



Bird-Borne Seeds

► UNTIL recently, earthbound man could only dream of flight, longingly watch the birds—and stay right there on the ground. Yet for ages many plants, though blind, unconscious, unknowing, have borrowed birds' wings for their seeds.

Evidences of these borrowed flights are so common all about us that as a



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* Kulp, J. L., Kerr, P. F., *Science*, Vol. 105, p. 413, 1947.



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rule we pay no attention to them. Because the survivors of such voyages sprout in every fallow field, stand thick in every fence-row, a veteran naturalist, W. L. McAtee of the U. S. Fish and Wildlife Service, has summed up the situation in a study presented by the *American Midland Naturalist*.

Birds that eat seeds as food, in particular weed seed, are seldom active agents in disseminating those particular species, Mr. McAtee believes. The seeds are ground up in their gizzards, digested, and that is the end of them.

Jays, woodpeckers and other birds that carry off acorns and other large seeds, however, often unwittingly plant them. They may drop them in flight, or after they have hidden them they may either forget about them or die and leave them unused, to sprout in the spring.

Intermediate between these two classes one might notice a group of birds that

often dig conifer seeds out of their cones. Included here would be crossbeaks, siskin, grosbeaks and several other members of the finch family. The seeds they swallow do not survive; but in their diggings and prying they often drop some seeds, which then swirl down the wind on their own wings. The birds here are not carriers, but launchers only.

Birds that eat seeds covered with more or less palatable pulp are perhaps the most effective agents of distribution. Here the pulp alone, as a rule, serves as food; the seed passes through the digestive tract unharmed and is dropped under the bird's perching-place. That is why fence-rows, stone walls and similar places are apt to be marked by rows of red cedar trees, and to be covered with growths of such berry-fruited scramblers and vines as Virginia creeper, wild grape, poison ivy, moonseed, false bittersweet and dewberries.

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MEDICINE

Cancer Cure from Vitamin?

► IS A cancer cure coming from a vitamin? It is too soon to tell but signs begin to point that way.

Latest of these signs appears in a report from a six-man research team headed by Dr. Sidney Farber of Children's Hospital, Boston, to the journal, *Science* (Dec. 19).

These doctors have in the past year treated well over 150 patients, suffering from many kinds of cancers, Hodgkin's disease and leukemia, with two vitamin chemicals. The chemicals are difolic acid and trifolic acid, known also as diapterin and teropterin. They are closely related to folic acid, one of the new vitamins which has been useful in treating certain kinds of anemia.

The patients were all in the last hopeless stages and more than a score have died. Those still living feel better, have less pain, eat better and have more energy.

Some of this improvement may be psychological, the result of knowing a new treatment was being used. Some is believed due to the vitamins.

But the vitamin treatment is "definitely not a cure for cancer at this time," Dr. Farber stated.

The vitamin chemicals used cannot be bought at the drug store and they should not be used in routine treatment of cancer patients, Dr. Farber and co-workers agree.

They are safe to use in that they do

not have any poisonous effects. Most of the report is on the tests for possible bad effects and on the doses to be used in experimental treatment with the vitamins. They are given by injection into the muscles though they can be injected into the veins or given by mouth.

The two vitamins, while not yet a cure, have "opened a door" beyond which may wait the vitamin or other chemical or combination of them that will be a cure for cancer. Within the next six months or a year, the picture may change greatly and scientists may be trying other, better cancer-fighting chemicals found by following the lead of this work with the folic acids.

The Boston doctors were the first to use the folic acids in treatment of human cancer patients, though other doctors have begun using them also on an experimental basis. The Boston group is still using trifolic acid and difolic acid but they are also investigating other, related chemicals. They have found a "very interesting lead" which is taking them far beyond the work now reported.

Dr. Farber's associates in the studies, at Harvard Medical School, Peter Bent Brigham Hospital and New England Deaconess Hospital, have been Drs. James W. Hawkins, J. Hartwell Harrison, E. Converse Peirce, 2nd, Gilbert G. Lenz and the late Dr. Elliott C. Cutler.

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