

A SYNOPSIS OF THE AMERICAN MINKS.

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No complete review of the American forms of the subgenus *Lutreola* has appeared since Mr. Outram Bangs, in 1896, published his Notes on the Synonymy of the North American Mink.¹ In this paper, the first to deal with the subject from the modern point of view, with the geographical races treated as subspecies, Mr. Bangs recognized four forms, the *vison*, *lutreocephala*, and *vulgivaga* of the present revision, and a new subspecies, *energumenos*, from the Pacific coast. This latter form included, in addition to the restricted *energumenos* of later workers, the minks afterwards described as *ingens*, *melampeplus*, and *nesolestes*.

Since the publication of Mr. Bangs's paper the number of described forms of American minks has grown to ten, including one species known only from the bones and teeth, and probably extinct.

A careful review of the minks in the collection of the United States National Museum has shown that while all the described forms must be recognized, the lack of revisionary work with a large collection has kept the group in an unsatisfactory condition, and that the ranges and characters of the various subspecies were imperfectly known. In all the more comprehensive works of reference the ranges are incorrectly given, and in many regional lists the specimens have been wrongly identified. It has seemed important, therefore, that the results of the examination of this material, some 370 specimens in all,² should be published.

Genus MUSTELA Linnæus.

1758. *Mustela* LINNÆUS, Syst. Nat., ed. 10, vol. 1, p. 45. Type.—*Mustela erminea* Linnæus.

Subgenus LUTREOLA Wagner.

1841. *Lutreola* WAGNER, Suppl. Schreber's Säugethiere, vol. 2, p. 239. Type.—*Mustela lutreola* Linnæus.

¹ Proc. Boston Soc. Nat. Hist., vol. 27, pp. 1-6, March, 1896.

² In addition to the material in the United States National Museum collection proper, a few especially instructive specimens from the Biological Survey, Department of Agriculture, have been studied.

LIST OF AMERICAN FORMS WITH TYPE LOCALITIES.

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|--|-----------------------------|
| <i>Mustela vison vison</i> Schreber..... | Eastern Canada. |
| <i>lutrocephala</i> Harlan..... | Maryland. |
| <i>lutensis</i> (Bangs)..... | Matanzas Inlet, Florida. |
| <i>vulgivaga</i> (Bangs)..... | Burbridge, Louisiana. |
| <i>letifera nobis</i> | Elk River, Minnesota. |
| <i>lacustris</i> (Preble)..... | Echimamish River, Keewatin. |
| <i>energumenos</i> (Bangs)..... | Sumas, British Columbia. |
| <i>nesolestes</i> (Heller)..... | Admiralty Island, Alaska. |
| <i>melampeplus</i> (Elliot)..... | Kenai Peninsula, Alaska. |
| <i>ingens</i> (Osgood)..... | Fort Yukon, Alaska. |
| <i>macrodon</i> (Prentiss)..... | Brooklin, Maine. |

MUSTELA VISON VISON Schreber.

1777. *Mustela vison* SCHREBER, Die Säugthiere, pl. 127b.
 1800. *Lutra vison* SHAW, Gen. Zoöl., vol. 1, p. 448.
 1800. [*Mustela*] *minx* TURTON, Syst. Nat., vol. 1, p. 58. (North America.)
 1829. *Mustela* (*Putorius*) *vison* RICHARDSON, Faun. Bor.-Amer., vol. 1, p. 48.
 1830. [*Putorius*] *vison* GAPPER, Zool. Journ., vol. 5, p. 202.
 1854. *Putorius nigrescens* AUDUBON AND BACHMAN, Viv. Quad. North Amer., vol. 3, p. 104. (Mountains of Pennsylvania, northern New York, Vermont, and Canada.)
 1857. *Mustela winingus* BAIRD, Mamm. North Amer., p. 177 (in synonymy).
 1877. *Putorius* (*Lutreola*) *vison* COUES, Fur Bear. Anim., p. 160.
 1899. *Putorius vison vison* MILLER, Bull. N. Y. State Mus., vol. 6, No. 29, p. 350 (October), November 18.
 1899. [*Lutreola*] *vison* JORDAN, Man. Vert. North. U. S., ed. 8, p. 344.
 1902. *Lutreola vison* PREBLE, North Amer. Fauna, No. 22, p. 66, October 31.
 1912. *Mustela vison vison* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Eastern Canada.

