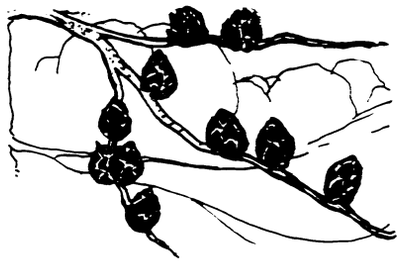
BOTANY

NATURE RAMBLINGS by Frank Thone



What is an Evergreen?

VERY many people, possibly most of us, commonly use the word "evergreen" to mean all trees of the group that includes pines, spruces, firs, and junipers. True, almost all the trees in this group really are evergreens, for their green leaves stay on them all year round. Yet the European larch and its American cousin the tamarack shed their leaves in the fall and stand as naked through the winter as any maple or birch.

One effort to get round the difficulty is to ignore the question of leaf-loss and evergreenness, and group all the trees of this particular botanical kinship as conifers. That is more scientific, for the fruits of most of them are cones. But to put all other trees into the general class of "broad-leaved trees" again gets you into difficulties. For some of the fairly close relatives of pines and spruces have broad leaves—notably the Asiatic ornamental tree, the ginkgo, now coming into increased use in this country. Furthermore, the ginkgo's fruit is not a cone but looks rather like a skimpy-fleshed plum.

Another difficulty arises when we encounter the many broad-leaved trees that are also evergreens, like the live-oaks of the South and Southwest, and very conspicuously the glossy-leaved magnolias, bays, and hollies, and such shrubs as mountain laurel and rhododendron. There are many lowlier plants, too, that are both broad-leaved and evergreen, particularly in the heath family. There are even many non-woody plants that are true evergreens, because their leaves survive the winter: Christmas fern, hepatica, yucca, are good random examples.

It boils down to this: an evergreen is any kind of a plant that stays green through the winter. It is a physiological or ecological term, and has nothing to do with the plant's botanical classification.

The distinction between the pine-spruce-juniper-ginkgo group and the other members of the plant kingdom can be accurately made only on a strictly botanical basis. Botanists call the one group Gymnosperms, the other Angiosperms. But it is perhaps too much to demand that these formidable-looking words be adopted into common use—at least, until we have all learned a little systematic botany.

Science News Letter, January 9, 1937

MEDICINE

Fatal Blood Clot Prevention Promised by Heparin

FATAL blood clots in the veins or arteries, the tragic consequence in many an operation and blood transfusion, may be prevented in future by the use of heparin, it appears from a report of a University of Toronto research team to the Canadian Medical Association. (*Journal,* December.)

Members of the research team are Drs. D. W. G. Murray, L. B. Jacques, T. S. Perrett and C. H. Best, the latter a co-discoverer of insulin.

Heparin, these scientists found, acts in two ways: 1. By making the blood clot more slowly, which would make it a valuable aid in blood transfusions where there is always danger of clotting; 2. By preventing dangerous narrowing or closing of the veins following injury to them.

Heparin was first prepared from the livers of dogs by Dr. William H. Howell, professor emeritus of Johns Hopkins University. As little as one milligram, about one hundredth of a grain by weight, will prevent clotting of about an ounce of blood for an hour, Dr. Howell found in his original investigations.

Use of this potential life-saving remedy was limited because of lack of sufficient supply of the material in highly pure form. This has been overcome by Drs. Arthur Charles and D. A. Scott of the Connaught Laboratories.

Their highly purified heparin has been used safely and successfully in both human patients and dogs, Dr. Best and associates report.

This heparin slowed the clotting of blood from a normal of 8 minutes to a maximum period of 30 minutes.

Heparin's effect on the veins may be equally important. The veins may be thought of as hollow tubes through which the blood flows. If injury or disease makes the walls of these tubes thicker, there may not be enough room for the blood to get through, and the veins are said to be occluded. It is thought that this may be a factor leading to formation of blood clots, which would completely block the circulation. The danger from such clots depends on the importance of the vein in which they form.

Heparin reduces the chance of such clots by its effect on the blood and in addition prevents the closing of a vein following injury. If injections of heparin are continued long enough in such cases, the Toronto scientists found, the injured vein heals and there is greatly reduced tendency for it to close up after heparin treatment is stopped.

Injecting heparin into a vein affects the blood throughout the entire body, making it clot less readily. Injecting it into an artery, on the other hand, produces a more local effect. This arterial injection affects the blood flowing through the particular arm or leg where the heparin was injected.

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