Burmese; Bruang, Malay.

Distribution.—Garo Hills, Assam, Chittagong, Arakan, Tenasserim, Malay Peninsula (Cantor), Sumatra, Java and Borneo (Temminck).

a. Skin, skull | Skull | Sibsagar, Assam | Zoological Gardens. |
| b. Skin, skull | Skull | ..... | Zoological Gardens. |
| c. Skin, skelet. | Skin | Assam | H. Phillips. |
| d. Skin, skelet. | Skull | ..... | Rajah R. Mullick. |
| e. Skin, skull, q. | Skull | ..... | W. Rutledge. |
| f. Skin, skull, q. | Skull | Garo Hills, Assam | Zoological Gardens |
| g. Skin | Skin | ..... | No history. |
| h. Skin | Skin | Java | Captain Scholefield, A.S.B. |
| i. Skin, skull | Skull | Arakan | Sir A. Phayre, 1845, A.S.B. |
| k. Stuffed, skull | Stuffed, skull | Sumatra | W. Rutledge. |
| l. Stuffed, skull, | Stuffed, skull | ..... | H. W. Bennett, 1853, A.S.B. |
| juv. | juv. |
| m. Skull | Skull | Malay peninsula | No history. |
| n. Skull | Skull | Arakan Hills | Zoological Gardens. |
| o. Skin, skull, | Skin, skull, | ..... | W. Rutledge. |
| juv. | juv. |
| p. Skin | Skin | ..... | No history, 1885. |

Ursus arctos.


Distribution.—Europe, Northern Asia, Asia Minor (Northern pt.), Amurland (Schrenck), Kurile Isles (Gunther) and Yesso.
URSUS.

a. Stuffed ♂ Europe Purchased, 1869.

b. Skull ♂ Norway Christiania Univ., 1846, A.S.B.

c. Skull ♂ Norway Christiania Univ., 1846, A.S.B.

d. Skeleton ♂ ....... Babu H. M. Roy.

e. Skull ....... H. F. Blanford, 1863, A.S.B.

f. Skull Japan Hakodate Mus. Yesso [E.]

Ursus japonicus.


Distribution.—Japan.

a. Skin ♂ Japan O. L. Fraser, Esq., 1886.

Ursus americanus.


Distribution.—North America from Alaska southwards to Mexico.

a. Skull ....... E. Blyth, 1865, A.S.B.

b. Skull ....... W. Theobald, 1868.

Ursus maritimus.

Ursus maritimus, Erxleben Syst. Reg. Anim., p. 160 (1777); Blyth Cat. no. 222, p. 75.

Ursus polaris, Shaw Mus. Leverianum, i, p. 7 (1792)*.

Ursus marinus, Pallas litin., iii, p. 591 (1793)*.

Thalarctos polaris, Gray Ann. Philos., p. 62 (1825)*.

Thalarctos maritimus, Gray List Mamm. B. M., p. 73 (1843).


Distribution.—Circum-polar, Arctic coasts of Europe, Asia and America.

a. Skin, skelet. ♂ ....... W Rutledge.

b. Skull ....... E. Blyth, 1865, A.S.B.

c. Skull Greenland Copenhagen Mus., A.S.B.

d. Skull Greenland Aberdeen University.
Genus MELURSUS.

Prochilus, Illiger Prodr., p. 109 (1811).

Melursus ursinus.

Bradypus ursinus, Shaw and Nodder Natur. Miscell., ii, pl. lviii (1791); id Genl. Zool., i, p. 159.
Prochilus ursinus, Illiger Prodr., p. 109 (1811).
Ursus longirostris, Tiedemann Abhandl., p. 4 (1820)*.
Melursus ursinus, Blanford Mammals, p. 201 (1888).

The Sloth Bear; Aswail, Mahrathi; Kaddi, Canarese; Rinch, Deccani; Oosa, Cingalese; Ballu Riksha, Sanskrit; Reech, Hindustani; Bhalu, Bhaluk, Bengali; Yerid, Gonds; Banna, Kols; Elugu, Telegu.

Distribution.—Over the whole Peninsula of India and Ceylon (Kelaart). It is apparently found in Cutch but not in Sind or in the Himalayas, eastwards it extends to Lower Bengal and apparently to Assam.

The Indian Bear is very distinct from the other bears, both in its distribution and its morphological characteristics. It is confined to the Peninsula of India strictly speaking, while the other Indian bears are all extra-peninsular; it is distinguished from the other Indian bears by its very elongated snout; by its very small cheek-teeth and by its concave and curved palate.

Of the two fossil bears found in India, one Ursus theobaldi from the Siwaliks [Pal. Ind. (20), ii, p. 211] is distinctly allied to Melursus ursinus.

a. Skin
b. Skin
c. Skin, skelet.
d. Stuffed, juv.
e. Skull * Umsuing nr. Shillong, Assam.
f. Skeleton
g. Skull
h. Skull

No history.
No history.
W. Rutledge.
W. Rutledge.
J. Cockburn.
No history, A.S.B.
R. C. Beavan, 1864, A.S.B.
Dr. McCosh, A.S.B.
PHOCA.

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Sub-order II—PINNIPEDIA.

Genus TRICHECHUS.


Trichechus rosmarus.

Trichechus rosmarus, Linnaeus Syst. Nat., 12th ed., i, p 49 (1766); Blyth Cat. no. 232, p. 79.
Rosmarus trichechus, Lamont Seasons with the Sea-horses, p. 141 (1861)*.
Rosmarus arcticus, Lilljeborg Fauna öfvers Swer. och Norg. Ryg., p. 674 (1874)*.

The Walrus.

Distribution.—North Atlantic shores of North America from Labrador northwards, Greenland; Spitzbergen and Nova Zembla.

a. Skull ♀ Greenland Copenhagen Mus. 1839, A.S.B.
b. Skull ♀ ....... Copenhagen Mus. 1839, A.S.B.
c. Skull ♀ ....... No history.
d. Tusk ♀ ....... No history, A.S.B.

Genus PHOCA.


Phoca vitulina.

Callocephalus vitulinus, F. Cuvier Dict. Sci. Nat., xxiix, p. 544 (1826); Blyth Cat. no. 228, p. 77.
Halicyon richardii, Gray P. Z. S., p. 28 (1864).
**MAMMALIA.**

*Distribution.*—The North Atlantic and Pacific coasts, from Japan to Southern California and from New Jersey round to Spain.

a. Skull  ♂ Greenland Copenhagen Mus. 1839, A.S.B.

**Phoca grøenlandica.**


*Distribution.*—North Atlantic and Pacific, Newfoundland to Greenland, Iceland, Spitzbergen, Nova Zembla and the Arctic coast of Europe; also Northern Pacific, Kamschatka and Sitka.

a. Skull  ♂ Greenland Copenhagen Mus., A.S.B.
b. Skull  ♀ Greenland Copenhagen Mus., A.S.B.

**Phoca barbata.**


*Distribution.*—Circum-polar but northerly in its range, southern limits, Labrador and Scandinavia on the Atlantic, Amur River and Sitka on the Pacific side.

a. Skull  ♀ Greenland Copenhagen Mus., 1839, A.S.B.

**Genus STENORHYNCHUS.**


**Stenorhynchus carcinophagus.**

Distribution.—Antarctic Seas.

a. Skull Antarctic Ocean Brit. Mus. [Ex.]

Genus CYSTOPHORA.

Cystophora, Nilsson Skand. Fauna, i, p. 382 (1820)*.

Cystophora cristata.

Cystophora borealis, Nilsson Skand. Fauna, p. 383 (1820)*.
Cystophora antillarum, Gray P. Z. S., p. 93 (1849).

Distribution.—Northern parts of the Atlantic Ocean from Labrador to Norway.

a. Skull ♂ ...... Copenhagen Mus., 1839, A. S. B.
b. Skull ♀ ...... Copenhagen Mus., 1839, A. S. B.
c. Skull juv. ♂ ...... Copenhagen Mus., 1839, A. S. B.

Genus MACRORHINUS.


Macrorhinus leoninus.

Phoca elephantina, Molina Saggio sul Stor. Nat. del Chili, p. 280 (1782)*.
Phoca proboscidea, Peron Voy. aux Terr. Austr., ii, p. 34 (1817)*; Blyth Cat. no. 234, p. 79.
Phoca byroni, Desmarest Mamm., p. 240 (1820).
Phoca ansoni, Desmarest Mamm., p. 239 (1820) [in part].

Distribution.—Antarctic and Southern seas, i.e., Kerguelen, Falkland, Patagonia, Juan Fernandez.

a. Upper canine ... C K. Hamilton, 1860, A.S.B.
Order CETACEA.

