

A NEW ENEMY OF THE BLACK LOCUST.

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During the latter part of June and during July of 1914, the leaves of the greater number of the locust trees in Switzerland, Jefferson, Clark, and Floyd counties, of southern Indiana, were observed to be losing their greenish appearance, and upon closer examination the chlorophyll of the leaflets was found to have been largely consumed. The foliage appeared as though dried up as a result of a severe drouth. Here and there individual trees, at a distance from groves, were unaffected, but the trees of practically every grove, at least among the hills of the Ohio and tributaries were seriously affected. So evident was this that the brown and sere appearance of the groves was noticeable as far as they could be seen.

The infected trees were found to be alive with a small beetle, which Professor Enders of Purdue classified as *Chalcopus dorsalis* of Blatchley's "Coleoptera of Indiana": "This beetle is from 6 to 6.5 mm. long, wedge shaped and rather broad, bluish black, thorax red, with black sutural stripe. Found throughout the State, but much more abundant in the southern counties. Occurs on flowers of black locust, in the leaves of which the larvæ mine. Hibernates beneath the locust bark."

On striking the trees the beetles could be heard falling to the ground by the scores. They could be seen in large numbers on the foliage, as many as five were counted on a single leaflet.

The eggs of this beetle are deposited late in April or early in May, and by the 20th of May the young larvæ are at work between the coverings of the leaflets, destroying all the inside portion. In some cases several larvæ may be seen at work within a leaflet. When mature the larvæ stop eating and remain enclosed within the leaf coverings until metamorphosis is completed, when they emerge, usually about the 20th or 25th of June, and for several days feed upon the upper leaf surface of any green foliage that may remain.

The writer is of the opinion that many of the locust groves in the northeastern part of Jefferson County were badly infected with this beetle

during the summer of 1913, and possibly previous to that, as several groves of that region were observed with foliage that seemed to be drying up, as though injured by a serious drouth. The infected area seems to be rapidly increasing, and the annual defoliation of the trees must in time prove a serious injury, since the foliage on the majority of the infected trees was practically useless by the first of July and in many cases even earlier. What the favoring circumstances have been that have caused this remarkable increase in the numbers of this insect is at present a mere conjecture. It may be that the unusual heat and drouth of May, 1914, and of the summer of 1913, may have caused their rapid multiplication, or that the relatively rapid increase of locust trees, their favorite food supply and breeding place, has augmented their numbers.

What the future may bring no one knows, but if this beetle continues in as great numbers in succeeding years, they will prove a very serious menace to locust groves, and the fence and telephone post industry of southern Indiana. Judging from the undoubted rapid increase in the past, the future is not promising.

As a remedy Professor Enders and others recommend spraying with arsenate of lead or other arsenical compounds. This no doubt would be in a measure effective, if applied within a few days after the emergence of the mature beetle June 25th to July 5th, and could be done on level or moderately level ground, but since the tens of thousands of volunteer locusts are on slopes so steep that they are almost inaccessible, it would prove a difficult task indeed to get at them with a spraying outfit. It is not probable that the pest, if it proves to be a serious one, will be eradicated in that way. It is very difficult to get farmers to spray orchards, much less locust trees scattered far and wide over rough, hilly land. It is to be hoped that an efficient remedy may be provided, for, if not, this defoliator, in addition to the borer, will probably end the locust industry.