
XVII. *Descriptive Catalogue of a Zoological Collection, made on account of the Honourable East India Company, in the Island of Sumatra and its Vicinity, under the Direction of Sir Thomas Stamford Raffles, Lieutenant-Governor of Fort Marlborough; with additional Notices illustrative of the Natural History of those Countries. By Sir Thomas Stamford Raffles, Knt. F.R.S. Communicated by Sir Everard Home, Bart., F.R.S. and L.S.*

Read December 5, 1820.

THE interest excited by the researches carried on during my administration in Java, early induced me to extend similar inquiries to the more extensive island of Sumatra; and I esteemed myself fortunate in obtaining the assistance of Dr. Joseph Arnold, a gentleman already advantageously known to the scientific world. Unhappily he fell an early sacrifice to his zeal in the cause, and his loss cannot be more regretted in a public view, than it is lamented by those who were best able to appreciate his amiable disposition and private virtues. He lived, however, long enough to lay the foundation of an extensive plan of research. I was subsequently induced to engage the services of two French gentlemen, who appeared qualified to assist in the collection and preservation of the zoological specimens, and to furnish such anatomical details as might require observation in recent subjects, it being stipulated that on the payment of the monthly sum of 500 dollars, the whole of their collections and observations should be the exclusive property of the East India Company. On these terms I intrusted to them the charge of the
collection,

collection, and used all my influence to bring into it whatever was interesting in zoology. A year had scarcely elapsed when circumstances rendered it necessary to discontinue this arrangement. They advanced pretensions diametrically opposed to the spirit and letter of their engagement, and altogether inconsistent with what I had a right to expect from them, or they from me. Thus situated, I had no alternative but to undertake an immediate description of the collection myself, or to allow the result of all my endeavours and exertions to be carried to a foreign country. I should observe, that the papers delivered to me as containing all their observations, were for the most part so speculative and deficient in the kind of information required, that I could make no use of them myself, nor give them to the world under the sanction of my authority. I have therefore returned them, and left these gentlemen at liberty to publish or amend them as they think proper. They are young men not deficient in zeal, and though misled for the moment by private and national views, will, I doubt not, profit by the means I have afforded them, and eventually contribute to our further knowledge of the zoology of these islands.

I have thought it necessary to say thus much respecting these gentlemen, in order to prevent the possibility of misrepresentation; and I need only add, that as my descriptions have been made without assistance from them, and may contain particulars not only unknown to them, but at variance with their ideas, they are of course not responsible for any part of them. The Catalogue now submitted has been drawn up by myself from actual examination of the subjects, combined with the result of extensive personal inquiries among the best informed natives of the country. It has no pretensions beyond accuracy and the simple statement of facts.

PART I. MAMMALIA.

SIMIA.

Of this genus nine or ten species are known to the natives of these islands, the greater part of which are in the collection. The first is the well known

SIMIA SATYRUS *Linn.*

ORANG UTAN of the Malays. اورغ هوتن

Of this a living specimen from Borneo was sent to the Menagerie at Calcutta in 1819. Native information gives reason to believe that it also exists in Sumatra; it is there known by the name of Orang Pandak (Pygmy), and the accounts given of it agree exactly with the Orang Utan of Borneo. It is frequently confounded with the Orang Kubu and Orang Gugu described by Mr. Marsden, which, though often the subject of fable and exaggeration, appear to exist on the island as a distinct race of men, almost as hairy and wild as the real Orang Utan.

The observation of Linnæus, that the nail of the thumb is wanting on the hind-feet, is confirmed by the above specimen, and is probably correct in all the true Orang Utans.

SIMIA SYNDACTYLA.

SIAMANG of the Malays. سيامغ

This new species of Gibbon is abundant in the forests near Bencoolen, where they are seen in large companies, making the woods echo with their loud and peculiar cry.

It is of a jet-black colour throughout; is upwards of three feet in height, and of a robust and muscular frame. It agrees with

feet, and is altogether of a more delicate and slender frame. Its colour is a dirty-yellowish white, which becomes nearly brown on the under and inner parts, contrary to what takes place in most animals, which are lighter below. The face and hands are black; the hair is softer and more woolly than that of the Siamang, and its cry is softer and less harsh.

Both these are of a more timid disposition, and have neither the strength nor boldness of the Siamang.

With regard to the Ungka puti, it is the general belief of the people of the country that it will die of vexation if it sees the preference given to another; in corroboration of which I may add, that the one in my possession sickened in this situation, and did not recover until relieved from the cause of vexation by his rival the Siamang being removed to another apartment.

Another variety has been met with at Bencoolen, which only differs in being of a light-brown colour, with a still lighter circle round its black face.

In none of these are there any naked folds of skin on the throat, and all the toes are separate. These marks are fully sufficient to distinguish them from the Siamang, which I therefore propose to establish as a distinct species under that appellation, if the characteristic one of *S. syndactyla* be not thought preferable.

SIMIA CARPOLEGUS.

BRUH of the Malays. بروق

This is a very common Baboon in the vicinity of Bencoolen, where the inhabitants frequently train it to ascend the trees for the purpose of gathering coco-nuts, a service in which it is very expert.

It is about two feet high when sitting: colour yellowish-brown mixed with black on the back, and pale or whitish in front.

The hair of the body is short and close. On the top of the head the hairs are black, and diverge horizontally; those of the eyebrows, which unite above the nose, are also black and are radiated upwards. There is scarcely any beard. The face is naked and flesh-coloured; the ears, hands and callosities are the same, and the extremity of the prepuce is vermilion. The muzzle is somewhat prominent, and the nostrils open anteriorly. The eyes are brown. Ears roundish, obtusely pointed behind. Cheeks pouched. Tail short and tapering, about six inches long, inserted very high, and curling downwards. The callosities on the nates are large. The thumb is a little longer in proportion to the fingers than in many other species. The last molar has five tubercles. In this species, as in many others of the genus, there is a sac under the os hyoides which communicates with the larynx.