Geographic distribution.—Eastern Canada, west to Hudson Bay; south in interior to Catskill Mountains, New York, and to northern Pennsylvania. Not found on the coast south of New Brunswick.

Subspecific characters.—Smallest of the American minks; colors dark. Skull small and comparatively weak and smooth, without well-developed sagittal crest; teeth small.

Measurements of skulls.—Average of 5 skulls of adult males from Quebec and the Adirondack Mountains, New York: Condylbasal length, 65.2; zygomatic breadth, 36.8; least postorbital constriction, 13.1; mastoid breadth, 32.3; length of upper molar-premolar row, 16.9 mm.

Remarks.—The western range of typical *vison* is imperfectly mapped. Where it meets the subspecies *lacustris* and *letifera* can not be stated at present, as good series of skulls from western Ontario, eastern Keewatin, and the middle Great Lakes region, necessary to determine the matter, are not at hand.

MUSTELA VISON LUTROCEPHALA Harlan.

1804. ? *Mustela winingus* BARTON, Trans. Amer. Philos. Soc., vol. 6, p. 70. (*Nomen nudum*.)
1825. *Mustela lutrocephala* HARLAN, Faun. Amer., p. 63.
1858. *M[ustela] rufa* SMITH, Jardines' Nat. Lib., vol. 15, p. 189. (New York.)
Not *Mustela rufa* DESMAREST, 1820.
1865. *Vison lutrocephala* GRAY, Proc. Zool. Soc. London, 1865, p. 116.
1896. *Putorius vison lutrocephalus* BANGS, Proc. Boston Soc. Nat. Hist., vol. 27, p. 4, March.
1898. [*Putorius vison*] *lutrocephala* TROUESSART, Cat. Mamm., vol. 1, p. 274.
1903. *Lutreola vison lutrocephalus* PRENTISS, Proc. U. S. Nat. Mus., vol. 36, p. 887, July 6.
1905. *Lutreola vison lutrocephala* OBERHOLSER, Notes Mamm. and Summ. Birds west. North Carolina [Pub. Biltmore Forest School], p. 8, September.
1905. *Lutreola lutrocephala* BAILEY, North Amer. Fauna, No. 25, p. 196, October 24.
1912. *Mustela vison lutrocephala* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Maryland.

Geographic distribution.—Eastern United States, from coast of New England south to North Carolina, and, in the interior, to central Georgia and Alabama; westward through southern Pennsylvania and Ohio to Missouri and northeastern Texas.

Subspecific characters.—Larger and more generally robust than *M. v. vison*; smaller than *M. v. letifera*. Coloration averaging much as in *vison*, possibly slightly darker; darker than in *letifera*, with far less white beneath. Skull much heavier and more angular than in *vison*, with well-developed sagittal crest in adults; smaller than in *letifera*.

Measurements of skulls.—Average of 7 skulls of adult males from Maryland and southeastern New York: Condylbasal length, 68.6; zygomatic breadth, 40.9; least postorbital constriction, 14.8; mastoid breadth, 34.7; length of upper molar-premolar row, 17.8 mm.

Remarks.—This subspecies, the common mink of eastern United States, grades into *letifera* wherever the ranges of the two forms meet. It also blends without break into the smaller Gulf coast form *vulgiva*. Its intergradation with *vison* and with *lutensis* is not so well shown in the specimens at hand, though the evidence seems sufficient to prove that they must run together. Specimens from the Catskill Mountains seem typical of *vison*, while from Highland Falls, Sing Sing, and from Long Island, New York, are skins and skulls equally typical of *lutrocephala*. In specimens from Maine, however, I believe I can see proof of intergradation. Three specimens from Smiths Island, Virginia, are certainly not typical of either *lutrocephala* or *lutensis*, and appear to be "intermediates."