Marine rarely fluviatile Mammals, with a thick, hairless skin and a flattened caudal fin; a certain number of the seven cervical vertebrae confluent; no sacrum; only very few of the ribs are provided with a capitulum or are connected with the sternum; no clavicles; the forelimbs are not provided with nails and form broad flattened paddles; the traces of the hind limb are scanty and entirely internal; the brain case is spheroidal, with broad basis cranii; the fused supraoccipitals and interparietals generally meet the frontals in front and separate the small laterally placed parietals from one another; a large supraorbital present; nasal bones very short, not covering the ventral nasal passages; rami of mandible with no ascending process; dentition homodont, monophyodont, teeth with single roots; pinna auris absent; stomach complex; salivary glands absent; kidneys lobulate; os penis not present; mammae inguinal two in number; placenta diffuse.

Our knowledge of the Indian Cetacea is primarily due to Blyth, who wrote a paper in the Journal of the Asiatic Society, Vol. XXVIII, describing all the remains of Cetacea from Indian seas which he had been able to secure for the Museum of the Asiatic Society; secondly, to Anderson, who in his Anatomical and Zoological Researches, gives a complete account of the two fresh-water Dolphins of Indian Rivers, and of the skeleton of the fin-back whale found in the Indian Ocean; and, lastly, to Owen, who (Trans. Zool. Soc., Vol. VI) described the remains of a large number of Indian Cetacea collected by Sir W. Elliot on the Madras Coast.

The following synopsis is entirely based on the various writings of Prof. Flower, of which the chief are the papers in the Transactions of the Zoological Society, Vol. VI, in the Proceedings for 1883, and the articles Mammalia and Whales in the Encyclopædia Britannica.

**Synopsis of Indian Genera.**

*a.* Teeth never functionally developed; upper jaws provided with plates of baleen; external respiratory aperture double; rami of mandible arched outwards; the anterior ends connected by fibrous tissue only; sternum a single piece connected with one pair of ribs only [= Mystacoceti]. **Balenoptera,** p. 313.

*a.* Teeth present and functional; no baleen; external respiratory aperture single; rami of the mandible straight, the anterior ends forming a true symphysis; sternum of several pieces and connected with several pairs of ribs. [= Odontoceti.]

*b.* Costal cartilages not ossified; hinder ribs loose the tubercular and retain the capitular articulation with the vertebrae;
cervical vertebrae ankylosed together; no functional teeth in the upper jaw; pectoral limbs small; dorsal fin usually present.

c. Teeth in lower jaw, 20 to 25 in number; rostrum greatly elongated; mandible long and narrow, the symphysis occupying more than half the length of the ramus.

Physeter, p. 314.

c². Teeth in the lower jaw, 9 to 12 in number; rostrum short, not exceeding the cranium in length; mandibular symphysis less than half the length of the ramus.

Kogia, p. 315.

b. Costal cartilages not ossified; the tubercular and capitular articulation of the ribs blending posteriorly; cervical vertebrae all free; mandibular symphysis very long, exceeding half the length of the ramus; dorsal fin rudimentary; eye rudimentary; fluvial or estuarine. Platanista, p. 315.

b². Costal cartilages firmly ossified; posterior ribs lose their capitular articulation and are united to the transverse processes of the vertebrae by the tubercular process; some of the anterior cervical vertebrae generally ankylosed; numerous teeth in both jaws; symphysis of mandible short or moderate, not exceeding \( \frac{1}{5} \) of the ramus; dorsal fin usually present.

\[ \text{[= Delphinidæ.]} \]

d. With rounded head; no distinct rostrum or beak; in the skull the rostral equals the cranial portion in length; atlas and axis firmly united; pterygoids small and widely separated.

e. Crowns of the teeth laterally compressed; teeth \( \frac{4}{5} \) to \( \frac{6}{5} \); no dorsal fin. Neomeris, p. 318.

e². Crowns of the teeth conical and pointed.

f. Pterygoid bones widely separated from one another; teeth \( \frac{3}{4} \) to \( \frac{4}{4} \), small, occupying the whole length of the rostrum. Orcella, p. 318.

f². Pterygoid bones normal, meeting in the middle line; teeth \( \frac{1}{8} \) to \( \frac{8}{8} \), occupying only the anterior part of the rostrum; dorsal fin low and triangular. Globicephalus, p. 319.

f³. Pterygoid bones normal, meeting in the middle line; teeth small \( \frac{3}{8} \) to \( \frac{3}{8} \), not exceeding 4 mm. in diameter; rostrum slightly exceeding in length the cranium. Lagenorhynchus, p. 21.
a². With distinctly elongated rostrum generally marked off from the antenarial adipose elevation by a V-shaped groove; the rostral considerably exceeds the cranial portion of the skull in length; atlas and axis united, other cervical vertebrae free.

g. Pterygoid bones normal, meeting in the middle line.

h. Palate with deep lateral grooves; symphysis of lower jaw short; teeth small not exceeding 3 mm. in diameter and $\frac{4}{10}$ to $\frac{6}{10}$ in number. Delphinus, p. 321.

h². Palate not grooved; symphysis of mandible short; teeth stout 6 to 7 mm. in antero-posterior diameter, $\frac{2}{11}$ to $\frac{2}{8}$ in number. Tursiops, p. 323.

h³. Palate not grooved; symphysis of mandible short; teeth $\frac{3}{8}$ to $\frac{3}{8}$, small not exceeding 3 mm. in diameter. Prodelphinus, p. 324.

h⁴. Palate not grooved; symphysis of the mandible longer than $\frac{1}{4}$th the length of the ramus; rostrum long and narrow; teeth $\frac{3}{11}$ to $\frac{3}{11}$, large 5 to 6 mm. in diameter. Steno, p. 324.

g². Pterygoid bones narrow, separated in the middle line, their inner borders diverging posteriorly; teeth $\frac{3}{10}$ to $\frac{3}{10}$ in number, 4 to 5 mm. in diameter. Sotalia. p. 325.

Genus Balaena.


Balaena australis.


The Southern Right Whale.

Distribution.—Southern Seas.

a. Scapula  
3 vertebrae

......

No history, A.S.B.

Balaena mysticetus.

The Greenland Right Whale.

Distribution.—Arctic Seas.

a. A flake of Baleen

Dr. McGowan, 1860,
A.S.B.

Genus Balaenoptera.

The Whales inhabiting the Northern Indian Ocean were first investigated by Blyth who described, from the remains catalogued below, Balaenoptera indica; Anderson (see below) believes that there are at least 3 species of Finback whales found in the Indian seas. Balaenoptera indica, the largest about 84 feet in length; a median-sized whale, whose existence is only indicated by certain vertebrae now in the Museum, attaining a length of about 60 feet for which he proposed the name Balaenoptera blythi; and a small species not exceeding 40 feet, which is founded on the nearly complete skeleton of the Sittang Whale (see below), for which the name B. edeni is proposed; these whales all seem to be closely allied to a species, Balaenoptera schlegelii, described by Prof. Flower (P. Z. S., 1864, p. 400) from Java and afterwards described and figured in great detail by Van Beneden and Gervais in the Osteographie des Cétacés; they do not seem to differ from one another at all except in size.

Balaenoptera indica.


Distribution.—The Bay of Bengal and the northern part of the Indian Ocean; this is probably also the whale recorded from the Arabian Sea and Persian Gulf.

a. Lower jaws, left
   radius, 1st, 2nd, 9th, 11th lumbar, 3rd caudal vertebræ and 1 rib.
   Amherst Isle, Arakan T. P. Sparks, A.S.B.
   Coast.

   [Type of Balaenoptera indica, Blyth.]

b. Pt. of skull, atlas, 1 lumbar 2 caudal, body of a dorsal vertebra, 3 ribs, right shoulder girdle, hyoid and some epiphyses.
   Sondip Isle, Babu Uday Chand nr. Chittagong, 11-74.
   Dutt.
Balaenoptera blythi.


Distribution.—? Bay of Bengal.

a. 4 Vertebrae 1 rib  

Bay of Bengal Medical College [Ex.], 1879.

[Type of Balaenoptera blythi, Anderson.]

Balaenoptera edeni.


Distribution.—Only known from the Bay of Bengal.

a. Skeleton mted. ribs and one pectoral arch re- 

stored in plaster. Thaybyoo Choung, Gulf Sir A. Eden and Major 

of Martaban, Burma. Duff.

[Type of B. edeni, Anderson.]

b. Skeleton almost com- 

plete. Sidhi Isle, Noakholly C. E. F. Tonnerre. 

Dist., 1-90.

c. Skull Arakan Coast (Prof. Medical Coll. Mus. [Ex.] 

Walker).

Genus PHYSETER.


Physeter macrocephalus.

Physeter macrocephalus, Linnaeus Syst. Nat., 12th ed., i, p. 107 (1766); 

Blyth. J. A. S. B., xxix, p. 452; Blyth Cat. no. 287, p. 93; Flower Trans. 


The Cachalot or Sperm Whale.

Distribution.—The temperate seas of the Northern and Southern 

Hemispheres; it has been recorded (Blyth l.c.) from the seas round 

Ceylon and the Malabar Coast; and a specimen about 24 feet 

long was washed ashore at Madras in January 1889, the skull 

of which has been preserved in the Madras Museum; the lower 

jaw contained 23 functional teeth and above imbedded in the gum 

were 12 rudimentary teeth on either side.

a-c. 3 Teeth...... No history, A.S.B. 

d. Small tooth..... R. C. Tytler, 1864, A.S.B. 

e-f. 2 Teeth Australia C. S. Guthrie, 1867. 

g. Tooth Mauritius S. R. Elson.
Genus **KOGIA**.


