



### Feeding the Enemy

➤ **INSECTS**, it is often asserted and seldom denied, may eventually become the inheritors of the earth, by literally eating man out of house and home. There is no doubt that they are formidable, feeding as they do on everything man produces and uses, from his crops and timber to his clothes and even himself, and serving as carriers of disease as a final lethal filip.

One aspect of the situation, however, is rather frequently overlooked: Most of the really bad insect pests were set up in business by man himself. Under natural conditions, a potential crop plant and its potential devourer are often separated by thousands of miles; it is far-travelling civilized man who brings them together. He also makes things all the easier for the pest by massing its chosen food plant in huge fields, and by devoting whole regions to the intensified production of one crop, like corn in the Midwest or cotton in the South.

As a typical instance, take a look at the striped potato beetle. It used to be a relatively insignificant insect, chewing the foilage of a few weed species related to the potato somewhere in the

Southwest or in northern Mexico. When large-scale potato cultivation reached Colorado it got its real start. It travelled eastward from field to field, and finally reached Europe as a stowaway in shipped potatoes.

The chinch bug, scourge of Midwestern grain fields in dry seasons, offers another case in point. It has always existed where it is now found, feeding undestructively on native grasses, but not until white men began planting hundred-acre grain fields, edge to edge, did it multiply into devastating hordes that sometimes destroy those fields in a single day.

Of course, man does not always bring the crop to the insect. Probably the more usual experience is for him to bring the insect to the crop. The very names of some of our most troublesome insects are monuments to this unhappy fact: Japanese beetles, Hessian fly, European corn-borer, Mexican bean beetle, Argentine ant, Oriental fruit moth—the list is a long one.

Whether man can exterminate the insects is still uncertain. But one thing is sure: if the insects succeed in exterminating man they will have destroyed their best provider.

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### CHEMISTRY

## Flame Cutting and Welding Use Fluorine and Hydrogen

➤ A WAR-BORN method for cutting and welding metals with flame that uses no oxygen is covered by U. S. patent 2,421,649, assigned by its inventors, H. F. Priest of New York and Dr. A. V. Grosse of Marcus Hook, Pa., to the Office of Scientific Research and Development.

Cutting and welding copper with flame has presented peculiar difficulties, partly because as soon as copper melts it forms oxides that interfere with the work, and even more because of the high thermal conductivity of copper, which carries away the heat before it can make the cut or weld.

The two engineers use a unique combination of gases, fluorine and hydrogen, to get an oxygenless flame of very high temperature—about 4,000 degrees Centigrade. This readily cuts copper. It is also good for welding because of the instant formation of copper fluoride, which serves as a flux, protecting the metal at once against oxidation and the corrosive effects of the fluorine gas itself.

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### MEDICINE

## Few Atom Bomb Survivors Have Serious Injuries

➤ IF AN atomic bomb were dropped over London, 75,000 people would be killed, 30,000 houses would be completely wrecked, 35,000 would be damaged badly and 50,000 to 100,000 would be damaged to some extent.

By contrast, a 500 pound bomb dropped in the same area would kill six people and a block buster would kill 30.

These figures, which are British estimates, were quoted by Col. James P. Cooney, medical adviser to the director of military application, Atomic Energy Commission, at a symposium at Walter Reed General Hospital in Washington.

Jap survivors of the atomic bombs had very few severe injuries due to mechanical force or flying debris, Col. Cooney reported. This was because the fire which swept both Hiroshima and Nagasaki after the explosions came so fast that no severely injured people could have escaped.

Changes in the color of the skin were striking features of the burns from the atomic bombs. Extreme dark color, like a walnut stain, appeared on those outside a certain range. At Hiroshima this gave a mask-like appearance. But inside this range, the skin lost its color although it was not always scarred.

These factors, Col. Cooney said, suggest that some of the victims were irradiated with ultraviolet light so intense that it completely destroyed the pigment, or color, layer of the skin. Others got only enough ultraviolet to stimulate the pigment layer, giving them a bronze color like a dark suntan.

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