NUTRITION

Diet May Affect Polio Susceptibility

➤ A HINT that susceptibility to poliomyelitis may be affected by diet has appeared in studies by Drs. A. F. Rasmussen Jr., Robert W. Weaver, C. A. Elvehjem and Paul F. Clark at the University of Wisconsin. (Dr. Rasmussen is now at the University of California Medical School at Los Angeles.)

The studies were made with monkeys and are, in the words of the scientists, "obviously of a preliminary nature." But the scientists think the results so far suggest that this approach to modifying susceptibility to polio should be explored further.

Earlier these scientists had found that mice that were not getting enough of the amino acid, tryptophan, in their diet were partially protected against the Lansing polio virus.

Now they find that the same is true for monkeys. This seems especially significant because monkeys are so much closer to humans and, until relatively recently, were the only non-human animals that got polio.
given in a sweetened suspension that the

In these experiments, the polio virus was animals drank. This got the virus into their bodies through a natural portal of entry.

The low-tryptophan diet did not protect all the monkeys. In one experiment, two out of nine escaped paralytic infection, though all nine control animals got paralysis. The disease took longer to develop in all the special diet monkeys and the feverish beginning stages were less pronounced. The two that escaped paralysis apparently did get infected, because they were able later to resist a large dose of polio virus given by injection into the brain.

In two other experiments, with smaller amounts of virus, fewer control monkeys got paralysis and of the special diet group, only one of 20 became paralyzed.

Details of the experiments are reported in the *Proceedings of the Society for Experimental Biology and Medicine* (Nov., 1953).

Science News Letter, January 2, 1954

ECOLOGY

NATURE RAMBLINGS

Guardians of the Snow

➤ CONIFER TREES and snow always seem to belong together.

However, conifers are by no means confined to the lands of snowy winters, but so ineradicable is the picture of snow-surrounded evergreens that when Rudyard Kipling wanted to pack the geographical grandiosity of the British Empire into a single phrase, he wrote of "dominion over palm and pine."

Although it is true that the coniferous trees can be found in lands that reach toward the sun (in our own South, they dispute dominion with at least one kind of palm!), nevertheless they do belong first to the North. Or perhaps it would be more proper to say that the North belongs to them.

They circle the boreal end of the earth like a dark-green garland. They are the last trees that look upon the desolate tundras that run to the Arctic sea. Willows and poplars and birches push toward the North, too; but they surrender and dwindle to bushes, while the spruces still stand up as trees.

Incidentally, Kipling limited the northern extent of his Empire unnecessarily, although probably quite unconsciously, when he made the pine the symbol of the North. Spruces run far to the north, beyond the last of the pines, just as the pines leave the spruces behind in their southerly extension. Their ranges overlap, but it is the spruce that in general stays within the circle of deep annual snow.

There is good reason for that, for the snow is more necessary to the spruce than it is to the pine. Some of the evergreens—and pine and juniper are outstanding among them—can stand a good deal of drought. Not all kinds of pine; but there are enough dryland pines to make good forests in lands where the slow seep of melting snow never figures as a source of ground water.

Not so the spruces, however, nor yet their cousins the firs. They are rather more particular than most pines, and seek the more moist regions. Where they grow in competition with pines, the spruces and firs cling to the shady, damp sides of ravines. Lands that they dominate are usually found to be perennially moist.

In part, these conifers attend to that themselves, for their dense foliage makes a superior shade for the snow that lies under their canopy, holding it against the ardor of the spring sun and permitting it to melt only slowly—and to the advantage of their roots.

Science News Letter, January 2, 1954

SURGERY

Stomach Cancer Survival

➤ PATIENTS WITH stomach cancer now have twice the chance of surviving five years that they had a decade ago, thanks to more extensive operations now performed to remove the cancer, Dr. Charles H. Brown of Cleveland reported at the American Medical Association meeting in St. Louis.

"Only one-fourth of the patients with gastric carcinoma were given a chance for a five-year survival in 1940-45, while now more than half of the patients are given that chance," he said. "Without resection [removal of all or part of the stomach], the outcome is inevitably fatal."

Improved surgical techniques today make possible operations which were not undertaken a decade ago. The operability rate in the Cleveland Clinic rose from 57% in 1940-45 to 90% in 1952, he reported. At the same time, the percentage of patients who underwent resection rose from 25% to 55%.

The type of operation has changed considerably. In the 1940-45 period, 85% of the patients underwent a partial removal of the stomach and eight percent had a total removal. In seven percent of the cases, stomach resection was accompanied by the removal of some other organ. In 1952, subtotal resections were down to 41%; total removals rose to 18%, and complicated resections increased to 41%.

This more extensive operation is important since it has been shown that some patients have been five-year survivors with local extension of the disease to some other organs. Dr. Brown also predicted:

"Further improvement will have to come either from some new simple test for earlier diagnosis, enabling the surgeon to operate upon less advanced lesions, or from some entirely new treatment, such as different radioactive materials and radioactive isotopes that would be specific for the gastric neoplastic [cancer] cell."

Science News Letter, January 2, 1954