

# Insects Winning Struggle

► **TRIUMPHANT INSECTS** continue to win many rounds in their struggle for survival against man and nature.

Their latest triumph is against chemical insecticides, developed during World War II and considered a promising weapon against the small pests that destroy man's food, bring him sickness and death, tear down his buildings and devour his clothing.

The amazing ability of houseflies and other insects to develop a resistance to DDT and other insecticides has sent scientists back to the laboratories for more effective weapons, reported Dr. Ross E. Hutchins, entomologist with the Mississippi State Plant Board and department chairman at Mississippi State College.

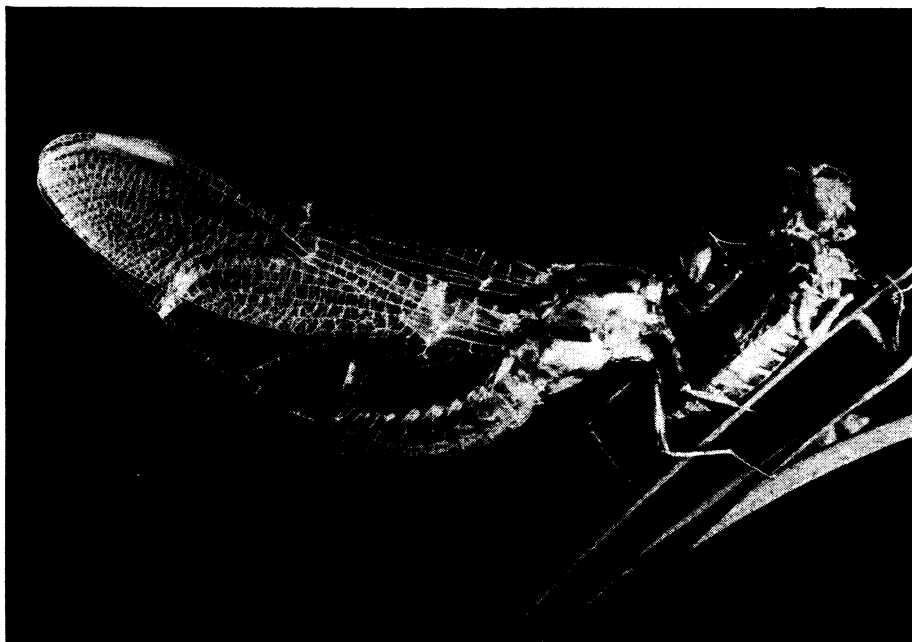
Man now finds it necessary to study and understand the varied life habits of these creatures in order to keep them in line, Dr. Hutchins pointed out in his recent book, "Insects" (Prentice-Hall, Inc., Englewood Cliffs, N.J.).

For the past 300 million years, insects have been winning many other battles against nature. They have been beset by and have overcome every conceivable calamity including ice ages, volcanic eruptions, upheaving mountains and submerging seas. The successful insects are now so populous that they constitute about 80% of the world's known animals and are found in almost every conceivable location in every continent, living at high altitudes, in desert sands, in Antarctic snow and ice and in tropical lushness. During the ages, they have learned to build houses, to camouflage, to navigate, to travel incredibly long distances, to wage chemical warfare, to "farm" their food and to care for their pets.

By the year 1,000,000 A.D., they will probably not have undergone much change. There will be different species, but they will average about the same size or smaller, "since miniaturization in insect evolution has been the trend for millions of years," reported Dr. Hutchins.

"Insects are, of all animals, the most completely inhuman. They represent a solution to the problems of living more radically different from man's than that of any other kind of living creature," said Joseph Wood Krutch in his introduction to the book.

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Prentice-Hall

**DRAGONFLY EMERGES**—One of the world's many successful insects is the dragonfly, shown here emerging from his nymphal case.

## CIVIL DEFENSE

# Portable Reactors Urged

► **PORTABLE NUCLEAR** reactors always ready to operate on barges, ships, trucks and flatcars should be developed and built in case of a power blackout following a nuclear attack.

This is one of several recommendations made by Oskar Morgenstern, director of the econometric research program at Princeton University, Princeton, N.J.

Power ranks only third, however, in Mr. Morgenstern's "Order of Urgency," which appears in *Scientist and Citizen*, Feb.-March 1966. At the top of the list is water, followed by communications, power, transportation, oil refineries, and food processing.

"One fundamental characteristic of the post-attack time will be—apart from loss of life, suffering and destruction—the utmost confusion," said Mr. Morgenstern. Because of this, there will be "a great temptation" to set up rigid, centralized control of the economy.

Just the opposite is preferable, however, he said. After arranging to protect whatever food, water, fuel and medicines that have not been damaged in the attack, an incentive system should be set up instead of a bureaucratic one that would consume valuable manpower just to keep it running.

"The people should be encouraged by whatever communications available . . . to go over into a money economy." Awards such as increased food rations for heavy workers should be offered.

"Controls, as always, will promptly produce black markets," Mr. Morgen-

stern pointed out, "especially when authority is weak as it is bound to be after nuclear holocaust. Hence, it is better to make the black market the official market and to let it provide for incentive and information as far as possible."

The "mothball ships," many of which have been relatively inactive since World War II, should be brought back into service for storage and, if necessary, for evacuation.

It should be possible to unload tankers at sea directly into pipelines on land. Prototypes of such systems are already under construction.

One kind of portable nuclear reactor that has already been constructed is the ML-1, built for the U.S. Army by the Aerojet-General Corporation but now suffering from reduced development funds. Weighing less than 15 tons, the ML-1 produces more than 400 kilowatts, can be set up in under 12 hours and can be towed into position, even in an open field, by an ordinary truck.

"Brains ought to be stored," Mr. Morgenstern said. This does not mean in the "eye bank" sense, but rather "a few widely dispersed places in which recently retired managers of power plants, railroads, refineries and a few other crucial industries should live for two to three years."

Such places, he recommended, should be kept up to date with current information about the various industries.

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