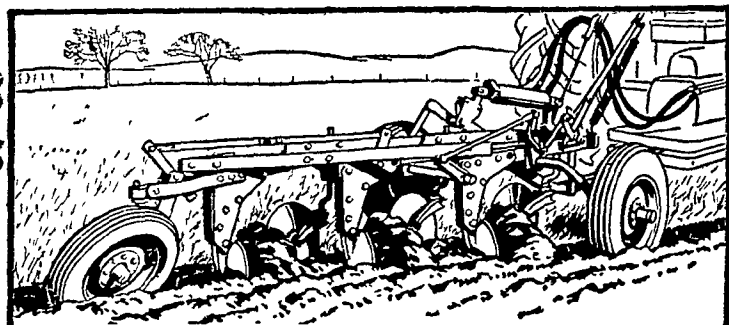
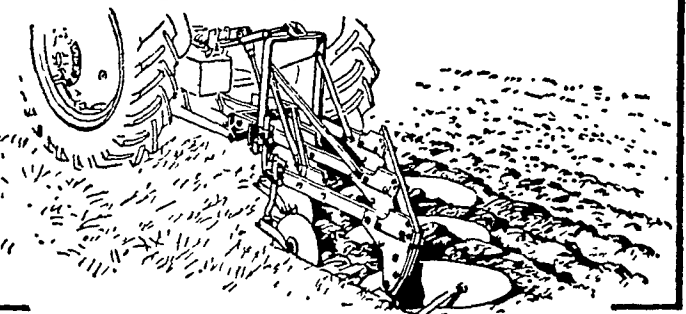




TOO DRY TO PLOW? Not at the International Harvester Field Day held last Thursday. Here H. E. Reinhart, IHC sales promotion supervisor, Harrisburg, and J. Harlan Burkhardt, R2 Ephrata, find that heavy equipment can plow up to 12 inches deep. Approximately 5,000 people attended the annual event. (LF Photo)



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Plant Explorers Seek New Species Of Ornamentals

A new look in ornamental landscaping for southern States may be the result of a recent plant exploration trip to Japan's southern islands, the U. S. Department of Agriculture said today.

The largest and perhaps the finest single collection of ornamentals ever gathered for the South was introduced into this country last winter by plant explorer J. L. Creech, who heads USDA's Plant Introduction Garden at Glenn Dale, Md., Dr. Creech collected nearly 700 species of cultivated and wild ornamentals in Japan.

Representing the first of a series of foreign searches for ornamental plants that may prove of value to nurserymen, florists, and home gardeners, this quest was sponsored jointly by USDA and the Longwood Foundation, Inc., Kennett Square Pa. Similar exploration, under the same joint sponsorship, are underway or being planned for the future. Plant explorers are looking for lesser known ornamentals, as well as improved varieties of plants already in this country.

A second plant-hunt in southern Europe is being conducted by USDA botanist Fred G. Meyer, who is seeking Mediterranean-type ornamentals suitable for propagation in mild-climate areas of the United States.

After exploring southern Europe, Dr. Meyer will travel to England, Scotland, Holland, and West Germany in quest of hard-wood ornamentals such as hollies, that can be adapted to colder parts of this country.

Tentative plans have been set for an early 1958 exploration to South American countries, including Brazil, Paraguay, and Uruguay. Search in those countries will be made for all types of ornamentals, especially flowering trees, adapted to warm, humid areas in this country. Plant explorers will also be seeking new and interesting house plants.

Some of the more important species collected by Dr. Creech in Japan last winter include chrysanthemum, camellia, holly, cryptomeria tree, evergreen oaks, and orchids of terrestrial and tree-inhabiting kinds. One holly species *Ilex hukuensis*, had never before been collected for the United States.

Researchers Find Use for Cockroach As Insecticide Laboratory Guinea Pig

The much-maligned cockroach, longtime bane of housewives, is a boon to one group of U.S. Department of Agriculture scientists.

Entomologists and chemists of USDA's Agricultural Research Service concerned with insect resistance to insecticides are rearing cockroaches as "guinea pigs" for laboratory experiments.

Many varieties of insects — including the mosquito and house fly — are outwitting man by building up resistance to insecticides almost as rapidly as new insect killers are turned out. Roaches are proving useful in attempts to solve this resistance problem and also in testing new insecticides and other preparations needed in the continuing battle against insects.

At least 12 special of cockroaches are being maintained at USDA's Agricultural Research Center, Beltsville, Md. They range in size from those less than half an inch long to winged giants more than two inches in length, introduced into this country from South America. There are native American roaches, the German species, and a variety of "undesirable aliens" from other parts of the world. Of great importance to the research work is the fact that there are strains of one cockroach species that are resistant to insecticides as well as species that are non-resistant.

In laboratory work at Beltsville, covering broad phases of insecticidal and physiological studies, roaches are being used to evaluate household sprays including aerosol to determine their effectiveness and the quantities of insecticide required and to provide a basis for accurate labeling of these products.

Roaches are also used in the study of other chemical formulations that may prove effective against insects. Among these are repellents and attractants. If sufficiently effective, such materials may eventually become highly useful means of combating insect infestation.

The rearing of the roach cultures is important in itself. This work permits close study of the habits and characteristics of different species of roaches—knowledge that is needed for effective control or eradication programs.

Also, because roaches are relatively large, they are excellent laboratory subjects for dissection. Their use in this respect is ex-

pected to greatly increase knowledge of insect physiology and may easily lead to findings of major importance.

Dissection, so far as insect control is concerned, offers a means by which the effect of insecticides on various organs can be studied. Such studies include the use of radio-active insecticides on the roaches and dissection later, to determine, by the use of instruments which measure radioactivity, the presence and quantities of insecticides in the various insect organs.

Cockroaches themselves demonstrate the value of this research in all its phases. For example, the German roach, which was an early immigrant to this country and is now widespread, has recently become resistant to insecticides in some areas of the United States. Resistant roaches spread from one colony to another, making control or eradication measures difficult.

The brown-banded roach, rarely seen 20 years ago, demonstrates how rapidly a species can spread. This species is now common in eastern, southern, and mid-western sections of the country. It frequents the dark recesses of electric switch and fuse boxes, radio and TV cabinets, and other dark or secluded locations about the home. In these places the females deposit egg capsules, each one of which may produce a dozen or more offspring. One life cycle — egg capsule to nymph to adult — is completed every three months.

Fortunately — and probably because of this relatively long life cycle — the brown-banded roaches have not yet developed resistance to insecticides as have the German roaches, which require only six to eight weeks to complete a life cycle. But USDA insect specialists believe the brown-banded roach still could develop insecticide resistance. If it does, control will be a difficult problem.

Spread of the brown-banded roach, and the chance it may become resistant, adds to the need for finding effective insecticides and also creates a need for repellents and attractants as additional tools for control. This is only one of six species of roaches common to many areas of the United States. Since World War II, there have been invasions by at least three new species, any one of which can spread from area to area.

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