MUSTELA VISON LUTENSIS (Bangs).

1898. *Putorius (Lutreola) lutensis* BANGS, Proc. Boston Soc. Nat. Hist., vol. 28, p. 229, March.
 1901. [*Putorius*] *lutensis* ELLIOT, Field Col. Mus. Publ. Zool., vol. 2, p. 340.
 1901. *Putorius lutensis* MILLER and REHN, Proc. Boston Soc. Nat. Hist., vol. 30, No. 1, p. 220, December 27.
 1912. *Mustela lutensis* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Salt marshes off Matanzas Inlet, St. John County, Florida.

Geographic distribution.—Coast of southeastern United States from South Carolina to Florida.

Subspecific characters.—Size medium; colors pale, russet to clay or reddish-brown; tail short. Skull long and slender; teeth large, tooth row measuring greater than in any existing American mink.

Measurements of skulls.—Average of 5 skulls of adult males from coast of Georgia and South Carolina: Condylbasal length, 71.1; zygomatic breadth, 39.8; least postorbital constriction, 12.2; mastoid breadth, 34; length of upper molar-premolar row, 19.2 mm.

Remarks.—Specimens from Smith's Island, Virginia, though referred provisionally to *M. v. lutrecephala*, show such a strong approach toward *lutensis* that I believe the evidence of intergradation is sufficient to warrant me in treating this remarkable mink as a subspecies. Good series of minks from the immediate seacoast between Smith's Island and Charleston will be necessary before a final understanding of the relationships of these two forms is possible.

MUSTELA VISON VULGIVAGA (Bangs).

1895. *Putorius (Lutreola) vulgivagus* BANGS, Proc. Boston Soc. Nat. Hist., vol. 26, p. 539, author's edition, July 31.
 1896. *Putorius vison vulgivagus* BANGS, Proc. Boston Soc. Nat. Hist., vol. 27, p. 5, March.
 1896. *Putorius vulgivagus* BANGS, Proc. Boston Soc. Nat. Hist., vol. 27, p. 5, March.
 1912. *Mustela vison vulgivaga* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 102 December 31.

Type-locality.—Burbridge, Plaquemines Parish, Louisiana.

Geographic distribution.—Coast of Louisiana and Mississippi. North in the Mississippi River bottoms to northern Louisiana.

Subspecific characters.—Like *M. v. lutrecephala*, but averaging decidedly smaller and somewhat paler.

Measurements of skulls.—Average of 6 skulls of adult males from coast region of Louisiana: Condylbasal length, 65.9; zygomatic breadth, 37.8; least postorbital constriction, 14.2; mastoid breadth, 32; length of upper molar-premolar row, 17.5 mm.

Remarks.—The Louisiana coast mink is simply a small, slightly paler form of *lutrecephala*, with which it intergrades throughout the lower Mississippi River region. Specimens from as far north on the Mississippi River as Burlington, Iowa, show a slight tendency toward *vulgivaga*, while specimens from western Alabama are almost typical of *lutrecephala*.

MUSTELA VISON LETIFERA, new subspecies.

1888. *Lutreola vison* BAILEY, Rep. Comm. Agric., 1887, p. 433.

Type-locality.—Elk River, Minnesota. Type-specimen, No. 188305, U.S.N.M., male ad., skin and skull; collected November 7, 1885, by V. Bailey.

Geographic distribution.—From northern Wisconsin and northern South Dakota south to northern Illinois, northern Missouri, and southern Kansas.

Subspecific characters.—Like *Mustela vison lacustris*, but averaging smaller and paler. Skull smaller, less constricted back of postorbital processes and with very much lighter, narrower rostrum.

