



Toads and Frogs

► **BOOKS** give various clues whereby the layman can distinguish toads from frogs. In general toads are predominantly land-lubbers with bumpy dry skin and broad plump bodies. Frogs are generally aquatic with smooth moist skin and more streamlined bodies.

But there are so many exceptions in each particular that the distinction often disappears. Both frogs and toads are amphibians, a class they share with newts and salamanders.

The name amphibian comes from a Greek word meaning living a double life. Amphibians are equally at home on land or in the water. This versatile ability to thrive in either element is nowhere more startlingly demonstrated than in the tadpole stage of frogs and toads.

When a frog egg hatches, the newborn offspring is a strange-looking little creature that seems to be a tiny fish. It swims like a fish and it has gills that enable it to breathe like a fish. But in the course of a few weeks the tail grows longer and hind legs begin to develop. Eventually the two forelimbs, which have been forming unseen beneath the skin, are pushed out through the gill slits.

By now it has ceased to be an exclusively aquatic creature and is well on its way to fulfill its destiny as an adult frog or toad. It develops lungs. The tail, which at this stage is less a swimming instrument than a food reservoir to tide the youngster over the transition period, gets slowly smaller and smaller until it disappears altogether.

Since most waters abound with predatory enemies which spend the better part of their time cruising about looking for a bite of lunch, the life expectancy of tadpoles is not very high. To compensate for this, nature produces tadpoles in great numbers so that enough will survive into maturity to insure the perpetuation of the species.

Some frogs skip the tadpole stage entirely. There is one African frog which carries its fertilized eggs in its mouth, not eating until the baby frogs are hatched out. Some Latin American species carry the tadpoles

on their backs, affixed by specialized sucking mouths.

One of the most remarkable is the Surinam toad of Brazil and the Guianas. Its back looks as though it had caught a shotgun blast, being pockmarked with innumerable hollow cavities. By dint of the

most strenuous cooperation of the male, the fertilized eggs are forced into the pockets. In time the eggs hatch out, and the youngsters play midwife to their own births, clambering into life on their own power as they squirm out of their mother's back.

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MEDICINE

Report on Antihistamines

► **LATEST** medical report on the antihistamines in the treatment of the common cold states that there is "no indication" that they "have any important effect on the duration or severity of these infections of the upper respiratory tract."

The report is from Drs. Donald W. Cowan and Harold S. Diehl of the University of Minnesota Students' Health Service.

They started their controlled experiment in the fall of 1948. They had intended running it for two years, but because antihistamine drugs were released for over-the-counter sale in the fall of 1949, they stopped the study then. The reason was that they thought there would be some difficulty in keeping the control group, which did not get the antihistaminics, strictly controlled.

The study was made on 367 University of Minnesota students who volunteered for the study because they were especially susceptible to colds and colds constituted a real problem to them. These 367 students treated 980 colds between December, 1948 and April, 1949.

The antihistaminic drugs used were thephorin and pyribenzamine. Ascorbic acid, or vitamin C, was also tested because an earlier experiment by Drs. Cowan and Diehl suggested a possible though slight

effect of this chemical in preventing colds.

The drugs under trial and a placebo which looked and tasted the same but had none of the on-trial drugs in it were given to the students in rotation as they enrolled for the study. They were also given directions to start taking the medicine at the first symptoms of a cold and to take it every four hours thereafter till the cold was "cured" or till their supply of 10 doses was used up.

With each of the medicines and with the placebo the colds lasted between five and six days.

Many enthusiastic reports were received from students in the experiment. Some of the "most glowing testimonials came from members of the control group," the doctors state.

A year after the experiment a student who had graduated made a special trip to Minneapolis from the northern part of Minnesota to get some of the medicine he had taken. When the doctors checked the records, they found he had been in the group getting the placebo, or mock medicine.

Details of the study are reported to the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (June 3).

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PHYSICS

Thorium Usefulness Proved

► **FURTHER** proof of the usefulness of thorium in the production of A-bombs was revealed at the meeting of the American Physical Society in Mexico City.

Fission of thorium atoms, like fission of uranium atoms, produces both light and heavy elements, Dr. A. Turkevich and J. Niday of the University of Chicago and the Argonne National Laboratory in Chicago told the meeting.

Also, like uranium, thorium fission is similar to slow neutron fission in being highly asymmetric. While thorium, by itself cannot sustain a chain reaction, like the bread crumbs in a meat loaf, if combined with uranium it serves to stretch out the uranium and make it go farther.

The two Chicago scientists identified 19 different light and heavy elements that resulted when thorium was split in the laboratory.

Thorium is much more plentiful than uranium and so should permit the manufacture of many more A-bombs.

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ENTOMOLOGY

Starlings Feast On Insect Pests

► **DON'T** berate the starling, famed mimic of the bird world. Though it often is branded a nuisance, a bulletin of the Smithsonian Institution reported that the starling is a major enemy of an even greater nuisance—insects which are gnawing U.S. crops this year. The starling devours vast numbers of Japanese beetles, potato beetles, caterpillars and weevils.

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