

ENTOMOLOGY-PLANT PATHOLOGY

# Chemicals Vital to Farm

**That insecticides, fungicides and herbicides are necessary to successful farming is the consensus of opinion in the Food and Drug hearings.**

► THE nation's fruit and vegetable growers would fight a losing battle without chemicals to help them beat back insect pests and plant diseases.

This will be the testimony, essentially, of specialists from 20 major U. S. chemical companies as they appear in the next month at Food and Drug Administration hearings which reconvened April 24.

The hearings, first begun in January, are part of an extensive Government survey of crop-control compounds used on today's farms and orchards. Goal of the investigation is to learn which of such substances may be poisonous or harmful to human consumers, and in what amounts.

More than 125 agricultural chemicals, among them such potent new substances as DDT, 2,4-D and parathion, are being studied.

The chemical companies' assertion that such insecticides, fungicides and herbicides are vital to successful farming has been backed up solidly in the first three months of the hearings. Technical experts from the Department of Agriculture, followed by representatives of more than 20 state agricultural offices and research stations and a dozen farmers and distributors associations, have said the same thing.

Unless insects and crop diseases are fought by farmers and growers, they testified, the amount of food fit for human consumption would be drastically reduced. And chemicals, in many cases, are the only effective weapons against such natural enemies.

The hearings, still in the first of five stages, are expected to last the better part of a year. They constitute the most far-reaching survey to protect the public against harmful amounts of agricultural chemicals since the protracted hearings on lead arsenate more than a generation ago.

Part A is concerned only with evidence on the necessity for using insecticides and similar chemicals against fruit and vegetable pests and diseases. Part B will seek to show which ones could be poisonous or harmful to humans.

The third section of the study will investigate what amount of such poisonous compounds could reach the public by being carried on fruits or vegetables. Part D will show how much could be allowed before the consumer would be harmed.

After a final phase on evidence not previously covered, the Food and Drug Administration will begin sifting the testimony.

Final result will be a set of regulations stating the permissible amounts of chemi-

cal residues on fruits and vegetables traveling in interstate commerce from farm or orchard to the dinner table.

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MATHEMATICS-ENGINEERING

## Giant Brains Now Detect Own Mistakes

► SO-CALLED "giant brain" electronic computers that solve intricate mathematical problems in seconds really have no ability to "think," but a new device will give them ability to detect their own mistakes and correct them.

The new device was revealed in New York by the Bell Telephone Laboratories where it was developed. The discovery is regarded as the most important and fundamental advance in computer techniques since the development of these powerful scientific tools, Bell engineers declared.

It is also expected to be of significance

in the general communication field where transmission is on a code basis.

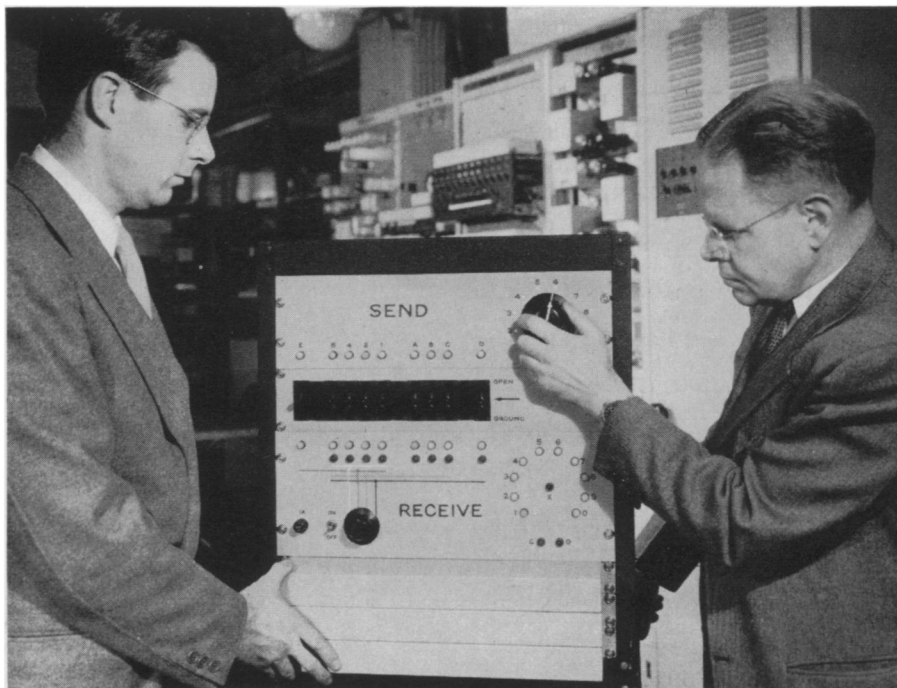
Errors in the electronic computers usually occur when a vacuum tube burns out or a switch fails to open or close properly. When this happens, some of the modern calculators will retrace their steps to the last check point and try again. If the same mistake recurs, they will stop and flash a light or ring a warning bell. The best these computers can do is to recognize when they make a mistake.

The new device, Bell scientists state, makes it possible for the computer not only to recognize that it has made a mistake and record that fact, including the approximate location, but to correct the error and proceed to the right answer.

The basic concepts underlying the new technique are the direct result of pure mathematical research carried out by Dr. R. W. Hamming of the laboratory staff. Apparatus incorporating the mathematical discovery was constructed under the direction of B. D. Holbrook, Bell research engineer.

The device is of course an intricate affair which few except electronic engineers can fully understand. The laboratory model already constructed is designed to catch and correct one mistake and to catch, but not correct, two simultaneous mistakes. Two mistakes at the same instant are an extremely unlikely occurrence.

Science News Letter, April 29, 1950



**INCREASE IN EFFICIENCY**—Modern computers have been endowed with a new faculty. They are able now not only to detect their own mistakes but actually to correct them. Dr. R. W. Hamming (left), Bell Laboratories mathematician was responsible for the research behind this achievement, and B. D. Holbrook (right), engineer, supervised the construction of the apparatus. The discovery is regarded as one of the most important and fundamental advances in computer techniques since the development of these tools.