

REMARKS ON THE LONG-TAILED SHREWS OF THE
EASTERN UNITED STATES, WITH DESCRIPTION OF A
NEW SPECIES.

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Since the publication of Dr. C. Hart Merriam's Synopsis of the American Shrews of the genus *Sorex*, 1895,¹ the number of specimens from southern localities has been greatly increased. Aside from *Sorex personatus* and *S. fumeus* from mountain localities, there was nothing available at that time but two imperfect specimens of the supposed "*lesueurii*," a few specimens of *S. fisheri* from the Dismal Swamp, and perhaps half a dozen specimens from Raleigh, North Carolina, which were assumed to represent *Sorex longirostris*, described by Bachman from the swamps of the Santee River, South Carolina. The overhauling of the old alcoholic shrews in the collection of the United States National Museum and a study of the recently acquired material in skins and skulls have resulted in some interesting discoveries and given a better understanding of the southern forms of *Sorex* than was ever before possible. South of New York and Wisconsin the restricted genus *Sorex* is represented by five distinct species.²

SOREX PERSONATUS I. Geoffroy.

1827. *Sorex personatus* I. GEOFFROY, Mém. mus. d'hist. nat. Paris, vol. 15, p. 122.

The most abundant and generally distributed species in the northern States, this shrew is represented in the collection by many specimens from Maine to Wisconsin. The few specimens from the southern boundary of its range in the upper Mississippi Valley (southeastern Wisconsin, northern Illinois, Indiana, and Ohio) and from New Jersey and the lower Hudson Valley, New York, average slightly smaller than specimens from New England, northern New York, northern Wisconsin, and Minnesota, the skulls averaging about 1 millimeter shorter, with flatter braincases. Farther south, where the species occurs only in the mountains of Maryland, the Virginias,

¹ North Amer. Fauna, No. 10, pp. 57-98, December 31, 1895.

² Three other long-tailed shrews have been found in this area: *Neosorex albibarbis* in Pennsylvania, *Microsorex hoyi* in Ohio, and *Microsorex winnemana* in Virginia and Maryland.

and North Carolina, the specimens are intermediate between those from the previously mentioned northern and southern areas. The difference in series of skulls is very noticeable, but it is difficult to assign a definite distribution for a southern race and it seems hardly proper to recognize one. The name *Sorex personatus platyrhinus* (De Kay),¹ type-locality Tappan, Rockland County, New York, is available should a southern subspecies of *personatus* ever be recognized.

The name *Sorex personatus lesueurii* (Duvernoy), based on a specimen from the Wabash Valley, Indiana, has been used for a southern form of *personatus*. As no specimen of a shrew of the *personatus* type is known from southern Indiana, and the few specimens collected in that region have all very surprisingly proved referable to *Sorex longirostris* Bachman, it is obvious that the name *Amphisorex lesueurii* Duvernoy is not applicable to a *personatus* shrew.² The status of *Sorex fimbripes* Bachman, 1837, is discussed below.

SOREX FONTINALIS, new species.

1895. [*Sorex personatus*] *lesueurii* MERRIAM, North Amer. Fauna, No. 10, p. 61, December 31 (in part, as to specimen from Sandy Spring, Maryland). Not *Amphisorex lesueurii* Duvernoy, 1842.

Type.—From Cold Spring Swamp, near Beltsville, Maryland. Cat. No. 85439, U.S.N.M. Skin and skull, old adult female. Collected November 6, 1898, by Gerrit S. Miller, jr.

General characters.—A diminutive shrew of the *S. personatus* group; smaller than *personatus*, with much shorter tail.

Color.—Almost precisely like *personatus*. The type matches exactly a skin of *S. personatus* from Highland Falls, New York, collected in September. Upperparts dark sepia, darkest posteriorly; sides lighter, about broccoli brown; underparts brownish gray; tail distinctly bicolor, tip blackish. Specimens collected in February and March are darker than the type, and a skin collected in May is much browner.

Skull and teeth.—Skull, compared with *S. personatus*, much smaller; braincase narrow and compressed; rostrum shorter and relatively wider, less attenuate. Teeth as in *personatus*, but unicuspid more crowded and uniformly decreasing in size from first to fourth.

