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THE TOAD, FRIEND OF THE GARDENER

(These Wildlife Articles Are Written by William  
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It is a common belief among some people that when one plays with or handles a toad, he is likely to get warts on his hands. There is no basis for truth in this story, any more than that toads and frogs rain down from the heavens. There is also a superstition that tadpoles eat their own tails. In a sense, this is true because the material that is in the tail is absorbed into the growing body. But no tadpole bites off his own tail.

None of nature's children have more interesting histories than the toad. He belongs to a class of animals called amphibians, which comes down from a Greek word meaning that he leads a double life and spends a part of his time on land and a part in the water. A popular idea of the difference between frogs and toads is that frogs live in the water and toads on the land.

The mother toad lays her eggs in May or June in a pond. The eggs are laid in strings of jelly and easily distinguished from those of the frog, which are laid in masses. When first deposited the jelly is transparent and the little black eggs can be plainly seen. After a few warm days these hatch and the babies are called tadpoles.

A toad is not such an ugly fellow as some people think, because he is such a true friend of man. He has an important part in making it possible for all of us to reap the fruits of our vegetable gardens. The real enemies of the gardens and or-

chards are the insects that destroy millions of dollars worth of food. These reproduce billions of their species each year. They would overrun the earth and destroy all vegetation, leaving man to starve, if it were not for toads, birds and other creatures that check these insect pests.

There is no doubt that the toad is valuable in vegetable and flower gardens when one reviews his record. As an insect destroyer, he is a fast worker and always hungry. He will eat four times the capacity of his stomach during the course of twenty-four hours. He is so important to the farmer and truck gardener in destroying cutworms alone during the spring vegetable months of May, June and July that the U. S. Department of Agriculture has put a high money value upon his head.

The key to the toad's ability as an insect catcher is his tongue attached to the lower jaw at the front edge of the mouth. It can be thrust far out. It is covered with a sticky substance which holds an insect until the tongue flies back and the prey is swallowed. It takes a quick eye to see the toad make his catch.



Born in the water, toads spend their early life in a fish-like state, breathing by means of gills. The time required for the natural transformation of the tadpole to the toad is between fifty and sixty days. About the first of July the tadpoles lose their tails and acquire legs. They then leave the water and, although they are tiny creatures, they swarm upon the land in such numbers that the story of the Egyptian plague of frogs in the time of Pharoah seems true to nature. The young toads are tender and cannot long survive in a dry place. ~~They will be dead and dried up in the morning after a night's confinement in a box, unless they have wet soil in which they can burrow.~~ They therefore remain hidden in the cool grass and under damp leaves through the day, but they go forth upon open paths and roadways in countless swarms in the evening, especially after a shower. Their source is not the clouds, as is often supposed, but the nearest pool of water.

If the weather is moderate toads are active from the end of March to the middle of November, at which time they hibernate for the winter months. This is an unusual and interesting process. The toad makes a burrow with his hind legs, and <sup>ES</sup> going down backwards, ~~the hind feet push a spur which is of assistance in digging.~~ As the toad descends the dirt falls in over his head. Toads "dig in" below the frost level, and go deeper if an unusually hard winter sends the frost far into the ground.

The skin of a young toad is smooth like that of a frog.

but as it grows older, projections that are like smooth warts appear. The two largest ones are situated behind the eyes and are called paratoids. The projections contain glands which produce an acid juice. A toad is not at all poisonous, and its touch cannot produce warts or any other kind of skin trouble. But the taste of the secretion of its skin glands is evidently unpleasant to dogs. ~~A puppy that once grasps a toad will quickly drop it with evident distaste, and will not touch one again with its mouth.~~ But some snakes prefer toads to any other kind of food. If it were not for snakes and other natural enemies, toads would overrun the land to an extent that may be imagined after seeing the numbers of young that appear after a Fourth of July rain.

True to a reptile characteristic, the toad sheds its coat several times a year. When it is time for the old coat to split, the toad goes off by itself and if the skin does not peel off easily, he hastens the operation by reaching back with his little fingers and pulls it off over his head.

A male toad is a persistent singer during his stay in the water. His song is a combination of a low whistle and a moan, and the two sounds so not melt into a chord. The combined sound is discordant and unpleasant to a musical ear. The toad chorus about a pool in a garden affects people differently. Being truly a midnight serenade, in many cases it drives sleep away. But to others who love most things out-of-doors, it is a soothing hum that lulls to slumber.

During its song, the common toad distends its throat in a pouch about as large as its head. It sings while sitting still,

usually in shallow water. It will retain its position many minutes and even hours if it is not disturbed, and it may be photographed with greater ease than any other batrachian. A toad may frequently be seen distending its vocal sacs, but giving forth no sound. These voiceless toads seem unaware of the pantomime they are enacting, and they go through the motions of their songs with as much grace and vigor as their noisy companions.

*One expert on Toads says,*

"Like crows, toads live for years, and like pigeons, they have a remarkable homing instinct. There have been frequent examples of toads living in gardens for more than thirty years, and it is well known that on numerous occasions when they were picked up and carried away from their regular place of habitation, they promptly hopped back when released. It is believed by scientists who have studied the habits and life of the toad that to mate it always returns to the pond in which it was born, and that it also returns year after year to the same shelter and feeding ground."