

Deadly toads recently found invading southern Florida, exude poison from swollen glands behind their eyes.

ECOLOGY

A Plague of Toads

Nobody was especially excited when Africa's cattle egret, the friendly, insect-eating cousin of the native snowy egret, made an unprecedented trans-Atlantic migration; by now it is strongly established throughout Florida and even well beyond its borders.

But now southeast Florida's fabulous gold coast, extending from Miami and Miami Beach north to Palm Beach, has a new arrival.

It is *Bufo Marinus*, a giant tropical, night-feeding toad.

Like the African cattle egret, the toad is an insect eater and is—if left alone—ordinarily harmless and helpful. But it also happens to be one of the deadliest of the species known to science, with poison glands that secrete a cobra-like venom.

The oversized hoppers are colored a yellowish brown with black markings and, at first glance, the largest seem like something from another planet. Specimens have been found weighing close to a pound and a half, as big as the span of a big man's hand.

The poison glands are located directly behind the eyes. When irritated, the toads exude their venom—a viscous, milk-colored substance—through arteries that carry it over the back, oozing out through volcano-like pro-

trusions. It's quickly lethal to certain small animals and is already known to have multiple effects upon human beings, attacking the nervous system, sharply increasing blood pressure and heart action, causing nausea, severe headaches and paralysis.

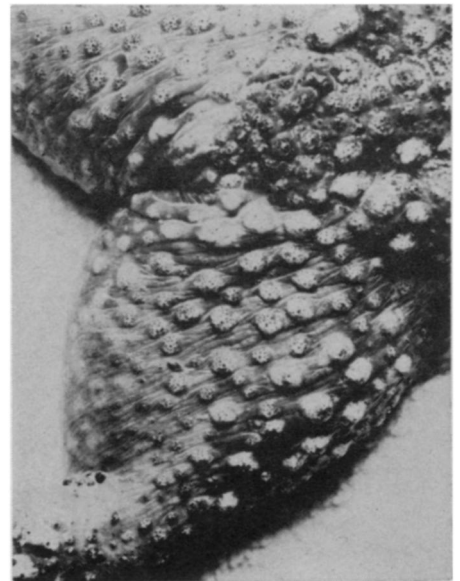
Dr. Edward Larson, professor of zoology at the University of Miami, in a special report on the acute toxicity of the poison says:

"This is the largest and undoubtedly one of the most dangerous toads ever to invade a populated area. While the species is not aggressive and does not attack anything, it is still a menace because of the potency of the venom secreted in the glands."

The giant toad, *Bufo Marinus*, has become a pest in south Florida because of its poisonous effect on pets, namely cats and dogs, says the zoologist.

Dr. Larson, who carried out toxicity studies on chicks, mice and 'possums, found injections of tissue extracts from the toads invariably caused illness, if not death, in the test animals.

While no human is yet known to have received a large dose of the venom, medical men fear such an occurrence could have serious results. This was apparent when two persons

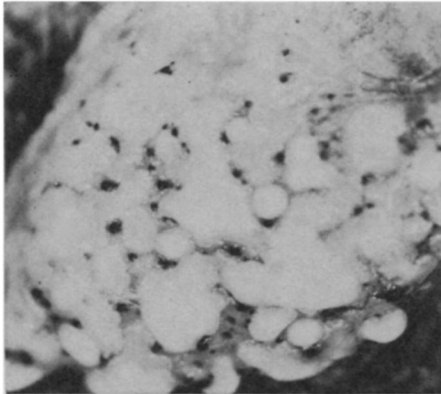


Venom is forced through many ducts.

accidentally received mild amounts of it, one into the bloodstream, the other simply on the skin surface.

