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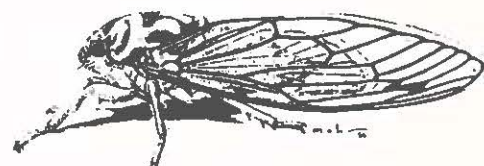
April 2, 1986



INSECT NOTES

PERIODICAL CICADAS

In Virginia there are a few species of "annual cicadas". They have a 4-7 year life cycle, but there are adults appearing every year because their life cycles are not synchronized. These cicadas are called "locusts", "harvest flies", and "dog day cicadas". Of course, they are not locusts (which are grasshoppers) or flies! The annual cicadas are the insects that sit in the trees in the late summer and make long, shrill sounds that seem to be natural of hot weather.



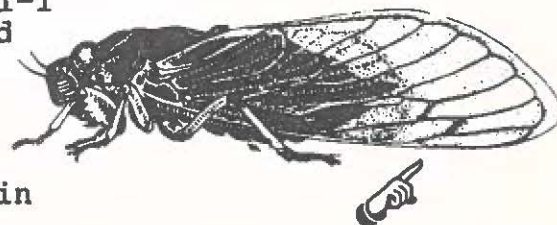
Annual Cicada

The annual or dog-day cicada is a large (1 1/2-2 inches), black and green insect--it is very robust and has green eyes. Dog-day cicadas appear in July and August.

In eastern U.S. there are several species of "periodical cicadas". They have either a 13-year life cycle or a 17-year life cycle. The 17-year cicadas are generally found in the northern states, and the 13-year cicadas have a southern distribution. Virginia has some of both varieties! Some periodical cicadas appear in large areas (=several states) at one time--these individuals are called broods. A brood appears in a specific location every 13 or 17 years. There are 13 broods of the 17-year cicada, and 5 broods of the 13-year cicada. These broods emerge in different years (fortunately!), and have different geographic ranges.

The periodical cicada is a small (1-1 1/2 inches), black insect with red eyes and reddish-orange wings. The adults of this cicada appear in late May and early June.

Life cycle. The life cycle of the periodical cicada is very long and very interesting. For years these insects remain



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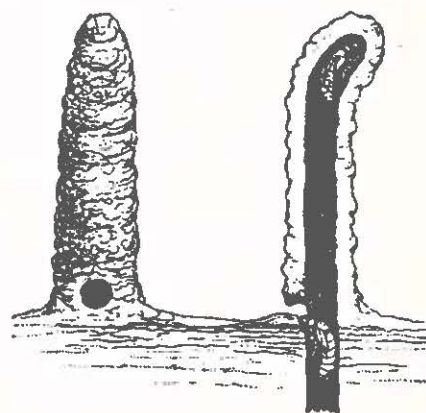
under ground, feeding on the roots of trees and other large plants. In the spring of the correct year, thousands of them will emerge from the ground, shed their skins to become adults, and fly into the trees. For weeks the trees will be filled with these singing insects as the business of mating and egg-laying goes on. In a few weeks they are gone, but the scars on the tree branches where the eggs were inserted will remain. The eggs hatch in summer and the young nymphs drop to the ground and quickly burrow below the surface. They will spend the next 13 or 17 years feeding on the sap from roots of large trees and plants.

Immature stages. The eggs laid in the tree branches in June hatch in about 6 weeks. The small (1/2 inch), soft-bodied nymph drops to the ground and burrows beneath the surface. The nymphs do not ordinarily burrow into the earth below 2 feet, and most of them remain at depths from 8 to 18 inches. However, there are reports of their having been discovered 10 feet beneath the surface, and they have been known to emerge from the floors of cellars.

There are approximately six nymphal stages. All stages remain close to shrub and tree roots, sucking the sap with their piercing-sucking mouthparts. There is no evidence that the insects, even when present in great numbers, do any damage to the plants by their feeding. Sometime in April of their last year (13th or 17th), before the full-grown nymphs emerge from the soil, they come up from their subterranean burrows and construct a chamber just below the surface of the soil. The chambers are long and narrow, descending about 6 inches into the ground and about 1 inch wide. The upper wall of each chamber is separated from the surface by a 1/2 inch layer of undisturbed earth. This "cap" is not broken until the insect is ready to emerge.

A habit of the nymphs observed in some locations is the construction of closed earthen turrets as a continuation of the underground chambers. The turrets are constructed of mud and extended several inches above the ground.

