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CONTRIBUTIONS IN SCIENCE



NATURAL HISTORY MUSEUM • LOS ANGELES COUNTY

NEW SPECIES OF SALAMANDERS,  
GENUS *BOLITOGLOSSA*, FROM PANAMA<sup>1</sup>

By DAVID B. WAKE,<sup>2</sup> ARDEN H. BRAME, JR.,<sup>3</sup>  
and WILLIAM E. DUELLMAN<sup>4</sup>

ABSTRACT: Three species of salamanders, *Bolitoglossa cuna*, *B. minutula*, and *B. compacta*, are described from Panamanian populations. *Bolitoglossa cuna*, from the Territorio de San Blas, is a lowland species with fully webbed hands and feet. It is a member of the *sima* group. *Bolitoglossa minutula* is the smallest member of the genus. It occurs at elevations between 1800 and 2000 m near the Costa Rican border, and has some similarity to the larger Costa Rican species, *B. epimela*. *Bolitoglossa compacta* is a large species with slightly webbed hands and feet which is sympatric with *B. minutula*. It is a relative of *B. cerroensis* of Costa Rica.

Gradually the notion that salamanders are rare and lack diversity in the tropics is being dispelled. The increased field work of recent years has disclosed that salamanders are widely distributed in tropical America, but densities are often low. As a result, most species are represented by rather small series in collections. As field work continues, the diversity of the group is becoming apparent. Often in a given restricted area several species live in broad sympatry and have varied structure and ecology. In the present paper we describe specimens of three new species collected principally by Charles W. Myers, William E. Duellman, and Linda Trueb since 1963. These species encompass much of the range of morphological diversity in Panamanian species of *Bolitoglossa* and add considerably to our knowledge of the Panamanian salamander fauna.

The first species occurs only in eastern Panama, along the Caribbean lowlands. It is named for the humans indigenous to the region.

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***Bolitoglossa cuna*, new species**

Figures 1 and 2

*Holotype*: KU 116519, an adult female from Camp Sasardi, 12 m (39 ft) elevation, Territorio de San Blas, Panamá, obtained by Charles W. Myers on 6 February 1967.

*Paratypes*: USNM 150035-36, adult females from Armila, near sea level, Territorio de San Blas, Panamá, collected by C. O. Handley, Jr. and F. M. Greenwell on 26 February, 1963.

*Diagnosis*: A moderate-sized species (3 adult females: 46.6-55.7, mean 50.3 SL<sup>5</sup>) with high numbers of maxillary (mean 72) and vomerine (mean 35) teeth; distinguished from *B. silverstonei* by its more numerous teeth and narrower head, hands and feet; from *B. biseriata* by its more numerous teeth and narrower head; from *B. sima* by its shorter legs, more numerous teeth and narrower head. *B. cuna* is distinguished from all other members of the genus



FIGURE 1. Dorsal and ventral views of the holotype of *Bolitoglossa cuna*, new species, KU 116519.

<sup>5</sup>Standard length, the distance in mm from the snout to the posterior end of the vent (all measurements are in millimeters).

