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## A RECORD FROM SURINAM OF THE BAT *CHIRODERMA TRINITATUM* GOODWIN, 1958 (MAMMALIA, CHIROPTERA)

by

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With 2 text-figures

Re-examination of a collection of bats from Surinam in the Zoölogisch Museum, Amsterdam, uncovered a specimen representing the Phyllostomatid bat *Chiroderma trinitatum* Goodwin, 1958. This species does not appear in the monograph of the Chiroptera of Surinam by Husson (1962), nor in his more recent works on the mammals of that country (1973; 1978). The present specimen therefore seems to be the first record from Surinam. It is a young adult female, captured after it had flown into a house at night on 1-II-1967, by H. Nijssen at Ligorio, a village on the river Gran Rio about 16 km south-west of Djoemoe in the Brokopondo District. It has been preserved in alcohol, with extracted skull, and is registered as ZMA 10.136.

### IDENTIFICATION

In a recent paper dealing with all members of the genus *Chiroderma* Peters, 1860, Baker & Genoways (1976) recognize five species: four larger ones with forearm lengths ranging from 43.7-47.5 mm in *Ch. salvini* Dobson, 1878, to 57.5 mm in the single known specimen of *Ch. improvisum* Baker & Genoways, 1976, and one smaller species, *Ch. trinitatum* Goodwin, 1958, with forearm lengths of 39.4-41.8 mm. From this survey it is clear that the specimen from Ligorio, with a forearm length of 39.2 mm, is allied to *trinitatum* rather than to any of the other four species.

In 1958 Goodwin described this species from Cumaca, Trinidad. He based it on one adult female with a forearm length of 40.5 mm, a greatest skull length of 22.5 mm, and a maxillary tooth row length of 7.7 mm. The skin of the holotype was in a bad state and fur colours could not be described.

In 1961 Goodwin & Greenhall published a drawing of the upper incisors

and canines of the holotype, and some photographs of its skull. In 1964 Goodwin & Greenhall gave measurements of additional specimens, four adults and one subadult, from other localities on Trinidad, and also described their fur colours. Baker & Genoways (1976) give measurements of another five specimens from Trinidad, all adults, and a figure of upper incisors and canines, presumably of one of their own specimens. If we combine the data in the aforementioned papers, some important measurements (in mm) in *Ch. trinitatum* from Trinidad are as follows.

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	n.	min.-max.	n	min.-max.
forearm length	6	38.9-41.5	3	39.4-41.8
greatest skull length	6	21.5-22.5	3	22.4-22.8
Maxillary tooth row length	6	7.4- 7.7	3	7.4- 7.8

Females seem to attain slightly higher average measurements than males. The Surinam female, with a forearm length of 39.2 mm, a greatest skull length of 21.3 mm, and a maxillary tooth row length of 7.1 mm, appears to be rather small. Moreover, there are slight differences in the form of the skull and the position and form of the upper incisors. When compared to the photographs and a drawing of the holotype (Goodwin & Greenhall, 1961), the Surinam specimen appears to differ in the following respects: its skull

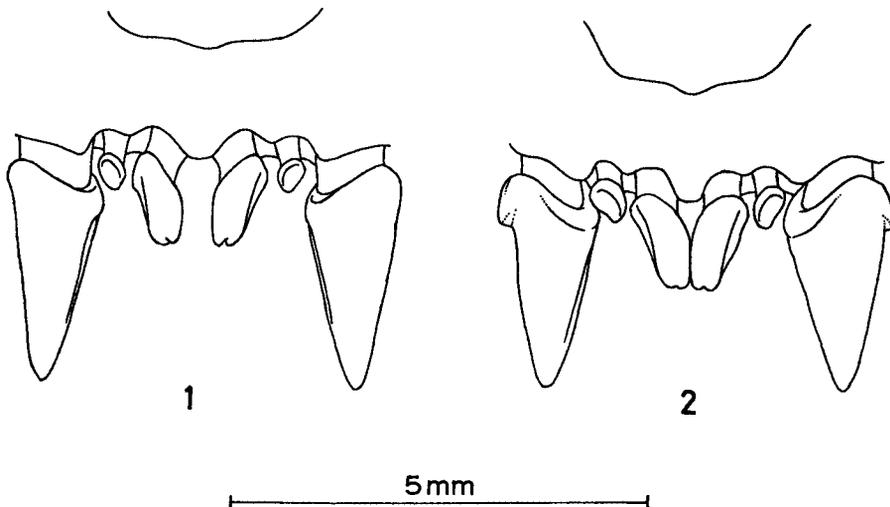


Fig. 1. Upper canines and incisors of *Chiroderma trinitatum* Goodwin from Ligorio, Surinam (ZMA 10.136). Fig. 2. Upper canines and incisors of *Chiroderma trinitatum* Goodwin from Belén, Venezuela (USNM 405150). The scale applies to both figures.

has a somewhat more domed frontal region, a higher braincase, a more distinct postorbital constriction, and no sagittal crest; its maxillary tooth row is relatively short, and its inner upper incisors are relatively shorter, farther apart, and weakly but distinctly bilobed (fig. 1). A comparison of the two actual specimens will be necessary to assess these observations, and to ascertain whether still other differences exist.