The natives distinguish three varieties of Bruh: the Bruh setopong, Bruh selasi, and Bruh puti. The Bruh setopong is the largest, the colour on the back verging to olive, and light in front. It is the most docile and intelligent of the whole, and is much prized in consequence. When sent to gather coco-nuts, he selects the ripe ones with great judgment, and pulls no more than he is ordered. The other two are darker coloured, less intelligent, and more intractable.

SIMIA CRISTATA.

CHINGKAU of the Malays. چینگکون

Frequent in the forests near Bencoolen.

This species is about two feet long, with a tail nearly two and a half; when standing on all fours it is fourteen inches high. It is of a dark-grey colour, the hairs being in general black with white points. The face, fore-arms, hands, feet, back, and upper

upper side of the tail are nearly black, the under part of the body paler. (The same colour would in a horse be called iron-grey, or grey with black points.) The disposition of the hairs on the head is peculiar; they are long, and diverge round the face, forming on the top a kind of crest. Beard scanty. Face and ears bare and nearly black. Orbits large. Nose rather elevated between them, but quite flat at the nostrils, which are situated at some distance above the upper lip, and open laterally. Head and face small. Ears large and rounded. Canines long. Neck short. Callosities large. Tail thin and tapering, without any tuft. Thumbs on the fore-hands remarkably short. It is altogether of a light and slender make. The young Chingkaus are of a reddish fawn-colour, forming a singular contrast with the dark-coloured adults.

A variety of this is described by the natives to be of a light-grey or whitish colour, and called Chingkau Puti.

SIMIA MELALOPHOS.

SIMPAI of the Malays. *سيمشي*

Frequent in the neighbourhood of Bencoolen.

In general form and appearance this species nearly resembles the preceding, but is a little larger, and of a very different colour, being of a bright fawn-colour, mixed with black on the head, back and shoulders. The whole of the under parts is nearly white. Head and face small, with hair diverging as in the preceding, but forming a longer and more distinct crest on the head composed of black hairs, and also forming a tuft on each cheek of a fawn-colour graduating into white. The forehead below the crest is of a bright fawn-colour. Beard scanty. The orbits, nose and ears scarcely differ in form from
the

the preceding. Face bare, of a blueish colour, and slightly wrinkled. The line of the face is singularly straight and perpendicular. The ears nearly of the same colour. The palms and soles of the hands and feet are black. The thumb of the hands very short. Callosities large. Tail long and tapering, exceeding thirty inches.

The hair of this and the preceding species is long, and in this soft and silky.

SIMIA FASCICULARIS.

KRA of the Malays. كرا

Frequent in the forests of Sumatra and the Malay islands, where they are met with in large companies.

The body is about twenty inches long, and the tail a little more.

The back and upper part of the head are of a reddish-brown colour; the tail and sides of the body grey, which becomes still lighter on the inside of the limbs and lower part of the body and face. The face is brown, and covered with short light grey hairs. The cheeks are furnished with tufts of the same colour, much longer than the beard. The eyelids, particularly the upper ones, are white. The eyes are brown, the eyebrows prominent, and the muzzle projecting. The nose is prominent between the eyes, and flat at its point, where the nostrils open obliquely some way above the lip. Cheeks pouched. Ears roundish, obtusely pointed behind. Canines short. Callosities strong. Thumb of the hands short.

The Malay name has frequently a close resemblance to the cry of the animal it designates; and this is remarkably the case in the present instance, as well as in the Simpai, Wouwou and others.

The

The Kra is not easily domesticated. The natives distinguish a whiter variety, with a reddish shade on the back.

Besides the Kra above described, there is a smaller species called the Kra Buku, which only differs in size, and in wanting the circle of hair round the face. This little animal, which is less than a foot in length, is equally common in the other Malay islands. The head is remarkable in having very little hair on the temples, in which it strikingly differs from the larger species.

SIMIA MAURA? Linn.

LOTONG of the Malays. لوتونغ

Found at Singapore and Penang.

This species is often eighteen or twenty inches long and twelve or thirteen in height when on all fours. The tail is some inches longer than the body. Its colour is chiefly black. The hair of the arms, legs, and top of the head is tipped with grey. The inside of the thighs and lower part of the abdomen are entirely white; a line of white also extends from thence to the throat; the breast and axillæ are light grey. The hands, feet, ears and face are black. The lips are furnished with short whitish hairs mixed with a few longer black ones. Beard scanty, and composed of a few black hairs. The cheeks have also some black hairs. The hair diverges from the crown of the head so as to project over the forehead in front, and to form a kind of crest behind. Head and face small. Nose flat at the point, where the nostrils open laterally. It is not easily tamed.

LEMUR TARDIGRADUS Linn.

KUKANG (Malay). كوكنج

Of this the natives distinguish a large and a small variety: the former they call Bruh samundi, and describe it as a larger and more

more active animal, of a grey colour, with a black stripe along the back. The Malays have a superstitious aversion to these animals, and never keep them in their houses, from an idea that they bring misfortunes and ill luck.

GALEOPITHECUS RUFUS *Pallas.*

LEMUR VOLANS *Linn.*

KUBUNG of the Malays. كوبونغ

Frequent in the Malay peninsula and islands.

This animal is too well known to require description: it usually hangs from the branch of a tree suspended by its four hands. The wing-like membrane cannot serve the animal to fly, but when extended acts as a kind of parachute, by which it is enabled to make long leaps from tree to tree. There are six pectinate incisors in the lower jaw, and four in the upper, of which the middle ones are remote; two canines in each jaw, and five molars on each side. The canines are peculiar in having two fangs, and the molars have the same number. The larynx is osseous. The animal produces two young at a time, and the number of mammæ correspond. The two pair are situated near to each other on the breast a little below the axillæ. The colours on the back of the young are more distinct and variegated than in the adult. Mr. Marsden's figure gives a very good idea of this animal.