*Euphysetes*, *Wall Hist. and Descript. New Sperm Whale, Sydney* (1851)*.

**Kogia breviceps**.


*Euphysetes grayi*, *Wall Hist. and Descript. New Sperm Whale, Sydney* (1851)*.


**Distribution.**—The temperate and tropical seas of both hemispheres; was procured by Sir W. Elliot at Waltair near Madras. [No specimens in the Indian Museum.]

Genus **PLATANISTA**.


**Platanista gangetica**.


The Gangetic Dolphin; Susa, Sous, Sunsar in the Ganges; Bulhan in Sind; Hihoo, Shhoo, Huh in Assam.

**Distribution.**—The Ganges and its tributaries, including the Brahmapootra and the Cachar Rivers and the Karnaphuli River of Chittagong; the Indus and its tributaries, all from their exit from the hills to their mouths.

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<td>b.</td>
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<td>E. Blyth, 1843, A.S.B.</td>
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MAMMALIA.

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E. Blyth, 1849, A.S.B.

G. E. Wakefield, 1867.

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Monodon monoceros.


The Narwhal.

Distribution.—Arctic Seas, north of 65° N. lat.


b. Tooth Capt. Lumsden, 1820, A.S.B.

Genus DELPHINAPTERUS.


Delphinapterus leucas.


The White Whale.

Distribution.—Arctic Seas and perhaps the Australian coasts (Delphinus kingi of Gray).

a. Skull Greenland Copenhagen Mus., 1840, A.S.B.

Genus PHOCAENA.


Phocaena communis.


Distribution.—Coasts of the North Atlantic, both European and American, the species found in the North Pacific is probably distinct.

a-b. 2 Skulls Greenland Copenhagen Mus. [Ex. A.S.B.

c. Skeleton Christiania Univ., A.S.B.
Genus **NEOMERIS**.


**Neomeris phocaenoides.**


**Distribution.**—Is recorded from the seas of Japan, the Bay of Bengal and the Cape of Good Hope. A second species from Karachi harbour which, however, does not seem to differ in any essential manner from the present species, has been described by Murray (Ann. Mag. N. H. (5), xiii, p. 348) under the name of Neomeris kurrachiensis, (see also J. Bomb. N. H. Soc., i, p. 159, with plate).

- a. Skeleton ♂ Bay of Bengal Calcutta Bazaar [P.] A.S.B.
- b. Stuffed ♂ No history.

Genus **ORCELLA**.


*Orcella, Anderson P. Z. S.*, p. 142 (1871).

**Synopsis of the two Indian Species.**

- a'. Dorsal fin higher and less falcate; pectoral fin longer and narrower; skin marked with streaks. *O. fluminalis*, p. 319.

**Orcella brevirostris.**


*Phocaena brevirostris*, *Owen Trans. Zool. Soc.*, vi, p. 24, pl. ix, figs 1, 2, 3 (1866).


**Distribution.**—Estuaries of the rivers flowing into the Bay of Bengal, recorded from Vizagapatam, the Hughli and Singapore.

*a.* Stuffed, skull
Hughli R., Serampore
G. T. Lushington, A.S.B.

*b.* Skull
Chilka Lake, Orissa
L. Schwendler, 1875.

*c.* Skull
Chilka Lake, Orissa
W. C. Taylor.

*d.* Skull
Amherst beach, Burma
Deputy Commr., Amherst, 1867.

*e.* Skeleton
Hughli River
River Police.

*f.* Skeleton
Budge Budge, Hughli R.
Purchased.

*g.* Skeleton
Circular Canal, Calcutta
J. F. Barckley.

*h.* Skeleton
Calcutta Bazaar
Purchased, 1859, A.S.B.

*i.* Skeleton
Kistna R., Madras Pr.
R. S. Ellis.

*j.* Skeleton
Calcutta Bazaar
Purchased, 1867.

*k.* Skeleton
Purchased, 1867.

**Orcella fluminalis.**


**Distribution.**—The Irrawaddy and its affluents, from Prome upwards extending to just beyond Bhamo.

*a.* Skeleton
Bhamo
Capt. Bowers, 1870.

[Type of O. fluminalis, Anderson.]

*b.* Skeleton
Bhamo
Capt. Cooke [P.]

*c.* Skeleton
Irrawaddy, above
Major Adamson.

Bhamo.

**Genus GLOBICEPHALUS.**


**Globicephalus melas.**

Delphinus melas, Traill Nichol. Journ., xxii, p. 81 (1809)*.


Globicephalus deductor, apud Blyth Cat. no. 273, p. 89 (1863).

Globicephalus melas, Flower List Cetacea B, M., p. 19 (1885).

**Distribution.**—Apparently Cosmopolitan; there are specimens in the British Museum from the English and American coasts in the Northern Hemisphere, and from the Falkland Islands and New Zealand in the Southern Hemisphere.

*a.* Skull
Greenland
Copenhagen Museum, 1840, A.S.B.

**Globicephalus indicus.**


Distribution.—Bay of Bengal.

The above synonymy also refers partly to what Blyth considered the young form of this species, but which was subsequently shown by Anderson to be really a different species (Orcella brevirostris, see supra).

The skull of Globicephalus indicus differs from that of G. melas, in having the premaxillae on the rostrum so broadened, as to cover the maxillae completely; the teeth are also much larger and less numerous than in G. melas.

This is exactly the difference pointed out by Prof. Flower between the skull of G. melas and G. macrorhynchus (Gray Zool. Erebt. Terr., p. 33) which was got from the Cape of Good Hope.

To this broad-snouted group of the genus Globicephalus, there also belong G. scammoni Cope from the Pacific, and G. brachypterus Cope from the Atlantic coasts of the Southern States and also G. guadaloupensis (= G. intermedius); True (Contributions to the Natural History of the Cetaceans in Bull. U. S. Nat. Mus. no. 36) considers that G. scammoni of the Pacific and G. brachypterus of the Atlantic differ specifically, and G. indicus seems to be rather more allied to the latter than to the former.

The following are the measurements of the two skulls of G. indicus and also of the one of G. melas above; the measurements are the same as those given by True in the paper quoted above and are given in centimetres.

<table>
<thead>
<tr>
<th></th>
<th>G. indicus</th>
<th>G. indicus</th>
<th>G. melas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>29 3/4</td>
<td>33</td>
<td>36 1/2</td>
</tr>
<tr>
<td>Length of beak</td>
<td>20 1/4</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Breadth of beak, at its base</td>
<td>19</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Breadth of premaxillae at middle of beak</td>
<td>16 1/2</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Greatest breadth between the outer margins of the premaxillae proximally</td>
<td>14 1/2</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Length of tooth line</td>
<td>13 1/4</td>
<td>14 1/2</td>
<td>13</td>
</tr>
<tr>
<td>Last tooth to base of maxillary notch</td>
<td>4 1/2</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>Extremity of beak to the anterior margin of the narial opening</td>
<td>4 1/2</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>Extremity of beak to the end of the pterygoid crest</td>
<td>4 1/2</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>Breadth between the orbits</td>
<td>3 1/2</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>Breadth between the hinder margins of the temporal fossae</td>
<td>27 1/2</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Length of the temporal fossae</td>
<td>13 1/2</td>
<td>11 1/2</td>
<td>13</td>
</tr>
<tr>
<td>Depth of the temporal fossae</td>
<td>14 1/4</td>
<td>14 1/2</td>
<td>10</td>
</tr>
<tr>
<td>Length of the mandible</td>
<td>4 1/2</td>
<td>56</td>
<td>53</td>
</tr>
<tr>
<td>Length of mandibular symphysis</td>
<td>8</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Length of the mandibular tooth row</td>
<td>1 3/4</td>
<td>1 3/4</td>
<td>1 7/8</td>
</tr>
<tr>
<td>Number of teeth</td>
<td>8 x 5/8</td>
<td>7 x 7/8</td>
<td>11 x 11/8</td>
</tr>
</tbody>
</table>
DELPHINUS.


[Types of Globiceps indicus, Blyth.]
c. Skull .... No history.

Genus LAGENORHYNCHUS.


Lagenorhynchus acutus.

*Delphinus acutus*, *Gray* *Spiceleg. Zool.*, i, p. 2 (1828).
*Delphinus schrichtii*, *Schlegel Abhan. Gebiet. Zool.*, i, p. 23, pls. i, ii, fig. 4, iv, fig. 5 (1841).
*Lagenorhynchus leucopleurus*, *Gray Zool. Ereb. & Terr.*, p. 34 (1846); *Blyth Cat.* no. 281, p. 91.

*Distribution.*—North Atlantic and North Sea.
a. Skeleton Norwegian Coast Christiania Univ. [Ex.], A.S.B.

Lagenorhynchus electra.

