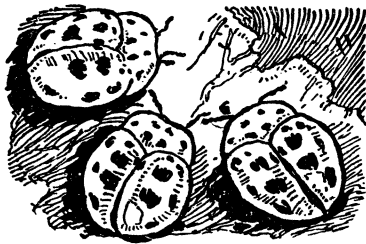


ENTOMOLOGY

# NATURE RAMBLINGS

by Frank Thone



## Early Ladybirds

➤ AMONG spring's early birds are the ladybirds. These attractive little spotted beetles, the delight of children, are astir very early. They have hibernated in hidden cracks and crannies, and the first warm, sunny days tempt them forth. As a matter of fact, they are likely to turn up even during late-winter thaws, along with woolly-bear caterpillars and a few other insects

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that are able to become active on just a little thermal encouragement.

Why they are called ladybirds is not known with any certainty. One conjecture is that in medieval times they were considered the special charges of Our Lady; their daintiness and apparent harmlessness would make such a fancy quite natural.

Such gentle patronage, however, may possibly be questioned. For the harmlessness of the ladybird beetles is only apparent; actually they are among the fiercest of predators in the insect world, attacking and devouring other insects with voracious appetite. Their tawny color, and the spots that most of them bear, would make some such name as leopard beetle more appropriate.

Most people are unlikely to find fault with the ladybird's carnivorous tendencies, once they learn towards what these tendencies are directed by most of the commoner ladybird species—for there are several kinds of these hungry little insects. The

## ELECTRONICS

# Faster, Smaller Computer

➤ A SIMPLE and less costly electronic computer, one-tenth the size of earlier models, was revealed by Dr. John W. Mauchly, president of the Eckert-Mauchly Computer Corporation in Philadelphia, which developed the famous ENIAC for the U. S. Army in 1946. It is said to be the first small machine of the type developed for use in factories and laboratories.

ENIAC is short for Electronic Numerical Integrator and Computer. The new computer is called BINAC because it uses a binary system, distinguishing between one and zero. The number one is represented by an electrical pulse, and zero by the absence of such a pulse. All other numbers greater than one are represented by combinations of these two conditions. An operator types instructions and figures to the computer in ordinary numbers which are automatically coded into the binary system within the machine. Numbers and instructions go on a magnetic tape reel. Results are tapped out automatically on paper.

BINAC is three times faster than its predecessor, the ENIAC, and calculates 12,000 times faster than a human being. It uses 700 vacuum tubes, compared to 18,000 in the ENIAC. Its chief advantage is its "mercury memory" unit. With a storage capacity of 15,000 binary units, this replaces 17,000 vacuum tubes and is responsible for the smaller size and the lower price of the new computer.

The memory is a column of mercury 18 inches long, through which electrical pulses representing numbers and instructions are sent at a rate of 4,000,000 a second. They can be rerouted through the column for as long as needed to hold the information.

ladybirds you most often see prey upon scale insects, aphids or plant lice, and similar enemies of man's most cherished and necessary possessions, the cultivated plants. They are, therefore, allies in the camp of the human species, with their hands—or rather their mandibles—against their closer kindred of the six-legged world.

In at least one classic case, ladybird beetles were even brought to this country from far overseas to aid in the human struggle against swarming hordes of insect enemies. Ladybird beetles imported from Australia have helped to keep under control one of the worst insect enemies of California's citrus groves, a nasty parasite known as the San Jose scale. They have not entirely wiped out this destructive pest, for to do so would mean their own elimination through lack of a staple food supply. However, by helping keep the scale reduced to a manageable level they have more than justified their existence.

Science News Letter, April 2, 1949

Eventually these pulses are used in other units of the computer for additions, multiplications, subtractions, and divisions.

Dr. Mauchly emphasized that a computer will not "think." It will merely follow instructions given to it in the form of simple arithmetic operations, thousands of times faster than the human brain. Mathematics has been brought into step with mass production through electronic computing, he said. Instead of taking several years to get a new airplane or automobile from the blueprint to the factory, it should now be a matter of months.

It will calculate what will happen to machine parts through vibrations, stresses, and other conditions. The engineer can discard impractical designs for anything from shock absorbers to airplanes without having to build expensive test models until he knows what his product will do. It can save millions of industrial research dollars, he said.

Science News Letter, April 2, 1949



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