

REVISION OF THE BATS OF THE GENUS GLOSSOPHAGA.

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The first American leaf-nosed bat to be described in detail was the *Vespertilio soricinus* of Pallas, now the type of the genus *Glossophaga*, an animal which attracted special attention by its small size, shrew-like head, and conspicuously extensible tongue. Pallas wrote two accounts of the species, the first ¹ based on a female, the second ² on a male. Although the external characters and the general anatomy are treated with unusual minuteness, and no less than four plates are partly or wholly devoted to the animal, no exact determination of the original *Vespertilio soricinus* is possible. Two species, one of them recently described as *G. longirostris*, are now known to inhabit the region from which Pallas received his material, and not one of the characters described or figured is diagnostic. The name has, however, been uniformly applied for about 50 years ³ to the more widely distributed and better known of the two animals, while there is nothing in either of the accounts given by Pallas which definitely points to any other conclusion. Therefore no change is required.⁴

During the first half of the nineteenth century a few synonyms were applied to *Glossophaga soricina*, principally because of failure to understand the characters described by Pallas. The history of this period was so fully treated by Peters in 1865 that it needs no special mention here. In 1896 and 1897 two more names were added to the synonymy of true *soricina*, apparently because the larger Mexican race was supposed to be the typical form. Local insular forms were

¹ *Miscellanea Zoologica*, pp. 48-53, pl. 4, figs. 16-18, pl. 5. 1766.

² *Spicilegia Zoologica*, fasc. 3, pp. 24-35, pl. 3, pl. 4, figs. 1-10. 1767.

³ Peters, *Monatsber. k. preuss. Akad. Wiss. Berlin*, 1865, pp. 351-354, and 1868, pp. 362-363; Dobson, *Cat. Chir. Brit. Mus.*, 1878, pp. 499-501 (description and most of the listed specimens); Miller, *Proc. Acad. Nat. Sci. Philadelphia*, 1898, pp. 330-333; all subsequent writers who have distinguished between *G. soricina* and *G. longirostris*.

⁴ It might be urged that the measurement of the forearm published in the *Miscellanea* is more likely to apply to *G. longirostris* than to *G. soricina*. It is 1 inch $5\frac{1}{2}$ lines=37 mm. In the common South American form of *soricina* the length of forearm ranges from 33 to 36.6 mm., in *G. longirostris* from 34.6 to 39.4 mm. Half a millimeter is obviously too slight a discrepancy to receive serious consideration. In the second specimen measured by Pallas the length of forearm is 34 mm.

made known in 1898 and 1902. The continental member of the *longirostris* group was distinguished from *Glossophaga soricina* in 1898, while the two insular forms, one specifically distinct, the other differing from the mainland animal by average characters only, were described respectively in 1900 and 1913.

The material on which this revision is based consists of about 700 specimens.¹ It appears to be sufficiently complete to form the basis for definite general conclusions, though much evidently remains to be learned regarding details. The genus contains two superspecific groups, the less modified but more wide-ranging *soricina*-group with six forms distinguishable by average characters only, and the more specialized *longirostris*-group with three forms, two of which are sharply differentiated. In range the *soricina*-group covers the entire continent from Paraguay and southern Brazil to Durango, Mexico, with one insular form on the Tres Marias Islands and another in Jamaica; the *longirostris*-group appears to be restricted to the coast region of northern South America and the adjacent islands (Curaçao and the southern Lesser Antilles).

The species and subspecies here recognized, with their type-localities, are as follows:

(*Soricina*-group.)

Glossophaga soricina (Pallas) (p. 415).

Glossophaga soricina soricina Pallas (p. 418). Surinam.

Glossophaga soricina microtis, new subspecies (p. 419). Sapucay, Paraguay.

Glossophaga soricina leachii (Gray) (p. 419). Realejo, Nicaragua.

Glossophaga soricina mutica (Merriam) (p. 420). Maria Madre Island, Tres Marias Islands, Mexico.

Glossophaga soricina valens, new subspecies (p. 420). Balsas, Cajamarca, Peru.

Glossophaga soricina antillarum Rehn (p. 420). Port Antonio, Jamaica.

(*Longirostris*-group.)

Glossophaga longirostris Miller (p. 421).

Glossophaga longirostris longirostris Miller (p. 422). Santa Marta, Colombia.

Glossophaga longirostris rostrata (Miller) (p. 423). Grenada, Lesser Antilles.

Glossophaga elongata Miller (p. 423). Willemstad, Curaçao.

Genus GLOSSOPHAGA Geoffroy.

1818. *Glossophaga* GEOFFROY, Mém. Mus. Hist. Nat. Paris, vol. 4, p. 418.

1838. *Phyllophora* GRAY, Mag. Zool. and Bot., vol. 2, p. 489 (*amplexicauda*=*soricina*).

1847. *Nicon* GRAY, Proc. Zool. Soc. London, p. 15 (*caudifer*=*soricina*; wrongly supposed by Gray to be identical with the *caudifer* of Geoffroy).

1868. *Glossophaga* PETERS, Monatsber. k. preuss. Akad. Wiss. Berlin, p. 362.

1907. *Glossophaga* MILLER, Fam. and Gen. Bats, p. 137. June 29, 1907.

Type-species.—*Vespertilio soricinus* Pallas.

Geographic distribution.—Warmer parts of America from Paraguay and southern Brazil to central Mexico; Jamaica; Lesser Antilles.

¹ U. S. National Museum, 564; Field Museum of Natural History, 108; American Museum of Natural History, 22; Museum of Comparative Zoology, 9.

Diagnosis.—Glossophagine bats with: (a) thirty-four teeth i. $\frac{2-2}{2-2}$, c. $\frac{1-1}{1-1}$, pm. $\frac{2-2}{3-3}$, m. $\frac{3-3}{3-3}$ = 34, (b) incisors both above and below in unbroken series, (c) complete zygoma, and (d) short tail extending barely to middle of wide uropatagium.

Remarks.—The genus *Glossophaga* contains the most widely distributed and best-known members of the family. Though superficially much resembled by *Lichonycteris* and *Lonchophylla* the genus is at once recognizable by its technical characters.

Key to the species and subspecies of Glossophaga.

Outer upper incisor about equal to inner in bulk; upper premolars essentially alike in crown outline when viewed from below.

Brain case narrow and low, its dorsal profile usually not forming evident angle with that of rostrum in interorbital region (Curaçao).....*elongata* (p. 423).

Brain case broad and high, its dorsal profile usually forming evident angle with that of rostrum in interorbital region (Northern South America and southern Lesser Antilles).....*longirostris* (p. 421).

Width of m_3 about one-third length; inflation of brain case extreme (Northern South America).....*longirostris longirostris* (p. 422).

Width of m_3 about one-half length; inflation of brain case not extreme (Grenada and Grenadines).....*longirostris rostrata* (p. 423).

Outer upper incisor obviously less than inner in bulk; upper premolars usually unlike in crown outline when viewed from below.....*soricina* (p. 415).

Length of forearm 33 to 36.6 mm.; condylobasal length of skull usually less than 20.6 mm. (18.6 to 21).

Condylobasal length of skull 19.8 to 21 mm.

(Panama to central Mexico).....*soricina leachii* (p. 419).

Condylobasal length of skull 18.6 to 20 mm.

Ear from meatus 14 to 15 mm. (Brazil, eastern Peru, British Guiana, Venezuela, Trinidad).....*soricina soricina* (p. 418).

Ear from meatus 13 to 14 mm. (Paraguay).....*soricina microtis* (p. 419).

Length of forearm 35.4 to 40 mm.; condylobasal length of skull usually more than 20.6 mm. (20.6 to 21.4).