VESPERTILIO VAMPYRUS. VAR. β . RUBRICOLLIS *Geoff.*

VESPERTILIO FERRUM EQUINUM *Linn.*

KALUANG of the Malays. كلواغ

Of this there are two distinct varieties: one large, and having a complicated nasal membrane; the other smaller, and having a simple semilunar membrane over the nose. In one of these, besides

besides the two pectoral mammæ, there are two others situated a little above the pubes, as already observed by Mr. Montagu in the 9th volume of the *Transactions of the Linnean Society*. These are not found in the *V. Vampyrus*.

MANIS PENTADACTYLA *Linn.*

PANGOLING SISIK. تَغُولِيخْ سِيْسِيكْ

Or, TANGILING. تَغِيلِيخْ

CANIS FAMILIARIS *Linn.* VAR. SUMATRENSIS.

WILD DOG OF SUMATRA*.

Of this I carried a living specimen to Bengal in 1818; it died soon after, and the preserved skin was sent to Mr. Henry Colebrooke, in England, by my friend Dr. Wallich. They are numerous in the forests of the interior, where they are said to hunt in packs.

It is of a small size, of a brownish-red colour, lighter beneath, with an elongated head, and a bush-like tail somewhat resembling that of a Fox. Body slender. Ears short and erect. It is wild and untameable, and seems to resemble most the Australasian Dog, or Dingo.

How far this differs from either of the wild Dogs of Java, Dr. Horsfield will be able to decide.

FELIS.

Of this genus two species only are in the collection, the Royal Tiger, and a species of Tiger-cat. The latter is precisely the same with the *Felis Bengalensis*, Bengal Tiger-cat described by Pennant, and is called by the Malays Rimau bulu, ريْمُو بُولُو

* For a description and figure of this Dog, see p. 235, tab. XXIII.

Tigers are very numerous in Sumatra, and are very destructive on the west coast. The natives distinguish several varieties, such as the Rimau Kumbang, or black Tiger; the Rimau samplat, and others.

It may be proper also to notice the variety of the domestic Cat peculiar to the Malayan Archipelago, and remarkable by having a twisted or knobbed tail, in which particular it agrees with that of Madagascar. Sometimes they have no tail at all. This coincidence with the Madagascar variety is the more remarkable, as the similarity between the language and customs of the inhabitants of Madagascar and the Malay islands has frequently been a subject of observation.

Besides these, native accounts have been obtained of two other species existing in Sumatra, the Chigau or Jigau, جیگو and the Rimau dahan.

The former, called the Rimau mang'in in the southern districts, is described as larger than the Tiger, more dangerous and destructive, and as making his attack in a different manner, not crouching and darting from a covert, but rushing furiously and steadily forward, and even forcing his way into villages and houses. It is stated to have a mane of long hair on its head and neck, to have a tuft at the extremity of its tail, to be of a more uniform and dark colour, and to have a larger and longer head than the Tiger. All these particulars of form and habits indicate its being a kind of Lion. It has been seen in various parts of the country, but is by no means common.

The Rimau Dahan, ریمو داهن is about the size of a Leopard, but is of a darker colour and less regularly spotted. It lives principally on trees, pursuing and feeding on birds, &c., and is said by the natives to be in the habit of sleeping stretched across the fork of a large bough.

MEPHITIS

MEPHITIS JAVANENSIS *Desm.*

TELAGU of the Malays. تلگو

Found in Sumatra and Java. From the latter it has already been sent to Europe by Mr. Leschenault, and I believe by Dr. Horsfield.

It is nearly related to the *Viverra Mephitis* Linn. of America, the type of this genus, but differs in having a very short tail not exceeding an inch in length, and in having but one line of white along the back, which covers the whole crown of the head, and becomes narrower as it runs backward to the tail, which is also white. The rest of the body is of a dark-brown colour. The snout is long and pointed. The direction of the hair on the forepart of the body is peculiar, being directed forwards under the throat, and upwards and forwards on the back of the head and neck. The five toes of the fore-feet are furnished with long claws fitted for digging. It has six incisors, two canines, and five molars in each jaw, of which the first three are not tuberculated.

When irritated, or in danger, it emits from its rectum a fluid of most insupportable stench.

VIVERRA ZIBETHA *Linn.*

TANGALUNG of the Malays. تنگالونج

This animal is kept by the natives for the purpose of obtaining the well known perfume, which they call *jibet* or *dedes*. It is contained in a double sac under the anus.

The animal is above two feet long; the tail shorter than the body, and annulated. A black stripe runs the whole length of the back; there are several longitudinal stripes on the back of the

neck, and a broad black band encircles the lower part of the throat. The sides of the body are spotted, and the spots become undulated in the limbs. The hair is rather short and close.

The natives distinguish a smaller variety by the name of Tangalung Padi.

VIVERRA GENETTA *Linn.*

MUSANG SAPULUT. *موسخ سقولت*

This appears to be the true Genet.

It is of a dark-grey colour, with stripes and spots of black. The tail is of the same colour mixed with black, but not white at the tip like the following.

VIVERRA MUSANGA.

MUSANG BULAN of the Malays. *موسخ بولن*

This animal, figured by Mr. Marsden in his *History of Sumatra*, is nearly related to *V. Genetta*, but must be considered a distinct species.

It is of a dusky fulvous colour mixed with black; the tail is of the same colour, except about two inches at the point, where it is white, and is about as long as the body. The space from the eyes to the ears is white; there are some long black bristles above the eyes, and some other white ones a little way behind them. The nose is prominent at the extremity, and deeply furrowed between the nostrils. The muzzle is long and pointed. The feet are five-toed. The animal is about the size of an ordinary Cat.

VIVERRA

VIVERRA? BINTURONG.

Intermediate between *Viverra* and *Ursus* is an animal called Binturong, بنتورونغ found at Malacca by Major Farquhar, who communicated an account of it, accompanied with a specimen and drawing, to the Asiatic Society. It has not been made public, and it may therefore be interesting to give the following particulars as furnished to me by that gentleman, in whose possession I saw a living specimen in 1819.

