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To cite this article: J.L. Bonhote B.A. (1901) XLV.—On the martens of the *Mustela flavigula* group, *Annals and Magazine of Natural History*, 7:40, 342-349, DOI: [10.1080/00222930108678482](https://doi.org/10.1080/00222930108678482)

To link to this article: <http://dx.doi.org/10.1080/00222930108678482>



Published online: 29 Sep 2009.



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XLV.—On the *Martens* of the *Mustela flavigula* Group.

By J. L. BONHOTE, B.A.

AMONG the martens that have hitherto been considered as *Mustela flavigula* several well-marked geographic subspecies may be distinguished, and one of the forms (*M. Gwatkinsii*) that has been united with them is apparently a distinct and easily recognizable species, only found in the peninsula of India. The synonymy of this group is somewhat lengthy, and when I began to work it out so many small errors and misquotations appeared to have been given, that I have thoroughly studied the subject and have personally verified all the references given.

The first mention of this animal was made by Pennant, who described it under the name of "White-cheeked Weesel," from a menagerie specimen whose origin was unknown. There can be little doubt, however, that the specimen belonged to the form found in Nepal, Assam, and southward to Burma, as Pennant stated that the head was black—a character typical of that race.

Boddaert, in his 'Elenchus Animalium,' was the first to bestow on Pennant's specimen the name of *Mustela flavigula*, and several other names were also based on the same description, which materially helped to confuse the synonymy; *Galidictis chrysogaster* is, however, the only one to which attention need be drawn. This animal is said to be very dark on the back, head, and legs, with white cheeks and a golden-yellow breast and underparts, and is described from a specimen shot at Mussorie in the Himalayas by Mr. R. Gwatkins. A few years later Horsfield, in his 'Catalogue of the East India Collection,' describes, under the name *Martes Gwatkinsii*, a specimen collected in Madras by Mr. (afterwards Sir) Walter Elliot, and states in addition that it belongs to the same species as Mr. Gwatkins' Mussorie specimen; this, however, is not the case, for, as will be seen later on, the Mussorie specimen, being only an individual of the typical *M. flavigula* in summer, is specifically distinct from that from Madras. As Horsfield gives a detailed description of the South-Indian form, comparing it with the typical *M. flavigula*, and as the specimen from which the description was taken is still in existence in the British Museum, it seems to me necessary to retain the name *Gwatkinsii* for the South-Indian species, of which Elliot's specimen would be the type.

The following species and races (which may be easily recognized) are referred to this group:—

	Hab.
I. (a) <i>Mustela flavigula typica</i> .	Nepal, Assam to Burma.
(b) ——— <i>borealis</i> . .	Amurland & E. Siberia.
(c) ——— <i>peninsularis</i> .	Malay Peninsula.
(d) ——— <i>Henricii</i> . .	Java, Sumatra, Borneo.
(e) ——— <i>kuatunensis</i> .	Kuatun, N.W. Fokien.
(f) ——— <i>xanthospila</i> .	Formosa.
II. <i>Mustela Gwatkinsii</i>	Madras.

Key to the Group.

- A. Soles of feet hairy.
- a¹. Head dark brown (seal-brown, Ridg. *).
- a². Shoulders light.
- a³. Smaller; back brownish (clay, Ridg.).
- a⁴. Underparts light (ecru-drab, Ridg.) *Mustela flavigula typica*.
- b⁴. Underparts darker (drab, Ridg.) *M. f. kuatunensis*.
- b³. Larger; back yellowish (gallstone-yellow, Ridg.) *M. f. borealis*.
- b². Shoulders dark brown (seal-brown, Ridg.) *M. Gwatkinsii*.
- b¹. Head light brown (bistre, Ridg.) *M. f. xanthospila*.
- B. Soles of feet naked.
- a. Shoulders conspicuously lighter than rest of back *M. f. peninsularis*.
- b. Shoulders not conspicuously lighter than rest of back *M. f. Henricii*.

Mustela flavigula, Bodd.

The White-cheeked Weesel, Pennant, Quad. ii. p. 331 (1781); id. 3rd ed. ii. p. 52 (1792).

Mustela flavigula, Bodd. Elench. Anim. p. 88 (ex Penn.) (1785); Schinz, Synops. Mamm. p. 319 (1825); Fischer, Synops. Mamm. p. 218 (1829); Bennett, Gard. & Menag. Zool. Soc. p. 225, fig. (1830); Shore, Zool. Journ. v. p. 271 (1835), suppl. plate xlv.; S. Müller, Over de Zoog. van den Ind. Archip. p. 30 (1839-44); Schreber, Säugeth. Suppl. 2, p. 224 (1841); Giebel, Säugeth. p. 774 (1859); Thos. P. Z. S. 1886, p. 67; Blanf. Faun. Br. Ind., Mamm. p. 158 (1891); Jent. Cat. Mamm. Mus. des P.-B. p. 140 (1892); Flower, P. Z. S. 1900, p. 333.

