



"Slime of the Earth"

**M**ORALISTS like to make a parable of the waterlily. Behold, they tell us, how it is rooted in slimy black mud at the bottom of the pond, yet how beautiful is the flower that turns its face up toward the sky!

A cynic or a pessimist might invert the tale, and point out how all that white beauty, all the glistening green of the broad leaves, are surely destined to die and decay and themselves be added to the black muck at the bottom. Slime of the earth they are, and unto slime of the earth they must return.

The philosophical naturalist, of course, sees both phases as complementary parts of the same cycle. A German poet long ago summed it up: "All things go to their end, and the end holds the germs of beginning." So the water plants sink and become muck—with the seeds of the next generation nestling in them for nourishment.

The cycle of decay, growth, again decay, new growth, is an advancing cycle. Year by year the drowned humus piles deeper on the bottom, ever fed by dead leaves, dead flowers, dead bodies of all manner of small water animals. Year by year the circle of open water becomes smaller, its depth less.

When a newly formed pond in an open basin turns first into a bog, then into solid earth, the process goes through a regular succession of stages, in each of which the aquatic and wet-land plants play certain regular roles.

At the margins, plants like arrowleaf and cattails grow, with lotus and button-bush a little farther out, where the bases of their stems are always submerged. As they die and add their bodies to the soil, they raise the level of the shore ever so little, push it ever so little toward open water.

In the water itself grow the water-lilies and other long-stemmed, bottom-rooted aquatics, and beyond the depth for even these are unrooted, floating plants like duckweed, water buttercup and bladderwort. These slowly raise the level of the bottom, preparing the way for further advance of the shore vegetation.

Among the bases of the larger plants along the wet margin are many smaller growths, particularly masses of sphag-

num moss, which adds a tremendous bulk to the total. Often this moss mat grows so fast that it forms a projecting shelf over part of the water, or even closes over the open pond completely, leaving a liquid core hidden beneath. In this stage we have a "quaking" bog.

Finally, however, the last of the water is filled up with dead plant parts, the bog becomes solid, is invaded by bushes and trees, and in the course of many centuries becomes firm, flat land.

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## CHEMISTRY

## Modern Chemistry Finds Why Greeks Prized Famous Spring

**M**ODERN chemistry has analyzed a sample of water from the fountain of Peirene at Corinth, revealing that the Greeks had reason to set store by this famous spring.

Ancient Greeks held that the water would improve bronze immersed in it hot. Dr. Earle R. Caley of Princeton University, who analyzed the water, finds that it contains unusually high amounts of potassium, chloride, and silica. The water in evaporating gives a residue that absorbs moisture, due to presence of hydrous chlorides, somewhat as ordinary table salt would absorb moisture in wet weather.

These facts, he pointed out, "might explain why the bronze objects anciently made at Corinth were treated with this water, for bronze with such a saline residue left on the surface would tend more rapidly to acquire a pleasing green patina than bronze not so treated."

Dr. Caley's investigation was made at the new chemical laboratory which has been set up in the ruins of the Athenian Agora, or market place, to aid archaeologists working there. The American School of Classical Studies at Athens, which has completed its seventh campaign of digging at the Agora, under leadership of Dr. T. Leslie Shear of Princeton, has now uncovered 18 acres of the 20-acre plot.

One important discovery of this season is a monumental stairway 30 feet wide, leading up the steep northwest pitch to the Acropolis. This stairway was shown on Athenian imperial coins, but it has heretofore been believed that the ancient coin designer was simply distorting his city geography, and was

merely trying to force the well-known front stair into the coin picture.

A large Doric temple, another new discovery, is 119 by 55 feet. It was built in the fifth century B.C. and is identified as the long-sought Temple of Ares, god of war.

Discovery of this temple solves a problem that has worried the excavators. The description of the Athenian market place left by Pausanias was particularly perplexing on this point, as to where the war god's temple stood. It is now cleared up, that Pausanias was not describing buildings of the market place in order all around. Instead, he described the west side, and then backtracked and started on the east side of the area.

Existence of a prehistoric settlement on this ground, at the foot of Athens' citadel, is definitely proved by discoveries this year. Pits and shallow wells have yielded baskets of sherds and many complete vases dating from the late Stone Age, 3000 B.C. and on to 1800 B.C.

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German chemists have succeeded in producing a synthetic emerald of fairly large size, but making this gem is slow and expensive.

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