Measurements.—Total length of type: 660 (26 inches, flesh). Skull of type: Condylbasal length, 69.6; zygomatic breadth, 40.9; least postorbital constriction, 13; mastoid breadth, 35.4; length of upper molar-premolar row, 17.9 mm. Average measurements of five skulls of adult males from Elk River and Fort Snelling, Minnesota: Condylbasal length, 69.3; zygomatic breadth, 39.8; least postorbital constriction, 12.8; mastoid breadth, 35; length of upper molar-premolar row, 17.9 mm.

Remarks.—This is a well-marked subspecies occupying a large area in the upper Mississippi Valley and thence southwest to Kansas. Owing to the lack of good series of adult specimens from the middle Mississippi Valley, the limits of the range of this form to the southeast can not now be defined satisfactorily. In general, the line dividing the ranges of *letifera* and *lutreocephala* runs from the northwestern corner of Indiana to the northeast corner of Missouri, thence southwest to the southeastern corner of Kansas. Larger series, to supplement the scattering material now at hand from this general region, may materially change our ideas of these limits; but there is no trouble in distinguishing the two forms, which, back from the general line of intergradation are represented by large series and are well marked.

MUSTELA VISON LACUSTRIS (Preble).

1902. *Lutreola vison lacustris* PREBLE, North Amer. Fauna, No. 22, p. 66, October 31.

1903. *Putorius vison lacustris* MILLER AND REHN, Proc. Boston Soc. Nat. Hist., vol. 31, No. 3, p. 114, August.

1912. *Mustela vison lacustris* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Echimamish River (near Painted Stone), Keewatin.

Geographic distribution.—Interior of Canada from Great Bear Lake and western shores of Hudson Bay south through Alberta, Saskatchewan, and Manitoba, to southern North Dakota.

Subspecific characters.—Nearest related to *M. v. ingens*, but smaller, slightly paler, and with maximum amount of white beneath. Differs from *M. v. letifera* in its slightly larger size, darker average color, and

very broad rostrum. Braincase flat, long, and little rounded posteriorly.

Measurements of skulls.—Average of 8 skulls of adult males from Keewatin: Condylbasal length, 71.5; zygomatic breadth, 42.3; least postorbital constriction, 11.9; mastoid breadth, 37.2; length of upper molar-premolar row, 18.4 mm.

Remarks.—This form, which has an extensive range over the interior of Canada, grades into the still larger *ingens* in the lower Mackenzie Valley; and in the northern United States (northern Minnesota and southern North Dakota) blends into the lighter colored and slightly less robust *letifera*.

MUSTELA VISON ENERGUMENOS (Bangs).

1896. *Putorius vison energumenos* BANGS, Proc. Boston Soc. Nat. Hist., vol. 27, p. 5, March.

1897. *Lutreola vison energumenos* MERRIAM, Mazama, vol. 1, No. 2, p. 227, October.

1912. *Mustela vison energumenos* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Sumas, British Columbia.

Geographic distribution.—Western North America, from northern British Columbia south to the Sierra Nevada Mountains in California and Rocky Mountains in New Mexico.

Subspecific characters.—Size rather small; coloration dark. Skull differs from those of its geographic neighbors, *lacustris*, *nesolestes*, and *letifera*, in its smaller size and small teeth.

Measurements of skulls.—Average of 5 skulls of adult males from British Columbia, Washington, Idaho, and Wyoming: Condylbasal length, 66.2; zygomatic breadth, 38.6; least postorbital constriction, 13.2; mastoid breadth, 33.7; length of upper molar-premolar series, 17.4 mm.

Remarks.—Though commonly referred to as a large form, the measurements of skulls of adult males of this subspecies are exceeded by those of all our minks excepting *vison* and *vulgivaga*, and good series from all parts of the range of *energumenos* bear this out. Intergradation is shown by the specimens at hand only in southeastern Alaska, with *nesolestes*; and in the eastern edge of the northern Rockies, with *lacustris*.

MUSTELA VISON NESOLESTES (Heller).