The body of this animal is about two feet and a half in length; tail nearly the same, bushy and prehensile; height from twelve to fifteen inches. It is entirely covered, with the exception of the legs and face, with a thick fur of strong black hair. Its general appearance and habit is slow and crouching, the body long and heavy, and low on the legs; the tail is thick at the root, gradually diminishing in size to the extremity, where it curls inwards. The muzzle is short and pointed, somewhat turned up at the nose, and is covered with bristly hairs, brown at the points, which lengthen as they diverge, and form a peculiar radiated circle round the face, giving the countenance a striking and remarkable aspect. The eyes are large, black and prominent; and the ears are short, rounded, edged with white, and terminated by tufts of black hair. There are six short rounded incisors in each jaw, two canines, which are long and sharp, and six molars on each side: of these, in the upper jaw, the three first are pointed; in the lower jaw the two first are pointed, and the last is smaller and imperfect. The molars are remote from the canines in the lower jaw, and approximate in the upper. The feet are five-toed, with large strong claws; the soles are bare, and applied to the ground throughout the whole of their length; the hind ones longer than the fore. The hair on the legs is short and of a brownish tinge.

tinge. When at rest the animal coils himself, the tail encircling the body.

It climbs trees assisted by its prehensile tail, in which it has uncommon strength. Major Farquhar kept one alive many years; it lived both on animal and vegetable food; was particularly fond of plantains, but would also eat fowls' heads, eggs, &c. Its movements are slow, and it is rather of a timid disposition; it sleeps much during the day, but is more active at night.

This animal seems to have considerable affinity to the *Viverra caudivolvula* of America; but in general appearance and nocturnal habits it resembles the *Ursus Lotor* or Raccoon.

LUTRA.

Of this genus there are two species in Sumatra known by the common appellation of Anjing Ayer, or Dog of the Waters. The largest is properly distinguished by the name of Simung, سيمونغ and the smaller by that of Barang Barang, بارغ^۲ or Ambrang.

The latter appears to be nearly allied to the *Lutra Lutreola* (*Mustela Lutreola* Linn.), being about a foot and a half in length, of a beautiful glossy-brown colour, and white on the mouth and throat. The feet are covered with hair, but the toes are not of equal length. The tail is shorter than the body, covered with hair, thick at the base, and tapering to a point.

URSUS MALAYANUS. BRUANG. برواغ

This deserves to be ranked as a distinct species from the common Bear, and from that of the continent of India. The most striking difference is in the comparative shortness of its hair, and the fineness and glossiness of its fur; in which particular

cular it appears to resemble the American Bear. It is further remarkable in having a large heart-shaped spot of white on the breast. The muzzle is of a ferruginous colour. It stands lower, but is a stouter and better proportioned animal than the common Bear.

When taken young they become very tame. One lived for two years in my possession. He was brought up in the nursery with the children; and, when admitted to my table, as was frequently the case, gave a proof of his taste by refusing to eat any fruit but mangosteens, or to drink any wine but Champaign. The only time I ever knew him to be out of humour was on an occasion when no Champaign was forthcoming. It was naturally of a playful and affectionate disposition, and it was never found necessary to chain or chastise him. It was usual for this Bear, the cat, the dog, and a small blue mountain bird or Lory of New Holland, to mess together and eat out of the same dish. His favourite play-fellow was the dog, whose teasing and worrying was always borne and returned with the utmost good humour and playfulness. As he grew up he became a very powerful animal, and in his rambles in the garden, he would lay hold of the largest plantains, the stems of which he could scarcely embrace, and tear them up by the roots.

A female of this species was sent to England last year by the William Pitt.

SOREX.

Of this genus the collection contains a small variety of the *S. carulescens*, or Musk Rat of Bengal. In it, as in the Bengal species, the musky fluid is emitted from a single gland on each side of the body.

TUPAIA.

TUPAIA.

GEN. CHAR. Snout elongated.

Teeth, Incisors above 4 remote.

below 6 (or 4?) leaning forwards,
the middle ones approximate.

Canines two on each side both above and
below, remote.

Molars, three on each side both above and
below.

Feet five-toed.

Habit and tail of a Squirrel.

TUPAIA FERRUGINEA.

TUPAI PRESS. Malay توفى فريس

This singular little animal was first observed tame in the house of a gentleman at Penang, and afterwards found wild at Singapore and in the woods near Bencoolen, where it lives on the fruit of the Kayo Gadis, &c. It has the tail and general appearance of a Squirrel, united to the elongated head and dentition of a *Sorex*. It further differs from the latter genus in being a lively playful animal, with large eyes suited to day-light, and in not being nocturnal or subterranean in its habits.

The head is prolonged into a conical snout; the upper jaw and lip not however projecting much beyond the lower. Incisors four above, rather remote and sharp, six below, the middle ones smaller, the lateral ones inclining forwards. Canines four in each jaw, remote from the incisors in the upper. Six conical molars in each jaw. Eyes large and bright. Ears roundish. Colour of a rusty brown on the back and sides, whitish on the belly; tail greyish-brown, the hairs being a mixture of black and white. Length of the body about six or eight

eight inches. Tail not quite so long, hairy like that of a Squirrel, but rounder. Five toes on all the feet; the middle three longest; all furnished with curved claws.

These animals are as tame and sprightly as Squirrels. The tame one above mentioned was suffered to go about at perfect liberty, ranged in freedom over the whole house, and never failed to present himself on the breakfast- and dinner-table, where he partook of fruit and milk.

TUPAIA TANA.

This species very nearly resembles the preceding one, but is larger, the length of the body being nine inches, and that of the tail about seven. Colour above nearly the same, but the lower parts of a ferruginous red. The tail in this species is flat like that of a Squirrel, and is of a reddish colour.

In the only specimen yet procured of this last, there are but four incisors in the lower jaw, yet in every other respect the teeth agree with the former species. As the specimen was prepared by a native before it came into my hands, further examination will be necessary to ascertain whether this difference may not have been the effect of accident in the preparation.