*Delphinus (Lagenorhynchus) fusiformis*, *Owen Trans. Zool. Soc.*, vi, p. 22, pl. v, fig. i (1836).

*Distribution.*—Bay of Bengal (Elliot) and Pacific (Sandwich Isles).

[No specimen in the Indian Museum.]

Genus DELPHINUS.


Delphinus delphis.

**Distribution.**—Cosmopolitan; there are in the British Museum specimens from the North and South Atlantic, and from the seas of New Zealand and Tasmania.

<table>
<thead>
<tr>
<th>Skeleton</th>
<th>Indian Ocean</th>
<th>No history, A.S.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower jaw</td>
<td>Indian Ocean</td>
<td>Purchased.</td>
</tr>
<tr>
<td>only</td>
<td>Nicobar Isles</td>
<td>F. A. de Roepstorff</td>
</tr>
</tbody>
</table>

[The above two probably of this species.]

### Delphinus frithi.


**Distribution.**—Probably the Indian Ocean.

This species, which is represented only by a skull, is closely allied to Delphinus delphis, it has the grooved palate characteristic of the genus as restricted by Flower; the teeth are not in good condition, many of them having fallen out; the number given by Blyth is 52, but it does not appear that there could ever have been more than 45 teeth above and below from the present state of the skull; the character by which Blyth thought to differentiate this species, namely, the fusing of the premaxillae together in the middle of their length is probably merely due to age and is shown to be also the case in the specimen of *D. delphis* figured by Van Beneden and Gervais; there seems therefore to be no reason why this skull should not be referred to *D. delphis*; as, however, there is no authentic specimen of *D. delphis* in the Indian Museum with which to compare it, it will perhaps be better for the present to let Blyth's name stand.

<table>
<thead>
<tr>
<th>Skull</th>
<th>Indian or Atlantic</th>
<th>R. W. G. Frith, A.S.B. Oceans.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>[Type of <em>D. frithi</em>, Blyth.]</td>
</tr>
</tbody>
</table>

### Delphinus pomeegra.


**Distribution.**—Bay of Bengal.

Probably conspecific with *D. delphis*.

[No specimen in the Indian Museum.]

### Delphinus longirostris.

*Delphinus longirostris*, *Cuvier Regn. Anim.*, 2nd ed., p. 228 (1829)*

*Van Beneden et Gervais Osteog. des Cétacés*, p. 604, pl. xxxix, figs. 10-11.
Distribution.—Malabar Coast.
This species is distinguished from Delphinus delphis by the number of its teeth: the beak forms 67.9 per cent. of the total length of the skull, a proportion never reached in any specimen of D. delphis (cf. True Bull. U. S. Nat. Mus., no. 36, p. 59).

[No specimen in the Indian Museum.]

Genus TURSIOPS.


Tursiops tursio.
Delphinus tursio, Fabricius Faun. Gragn., p. 49 (1780)*.
Delphinus eurynome, Gray Zool. Ereb. and Terr., p. 38 (1846); Blyth Cat. no. 277, p. 90.
Tursiops tursio, Flower P. Z. S., p. 512 (1883); id. List Cetacea B. M., p. 25.

Distribution.—Atlantic and Indian Oceans extending to the Bay of Bengal.
There is a specimen identified by Prof. Flower with this species in the British Museum from the Seychelle Islands, so there is no reason that the two specimens catalogued below should not be identified with this species, though without direct comparison it is impossible to be certain.

| a. Skull | Medical College, Calcutta, A.S.B. |
| b. Skull | Bay of Bengal, Capt. Fairweather, A.S.B. |
| c. Skeleton | Port Natal, O. L. Fraser. |

Tursiops perniger.

Distribution.—The Bay of Bengal.
This species can never be properly identified as the type consists of a stuffed specimen and only about 8 inches of the beak of the skull; it is best assigned to Tursiops, from the typical specimens of which, however, it differs in the fact that the tooth row above is only about 7½ inches long, whereas in Tursiops tursic the measurement is between 9 and 10 inches; the teeth are large between 5 and 6mm. in antero-posterior diameter.

| a. Stuffed and pt. of skull. | Bay of Bengal, Sir W. Elliot, A.S.B. |

[Type of Delphinus perniger, Blyth.]
Genus **PRODELPHINUS.**


**Prodelphinus obscurus.**

Prodelphinus obscurus, *Flower List Cetacea B. M.,* p. 28 (1885).

*Distribution.*—Southern seas; there are in the British Museum and in the Museum of the Royal College of Surgeons specimens from New Zealand, the Cape and the west coast of South America.

The skulls catalogued below certainly belong to the genus *Prodelphinus* as defined by Prof. Flower (P. Z. S., 1883); they seem more nearly allied to *P. obscurus* than to any other species.

| a. Skull | ..... |
| b. Skull | Palk Straits, Ceylon |

O. L. Fraser.

**Prodelphinus attenuatus.**

Prodelphinus attenuatus, *Flower List Cetacea B. M.,* p. 30 (1885).

*Distribution.*—Indian Ocean, the Bay of Bengal to the Cape.

The specimens attributed to this species, bear a considerable resemblance to the specimens identified with the previous *P. obscurus,* but the rostra are considerably narrower and the teeth more numerous, being about $\frac{38}{40}$ instead of $\frac{30}{40}$.

| a. Skull | ..... |
| b. Skull | Bay of Bengal |
| c. Skull | Cape of Good Hope |
| d. Lower jaw | ..... |
| e-f. 2 Skulls, no lower jaws. | ..... |

R. C. Tyler, 1859, A.S.B.
C. Henry, A.S.B.
No history, A.S.B.

Genus **STENO.**


**Steno rostratus.**

SOTALIA.

Delphinus frontatus (pt.), G. Cuvier Oss. foss., 2nd ed., v., pt. 1, p. 278, pl. xxi, figs. 7, 8 (1823)*.
Steno frontatus, Gray Zool. Ereb. and Terr., p. 43 (1846); Blyth Cat. no. 282, p. 91.

Distribution.—The Indian Ocean including the Red Sea and Bay of Bengal, the Southern Atlantic and Pacific Oceans.

Sotalia, Gray Cat. Seals and Whales, p. 393 (1866).

Sotalia gadamu.

Delphinus (Steno) gadamu, Owen Trans. Zool. Soc., vi, p. 17, pl. iii, figs. 1-2, pl. iv, figs. 1-5 (1866).
Sotalia gadamu, Flower P. Z. S., p. 513 (1883); id. List Cetacea B. M., p. 33.

Distribution.—Indian Seas (Vizagapatam and Karachi).
The teeth of the specimen catalogued below are about 33 in number, while those of the type of S. gadamu are rather fewer, being only 27-28.

a. Skull Red Sea J. Owen, 1844, A.S.B.
b. Skull Nicobar Isles, Bay of H. Lewis, 1846, A.S.B.

Sotalia plumbea.

Sotalia plumbea, Flower List Cetacea B. M., p. 32 (1885).

Distribution.—Is recorded from the Malabar Coast and from Sind.

[No specimen in the Indian Museum.]

Sotalia lentigenosa.

Sotalia lentigenosa, Flower List Cetacea B. M., p. 33 (1885).

Distribution.—Bay of Bengal (Vizagapatam, Elliot).

[No specimen in the Indian Museum.]
Mammals of herbivorous and aquatic habits, with an almost hairless skin, a horizontal flattened caudal fin and an odontoid process; no sacrum; the capitulum of the rib articulates with the centrum of the vertebra; no claws; fore-limbs paddle-shaped with rudimentary nails; digits never provided with more than three phalanges; no trace of hind-limbs; brain-case cylindroidal; the parietals meet in a sagittal suture; the rami of the mandible have a high ascending portion (in these two points differing from Cetacea); frontals with large supra-orbital processes; nasals aborted; salivary glands well developed; a caecum present; testes abdominal; mammae pectoral.

**Genus HALICORE.**

Halicore, Illiger Prodr., p. 140 (1811).

**Halicore dugong.**


Halicore dugong, Illiger Prodr., p. 140 (1811); Gray Illust. Ind. Zool., ii, pl. xxiii; Horsfield Cat. E. I. Mus., p. 139; Blyth Cat. no. 461, p. 143; Jerdon Mamm., no. 240, p. 311; Blyth jf. A. S. B., xliiv, Burma List, p. 53; Nevill Taprobanian, i, p. 2.


**Distribution.**—The coasts of the Indian Ocean from Mozambique to the Red Sea, Malabar, Ceylon, Andamans and Tenasserim to Singapore.

The Australian species was separated by Owen, chiefly on account of the fact that it possessed 24 instead of 20 molar teeth, this does not seem to be a constant difference, as both species exceptionally develop 6 molars instead of 5.

There seem to be, however, other distinctions, some of which were noticed by Owen, these distinctions have been ignored by modern writers by whom all the Dugongs are included under one specific name. If an Australian skull be compared with an Andamanese one of approximately the same age, it will be found that the very large external nasal opening is in the Australian skull distinctly heart-shaped, the sides of the opening forming a continuous curve; in the Andamanese skull the opening is pear-shaped, the sides of the opening bulging forward anteriorly so as to constrict the opening; in the Australian skull too, the anterior projection of the frontal bones which, with the premaxillae and the maxillae
form the side wall of nasal opening, is very much more prominent and raised up than in the Andaman species.

