

Notes on Colombian Opalinids.

I. *Opalina*, *Zelleriella*, and *Cepedea*.

by

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During a two year period 25 species of frogs and toads from north, west, south and central Colombia were examined for the presence of opalinids. Relatively little work has been done since METCALF (2, 5) and no literature on Colombian opalinids exists.

In general the body of all opalinids is uniformly covered with cilia of equal length, no cytostoma or micronuclei are present and asexual reproduction is by binary fission. The genera *Opalina* and *Cepedea* are multinucleate (4) in contrast to *Zelleriella* which has only two nuclei. The body of *Zelleriella* is less flattened than that of *Opalina*, and cylindrical or pyriform in *Cepedea*.

Identification of the organisms mentioned in this paper is based on both morphological features and behaviour in culture (6). The following identifications were made during the survey:

Opalina belenae Metcalf was found in 1 out of 6 *Rana palmipes* captured near the Rockefeller Foundation field station on the Río Raposo (Dept. Valle), 30 kilometers south of Buenaventura on the Pacific coast of Colombia. This protozoan has been reported from Costa Rica by RUIZ (7) from *Phyllomedusa belenae* (*Agalychnis belenae*).

Opalina copei Metcalf was recovered from two *Leptodactylus bolivianus* collected in virgin mountain forest of south Huila. *O. copei* has been reported from *Rana copei* in Costa Rica by RUIZ (7).

Opalina obstrigonoidea austriicola Metcalf, known from *Bufo marinus* in Venezuela (7), was found in the majority of *Rana palmipes* from central and western

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Colombia (Departments: Chocó, Valle, Cauca, Tolima, Caldas and Boyacá). This opalinid has also been reported from *Rana pipiens* in Costa Rica by RUIZ (7).

Opalina moreletei Metcalf was abundant in a specimen of the giant toad *Bufo blombergi* collected north of Buenaventura (Dept. Valle). *O. moreletei* was originally described from *Phyllomedusa moreletei* (syn. of *Agalychnis moreletei*) in Guatemala and later found in the same frog in Costa Rica (7).

Opalina bylaxena, Metcalf originally described from *Hyla versicolor*, was found in an as yet unidentified *Hyla* sp., collected south of Villavicencio (Dept. Meta) in central Colombia.

Zelleriella dendrobatidis Metcalf was abundant in a *Dendrobates* sp. collected near Manizales (Dept. Caldas), and is often present in the *Phyllobates subpunctatus* around Bogotá (Dept. Cundinamarca). Metcalf described this opalinid from a Costa Rican *Dendrobates tinctorius*.

Zelleriella atelopyxena Metcalf was recovered from *Atelopus longirostris* collected south east of Popayan (Dept. Cauca and Dept. Huila), and from *Atelopus pachyderma* collected 20 kilometers west of Cali (Dept. Valle). METCALF (5) found this opalinid in *Atelopus varius* in Costa Rica.

Zelleriella opisthocarya Metcalf was found in *Hyla crepitans* collected south of Villavicencio near the Ariari river (Dept. Meta). *Bufo marinus* from Venezuela and *B. coniferus* from Costa Rica (8) also harbor this opalinid.

Zelleriella bufoxena Metcalf. All the specimens of *Bufo typhonius ockerdeni*, a common toad around the Rockefeller Foundation laboratory at Río Raposo (Dept. Valle), were infected with this species originally described from Nicaraguan and Costa Rican *Bufo baematiticus* (8). The same *Zelleriella* was found in a *Bufo guttatus* collected in the same area.

Zelleriella antillensis (Metcalf). Two species of *Zelleriella* were found in *Bufo marinus*, the most common toad of Colombia; *Z. antillensis*, originally described from the Jamaican *Bufo marinus*, was present often in great abundance in 217 out of 320 adults collected in the western part of Colombia between Cali and the Pacific coast (Depts. Valle and Chocó). In Costa Rica this opalinid seems to be very common in *B. marinus* (8).

Zelleriella artagasi Unti was the other opalinid found in *Bufo marinus* collected on the north coast of Colombia near Barranquilla (Dept. Atlántico) and near Cartagena (Dept. Bolívar). Half of these toads harboured *Zelleriella* but the infestation rate was always low. One hundred and twenty-six juvenile *Bufo marinus* with a body length under 3 cm were all negative for opalinids. This is surprising because anurans can be infected with opalinids only as tadpoles (2, 4).

Zelleriella opisthocarya, Metcalf described from *Bufo marinus* in Vene-

zuela (1), has not been found. A seventh species of *Zelleriella* was found in frogs collected south of Popayán (Dept. Cauca), and an apparently similar opalinid was isolated from an unidentified frog from the same area. Neither the frogs nor the opalinids are as yet identified.

Cepedea obovoidea Metcalf represents a third opalinid genus found in the survey. Originally described from *Bufo lentiginosus* (3), it was located in two individuals of *B. guttatus*, collected in the tropical rain forest on the Pacific coast of Colombia (Dept. Nariño).

Eleven other host species belonging to the genera *Gastrotheca*, *Leptodactylus*, *Eleutherodactylus*, *Ateles*, *Hyla* and *Cochranella* were examined, but no opalinids found.

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SUMMARY

Three different genera of opalinids were recovered from 14 out of 24 species of anurans collected in 12 departments of Colombia. At least 7 species of the opalinid genus *Zelleriella* were found in 10 different frogs. Five species of the genus *Opalina* were present in 4 colombian frogs and one *Cepedea* was recovered from a toad. None of the opalinid species identified has been described previously from Colombia, and except for *Bufo marinus*, all host species mentioned seem to be new records for the cited opalinids.

RESUMEN

Tres géneros diferentes de opalínidos fueron obtenidos de 14 entre 24 especies de anuros colectados en 12 departamentos de Colombia. Por lo menos 7 especies del género opalínido *Zelleriella* se encontraron en 10 ranas diferentes. Cinco especies del género *Opalina* se presentaron en 4 ranas colombianas y una *Cepedea* fué obtenida de un sapo. Ninguna de las especies de opalínidos identificados ha sido descrita previamente de Colombia, y excepto por *Bufo marinus*, todas las especies huéspedes mencionadas parecen ser nuevos registros para los opalínidos citados.

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