These animals are generally known by the country people under the name of Tupai tana; and it is said they are always found on or near the ground. It is not impossible we may succeed in finding further varieties; at all events, the two noticed are sufficiently distinct to form separate species, and, I should presume, to justify the adoption of a new genus: most certainly they will not come under any of the genera yet noticed.

HYSTRIX.

Of this there are two species, one long-tailed, the *H. fasciculata*, the other the Landak, لندق, figured by Mr. Marsden in

his *History of Sumatra*, under the name of *Hystrix longicauda*. That figure is a good and accurate representation of the animal, with the exception of the fore-feet being delineated as five-toed, while in reality they are only four-toed, the place of the thumb being supplied by a tubercle. The name *longicauda* is perhaps objectionable, as the tail of this species is much shorter than that of the *H. fasciculata*. It seems questionable whether the *H. macroura* of Seba is really different from the *H. fasciculata*, and whether two species are not confounded under it.

MUS SUMATRENSIS.

A drawing and specimen of an animal, which appears related to the *Mus Pilorides*, was forwarded from Malacca by Major Farquhar to the Asiatic Society at the same time with the Binturong. I am informed by him, that it is not uncommon at Malacca, and is perhaps to be found in most parts of the Malay peninsula. It is called by the natives Dekan, دكن, and by Europeans in India the Bamboo Rat, from its being found principally about Bamboo hedges, and being said to live on their roots.

The body is about seventeen inches in length, ten inches in circumference, and the height at the shoulder about five. The tail is six inches long, tapering, and blunt at the points, naked and scaly. The body is covered with rough greyish hair, brownish on the back. The head round and lighter coloured. Incisors large, two in each jaw. Eyes small. Ears naked. Fore-feet four-toed; hind-feet with a short fifth toe.

SCIURUS.

Besides the *Sciurus maximus*, the Tupai Jinjang or Tankrawa, توفى جنجج of the Malays, and the *S. bicolor* or Java Squirrel, which are frequent in the Malay islands, a third species, which may be named

SCIURUS

SCIURUS AFFINIS,

was found abundantly in the woods of Singapore (on the occupation of that station by the British in 1819), agreeing with the two former in having a flat nail on the very short thumb of the fore-feet, but differing in colour, being of a cinereous grey or brownish on the upper part of the head, body and tail, and on the outside of the limbs, and being nearly white on the under and inner parts. It is about the size of the *S. bicolor*. The separation of the colours on the body is not so abrupt as in that species, a stripe of reddish-brown marking the transition. Grey is the most usual colour of the upper parts; but it appears to vary considerably at different seasons (perhaps at rutting time), changing to a light brown, and even to a dusky yellow. The first specimens, that were procured in February, were of this latter colour; five months after they were found of a grey colour. One of them, which has been in my possession about ten months, and is now alive, has not changed colour perceptibly in that time. This animal is remarkably tame, and has become a regular and very amusing guest at the breakfast-table.

A sufficient number of specimens of the *S. maximus* and *bicolor* has not been examined, to decide whether they are subject to the same variations of colour. A young one of the latter, procured from the straits of Sunda, had the whole of the tail of the same fulvous colour as the belly, while in adult ones it is entirely black, like the upper part of the body. These facts indicate the necessity of caution in multiplying the number of species in this genus on mere diversities of colour, as intermediate varieties will often be found to connect species apparently sufficiently remote.

SCIURUS VITTATUS.

This species, which appears to be related to the *Sciurus gingianus*, is smaller than the preceding, and is frequent in the woods

of Bencoolen, living principally on palm-trees. It pierces a hole in the coco-nuts for the purpose of drinking the contained milk. It is called Tupai, توفّي which appears to be the generic name of the Squirrels.

It is about eight inches in length, and the tail is about the same. The ears are round, resembling in form the human, and not bearded. The colour on the upper part of the body and on the tail is a mixed yellowish-grey, each hair being twice annulated with black and fawn-colour. The lower parts are brownish-red or fulvous. On the sides, from the shoulder to the hind-leg, is a stripe of white, separated from the fulvous part by one of black. The tail is round, and has the hair uniformly disposed, not spreading towards each side, in which particular it resembles the *S. Guerlingus* (*Myoxus Guerlingus* Pennant). It carries it erect like the other Squirrels, and it is of the same colour as the body, with the exception of the extremity, which is furnished with some fulvous hairs. The scrotum is very large and pendent. The eyes are surrounded by a fawn-coloured ring. The whiskers are black.

There is another species nearly related to the preceding, but much smaller, being only about five inches in length. It has the same distinguishing characteristics of rounded ears, round tail, and large scrotum, but differs in wanting the white stripe on the sides; in the under parts being of a greyish-white, not fulvous; in the tail wanting the fulvous hairs at its point, and in having the light and dark colours more distinct and somewhat annulated. In other respects, and in the colour of the back, it exactly resembles the former, and is perhaps no more than a variety.

Of Flying Squirrels there are two species. The *S. Petaurista* is, according to Major Farquhar, a native of Malacca, and there called Chin Krawa. The second species was lately sent to me from

from Singapore, and is without doubt the *Sciurus Sagitta* of Linnaeus, but quite a different animal from that figured by Shaw (*Gen. Zool.*) under this name. The flying membrane does not extend from the head to the hands, but only between the limbs, and is beautifully ciliated. The tail is flat and distichous, of an oblong lanceolate form. The scrotum is particularly large.

MOSCHUS.

The Malays distinguish three species or varieties of this genus, viz. the Napu, ناڤو the Kanchil كنجيل and the Pelandok.

MOSCHUS JAVANICUS Pallas.

