AMERICAN MUSEUM NOVITATES

Number 358 Published by THE AMERICAN MUSEUM OF NATURAL HISTORY New York City July 10, 1929

59.9,74 M (51)

MUSTELIDS FROM THE ASIATIC EXPEDITIONS[1]

BY GLOVER M. ALLEN

On bringing together the mustelids, collected by the Asiatic Expeditions, they are found to comprise over one hundred and forty skins, representing various localities in China (chiefly in Yunnan, Szechwan, and Fukien Provinces) and a few in Mongolia. A critical study of these has entailed a careful consideration of a number of names based on eastern Asiatic specimens, with the result that in many cases it has been possible to arrive at fairly satisfactory conclusions as to their validity. A few wide-ranging species have closely allied representatives in northern India and in parts of China, as *Mustela sibirica*, *M. kathiah*, and *Arctonyx collaris*, so that it will be necessary eventually to show the relationship of sundry Chinese forms to Himalayan species by the use of trinomials. A list of the species secured, with brief remarks, follows. Only one new form is described, a northern race of the lesser ferret-badger, a species hitherto known only from Indo-China.

Charronia flavigula flavigula (Boddaert)

Mustela flavigula BODDAERT, 1785, 'Elench. Anim.,' p. 88.

Size of a house cat, with long tail and short legs; head from muzzle to base of ears, the nape, forearms, fore feet, hind legs and tail brownish black; body above golden on shoulders, passing into brown and black on rump; chin to ears white, throat yellow, belly brownish gray; in summer darker above and below on body.

The series of this long-tailed marten includes four from the Namting River, Yunnan, near the Burma border, and one from Lichiang in the same province, that undoubtedly represent the typical form, whose range extends southeastward at least to Siam, for Thomas has lately relegated the name *indochinensis*, based on the Siamese animal, to the synonymy of *flavigula*. There is more or less individual variation in color among these specimens and the matter is further complicated by the fact that summer skins are darker than winter specimens, apparently

[1]Publications of the Asiatic Expeditions of The American Museum of Natural History. Contribution No. 89.

with an increase in the golden area of the back and a darkening of the belly. It was a dark-bellied skin (May 6), no doubt wholly or partly in summer fur, that served Bonhote as the type of his *Mustela f. kuatunensis* from Fukien, but this supposed race also proves to be untenable, for winter skins from this province are quite as pale-bellied as those from Yunnan taken in February. Indeed, the yellow of the throat seems a very little paler in winter skins from Fukien as compared with the latter, but this difference is so very slight and uncorrelated with other characters, that it seems better to regard the South China form as typical *flavigula*.

A single skin from the Tsingling Range, Shensi, is a trifle paler yellow on the throat and lighter brownish gray above than any of the more southern winter skins but this variation may be individual, or possibly approaches the winter condition of *C. f. borealis* (Radde) of Amur Land, a race that seems to be slightly paler and with a very little larger skull. To this subspecies Jacobi referred the skins from Min Valley region, Szechwan, brought back by the Weigold Expedition and showed that Hilzheimer's *Mustela f. szetschuensis* is not distinguishable. Additional material from northwestern Szechwan, however, shows no important differences from the Yunnan series and is probably best regarded as *C. f. flavigula*. The range of *C. f. borealis* is probably cut off from that of the Chinese animal by the intervention of the Gobi Desert, except in northeastern China and Manchuria.

Mustela larvata tiarata Hollister

Mustela tiarata Hollister, 1913, Proc. Biol. Soc. Washington, XXVI, p. 20.

A large weasel, face and forehead dark brown, neck, back, and basal two-thirds of tail light fulvous, with short white underfur, the back darkened by long black-tipped hairs; throat, chest, fore and hind legs, and tip of tail blackish to blackish brown; sides of belly buff.

