

"17-YEAR LOCUST" DUE THIS YEAR

MOST MYSTERIOUS INSECT KNOWN TO SCIENTISTS WILL INVADE LARGE PART OF THE UNITED STATES.

(Prepared by the U. S. Department of Agriculture.)

THE most interesting insect in the world, the periodical cicada, is going to be seen, perhaps in very large numbers, during the coming spring and early summer over large regions of the United States where this brood has not appeared before for 17 years, and over other regions where another brood appeared 13 years ago. This is the insect commonly referred to as the "17-year locust," a name that is incorrect in at least two particulars. It is not a locust at all, that name being properly applied only to members of the grasshopper family, and while it has a 17-year period, it also has a 13-year period. It has been so long miscalled by the name of locust, however, that there is no hope of divesting it of that incorrect appellation, and in the regions where there is the longer period of recurrence it will continue to be known as the "17-year locust," and in the areas of the shorter recurrence period as the "13-year locust." The scientifically accepted name of periodical cicada, therefore, is the only one that exactly fits.

The statement that this is the most interesting insect in the world will hardly be questioned anywhere, and it is the most interesting because it is the most anomalous, or possibly, because it has always appeared to be so mysterious. The fact that it appears in countless numbers one year, then is not seen again for half the average lifetime of human beings and then suddenly appears again in countless numbers, has kept the popular mind mystified and has woven many superstitions about the cicada. When it is known that the insects spend the 13 or 17 years in slow development beneath the ground and emerge at almost exactly the same spot where they entered the ground 13 or 17 years before—then the mystery disappears, but the interest, if anything, is intensified. One of the queerest things in nature is that in spite of such extremely slow growth in their subterranean habitat, all the millions of individuals attain maturity and burst from the ground at almost the same moment.

Every "locust year" is, in some sort, a year of fear and dread. It appears to have been so with the savages and has remained so with their civilized successors, notwithstanding the fact that the cicada has been under investigation for well over 200 years, and the appearance of the swarms are foretold by entomologists as accurately as eclipses of moon are foretold by astronomers. People have fancied that they could detect in the cry of the cicada a resemblance to the name of the monarch, Pharaoh, that persecuted the Israelites, and that occult belief or fear added to the somewhat dolorous sound has served to make the cry of the cicada generally an unwelcome one. Very long ago some superstition attached to the dark bars of the filmy wings. These bars are always in the shape of the letter W, but few people remember that through a period of 13 or 17 years, and great significance is attached to it at each recurrence. Some prophet has arisen always to announce that the W on the locust's wings means "war." Since this outbreak will come just at the conclusion of the greatest war, and when even the imagination of the rural prophet could hardly conjure up the likelihood of another one, some new explanation will apparently have to be found this time. But no doubt the cicada will, as usual, be greeted as a harbinger of disaster, and, as usual, there will be reports of deaths caused by stings of the cicada, a belief that has persisted in spite of positive proof that the cicada has no sting, that only by the extreme accident could it inflict a wound either with bill or ovipositor, and that it could not, in any case, inject a poison.

Injury is Usually Overestimated.
Upon every appearance of large broods of the cicada, fear is aroused that trees will be destroyed, particularly young trees of the fruiting and ornamental species. There would seem to be some ground for such a fear. The number of the insects is so tremendous that one can hardly understand how they can deposit their eggs in the young and tender branches of the trees without killing them. Yet the fact remains that there have been outbreaks of cicadas in some sections of the United States in most of the years since this country was discovered and that no very grave damage ever yet has been done. Very young fruit trees sometimes are killed or seriously injured, but little or no permanent injury is done to forest trees or mature trees of any kind and measures of protection can be employed that will save the young and tender stock from serious injury.