Brain case conspicuously inflated; rostrum more robust (central and western Peru).....*soricina valens* (p. 420).

Brain case moderately inflated; rostrum less robust.

Crown area of molars normal (Tres Marias Islands).*soricina mutica* (p. 420).

Crown area of molars slightly increased (Jamaica).*soricina antillarum* (p. 420).

GLOSSOPHAGA SORICINA (Pallas).

(Synonymy under subspecies.)

Geographic distribution.—Tropical America from Paraguay and southern Brazil to central Mexico; also the islands of Trinidad, Jamaica, and the Tres Marias group.

Diagnosis.—Skull usually less than 21 mm. in condylobasal length (18.6 to 21.6 mm.), its rostral portion small, appearing much shorter than brain case; outer upper incisor distinctly less than inner in bulk; pm^3 and pm^4 noticeably unlike in crown outline.

Color.—General color of upper parts cinnamon (Ridgway, color

standards, pl. 29) mixed with black, the combination of different hues of cinnamon with different admixtures of black giving rise to many degrees of individual variation. These variations tend to group themselves around two extremes, in one of which the general effect is between bister and black, in the other snuff-brown or royal-brown. Direct intermediates between the blackish and rich reddish phases are rare or absent, but the two extremes may be connected by a series of specimens showing gradually paling tints leading to a neutral condition which can not be definitely referred to one phase rather than to the other. In extreme neutral specimens the snuff-brown or bister, is reduced to a wash overlying the pale-pinkish-cinnamon under color which everywhere appears conspicuously at surface. Under parts slightly less dark than back, often with a tinge of drab. Membranes (dry) an indefinite dark brown; ears not so dark as membranes.

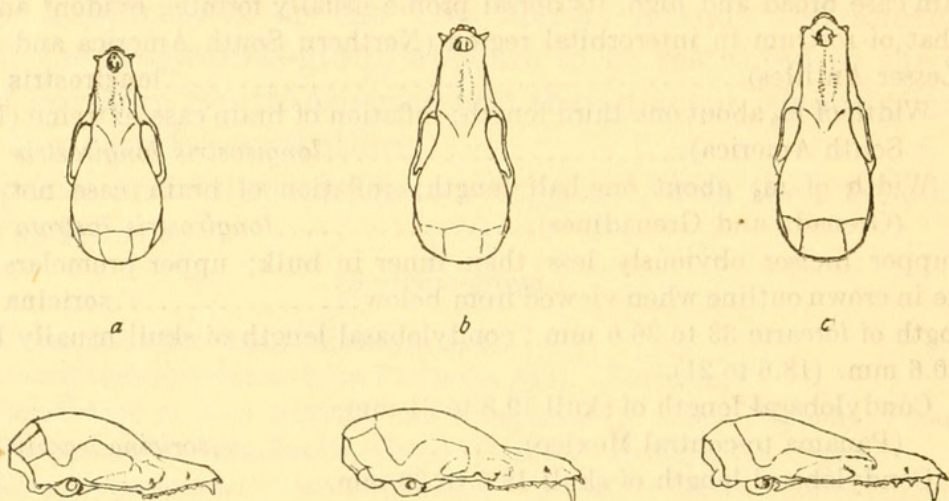


FIG. 1.—DORSAL AND LATERAL VIEWS OF SKULL: GLOSSOPHAGA SORICINA (a), G. LONGIROSTRIS (b), AND G. ELONGATA (c). ALL NATURAL SIZE.

Skull.—The general features of the skull (fig. 1a) are too well known to require special description.¹ Variation in size is not conspicuous. Taking the species as a whole the condylobasal length varies 3 mm., or 14.9 per cent of the mean. In each of two of the smaller races, *soricina* and *leachii*, the variation is 1.2 mm., or, respectively, 6.2 and 5.9 per cent, while in the large Peruvian form it is 1 mm., or 4.7 per cent. The Peruvian animal is not represented by so many specimens as the others. Hence the percentage of variation is probably too low. With sufficient material it may be expected to be about 6 per cent in any race. The breadth of brain case appears to be more variable than the length of skull, though the actual measurements show that such is not the case. In the two small races, *soricina* and *leachii*, the extremes are 0.6 and 0.4 mm. apart, or respectively, 6.9 and 4.5 per cent of the mean for each form. In the larger Peruvian animal the variation is the same as in *leachii*. Referred to the mean condylobasal

¹ See H. Allen, Trans. Amer. Philos. Soc., N. S., vol. 19, p. 243, pls. 6 and 7, 1898. Miller, Fam. and Gen. Bats, p. 138, June 29, 1907.

length the percentages of variation for the three forms are 3.1, 2—, and 1.9. The greater apparent variation in breadth is due to the fact that the widened region extends further forward in some individuals than in others, thus probably causing appreciable differences in the capacity of the brain case. While some of the narrower skulls bear a slight resemblance to those of *Glossophaga longirostris* the likeness is superficial, since the relative lengths of rostrum and brain case are always noticeably different in the two species.

Teeth.—Like the skull, the teeth have already been sufficiently described so far as their general features are concerned. Regarding the upper incisors and the premolars a few details are required.

When viewed either from the front, from behind, or on the cutting edge, the outer upper incisor of each pair is seen to be an obviously smaller tooth than the inner. Exact comparison of bulk is difficult, owing to the greater obliquity of the cutting edge of the outer tooth, but the difference, perhaps chiefly due to these peculiarities in obliquity, is always appreciable, the apparent size of the larger tooth exceeding that of the other by one-fifth or one-fourth. It becomes more evident as the cutting edges of the teeth wear down, in a few individuals approaching the proportion of 1 to 2. Anterior upper premolar narrowly elliptical in crown outline, the width at middle about one-third the length, the outer and inner borders nearly parallel, the former usually a little concave, the latter apparently always perceptibly convex; width of region in front of cusp less than that behind, but contrast not conspicuous. Posterior upper premolar with crown outline, except in rare instances, unlike that of first, the width at middle nearly half the length, the outer border and region in front of cusp much as in the anterior tooth, but postero-internal portion of crown so developed inward as to destroy the symmetry of the outline. This postero-internal projection varies considerably in extent; usually its border is rounded, though not infrequently it forms an acute angle, while in rare instances it is sharply limited posteriorly by an evident notch; cingulum in most specimens well developed, though never forming a cusp.

Measurements.—See under subspecies.

Remarks.—Although the species as a whole is not invariably distinguishable from its allies by small size alone, this character is usually diagnostic in northern South America, the only region where two members of the genus (*longirostris* and the small typical race of *soricina*) are known to occur together. Exact determination of specimens is not practicable without recourse to cranial and dental characters.

In its three large races (*antillarum*, *mutica*, and *valens*) *Glossophaga soricina* appears to present an instance of the independent development of nearly identical characters in isolated localities so far apart

as Jamaica, the Tres Marias Islands, and northern Peru. While there is no difficulty in distinguishing each large form from its geographically nearest small form, the characters of the large races as compared with each other are so slight that if all the known specimens of the three were mixed together without labels they would not appear to make an unusually variable form. On close study slight average characters can be detected, and in view of the obviously independent origins of the three it seems best to recognize each as a distinct race.

GLOSSOPHAGA SORICINA SORICINA (Pallas.)