As was pointed out by Owen, the scapula of the two forms also presents several points of distinction, the coracoid process is much more developed in the Australian species than in the Andaman form, the notch between the coracoid process and the anterior part of the blade is also strongly developed in the Australian, whereas in the Indian species there is hardly any notch at all; the curve of the posterior edge of the blade is very much greater in the Andaman than in the Australian example; the acromion too is much higher and bigger in the Andamanese form.

Curiously enough the skull entered in Blyth’s Catalogue under the number 462B, and believed by him to be the skull of an Australian specimen, agrees in every way with the Andamanese species in the Museum, and has therefore been entered here under the name of H. dugong; it is very possible that there has been some mistake in the locality of the skull in question.

It seems to be generally acknowledged that the Red Sea form, (H. tabernaculi of Rüppell) is indistinguishable from the Indian species.

a. Skeleton a Andamans E. H. Man [P.]
b. Skeleton (foetus) .... No history.
c. Skull Port Blair, Andamans Col. Ford, 1867.
d. Skull Nicobars F. A. deRoepstorff.
e. Lower jaw Nicobars, Andamans F. A. deRoepstorff.
f. Lower jaw Andamans R. C. Tytler, A.S.B.
g. Skull Gulf of Carpentaria? Dr. R. Tytler, A.S.B.
h. Skull .... Purchased.

Halicore australis.


Distribution.—Coasts of Australia.

a. Stuffed and skeleton mtd. Queensland Brisbane Mus. [Ex.]
b. Skeleton Queensland Purchased.

Order EDENTATA

The Order Edentata is a very polymorphic one and not easily defined; the forms included in it have, however, the following points of structure in common; teeth present or absent, when present, consisting of molars only, and springing from persistent pulps devoid of enamel.
The only genus represented in the Indian Empire is Manis, which is characterised by being covered externally by large imbricated horny scales; no teeth; tongue long, vermiform and protractile; limbs short, with five complete digits to each foot; a diffused and non-deciduate placenta.

Genus **CHOLOPUS**.

*Choloepus, Illiger Prodr., p. 108 (1811)*.

**Choloepus didactylus**.

*Bradypus didactylus, Linnaeus Syst. Nat., 12th ed., i, p. 51 (1766).*

*Choloepus didactylus, Illiger Prodr., p. 108 (1811); Gray Cat. Carn. Mamm., p. 363.*

**Distribution.**—Brazil and Guiana.

- Skin, skull & and bones, Zoological Gardens.

**Choloepus hoffmanni**.


**Distribution.**—Central and South America from Costa Rica to Ecuador.

- Skeleton mtd., Purchased.

Genus **MYRMECOPHAGA**.

*Myrmecophaga, Linnaeus Syst. Nat., 12th ed. i, p. 51 (1766).*

**Myrmecophaga jubata**.


**Distribution.**—America from Guatemala to Paraguay.

- Stuffed, A. D. Bartlett, A.S.B.

Genus **TATUSIA**.

*Tatusia, Lesson Man. Mamm., p. 309 (1827).*
Tatusia novemcincta.


*Distribution.*—America from Texas southwards to Paraguay.

*a.* Alc. ...... British Mus. [Ex.]

Genus DASYPUS.


Dasypus sexcinctus.


*Distribution.*—Brazil and Paraguay.

*a.* Stuffed Brazil E. Blyth, 1865.
*b.* Skelet. mtd. ♂ ...... W. Rutledge.
*c.* Skeleton and carapace. ...... Zoological Gardens.
*d.* Skeleton ♂ ...... Rajah R. Mullick.

Genus MANIS.


*Synopsis of Indian Species.*

*a.* Tail the same length as the body or rather shorter.

*b.* Scales very large and light olive coloured; 11 to 13 longitudinal rows on the trunk; a mesial line of 14 on the tail.

*M. pentadactyla*, p. 330.

*b*². Scales smaller and very dark; 15 to 18 longitudinal rows on the trunk; a mesial line of 16 to 20 scales on the tail.

*M. aurita*, p. 330.

*a*². Tail rather longer than the body; scales very dark; 19 longitudinal rows on the trunk; and as many as 30 in the mesial line of the tail.

*M. javanica*, p. 331.
Manis pentadactyla.


Sind, p. 60.

The Scaly Ant Eater or Manis; Hind. and Sanskrit, Bajar-kiit, Bajrakapta, Sillu, Sukunkhor; Kols, Armoi; Mahratta, Kaulimah; Telugu, Alawa; Mal, Alangu; Deccan, Banrohu (=Jungle carp); Bengal, Kot-pohu; Sind, Chulla Mirron; Cingalese, Caballaya.

Distribution.—Throughout India and Ceylon, from Sind in the west to Cuttack in the east, not extending into Lower Bengal, or found in the Himalayas.

<table>
<thead>
<tr>
<th>a-b.</th>
<th>2 Skins</th>
<th>Shabbunder, Sind</th>
<th>Karachi Mus. [Ex.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>c.</td>
<td>Skin</td>
<td>...</td>
<td>E. I. Mus., London.</td>
</tr>
<tr>
<td>d.</td>
<td>Skin</td>
<td>...</td>
<td>Purchased, 1871.</td>
</tr>
<tr>
<td>e.</td>
<td>Skin, skeleton</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>f.</td>
<td>Skin, skull</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>g.</td>
<td>Skin, skull, bones</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>h.</td>
<td>Alc.</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>j.</td>
<td>Alc.</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>k.</td>
<td>Foetus of &quot;e&quot;</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>l.</td>
<td>Alc. foetus</td>
<td>...</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>m.</td>
<td>Skull</td>
<td>Ceylon</td>
<td>E. F. Kelaart, A.S.B.</td>
</tr>
<tr>
<td>n-o.</td>
<td>2 skulls</td>
<td>...</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>p.</td>
<td>Stuffed</td>
<td>Chybassa</td>
<td>S. R. Tickell, 1842, A.S.B.</td>
</tr>
<tr>
<td>q.</td>
<td>Stuffed</td>
<td>...</td>
<td>A. Masters, A.S.B.</td>
</tr>
<tr>
<td>r.</td>
<td>Skelet. mted.</td>
<td>...</td>
<td>R. W. G. Frith, 1848, A.S.B</td>
</tr>
<tr>
<td>s.</td>
<td>Skull</td>
<td>...</td>
<td>No history.</td>
</tr>
</tbody>
</table>

Manis aurita.


MANIS.

Manis javanica, *apud* Adams *P. Z. S.*, p. 133 (1859); *Blyth* *J. A. S. B.*, xxix, p. 449.

**Distribution.**—The Himalayas from Nepal to Assam, Upper Burma at considerable elevations, Yunnan and Southern China, including the Islands of Formosa and Hainan.

<table>
<thead>
<tr>
<th>u. Skin</th>
<th>Sikkim</th>
<th>T. C. Jerdon, A.S.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b-c. 2 Skins</td>
<td>Sikkim</td>
<td>L. Mandelli.</td>
</tr>
<tr>
<td>ad. and juv.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Skin</td>
<td>Himalayas</td>
<td>W. Theobald, A.S.B.</td>
</tr>
<tr>
<td>f-j. 4 Skins</td>
<td>Momien, Yunnan, 6,000</td>
<td>J. Anderson.</td>
</tr>
<tr>
<td>ft., 6-68.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k-l 2 Skins</td>
<td>Sanda Valley, Yunnan, J. Anderson.</td>
<td></td>
</tr>
<tr>
<td>4,000 ft., 7-68.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. Skin</td>
<td>Hotha Valley, Yunnan, J. Anderson.</td>
<td></td>
</tr>
<tr>
<td>5,000 ft., 8-68.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. Skin</td>
<td>Kakhyen hills, 3,400 ft., J. Anderson.</td>
<td></td>
</tr>
<tr>
<td>4-68.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o-p. 2 Skins</td>
<td>Kakhyen hills, 3,400 ft., J. Anderson. 4-68.</td>
<td></td>
</tr>
<tr>
<td>q. Skin ♂</td>
<td>Mantin, Kakhyen hills, J. Anderson. 19-1-75.</td>
<td></td>
</tr>
<tr>
<td>r. Skin ♂</td>
<td>Tsitkaw, Kakhyen hills, J. Anderson. 16-2-75.</td>
<td></td>
</tr>
<tr>
<td>s. Skin, skull</td>
<td>.....</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>and bones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t. Skin, skeleton</td>
<td>.....</td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>♂</td>
<td></td>
<td></td>
</tr>
<tr>
<td>u. Skin, skeleton</td>
<td>&quot;China&quot;</td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>w-x. 2 Stuffed</td>
<td>Momien, 6,000 ft., 6-68 J. Anderson.</td>
<td></td>
</tr>
<tr>
<td>y. Skeleton ♂</td>
<td>Kakhyen hills, Burma, J. Anderson. 19-1-75.</td>
<td></td>
</tr>
<tr>
<td>z. Skull</td>
<td>Yunnan</td>
<td>J. Anderson.</td>
</tr>
<tr>
<td>a. Skull</td>
<td>China</td>
<td>R. Swinhoe, A.S.B.</td>
</tr>
<tr>
<td>b²-f² 5 Skulls</td>
<td>.....</td>
<td>No history.</td>
</tr>
</tbody>
</table>

**Manis javanica.**


*Manis pentadactyla, apud* *Raffles Linn. Trans.*, xiii, p. 249 (1822).

