BOTANY

Nature Ramblings

By FRANK THONE

Solomon's Seal

TO SEE this graceful, bending, leafy-stemmed plant in the woods, with its two pendulous flowers at each joint under the leaves, one might wonder why it must bear the weight of the awful name that compelled the djinns to work the will of the Great King. But it is nothing more serious than certain markings in the stem, which can be connected with lines to form the double triangle or six-pointed star that is the traditional seal of Solomon, used even today by Jews on their synagogues as Christians use the cross on their churches.

An early botanist once tried to immortalize this popular fancy in Latin, calling the genus *Salomonia,* but it was shown that an even earlier botanist had called it *Polygonatum,* and the older name had to be given the right of way. The botanical name is not ill taken, however, because it refers to a pronounced characteristic of the plant—its zigzag stem. For *Polygonatum* is a combination of two Greek words that mean "many knees."

It was inevitable that a plant bearing such a magic mark should be used in medicine. Oddly enough, and unlike most such plants that were made into extracts or decoctions and poured into sick folks whether they liked it or not, Solomon's seal has a real medicinal value. It is a slightly astringent tonic, according to the official medicinal lists. However, there are many better tonics, and the use of Solomon's seal has fallen off considerably during the past few decades.

Science News Letter, May 9, 1931

More than 100 sportsmen from the United States go to Alaska each year to hunt bear, moose, caribou, mountain goats, and other animals.

MEDICINE

New Kind of Toxin May Yield Serum for Many Diseases

A NEW KIND of toxin which may mean great progress in the cure of infectious diseases has been reported by Dr. Gregory Shwartzman, of the laboratories of the Mount Sinai Hospital in New York City, to the Society of American Bacteriologists.

Since the discovery of the toxin or poison of diphtheria and the development of an efficient antitoxin serum for it, that disease has been effectively combatted, but similar methods when applied to other diseases have given effective results in only a few instances. The whole problem had come somewhat to a standstill and many leading investigators had lost faith in the future of such work.

Dr. Shwartzman's discovery of a totally new type of toxin formed by many bacteria opens the field again and puts the whole problem of the production and standardization of curative sera on an entirely new basis.

These toxins are found, Dr. Shwartzman reported, in the washings from the bodies of the bacteria and are capable of producing peculiar reactions when injected into the skin of experimental animals.

A few drops of the toxin are injected into the skin of a rabbit and after twenty-four hours a very small amount of the same toxin is injected into the blood stream of the animal. Four hours later a red area the size of a quarter appears at the place where the toxin was first injected.

The great hope for the work lies in the fact that the value of a curative serum is found to be gauged by its ability to prevent the development of this red spot.

By the use of the "Shwartzman Reation" it is hoped that a new serum treatment for typhoid fever, for dysentery, for meningitis, and for many other diseases may be found.

Science News Letter, May 9, 1931

BIOLOGY

Bacteria-Eating Protozoa Thrive Best on Mixed Diet

THE SMALLEST and most primitive of animals, the protozoa, like a balanced diet of mixed foods, no less than larger creatures that arrogate to themselves higher places on the evolutionary ladder.

At least, that is what has been learned by three Stanford University researchers, Prof. J. Murray Luck, Miss Grace Sheets and John O. Thomas, regarding one of the forms of minute animal life in stagnant water.

Protozoa, like the higher animals, have very diverse tastes. Some of them feed only on living microscopic plants —cows and sheep of the microscopic world. Others are carnivores, accepting only other protozoa as food. Still others are carrion feeders.

The organism selected by Prof. Luck and his associates was a plant-eater, feeding on bacteria, which are a low form of plant life.

In order to start "at scratch," the Stanford scientists cleared their protozoa of the bacteria already in them, by a prolonged and difficult washing technique. Then the organisms thus sterilized were offered various kinds of bacteria to eat. It was discovered that they throve little or not at all on several different species taken separately, but when two or three kinds of bacteria were made into a "mixed ration" the protozoa grew fat and multiplied.

It seems to be the living bacteria themselves that the protozoa want. In order to test a theory that they fed on some dissolved product of bacterial action, cultures of the protozoa were tried with broth in which bacteria had been grown and then removed by filtering or otherwise. But in these the protozoa failed to multiply, as they failed also in other kinds of food substances offered to them in solution.

Science News Letter, May 9, 1931