1909. *Lutreola vison nesolestes* HELLER, Univ. California Publ. Zool., vol. 5, No. 2, p. 259, February 18.

1912. *Mustela vison nesolestes* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 102, December 31.

Type-locality.—Windfall Harbor, Admiralty Island, Alaska.

Geographic distribution.—Alexander Archipelago, Alaska.

Subspecific characters.—Size intermediate between *ingens* and *energumenos*; colors rather dark. Skull with broadly spreading zygo-

mata; teeth, especially last upper molar, very large. Measurements of length of upper molar-premolar series exceeded only by those of *lutensis* and *macrodon*.

Measurements of skulls—Average of 3 skulls of adult males from Admiralty and Baranof Islands: Condylbasal length, 69.7; zygomatic breadth, 41.5; least postorbital constriction, 13.2; mastoid breadth, 34.6; length of upper molar-premolar row, 18.9 mm.

Remarks.—The large teeth readily distinguish this form from its neighbors on the mainland. It apparently intergrades with *energumenos* over the islands of extreme southeastern Alaska and British Columbia.

MUSTELA VISON MELAMPEPLUS (ELLIOT).

1903. *Putorius vison melampeplus* ELLIOT, Field Col. Mus. Publ. Zool., vol. 3, No. 10, p. 170, April.

1904. *Lutreola vison melampeplus* OSGOOD, North Amer. Fauna, No. 24, p. 45, November 24.

1905. *Putorius melampeplus* ELLIOT, Field Col. Mus. Publ. Zool., vol. 6, p. 425.

1912. *Mustela vison melampeplus* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 102, December 31.

Type-locality.—Kenai Peninsula, Alaska.

Geographic distribution.—Kenai Peninsula and Cook Inlet region, Alaska.

Subspecific characters.—Closely related to *M. v. energumenos*, and of about same size; colors averaging darker and skull with audital bullæ much flattened.

Measurements of skulls.—Average of skulls of 5 adult males from the Kenai Peninsula: Condylbasal length, 66.9; zygomatic breadth, 38.1; least postorbital constriction, .11.4; mastoid breadth, 35; length of upper molar-premolar row, 17.4 mm.

Remarks.—This is a slight form, the least marked of any recognized. Its relationships are close to *M. v. energumenos*, with which it probably blends along the coast. Though specimens from the Alaska Peninsula are placed with *ingens*, these show an approach toward *melampeplus*.

MUSTELA VISON INGENS (OSGOOD).

1900. *Lutreola vison ingens* OSGOOD, North Amer. Fauna, No. 19, p. 42, October 6.

1901. [*Putorius vison*] *ingens* ELLIOT, Field Col. Mus. Publ. Zool., vol. 2, p. 340.

1901. *Putorius vison ingens* MILLER and REHN, Proc. Boston Soc. Nat. Hist., vol. 30, No. 1, p. 220, December 27.

1912. *Mustela vison ingens* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Fort Yukon, Alaska.

Geographic distribution.—Northern, western, and central Alaska; northern Yukon and northwestern Mackenzie; south to the Alaska Peninsula and to Fort Good Hope, Mackenzie; east to Anderson River.

Subspecific characters.—Size largest of the existing forms; colors averaging pale. Skull very large and angular; teeth larger than in any existing forms except *nesolestes* and *lutensis*.

Measurements of skulls.—Average of 5 skulls of adult males from Yukon River, Alaska: Condylbasal length, 74.8; zygomatic breadth, 44.4; least postorbital constriction, 13; mastoid breadth, 39.5; length of upper molar-premolar row, 18.9 mm.

Remarks.—This subspecies, long known as the largest of the existing minks, grades directly into *M. v. lacustris* in the lower Mackenzie Valley, and into *M. v. melampeplus* near the base of the Alaska Peninsula.

MUSTELA MACRODON (Prentiss).

1903. *Lutreola macrodon* PRENTISS, Proc. U. S. Nat. Mus., vol. 26, p. 887, July 6.