1766. *Vespertilio soricinus* PALLAS, *Miscellanea Zoologica*, p. 48.
 1767. *Vespertilio soricinus* PALLAS, *Spicilegia Zoologica*, fasc. 3, p. 24.
 1818. *Glossophaga amplexicauda* GEOFFROY, *Mém. Mus. Hist. Nat., Paris*, vol. 4, p. 418. (Rio Janeiro).
 1823. *Glossophaga amplexicaudata* SPIX, *Sim. et Vesp. Brasil sp. nov.*, p. 67. (Rio Janeiro).
 1843. *Phyllophora nigra* GRAY, *Cat. Mamm. Brit. Mus.*, p. 20 (nomen nudum). Brazil.
 1844. *Phyllophora nigra* GRAY, *Voyage of the Sulphur, Zool.*, vol. 1, p. 18, pl. 5, fig. 1. Tropical America [=Brazil]. Based on same specimen as the nomen nudum. (Volume not seen; reference verified by Witmer Stone.)
 1896. *Glossophaga villosa* H. ALLEN, *Proc. U. S. Nat. Mus.*, vol. 18, p. 779. (Probably Guiana or Venezuela¹). Not of Rengger, 1830. Type in U. S. Nat. Mus.
 1897. *Glossophaga truei* H. ALLEN, *Science, U. S.*, vol. 5, p. 153. January 22, 1897. (Substitute for *villosa* H. Allen.)

Type-locality.—Dutch Guiana. No locality is mentioned in the first account of the species. In the *Spicilegia* (p. 24) Pallas says that he has seen specimens from Surinam and the Caribbean Islands.² I have therefore chosen Dutch Guiana as the type locality.³ Type specimen probably lost.⁴

Geographic distribution.—Tropical America from southern Brazil to Trinidad and the coast of Colombia; west to eastern Peru.

Diagnosis.—Size minimum for the genus (forearm, 33 to 37 mm.; condylobasal length of skull, 18.6 to 19.8 mm.); ear normal, its height from meatus, 14 to 15 mm.

Measurements.—For detailed measurements see table, page 425.

Specimens examined.—Eighty-three, from the following localities:

BRAZIL—*Sao Paulo*: San Sebastiao, 4 skins (U.S.N.M. and Field).
Goyaz: Baiao, Rio Tocantins, 1 skin (Field); Catema, Rio Tocantins, 1 skin (Field). *Maranhao*: Maranhao City, 3. *Brazilian Guiana*: Faro, Rio Jamunda, 2 skins (Field).

PERU—*Loreto*: Moyobamba, 16 (5 skins), Field.

BRITISH GUIANA. Berbice, 1.

¹ See Lyon and Osgood, *Cat. Type-Sp. Mamm. U. S. Nat. Mus.*, p. 264. January 28, 1909.

² Inter *Vespertiliones* . . . haec species in calidioribus Americae tractibus non infrequens esse videtur, quippe quam Surinamo et e Caribaeis insulis saepiuscula adlatam vidi.

³ Bull. U. S. Nat. Mus., No. 79, p. 39. December 31, 1912.

⁴ Peters, *Monatsber. k. preuss. Akad. Wiss. Berlin*, 1865, pp. 353-354.

VENEZUELA. Maracay, Oragua, 1; San Julian, near La Guaira, 5 skins and 1 extra skull; "Guayara," 2 (type and paratype of *truei* H. Allen).

TRINIDAD. Port of Spain, 41.

COLOMBIA. Bonda, 5 (Am. Mus.).

GLOSSOPHAGA SORICINA MICROTIS, new subspecies.

Type.—Adult female (in alcohol). No. 115061 U.S.N.M. Collected at Sapucay, Paraguay, June, 1901, by William Foster. Original No. 66.

Geographic distribution.—Paraguay. Limits of range not known.

Diagnosis.—Like *Glossophaga soricina soricina*, but with ear reduced in size, its height from meatus 13 to 14 mm.

Measurements.—For detailed measurements see table, page 426.

Specimens examined.—Twelve, from the following localities in Paraguay: Sapucay, 6 (3 skins); Villa Rica, 6.

GLOSSOPHAGA SORICINA LEACHII (Gray).

1844. *Monophyllus leachii* GRAY, Voyage of the *Sulphur*, Zool., vol. 1, p. 18. (Volume not seen; reference verified by Witmer Stone.)

1847. *N[icon] caudifer* GRAY, Proc. Zool. Soc. London, p. 15 (renaming of *leachii* wrongly supposed to be identical with the *Glossophaga caudifer* of Geoffroy¹).

Type-locality.—Realejo, Nicaragua. Type-specimen in British Museum (O. Thomas, in recent letter).

Geographic distribution.—From Panama north to central Mexico (Durango and Tamaulipas).

Diagnosis.—Like *Glossophaga soricina soricina*, but skull very constantly longer, its condylobasal length ranging from 19.8 to 21 mm.

Measurements.—For detailed measurements see table, page 426.

Specimens examined.—Three hundred and thirty-three from the following localities:

PANAMA. Balboa, 5 skins (Field); Canal Zone, 16; Colon, 3; Paraiso, 22; no exact locality, 2.

COSTA RICA. Boqueron, 21 (Am. Mus. and Field); San José, 2.

NICARAGUA. Escondido River, 50 miles from Bluefields, 2; Granada, 1 (Field).

BRITISH HONDURAS. Stann Creek, 4.

MEXICO. *Campeche*: Apazote, 2 (1 skin); La Tuxpana, Champoton, 3. *Tabasco*: Montecristo, 7 (6 skins). *Chiapas*: Ocuilapa, 1; Tuxtla, 1. *Oaxaca*: Chicapa, 3 (2 skins); Huilotepec, 1; Llano Grande, 6; Oaxaca City, 2; Pinotepa, 39 (4 skins); Puerto Angel, 2 (skins); San Geronimo, 5 skins (Field); Santa Efiginea, 2 (1 skin); Tuxtepec, 3 (1 skin). *Vera Cruz*: Achotal, 36 (7 skins), (Field); Catemaco, 11 (1 skin); Jaltipan, 2 (skins); Mirador, 3; no exact

¹ "N. caudifer, Leach's Nicon=*Glossophaga caudifer*, Geoff. Mem. Mus. IV. 418. t. 17=*Monophyllus leachii*, Gray, Zool. Sulph. 18. *Hab.* Central America." The generic diagnosis of *Nicon* contains the characters of *Glossophaga* only. Geoffroy's *caudifer* is a *Lonchoglossa*.

locality, 19 (5 skins). *Puebla*: Tuchitan, 1 (skin). *Morelos*: Cuernavaca, 18 (4 skins); 20 miles south of Cuernavaca, 19. *Colima*: Manzanillo, 1. *Jalisco*: Ameca, 4. *Tepic*: Acaponeta, 2; San Blas 27 (4 skins); Santiago, 3. *Sinaloa*: Plomosas, 4; Rosario, 1. *Durango*: Chacala, 25. *Tamaulipas*: Altamira, 2.

GLOSSOPHAGA SORICINA MUTICA (Merriam).

1898. *Glossophaga mutica* MERRIAM, Proc. Biol. Soc. Washington, vol. 12, p. 18. January 27, 1898.

Type-locality.—Maria Madre Islands, Tres Maria Islands, State of Jalisco, Mexico. Type-specimen in United States National Museum.

Geographic distribution.—Tres Marias Islands.

Diagnosis.—Like *Glossophaga soricina leachii* of the adjacent mainland but larger, the forearm ranging in 27 adults from 36 to 39 mm. (instead of from 33 to 37 mm. in 123 specimens), the condylobasal length of skull usually more than 20.6 mm. (range in 12 skulls from 20.6 to 21, while in 32 skulls of *leachii* the length of 20.6 is attained only 9 times and exceeded only 5 times); skull rather slender, the brain case not specially inflated, the rostrum weak, and the interorbital swellings inconspicuous.

Measurements.—For detailed measurements see table, page 427.

Specimens examined.—Thirty-three (4 skins), all from Maria Madre Island.

GLOSSOPHAGA SORICINA VALENS, new subspecies.

