

PROCEEDINGS
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TWO NEW GLOSSOPHAGINE BATS FROM THE
WEST INDIES.*

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Examination of material in the United States National Museum proves that there are at least three species of the Glossophagine genus *Phyllonycteris* in addition to the slightly known *P. poeyi*. One of these, *P. sezekorni* Gundlach,† is confined to Cuba, the second occurs in the Bahamas, and the third is thus far known from Puerto Rico only.‡ To the kindness of Dr. J. A. Allen I owe the opportunity of examining two skulls of *Phyllonycteris sezekorni*.

The three species may be distinguished by the following synopsis:

Zygomatic arch incomplete; braincase high but forming no angle with dorsal outline of rostrum; rim of anterior nares thick, not flaring; no distinct lachrymal swellings; depth of mandible about one-sixth length; crown of first lower molar only slightly longer than that of first premolar; color light yellowish brown.....*P. sezekorni*.

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† Monatsber. K. Preuss. Akad. Wiss., Berlin (1860), p. 818, December, 1860.

‡ Since this paper has been in press, Mr. D. G. Elliot has sent me for examination the *Phyllonycteris* from San Cristobal, Santo Domingo, which he recorded in 1896 as *P. poeyi* (Field Columbian Museum Publication 11, Zoölogical Series, I, No. 3, p. 82, May, 1896). The single skin represents a species closely related to *P. bombifrons* of Puerto Rico, but probably distinct. In the absence of satisfactory material it would be useless to attempt to define the form.

Zygomatic arch complete; braincase forming an angle with dorsal outline of rostrum; rim of anterior nares variable; lachrymal region distinctly swollen; depth of mandible about one-seventh length; crown of first lower molar nearly twice as long as that of first premolar; color variable.

Braincase rising above plane of rostrum at angle of about 12° ; rim of anterior nares thick, not flaring; teeth large; anterior border of tragus entire; back light clay color *P. planifrons.*

Braincase rising above plane of rostrum at angle of about 30° ; rim of anterior nares thin, distinctly flaring; teeth small; anterior border of tragus with several fleshy projections near tip; back dark brown *P. bombifrons.*

Phyllonycteris planifrons sp. nov.

Type, adult ♂ (in alcohol), No. 62517, United States National Museum, collected at Nassau, New Providence, Bahamas, March 18, 1886, by James E. Benedict.

General characters.—See synopsis.

Ears.—The ears are moderately long; laid forward they reach about three-fourths of the distance from eye to nostril. Anterior border of conch strongly convex immediately above base, then nearly straight to narrowly rounded off tip. Posterior border faintly concave immediately below tip, convex through lower half. The posterior border terminates abruptly close in front of meatus, and almost directly below anterior base. Six or seven transverse ridges on inner side of conch near posterior border. A small but conspicuous wart on cheek in front of lower base of ear. Anterior border of tragus much thickened, nearly straight, though slightly convex near middle and slightly concave below tip. Tip pointed. Posterior border with four jagged projections, of which the two lower are largest and the two upper occasionally obsolete.

Muzzle and chin.—Main portion of noseleaf oval, considerably broader than high, ill defined over upper lip, the free edge finely crenulate. At middle of upper part of free edge is a well defined upright projection, the height of which above general outline of oval is about equal to distance between inner borders of nostrils.

Nostrils near outer edges of noseleaf, opening upward, forward and slightly outward.

Behind the noseleaf and separated from it by a deep groove is an irregular but well-developed horseshoe-shaped ridge, the ends of which blend with the glandular upper lip.

Chin divided by a deep groove, narrow below, wide above, from the sides of which spring four to six small, fleshy projections.

Membranes.—The membranes are thick and leathery; the wings and propatagium broad and ample; the uropatagium greatly reduced (only 10 mm. wide at base). Propatagium extending along forearm to join

thumb at distal end of metacarpal. The membranes are practically naked throughout, as the fur of the body reaches the wings (both above and below) in a narrow line only.

Feet.—The foot is long and strong, about two-thirds length of tibia. Toes essentially equal in length, the first and fifth slightly shorter than the others. Claws large and sharp, nearly one-third as long as rest of foot. Calcar distinct but reduced to a mere stub 3 mm. in length.

Tail.—Tail slightly longer than foot, a little less than half free from membrane.

Fur and color.—The fur is loose in texture, and only moderately long (about 10 mm. at middle of back). It is closely confined to body, scarcely reaching wings. That of head covers external basal fourth of ears. Face densely hairy as far forward as ridge behind noseleaf. Chin and noseleaf naked. Lips and ridge behind noseleaf sprinkled with fine, short hairs.

Color of two skins (topotypes) collected June 3, 1884, by C. J. Maynard (Nos. 85 and 86, Miller collection): fur of back whitish gray through basal half, then light clay color faintly tinged with pinkish buff. The pale bases of the hairs appear irregularly at the surface. Ventral surface pinkish buff, the hairs grayish at base. Ears, membranes, and feet light brown. After thirteen years' immersion in alcohol the color of the type does not differ appreciably from that of these skins.