1904. [*Putorius*] *macrodon* TROUSSERT, Cat. Mamm., Suppl., vol. 1, p. 206.

1911. *Lutreola vison antiquus* LOOMIS, Amer. Journ. Sci., vol. 31, No. 183, p. 228, March. (Flagg Island, Casco Bay, Maine.)

1912. *Mustela macrodon* MILLER, Bull. U. S. Nat. Mus., No. 79, p. 101, December 31.

Type-locality.—Brooklin, Hancock County, Maine.

Geographic distribution.—Known only from fragments of skeletons and teeth found in the "shell-heaps" on the coast of Maine.

Specific characters.—Size, largest of the mink. Skull with wide rostrum, large opening of anterior nares, large antorbital foramina, and very large teeth.

Measurements.—Length of upper molar-premolar row of type-specimen, 21 mm. Measurements of a right mandibular ramus from Lower Babson Island, Maine: Length (estimated), 48; length of lower molar-premolar row, 24.6 mm.

Remarks.—The skull of this species is readily distinguishable from skulls of all the subspecies of *vison* by its large size and by the much larger teeth. The difference is so great that direct comparison or measurements are unnecessary, to separate it from all existing minks.

In Forest and Stream for August 15, 1903, Manly Hardy gives information that makes it seem probable that *Mustela macrodon* did not become extinct until about 1860. Up to that time a large mink from coast islands was recognized as a distinct form by Mr. Hardy's father, Mr. Hardy himself, and other Maine fur buyers. As skins of this giant species were received only from the coast, it was known to the traders as the "sea mink." On account of its large size it brought special prices, and was eagerly sought by hunters and trappers. Hardy describes it as "fully twice as large as the mink from inland, the smallest of them being as large as the largest inland mink and the largest fully twice the size of their inland relatives * * *". The fur was coarse and was of a more reddish color than that of the inland, or as they were called, the 'woods mink,'

to distinguish them from the 'sea mink.' The mink which are now taken on our seacoast along Penobscot Bay are quite large and the fur is coarse, but we get none of the great sea mink like those taken 40 or more years ago."

It seems more than probable, therefore, that this species flourished on the Maine islands until comparatively late years, and was exterminated, in its limited distribution, by the modern fur trade.

Measurements of selected adult male skulls of the subspecies of *Mustela vison*.