The weasel described by Hollister from Kansu (150 miles east of Lanchow) as *Mustela tiarata* is undoubtedly a very close relative of *M. larvata* of southern Tibet, from which it differs mainly in having the blackish facial mask continuous with the dark brown of the forehead instead of being separated by a distinct white area, and in having the terminal part only of the tail black instead of its entire length. Apparently Hollister's *M. lineiventer* from the Little Altai is a paler race with the facial mask distinct, while the animal described by Kastchenko from northwestern Mongolia as *michnoi*, is, as Hollister suggests, probably a race of *eversmanni* rather than of *larvata*, so far as may be judged from the

description. The latter is at once separated from *eversmanni* by its larger size, its tail longer in proportion, with a shorter black tip, and by its more yellowish ground color. In Hollister's description of *M. tiarata* the length of the foot is given as 93 mm., evidently a misprint for 63; also the tail of the type is said to have its terminal two-thirds black.

The Asiatic Expeditions secured three skins, from a locality eighty miles southeast of Urga, that conform closely with the description of *tiarata* except that the black tail-tip varies in length in each, from nearly one-half to a third, and even a quarter of the length of the tail. A fourth skin, from Paotou, Shansi, taken in spring is apparently paler on the body and with the forehead and crown as well as the sides of the face white instead of brown, and the nape nearly clear white with a yellow wash, indicating a seasonal difference in the coloring of the head and body. This weasel, like our black-footed ferret, frequents the colonies of marmots and ground squirrels on which it preys.

Mustela sibirica fontanieri (A. Milne-Edwards)

Putorius fontanierii A. MILNE-EDWARDS, 1868–74, 'Recherches Hist. Nat. des Mamm.,' p. 205, Pl. LXI, fig. 1.

Weasel-like, with a long rather bushy tail, three-fifths the length of head and body; color uniform pale fulvous, slightly paler below; forehead brown, chin white, with often white marks on throat.

A careful comparison of Milne-Edwards's description and figure of *Putorius fontanierii*, based on a skin without skull from Peking, leaves no doubt that this animal is a representative of the yellow mink of Siberia and China. The description applies well to a female in pale winter pelage, and the dimensions taken from a skin are nearly identical with those of a female from Shansi. The yellow mink of eastern China has been currently referred to *M. sibirica* of Pallas, whose specimens came from the forests of Siberia, "voisines de l'Enisséi," but it seems unlikely that it is subspecifically the same as the more northern animal, especially in view of Radde's statement (1862, 'Reise,' I, p. 45) that specimens from the Amur region are larger and darker than those of the Baikal district. Until topotypes of *sibirica* are avilable for comparison therefore, Milne-Edwards's name may be adopted for the very pale-yellow form of the dry area of North China. In fresh winter pelage, the body is very pale, about "pinkish cinnamon" (Ridgway, 1912) above, paling to "cinnamon-buff" below, the tail somewhat more intensely colored, about "orange-cinnamon" (specimen from Fengsiangfu, Shensi, November 23), while late-winter specimens are even paler. The collections include

skins from Chimo (Shantung Province), Kweihuacheng (Shansi Province), and Fengsiangfu (Shensi Province). There are also two adult males in the Museum of Comparative Zoölogy from near Taiyuanfu, Shansi.

Mustela sibirica davidana (A. Milne-Edwards)

Putorius davidanus A. MILNE-EDWARDS, 1870, Nouv. Arch. Mus. d'Hist. Nat., Paris, VII, Bull., p. 92.

The yellow mink of southeastern China is much more intensely colored than that of northern China, almost "ochraceous-orange" (Ridgway, 1912) in fresh winter pelage, and tail not differing from the back. Summer specimens are darker, almost "ochraceous-tawny." Milne-Edwards's name *davidana*, based on a female from Kiang-si Province, is available for this form, the range of which extends from Shanghai west nearly to the borders of Szechwan and south in Fukien Province to Amoy, where Swinhoe mentions it as frequenting the walls of houses in pursuit of rats. The collections of the Asiatic Expeditions include skins from Foochow and Futsing (Fukien Province) and Ching River (Hupeh Province), while the Museum of Comparative Zoölogy has skins from Soochow (Kiang-su Province) and Ichang (Hupeh Province).