Measurements.—Flesh measurements of type: Total length, 90 mm.; tail vertebrae, 31; hind foot, 10. (An average specimen of *S. personatus* from the Catskills measures: Length, 99; tail, 40; hind foot, 12.) Skull of type: Condylbasal length, 14.2; breadth of brain case, 7; greatest anteorbital breadth, 3.9; length of bony palate, 5.6.

¹ Zool. New York, Mamm., 1842, p. 22, pl. 5, fig. 1.

² Dr. W. L. Hahn has, in his Mammals of Indiana, 1909, p. 607, already placed *lesueurii* in the synonymy of *S. longirostris*.

Remarks.—There are no specimens showing intergradation between this species and *Sorex personatus*. Specimens of *personatus* from the mountains of western Maryland and Virginia in no way approach it in external or cranial characters, and it is apparently a true Austral species, perfectly distinct from the species of the southern Alleghenies. Only ten specimens of *Sorex fontinalis* are known. They were all collected near the District of Columbia, in Maryland, at localities as follows: Beltsville, 2; Hyattsville, 5;¹ Laurel, 2; Sandy Spring, 1.

SOREX LONGIROSTRIS Bachman.

1837. *Sorex longirostris* BACHMAN, Journ. Acad. Nat. Sci. Phila., vol. 7, pt. 2, p. 370.

1842. *Amphisorex lesueurii* DUVERNOY, Mag. de zool., ser. 2, mamm., p. 33, November.

1901. *Sorex personatus lesueurii* MILLER and REHN, Proc. Bost. Soc. Nat. Hist., vol. 30, No. 1, p. 235, December.

An alcoholic specimen of this rare shrew from Butler, Taylor County, Georgia, has been found in the collection of the National Museum. It was presented by Dr. H. M. Neisler, and was catalogued in 1873 as No. 11318. The locality is the most southern point from which *Sorex* is known in the eastern United States, and the specimen is of great interest because it probably represents the typical form of Bachman's *S. longirostris*, described from the Swamps of the Santee River, South Carolina. The specimen, a pregnant female, is in an excellent state of preservation. It measures (from alcohol, before removal of the skull): Total length, 82 mm.; tail vertebræ, 28; hind foot, 10.5. The skull measures: Condylbasal length, 14.1; breadth of cranium, 7.4; greatest anteorbital breadth, 4.2; length of bony palate, 5.3.

Howell has already recorded this species from northern Georgia and from Bicknell, Indiana,² and its known range was still further extended by the capture of a specimen at Chesapeake Beach, Calvert County, Maryland, July 3, 1908, by Dr. M. W. Lyon, jr. An additional specimen from Washington, District of Columbia, collected by C. Girard, and entered April 19, 1855, as number 637, has been found in the Museum collection. The skin without skull, from New Harmony, Indiana, recorded somewhat doubtfully by Doctor Merriam as *Sorex personatus lesueurii*, seems certainly to be *S. longirostris*. At that time the occurrence of this species in Indiana was unthought of, and the determination of a skin alone, with so few specimens of *longirostris* for comparison, was virtually impossible. The eight specimens³ before me show a little variation in the shape of the

¹ Biological Survey collection.

² Proc. Biol. Soc. Wash., vol. 22, p. 66, Apr. 17, 1909.

³ Five specimens from Biological Survey collection; Young Harris, Georgia; Raleigh, North Carolina; New Harmony and Bicknell, Indiana.

braincase, probably due to age, but all seem to belong to one wide-ranging form. If larger series from Illinois and Indiana should show the northern specimens to be separable, the name *Sorex longirostris lesueurii* (Duvernoy), type-locality Wabash River, Indiana, is available.

SOREX FISHERI Merriam.

1895. *Sorex fisheri* MERRIAM, North Amer. Fauna, No. 10, p. 86, December 31.

This very distinct species continues to be known only from the Dismal Swamp, Virginia. In addition to the original specimens, a series of skins with skulls and alcoholic specimens was collected by Dr. W. L. Ralph and Lieut. J. W. Daniel, jr., and presented to the National Museum. The species is apparently related to *S. longirostris*, but is readily recognizable by its larger size and much larger skull. A litter of five young was collected by Doctor Ralph in the Dismal Swamp, May, 1905, and preserved in alcohol.

SOREX FUMEUS Miller.

1895. *Sorex fumeus* MILLER, North Amer. Fauna, No. 10, p. 50, December 31.