NAPU. ناڤو

This is the largest of the three. It is about twenty inches long and thirteen in height. It stands considerably higher behind than at the shoulder. It is of a mottled ferruginous colour on the back, grey varied with white on the sides, and white below and on the inside of the thighs. The tail is from two to three inches long, tufted, white below and at the end. A white stripe runs along the base of the lower jaw on both sides to the posterior angle; the space between is also white, and gives origin to three diverging white stripes, which run to the shoulders and middle of the breast. The top of the head is very flat, and of the same ferruginous colour as the back, which, however, becomes darker on the back of the neck. A nearly black line runs from each of the eyes to the nose. A grey stripe runs for some way along the middle of the belly. It has short spurious hoofs.

This species frequents thickets near the sea-shore, and feeds principally on the berries of a species of *Ardisia*. It can be easily tamed if taken young, and will become quite familiar.

MOSCHUS

MOSCHUS KANCHIL. كنجيل

This species is smaller than the preceding, being about fifteen inches long by about nine or ten in height. In form it nearly resembles the Napu, but is lighter and more active. Its colour is very different, being of a deep-red brown, approaching to black on the back, and becoming of a bright bay on the sides. It is white on the belly and inside of the legs. It has three white stripes on the breast like the Napu, but differently disposed. The stripe on each side of the lower jaw is prolonged to the shoulder, becoming narrower as it goes backwards; the middle stripe is broadest below, and narrows to a point above, never uniting with the lateral stripes. In the Napu, on the contrary, the three white stripes originate from one point between the maxillary ones, which appear like the commencement of another pair; and all three become broader behind. The head of the Kanchil is not so flat, and the muzzle is more curved above. The black lines from the eyes to the nose are wanting, but a well defined black line runs down the back of the neck, which is not present in the Napu. A brown line runs from between the fore-legs to the middle of the belly. This species is further distinguished by having long upper canines curving backwards; while in the Napu they are short and straight. The tail is from one and a half to two inches long, tufted, white below and at the end. It has spurious hoofs like the former.

These differences are constant at every age, and they differ not less in their habits and manners. This species is found in the depth of the forests, and feeds chiefly on the fruit of the Kayo briang (*Gmelina villosa* Roxb.). It will live in confinement, but never becomes tame like the preceding. If ever it succeeds in breaking its confinement, it endeavours to make its escape

escape to the woods. It is a much swifter and lighter animal, and is said to be so alert and cunning, that it is a common Malay proverb to designate a great rogue, to be as cunning as a Kanchil. Of this cunning many instances are related by the natives. If taken in the nooses laid for them, they will, when the hunter arrives, stretch themselves out motionless and feign to be dead; and if he is deceived by this manœuvre and unties them, they seize the moment to start on their legs and disappear in an instant. A still more singular expedient however is mentioned: that when closely pursued by dogs, the Kanchil will sometimes make a bound upwards, hook itself on the branch of a tree by means of its crooked tusks, and there remain suspended till the dogs have passed beneath. No portion of this activity and quickness is ascribed to the Napu or Pelandok; and to this difference of disposition is attributed the Kanchil frequenting the forests without fear of the Tigers and beasts of prey; while the latter two, more timid, seek safety in the thickets nearer to human habitations, where they are less exposed to such enemies.

The Pelandok is the least of the three in point of height, but has proportionably a larger and heavier body: it has also a larger eye.

CERVUS.

Of this genus there are three kinds frequent in Sumatra and the adjacent islands, viz. the Rusa, the Rusa ubi, and the Kijang.

CERVUS AXIS.

RUSA. رُوسَا

This is, no doubt, the greater *Axis* of Pennant, and is abundantly distinct from the common or spotted *Axis*.

It is of a large size, often standing as high as an ordinary sized pony of the country, which is about four feet or twelve hands.

Its

Its horns are large, furrowed and rugged, and, like the other kinds of *Axis*, three-branched. Its colour is pretty uniformly of a greyish-brown, darker on the belly; the hinder parts and tail have somewhat of a ferruginous shade, and the inside of the limbs is whitish. The head is handsome; the muzzle black, and soft at its extremity. The chin is whitish. The eyes have the usual lacrymal furrow. The female has no horns; in the male they are large, frequently more than two feet in length, varying somewhat in the degree of divergence, and in relative thickness and proportions; their colour is more or less dusky or brown. The burr at the base is tuberculated; the lowest branch is directed forward, and the upper, which is shorter, looks backwards. The canines of the upper jaw are rather long in old individuals. The ears are large, rather naked, soft and whitish at the edges, and have some pencils of long hair at the lower and inner margin.

This species is elegantly formed, and in its habits is peculiarly gentle and tractable. It is frequently kept tame, and has been commonly known among Europeans in these islands by the erroneous name of Elk. The pair now in my possession were presented to me by the King of Acheen.

A variety of this is described by the natives as of a darker colour, being of a deep brown or nearly black, and called *Rusa etam* or *Rusa Kumbang*. It is rather smaller than the common kind, but has exactly the same horns, and in fact seems to differ in nothing but colour.

The spotted *Axis* met with in these islands appears to be the same as that of Bengal, and has probably been introduced from thence.

The middle *Axis* of Pennant is probably the small species most frequent in Java, and generally dried as an article of food, called *Dinding* throughout the eastern islands. A white individual of
this

this species was sent to me from Macassar in the island of Celebes, and lived some years in my park at Buitenzorg.

CERVUS MUNTJAK? *Schreb.*

KIJANG. كيجنج

The Kijang is smaller than the other species of deer, being less than four feet in length, and not exceeding two feet in height. The horns are seated on an elevated cylindric base or pedicel covered with skin and hair. The pedicel is about three inches long; the horn about four, deeply furrowed, with a prominent burr at the base, immediately above which it divides into two branches, one short and pointing inwards; the other erect, and curved inwards and backwards at the point. The pedicels are an elongation of the *os frontis*, and their roots are continued forwards above the eyes to the nose, forming two strong prominent ribs on the face. On the forehead between these is a double longitudinal fold of the skin, forming in some sort a middle rib, much less conspicuous than the lateral ones. The female has no horns, and the ribs of the face are obscure. The male has long canines in the upper jaw resembling tusks, sharp, and curved backwards. In form this deer is remarkably elegant; the legs are slender and graceful; the body is round, compact, and rather large in proportion to the legs. The fur is very fine, close and glossy. The colour is a bright bay or reddish brown, lighter below, and mixed with brown on the neck. The inside of the thighs, the region of the pubes, and the under-side of the tail, are of a pure white. The chin and lower jaw is whitish. The muzzle is nearly black, which colour extends along the middle rib, and from thence in a stripe running upwards to the extremity of each pedicel. In the female the place of the horns is marked

by a tuft of black hairs. The ears are rather small, and thinly covered with hair. Lachrymal furrows as usual. Spurious hoofs small and blunt.

