

## GIANT TOADS OF FLORIDA

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Repetitiously there appear in the public press of this state startling accounts of monstrous toads which threaten housewives in their backyards, seize dogs by the head and hang on with a death-resulting grip, or attack and kill with their virulent poison the innocent neighborhood cats.

An Associated Press release has been widely printed during 1958 which renews these tales. In a variety of versions it has appeared in most of the newspapers of Florida, and informants report its presence on the air or in the press as far away as Texas and Pennsylvania.

Ordinarily the offender is described in terms similar to these: "The poisonous [sic] reptile is warty, yellow-brown and about five times as large as an average bullfrog"! On the infrequent occasions when a particular kind of creature is accused of being responsible for these untoadlike actions, it is invariably singled out as *Bufo marinus*. However, the validity of these accusations may be questioned since it is possible that several large *Bufo* may occur in Florida.

The following paragraphs are presented with the idea of summarizing the history of large toads in Florida, and of correcting and clarifying some of the details of that story.

### *Bufo marinus*

Prior to June 1936, R. N. Lobdell of the University of Florida Agricultural Experiment Station, with the cooperation of the United States Bureau of Entomology, imported from Puerto Rico and released at Canal Point and at Belle Glade, Florida, about 200 individuals of this species. It was hoped that these toads would be useful in reducing the number of cutworms, click beetles, and other insect enemies of sugarcane (Lobdell, 1936). This is the first importation and intentional release in Florida of which I find record.

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Sometime prior to 1944 the United States Sugar Corporation introduced *Bufo marinus*, this time at Clewiston, Florida. The stock again was imported from Puerto Rico and with the hope of controlling sugarcane pests (Oliver, 1949). Clewiston, Belle Glade, and Canal Point are along the southern and eastern shores of Lake Okeechobee in southern Florida.

In recent years several Floridian dealers in imported animals have carried this species in stock. Along with other exotic forms which escaped through negligence or were intentionally released, *Bufo marinus* has been found in the Miami area where several of these importers are in business. Allen and Neill (1958) have reviewed many of these details in a sportsman's magazine, the organ of the Florida Game and Fresh Water Fish Commission.

Additional introductions are alleged to have been made at Pennsuo, 10 miles northwest of Miami, and on the west coast at the Bass Biological Laboratory at Englewood; however, I have been able to uncover no additional details.

Most authors consider these introductions unsuccessful. No further mention is made by the Agricultural Experiment Station of the toads released at Belle Glade and Canal Point except that within a year of that event some of the toads were taken 1½ miles from the point of release, and that some in captivity were feeding well but had not bred (Lobdell, 1937). In an article in the "Florida Times-Union" of Jacksonville for 10 March 1944, Josiah Ferris, the person responsible for releasing toads at Clewiston, is quoted as saying the Puerto Rican toads "were unable to withstand the cold." Oliver (1949: 32) regards the Clewiston attempt a failure. The sixth edition of the North American herpetological checklist (Schmidt, 1953) does not mention *Bufo marinus* as an introduced form. This may be merely an inadvertent omission, since at least one nonsurviving introduction is mentioned. In 1955 Oliver (p. 27) still thought the toads were absent in Florida. Announcement of the establishment of the species in Florida is made by Neill (1957: 207), and he personally assures me of its current presence in the Miami area. Duellman and Schwartz (1958) quote Neil Bell as having observed calling males, mated pairs, and tadpoles in or near that city. Dennis R. Paulson is quoted by them as saying that the population at Miami was thriving during the summer of 1957. In spite of this, they indicate only a single specimen

extant in collections from south of Fort Lauderdale, Florida, namely University of Michigan Museum of Zoology number 113000. Additional specimens from north of this level are said to be present in the E. R. Allen—W. T. Neill collection.

*Bufo arenarum* and *Bufo paracnemis*

Following apparent failure of the Clewiston introduction of *Bufo marinus*, the United States Sugar Corporation attempted to import toads which were more cold hardy. A series was procured from the Agricultural Experiment Station of Tucuman, Argentina, and flown to this country as war material. This introduction, never considered in the identification of giant toads from Florida, was reported in several South American newspapers, and on 10 March 1944 in the "Florida Times-Union," on 13 August 1944 in "The American Weekly," and later in Copeia (Myers, 1945).

Coleman J. Goin of the University of Florida, being interested in the outcome of these introductions, wrote to B. A. Bourne, Vice President and Director of Research of the United States Sugar Corporation at Clewiston, Florida, and received this reply dated 25 February 1947:

"On March 8, 1944 we received 16 specimens of *Bufo paracnemis* and 54 specimens of *Bufo arenarum* from Argentina. Up to the fall of 1945 when our Entomologist resigned, he reported that these species had failed to reproduce in the special ponds created for them. However, before leaving us he released the specimens and no proper check has been made to determine whether these species finally reproduced themselves subsequently."

To my knowledge no mention has been made in the herpetological literature of these toads occurring in Florida except the initial announcement by Myers. This omission may be due to the fact that some workers consider these two species to be conspecific with *Bufo marinus*. Although this may be true, examples from the localities from which introduced toads are known to have been derived are, in any case, wholly distinctive.

*Bufo terrestris*

All of the species mentioned above attain a large size, indeed, the primary reason for importing them was that their large size enables them to consume large insects in large numbers.

Recently a large toad was captured at the Belle Glade Experiment Station which revived interest there in the fate of the *Bufo marinus* released 22 to 23 years earlier. The toad is a *Bufo terrestris* (University of Florida 9077), the common native form, but is of unusual size for this region. It has a snout-vent length of 109½ mm. Duellman and Schwartz (1958) report other large ones of from 104 to 107 mm. from elsewhere in southern Florida. Neill measures one in the Allen—Neill collection, presumably from Florida, as 112 or 113 mm. Comparably large *B. terrestris* are known from elsewhere in the southeastern states. (Though data are lacking, the exotic *Bufo* in Florida probably rarely exceed 150 mm. in length. Neill cites 167 mm. for a *B. marinus* as the maximum measurement known to him.) Whether these large *terrestris* are merely individual growth anomalies or represent populations which attain exceptional size is not definitely established. The size and appearance of the Belle Glade individual has occasioned genuine surprise on the part of several veteran herpetologists long familiar with the Floridian fauna. Logically then it might also be expected to create concern or alarm on the part of laymen, and hence furnish good copy for journalists.

Because any one of four species might be involved, it is important that the guilty party in "toad incidents" be carefully identified, and the accused animal should be saved as a voucher. At this time it is likely that the only exotic *Bufo* surviving now in Florida is *B. marinus*, and probably only in the area of Miami, but the facts are not certainly known. If this is true we may well consider ourselves fortunate, for wherever this animal has been a really successful introduction it has been so at the expense of the native anuran fauna (see for example, Rabor, 1952).

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