Type.—Adult female (in alcohol) No. 19868 Field Museum of Natural History. Collected at Balsas, Province of Cajamarca, Peru, by W. H. Osgood and M. Anderson. Original No. 4723.

Geographic distribution.—Central and western portions of northern Peru. (Balsas, Charapex, Zorritos.¹)

Diagnosis.—Very similar to *Glossophaga soricina mutica*, but skull with more inflated brain case, heavier rostrum, and more prominent interorbital swellings.

Measurements.—For detailed measurements see table, page 428.

Specimens examined.—Thirty-three, from the following localities in Peru: Balsas, Province of Cajamarca, 29 (2 skins), Field; Charapex Province of Piura, 4.

GLOSSOPHAGA SORICINA ANTILLARUM Rehn.

1902. *Glossophaga soricina antillarum* REHN, Proc. Acad. Nat. Sci. Philadelphia, p. 37. April 23, 1902.

1913. *G[lossophaga] antillarum* MILLER, Proc. Biol. Soc. Washington, vol. 26, p. 32. February 8, 1913.

Type-locality.—Port Antonio, Jamaica. Type-specimen in Academy of Natural Sciences of Philadelphia.

Geographic distribution.—Jamaica.

¹ The measurements of forearm, 36.4, 37, and 38.5 mm. in three specimens from Zorritos, published by Dr. Glover M. Allen (Bull. Mus. Comp. Zool., vol. 52, p. 35, July, 1908), are characteristic of the large Peruvian form.

Diagnosis.—Very similar to *Glossophaga soricina mutica* but probably averaging larger (the two adults examined are about equal in size to the largest among 24 *mutica*); molars both above and below with crown area sensibly increased.

Measurements.—For detailed measurements, see table, page 428.

Specimens examined.—Five (three young), all from Port Antonio, Jamaica.

GLOSSOPHAGA LONGIROSTRIS Miller.

(Synonymy under subspecies.)

Geographic distribution.—Coast region of Colombia and Venezuela; southern Lesser Antilles (Grenada, Grenadines, Dominica). Limits of range very imperfectly known.

Diagnosis.—Like *Glossophaga soricina*, but skull (fig. 1b) longer, its condylobasal length usually more than 21 mm. (21 to 22.4 mm.), with rostral portion so much more developed as to appear nearly as long as braincase; outer upper incisor about equal to inner in bulk; pm^3 and pm^4 not noticeably unlike in crown outline; braincase broad and high, its dorsal profile usually forming evident angle with that of rostrum in interorbital region.

Color.—The color does not differ appreciably from that of *Glossophaga soricina*. Among the skins examined the extremes of coloration, blackish, reddish, and pallid, are less frequent than in the smaller animal.

Skull.—The skull (fig. 1b) is distinguishable from that of *Glossophaga soricina* by its larger size and by the greater development of the rostrum, the region lying to the front of the postorbital constriction appearing about equal to the braincase in length, while in the smaller animal it is obviously shorter. Dorsal profile not conspicuously different from that in *G. soricina*, but braincase rising less abruptly in front, this reduction of abruptness not sufficient to do away with the noticeable angle over anterior part of orbit. In the features not directly affected by the essential proportions of rostrum and braincase the skulls of the two species present no tangible points of difference. Individual variation appears to be about as extensive as in *Glossophaga soricina*, though the material examined is not sufficient to give so satisfactory results as in the case of the smaller animal. In 12 specimens of true *longirostris* the variation in condylobasal length is 1.4 mm., or 6.4 per cent of the mean, while in 17 skulls of *rostrata* it is only 1 mm., or 4.6 per cent. The breadth of braincase in the two races shows a variation of 0.6 mm., or 6.7 per cent, and 0.4 or 4.5 per cent, respectively. Referred to mean condylobasal length of skull the percentages for the two forms are 2.7 and 1.8. While the percentages of variation in length and breadth are about the same as in *G. soricina* the appearance of the skulls is more uniform, probably because the anterior portion of braincase is less subject to change.

Teeth.—Though in general like those of *Glossophaga soricina* the teeth of *G. longirostris* present certain characters by which they may be easily recognized. When viewed either from the front, from behind, or on the cutting edge the outer upper incisor never appears to be obviously smaller than the inner tooth, while in most specimens, at least when unworn, it has the greater bulk. Anterior upper premolar very narrowly elliptical in crown outline, the width at middle about one-fourth the length, the general form otherwise much as in *G. soricina*. Posterior upper premolar with postero-internal region usually much less developed than in *G. soricina*, so that in the majority of specimens the crown outline though less narrowly elliptical does not differ noticeably from that of the anterior tooth. Individuals of either species may be found, however, in which the form of this tooth is not diagnostic. The same narrowness of crown characterizes the lower premolars as compared with those of *Glossophaga soricina*. Upper molars essentially as in the related species, but lower molars narrower in proportion to their length.

Measurements.—See under subspecies.

Remarks.—Though it does not exceed in general size the larger races of *Glossophaga soricina* this animal is distinctly larger than the typical form of *soricina*, the only one that it is known to occur together with. It appears to be less widely distributed than the related species, no specimen referable to it having been seen from any other region than the coast of northern South America and the adjacent Lesser Antilles. As all members of the genus are easily procured wherever they occur, this fact probably has more significance than might otherwise be the case. The insular representative proves to differ from that of the mainland by average characters only. It is therefore treated as a subspecies.

GLOSSOPHAGA LONGIROSTRIS LONGIROSTRIS Miller.

1898. *Glossophaga longirostris* MILLER, Proc. Acad. Nat. Sci. Philadelphia, p. 330.

July 25, 1898. (Near Santa Marta, Colombia.)

1900. *Glossophaga longirostris* ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 89.

May 12, 1900. (Bonda and Taguaga, Colombia.)

1901. *Glossophaga longirostris* ROBINSON and LYON, Proc. U. S. Nat. Mus., vol. 24, p. 151. October 3, 1901. (Vicinity of La Guaira, Venezuela.)

Type-locality.—Near Santa Marta, Colombia. Type-specimen in Museum of Comparative Zoology, Cambridge, Mass.

Geographic distribution.—Coast region of Colombia and Venezuela.

Diagnosis.—Inflation of brain case and general size of skull maximum for the species; postero-external projection of m^1 and m^2 broad; m_2 and m_3 relatively large, the length of m_3 about three times width.

Measurements.—For detailed measurements see table, page 428.

Specimens examined.—Forty-eight, from the following localities:

COLOMBIA. Bonda, 2 skins; Taguaga, 1 skin, 6 skulls (Am. Mus.).

VENEZUELA. Vicinity of La Guaira, 40 (25 skins).

Remarks.—In the original description attention was directed to the fact that the type-skull, the only one then known, lacked the incisors. Two years later Dr. J. A. Allen reported of a series of 34 specimens from Bonda and Taguaga, Colombia, that, "in nearly one-half . . . the incisors are all present in both jaws; in about one-third of the series they are entirely absent in both jaws; in the remainder some of the incisors are present and the alveoli of those lacking are clearly indicated."¹ This tendency toward defectiveness of the incisors in Colombian specimens may be due to some local peculiarity in the conditions under which the animals live. I can find no trace of it in the skulls of 18 individuals from the vicinity of La Guaira, Venezuela, or in the same number of *G. longirostris rostrata* from the Lesser Antilles.

GLOSSOPHAGA LONGIROSTRIS ROSTRATA (Miller).

1908. *Glossophaga longirostris* G. M. ALLEN, Bull. Mus. Comp. Zool., vol. 52, p. 35. July, 1908. (Union Island and Carriacou.) Not of Miller, 1898.
 1911. *Glossophaga longirostris* G. M. ALLEN, Bull. Mus. Comp. Zool., vol. 54, p. 229. July, 1911. (Grenada and the Grenadines.) Not of Miller, 1898.
 1913. *Glossophaga rostrata* MILLER, Proc. Biol. Soc. Washington, vol. 26, p. 32. February 8, 1913. (Westerhall estate, Grenada.)

