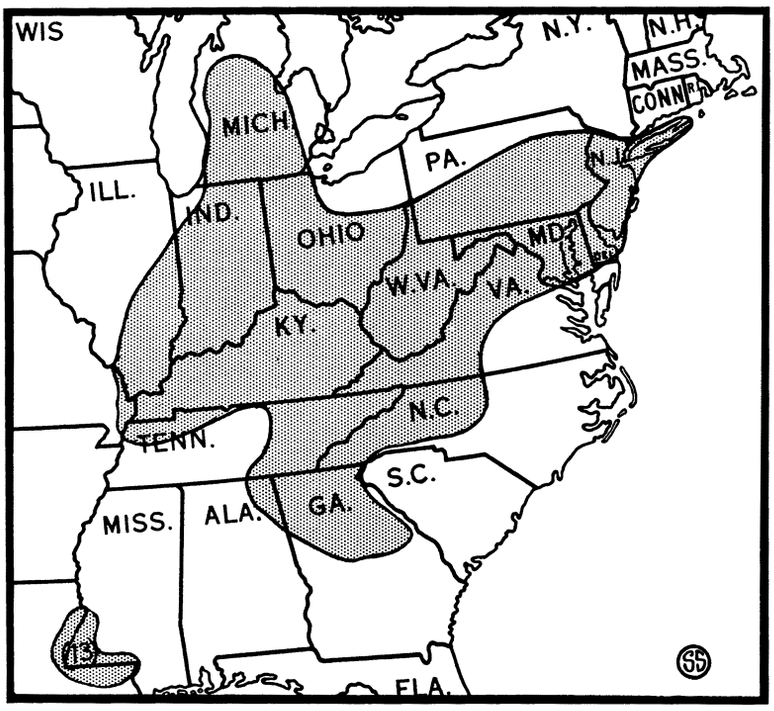

THE 17-YEAR "LOCUST'S" KINGDOM

This map shows the distribution of this year's outcrop of the 17-year cicada, commonly called 17-year locust. The small area near mouth of Mississippi river is the territory of the 13-year cicada, a cousin-insect.

ENTOMOLOGY

Longest-Lived of All Insects; Not That of Bible Plague

See Front Cover

OLD-AGE champions of the insect world are beginning to appear in the Southeast. They will swarm in uncountable millions, over a great part of the eastern United States, before their day of sunlight and song is ended, in the closing days of June.

They are the 17-year cicadas, usually called 17-year locusts. They will appear from Georgia on the south to Michigan on the north, from Long Island on the east to the Mississippi river on the west, with smaller outlying swarms in Wisconsin, New England, and other border areas. Similar insects, the 13-year cicadas, will appear in a single compact area, where the "corner" of Mississippi fits into Louisiana. They are rather large insects, about the size of big bumblebees, with transparent, dark-veined wings.

They are not really locusts. True locusts, the kind that were one of the Plagues of Egypt, are long-winged grasshoppers, and are terribly destructive. The 17-year cicadas are strictly American insects, and they are usually harmless. The only damage they cause is by laying their eggs in the young green twigs of trees. This causes leaves to drop off, and sometimes kills young nursery and orchard stock. But for the most part they are more noisy than they are economically important.

The cicadas are the longest-lived insects known. After their eggs are hatched, the tiny young ones, no bigger than ants, dig into the ground, and there they live for 17 long years (13, in the Southern species), sucking sap from the roots of trees. In the late spring of the seventeenth year, they burrow to the surface, climb up the trees and bushes, split their "baby-clothes" up the back, and emerge as winged, singing insects. They live for a few weeks in the sunlight, mate, lay their eggs—and die. The brood now emerging are the orphan offspring of the brood that emerged and died in 1919.

Of the 17-year species there are 17 broods; of the 13-year species in the South, 13 broods. Each brood has its known area, and of course its known years of appearance. This year's brood has an unusually large area. Last year's was confined mainly to West Virginia and the mountainous parts of Virginia and northwestern North Carolina. Next year's brood is known only from Massachusetts, Connecticut and Rhode Island.

The enormous numbers and the shrill noisiness of the 17-year cicadas, as they swarm in the woods, sometimes cause a good deal of alarm. Superstitious folk are also prone to think that the orange-red W-shaped mark near the tip of each wing is a sure omen of war. However, since these insects appear somewhere in this country every year, and since there is almost always a war going on somewhere in the world, the cicada's powers of prophecy are not really put to a very severe test.

The front cover photograph of a young cicada still in his "cradle-clothes" is by Cornelia Clarke.

Science News Letter, May 16, 1936

RADIO

Moon Tides in Upper Air Affect Radio Reception

OWNERS of the new high-powered radio receivers may get their thrills from "picking up" distant stations throughout the United States and foreign lands, but scientists use these distant signals to study the tides created by the moon in the ionized layers miles above the earth which make such transmission possible.

Dr. Harlan T. Stetson, of Harvard, presented new facts about the moon tides in the radio reflecting layers before the joint meeting of the Institute of Radio Engineers and International Scientific Radio Union in Washington, D. C.

Dr. Stetson studied the changing intensity of radio signals between KFI Los Angeles and WBBM Chicago and Delaware, Ohio, as the moon moved across the sky at night.

Correlating his findings with observations made at Harvard University by Prof. H. R. Mimno, Dr. Stetson concludes:

"These results may be interpreted as indicating that when the moon is opposite the sun there is a tendency for an increase in the ionic density on the night half of the earth's atmosphere, thus favoring increased number of reflections (better reception) from the E layer."

The E layer refers to one of the several zones of ionized particles which reflect radio waves.

Science News Letter, May 16, 1936

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