Mustela sibirica moupinensis (A. Milne-Edwards)

Putorius moupinensis A. MILNE-EDWARDS, 1870, Nouv. Arch. Mus. d'Hist. Nat., Paris, VII, Bull., p. 92.

In the highlands of western China this species is represented by a much darker form having a contrastingly dark tail-tip. The brownish of the forehead extends back along the median part of the back, which in the other races mentioned is pale. The dark tip to the tail is present in all the skins examined, which includes six from Wanhsien, two from Tachiao, and one from Washan, in Szechwan, and one each from Talifu and Lichiang in Yunnan. The last locality is at an altitude of 12,000 feet.

Milne-Edwards, in describing these forms, gave them all specific status and apparently did not recognize the fact that females are considerably smaller than males. The westward range of this race probably is continuous with that of the smaller Nepalese *sub-hemachalana*, which may eventually prove also to be a subspecies of *M. sibirica*. Thomas indicates further that his *M. hamptoni* from Mt. Imaw Bum, northern Burma, is closely related to *moupinensis*, if not identical with it.

Mustela kathiah Hodgson

Mustela (*Putorius*) *kathiah* HODGSON, 1835, Journ. Asiatic Soc. Bengal, IV, p. 702.

A weasel with tail slightly more than one-half the length of head and body; dorsal surfaces and tail all around uniform dark brown; lips and chin white; throat to wrists and ankles bright yellow, sharply delimited at sides.

A series of eleven weasels from Yenping and Futsing, Fukien Province, evidently represents Matschie's *Arctogale melli*, described from the adjoining province of Kwangtung, but I cannot see that they differ in any way from *M. kathiah*, of Nepal, to which the yellow-bellied weasel of Szechwan is currently referred. A single immature specimen from Lichiang, Yunnan Province, 9000 feet, is quite the same, so that, as in the case of *Charronia flavigula*, this weasel seems to have a wide range from northern India across southern China, without important change in color or size. There seems to be no doubt that Milne-Edwards's *Putorius astutus*, based on a weasel of this group from Moupin, Szechwan, is identical with the species here considered. He mentions that its fore feet are white on their upper surface, but this is not true of the Yunnan specimen, nor apparently of Nepalese specimens, though Hodgson mentions one from western India that had partly whitish feet. Matschie makes the wholly dark feet of his Kwantung specimen the chief distinctive character of *Arctogale melli*, but this is probably a matter that may vary individually. Yet none of the Fukien series has any white on the feet. Trouessart, describing a skin from Fukien, collected in 1874 by David, likewise states that the feet are dark like the back, while of three others from Ta-tsien-lu, Szechwan, supposed to be winter specimens, two have white toes and the third only "un peu de jaune" on the external side of the feet. Thus, while Szechwan specimens may or may not have white feet, it seems that those from Nepal, Yunnan, and Fukien do not so far as available evidence goes. Farther north, however, white on the feet is apparently the usual condition.

As to seasonal variation, the Fukien series is about equally divided between summer and winter skins, yet there is very little difference between those of July and those of December. The latter are, however, a very little paler above, more buffy, especially the underfur. The intensity of the yellow on the lower side varies individually from buff to deep ochraceous.

Mustela pygmæa (J. A. Allen)

Putorius (Arctogale) pygmæus J. A. Allen, 1903, Bull. Amer. Mus. Nat. Hist., XIX, p. 176.

Very small, tail about as long as hind foot; above, including tail,

brown; below white, including upper lip, fore feet (except center of backs of hands), the inner side of hind legs, and terminal half of hind foot.