Type-locality.—Westerhall estate, Grenada, Lesser Antilles. Type-specimen in United States National Museum.

Geographic distribution.—Grenada and the Grenadines (Union and Carriacou), Lesser Antilles; Dominica?²

Diagnosis.—Braincase less inflated than in *Glossophaga longirostris longirostris* and general size of skull slightly less; postero-external projection of m^1 and m^2 narrower; m_2 and m_3 relatively smaller, the length of m_3 about twice width.

Measurements.—For detailed measurements see table, page 429.

Specimens examined.—Twenty-three from the following localities in the Lesser Antilles:

Grenada, 14 skins; Union Island, 1 skin (M. C. Z.); Carriacou, 5 skins, 3 extra skulls (M. C. Z.).

Remarks.—Though individuals can be selected which are indistinguishable from certain specimens of true *longirostris* the appearance of a series of skulls from the islands is sufficiently characteristic to justify the recognition of this form.

GLOSSOPHAGA ELONGATA Miller.

1900. *Glossophaga elongata* MILLER, Proc. Biol. Soc. Washington, vol. 13, p. 124. April 6, 1900.

Type-locality.—Willemstad, Curaçao. Type-specimen in United States National Museum.

Geographic distribution.—The island of Curaçao.

¹ Bull. Amer. Mus. Nat. Hist., vol. 13, pp. 89-90. May 12, 1900.

² Two specimens, one too young the other too mutilated for exact identification.

Diagnosis.—Like *Glossophaga longirostris*, but skull (fig. 1c.) with rostrum more extremely elongated and braincase reduced in both height and relative width, its dorsal profile not forming evident angle with that of rostrum in interorbital region.

Color.—The only skins seen are four prepared after a few months' immersion in formalin. They show no peculiarities of color as compared with the other members of the genus.

Skull.—Apart from the characters already mentioned the skull (fig. 1c.) does not differ appreciably from that of *Glossophaga longirostris*. The range of variation is essentially as in the other species. In 20 skulls the variation in condylobasal length is 1.4 mm., or 6.2 per cent of the mean, that in breadth of braincase 0.6 mm., or 6.9 per cent. Referred to the mean condylobasal length the variation in breadth of braincase is 2.6 per cent.

Teeth.—The teeth do not differ appreciably from those of *Glossophaga longirostris*.

Measurements.—For detailed measurements see table, page 429.

Specimens examined.—One hundred and thirty-three, all from the island of Curaçao.

Remarks.—Contrary to what might be expected the local member of the *longirostris* group inhabiting Curaçao is much more differentiated from that of the mainland than is the race found in the Lesser Antilles. Every specimen examined is immediately recognizable by its relatively narrow braincase and faintly angled dorsal profile.

Measurements of *Glossophaga*.

Locality.	Number.	Glossophaga soricina soricina.										Observations.					
		Sex.	Head and body.	Tail.	Tibia.	Foot.	Forearm.	Third finger.	Fifth finger.	Ear.	Condylar length of skull.		Rostral breadth.	Breadth of brain case.	Mandible.	Maxillary tooth-row.	Mandibular tooth-row.
Brazil:	141386	♂	63.5	5	14	10.4	34	67	47	.....	19.2	4.6	9.0	13.6	7.0	7.4	Teeth not worn.
S. Paulo.	141387	♂	58	6.6	14	11	33	69	47	.....	19.4	4.6	9.0	13.2	.....	7.2	Teeth slightly worn.
Do.	141388	♂	57	8	13.4	10	34.6	70	47	.....	19.4	4.2	8.8	14.0	7.0	7.4	Teeth moderately worn.
Goyaz.	118893	♂	64	8	14	10.4	34.6	74	52	.....	19.0	4.2	9.0	13.4	7.0	7.2	Do.
Do.	119526	♂	56	5	14	10	35	71	51	15	19.0	4.2	8.8	14.0	7.0	7.2	Do.
Maranhão.	104586	♂	58	7	13.6	9	36.6	71	51	14.6	19.4	4.2	8.8	14.0	7.0	7.2	Do.
Do.	104587	♂	56	8	13	9.6	33	69	49	.....	18.6	4.4	8.6	.....	6.8	.....	Do.
Do.	119528	♂	49	8	13	10	32.4	68	46	.....	18.8	4.2	8.8	13.0	6.8	7.2	Teeth slightly worn.
Amazonas.	119525	♂	56	8	13	10	35	73	52	.....	19.4	4.2	8.6	13.4	7.0	7.2	Teeth not worn.
Do.	119526	♂	50	6.6	14.4	11	35	72	51	14	19.0	4.4	8.6	13.2	7.0	7.4	Do.
British Guiana: Berbice.	86904	♂	63	9	13	10	33	68	48	.....	19.0	4.2	8.8	13.8	7.0	7.2	Teeth slightly worn.
Venezuela:	105927	♂	62	9	14	9	35	67	47	.....	19.0	4.2	8.8	13.0	6.8	7.2	Teeth not worn.
S. Julian.	143773	♂	63	8	14	9.6	33	66	46	.....	19.0	4.2	8.4	13.0	6.8	7.2	Do.
Do.	143775	♂	63	7	13	9	33	70	46	.....	19.0	4.2	8.6	13.0	6.8	7.0	Do.
Do.	143776	♂	62	8	14	10	33.6	72	46	.....	19.0	4.0	8.8	.....	6.8	.....	Do.
Do.	143774	♂	57	9	14	9.6	35	73	52	14.6	19.6	4.2	8.8	14.0	7.0	7.2	Do.
Maracay.	196925	♂	51	7	13	10	33	67	47	.....	19.0	4.2	8.6	13.8	7.2	7.6	Teeth slightly worn.
"Guayara".	29523	♂	52	6	13.6	9.6	34.6	72	50	14	19.6	4.2	8.6	13.8	7.2	7.8	Teeth not worn.
Trinidad.	103937	♂	52	7	14	9.6	36	74	52	14	19.6	4.2	8.4	13.4	7.0	7.2	Do.
Do.	103938	♂	52	7	14	9.6	36	74	52	15	18.8	4.2	8.4	13.6	7.0	7.6	Do.
Do.	103948	♂	48	7	13.6	9.4	34	71	49	14.4	19.2	4.2	8.4	13.2	6.8	7.6	Do.
Do.	103951	♂	52	7	14	10	35	73	50	14	18.8	4.2	8.6	13.2	6.8	7.2	Do.
Do.	103957	♂	52	7	14	10	36.6	76	53	15	19.2	4.0	8.6	.....	7.0	.....	Do.
Do.	103958	♂	52	7.6	14	10	36.6	75	52	14.4	19.4	4.2	8.6	13.6	7.0	7.4	Do.
Do.	103959	♂	53	7	14	10	36	74	51	14	19.4	4.2	8.6	13.8	7.2	7.8	Do.
Do.	103960	♂	50	8	13.6	9.6	35	74	51	15	.....	4.4	8.6	13.8	7.0	7.4	Do.
Do.	103961	♂	53	8	14	10	36	72	49	14	19.0	4.0	8.4	13.2	7.0	7.2	Do.
Do.	103962	♂	51.4	7	13	10	34	72	47	.....	19.6	4.4	9.0	13.8	7.2	7.6	Teeth slightly worn.
Colombia: Bonda.	315157	♂	53	.....	14	10	35	73	52	.....	19.8	4.4	8.8	14.0	7.0	7.6	Teeth moderately worn.
Do.	315158	♂	51	.....	14	10	35	75	51	.....	20.0	4.4	9.0	14.0	7.2	7.4	Teeth slightly worn.
Do.	315159	♂	52	.....	14	10	35	73	52	.....	19.6	4.4	8.8	14.0	7.0	7.6	Teeth not worn.
Do.	315162	♂	52	.....	13.6	9.6	34	73	52	.....	19.4	4.2	8.8	14.0	7.0	7.4	Do.
Do.	315161	♂	52	.....	13.6	9	34.6	72	53	.....	19.4	4.2	8.8	14.0	7.0	7.4	Do.