Mustela melina, Kerr, An. King. p. 183 (1792).

Viverra quadricolor, Shaw, Gen. Zool., Mamm. i. 2, p. 429 (1800).

Mustela leucotis, Bechst. Uebers. vierf. Thiere, ii. p. 375 (1800).

Marte à gorge dorée, Desm. Mamm. p. 185. no. 4 (1820).

* Ridgway, 'Nomenclature of Colours' (1886). These determinations must be taken only as approximate.

- Mustela leucotis* (Temm.) *, Ham. Smith, Griff., Cuv. An. King., Mamm. vol. ii. p. 297 (1827), pl.; id. Jard. Nat. Lib. xv. (Mamm. i.) p. 188 (1842).
- Mustela Hardwickei*, Horsf. Zool. Journ. iv. p. 239, pl. xxviii. (1834); Ham. Smith, Jard. Nat. Lib. xv. (Mamm. i.) p. 187 (1842); Less. Compl. des Œuvres de Buffon, vol. v. p. 301 (1847); Jent. Cat. Ost. Mamm. des P.-B. p. 112 (1887); id. Cat. Mamm. Mus. des P.-B. p. 140 (1892).
- Martes flavigula* (Bodd.), Hodgson, J. A. S. B. vi. p. 560 (1837); id. *op. cit.* x. p. 909 (1841); id. *op. cit.* xi. p. 281 (1842); Gray, List Mamm. B. M. p. 64 (1843); Hodgs. Calc. Journ. N. H. iv. p. 287 (1844); Gray, Cat. Hodgs. Coll. p. 12 (1846); Horsf. Cat. E. Ind. Coll. p. 98 (1851); Blyth, J. A. S. B. xxvi. p. 316 (1858); Adams, P. Z. S. 1858, p. 516; Blyth, P. Z. S. 1864, p. 485; Jerd. Mamm. Ind. p. 82 (1867); Gray, Cat. Carn. B. M. p. 86 (1869); Blyth, Cat. Mamm. Burmah, J. A. S. B. xlv. extr. no. p. 29 (1875); W. Sclater, Cat. Mamm. Calc. Mus. i. p. 273 (1891).
- Galidictis chrysoaster*, Ham. Smith, Jard. Nat. Lib. xv. (Mamm. i.) p. 167, pl. vii. (1842).

Subsp. *typica*.

The fur is long, dense, and soft. Head, sides of the face, nape, feet, tail, and hind-quarters very dark brown. Chin white; underside of neck golden yellow, shading into very pale brown on the underparts. The whole of the back light clay, gradually shading into brown on the hind-quarters. Ears hairy and of the same colour as the head, with a conspicuous light margin. Soles of the feet hairy.

Skull.—The skull of this species may be distinguished at a glance from all other species of the genus (*M. Gwatkinsii* excepted) by the narrowness of the inner lobe of the posterior molar, which is of the same width throughout and is in no way widened or flattened on its innermost margin. It is also a large and stoutly built skull, that of *M. zibellina* being the only one which approaches it in size; the skull of this last-named is easily distinguishable by its longer and more pointed muzzle. The muzzle of *M. flavigula* is proportionately the shortest of the genus, its greater bulk being almost entirely due to an increase in the size of the brain-case. In general shape it resembles that of *M. foina* most closely, for instead of falling away in front in a direct slope from the anterior end of the brain-case, as is the case in most species, the slope is gradual till on a line with the supraorbital processes, when it falls away more directly.

Except in size the skulls of the various races do not differ materially from the one which has just been described.

* This is evidently a mistake, as Temminck never, so far as I know, published the description of a marten under that name.

Dimensions (from a Nepal skin):—Head and body 500 millim.; tail 475; hind foot 101; ear 34.

Skull.

	Greatest length.	Basal length.	Zygomatic breadth.	Least breadth at post-orbital constriction.	Length of palate from hensenion.	Least breadth between carnassials.
<i>M. flavigula</i> (Nepal)	100	89	60	21	43	15
<i>M. zibellina</i> (Kamschatka) ..	95	83	53	15	45	11
<i>M. foina</i> (France)	84	74	51	18	40	14
<i>M. martes</i> (Sweden)	90	80	50	20	44	12

Hab. N. India, Nepal, Assam, and southward to Burma.