This species is found in the neighbourhood of Bencoolen, and is figured by Mr. Marsden in his *History of Sumatra*. That drawing, however, must have been taken from a young individual before the horns had fully formed or begun to branch. Even the burr, which afterwards becomes so conspicuous, appears to have been wanting.

Of the *Rusa ubi*, روسا اوبي called also *Rusa saput*, روسا سافوت and *Rusa tunjuk*, a specimen has not been procured; but it is described by the natives to be inferior in size to the *Rusa*, of a reddish colour, and to have unbranched horns covered with hair to within a short distance of the point.

None of these species of deer appear to shed their horns yearly like the European ones. The first horn is commonly a small and imperfect one, and falls early. It is replaced by the perfect one, which is permanent, and is never lost unless by accident, when it is not replaced. This is probably the case with all the deer of tropical climates.

ANTILOPE SUMATRENSIS *Penn.*

KAMBING UTAN. كمبريخ هوتن

WILD GOAT OF SUMATRA.

The figure of this animal, given in the last edition of Mr. Marsden's *History of Sumatra* is very accurate, but does not fully express the character of spirit and vivacity which marks the living subject. I kept one for some months, but found it impossible to tame him; and he finally died from impatience of confinement. It is a powerful muscular animal. The detailed description in Shaw's *Gen. Zool.* is generally correct.

BOS.

BOS.

There is a very fine breed of cattle peculiar to Sumatra, of which I saw abundance in Menangkabu when I visited the capital of that country in 1818. They are short, compact, well made animals, without a hump, and almost without exception of a light fawn-colour relieved with white. The eyes are large and fringed with long black eye-lashes. The legs are delicate and well shaped. Among all that I saw I did not observe any that were not in excellent condition; in which respect they formed a striking contrast to the cattle generally met with in India. They are universally used in agriculture, and are perfectly domesticated. This breed appears to be quite distinct from the Banting of Java and the more eastern islands.

Of the Buffalo, the white variety is the most frequent at Bencoolen. It does not appear to differ from the black in any thing but the colour, which is a reddish white.

EQUUS.

The Sumatran horses are small, strong and hardy. Those of the northern parts of the island, particularly Acheen, are the most prized. The Batta horses are rather larger, very strong, but not handsome. They are distinct breeds from the horses of Java and Bima, which are nearly of the same size, about twelve hands.

ELEPHAS.

Wild Elephants are extremely numerous in the forests of Sumatra; but few attempts have been made to catch and domesticate them. At Acheen alone have they been trained to the service of man; and I have now in my possession a young one presented to me by the King of that country.

RHINOCEROS SUMATRANUS.

BADAK. بادق

TWO-HORNED RHINOCEROS OF SUMATRA.

Dr. Bell's description and representation of this animal in the *Philosophical Transactions* are extremely correct. The drawing of the skull is however erroneous in one particular; the incisor bone of the upper jaw is straight and horizontal, and not curved as there represented. It must also be remarked, that the original number of incisor-teeth is four in each jaw, the same as in the one-horned Rhinoceros of India. Of these incisors, two in each jaw are very small, and soon fall out, and were therefore probably wanting in the adult head figured by Dr. Bell. The small incisors of the upper jaw are situated behind the large and persistent ones; those of the lower jaw between them. The number of persistent molars in each jaw is six on each side, as represented by Dr. Bell; but it appears that there is a seventh, which soon falls out. The number in the young subject is six, with the rudiment of a seventh behind. As this seventh advances, the first molar begins to be obliterated, and falls out before the last arrives at its full size; so that at no period are there seven completely formed teeth existing in the jaw. The skin of the Sumatran Rhinoceros is much softer and more flexible than that of the Indian one, and is not, like it, corrugated into plates of mail. It has however some doublings or folds, particularly round the neck, shoulders and haunches, rather more distinct and defined than in Dr. Bell's drawing. The natives assert that a third horn is sometimes met with; and in one of the young specimens procured, an indication of the kind was observed. The female has a larger and heavier head than the male, but is similar in other respects.

They

They are not bold, and one of the largest size has been seen to run away from a single wild Dog.

The one-horned Rhinoceros of India is not known to the natives of this part of Sumatra; and the single horns which are occasionally procured, appear to be merely the larger horns of the two-horned species separated from the small one. There is, however, another animal in the forests of Sumatra never yet noticed, which in size and character nearly resembles the Rhinoceros, and which is said to have a single horn. This animal is distinguished by having a narrow whitish belt encircling the body, and is known to the natives of the interior by the name of Tenu. تنوق It has been seen at several places; and the descriptions given of it by people quite unconnected with each other, coincide so nearly, that no doubt can be entertained of the existence of such an animal. It is said to resemble in some particulars the Buffalo, and in others the Badak or Rhinoceros. A specimen has not yet been procured; but I have several parties on the look-out, and have little doubt of soon being able to forward a more accurate description from actual examination.

It should be remarked, that the native name, Tenu, has, until lately, been understood to belong to the Tapir. It is so applied at Malacca, and by some of the people at Bencoolen. In the interior however, where the animals are best known, the white-banded Rhinoceros is called Tenu, and the Tapir Gindol, and by some Babi Alu. It is not impossible, that, as both animals have white bands, the names may have been confounded by people little in the habit of seeing either, and deriving their information solely from report. In a country like Sumatra, where the inhabitants, in a great measure shut out from general communication, are divided into an infinity of tribes, speaking different dialects, a perfect consistency or uniformity of nomenclature

ture cannot be expected, and it is not always easy to reconcile the synonymy.

