

"The bird, which is a beautiful male, was taken by a young man named Crowell, near his home, about two and one-half miles southwest of this place. He reported that there were two. He heard the bird cooing and shot it and brought it to me, having concluded that it was something new. You can imagine how we almost took it away from him when he unrolled it out of a bloody old newspaper and began to inquire if we knew what it was. I was convinced that I saw a flock of five Passenger Pigeons one day in the spring of 1901, but had never said much about it as I only saw them flying and at a distance and it seemed rather improbable. I used to see them occasionally in Iowa about 1882-3, and although I was then very small, the specimen was not new to me, and I, of course, at once recognized the same."

Mr. Muchmore in a recent letter says he heard of a small flock near Laurel last fall (1902).

THE CATALPA SPHINX (*CERATOMIA CATALPÆ*) DESTROYED BY THE
YELLOW-BILLED CUCKOO (*COCCYZUS AMERICANUS*)
IN SOUTHERN INDIANA.

F. M. WEBSTER.

This paper was suggested by the receipt of a letter from Mr. A. W. Butler, calling attention to a statement made by Mr. John B. Elliott, a very observing farmer of New Harmony, Indiana, who stated that the catalpa trees in his neighborhood had, until recently, been defoliated by a large worm, but, recently, this worm had nearly disappeared, having been eaten by the Cuckoo or Rain Crow, as they are termed in the South.

There did not appear to be any doubt about the food habit of the bird, though there is but one other similar observation on record, the only question being as to the identity of the worms. Now, the catalpa, like the aïlanthus, and the China tree of the Gulf States, has very few enemies, and there is no chance of mistaking the larvæ of the catalpa sphinx for any other insect. On the other hand, there is no data whatever in possession of the division of Biological Survey of the United States Department of Agriculture, showing that this bird ever attacks the catalpa sphinx, though the stomachs of ninety birds have been examined. Several other species of Sphingidæ do not fare so well. Two, *Deilephila lineata*

and *Phlegethontius sexta*, are frequently taken by these birds. There hardly seems a doubt about the correctness of Mr. Elliott's observations, and I give these facts in order to show their value. The catalpa is planted as far north as extreme northern Indiana and Illinois, but the catalpa sphinx does not occur north of about the latitude of Vincennes, in this State, Flora, in Illinois and extreme southern Lawrence County, in Ohio. On the Atlantic Coast it is steadily working its way northward, being now seriously abundant about Philadelphia, which is in the latitude of Columbus, Ohio, and almost that of Urbana, Illinois. It was abundant at Flora, Illinois, as far back as 1875, but seems to have progressed no farther northward. The insect has this peculiarity: The female will deposit to the number of 1,000 eggs in a mass on a single leaf and the young are for a considerable time after hatching thoroughly gregarious, so that while a single tree or a row of trees may be defoliated by the larvae, other trees in the neighborhood may entirely escape. This gives the enemies of the larvae an opportunity to literally exterminate a colony in short order. Mr. W. H. Edwards, a lepidopterist of Coalburgh, West Virginia, some years ago, recorded the sudden appearance of this insect in his locality for the first in 1896, and the as sudden disappearance the following year.

The catalpa sphinx is like its food plant, a southern species; the Sphingidae are a tropical family for that matter, and it is interesting to note that Judge Lawrence Johnson observed the attacks of the Cuckoos, both species, on these larvae in 1883, in Alabama. The Cat Bird and the Baltimore Oriole are both known to feed upon them.

Besides the birds there are several insect enemies of the catalpa sphinx, two being species of Tachinid flies, *Euphorocera claripennis* and *Frontina frenchii*. A Hymenopter, *Apanteles congregatus* also destroys a large number of the larvae. As I found many of these caterpillars on catalpa trees about Princeton, Indiana, late in August, 1902, with numerous eggs of the Tachinid flies attached to their bodies, there is no doubt but what they are doing their full share in keeping the insect in check.

I might say, in addition to the foregoing, that this Cuckoo is exceedingly fond of another caterpillar, *Datana angustii*, which so frequently defoliates the walnut and hickory trees in midsummer. Here, too, we have the work of the Tachinid flies previously mentioned, and while at Purdue University, several years ago, I observed a case of excessive parasitism, on the larvae of a closely allied species, *Datana contracta*. On four of the

caterpillars of the latter species I counted respectively, 115, 131, 213 and 228 eggs of these parasites. I mention this, seemingly disconnected circumstances, because the same species of Cuckoo is fond of all these caterpillars, and we are met with that perpetual puzzle to economic entomologists, viz., to determine the exact economic value of an organism. If the bird ate only the unparasitized caterpillars, it would be wholly beneficial, but, on the other hand, if it devours parasitized caterpillars, it has done no good, because these would have died in any case, and has done actual harm, because it has destroyed beneficial insects.

NOTES ON REARED HYMENOPTERA FROM INDIANA.

F. M. WEBSTER.

The material upon which this list is based was obtained during two trips to southern Indiana, the first late in August and the last late in October, 1902, while in the employ of the United States Department of Agriculture, and making some special investigations of certain insects attacking growing wheat. My first intention was to present a paper that would include only such species as were new to science, but I have in addition to such, found so many forms that are new to the State, and others discovered by me about Lafayette, years ago, but of whose habits nothing was known, have been farther investigated, throwing new light on their life history and habits, that I later decided to include all of the Hymenoptera reared by me, but not previously reported as inhabiting Indiana. I may add that the nature of my investigations required that considerable quantities of wheat stubble, and the stems of *Elymus canadensis* and *E. virginicus*, *Trienspis sceleroides* and *Bromus secalinus*, the latter being the common cheat of the wheatfields, be collected and the *Isosoma* and other insects inhabiting these stems secured. The stems of these grasses and the wheat stubble were collected and placed in paste-board boxes so that everything developing within them was thus secured. It will be observed, then, that the prime object of my rearings was to determine the food plants of the *Isosoma*, the parasitic species, though of much importance, were of secondary signification in these studies.

Isosoma grande, which I reared about Lafayette, during the years 1884 to 1886, and established the fact of a dimorphism and alternation of