Three summer skins taken in the vicinity of Urga, Mongolia, agree perfectly with the original description of this species, the type of which came from Gichiga, on the Okhotsk Sea, Siberia. One, a male, is from 15 miles north of Urga, the second is from 45 miles northeast of that city, while the third, a female, is without precise locality. This, is therefore, a considerable extension of the known range to the southwestward. Kuroda, in 1921, announced the discovery of a weasel of this type from northern Hondo, Japan, and named it *Mustela rixosa namiyei*. The female of the three Mongolian specimens has four small brown spots medially on the chest. One, a male, measured: total length, 177 mm.; tail, 20; hind foot, 24; ear, 16; the female, total length, 158; tail, 17; hind foot [? 20]; ear, 10. No doubt the relationship of this weasel to the American *M. rixosa* is very close.

HELICTIS Gray

Ferret-badgers

The ferret-badgers are distinguished externally by their somewhat weasel-like form, though they are less slender, their strong fore claws, greatly developed cartilaginous snout, and their color which is brownish gray above, more or less hoary, white below, and with white facial markings on forehead, cheeks, and ears, often with more or less of a white median line extending from the nape spot to the shoulders. They are of special interest since the several species of eastern Asia are very much alike externally but are very different in cranial characters. Thomas (1922) has lately summarized these points and recognizes three genera for the Indian, Chinese, and North Bornean ferret-badgers, but in view of the quantitative nature of the characters it may be better to regard these divisions as of subgeneric value only, for the species are obviously nearly allied. The Indian *Helictis personata* represents then the subgenus *Melogale*, distinguished by its heavy teeth, the lower second premolar disproportionately larger than the first, and the upper carnassial with its external edge convex instead of practically straight. A smaller race occurs in Tonkin, and probably will be found to reach the southern borders of Yunnan, *Helictis* (*Melogale*) *personata tonquinia;* another small-toothed subspecies *H.* (*M.*) *personata laotum*, is named from northeastern Siam. This subgenus is further distinguished from typical *Helictis* (type *H. moschata*), by the characters of the baculum or penis bone, which, as Thomas points out, is bifid terminally, with the prongs thick-

ened, one forming a curved crest, whereas in *H. moschata* the tip is trifid, with the slightly thickened terminal prongs set in a triangle. There is evidence that this difference is not so trenchant as might appear, for in a baculum of *H.* (*M.*) *p. tonquinia* in the Museum of Comparative Zoölogy there is, in addition to the two large thickened lateral prongs, a small ventral knob representing the third one, that is more fully developed in *H. moschata.* An additional peculiarity of *Melogale,* not mentioned by Thomas, appears very clearly on laying out the series of skulls available, namely, the very different character of the temporal ridges. In *Melogale,* these are heavier and more nearly median, curving strongly inward from the supraorbital processes so that their point of closest approximation is about the diameter of the orbit behind these processes, and from there back the ridges diverge very slightly. In *Helictis* as represented by the *moschata* group, the ridges are less heavy, much wider apart, and either parallel or slightly bowed outward over the braincase, occasionally converging at their posterior ends.

The close similarity of these two species makes it seem likely that their geographic ranges are mutually exclusive or nearly so. Anderson (Zool. Res. Yunnan) long ago recorded *H. moschata* from western Yunnan, but the specimen is possibly referable to the animal Thomas named *millsi* of Assam, no doubt to be regarded as the westernmost race of *H. moschata.* A further interesting point is the occurrence of a smaller species, *H. taxilla* Thomas, closely resembling *H. moschata* but of very much less size. Originally discovered in Tonkin, French Indo-China, the collections made by Mr. Clifford H. Pope for The American Museum of Natural History have resulted in extending its known distributon to Fukien Province, a thousand miles to the northeast, where it is represented by the large-toothed race described below.

Helictis moschata Gray

Helictis moschata GRAY, 1831, Proc. Zoöl. Soc. London, I, p. 94.

The type locality is Canton, Kwangtung Province, South China, where the original specimen was secured by John Reeves. A series of 17 skins and skulls, secured by Mr. C. H. Pope in Hainan, is provisionally referred to the typical race in the lack of specimens from elsewhere in South China for comparison. Dr. J. A. Allen, in his list of the mammals of Hainan, follows the same course.