Malayan, Pangolin; Burmese, Theng-khwe-khyat.

**Distribution.**—Burma from Arakan to Mergui, including Upper Burma, where it replaces *M. aurita* in the plains, the Malay Peninsula, Sumatra, Java, Borneo, and Celebes.

- **a.** Skin
  - Bhamo, Burma, 600 feet, J. Anderson.
  - 2-68.

- **b.** Skin
  - 8-2-82.

- **c.** Skin, skull
  - Java
  - Batavian Soc., 1844, A.S.B.

- **d.** Skin, skull
  - ... No history, A.S.B.

[Type of Manis leptura, *Blyth*.]

- **e.** Alc. foetus
  - A.S.B.

- **f-h.** 3 Stuffed
  - Arakan
  - ... A.S.B.

- **j.** Skeleton
  - ... Sir A. Phayre, A.S.B.

- **k-l.** 2 Skulls
  - ... No history.

**Genus ORYCTEROPUS.**

*Orycteropus, Geoffroy St. Hil. Decade Philosophique*, (1795)*.

**Orycteropus capensis.**

*Myrmecophaga a'ra, Pallas Miscell. Zool.*, p. 64 (1779)*.


**Distribution.**—South Africa.

- **a.** Stuffed
  - South Africa
  - E. L. Layard, A.S.B.

**Order MARSUPIALIA.**

This Order is entirely confined to the Australian and Neotropical Regions, so no definition is given.

Mr. Thomas' recent Catalogue of the Marsupialia and Monotremata in the British Museum has been rigidly adhered to in the following pages, and for full synonymy reference should be made to that work.

**Genus MACROPUS.**

*Macropus, Shaw Nat. Misc.*, i, text to pl. xxxiii (1790).
Macropus giganteus.

Macropus giganteus, Shaw Nat. Misc., i, pl. xxxiii (1790); Blyth Cat., p. 183; Thomas Cat. Mars. B. M., p. 15.

Distribution.—Australia generally, except the extreme north.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skin</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>b. Stuffed ♂</td>
<td></td>
<td>Bengal Econ. Mus.</td>
</tr>
<tr>
<td>c. Stuffed, skelet.</td>
<td></td>
<td>Barrackpore Menagerie, 1847, A.S.B.</td>
</tr>
<tr>
<td>d. Skeleton ♂</td>
<td></td>
<td>Rajah R. Mullick.</td>
</tr>
<tr>
<td>e. Skeleton ♂</td>
<td></td>
<td>Barrackpore Menagerie.</td>
</tr>
<tr>
<td>f. Skeleton ♀</td>
<td></td>
<td>Rajah R. Mullick.</td>
</tr>
<tr>
<td>g. Skull</td>
<td></td>
<td>N. Wallich, A.S.B.</td>
</tr>
<tr>
<td>h. Stuffed juv.</td>
<td></td>
<td>Bengal Econ. Mus.</td>
</tr>
</tbody>
</table>

Macropus rufus.

Kangurus rufus, Desmarest Mamm. Suppl., p. 541 (1822).

Distribution.—Eastern, South-Eastern and South Australia.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stuffed ♂</td>
<td></td>
<td>Purchased, 1886.</td>
</tr>
<tr>
<td>b. Stuffed ♀</td>
<td>Cachlan R., N. S. Wales</td>
<td>Bengal Econ. Mus.</td>
</tr>
<tr>
<td>c. Skeleton ♂</td>
<td></td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>d. Skeleton South Australia</td>
<td>Adelaide Mus. [Ex.]</td>
<td></td>
</tr>
<tr>
<td>e. Skin, skelet-</td>
<td></td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>ton juv. ♀</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Macropus ualabatus.


Distribution.—New South Wales and Victoria.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stuffed</td>
<td>N. S. Wales</td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>b. Skeleton</td>
<td></td>
<td>Zoological Gardens.</td>
</tr>
<tr>
<td>c. Skull</td>
<td></td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>d. Skeleton ♂</td>
<td></td>
<td>No history, 1867.</td>
</tr>
</tbody>
</table>
Mammalia.

Macropus ruficollis.

Var. A.—typicus.

Halmaturus ruficollis, Golffus Isis, p. 257 (1819); Gould Mamm. Austr., ii, pls. xiv, xv.
Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.

Halmaturus ruficollis, Golffus Isis, p. 257 (1819); Gould Mamm. Austr., ii, pls. xiv, xv.
Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.

Halmaturus ruficollis, Golffus Isis, p. 257 (1819); Gould Mamm. Austr., ii, pls. xiv, xv.
Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.

Halmaturus ruficollis, Golffus Isis, p. 257 (1819); Gould Mamm. Austr., ii, pls. xiv, xv.
Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.

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Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.

Halmaturus ruficollis, Golffus Isis, p. 257 (1819); Gould Mamm. Austr., ii, pls. xiv, xv.
Macropus ruficollis, Lesson Man. Mamm., p. 226 (1827); Thomas Cat. Mars. B. M., p. 32.
MACROPUS.

Distribution.—South-Eastern New Guinea, Northern Territory and Queensland.

a. Skin, skull

Macropus thetidis.

Macropus thetidis, *Giebel Odonogr.*, p. 43 (1855); *Thomas Cat. Mars.* B. M., p. 52.

Distribution.—South-Eastern New Guinea, Northern Territory and Queensland.

Macropus eugenii.


Distribution.—South-Eastern New Guinea, Northern Territory and Queensland.

a. Skin, skull

Macropus billardieri.


Distribution.—South-Eastern New Guinea, Northern Territory and Queensland.

a. Skin, skeleton

Macropus brachyurus.

MAMMALIA.


Distribution.—Western Australia.
a. Skull ...... No history, A.S.B.

Genus PETROGALE.


Petrogale xanthopus.
Petrogale xanthopus, Gray P. Z. S., p. 219, pl. xxxix (1854); Gould Mamm. Austr., ii, pls. xliii, xlv; Thomas Cat. Mars. B. M., p. 64.

Distribution.—South Australia.
a. Skin S. Australia Adelaide Mus.
b. Skin S. Australia Adelaide Mus.
c. Skin ...... Purchased, 1857.
d. Skin, skeleton ...... W. Rutledge, 1859.
e. Stuffed ...... W. Rutledge, 1869.
f. Skull S. Australia Adelaide Mus.
g. Skull ...... Maharajah of Burdwan, A.S.B.

Petrogale penicillata.
Heteropus albogularis, Jourdan Comptes Rend., v, p. 522 (1837).

Distribution.—Eastern Australia, Queensland to Victoria.
a. Skin, skull ...... Purchased.
b. Skin, skull ...... Purchased.

Genus ONYCHOGALE.


Onychogalea frenata.
Macropus fraenatus, Gould P. Z. S., p. 92 (1840); Blyth Cat., p. 184.
Onychogalea frenata, Thomas Cat. Mars. B. M., p. 75 (1888).
**LAGOSTROPHUS.**

**Distribution.**—Eastern Australia from Queensland to Victoria.

- **a. Stuffed** ♂
  - **Melbourne Inst., 1862, A.S.B.**

- **b. Stuffed** ♀
  - **Bengal Econ. Mus.**

- **c. Skull**
  - **No history, A.S.B.**

**Onychogale lunata.**


**Distribution.**—South and West Australia.

- **a. Skin**
  - **S. Australia**
  - **Adelaide Mus. [Ex.]**

- **b. Skeleton** juv. Yorke Peninsula,
  - **S. Australia.**
  - **Adelaide Mus. [Ex.]**

- **c. Skull**
  - **S. Australia**
  - **Adelaide Mus. [Ex.]**

**Genus DORCOPSIS.**


**Dorcopsis müleri.**


Dorcopsis müleri, *Garrod P. Z. S.*, p. 49 (1875); *Thomas Cat. Mars. B. M.*, p. 87.

**Distribution.**—New Guinea and the adjoining Islands.

- **a. Skin**
  - **Maharajah of Burdwan, 1858, A.S.B.**

**Genus LAGOSTROPHUS.**


**Lagostrophus fasciatus.**


MAMMALIA.

_Distribution._—Western Australia.

a-b. 2 Skins ♂ ♀ West Australia Adelaide Mus. [Ex.]

Genus **AEPYPRYMNUS**.