³ American Museum of Natural History.

² Type of *G. truei* H. Allen.

¹ Field Museum of Natural History.

Measurements of *Glossophaga*—Continued.

Locality.	Number.	Sex.	Head and body.	Tail.	Tibia.	Foot.	Forearm.	Third finger.	Fifth finger.	Ear.	Condylobasal length of skull.	Rostral breadth.	Breadth of brain case.	Mandible.	Maxillary tooth-row.	Mandibular tooth-row.	Observations.
<i>Glossophaga soricina soricina</i> —Continued.																	
Peru: Moyobamba.....	1 19233	♂	57	6	14	11	35	71	50	.....	19.4	4.4	8.6	13.8	7.2	7.4	Teeth not worn.
Do.....	1 19234	♂	56	.....	13	9	34	74	51	.....	18.8	4.2	8.4	13.2	7.0	7.2	Do.
Do.....	1 19235	♂	60	8	14	9	33.6	73	49	.....	19.0	4.2	8.4	13.4	6.8	7.2	Teeth slightly worn.
Do.....	1 19239	♂	57	.....	14	9.4	35	74	51	.....	19.2	4.2	8.4	13.6	7.2	7.4	Teeth not worn.
Do.....	1 19242	♂	57	.....	14	9.6	34.4	73	51	.....	19.6	4.4	8.4	13.8	7.2	7.6	Teeth slightly worn.
Do.....	1 19238	♂	56	9	13.6	9.4	35	75	49	.....	19.8	4.4	8.4	13.8	7.2	7.8	Do.
Do.....	1 19862	♂	50	5	14	9.4	34	70	50	14	19.0	4.2	8.4	13.8	7.0	7.2	Teeth moderately worn.
Do.....	1 19863	♂	49	8	14	9	36	71	51	14	19.4	.....	8.4	13.6	7.2	7.6	Teeth not worn.
<i>Glossophaga soricina microtis</i> .																	
Paraguay: Villa Rica.....	105668	♂	52	8	14.6	9.2	34	70	51	13.2	18.8	4.4	8.8	13.2	6.8	7.2	Do.
Do.....	105669	♂	50	8	13.6	8.4	34.6	72	50	13	19.8	4.6	8.8	13.8	7.2	7.6	Do.
Do.....	105670	♂	48	7	14	9.6	35	73	51	13	19.8	4.4	8.8	13.2	7.0	7.2	Do.
Sapucay.....	115063	♂	56	9	13	8.4	34	70	48	13	19.2	4.4	8.6	13.2	7.0	7.2	
Villa Rica.....	105671	♂	52	8.4	14	9	34.4	72	50	13.6	.....	.....	.....	.....	.....	.....	
Do.....	105672	♂	56	7	14	9	35	74	52	14	19.8	4.6	8.8	14.0	7.4	7.8	Teeth moderately worn.
Do.....	115060	♂	51	8.4	14	10	35	72	52	14	19.8	5.0	8.8	13.4	7.0	7.2	Teeth slightly worn.
Sapucay.....	2 115061	♂	51	7	14	9	34	72	52	13	19.6	4.8	9.0	14.0	7.2	7.6	Do.
Do.....	115062	♂	49	9	14	9.6	35	74	51	13	18.4	4.2	8.8	13.2	7.0	7.2	Do.
Do.....	121470	♂	51	7	15	9	34.6	74	52	13.4	19.8	4.6	8.8	14.0	7.2	7.6	Do.
Do.....	121472	♂	52	6.6	14.6	9	36.4	75	53	14	19.8	4.6	8.6	14.0	7.2	7.6	Teeth not worn.
<i>Glossophaga soricina leachii</i> .																	
Mexico: Tepic.....	92270	♂	48	6	13.4	8.4	33	72	48	.....	20.0	4.4	8.6	14.0	7.4	8.0	Teeth not worn.
Do.....	92271	♂	48	6	.....	9	35	73	50	14	20.2	4.6	9.0	14.0	7.4	8.0	Do.
Do.....	92433	♂	50	6	15	9	35.4	73	50	15	20.2	4.6	9.0	14.0	7.4	8.0	Do.
Do.....	92510	♂	51	8	14	10	36	75	50	14	20.0	4.4	9.0	13.6	7.2	7.6	Do.
Do.....	92571	♂	51	7	14	10	35.6	73	50	14.6	20.6	4.4	8.8	14.0	7.4	8.0	Do.

Do.....	92274	♂	51	7	12.4	9	33	70	47	15	20.0	4.4	8.6	13.6	7.2	7.6	Do.
Do.....	92275	♂	52	7.4	13.4	9	34.6	70	54	14	20.4	4.6	9.0	14.0	7.2	7.6	Teeth slightly worn.
Do.....	92316	♂	55	8	14.6	10	36	77	54	15	20.6	4.4	8.8	14.2	7.6	8.0	Do.
Do.....	92509	♂	53	8	14	10.4	35	73	52	15.4	20.2	4.6	8.6	.....	7.6	8.0	Teeth not worn.
Do.....	92512	♂	51	8	14	10	36	74	52	15	20.4	4.4	8.6	14.4	7.6	8.0	Do.
Durango.....	96834	♂	50	7	14	9	35.6	71	50	14.6	20.0	4.6	8.8	13.8	7.2	8.0	Do.
Do.....	96837	♂	50	8.6	14	9	34	70	49	14	20.0	4.6	8.8	13.6	7.0	7.8	Do.
Do.....	96838	♂	52	8	13.6	10	35	76	53	15	21.0	4.6	8.8	14.6	7.6	8.2	Do.
Do.....	96852	♂	53	8	14.6	9	37.6	75	51	14.6	20.4	4.8	9.0	14.2	7.4	8.0	Teeth slightly worn.
Do.....	96853	♂	53	7	13	9.6	36	73	52	15.4	21.0	4.4	9.0	14.2	7.8	8.2	Teeth not worn.
Do.....	96856	♂	55	6.6	14	10	36.6	77	53	16	20.6	4.6	9.0	14.0	7.4	7.8	Teeth slightly worn.
Do.....	70443	♂	54	7.6	15	10	37	75	53	15	20.2	4.8	8.8	.....	7.2	7.6	Teeth not worn.
Vera Cruz.....	114007	♂	52	8	15	10	36	74	53	16	20.0	4.4	8.6	13.8	7.2	7.8	Do.
Do.....	70434	♂	55	8	14.4	9.6	35	71	50	14.6	20.8	4.4	9.0	14.2	7.2	7.8	Teeth slightly worn.
Do.....	70414	♂	57	9	15	10	.....	77	50	15	20.2	4.6	8.6	13.4	7.6	8.0	Do.
Nicaragua.....	51541	♂	49	8	14	10	34	74	49	14	20.0	4.2	8.6	13.6	7.0	7.2	Teeth not worn.
Do.....	52794	♂	50	7	13	9	33	69	48	14	.....	4.4	8.6	13.6	7.0	7.2	Do.
Do.....	12915	♂	52	7	14	9	35	72	49	14	19.8	4.4	8.8	14.0	7.0	7.4	Do.
Costa Rica.....	3 18753	♂	.....	.....	14	10	.....	72	51	.....	20.2	4.6	9.0	14.2	7.0	8.0	Teeth slightly worn.
Do.....	3 18758	♂	.....	.....	13	10	.....	73	52	.....	20.0	4.6	8.6	14.2	7.2	7.8	Teeth not worn.
Do.....	3 18752	♂	.....	.....	14	9.6	.....	72	50	.....	20.2	5.0	9.2	14.2	7.4	7.8	Teeth slightly worn.
Do.....	2 18753	♂	.....	.....	14	10	.....	75	53	.....	20.2	4.4	8.8	14.2	7.2	8.0	Do.
Do.....	3 18756	♂	.....	.....	.....	10	.....	74	53	.....	20.2	4.8	8.8	14.2	7.4	8.0	Do.
Panama.....	171991	♂	53	8	15	10	34.6	73	50	14	20.0	4.2	8.8	13.6	7.4	7.8	Teeth not worn.
Do.....	171992	♂	52	9.4	14.6	10.4	35	71	51	15	20.0	4.6	8.8	14.0	7.0	7.6	Teeth slightly worn.
Do.....	171994	♂	50	11	15	10.4	35	73	50	15	20.0	4.6	8.6	14.0	7.0	7.8	Teeth not worn.
Do.....	171998	♂	51	9	14	10	34	69	47	14.4	20.0	4.8	8.8	14.0	7.2	7.8	Teeth slightly worn.
Do.....	172000	♂	52	9	15	10	37	76	54	14	20.8	4.8	9.0	14.2	7.8	8.0	Teeth moderately worn.
Do.....	171988	♂	50	9	14	10.4	36	74	53	14.6	20.2	4.6	9.0	14.2	7.2	7.8	Teeth not worn.
Do.....	171989	♂	56	10	15	10.4	35	72	51	15	20.6	4.8	8.8	14.4	7.2	7.8	Teeth slightly worn.
Do.....	171990	♂	58	10	14.6	11.4	36	74	53	14.6	20.6	4.6	8.8	14.2	7.2	7.8	Do.
Do.....	171995	♂	57	9	15.6	11	37	76	54	15	21.0	4.6	9.0	14.6	7.8	8.2	Do.
Do.....	171997	♂	55	7	14	10	35	72	50	14	20.0	4.6	8.8	13.8	7.2	7.8	Do.

