

GUNTHER KÖHLER - The amphibians and reptiles of Nicaragua. A distributional checklist with keys - 1999 - Frankfurt am Main [Senckenbergische Naturforschende Gesellschaft] - C F S Courier Forschungsinstitut Senckenberg 213: 1-121 - 135 figures, 2 tables, 60 black-and-white photographs - book size 21.0 cm \* 29.6 cm (A4) - ISBN 3-929907-55-0 - ISSN 0341-4116 - price DM 55.00 - [in English]

Among Middle American countries Nicaragua has been one of the least explored herpetologically, in part because it has widely been assumed to contain the least distinctive herpetofauna. This assumption is largely based on the fact that while it is the largest of the Central America republics, Nicaragua is the least mountainous of the larger countries, with many of its mountains being recent volcanos that would not be expected to harbor endemics. Since most endemic amphibians and reptiles in Middle America are montane isolates, the assumption has seemed reasonable. However, to some degree this is self-fulfilling prophecy, and Nicaragua has been largely overlooked by field biologists who have instead focused their efforts on Costa Rica, Guatemala, and more recently Honduras. Most of our knowledge of the Nicaraguan herpetofauna is due to JAIME VILLA, who produced summaries of the snakes (1962) and amphibians (1972) that were incomplete and not widely disseminated. Now GUNTHER KÖHLER has produced an attractive, functional checklist and key.

There are 227 species of amphibians and reptiles recorded for Nicaragua, classified in 120 genera and 31 families. There is an account for each species, but it consists only of the bare facts of the name of the taxon and its history, as well as a brief synopsis of its distribution as a species, specimens examined, and literature records. Localities within Nicaragua are plotted as dots on a map of the country, with the political subdivisions outlined in the background. The work is well organized and usable, with keys, maps illustrating the location of nearly every specimen, and lists of specimens examined or recorded in the literature.

By comparison with Costa Rica, a smaller but topographically more complex political unit, the herpetofauna is relatively

small. SAVAGE & VILLA (1986) list 362 species, and that number has increased now by about 20-25 species. With respect to a group of interest to me, the salamanders, only five species are reported from Nicaragua (a sixth will be described soon), whereas SAVAGE & VILLA (l. c.) report 26 from Costa Rica and my own estimate is that recent discoveries have increased that total to about 40. There are 24 species of salamanders known from Honduras. Most of the Honduran and Costa Rican species are endemic to those countries, but only one described species of salamander is endemic to Nicaragua. I suspect these differences are not solely the result of little field work having been done in Nicaragua, but rather of the fact that Nicaragua shows relatively low topographic relief, with very few places rising above 1500 m. Most of the salamanders endemic to Honduras and Costa Rica occur at elevations in excess of 1000 m. Furthermore, the areas below 1000 m in Nicaragua have been intensively deforested and converted for agriculture and animal husbandry. Accordingly, while I do not expect that many new species will be discovered in the mountainous regions of Nicaragua, I hope that serious field investigations will be continued, especially in poorly studied areas and in the remaining montane forests.

KÖHLER and his associates have contributed much new information concerning Nicaragua in recent years. Their efforts are partly displayed in 54 excellent black and white photographs of living specimens (one caecilian, one salamander, one crocodile, two turtles and the remainder frogs, lizards and snakes), many of them common and widespread in Middle America, but also including some endemic and rare species.

The publication is of high quality, with well designed maps published at an appropriate size and in general good attention paid to detail. I noted only a few minor

errors (e.g., SLOVINSKI for SLOWINSKI). I only checked a few of the keys, and they appear to be well constructed. I was surprised to find a few species listed even though they have not been found in Nicaragua - e.g., *Cochranella albomaculata* (TAYLOR, 1949), *Anotheca spinosa* (STEINDACHNER, 1864); *Sibon longifrenis* (STEJNEGER, 1909). However, these species expected to occur were not included in the total count of species reported for the country. There are only a few endemic species: *Bolitoglossa mombachoensis* KÖHLER & MCCRANIE, 1999, which surprisingly is found only on the flanks of a recent volcano; *Rana miadis* BARBOUR & LOVERIDGE, 1929, curiously known only from a small island off the Atlantic Coast; *Norops wermuthi* KÖHLER & OBERMEIER, 1998, recently described from the north-central mountains; *Geophis dunni* SCHMIDT, 1932, known only from the type locality in the north-central mountains; *Leptotyphlops nasalis* TAYLOR, 1940, known only from the type locality, Managua. Taxonomically the treatment is relatively

conservative (e.g., the Iguanidae includes all iguanid lizards), but anoline lizards are divided into *Norops* and *Anolis* (only the former occurs in Nicaragua), and the vipers once considered to be *Bothrops* are placed in several genera.

This attractively produced checklist should stimulate further research on the herpetofauna of this region. The author is to be congratulated for this useful contribution.

#### REFERENCES

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