_Aepyprymnus, Garrod P. Z. S., p. 59 (1875).*

**Aepyprymnus rufescens.**

_Bettongia rufescens, Gray Charlesw. Mag. N. H., i, p. 584 (1837); Gould Mamm. Austr., ii, pl. lxv._

_Hypsiprymnus melanotis, Ogilby P. Z. S., p. 62 (1838)._  

_Aepyprymnus rufescens, Garrod P. Z. S., p. 59 (1875); Thomas Cat. Mars. B. M., p. 103._

_Distribution._—Eastern Australia.

a. Skin ♂ ...... No history.

Genus **BETTONGIA.**

_Bettongia, Gray Charlesw. Mag. N. H., i, p. 584 (1837).*

**Bettongia cuniculus.**

_Bettongia setosα, apud Gray Charlesw. Mag. N. H., i, p. 584 (1837)._  

_Hypsiprymnus cuniculus, Ogilby P. Z. S., p. 63 (1838)._  

_Bettongia cuniculus, Gould Mamm. Austr., ii, pl. lxiii (1854); Blyth Cat., p. 186; Thomas Cat. Mars. B. M., p. 106._

_Distribution._—Tasmania.

a. Skull ...... W. Cracroft, A.S.B.

**Bettongia penicillata.**

_Bettongia penicillata, Gray Charlesw. Mag. N. H., i, p. 584 (1837); Gould Mamm. Austr., ii, pl. lx; Thomas Cat. Mars. B. M., p. 110._  

_Hypsiprymnus ogilbyi, Waterhouse Jard. Nat. Libr., xi, p. 185 (1841)._  

_Distribution._—All Australia except in the North; not found in Tasmania.

a. Skin, skull West Australia Adelaide Mus. [Ex.]  

b. Skeleton ...... Major Turnbull.

**Bettongia lesueuri.**

_Hypsiprymnus lesueuri, Quoy et Gaimard Voy. Uranie, p. 64 (1824)*._  

_Hypsiprymnus grayi, Gould P. Z. S., p. 178 (1840)._  


_Bettongia lesueuri, Thomas Cat. Mars. B. M., p. 112 (1888)._
Distribution.—South and West Australia.

a. Skin, skull South Australia Adelaide Mus. [Ex.]
b. Skin, skull South Australia No history.
c. Skull South Australia Adelaide Mus. [Ex.]
d. Stuffed, skull South Australia W. Rutledge.

Genus TARSIPES.


Tarsipes rostratus.


Distribution.—Western Australia.

a. Skin & W. Australia Adelaide Mus. [Ex.]

Genus ACROBATES.


Acrobates pygmaeus.

Didephys pygmaeæ, Shaw Zool. New Holland, i, p. 5 (1794)*.


Distribution.—Southern Queensland, New South Wales and Victoria.

a. Stuffed N. S. Wales Sydney Inst., A.S.B.
b. Alc. N. S. Wales G. Nevill.

Genus DROMICIA.


Dromicia nana.


Phalangista gliriformis, Bell Linn. Trans., xvi, p. 121, pl. xiii, xiv (1828).


Dromicia gliriformis, Gould Mamm. Austr., i, pl. xxix (1845).

Dromicia unicolor, Krefft P. Z. S., p. 49 (1863).

Distribution.—Tasmania.

a. Skin, skull ..... No history.
Genus PETAURUS.

Petaurus, Shaw Nat. Misc., ii, text to pl. lx (1791).

Petaurus australis.
Petaurus australis, Shaw Nat. Misc., pl. lx (1791); Thomas Cat. Mars. B. M., p. 151.
Belideus flaviventer, Gould Mamm. Austr., i, pl. xxiii (1843).
Belideus australis et sciurus, Blyth Cat., pp. 182, 183 (1863).

Distribution.—New South Wales and Victoria.

Petaurus breviceps.
Petaurus (Belideus) breviceps, Waterhouse P. Z. S., p. 152 (1838).
Belideus breviceps, ariel et notatus, Gould Mamm. Austr., i, pls. xxv, xxvi and xxvii (1849).

Distribution.—Queensland, New South Wales and Victoria.

Genus PETAUROIDES.

Petaurista, Desmarest Mamm., i, p. 268 (1820).
Petauroides, Thomas Cat. Mars. B. M., p. 163 (1888).

Petauroides volans.
Didelphis volans, Kerr Linn. Anim. Kingd., p. 199 (1792)*.
Petaurus taguanooides, Desmarest N. Dict. d'Hist. Nat., xxv, p. 400 (1817); Blyth Cat., p. 182.
Petaurista taguanooides, Desmarest Mamm., i, p. 269 (1820); Gould Mamm. Austr., i, pl. xxii.

Distribution.—Queensland to Victoria.
TRICHOSURUS.

a-b. 2 Stuffed & ♀ N. S. Wales  Dr. Scone, 1864.
c. Skull  ......  Purchased, A.S.B.
d. Skull  ......  T. Shawe, A.S.B.

Genus PSEUDOCHIRUS.

Pseudochirus, Ogilby P. Z. S., p. 26 (1836).
Hepoona, Gray, App. Grey’s Travels Austr., ii, p. 402 (1841)*.

Pseudochirus peregrinus.

Didelphis peregrinus, Boddaert Elench. Anim., i, p. 78 (1785)*.
Didelphis caudovolvula, Kerr Linn. Anim. Kingd., p. 196 (1792)*.
Phalangista cooki, apud Ogilby P. Z. S., p. 192 (1835); Gould Mamm. Austr., i, pl. xviii.
Phalangista lanuginosa, Gould Mamm. Austr., i, pl. xx (1858).

Distribution.—Queensland to South Australia.

a. Skin  ......  Melbourne Mus., 1864.

Pseudochirus occidentalis.


Distribution.—Western Australia.

a. Skin  Gawler Ranges,  Adelaide Mus. [Ex.]
         S. Australia.

Pseudochirus cooki.

Phalangista viverrina, Ogilby P. Z. S., p. 131 (1837); Gould Mamm. Austr., i, pl. xix.

Distribution.—Tasmania.

a. Stuffed  Tasmania  Bengal Econ. Mus.

Genus TRICHOSURUS.


Trichosurus vulpecula.

Var. A.—typicus.

Didelphis vulpecula, Kerr Linn. Anim. Kingd., p. 198 (1792)*.

Var. B.—fuliginosus.

*Distribution.*—The typical variety is found throughout Australia, except in the extreme north; var. fuliginosus is confined to Tasmania.

Var. A.—typicus.

<table>
<thead>
<tr>
<th>a.</th>
<th>Skin, skeleton</th>
<th>......</th>
<th>Zoological Gardens.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Skin, skeleton</td>
<td>......</td>
<td>W. Rutledge.</td>
</tr>
<tr>
<td>c-d.</td>
<td>2 Stuffed</td>
<td>Australia</td>
<td>Dr. Scone, 1864.</td>
</tr>
<tr>
<td>e.</td>
<td>Stuffed</td>
<td>N. S. Wales</td>
<td>W. Rutledge, 1870.</td>
</tr>
<tr>
<td>f.</td>
<td>Skeleton</td>
<td>......</td>
<td>Rajah R. Mullick.</td>
</tr>
<tr>
<td>g-h.</td>
<td>2 Skulls</td>
<td>S. Australia</td>
<td>Adelaide Mus. [Ex.]</td>
</tr>
<tr>
<td>j.</td>
<td>Skull</td>
<td>......</td>
<td>No history, A.S.B.</td>
</tr>
<tr>
<td>k.</td>
<td>Stuffed albino</td>
<td>......</td>
<td>W. Rutledge, 1870.</td>
</tr>
</tbody>
</table>

Var. B.—fuliginosus.

<table>
<thead>
<tr>
<th>a.</th>
<th>Skin, skull, bones.</th>
<th>......</th>
<th>Purchased.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Skin, skeleton</td>
<td>......</td>
<td>Purchased.</td>
</tr>
<tr>
<td>c.</td>
<td>Stuffed</td>
<td>Tasmania</td>
<td>C. F. T. Lloyd, A.S.B.</td>
</tr>
<tr>
<td>d.</td>
<td>Skeleton, skin</td>
<td>......</td>
<td>Purchased.</td>
</tr>
<tr>
<td>e-f.</td>
<td>2 Skulls</td>
<td>Tasmania?</td>
<td>C. F. T. Lloyd, A.S.B.</td>
</tr>
</tbody>
</table>

Trichosurus caninus.

*Distribution.*—South Queensland and New South Wales.

| a. | Stuffed, skull | New South Wales | Bengal Econ. Mus. |
**Genus PHALANGER.**


**Phalanger orientalis.**


*Distribution.*—Timor and the Islands to the east of New Guinea.

a. Skin, skull
b. Skin, skull

**Phalanger celebensis.**

Cuscus celebensis, *Gray P. Z. S.*, p. 105, pl. lxii (1858).*

*Distribution.*—Celebes and the Sanghir Isles.

a. Skin, skull
b. Skin, skeleton

**Genus PHASCOLARCTUS.**


**Phascolarctus cinereus.**

Phascolarctus fuscus, *Desmarest Mamm.*, i, p. 276 (1820).