With regard to the difference of summer and winter pelage in this race I am unable to say much personally, as the skins to which I have had access are sadly deficient in the necessary data. Mr. Adams (P. Z. S. 1858, p. 516) points out that it has a seasonal change, being much darker in summer; this fact had been already indicated in the Zool. Journ. vol. v. by Capt. Shore, and a plate given, representing a specimen then living in the Zoological Society's Gardens. Mr. Blyth (P. Z. S. 1864, p. 482), in some notes relating to this species, also remarks on its change of pelage, stating that in summer its appearance is very similar to *M. Gwatkinsii*, and he then goes on to point out that *Galidictis chrysogaster* is an individual of *M. flavigula* in summer dress. Mr. Hodgson, in his unpublished drawings, now in the Zoological Society's Library, gives two figures of *M. flavigula*, illustrating the different pelages, and the summer phase undoubtedly represents an animal of the same species as that figured under the name *G. chrysogaster*.

Mustela flavigula borealis, Radde.

Mustela flavigula, var. *borealis*, Radde, Reis. Ost-Sib. i. p. 19, Taf. i. fig. (1-5) (1862).

This form, described by Radde from Amurland, is rather larger than the typical *flavigula*; the colour of the head, sides of face, nape, feet, tail, and hind-quarters is dark brown, as in the preceding form, but the light colour of the back is much lighter, being yellowish (gallstone-yellow, Ridgw.) instead of brownish. The yellow on the throat is also very pale.

Dimensions (of type, from Radde):—Head and body 610 millim.; tail (with hairs) 460 millim.

Hab. Amurland and E. Siberia.

The above description is taken from a specimen from Amurland in the Museum.

Mustela flavigula peninsularis, subsp. n.

Mustela flavigula, Cantor, J. A. S. B. xv. p. 194 (1846); Blanford, J. A. S. B. xlvii. pt. 2, p. 156 (1878) (nec Bodd.).
Martes flavigula, Blyth, J. A. S. B. xxvi. p. 316 (1858).

The race which inhabits the Malay Peninsula has long been recognized as a clearly distinguishable form of the true *M. flavigula*, although it does not appear to have been given a special name.

The hair is short and close on all parts of the body and the soles of the feet are naked. The face and crown of the head are light brown (Prout's brown, Ridgw.), and two dark stripes, about 40 millim. in length and of a slightly darker shade, extend backward on either side of the neck, starting from immediately behind the ears. On the nape and across the shoulders the colour is of a brownish fulvous (tawny olive, Ridgw.), gradually shading into dark brown on the hinder part of the body. The chin is dirty white and the throat and fore chest golden fulvous; the remainder of the underparts (with the exception of a small patch on the vent) are brown, of a slightly lighter shade than the back. Feet and tail dark brown.

The skull is only to be distinguished from that of the true *flavigula* by its slightly smaller size.

Dimensions (of type from skin):—Head and body 475 millim.; tail 425.

Skull: zygomatic breadth 60; least breadth at postorbital constriction 23; length of palate from henselion 44; least palatal breadth between carnassials 15.

Hab. Malay Peninsula and South Burma.

Type ♂, B.M. 85. 8. 1. 66. Bankasun, Tenasserim. Collected on the 20th June, 1877, by Mr. W. Davison and presented by Mr. A. O. Hume.

The short fur, naked soles, and dark underparts will enable this form to be easily distinguished from the typical *M. flavigula*.

Mustela flavigula Henricii, Westerman.

Mustela Henricii, Westerman, Bijdragen tot de Dierkunde, i. p. 13 (1849); Jentink, Cat. Ost. Mus. des P.-B. p. 112 (1887); id. Cat. Mamm. Mus. des P.-B. p. 140 (1892).

- Mustela flavigula*, Bodd., Gray, Voy. of 'Samarang,' p. 17 (1850);
Hose, Mamm. Borneo, p. 26 (1891).
Mustela lasiotis, Temm., MS., Jent. Cat. Mamm. Mus. des P.-B. p. 140
(1892).

In the shortness of the fur and the naked soles to the feet this form, described by Westerman from a specimen taken at Padang, Sumatra, resembles the preceding.

The general colour throughout, with the exception of the chin, throat, fore chest, and a patch on the vent, is dark brown, darkest on the tail and feet and lightest on the nape and shoulders, the underparts not being in any way lighter than the back. The lines on either side behind the ear noticed in the last form are similar in this race and well marked. The chin is white, the throat and fore chest pale yellow, and the vent-patch dull white.

The skull differs only in being slightly smaller than in all the preceding forms.

Dimensions (from skin):—Head and body 450 millim.; tail 450.

Skull: greatest length 92; basal length 81; zygomatic breadth 53; length of palate 41; least breadth at postorbital constriction 21; least breadth of palate between carnassials 15.

Hab. Sumatra, Java, Borneo.

This race is most nearly allied, as might be expected, to the Malay form, but is very much darker in colour, which renders it easily distinguishable.

Mustela flavigula xanthospila (Swinhoe).