Skull.—The skull of *Phyllomycteris planifrons* differs from that of *P. sezekorni* most noticeably in the presence of very slender but complete zygomatic arches. The rostrum is slightly broader and flatter and the braincase smaller relatively to the size of the skull. The facial profile is straight from external nares to base of proencephalon, where it rises at an angle of about 12°. Proencephalon small, indistinctly marked off from very large mesencephalon. Metencephalon small and slightly outlined. Lachrymal region abruptly swollen. Antorbital foramen placed obliquely over posterior part of second premolar. Bony palate slightly arched, its general form nearly rectangular, the width between penultimate molars about half length. Vacuities behind incisors smaller than in *P. sezekorni*, but distinct. Pterygoids long, the distance from hamular to posterior molar slightly greater than length of tooth row behind canine. The pterygoids are strongly hollowed from within; and the interpterygoid fossa is partly closed in immediately behind the bony palate by the thin shelf-like edges of the pterygoids. Ventral aspect of roof of posterior nares flat. A slight depression on each side of the faint median ridge on basioccipital between audital bullæ. Audital bullæ small and round, their greatest diameter about equal to least width of palate between second premolars. Rim of external nares thick, not flaring. Mandible slender, the depth contained about seven times in greatest length.

The skull of the type measures: greatest length 25; basal length 22; basilar length 20; zygomatic breadth 11; interorbital breadth 4.8; lachrymal breadth 6; mastoid breadth 11; fronto-palatal depth 3.4; depth of braincase from highest point to level of audital bullæ 9.6; maxillary

tooth row (exclusive of incisors) 8.4; mandible 16.4; mandibular tooth row (exclusive of incisors) 9.

Teeth.—The teeth are slightly larger than in *P. sezekorui* or *P. bombifrons*. Crown of first upper molar nearly equal in length to that of second and third together. First upper premolar minute, usually closely wedged between canine and second premolar. Second premolar larger than second molar. First lower molar nearly double as long as first lower premolar; second premolar slightly larger than first, which is about equal to third molar.

Measurements (type specimen).—Total length 78; tail vertebrae 17; tibia 22; foot 14; forearm 47; thumb 12; second finger 35; third finger 82; fourth finger 62; fifth finger 64; ear from meatus 19; ear from crown 15; width of ear 13.6; tragus 8.2; width of tragus at anterior base 2.2; height of noseleaf from upper lip 4.6; width of noseleaf 5.

Specimens examined.—One hundred and twenty-four (2 skins), all from the same limestone cave a few miles from the city of Nassau.

Phyllonycteris bombifrons sp. nov.

Type, adult ♂ (in alcohol), No. 86274, United States National Museum, collected in a limestone cave near Bayamon, Province of San Juan, Puerto Rico, January 18, 1899, by Paul Beckwith.

General characters.—See synopsis.

Ears.—In size and form the ears are as in *P. planifrons*. Tragus shorter and broader than in *P. planifrons*, the anterior border strongly convex, and with from one to three pointed outgrowths above middle. Posterior border much more conspicuously denticulate than in *P. planifrons*.

Muzzle and chin.—The muzzle and chin are essentially as in the Bahaman species, but the ridge back of the noseleaf is separated from the latter by a much broader groove, and the fleshy outgrowths from the sides of the groove in chin are more conspicuous.

Membranes, feet, tail, and fur as in *P. planifrons*.

Color.—Both fur and membranes are much darker than in *P. planifrons*. In a specimen (No. 86270) skinned after only two months' immersion in formalin and alcohol, the fur of the dorsal surface is whitish gray through basal two thirds, then mars brown to tip. Ventral surface pale wood brown. Ears, feet, and membranes dark brown.

Skull.—The skull of *Phyllonycteris bombifrons* differs from that of *P. planifrons* in its shorter, narrower, more rounded rostrum, and larger, much more highly arched braincase. The proencephalon rises above the plain of the rostrum at an angle of about 30°. Lachrymal swellings well developed. Audital bullae smaller than in *P. planifrons*, the greatest diameter of each considerably less than least width of palate between second premolars. *Pterygoids* slightly shorter than in *P. planifrons*. Rim of external nares thin and noticeably flaring. Mandible slender.

The skull of the type measures: greatest length 24.4; basal length 22; basilar length 19.8; zygomatic breadth 12; interorbital breadth 5; lachrymal breadth 6; mastoid breadth 11.4; fronto-palatal depth 3; depth

of braincase from highest point to level of audital bullæ 10.4; maxillary tooth row (exclusive of incisors) 8; mandible 16; mandibular tooth row (exclusive of incisors) 9.

Teeth.—Except for their somewhat smaller general size, the teeth of *Phyllonycteris bombifrons* do not differ appreciably from those of *P. planifrons*.

Measurements (type).—Total length 78; tail vertebræ 14; tibia 22; foot 14; forearm 48.4; thumb 14; second finger 38; third finger 81; fourth finger 65; fifth finger 64; ear from meatus 18; ear from crown 14; width of ear 13; tragus 7; width of tragus at anterior base 2.2; height of noseleaf from upper lip 4.6; width of noseleaf 5.

Specimens examined.—Fourteen, all from the type locality.