Glossophaga soricina mutica.

Tres Marias Islands.....	2 89271	♂	.....	8	14	10.4	36	75	52	.....	20.6	4.6	9.0	14.8	7.4	7.8	Teeth not worn.
Do.....	92418	♂	51	9	15	10	37	77	53	15	20.6	4.6	8.8	14.8	7.2	7.8	Do.
Do.....	92573	♂	54	9	14.6	10	36.4	75	53	15	21.0	4.6	8.6	15.0	7.8	8.2	Teeth slightly worn.
Do.....	92603	♂	53	9	14	10	36	74	52	15	21.0	4.6	8.6	14.6	7.6	8.0	Teeth not worn.
Do.....	92607	♂	54	9	14	9	36.6	76	52	14.6	20.6	4.4	8.6	14.6	7.6	8.0	Do.
Do.....	92608	♂	54	8	14	10	37	75	52	14.6	20.6	4.6	8.8	14.0	7.4	8.0	Do.
Do.....	92574	♂	54	9	15	11	39	81	54	15.4	21.0	4.8	9.0	14.8	7.8	8.2	Do.
Do.....	92602	♂	55	8	14	10	37	76	53	15	21.0	4.6	8.8	15.0	8.0	8.2	Do.
Do.....	92605	♂	56	7	15	10	36.6	78	54	14.6	21.0	4.4	8.6	14.6	7.6	8.0	Do.
Do.....	92606	♂	53	7	14.4	10.4	37	74	53	14	21.0	4.8	8.6	14.8	7.8	8.2	Do.
Do.....	92609	♂	55	7	15.4	11	37.6	78	54	15	21.0	4.4	9.0	14.6	7.8	8.2	Do.
Do.....	92611	♂	54	9	14.6	10.4	37	74	52	14.6	20.6	4.4	8.8	14.2	7.8	8.0	Do.

¹ Field Museum of Natural History.

² Type.

³ American Museum of Natural History.

Measurements of Glossophaga—Continued.

Locality.	Number.	Sex.	Head and body.	Tail.	Tibia.	Foot.	Forearm.	Third finger.	Fifth finger.	Ear.	Condylolbasal length of skull.	Rostral breadth.	Breadth of brain case.	Mandible.	Maxillary tooth-row.	Mandibular tooth-row.	Observations.
<i>Glossophaga soricina valens.</i>																	
Peru: Balsas.....	19873	♂	56	6	15	9.6	38	78	54	14	21.4	4.8	9.0	15.0	8.0	8.2	Teeth not worn.
Do.....	19879	♂	54	8.4	15.4	10.6	37	79	54	14.4	21.0	.....	8.8	14.8	7.6	8.0	Teeth slightly worn.
Do.....	19882	♂	50	8	15	10.4	38	77	55	14	20.4	4.6	9.0	14.4	7.4	8.0	Do.
Do.....	19884	♂	54	8	14.4	10	38	76	58	14.6	21.4	.....	8.8	15.0	7.8	8.2	Teeth moderately worn.
Do.....	19885	♂	53	8.4	15.4	10	37.4	78	54	15	20.6	.....	8.8	14.8	7.8	8.0	Teeth slightly worn.
Do.....	19865	♂	52	.....	14	10	36.6	75	53	14.6	21.0	4.6	9.0	14.4	7.8	8.0	Do.
Do.....	19886	♂	51	10	14	10	36	74	54	16	21.0	4.6	9.0	14.6	7.8	8.0	Do.
Do.....	19888	♂	52	10	14	10	35.4	74	53	14	20.6	4.6	8.6	14.0	8.0	8.2	Teeth not worn.
Do.....	19890	♂	54	7.4	14	10	36.4	75	54	15	20.6	4.8	9.0	14.6	7.6	8.0	Do.
Do.....	19866	♂	55	9.4	14.4	10	37.4	80	56	14.6	20.6	4.4	8.8	14.4	7.6	8.0	Teeth slightly worn.
Do.....	19868	♂	55	8	15.4	10	40	80	55	15	21.2	4.6	9.0	15.0	8.0	8.2	Teeth not worn.
Do.....	19870	♂	55	7	15.4	10	37.6	76	54	15.4	21.2	4.8	9.0	14.8	8.0	8.2	Teeth slightly worn.
Do.....	19877	♂	54	8	14.6	10	.....	78	53	14.6	21.0	4.8	9.0	14.8	8.0	8.2	Teeth not worn.
Do.....	19883	♂	53	6	15	10	38	79	55	14.6	21.2	4.8	9.0	14.8	7.8	8.0	Do.
Charapex.....	179195	♂	55	6.4	15	9	37.4	79	52	14	21.2	4.6	9.0	14.8	7.8	8.2	Do.
Do.....	179194	♂	55	9	15.4	9	38	80	55	14	21.2	4.6	8.8	14.8	7.8	8.2	Do.
Do.....	179196	♂	57	7.6	15.6	9.6	36.4	77	52	14	21.0	4.6	9.0	15.0	7.6	8.2	Do.
<i>Glossophaga soricina antillarum.</i>																	
Jamaica.....	113921	♀	55	6	14.4	10	37.6	79	54	15.6	21.2	4.4	9.0	14.8	7.8	8.0	Teeth slightly worn.
Do.....	113922	♀	54.6	8	15	11	38.6	77	55	15	21.0	4.6	9.0	14.8	7.8	8.0	Do.
<i>Glossophaga longirostris longirostris.</i>																	
Venezuela: Near La Gualra.....	102803	♂	.....	.....	14	11	37	80	54	.....	21.0	4.4	9.2	.....	7.8	.....	Teeth slightly worn.
Do.....	102805	♂	65	9	15	11	38.6	79	55	.....	21.2	4.6	9.2	15.0	8.8	8.4	Teeth not worn.
Do.....	143768	♂	.....	11	14.4	11	37	75	52	.....	21.8	4.6	9.0	15.2	8.0	8.2	Teeth slightly worn.
Do.....	143769	♂	60	8	15	10.4	38	80	54	.....	21.8	4.6	9.2	15.0	8.0	8.4	Teeth not worn.
Do.....	102820	♂	56	9	15	9.6	37	76	52	15.4	21.4	4.8	9.4	15.0	8.0	8.2	Teeth slightly worn.
Do.....	102821	♂	57	8	14	9.6	35.4	79	53	14.6	21.2	4.6	8.8	15.0	7.8	8.2	Teeth not worn.
Do.....	102823	♂	57	7	16	10.4	38.6	82	56	15.4	22.4	5.0	9.0	15.6	8.2	8.6	Teeth slightly worn.
Do.....	102824	♂	58	7	14	10	36	75	54	15	22.0	4.8	9.0	.....	.....	.....	Do.