*Distribution.*—Eastern Australia from Queensland to Victoria.

a. Stuffed
b. Stuffed
c. Skull
d-e. 2 Skulls
f. Skeleton

**Genus PHASCOLOMYS.**

Phascolomys mitchelli.


Distribution.—New South Wales, Victoria and South Australia.

a. Stuffed ................................................. No history.
b. Stuffed juv. ♀ ........................................... W. Rutledge, 1870.
c. Generative ♀ ........................................... W. Rutledge, 1869.

Phascolomys ursinus.

Phascolomys ursinus, G. Cuvier Regne Anim., i, p. 185 (1817); Thomas Cat. Mars. B. M., p. 215.

Distribution.—Tasmania.

a. Stuffed ................................................. Tasmania
b. Skull ..................................................... C. J. T. Lloyd, A. S. B.
c. Skeleton .............................................. W. Rutledge, 1870.

d. Generative ♀ ........................................... W. Rutledge, 1869.

Phascolomys latifrons.

Phascolomys latifrons, Owen P. Z. S., p. 82 (1843); Thomas Cat. Mars. B. M., p. 217.
Phascolomys lasiorhinus, Gould Mamm. Austr., i, pl. lix, lx (1863).

Distribution.—South Australia.

a. Skeleton ♀ ................................................. Zoological Gardens,
b. Skull ................................................... Blanche town, Adelaide Mus. [Ex.]

Murray R., S. A.

Genus PERAGALE.

Macrotis, Reid P. Z. S., p. 131 (1836).
Peragalea, Gray App. Grey's Travels Austr., p. 401 (1841)*.

Peragale lagotis.

Perameles (Macrotis) lagotis, Reid P. Z. S., p. 129 (1836).

Distribution.—South and West Australia.

a. Skin ...................................................... S. Australia
b. Skeleton ................................................ Adelaide Mus. [Ex.]

Adelaide Mus. [Ex.]

Adelaide Mus. [Ex.]
Genus **PERAMELES**.


Thylacis, Illiger *Prodr.*, p. 76 (1811).


**Perameles obesula.**

Didelphis obesula, Shaw *Nat. Miscell.*, viii, pl. ccxcviii (1793).


**Distribution.**—Throughout Australia and Tasmania.

<table>
<thead>
<tr>
<th>a. Skin, skull</th>
<th>b. Skin</th>
<th>c-d. 2 Stuffed</th>
<th>e. Stuffed</th>
<th>f. Skull</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Australia</td>
<td>......</td>
<td>......</td>
<td>......</td>
<td>New South Wales</td>
</tr>
<tr>
<td>Calcutta Exhibition</td>
<td>Adelaide Mus. [Ex.]</td>
<td>Melbourne Inst., 1862 A.S.B.</td>
<td>Dr. Scone, 1864</td>
<td>Adelaide Mus. [Ex.]</td>
</tr>
</tbody>
</table>

**Perameles nasuta.**


**Distribution.**—Eastern Australia.

| a. Alc. |
| ...... |
| Brisbane Mus. [Ex.] |

**Perameles gunni.**


**Distribution.**—Tasmania and perhaps Victoria.

| a. Skin | b. Stuffed |
| ....... | Victoria    |
| ......  | Tasmanina   |
| Dr. Scone. | Melbourne Inst., 1862 A.S.B. |

**Perameles bougainvillei.**


**Distribution.**—Western Australia.

| a. Skin |
| Gawler Ranges, S. Austr. Adelaide Mus. [Ex.] |

Genus **THYLACINUS**.


*Thylacinus, Temminck Monogr. Mamm.*, i, p. 60 (1827).
Thylacinus cynocephalus.


**Distribution.**—Tasmania.

| a. Skin, impt. | ..... | No history, A.S.B. |
| b. Skull | ♂ | ..... | Dr. J. Henderson, A.S.B. |
| c. Skull | ♀ | ..... | No history, A.S.B. |

Genus SARCOPHILUS.


Sarcophilus ursinus.


**Distribution.**—Tasmania.

| a. Skin, skull | ..... | Calcutta Exhibition. |
| b. Skull | ..... | E. Blyth, A.S.B. |

Genus DASYURUS.


Dasyurus maculatus.


**Distribution.**—Eastern and South-Eastern Australia and Tasmania.

| a. Skin, skull | N. S. Wales | Calcutta Exhibition. |
| b. Stuffed | Tasmania | G. Scoeva, 1867. |
| c. Skull | Mt. Gambier, S. Austr. | Adelaide Mus. [Ex.] |
| d. Skull | ..... | No history. |
Dasyurus viverrinus.


**Distribution.**—South-Eastern Australia and Tasmania.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Skin, skeleton</strong></td>
<td>juv.</td>
<td></td>
</tr>
<tr>
<td><strong>b. Stuffed</strong></td>
<td>Hunter R., N. S. W.</td>
<td>British Mus. [Ex.]</td>
</tr>
<tr>
<td><strong>c. Stuffed</strong></td>
<td>N. S. Wales</td>
<td>Bengal Econ. Mus.</td>
</tr>
<tr>
<td><strong>d-e. 2 Skulls</strong></td>
<td></td>
<td>A. D. Bartlett, A.S.B.</td>
</tr>
<tr>
<td><strong>f. Alc.</strong></td>
<td></td>
<td>Zoological Gardens.</td>
</tr>
</tbody>
</table>

Dasyurus geoffroyi.


**Distribution.**—All Australia, except extreme north and Tasmania.

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<tbody>
<tr>
<td><strong>a. Skin</strong></td>
<td>West Australia</td>
<td>Adelaide Mus. [Ex.].</td>
</tr>
<tr>
<td><strong>b. Skin</strong></td>
<td></td>
<td>Adelaide Mus. [Ex.].</td>
</tr>
<tr>
<td><strong>c. Stuffed</strong></td>
<td></td>
<td>Purchased, 1846, A.S.B.</td>
</tr>
<tr>
<td><strong>d. Stuffed</strong></td>
<td>Melbourne?</td>
<td>No history.</td>
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Genus PHASCOGALE.


Phascolage flavipes.


**Distribution.**—Eastern Australia.

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<td><strong>a. Stuffed</strong></td>
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<td>Melbourne Inst., A.S.B.</td>
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Phascolage penicillata.


MAMMALIA.


Distribution.—Throughout Australia, except the extreme north.

a. Skin  West Australia  Adelaide Mus. [Ex.]
b. Skull  South Australia  Adelaide Mus. [Ex.]

Genus SMINTHOPSIS.

Podabrus, Gould Mamm. Austr., letterpress to pl. xlvi (1845).

Sminthopsis crassicaudata.

Podabrus crassicaudatus, Gould Mamm. Austr., i, pl. xlvi (1845); Blyth Cat., p. 181.
Podabrus macrurus, Gould P. Z. S., p. 70 (1845).

Distribution.—Throughout Australia.

a-b. 2 Stuffed  ......  Melbourne Inst., A.S.B.

Genus MYRMECOBIIUS.

Myrmecobius, Waterhouse P. Z. S., p. 69 (1836).

Myrmecobius fasciatus.

Myrmecobius fasciatus, Waterhouse P. Z. S., pp. 69, 131 (1836); Gould Mamm. Austr., i, pl. iv; Thomas Cat. Mars. B. M., p. 312.

Distribution.—Western and Southern Australia.

a. Skin  South Australia  Adelaide Mus. [Ex.]
(A. Anderson, 12-73).

Genus DIDELPHYS.


Didelphys marsupialis.

Didelphys virginiana, Kerr Linn. Anim. Kingd., p. 193 (1792)*.

*Distribution.*—America from the States to Chili and South Brazil.

u. Skin   juv. ♀   ......   Zoological Gardens.

Order MONOTREMATA.

Genus ECHIDNA.


Echidna aculeata.

Myrmecophaga aculeata, *Shaw Nat. Miscell.*, iii, pl. cix (1792).

*Distribution.*—Throughout Australia, replaced by geographical races in New Guinea and Tasmania.

| a. Skin, skeleton | ...... | Purchased. |
| b-d. 3 Stuffed | ...... | A.S.B. |
| e. Stuffed | New South Wales | Bengal Econ. Mus. |
| f. Alc. | ...... | Calcutta Exhibition. |

Genus ORNITHORHYNCHUS.

Platypus, *Shaw Nat. Miscell.*, x, letterpress to pl. ccclxxvi (1799) (*nec Herbst*).

Ornithorhynchus anatinus.


**Distribution.**—Eastern Australia and Tasmania.

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<td><strong>a. Skin</strong></td>
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<tr>
<td><strong>b. Skin</strong></td>
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<td>N. S. Wales</td>
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<td><strong>c. Stuffed</strong></td>
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<td>S. E. Australia</td>
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<tr>
<td><strong>d. Stuffed</strong></td>
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<td>N. S. Wales</td>
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<td><strong>e. Skeleton mted.</strong></td>
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<td>N. S. Wales</td>
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<td><strong>g. Alc.</strong></td>
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[Names of synonyms are printed in italics; recognized names in Roman characters.]

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