This species extends its range down the Alleghenies as far south as Brasstown Bald, Georgia, from which locality it has been recorded by Howell.¹ The National Museum collection contains specimens from southern localities as follows: Mount Rogers, Grayson County, and Rowleysburg, Virginia; Franklin, West Virginia; Roan Mountain, North Carolina. A single specimen from Racine, Wisconsin, carries the known range far to the west. The southern specimens seem perfectly typical.

NOTE ON THE SUPPOSED TYPE OF SOREX FIMBRIPES.

Bachman described *Sorex fimbripes*² from a specimen received at the Philadelphia Academy of Sciences from Drury's Run, Pennsylvania. Baird, in the Mammals of North America, 1857, states that he had not seen the type, which he says is in the Philadelphia Academy. Coues, 1877,³ writes: "In 1861 Baird examined Bachman's type, preserved in the Philadelphia Academy, and found it to be a species of ordinary 32-toothed shrew, scarcely or not distinguishable from '*cooperi*.'" On this authority Miller⁴ placed the name in the synonymy of *Sorex personatus*, remarking on the strange characters attributed to the animal by Bachman. As recorded by Lyon and Osgood,⁵ an alcoholic shrew, without number and absolutely without record, but bearing a parchment label marked "*Sorex fimbripes*, Type," was found in the National Museum early in 1898. In the

¹ Proc. Biol. Soc. Wash., vol. 22, p. 66, Apr. 17, 1909.

² Journ. Acad. Nat. Sci. Phila., 1837, vol. 7, pt. 2, p. 391.

³ Bull. U. S. Geol. and Geog. Survey of Terr., 1877, vol. 3, p. 641.

⁴ N. Amer. Fauna, No. 10, p. 41, 1895.

⁵ Cat. Type-Spec. Mamm. in U. S. Nat. Mus., p. 243, 1909.

type-catalogue, as is carefully stated, the locality, Drury's Run, Pennsylvania, was supplied from Bachman's description. The skull of this specimen has recently been removed, and it proves to be not *personatus*, but *Sorex fumeus*. A careful comparison of the specimen with Bachman's description makes it perfectly obvious that it is NOT the single specimen he had before him when he wrote the diagnosis of *Sorex fimbripes*. Beyond a point where a specimen of any shrew might answer, it does not agree with any of the alleged characters, and in all the distinctive characters mentioned differs widely in every detail. In measurements particularly it differs so greatly that it is at once evident this specimen has no claim as the type and it seems probable it did not come from Drury's Run and was never in Bachman's hands. At the time the label was written the word "type" had a very different meaning from what it now has and was used for various purposes. Several specimens in the collection are marked "type" which have not the slightest claim, in the modern meaning of the word, to that distinction. Some were even collected after the description was published. The writing on the parchment label of this specimen is probably that of Professor Baird, who may or may not have believed that the specimen was the original of Bachman's description.

The description of *Sorex fimbripes* differs so widely from any known American shrew that the name is probably unidentifiable. This specimen at any rate can not be considered the type, and the fact that it proves to be the same as *Sorex fumeus* in no way invalidates that currently used name.

NOTE ON THE SOREX ACADICUS OF GILPIN.

Mr. Gerrit S. Miller, jr., has called my attention to the fact that the identity of the shrew described by Gilpin,¹ from Nova Scotia, as *Sorex acadicus*, has never been determined. A careful review of Gilpin's papers makes it reasonably certain that his species is *Sorex personatus*. The only characters given which are of value as evidence are the measurements, and these, though differing considerably among themselves, agree best with the measurements of *Sorex personatus*. The size as given in the table of measurements of five specimens is: Length, $3\frac{6}{8}$ to 4 inches (= 97 to 103 mm.), and tail, $1\frac{1}{2}\frac{5}{8}$ to 2 inches (= 41 to 51 mm.). This is large for *Microsorex hoyi* and too small for *Sorex fumeus*. Though the length of tail is somewhat great for *S. personatus*, it is too short for *S. macrurus*, and was doubtless taken to the end of hairs. At present it seems perfectly proper to consider *Sorex acadicus* Gilpin a synonym of *Sorex personatus*.

¹ Trans. Nova-Scotian Inst. Nat. Sci., vol. 1, pt. 2, p. 2, 1867. Erroneously marked vol. 2.