Inasmuch as the coming 1919 brood of locusts may be one of the largest on record, it is particularly important to allay excessive fear of destruction to timber as well as to have people on guard, so that the few preventive measures possible may be applied. The belief that the 1919 brood will be exceptionally large is based on the fact that the 17-year brood coming out this year is brood 10, perhaps the largest of the 17-year broods, and that brood 15 of the 13-year family comes out at the same time. The year 1868 was the greatest locust year in history. In that year brood 19, the largest of the 13-year broods, appeared in conjunction with brood 10, the two combining to make an unprecedented infestation. The coincidence of the largest



TRANSFORMATION OF PERIODICAL CICADA
NUMBERS INDICATE STAGES OF DEVELOPMENT



OCCURRENCE OF THE PERIODICAL CICADA IN 1919. LARGE DOTS REPRESENT DENSE AND SMALL DOTS SCATTERING COLONIES OF THE 17-YEAR PEST; CROSSES REPRESENT COLONIES OF THE 13-YEAR CICADA.

17-year brood with a smaller 13-year brood this year will not bring about conditions approaching those of 1868. The United States department of agriculture has long kept close check on all of the broods of both families and is able to say with almost complete, unflinching accuracy just when and over what territory any brood will appear.

The two broods due this year are brood 10, which belongs to the 17-year family, and brood 15, which belongs to the 13-year family. Brood 10 has the widest distribution of any brood. Beginning at the eastern extremity of Long Island, it sweeps west and south to the Mississippi river at Cairo, Ill., and extends as far north as central Wisconsin and as far south as middle Georgia, with some isolated colonies as far northeast as upper Vermont, and one as far west as the boundary line between Iowa and Nebraska. The whole or portions of 20 states are included within this range. There are three regions of greater occurrence, one covering New Jersey, Maryland and eastern Pennsylvania; another covering all of Indiana, the greater part of Ohio and southern Michigan, and a third covering western North Carolina, eastern Tennessee, and northern Georgia.

Brood 15, the 13-year brood that comes out this year, is comparatively a small brood and is made up of scattered colonies rather than of the dense and compact swarms that mark the larger broods. Five states are affected by it—Alabama, Georgia, North Carolina, South Carolina, and Tennessee—but it touches only limited areas of these states.

Cicadas Will Appear in May.
Latitude does not appear to materially affect the time of emergence from the ground, the cicada in the lake states coming out within a week or two of the same time as in the Gulf and South Atlantic states. This data ranges from the last week in May to the first in June, and the shrieking hosts may be looked for throughout the whole territory indicated at about that time. Late in May or early in June the under sides of leaves on practically all trees in dense brood areas will be studded with the cast skins and every wooded place will be resounding with the shrill drums.

A month later the disposition of eggs in branches will have become general. Fear aroused by the presence of this insect in great numbers is out of proportion to the real damage likely to be done. People in infested sections should not become unduly alarmed, but should apply such methods of control as are possible. In young orchards and nurseries, the safest method is the hand collection of the insects at the time of emergence or as soon afterward as possible. Every cicada tries to climb some plant or tree immediately after coming out of the ground, and great numbers of them can be shaken off and collected in bags or umbrellas. This practice may be continued for an indefinite time after emer-

When the "17-Year-Locusts" Come.

The year 1919 is likely to be one of the worst "locust years" on record. But entomologists of the United States department of agriculture see nothing alarming in the prospect.

The periodical cicada, the real name of the insect commonly called "locust," will appear this year in the following states: Alabama, District of Columbia, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

The injury done by the periodical cicada consists almost wholly in chiseling grooves in the branches of trees for depositing eggs. This injury always appears to be greater than it actually is. Popular alarm is usually out of proportion to general damage.

Young fruit trees are sometimes killed by the cicada. The precautionary measures are: Defer putting out young fruit trees till next year; postpone budding operations; do no pruning this winter or spring.

When the insects begin coming out, hand pick them from young fruit trees or spray them with pyrethrum powder, kerosene emulsions or a solution of carbolic acid or acetic acid.

Later, when the insects are ready to begin laying, spray young fruit trees with whitewash.

gence, and the work should be very early in the morning or late in the evening when the insects are somewhat torpid and sluggish.