#### DISCUSSION

The Surinam specimen is not the first from the Middle- and South-American mainland to be assigned to *Ch. trinitatum*. In 1960 Handley described *Chiroderma gorgasi* n. sp. from Tacarcuna Village, Panama. He pointed out that *gorgasi* is closely related to *trinitatum* and suggested that results of further collecting might lead to their eventual synonymy. He had two specimens, with forearm lengths of 38.5 mm (the male holotype) and 37.5 or 37.6 mm (the female paratype), greatest skull lengths of 20.9 mm (holotype) and 20.2 or 20.7 mm (paratype), and maxillary tooth row lengths of 7.3 mm in both specimens. *Ch. gorgasi* would differ from *trinitatum* by "smaller size; relatively broader skull; relatively deeper braincase and more bulging forehead; shorter rostrum; sharper lachrymal ridge; more rounded supraorbital region; heavier zygomata; larger outer upper incisors (I<sup>2</sup>); shorter (anterior-posterior) M<sup>1</sup>" (Handley, 1960: 465). In 1965 Barriga-Bonilla recorded the first *Ch. trinitatum* from Columbia, collected between Mitú and the Cerro de Mitú. His single specimen, an adult female, has a forearm length of 38.1 mm, a greatest skull length of 21.3 mm, and a maxillary tooth row length of 7.2 mm. He compared the skull with the skull photographs and drawing of the holotype of *trinitatum* in Goodwin & Greenhall (1961), and with the description of *gorgasi*, and concluded that a number of skull characters in his specimen were intermediate between those in the type specimens of *trinitatum* and *gorgasi*. He therefore considered *gorgasi* as a subspecies of *trinitatum*, and as his Columbian specimen had more in common with *gorgasi* (stronger zygomatic arches, more pronounced lachrymal ridges, a more bulging forehead, a relatively shorter M<sup>1</sup> and larger I<sup>2</sup>) than with *trinitatum*, he assigned it to the subspecies *gorgasi*. In 1970, Pine et al. recorded *Ch. trinitatum* from Serra do Roncador in Brazil, which was the first record from that country. (A specimen from Codojas, Brazil, with a forearm length of 45.4 mm and free I<sup>1</sup>, identified as *Ch. trinitatum* by Pirlot, 1972, seems too large for this species.) Also in 1970, the first Peruvian specimens, from various localities, were recorded by Tuttle. Further records from Peru are to be found in Davis (1975), Gardner (1976) and Koopman (1978). Gardner (1976) measured two males and six females from three

Peruvian localities and found forearm lengths of 39.9-43.1 mm (mean 41.9), greatest skull lengths of 21.9-23.8 mm (mean 23.0), and maxillary tooth row lengths of 7.5-7.8 mm (mean 7.7). In 1976 Handley listed 67 specimens of *Ch. trinitatum* from 11 localities in Venezuela, which were the first from there. Of this large series, one alcohol specimen and two skulls from Belén and one alcohol specimen from Tamatama have been examined by the present author (United States National Museum, Washington, 496593, 496595, 405150-1). Both localities are in southern Venezuela.

Some of the characters that would distinguish the Panamese *gorgasi* (small size, bulging forehead, large braincase) from *trinitatum* are present in the Surinam specimen, but, as it seems, again fewer than in the Columbian specimen described by Barriga-Bonilla (1965). The specimens from southern Venezuela are probably also rather small (USNM 496593, an adult male, has a forearm length of 37.5 mm; USNM 496595, a subadult female, of 38.1 mm; USNM 405150-1, both adult females, have greatest skull lengths of 21.0 and 22.0 mm, and maxillary tooth row lengths of 7.2 and 7.5 mm, respectively), but when compared to the Surinam specimen they have less bulging foreheads, smaller braincases and (weak) sagittal ridges, and moreover some distinctive differences in dental characters. Their inner upper incisors are quite large, firmly touching in the middle, and very weakly bilobed in one or two specimens per dozen (Mrs. L. K. Gordon, in lit., 25-IX-1978), their outer upper incisors are relatively larger, their upper canines have broad bases with a very small cingular outer cusp (fig. 2; rather strong in the figured specimen, but hardly indicated in one of the four examined specimens), and all their premolars, but especially the lower ones, are relatively broader. As far as can be gleaned from the illustrations of the holotype of *trinitatum* (Goodwin & Greenhall, 1961) the skull characters of the Venezuelan specimens approach those of the holotype, but the dental characters do not, or only partly so: the inner upper incisors, for instance are quite different. But they agree very well with those of another specimen (from Trinidad?), assigned to *trinitatum* and figured by Baker & Genoways (1976).

Either we must accept a considerable infraspecific variation in *Chiroderma trinitatum*, or this taxon, as it is now understood, comprises more than one form. Only the analysis of larger series can solve this problem.

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## ADDENDUM

While this paper was in press, Genoways & Williams (1979) published another 4 specimens of *Chiroderma trinitatum* from Suriname.

- GENOWAYS, H. H. & S. L. WILLIAMS, 1979. Records of bats (Mammalia: Chiroptera) from Suriname. — Ann. Carnegie Mus. Nat. Hist., 48 (18): 323-335.