KENTUCKY LEPIDOPTERIST

NEWSLETTER OF

The Society of Kentucky Lepidopterists

1974

VOL. 13, NO. 3 M. L. McInnis, Editor March, 1987

Host Plant Utilization by Incisalia henrici Grote & Robinson

J. B. Ziegler

Despite the large number of lepidopterists in the United States (about 1,200 U.S. members in the Lepidopterists' Society), the host plant requirements of many of our butterflies are still rather poorly known in any detail, particularly with regard to wide-ranging species. Much of the available information seems to be rather sketchy, vague in origin, of dubious reliability and of uncertain generality and significance.

The hairstreak Incisalia henrici provides a case in point. In "The Lepidoptera of Pennsylvania" (1952), H. M. Tietz cited the following as food plants: Gaylussacia baccata (Ericaceae), Prunus domestica and P. serotina (Rosaceae), Cercis canadensis and Lupinus perennis (Leguminosae), Eubotrys racemosa, Vaccinium corymbosum and V. vacillans (Ericaceae), Ilex sp. (Aquifoliaceae) and Cyrilla racemifolia (sic) racemiflora?) (Cyrillaceae). Taking a somewhat more conservative approach, the standard butterfly manuals (Klots, Ehrlich & Ehrlich, Howe) later narrowed this list down to Blueberry (Vaccinium sp.), Redbud (Cercis canadensis) and Plum (Prunus sp.). Thereafter, a consensus seemed to have been reached that the primary hosts were probably Blueberry in the east and Redbud in the western portion of the range.

Recently, however, this apparent consensus was upset when several workers published convincing evidence that certain hollies (Ilex sp.) are actually the primary host plants in various areas of the central and south Atlantic coastal plain. Additionally, a recent publication stated that Viburnum acerifolium (Caprifoliaceae) is utilized in Michigan, and there is evidence that Diospyros texana (Ebenaceae) and Ungnadia speciosa (Sapindaceae) are hosts in Texas. To further complicate matters, there is a very recent report that the exotic shrub Rhamnus frangula (Rhamnaceae), introduced from Europe, serves as an anomalous host in a locality in eastern Massachusetts. This raises the possibility that the genus Rhamnus, with three native species and one other introduced and naturalized exotic species in the eastern U. S., might be of significance in the host plant ecology of henrici.

Opler and Krizek's "Butterflies East of the Great Plains" (1984) listed host plants in the families Leguminosae, Aquifoliaceae, Ericaceae, Caprifoliaceae and Ebenaceae, with emphasis on Cercis canadensis, Ilex opaca, I. cassine, I. vomitoria, Vaccinium sp., Viburnum acerifolium and Diospyros texana. Finally, in his "Butterflies of North America--A Natural History and Field Guide",

Scott (1986) listed as many as nineteen (19) plant species in the families Leguminosae, Rosaceae, Ericaceae, Aquifoliaceae, Ebenaceae, Caprifoliaceae and Cyrillaceae as hosts.

It seems unlikely that I. henrici really utilizes all of these plant species as significant hosts. Ambiguity in the existing reports may have arisen in part from the reliance of some authors upon plant associations to suggest host plant utilization, which can be misleading, or from failure to indicate whether a report was based on a laboratory or a natural situation. For example, the butterfly may have been induced to oviposit in the laboratory on, or larvae may have been reared on, a plant not normally used in the wild. Or perhaps, in isolated instances, ovipostion has been observed on, or larvae have been found on a plant in the wild which is not normally preferred.

In any event, what is needed are well-designed studies and observations carried out with greater thoroughness, precision and attention to detail. The major objective of my work program is to establish the primary host plant of I. henrici in New Jersey; a second goal is to review critically what is known about the host plant situation in other areas throughout the range of this species. The primary or principal host plant in a given area is defined as the plant species which is usually or always chosen by the ovipositing female in the wild state. A secondary or supplementary host plant is one which may on occasion be used by the female as an oviposition site and/or which is acceptable by the larva and nutritionally suitable for full development to the adult stage, either in the wild state or in the laboratory. The primary host plant of a species is of particular biological significance since it is this plant which is orinarily selected by the insect in a free-choice situation and which is therefore of importance in defining its ecological niche.

The primary host plant of I. henrici in New Jersey has been variously reported or suggested to be either American Holly (Ilex opaca) or Blueberry (Vaccinium sp., e.g. corymbosum) or perhaps Redbud (Cercis canadensis). I am attacking this problem with a combination of field observation and controlled rearing studies. My preliminary results to date suggest that I. opaca is in fact the primary host. If this is indeed the case, it would seem not unlikely that one or another species of Ilex might be the primary host along the entire Atlantic seaboard, to the north as well as the south.

