## Notes on Costa Rican Opalinids.

## II. Zelleriella antillensis (Metcalf) and Z. bufoxena Metcalf.

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Four species of zelleriellae are known in Costa Rica, all described from local anurans. Zelleriella opisthocarya Metcalf, 1923, from Bufo coniferus Cope (collection place not indicated), Z. atelopyxena Metcalf, 1923, from Atelopus varius Stannius, collected at Pico Blanco, Z. dendrobatidis Metcalf, 1923, from Dendrobates tinctorius (Schneider), (collection place not indicated) and Zelleriella sp., a second species found by Metcalf in Atelopus varius but not named by this author, Unfortunately we have not had the opportunity of examining specimens of this frog so that we might encounter again the latter species of Zelleriella and proceed to redescribe it. With this note we increase the number of known species with the following: Z. antillensis (Metcalf, 1914) Metcalf, 1923 and Z. bufoxena Metcalf, 1923.

Z. antillensis was originally described by Metcalf from specimens of Bufo marinus from Jamaica. B. marinus is the most widely distributed toad in our country. We have examined 33 animals of this species of which 22 harbor zelleriellae. No differences were found with Metcalf's description (U. S. Nat. Mus. Bull., 120, 1923). The largest form we found measured 194  $\mu$  in length and 121  $\mu$  in width. In our preparations there are present a great variety of sizes from the largest trophozoits to the smallest pre-cystic forms. The cysts appear as uninucleated, irregular or rounded bodies. These elements measured 21 - 30  $\mu$  in diameter. Zelleriella artagasi Unti (Rev. Biol. Hyg., 6: 39, 1935) is another species described from Bufo marinus. At present we have not been able to find it in our material.

Zelleriella bufoxena was found in a specimen of Bufo haematiticus collected at Turrialba. The scanty forms encountered corresponded well to Metcalf's description (U. S. Nat. Mus. Bull., 120, 1923). No cysts were observed. This species was described by Metcalf from specimens of Bufo haematiticus collected at Nicaragua.

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