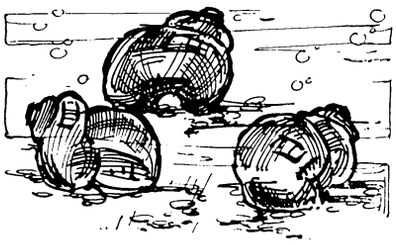
BIOLOGY

NATURE RAMBLINGS



Snails

➤ QUAINT, COILED, curious, humble little things, with their houses packed on their backs, snails have been objects of interest to many generations of boys, and of their elders as well.

"Slow as a snail" is proverbial, but in justice "patient as a snail" should be added also, for these leisurely travelers can make surprisingly long journeys if you give them time enough.

Snails belong to the great zoological group known as mollusks, which includes also such diverse creatures as oysters and clams, cuttlefish, rock limpets and chitons. They are classified as "gasteropods," which means "stomach-foot," because the broad, flat muscular pad, or foot, on which it moves is the most prominent thing about the lower part of the snail's body.

Plastered firmly on the rock or plant stem, the snail progresses by a succession of rhythmic waves in this foot, that start at its rear and slowly push through to the front. Each wave sets the snail forward on its way a small fraction of an inch.

Perhaps the most interesting things to children about a snail are its stalked eyes, which it can pull back into its body like a flash at a touch. These eyes are of a very primitive structure, and it is extremely doubtful whether the snail can do more than distinguish light from darkness, and perhaps detect motion in nearby bodies. Certainly the snail is very near-sighted, for it does not "pull in its horns" until you almost touch them.

Some snails carry on the upper side of the rear part of their bodies a little oval trap-door, which exactly fits the opening of their shells, so that when they withdraw into their houses for safety they have this extra barricade. In addition, all snails secrete a sticky slimy substance, which is another means of defense.

In a sense, snails are strangers from another world, for their home ties are strongly with the world of queer beings that live in the water. The snail is the only mollusk that has come ashore to live, and even at that, there are more snails that continue to live in the water than there are land-lubber snails. Land snails keep a strong memory of their old home, for they like deep woods and other damp habitats; a snail in the desert would be an anomaly.

This inability of snails to endure long drought is responsible for one of the best examples we have of evolution actually in progress. There are several volcanic islands in the South Pacific, on which deep, moist canyons are cut off from each other by high walls of lava rock. The upper parts of these ridges are extremely dry, veritable desert strips while the canyon bottoms are rich, wet, tropical jungles.

Each of these canyons has its own separate species of snails, which, unable to cross the ridges and mingle with its neighbors on either side, has developed its own peculiarities. On one of these islands, two surveys of the snail population, made at an interval of several years, have shown changes to be taking place even in so brief a time.

Science News Letter, August 4, 1951

NATURAL RESOURCES

Canadian Petroleum May Meet All Domestic Needs

➤ CANADA'S RELATIVELY recently discovered fabulous oil fields in the Province of Alberta may soon make the nation independent of petroleum products imported from the United States. This means to the United States a more abundant supply for uses at home.

In 1947, when the first oil strike in Alberta was made near Leduc, Canada was producing only about 7% of the oil it consumed, the American Society of Mechanical Engineers was told by Dr. Oliver B. Hopkins of Imperial Oil, Ltd., of Canada. Alberta fields now meet about one-third of Canadian needs of 350,000 barrels daily.

Leduc field, and the later discovered nearby Woodbend pool, together have an estimated 200,000,000 barrels of recoverable petroleum. The more recently discovered Redwater deposits some 35 miles northwest of Edmonton contain perhaps 500,000,000 barrels of crude. Dr. Hopkins pointed out that the Redwater volume is more than the average reserves discovered annually in the past ten years in all the new fields in the United States.

Important in the Canadian oil industry is a pipeline from the Alberta fields to refineries in the Lake Superior region of Ontario. It is now planned to increase the capacity of this line by the addition of six new pumping stations.

Also planned is the construction of 2,600,000 barrels of additional storage at Lake Superior. Tankers on the Great Lakes will transport Alberta oil products from Lake Superior to Canadian ports on the other lakes.

Science News Letter, August 4, 1951

PHYSICS

Sun May Make Technetium

➤ ONE OF the chemical elements that had to be manufactured by atomic bombardment in order to be discovered on earth has been identified in the sun.

It is element 43, technetium. It is most plentifully obtained now as a product of the fissioning of uranium atoms in AEC nuclear reactors at Oak Ridge, Tenn. It is an explosion product of the atomic bomb.

The National Bureau of Standards has observed the first and second spectra of this rare element, using Oak Ridge samples of Tc, as the element is known according to its symbol. These were matched with the spectrum of the sun.

Dr. Charlotte E. Moore-Sitterly, working with Dr. W. F. Meggers in the Standards' spectroscopy laboratory, found one line in the second order spectra of both technetium and the sun that matched. On this basis there is a good chance that technetium exists in the sun among the least abundant elements.

There is a worry about the existence of technetium in the sun because the period of existence, known as its half-life, of any kind on earth is relatively short, measured in mere hundreds of thousands of years, which is a short time for material in the sun. If a longer lived isotope of technetium were discovered on earth, one that has a half-life of 400,000,000 years or more, it would fit into the picture better.

It is even suggested, in the report to the journal SCIENCE (July 20), that technetium is not as rare in the earth's crust as previously supposed and that a longer-lived variety should be sought.

Technetium was first discovered by transmuting molybdenum into it by bombardment with neutrons in the University of California cyclotron. Perhaps that is the same process that the sun uses in getting its technetium, it is suggested.

Science News Letter, August 4, 1951