

## BIOCHEMISTRY

# Plants Use Weapons

► PLANTS of all kinds and sizes, from bacteria to trees, use chemical weapons in their struggle for living space in a crowded world. How they do it was developed in discussions at the opening session of a special symposium on conflict and cooperation among organisms, held in Washington.

Chemical competition of this kind is not known to be common among the higher plants; species that are chemically unfriendly to their neighbors generally betray that fact by the sparseness of other plant growth in their vicinity. Prof. James Bonner of the California Institute of Technology told of a plant-killing substance produced in the leaves of wormwood, the shrub used in flavoring such liquors as vermouth and absinthe. Of a large number of weeds, only one species of chickweed and one of jimsonweed could tolerate it. A Southwestern shrub with yellow daisy-like flowers, known as encelia or bush sunflower, secretes a poison so deadly to other plants that a small handful of its dead leaves would kill potted tomato plants.

Some plants produce their chemical weapons through their roots instead of their leaves. Prof. Paul Sears of Oberlin College joined Prof. Bonner in calling attention to the fact that few plants, other than grasses, will grow on soil underlain by the roots of black walnut trees.

In some instances these root secretions are poisonous to seedlings of the species that produce them. Prof. Bonner called attention to the common cultivated bromegrass as a case in point.

Science News Letter, September 25, 1948

## Molds Versus Bacteria

► CHEMICAL competition appears to be very widespread among bacteria, molds and other lower plant forms, Prof. Robertson Pratt of the University of California stated. Lately man has been taking advantage of some of these substances, like penicillin and streptomycin, for his own purposes.

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Prof. Pratt pointed out that some bacterial species meet the attack of these antibiotics by quickly evolving resistant strains. On the other hand, it has been observed that bacteria dying of penicillin poisoning may do a disservice to their survivors by releasing a growth-promoting substance into the medium, that renders the remaining bacteria more susceptible.

Science News Letter, September 25, 1948

## Competition Not Evil

► IN DISCUSSING competition among plants, Prof. Sears cautioned against attaching to such conflict the "overtone of evil" which we Occidentals are apt to read into human strife. Young trees in a forest, shading each other out until finally only one remains where scores or hundreds started, are only carrying out a natural and necessary thinning process.

There is even something resembling cooperation between trees and shrubs, where Eastern forest tries to invade Western prairie. Prof. Sears stated that the trees do not go out directly into the grassland, but that the forest has a border of shrubby growth such as sumac, blackberry and rabbit-brush, that constantly pushes ahead as a kind of advance guard.

Science News Letter, September 25, 1948

## INVENTION

## New Discharge System For Airplane Cargoes

► AN ENDLESS belt conveyor system, now ready for Air Force tests, will drop in the air from the rear of the plane 12,000 pounds of cargo in five seconds, it was revealed by Fairchild Aircraft, of Hagerstown, Md.

It is a double conveyor system, designed for the Fairchild C-82 transport plane, and is electrically operated from the pilot's position. Two conveyors extend the entire length of the ship's hold. Each of the two is in three sections, two feet wide and 9.5 feet in length. Each is individually powered. The system can be used also in Fairchild's larger and more powerful troop and cargo plane, the C-119B.

Science News Letter, September 25, 1948

## PSYCHOLOGY

## Find Hay Fever May Be Induced by Unhappiness

► HAY FEVER or asthma can sometimes be a hidden way of saying, "I don't like the way my parents treat me," or, simply, "I am unhappy."

Allergies such as asthma may represent attempts to gain sympathy or they express

hostility and mask a feeling of guilt or anxiety. Sometimes they can be cured by getting rid of hostility. This is the conclusion of Drs. Hyman Miller and Dorothy W. Baruch, both of Beverly Hills, Calif., who made a special study of 22 asthma patients. Their patients had all been previously treated for allergies without success. They all had personality problems. There were seven men, eight women and seven children in the group.

Some of the patients realized that there was some connection between their allergies and their emotions. One 18-year-old girl who suffered from hay fever said, "My whole life is stopped up like my nose."

"If you don't get my mother back, I'll cough," cried a five-year-old asthma patient when he saw her driving away in a car. "I'll get asthma. Then she'll have to come back."

His mother was too busy to pay any attention to him except when he was sick, the psychologist found out. After five months of treatment he was cured when he learned other ways of getting affection.

The patients were urged to tell their emotional difficulties to the psychologists. All of them, the psychologists found, tended to get asthmatic attacks when they were talking about something that was important to them emotionally, or something about which they felt guilty.

Under psychological treatment 21 out of the 22 patients showed improvement, the doctors reported in the *JOURNAL OF CONSULTING PSYCHOLOGY* (March-April).

Science News Letter, September 25, 1948

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