Martes flavigula, var. *xanthospila*, Swinhoe, P. Z. S. 1870, p. 623.

I have examined the Formosan form of *M. flavigula* described by Swinhoe, of which the type is the only specimen; it is, as one would expect, an intermediate link between the two southern forms on the one hand, and the Chinese form, which I propose to describe next, on the other. In size it is much the same as Bornean examples—that is to say, small—although Swinhoe's measurements, quoted below, make it as large as my measurements of the Nepal form. These latter, however, being made from the dried skin cannot be considered accurate, and the measurements of the skulls, always a much safer test, show it to be rather smaller.

The hair on the body is of moderate length, although not so long as in the mainland race, and the soles of the feet hairy. The crown of the head, sides of the face, and nape are light brown (bistre, Ridg.), the hairs on the nape having white tips; the dark stripes extending backwards from the

ears are clear and distinct, as in the southern forms. The shoulders and anterior part of the body are of a clear golden fulvous, shading gradually to a dark brown on the hind-quarters. The feet and tail are dark brown, the underparts, except for a patch on the vent, pale brown, rather lighter than in *M. f. Henricii*. Chin, fore chest, and patch on the vent white; the throat deep yellow.

The skull does not differ in any material respect from that of the other forms.

Dimensions (in the flesh, after Swinhoe):—Head and body 500 millim.; tail 350; hind foot 87; ear 31.

Skull: greatest length 91; basal length 76; zygomatic breadth 50; length of palate 40; least breadth at interorbital constriction 24; least breadth of palate between carnassials 14.

Hab. Formosa.

Type B.M. 70. 2. 10. 97. Presented by Mr. Swinhoe.

Mustela flavigula kuantunensis, subsp. n.

The hairs are long and soft and the soles of the feet hairy, as in *M. flavigula typica*. Head, sides of the face, nape, feet, and tail very dark brown; remainder of the upper parts yellowish brown (clay, Ridg.), shading gradually to dark brown on the hind-quarters. The hairs towards the edge of the dark colour on the nape have fulvous tips, and the backward lines from the ears are only noticeable by the absence of these tips. The whole of the underparts from the fore chest backwards are of a uniform pale brown (drab, Ridg.). Chin snow-white; throat and fore chest bright orange-yellow (orange-ochraceous, Ridg.).

Skull as in the preceding forms.

Dimensions (from skin):—Head and body 350 millim.; tail 350.

Skull: greatest length 94; basal length 85; zygomatic breadth 52; length of palate 41; least breadth at postorbital constriction 22; least breadth between carnassials 13.

Hab. Kuantun, N.W. Fokien, China.

Type B.M. 98. 11. 1. 7. 6th May, 1898. Presented by Mr. J. de La Touche.

This form resembles the typical race in the general colour of the upper parts, the long hair, and hairy soles, while in size and the brown underparts it shows affinities through the Formosan race to the Southern forms.

Mustela Gwatkinsii (Horsf.).

Martes Gwatkinsii, Horsf. Cat. E. Ind. Coll. p. 99 (1851); Blyth, J. A. S. B. vol. xxvi. p. 316 (1858).

The whole animal, except the chin and throat, very dark brown. Hair long and coarse, soles of the feet hairy; the ears are wanting in the light margin characteristic of the other species. Chin white, throat deep yellow; there is on either side a dark spot in line with the mouth and about midway between its corner and the base of the ear.

The skull differs in several points from that of *M. flavigula*, although it is clearly allied to that species and agrees with it in the shape of the posterior molar.

In its general shape it is greatly flattened, especially over the eyes, and it hardly rises at all over the brain-case; the auditory bullæ are also somewhat flattened, and the meatus in consequence rather shorter and less conspicuous.

It further differs from the skulls of all the other species in the absence of the first premolar, and, judging by the distance between the second premolar and the canine, this does not seem to be an individual variation.

There is a second skull in the Museum collected in the Nilgiris by Mr. Davison which agrees in every respect with the type.

Dimensions (from skin):—Head and body 350 millim.; tail 300.

Skull: greatest length 82; basal length 78; zygomatic breadth 50; least breadth at postorbital constriction 22; least palatal breadth between carnassials 13.

Hab. Peninsula of India.

Type ♀ ad., B.M. 79. 11. 21. 621. Madras. Collected by Sir W. Elliot, and presented through Col. Sykes to the Indian Museum.

XLVI.—*Descriptions of Genera and Species of Coleoptera from South Africa.* By H. S. GORHAM, F.Z.S. &c.

[Continued from vol. v. p. 94.]

SINCE the first part of this paper was printed I have received a further collection from Mr. Guy A. K. Marshall, in which are many interesting species not contained in his first collection, of which I now give an account, as well as of the other families (the Coccinellidæ &c.) sent to me. Of some of the