Emergence. The period of emergence for periodical cicadas is late May. The nymphs leave their chambers in the ground in the evening (usually after sundown). After scooping away the soil to open the chamber, the nymphs crawl out of the chamber and head for any upright object close by (a bush, tree, post). Once the nymph has climbed up off the ground, transformation to the adult cicada begins. The soft-bodied, cream-colored adult will slowly emerge from the split in the top of the nymphal skin. It



Cicada Huts

may take more than one hour for the adult to emerge, harden its

skin and look like a cicada. By morning the young adult is ready and able to fly off and join the rest of the group.

The adult. The adult periodical cicada is robust, with a bulging face, and red eyes set out prominently on each side of the head. The body is black, the eyes red, and the wings are shiny transparent with orange-red veins. Each front wing is marked with a dark brown "w" near the tip.

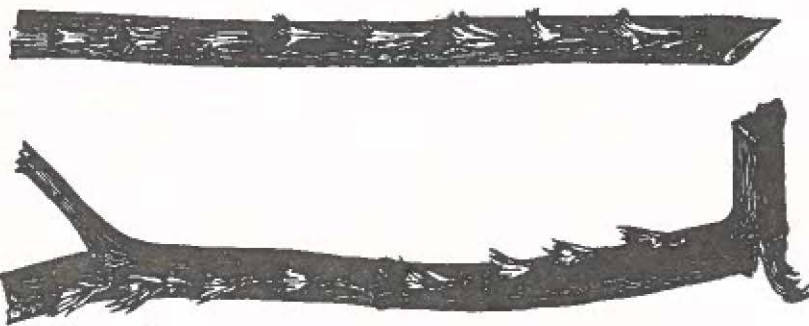
Adult cicadas have piercing-sucking mouthparts, and feed on plant juices. They rarely cause visible damage to trees by their feeding. Perhaps this is because their attack lasts only a short time and comes at a time when the trees are very healthy.

The female cicada has a long, swordlike ovipositor for inserting eggs into twigs of trees and bushes. The ovipositor consists of two lateral blades; these blades are used to excavate a cavity in the wood for the eggs. The female may deposit 400-600 eggs.

Sound production. Male crickets produce their music (?) differently from those of the singing grasshoppers, katydids, and crickets. Female cicadas do not make a sound. Grasshoppers rub a part of a hind leg against a wing; crickets and katydids rub their wings together; male cicadas have a thin membrane at the base of the abdomen (under the wings) that is vibrated like the top of a drum. The sound is produced by moving this membrane in and out very rapidly.

Cicadas sing during the day and remain quiet at night. They usually sing in a group--everyone in a tree, everyone on the street, everyone in the county!--so the noise can be loud. The males sing to attract females for mating (so, what else is new!).

What about 1986? The Va counties that are expected to have periodical cicadas are: Alexandria, Augusta, Clarke, Fairfax, Fauquier, Frederick, Grayson, Lee, Loudon, Orange, Prince William, Roanoke, Warren, Wise, and Wythe. The counties that are adjacent to those mentioned should also be prepared for possible emergence.



Egg-laying damage to twigs

LONGHORNED BEETLES

Longhorned beetles coming from firewood inside houses have been a popular item in the Identification Laboratory for the last few weeks. As warm weather comes, there is less need to use stoves and fireplaces, thus firewood may remain in the house for extended periods. When that is coupled with the normal springtime emergence of many longhorned beetles--you can get some homeowners concerned about the beetles (and other insects) flying around their house.

Remember a few facts: longhorned beetles from firewood will not infest structural wood; the old house borer (a pest of structural wood) does not live in firewood. Enough said!

WHAT COMING THIS MONTH

There are a few insects that occur every spring, and their presence usually brings questions and concerns of homeowners.

Gnats (chironomids) - These insects usually form swarms or masses of individuals in the yard, around tree limbs, or bare spots in the lawn. They are not capable of biting--they don't eat at all! No need for control.

Biting gnats, eye gnats - These pesty flies will fly around your head, getting into your ears and eyes--sometimes biting and leaving a welt. They live in clean, fast flowing streams and may fly for several miles to bother people. Not much you can do about control.

Spiders - These arthropods are active in the spring--mostly looking for mates! They may be numerous inside houses, especially in basement areas, or at ground-level doors. Aerosol sprays are effective for control.



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