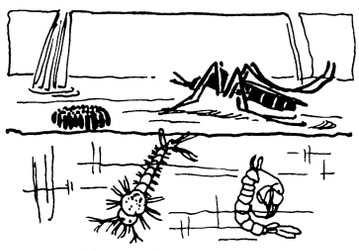
BIOLOGY

NATURE RAMBLINGS

by Horace Loftin



Changing Forms

➤ FOLLOWING a hard spring shower, the quiet night is rent with the incessant chorusing of male frogs calling for mates. Flash a beam of light along one of the rain pools and you will see these nocturnal singers. There are other singers out that you can hear but not see—mosquitoes, also in search of mates.

If you go back to your rain pool next morning, you will find strings or rafts of shiny black dots coated in a clear jelly-like substance. These are the eggs of the frogs. Looking sharper at the water's surface, you will also find groups of tiny whitish specks, eggs of the mosquitoes.

Your next visit to the pool, some days later, will disclose scores or hundreds of tadpoles—dots with tails—scurrying through the water. These tadpoles are a stage in the life history of the frog.

Although then they little resemble the adults, as they grow, they will sprout legs, lose the tail and develop into an adult in miniature. This process is called metamorphosis, or "changing form."

As frogs do, although even more drastically, the mosquitoes undergo metamorphosis to become adults. When you first saw the tadpoles in the rain pool, you could also find countless numbers of worm-like creatures writhing through the water. These are larvae that hatched from the mosquito eggs, popularly called "wiggle worms," or "wrigglers." They change their old skins for new ones several times, becoming larger at each molt, until they are about three-eighths of an inch long in most species.

On the last larval molt, not a larva, but a creature of a new shape emerges from the old skin—the pupa. This pupa looks like an immense head being tumbled about in the water by a skinny tail. Although the larva is a voracious eater of minute plant and animal life in the water, the pupa eats nothing.

After a few hours to a few weeks of existence, the pupa begins to split its skin down the back, and the adult mosquito crawls out, perches for a few moments on the empty shell, then flies away.

As adult mosquitoes, the larvae and pupae must breathe air to live. For this purpose, they are equipped with a tube-like structure that they can stick above the surface of the water to take in air.

Thus, to prevent the emergence of these young into winged, biting mosquitoes, oil can be poured on the surface of their pool, keeping them from getting fresh air.

Science News Letter, May 26, 1956

MAMMALOGY

Seals Use Perfume As Direction Finder

➤ MALE SEALS and sea lions let their cows know where to find them by giving off a sweet scent which, in the case of fur seals, at least, is a "pleasant perfume."

The scent from the bulls was discovered by Dr. J. E. Hamilton of Ross House, Stanley, Falkland Islands, when he was examining the small, almost residual herd of fur seals in the Falkland Islands.

He suggests that the bulls, which occupy territory and wait for the cows to come ashore, use the scent as a direction finder for their females. Dr. Hamilton reports his findings in *Nature* (May 12).

Science News Letter, May 26, 1956

AGRICULTURE

New Zealand Sells Green Buttermilk

➤ NEW ZEALAND is exporting green powdered buttermilk.

The colored powder is used as a poultry feed by farmers in Singapore and the Federation of Malaya. It is colored green so it can be distinguished from powdered milk for humans, even when mixed with water.

Coloring powdered buttermilk, the U. S. Department of Agriculture reports, is only one of 30 ways in which the New Zealanders package and market their milk products to satisfy their customers.

Science News Letter, May 26, 1956

Sonic Bone Pictures

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forms a sound image of the object on another, piezoelectric crystal.

The image can be formed either by reflected sound waves or those that have passed through the object. When the waves hit the piezoelectric crystal, they generate electric charges on it corresponding exactly to the variations in sound intensity of the image.

A mechanical scanning system picks up the charges, which vary at a radio frequency of about three megacycles, and amplifies them to govern the visible picture made on an oscilloscope, or TV-like, screen.

Pictures taken at the present time show with relative clearness the outlines of such delicate structures as a fish skeleton, a cat's kidney and the bone structure of a human hand. The method is promising for future photography of such X-ray transparent organs as the pancreas.

Sound waves can be reflected by objects as small as the length of the wave itself. The one-fiftieth of an inch high-frequency waves used by Profs. MacLean and Suckling could, therefore, reflect an object of about that size, suggesting the possibility of picturing nerves, veins and arteries.

Objects being pictured by sound waves must be immersed in water because oxygen atoms in the air absorb the high-frequency sound waves.

Science News Letter, May 26, 1956