Insecticides Are Effective.
The destruction of the cicada may be accomplished with insecticides if applied at the moment of emergence from the ground or shortly after it has shed its pupal skin and is still soft and comparatively helpless. This kind of work can be made very successful in small areas, but could not be applied on a large scale. Best results are obtained with pyrethrum powder, kerosene emulsions, a 2 per cent solution of carbolic acid, or a 15 per cent solution of acetic acid, sprayed directly on the insects.

Not much success has been attained with washes or other applications to prevent oviposition. Ill-smelling substances appear not to repel the cicada. There are some indications that the insect dislikes to sit on a white surface, and therefore whitewash is believed to possess some efficacy as a preventive of oviposition, though the cicada will oviposit on whitewashed trees if no more pleasing place can be found. A spray of bordeaux mixture is also believed to have some value as a preventive.

Certain precautionary methods, however, are of more importance than the curative ones. In all regions where there is to be an appearance of the cicada, all pruning operations should be neglected during the preceding winter and spring in order to offer a larger twig growth and thus to distribute the damage over a greater surface. The planting of young orchards should be deferred until the danger is past, and the same advice applies to budding operations in the spring prior to the cicada's appearance.

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The Alternative.

Hubby—I will not stand these shopping bills of yours any longer.
Wife—I don't care whether you stand them or not as long as you foot them.

Weak and Miserable?

Does the least exertion tire you out? Feel "blue" and worried and have daily backache, lameness, headache, dizziness and kidney irregularities? Sick kidneys are often to blame for this unhappy state. You must act quickly to prevent more serious trouble. Use Doan's Kidney Pills, the remedy recommended everywhere by grateful users.

An Illinois Case

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KEEP THEIR MONEY AT HOME REMARKABLE TEST OF LOVE

Many People in England Evidently Will Not Entrust Savings to the Care of Banks.

A vast amount of money still lies uninvested in the country, declares the London Mail. In a Yorkshire village there is a fisherman who is known to have five thousand dollars in notes in his thirty-dollar-a-year cottage. He wears clothes which cost about ten dollars before the war, and owns a fishing boat worth one thousand or fifteen hundred dollars. In the same village a short time ago a fisherman bought his cottage, and when the owner called for a deposit he counted out fifteen hundred dollars in gold, the full purchase price. In a neighboring town there is at least one fisherman who has five thousand dollars or more in notes in his little house, but he cannot be induced to invest any of it. When he has been urged to do so he has said that he "preferred to have it near him as it is safer!" A woman in a Yorkshire country town one morning walked into a lawyer's office and produced a handbag containing two thousand half-sovereigns which she had collected in thirty years. After asking advice on investing the money she stated that at night she took the handbag up to her bedroom. When she traveled she took the handbag with her, and on one occasion left it on the rack in the train. She remembered her treasure before she left the station and recovered it.

Surely Any Woman Would Be Satisfied With Proof That Was Offered Mrs. Newlywed.

For a while, as they walked along, neither spoke. The silence became quite strained. At last she said in a hard, tense voice:
"You don't care whether I'm happy or not, do you? We've been married nearly a week and now you don't care whether I'm happy or not."
"My angel, I do," he said miserably.
"But I simply cannot permit you to do that. It is asking too much."
Two tears rolled down her cheeks—one for each cheek.
"You don't! You don't!" she cried, biting her lip tearfully. "You don't care whether I'm happy or not!"
It was more than his tender, loving heart could stand. He gulped guiltily. "Oh, very well, go ahead if you like," he said gruffly.
And while she took out her powder puff and powdered her nose and vicinity right on the crowded pavement, he turned his back and looked into the show windows of a piano shop so no one would know he was with her.

Disgusted.
Hostess—I'm sorry you found Miss Bigger a poor conversationalist.

Jack—Poor conversationalist? She's absolutely the limit! Why, the only thing she said to me the entire evening was "no," and I had to propose to her to get her to say that.—Boston Transcript.

Constructive Work.
Hewitt—He's a constructive statesman.

Jewett—I understand he is pretty good at building political fences.

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