Do.....	102828	♂	59	9	14	10	37	76	54	14.6	22.0	4.6	9.2	15.8	8.0	8.6	Teeth not worn.
Do.....	102833	♀	59	11	15	10.4	37.4	79	56	16	22.0	4.6	9.0	15.4	8.0	8.4	Teeth slightly worn.
Colombia: Bonda.....	102100	.....	.....	.....	15	11	39.4	76	56	.....	.....	4.8	9.0	15.6	8.0	.....	Do.
Do.....	102101	♂	.....	.....	15	11	38.4	75	54	.....	22.0	4.6	9.0	15.0	7.8	8.2	Teeth not worn.
<i>Glossophaga longirostris rostrata.</i>																	
Grenada.....	111493	♂	.....	.....	15.4	10	38	78	53	.....	21.2	4.6	8.8	15.0	8.0	8.4	Teeth not worn.
Do.....	111495	.....	.....	.....	16	10.4	39.4	81	55	.....	21.0	4.6	9.0	15.2	8.0	8.2	Do.
Do.....	111497	.....	.....	.....	15	11	38	79	54	.....	21.2	4.4	9.0	14.8	7.8	8.2	Do.
Do.....	111498	.....	.....	.....	14.6	10.4	37	78	55	.....	21.4	4.4	9.0	14.8	7.8	8.2	Do.
Do.....	111499	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.8	4.4	8.8	15.0	8.0	8.4	Do.
Do.....	111500	.....	.....	.....	15	10.6	37.4	82	53	.....	21.8	4.6	9.0	14.8	8.0	8.4	Do.
Do.....	111502	.....	.....	.....	14.4	11	36.4	75	51	.....	22.0	4.6	9.0	15.2	8.2	8.4	Do.
Do.....	111503	.....	.....	.....	15	11	34.6	74	52	.....	21.8	4.2	8.8	15.2	8.0	8.4	Do.
Do.....	111504	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.4	4.2	8.6	15.0	7.8	8.2	Do.
Carriacou.....	3 11021	.....	.....	.....	16	10	38.6	.....	.....	.....	21.2	4.6	8.8	14.8	8.2	8.2	Teeth slightly worn.
Do.....	3 11023	.....	.....	.....	16	10.4	38	.....	.....	.....	21.6	4.2	8.8	14.8	8.0	8.2	Teeth not worn.
Do.....	3 11026	.....	.....	.....	15.4	10	38.4	.....	.....	.....	21.8	4.2	8.8	15.0	8.0	8.0	Do.
Do.....	3 11030	.....	.....	.....	16	10	38	.....	.....	.....	21.2	4.2	8.6	14.8	7.8	8.0	Teeth slightly worn.
Do.....	3 11033	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.2	4.6	8.8	15.0	7.8	8.2	Teeth not worn.
Do.....	3 11024	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.0	4.4	9.0	15.4	8.2	8.6	Do.
Do.....	3 11027	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.2	4.0	8.8	.....	7.8	.....	Do.
Do.....	3 11035	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.4	4.2	8.8	15.0	7.8	8.2	Do.
<i>Glossophaga elongata.</i>																	
Curacao.....	102855	♂	57	7	16	11.4	38	80	56	15	21.8	4.2	8.4	15.0	.....	8.4	Teeth not worn.
Do.....	102856	.....	56	7	16	10	36.4	77	54	14.6	22.2	4.2	8.4	15.6	8.2	8.6	Teeth slightly worn.
Do.....	102857	.....	55	6	16	11	37.6	79	54	14.6	22.2	4.2	8.6	15.6	8.0	8.4	Teeth not worn.
Do.....	102862	.....	57	6	16	10.4	38.6	77	54	15	22.0	4.4	8.6	15.2	8.0	8.2	Teeth moderately worn.
Do.....	105139	.....	59	6	16	11	37	76	55	15	22.4	4.4	8.6	16.0	8.0	8.6	Teeth slightly worn.
Do.....	105140	.....	56	7	15	10.4	37	78	54	15	22.4	4.6	8.8	15.6	8.0	8.6	Teeth not worn.
Do.....	105141	.....	57	7.6	15	9.4	36.4	77	55	14	22.2	4.4	8.8	16.0	8.2	8.8	Do.
Do.....	105145	.....	58	9	15	10	37	76	55	15	22.6	4.4	9.0	15.8	8.2	8.8	Teeth slightly worn.
Do.....	105147	.....	52	6	15	11	35.6	74	52	15	22.4	4.2	9.0	15.0	8.0	8.4	Do.
Do.....	105148	.....	51	5	15	10	36	78	52	15	22.0	4.4	8.6	15.2	8.0	8.4	Do.
Do.....	101871	.....	60	5	16	11.4	39	78	53	14.6	23.0	4.4	8.8	16.0	8.4	8.8	Do.
Do.....	105142	.....	57	6	15	10	36.6	77	55	15.4	22.2	4.4	8.6	15.4	8.2	8.8	Do.
Do.....	105143	.....	59	5	15.4	10	38	78	54	15	22.6	4.4	8.8	15.4	8.2	8.8	Teeth not worn.
Do.....	105144	.....	60	5	14.6	10.6	38	74	53	15	22.4	4.6	8.8	16.0	8.2	8.8	Teeth slightly worn.
Do.....	105152	.....	59	5	15	10	38	77	56	15	23.0	4.4	8.8	16.0	8.0	8.6	Do.
Do.....	105167	.....	58	6	15	10	36.4	78	53	14.6	22.4	4.4	8.8	15.2	8.0	8.4	Do.
Do.....	105199	.....	56	5	15.4	10	38.6	80	56	15	23.2	4.6	8.6	16.0	8.2	8.8	Teeth not worn.
Do.....	105205	.....	59	6	15.4	10	37.4	79	56	14.6	22.8	4.4	8.8	16.0	8.2	8.8	Teeth slightly worn.
Do.....	105206	.....	57	4	15.4	10	37.6	76	53	14.6	22.6	4.6	9.0	15.6	8.0	8.6	Do.
Do.....	105207	.....	54	6	15	10	37	76	55	15	22.8	4.8	8.8	15.8	8.2	8.8	Do.

¹ Field Museum of Natural History.

² Type.

³ Museum of Comparative Zoology.



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DOI: <https://doi.org/10.5479/si.00963801.46-2034.413>

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