

THE DEVELOPMENT OF THE GIANT SURINAM TOAD, *BUFO MARINUS* L.

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On April 20, 1934, a strand of the eggs of the giant Surinam toad, *Bufo marinus* L., was collected in a brook at Monacillos, Río Piedras, Puerto Rico. The strand was found dangling from grass stems in swiftly running water, where it presumably had been carried by the current before becoming entangled in the grass. It was carried to the laboratory and placed in a large receptacle of water, where all changes could be readily observed. (Fig. 1.) The strand was transparent, with segmentation visible at the tips. The black, rounded eggs were embedded in the center of this strand.

On April 21, 1934, the eggs hatched, each tadpole pushing its way out of the main strand into branches or short lateral tubes. (Fig. 2, A and B.) The tadpoles later in the day left the branch tubes but remained attached to them externally. (Fig. 2, C.)

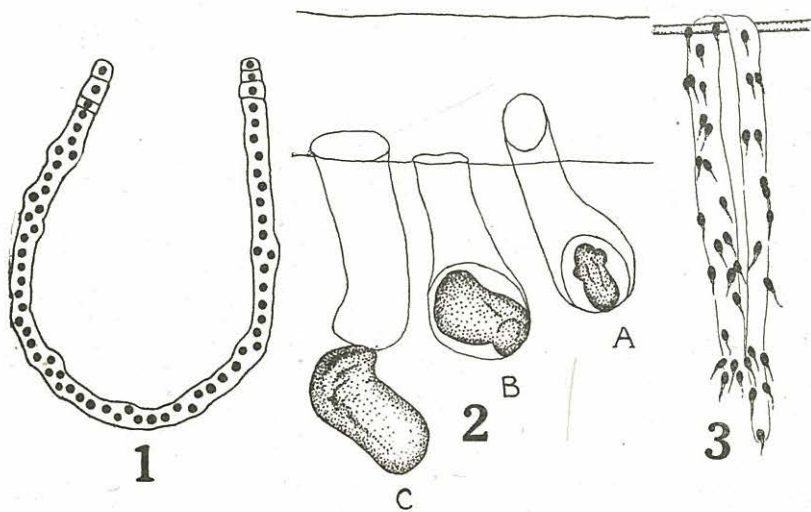


FIG. 1. Strand of eggs of the giant Surinam toad, *Bufo marinus* L.

FIG. 2. A section of the egg strand showing branches or lateral tubes. (A) and (B), the tadpoles still inside the tubes; (C), the tadpole outside the tube.

FIG. 3. The tadpoles with well developed tails clinging to the outside of the egg strand.

By April 23d, practically all of the tadpoles had become rounded and had developed tails, but they still remained attached to the egg-strand. (Fig. 3.) Shortly afterwards they abandoned it, dropping to the bottom and sides of the glass receptacle. They were fed lettuce, bread crumbs and occasional insects or earthworms, which were killed and cut up in small pieces for them. They were extremely fond of the earthworms and the bread. Large numbers of them feeding on a floating piece of bread would often cause it to slowly revolve, as it was pushed around by eager wagging of their tails.

By June 11th several tadpoles had developed hind legs, and by the 20th, two individuals had developed fore legs. One of these still had a complete tail, but the tail of the other had already begun to shrink and curve downwards between its hind legs. By the next day, the tail had become a stump and the toad left the water, being at that time only one-quarter of an inch long. From time to time during the summer, others became adult, but no record was kept, and food was supplied more sparingly.

On October 3d, 1934, the last tadpole had transformed to adult, nearly six months after the eggs were collected.