| U.S.N.M. No. | Name. | Locality. | Condylo-basal length. | Zygomat. breadth. | Least post-orbital constriction. | Mastoid breadth. | Length of upper molar-pre-molar row. |
|--------------|-----------------------------|----------------------------------|-----------------------|-------------------|----------------------------------|------------------|--------------------------------------|
| | | | mm. | mm. | mm. | mm. | mm. |
| 102571 | <i>M. v. vison</i> | Lake St. Johns, Quebec..... | 65.0 | 36.5 | 15.1 | 31.6 | 16.2 |
| 188279 |do..... | Adirondack Mountains, New York. | 66.5 | 36.5 | 12.5 | 32.5 | 17.4 |
| 188291 |do..... |do..... | 66.0 | 37.7 | 13.0 | 31.6 | 17.0 |
| 188282 |do..... |do..... | 64.0 | 36.0 | 12.6 | 33.0 | 17.0 |
| 188274 |do..... |do..... | 65.4 | 37.2 | 12.5 | 32.6 | 16.7 |
| 155390 | <i>M. v. lutrocephala</i> . | Laurel, Maryland..... | 68.5 | 38.8 | 15.7 | 33.1 | 18.8 |
| 145259 |do..... |do..... | 67.0 | 41.0 | 15.6 | 34.5 | 17.5 |
| 145256 |do..... |do..... | 67.7 | 42.1 | 15.2 | 36.0 | 18.2 |
| 172459 |do..... | Little Patuxent River, Maryland. | 69.0 | 39.9 | 14.4 | 35.0 | 18.0 |
| 174764 |do..... | Maryland..... | 67.4 | 40.6 | 15.0 | 33.5 | 18.5 |
| 36915 |do..... |do..... | 71.0 | 45.0 | 13.7 | 37.1 | 17.5 |
| 86234 |do..... | Highland Falls, New York.. | 68.4 | 38.5 | 13.9 | 33.4 | 17.4 |
| 3901 | <i>M. v. lutensis</i> | Georgia..... | 70.1 | 39.4 | 11.2 | 34.0 | 19.1 |
| 188358 |do..... | Frogmore, South Carolina... | 69.6 | 41.0 | 12.8 | 33.6 | 18.2 |
| 188359 |do..... |do..... | 71.0 | 37.6 | 11.1 | 32.6 | 19.0 |
| 188362 |do..... | Charleston, South Carolina.. | 71.5 | 39.9 | 13.8 | 36.2 | 19.1 |
| 188361 |do..... | Mount Pleasant, South Carolina. | 73.1 | 41.0 | 12.0 | 33.3 | 18.7 |
| 99954 | <i>M. v. vulgivaga</i> | Calcasieu Parish, Louisiana. | 70.2 | 41.1 | 15.0 | 34.4 | 18.0 |
| 99953 |do..... |do..... | 66.5 | 35.8 | 14.2 | 30.7 | 17.6 |
| 99956 |do..... |do..... | 68.0 | 40.0 | 13.9 | 32.6 | 17.8 |
| 99957 |do..... |do..... | 67.2 | 36.5 | 15.0 | 32.1 | 13.2 |
| 136596 |do..... | Iowa, Louisiana..... | 62.6 | 36.5 | 13.0 | 31.4 | 16.3 |
| 136597 |do..... |do..... | 61.0 | 36.1 | 14.1 | 31.0 | 17.0 |
| 188322 | <i>M. v. lutifera</i> | Elk River, Minnesota..... | 71.5 | 40.8 | 13.6 | 36.3 | 19.5 |
| 188305 |do..... |do..... | 69.6 | 40.9 | 13.0 | 35.4 | 17.9 |
| 188324 |do..... |do..... | 67.6 | 38.6 | 12.6 | 33.6 | 17.6 |
| 188316 |do..... |do..... | 66.8 | 36.2 | 12.0 | 32.3 | 17.2 |
| 122509 |do..... | Fort Snelling, Minnesota. | 71.0 | 42.6 | 12.8 | 37.0 | 17.2 |
| 110146 | <i>M. v. lacustris</i> | Oxford House, Keewatin... | 69.6 | 41.7 | 11.5 | 36.0 | 18.0 |
| 110134 |do..... |do..... | 71.2 | 42.0 | 10.2 | 37.0 | 18.0 |
| 110147 |do..... |do..... | 69.7 | 41.6 | 13.2 | 37.0 | 18.5 |
| 110131 |do..... |do..... | 70.9 | 42.5 | 13.0 | 37.8 | 15.5 |
| 115950 |do..... | Cross Lake, Keewatin..... | 73.0 | 45.6 | 13.0 | 38.0 | 18.9 |
| 115953 |do..... |do..... | 71.0 | 41.2 | 11.6 | 37.0 | 18.0 |
| 115952 |do..... |do..... | 73.0 | 43.6 | 11.9 | 38.0 | 18.6 |
| 3284 |do..... | Nelson River, Keewatin..... | 72.6 | 41.6 | 10.9 | 35.5 | 18.6 |
| 84572 | <i>M. v. encrgumenos</i> . | Chilhiwack, British Columbia. | 66.7 | 40.5 | 13.4 | 33.5 | 17.4 |
| 188336 |do..... | Chehalis County, Washington. | 67.0 | 39.0 | 13.6 | 35.4 | 17.5 |
| 188334 |do..... | Teton Basin, Idaho..... | 66.0 | 39.0 | 11.6 | 34.6 | 17.0 |
| 188335 |do..... | Idaho..... | 66.1 | 38.0 | 14.0 | 33.6 | 18.0 |
| 188339 |do..... | Woods, Wyoming..... | 64.0 | 36.4 | 13.2 | 31.6 | 17.2 |
| 137473 | <i>M. v. nesolestes</i> ... | Admiralty Island, Alaska... | 70.1 | 41.5 | 12.2 | 37.1 | 19.2 |
| 14463 |do..... | Sitka, Alaska..... | 68.5 | | 14.1 | 33.6 | 18.5 |
| 76703 |do..... |do..... | 70.5 | | 13.4 | 33.2 | 18.9 |
| 136760 | <i>M. v. melampeplus</i> . | Kenai Peninsula, Alaska... | 65.5 | 37.7 | 11.4 | 35.0 | 17.5 |
| 136761 |do..... |do..... | 68.5 | 39.0 | 12.0 | 35.0 | 17.9 |
| 136759 |do..... |do..... | 66.1 | 37.4 | 10.4 | 35.2 | 17.1 |
| 136758 |do..... |do..... | 68.2 | 39.0 | 12.1 | 35.8 | 17.0 |
| 136756 |do..... |do..... | 66.0 | 37.1 | 11.1 | 35.9 | 17.5 |
| 6530 | <i>M. v. ingens</i> | Fort Yukon, Alaska..... | 76.2 | 47.4 | 12.6 | 41.6 | 19.0 |
| 21377 |do..... | Mission, Alaska..... | 77.0 | 44.0 | 13.2 | 38.4 | 18.5 |
| 21366 |do..... | Andraefski, Alaska..... | 73.5 | 44.0 | 13.6 | 40.4 | 19.1 |
| 21370 |do..... |do..... | 74.0 | 44.0 | 12.0 | 38.5 | 18.5 |
| 21357 |do..... | Alaska..... | 73.0 | 42.6 | 13.5 | 38.5 | 19.5 |