TAPIRUS MALAYANUS.

The first notice that I received of the existence of this animal was in the year 1805; a living specimen having been sent to Sir George Leith, when Lieutenant-Governor of Penang: it was afterwards observed by Major Farquhar in the vicinity of Malacca. A drawing and description of it was communicated by him to the Asiatic Society in 1816, and a living subject was afterwards sent to the Menagerie at Barrackpore from Bencoolen. At this latter place the specimens contained in the present collection have been procured.

It is known by different names in different parts of the country. By the people of Limun it is called Saladang, سالدغ by those of the interior of Manna, Gindol, گندول in the interior of Bencoolen, Babi Alu; and at Malacca, Tenu.

Little can be added to the original description of Major Farquhar, the substance of which is as follows:

The Malay Tapir resembles in form the American, and has a similar flexible proboscis. Its general appearance is heavy and massive, somewhat resembling the hog. It is particularly distinguished by its colour, the body having a broad defined belt or band of white, while the fore and hind parts are black. This band extends circularly round the body from behind the shoulders to the root of the tail, and contrasts strongly with the glossy black of the rest of the animal. The skin is thick and firm, thinly covered with short hair. There is no mane on the neck as in the American species. The head is black, and furnished with a proboscis of six or eight inches in length. The eyes are small. Ears roundish and bordered with white. The teeth are forty-two in number. In the upper jaw there
are

are seven molars on each side, one small canine inserted exactly on the suture of the incisor-bone, and in front six incisors, the two outer of which are elongated into tusks. In the under jaw there are but six molars, the canines are large, and the number of incisors, the two outer of which are the smallest, is the same as in the upper jaw. There is a vacant space of about two inches between the molars and canines in each jaw. The tail is very short, and almost destitute of hair. The legs are short and stout; the fore-feet furnished with four toes; the hind-feet with three.

These animals are large, particularly in the body, which is equal to that of the Buffalo. It may be interesting to give the exact dimensions of two, one a male, described by Major Farquhar; the other a female, killed at Bencoolen. It is remarkable that all the females that have been procured have been considerably larger than the males.

	MALE.		FEMALE.	
	Ft.	Ins.	Ft.	Ins.
Extreme length from the nose to the tail, measured along the back	6	10 $\frac{1}{2}$	8	1
Circumference of the body	6	0	6	3
Height of the shoulder	3	2	3	5
Ditto at the haunch	3	4	3	9

In a subsequent communication to the Asiatic Society, Major Farquhar gave an account of a very young Tapir which he had alive in his house. It appears that until the age of four months it is black, and beautifully marked with spots and stripes of a fawn colour above, and white below. After that period it began to change colour, the spots disappeared, and at the age of six months it had become of the usual colour of the adult. Major Farquhar says that he found this animal of a very mild and gentle disposition, that it became as tame and familiar as a dog, fed

fed indiscriminately on all kinds of vegetables, and was very fond of attending at table to receive bread, cakes, or the like. The living specimen sent from Bencoolen to Bengal was young, and became very tractable. It was allowed to roam occasionally in the park at Barrackpore, and the man who had the charge of it informed me that it frequently entered the ponds, and appeared to walk along the bottom under the water, and not to make any attempt to swim.

The flesh is eaten by the natives of Sumatra.

SUS SCROFA.

BABI. بابي

The Wild Hog of Sumatra offers nothing peculiar.

HALICORA DUGONG.

DUYONG of the Malays. دويونغ

Of this singular and interesting animal I have already sent an account to England. The specimen which accompanied it was procured at Singapore, and presented to me by the Sultan. They are occasionally met with in the bay of Tappanuli on the west coast of Sumatra.

Since writing the above a new and very singular animal has been brought to me, which agrees with *Viverra* in the number of incisors, but differs in their proportions and disposition. The naked rat-like tail is also peculiar. If it be considered as a *Viverra*, the specific name of *gymnura* would be appropriate.

It is above a foot in length from the nose to the root of the tail, which

which is ten inches more. The body, legs, and first half of the tail are black. The head and neck to the shoulders are white. There is a black stripe above the eyes, and there are black hairs intermixed with the white on the top of the head between the ears. The tail is nearly naked, somewhat scaly, black to the middle, and white from thence to the tip. The body is covered with two sorts of hair, one short, silky and dense, forming a fine coat of fur; the other longer and coarser. The muzzle is elongated, and the snout projects nearly an inch beyond the lower jaw. The nostrils are prominent, and have their margins convoluted. There are in the upper jaw six incisors, the first two largest and remote from each other, the last pair very small; two canines about the same length as the first incisors, and six molars on each side, the first of which is small and has two points, the second is larger and has one point. The fourth and fifth molars are the largest, and are marked with four tubercles; while the last is imperfect, and has only three. In the lower jaw there are six incisors, of which the last pair is the smallest; the others nearly equal, and with a space between the first two as in the upper jaw. There are two long canines, and six molars, similar to those above. Tongue large and soft. Eyes small. Ears rounded, erect and bare. Whiskers long, some of the hairs white, some black. Legs and feet scantily covered with short hair, the fore-ones thick and muscular. Feet five-toed, with compressed, curved, sharp claws. The animal emits a strong musky smell.

An animal was brought to Major Farquhar some years ago from the woods in the interior of Malacca, under the name of *Tikus Ambang bulan*, which appears to be the same as the above.

In concluding this part of the catalogue, it may be proper to observe that I have information from the natives, of several additional Mammalia existing in Sumatra, but which I have not felt myself justified in noticing until that information is more full and complete. The King of Acheen assures me that there is an animal called Jumbing nearly the size and make of a horse, with two unequal horns, to be found in the eastern part of his dominions; and several smaller animals, which appear to be yet undescribed, are mentioned by the natives as existing in the forests of the interior of Bencoolen, which I hope in time to procure.



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