

## Yellow Jacket Control Study

Being stung by a yellow jacket is a painful experience; to a hypersensitive person, it can be fatal. Since a wooded area may have two nests per acre with up to 1,000 stinging yellow jackets, control is important to farmers, outdoormen and homeowners.

To adequately control yellow jackets, you have to know their life history and habitat, according to Dr. Paul Catts, assistant professor, and Fred Preiss, research assistant, both in the department of entomology and applied ecology at the University of Delaware. Their project to provide the necessary information is part of long range research on the urban impact on woodland ecology. The work is carried out in the 35-acre University woodlot.

To find out about the yellow jacket, the researchers first have to locate the nests. As Catts points out, that may not be easy, since the nests are hidden three inches to a foot underground. In fact, the best way to find the invisible nests is to watch flying yellow jackets; they fly horizontally while

hunting food and vertically into the nest.

The nests are not evenly distributed over all the woodland area; these wasps seem to prefer higher ground covered with leaves or underbrush. The reason the yellow jackets nest in a particular location is still unknown; the scientists are investigating such factors as topography, temperature and soil type.

The size of a cantaloupe, the nests are made of "paper" which the yellow jackets produce from well-chewed wood. The nest is suspended from the surrounding earth with the same material. A level landing platform and a tunnel lead from the ground surface to the nest itself.

Inside the nest are tiers of honeycomb like cells containing the yellow jacket larvae. The queen lays eggs and the workers, which are sexless females, care for the larvae and forage for food. The workers have an egg-laying organ which is modified to sting. Drones are males which appear in the late summer to fertilize new queens.

The workers and drones do not survive the winter, and if more than one queen overwinters from each nest, they each make a new nest in the spring. Just before winter there may be as many as 50

queens in a nest, according to Catts. The population of the nest is at its highest in the late summer and early fall; as many as 3000 yellow jackets may be in a single nest.

As soon as the peak of the yellow jacket population is reached, skunks begin to show up at the University woodlot, Catts says, and by October all the wasp nests are destroyed. Skunks are apparently tolerant of the yellow jacket venom and regard the wasps as a delicious addition to their diet. They eat the entire population, digging up the nest to get at the larvae and pupae.

Unfortunately skunks aren't the entire answer to the yellow jacket problem since the skunks are potential carriers of rabies. Catts hopes the research will lead to other biological control methods. However, yellow jackets can be controlled with a DDT powder, such as a 65 per cent dust, liberally sprinkled around the nest opening and into the opening itself. Use the DDT at night, he cautions.

A bait can be used to control yellow jackets especially in picnic areas where the pests come from many nests which can't all be located. Combine equal parts of cider vinegar, sugar and DDT liquid or powder. Place in small paper cups

## "Don't Buy Hay By The Bale And Pay By The Ton," Bull Warns

HARRISBURG — The State Agriculture Department Wednesday cautioned farmers to insist on weight slips when buying emergency supplies of hay.

The warning followed a number of reports of farmers in drought-stricken areas getting short weight when sold hay on the basis of 50 bales to the ton, according to State Agriculture Secretary Leland H. Bull.

"While this is a common rule-of-thumb in judging the weight of hay, it is far from accurate," Bull said.

Hay generally is baled in two sizes, he pointed out, 40-pound bales and 30-pound bales. These weights, however, are only approximate and may vary because of the condition of the hay itself, and whether it is packed tightly or loosely. These circumstances, Bull explained, could lead to a shortage of as much as 500 pounds to a ton.

He advised farmers, to avoid risk of loss, to insist that all shipments be weighed. "Don't buy by the bale and pay by the ton," the secretary added.

out of children's reach. The bait is not attractive to honey bees so it won't hurt them, according to the entomologists.

As far as humans are concerned, yellow jackets are villains. However, they, too, have their place in the woodland ecology. They are part of the woodlot sanitation department — necessary scavengers that devour decaying organic matter.

Usually, according to Dr. Catts, yellow jackets are only dangerous when the nest is

disturbed. Even then they generally will not follow a victim more than 25 feet. Nonetheless, people eating in the open have been stung in the mouth or throat by biting into a piece of food on which a yellow jacket has just landed.



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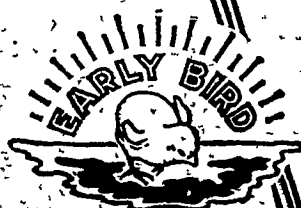
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