Average measurements of selected adult male skulls of the subspecies of *Mustela vison*.

| No. of specimens averaged. | Name. | Locality. | Condylobasal length. | Zygomathic breadth. | Least post-orbital constriction. | Mastoid breadth. | Length of upper molar-pre-molar row. |
|----------------------------|------------------------------|---|----------------------|---------------------|----------------------------------|------------------|--------------------------------------|
| 5 | <i>M. v. vison</i> | Quebec and Adirondack Mountains, New York. | mm. 65.2 | mm. 36.8 | mm. 13.1 | mm. 32.3 | mm. 16.9 |
| 7 | <i>M. v. lutrocephala</i> . | Maryland and southeastern New York. | 68.6 | 40.9 | 14.8 | 34.7 | 17.8 |
| 5 | <i>M. v. lutensis</i> | Coast of Georgia and South Carolina. | 71.1 | 39.8 | 12.2 | 34.0 | 19.2 |
| 6 | <i>M. v. vulgivaga</i> | Southern Louisiana..... | 65.9 | 37.8 | 14.2 | 32.0 | 17.5 |
| 5 | <i>M. v. letijera</i> | Fort Snelling and Elk River, Minnesota. | 69.3 | 39.8 | 12.8 | 35.0 | 17.9 |
| 8 | <i>M. v. lacustris</i> | Keewatin..... | 71.5 | 42.3 | 11.9 | 37.2 | 18.4 |
| 5 | <i>M. v. energumenos</i> . | British Columbia, Washington, Idaho, and Wyoming. | 66.2 | 38.6 | 13.2 | 33.7 | 17.4 |
| 3 | <i>M. v. nesolestes</i> | Admiralty and Baranof Islands, Alaska. | 69.7 | 41.5 | 13.2 | 34.6 | 18.9 |
| 5 | <i>M. v. metampeplus</i> . | Kenai Peninsula, Alaska..... | 66.9 | 38.1 | 11.4 | 35.0 | 17.4 |
| 5 | <i>M. v. ingens</i> | Yukon River, Alaska..... | 74.8 | 44.4 | 13.0 | 39.5 | 18.9 |