The first was Mrs. Evelyn Bradford, a Miami housewife, who was awakened one morning at 6 o'clock by the furious barking of her two small dogs,

fenced inside her backyard. She hurried out to investigate and noticed an injured toad close to her kitchen door. Nearby was Jet, a two-year-old terrier, moaning and rubbing its head and mouth on the grass. She realized the dog had bitten the toad. Mrs. Bradford quickly got a pan of water and, using a rag, was trying to cleanse the dog's mouth when she accidentally scratched her right thumb on one of its teeth. "I began to feel ill almost instantly," Mrs. Bradford said. "And, of course,



The milky poison overflows.

I was terribly frightened for I'd heard about the toads. In minutes, my right hand was swollen and my arm felt paralyzed. Then my head began to ache and I was extremely nauseated."

The woman rushed to the office of her physician, Dr. J. Charles Savarese. He was not acquainted with the toad or the type of venom carried in its glands. But he called Dr. Robert Knowles, a veterinarian who, fortunately, knew something of the qualities of *Bufus Marinus*.

"I learned the venom secreted by this toad is very similar to that found in a cobra and with a comparable toxicity," Dr. Savarese said. "It's neurotoxic, affecting the nerves, rather than hemotoxic, like the poison from a rattlesnake. That is why Mrs. Bradford so swiftly felt paralysis in her arm."

Mrs. Bradford was under treatment for a month before she fully recovered. But Jet, the small terrier, was dead 90 minutes after biting the toad.

"The significance of Mrs. Bradford's case," Dr. Savarese explained, "is that she received but a very slight scratch from her pet's tooth, the poison in its mouth already diluted by the animal's saliva. Yet the reaction from even such a small amount of the milky fluid from *Bufus Marinus* was swift and violent. I shudder to think what might happen to a person receiving a substantial dose of it, especially a child."

Another resident of Miami was mowing his lawn when the machine ran over a big specimen. The whirl-

ing blades cut the toad to shreds, whipping some of the poison onto his face. Within minutes, the man's lips and cheeks were painfully swollen and it was days before he recovered.

Dr. Knowles said his own clinic is each week receiving for treatment a steady stream of animal patients that have attacked the creatures.

"If the pet owner quickly brings in the animal," Dr. Knowles said, "we're usually able to do something to save it. Still, we're losing quite a few. Others, badly frightened or crazed with pain, undoubtedly run off to die in some secluded spot."

The night feeding *Bufus Marinus* is apparently native to certain sections of South and Central America. Exactly when or how they reached south Florida is a much disputed question. Some reports say a farmer brought in several pairs some years ago to use experimentally for agricultural insect control. Long-time residents say this is nonsense, insisting the toads showed up "just recently."

For a while they were noted in but a few isolated spots around greater Miami. Then, suddenly, their numbers began to increase at a startling rate. They're now seen in all suburban residential sections and farming districts, as well as for some 70 miles north along the Atlantic Coast to Palm Beach.

They breed in canals, ponds and lakes, but spend part of their time on dry land hunting insects which, researchers say, they consume at the prodigious rate of half their body weight each night. Everyone agrees that, in this respect, they're definitely helpful in holding down the crawling and flying insects population of the subtropical region.

But residents complain their front lawns and backyards are frequently swarming at night with battalions of the hungry hunters after their nocturnal delicacies. Requests for toad control action have been made to state and Federal departments, but nothing so far has been done by either, although both have wildlife and health officers watching the situation. Moreover, extermination, if attempted, might be difficult. Being insect eaters, they scorn any type of poisoned bait.

Since *Bufus Marinus* started to move northward up the Florida peninsula, there's been speculation whether the species will keep moving right on into Georgia, spreading out to other states. Some biologists say they don't expect this to happen, since the toads are native to the tropics, and probably could not stand cold weather. Others think they could adapt to lower temperatures by resorting to seasonal hibernation.

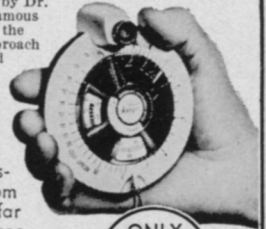
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