Helictis moschata ferreo-grisea Hilzheimer

Helictis ferreo-griseus HILZHEIMER, 1905, Zoöl. Anz., XXIX, p. 298.

The type is a skin purchased in Hankau, Hupeh Province, and no doubt came from that general region. If the Hainan skins are correctly referred to typical *H. moschata*, those from Fukien and eastern Szechwan represent a larger race with grayer tone to the pelage, for which Hilzheimer's name is available. The average measurements of a series of skulls show that the northern animal is larger by several millimeters in most of its dimensions and the color is usually without the buffy tint to the white under parts and pale bases of the hairs above, though occasional specimens agree with the more southern animal in the pale orange suffusion of the lighter areas. Males average a very little larger in cranial dimensions than females. Specimens were secured at Futsing, Yenping, and Chunganhsien in Fukien Province, and at Wanhsien in eastern Szechwan, and Yochow, Hunan.

Helictis taxilla sorella, new subspecies

TYPE.—Adult male, skin and skull, No. 85030, American Museum of Natural History, from Futsing, Fukien, China. February 21, 1926. Clifford H. Pope, collector; Third Asiatic Expedition.

DESCRIPTION.—Externally similar to *H. moschata* in general appearance, but much smaller, the ears slightly larger in proportion, the claws of the fore feet slightly more curved, the metatarsal pads shorter; the skull is relatively more slender, less inflated, and with a narrower muzzle. From typical *H. taxilla* of northern Tonkin this Chinese race is distinguishable by its smaller skull in combination with the large size of the teeth, which are even slightly larger than in *taxilla*.

Color, pale chocolate-brown above, becoming hoary on the sides; tail long-haired and narrow, the chocolate hairs predominating on the basal half, the white-tipped ones on the distal portion. The pelage above has the proximal part of the hairs dull whitish. Notwithstanding that the white and dark head-markings are "about as in *moschata*" (Thomas) the four specimens from Fukien differ from that species in the following points: the white interorbital spot tends to be more linear than broad (in one it extends from nose-pad to crown as a broad line); the cheeks behind the eye are grizzled chocolate-gray and whitish, whereas in *moschata* a distinct dark spot extends backward from the posterior corner of the eye and is surrounded above and below by an area of clear white; finally a third distinctive mark of *moschata* is the presence of a small elongate chocolate spot beginning about 5 mm. behind the angle of the mouth and embracing a small clump of dark vibrissæ, but in the four specimens of the smaller species this spot is without exception absent and the corresponding vibrissæ are white or poorly developed. The ventral surface of the body, including the fore legs to the wrist and the hind legs nearly to the ankles, is dull white. Inside of ears and their outer rim whitish.

SKULL.—This is a replica on a smaller scale of the skull of *H. moschata* but, as Thomas has pointed out in his description of *H. taxilla*, it is more slender, especially in the rostral part, with a low and less inflated braincase. The female, however, seems to have a slightly more inflated skull than the male. The temporal ridges are wide

apart and nearly parallel. The tooth rows are very nearly as long as in *H. moschata* and slightly longer than in *H. taxilla*, but the individual teeth are as large as in the former species, resulting in a more slender attenuate rostrum for their accommodation. The distance between the upper molars equals the width of the postpalatal tube whereas in the larger *H. moschata* it exceeds that width.

MEASUREMENTS.—The collector's measurements of the type and a female topotype are respectively: head and body, 330, 320 mm.; tail, 140, 150; hind foot, 40, 40. In the dried skin the hind foot without claws measures in each 45 mm.

The skull of the type measures: greatest length, 71 mm.; basal length, 63.8; palatal length, 33.6; orbit to tip of rostrum, 24.8; zygomatic width, 37.0; mastoid width, 30.2; width across outer corners of molars, 18.2; interorbital width, 16.3; depth of braincase including bulla, 25.2; upper cheek teeth, 23.0; lower cheek teeth (canine to molars inclusive), 27.0.

This smaller species bears so close an external resemblance to *H. moschata*, that it may easily be confused with it. A close examination, however, shows that in addition to its smaller proportions, it differs in the gray instead of white cheek markings, the lack of a rictal dark spot, the much shorter metatarsal pads, and the weaker and slightly curved instead of nearly straight fore claws. In the case of two species so alike in structure living in the same region, one suspects a difference in habits, and it may be that the last two points indicate modifications for tree-climbing instead of terrestrial life.

Meles meles leptorynchus Milne-Edwards

Meles leptorynchus MILNE-EDWARDS, 1867, Ann. des Sci. Nat., Zool., (5) VIII, p. 374.

A badger with the under side from chin to root of tail and the feet blackish to blackish brown. A white stripe from the angle of the mouth on each side to and beyond the base of the ear, and a median one from muzzle to eyes or occiput, as well as a blackish stripe from muzzle including the eye; all merge at the back of the head in the grizzled black and buffy white of the rest of the dorsal side.

The black instead of white throat and the white instead of grizzled tail distinguish skins of this genus at a glance from those of *Arctonyx*. Compared with the European badger, the Chinese form has the white facial stripes shorter and the pale tips of the hairs above are less extensive and tinged with buffy instead of being pure white. The median white stripe on the muzzle is usually clear and broad to or slightly past the level of the eyes, beyond which it becomes smoky brown or even heavily brown, but in one of eleven skins is darkened quite to the nasal pad. Matschie's *M. tsingtauensis* is based on a nearly normal specimen with the stripe

extending to the eyes. Matschie's *M. hanensis* and *M. siningensis* are also synonyms, based on slight individual variations in color.

The relationship of the Chinese badger to the European *M. meles* seems, on examination of a series of both, to be not more than subspecific. The color pattern is the same, except that the white head-markings are more obscured in the former, and its general tone is a little more buffy. The European animal is distinctly larger of skull with a better developed median crest. It also may occasionally have the first upper and first lower premolar (p^1 and p_1) present as small spicules but more often the upper one is altogether lacking and the lower one frequently, while in old age both are deciduous. In the Chinese badger, on the other hand, there seems to be no indication that the first small premolar is ever present, for in all the specimens at hand there is not even a space where it might stand in the toothrow. The slightly greater inflation of the bullæ is noticeable in Asiatic specimens, even in those of Asia Minor, which thus afford an intermediate condition.

Arctonyx collaris collaris F. Cuvier

Arctonyx collaris F. Cuvier, 1825, Hist. Nat. des Mamm.,' pt. 51 (2 pp., Pl.).

A large, short-limbed badger, with pale claws; a white forehead stripe, and a shorter one below the eye; throat, ears, and tail white; feet and belly black. The fur of the back is basally white with a black terminal portion, or the black band may be succeeded by a white or a yellowish tip, so that specimens from the same locality may be black-backed or largely grizzled gray, often with a yellowish tinge.

The precise relationships of the Asiatic hog-badgers still require to be more carefully worked out with adequate material. The collections of the Asiatic Expeditions include fourteen skins and eight skulls from various localities in China and these show a considerable amount of variation which seems individual rather than geographic. Skins from the same region vary in color from those having white head-markings and black nape and back (with white bases to the hairs) to those with the facial markings tinged with ochraceous, the nape, shoulders, and all the hairs of the back white-tipped or ochraceous-tipped. A light-colored specimen of the latter type served as the basis for Thomas's *A. leucolæmus orestes* from the Tsingling Mts., Shensi. I cannot see that specimens occurring from Yunnan across South China to Fukien differ materially from *A. collaris* of Bhutan, judging from descriptions of the latter, and allowing for certain inaccuracies in the original figure as to the thinly

haired tail. Anderson, who examined the type of *A. obscurus* from western China, regarded it as a young animal identical with *A. albogularis*, itself doubtless the same as *A. collaris*, and Milne-Edwards also admits the close similarity. Wroughton in his summary list of Indian mammals (1919, Journ. Bombay Nat. Hist. Soc., XXVI, p. 347) states that the greatest length of skull in *A. collaris* is 135 mm., which is almost precisely that of adult skulls from Fukien (condylobasal length 135.7–136 mm.). Thomas, in 1922, described as *A. obscurus incultus* an old male from Anhwei, which differs in its thin coat and the great inflation of the sides of the posterior tubular part of the palate. The former character, however, is likely to vary seasonally as it obviously does in the Fukien and Yunnan skins, while the degree of inflation of the palate varies considerably in skulls from the same locality in Fukien. I am, therefore, regarding all the specimens in the present series from Lichiang, Yunnan Province, and from Chungan, Yenping, and Futsing, Fukien Province, as *A. collaris collaris*.

Arctonyx collaris leucolæmus (A. Milne-Edwards)

Meles leucolæmus A. MILNE-EDWARDS, 1867, Ann. des Sci. Nat., Zool., (5) VIII, p. 374.

Smaller than the typical form, skull with condylobasal length of 123 mm., the white collar usually complete; the dark color of the back extending on to the basal part of the tail.

Three skins labelled from Chihli Province represent this slightly smaller subspecies. In Milne-Edwards's figure of the type from the environs of Peking, the white collar extends broadly across the nape, passing gradually into the grizzled, white-tipped hairs of the back. The three skins above noted show this collar but the entire back is black, lacking the white-tipped hairs. The skulls of two of these (labelled males) are aged and considerably smaller than those of South China animals, with the posterior tubular part of the palate hardly inflated at all. They agree in small size with the type skull as figured by Milne-Edwards. The third skin is not accompanied by a skull. In 1923, Lönnberg (Ann. Mag. Nat. Hist., (8) XI, p. 322) described as *A. leucolæmus milne-edwardsii* a hog-badger from the Minshan, southern Kansu, the chief characters of which are the black instead of grizzled dorsal surfaces, and the presence of a minute premolar (p^1 and p_1) in both jaws. He calls attention to a similar tooth variation in a specimen from Shensi recorded by Milne-Edwards. The skull of the type, a subadult female, is small, like that of Chihli specimens (123 mm. long), while the material now at hand shows

that the variations in color and in the presence or absence of the minute anterior premolars are altogether individual, for the skins from Chihli are similar in their black backs to that from Kansu, while of two skulls from Chihli, one has p_1 in the left lower jaw; and in six others from South China representing *A. c. collaris*, two have p^1 present in the left upper jaw, and all have p_1 on both sides in the lower jaws. It is obvious that this small tooth is in process of disappearance, and so is either quite absent or represented by a minute spicule, of varying size. The Minshan hog-badger is thus similar to that of Chihli and both seem to represent the slightly smaller, white-naped race, *A. collaris*, described by Milne-Edwards.

Lutra lutra chinensis Gray

Lutra chinensis Gray, 1837, Mag. Nat. Hist., (2) I, p. 580.

A clawed otter with the upper outline of the naked nose-pad W-shaped, instead of nearly straight across; general color light chocolate-brown, lips white, longer hairs of the lower surface white, the under-fur pale brown, whitish at base.

Two otter skins, one from Nodoa, Hainan, the other from Yenping, Fukien Province, are quite similar in color and evidently represent Gray's *L. chinensis*, the type of which was sent from China by Reeves, hence probably from near Canton. They are decidedly paler than European and Japanese skins of *Lutra lutra* and probably somewhat smaller, although the skulls indicate that the animals are hardly more than adult. The upper border of the nose-pad is W-shaped, with a decided central triangular point, as in the *L. lutra* group. It is probable that Matschie's *Lutra hanensis*, based on a trade-skin purchased in Hinganfu, southern Shensi, may represent the Indian and Burmese species, *tarayensis*, in which the outline of the nose-pad is nearly straight above as he describes it.