This might then call into question the current general assumption that Redbud is the primary host over the rest of the inland range. At the moment, I am aware of very few documented reports to this effect. The standard botanical reference works indicate that one or more of the approximately nineteen (19) species of Ilex found in the U. S. occur over practically the entire known range of henrici. It would not be unreasonable to suspect that one or another of them might play an important role in the host plant ecology of henrici.

Therefore, I have adopted the tentative working hypothesis that some species of Ilex might serve as the primary host plant for henrici over other sections of its range, expecially in areas where more generally suitable conditions support larger populations. It is possible that some other plant might be a primary or secondary host in certain parts of the range, especially on the periphery where conditions are generally less suitable.

In testing this hypothesis, I would appreciate the help of colleagues, especially midwestern, who have pertinent information. I would

in particular like to hear from anyone who has personally developed or otherwise knows of hard data which would establish Redbud as a primary host. Definitive field observations on Redbud would include: (1) observation of oviposition followed by development in situ to the adult, (2) finding eggs or larvae followed by full development, and (3) repetitive observations of this type if possible. It is, of course, also important to know whether there is an association with any species of Ilex at localities where henrici has been collected. In the central states, some of the more likely possibilities might include American Holly (I. opaca), Yaupon (I. vomitoria), Possumhaw (I. decidua) and Mountain Winterberry (I. montana), among others.

In conclusion, I would welcome correspondence with anyone who has information or thoughts of any sort bearing on this subject. I hope to publish eventually and would gratefully acknowledge all contributions.

A RECENT CAPTURE OF Cerma cora (Noctuidae) IN SOUTH CAROLINA

Loran D. Gibson

On April 15, 1987, George and Teri Balogh, Bob Borth, and Pat and Loran Gibson spent most of the day in a motel room in North Myrtle Beach, South Carolina, waiting out a rain storm.

By early afternoon, the courtyard of the motel was entirely flooded, and looked like an extension of the swimming pool, which nearly overflowed. Five inches of rain fell on Myrtle Beach that day, and as much as eight inches was received by some other areas of the Grand Strand beach strip.

By late afternoon the rain had stopped, and the sun finally broke through. Weather forecasts for the evening predicted an end to the rains, so we decided to try to collect some moths. We wanted a locality near our motel which was not flooded. We chose the South Caroline Welcome Center, on the west side of U. S. Route 17, in Horry County, South Carolina, just south of the NC/SC state line.

West of the Welcome Center parking area, a small service road led into a wooded area. We set up our blacklights along this road in an open area. At approximately 10:30 P.M. EDST, one very fresh male Cerma cora was collected at one of the lights. No others were seen.

On the east side of the road was a large thicket of small trees or large bushes belonging to the Rosaceae. These were, no doubt, in the genus Prunus. Since larvae of Cerma cora are known to feed on Prunus, it seems likely that the thicket was the host of our specimen.

Although Cerma cora is widely distributed in eastern North America, it is seldom seen. Interested lepidopterists are urged to try our unusual locality for this rare noctuid.

WHAT IS THE LIMIT OF THE NORTHEASTERN RANGE OF ANAEA ANDRIA?

John Hyatt

One of my most vivid memories from childhood deals with capture of a pair of Anaea andria in Virginia. Around the year 1960, I captured the insects in a barnyard on an uncle's farm in the community of Flatwoods, Lee County, Virginia. It was many years before I learned the identity of the strangely exotic-looking butterflies, and despite many searches in the following decades, I never again encountered Anaea andria in Virginia. Lee County is the westernmost county of Virginia; the collecting site is about 20 miles east of the Kentucky border at Cumberland Gap. My original pair, which miraculously survived to be donated to

the Smithsonian collection a few years ago, appear to represent the only recorded occurrence of the species in Virginia; its normal range is, of course, the Mississippi Valley and Gulf areas.

Anaea andria has now been taken again in Virginia. On May 10, my wife and I collected for about an hour in a dry, cedar-overgrown hillside about five miles west of Jonesville, Lee County, Virginia (a site only 5-8 miles from my original Flatwoods locality). We took two males and a female andria (the latter was released); a further three specimens were observed in flight. We have collected at this site in previous years without seeing andria, but it was clear from the numbers observed that the species is established there, and a number of hibernators survived the rather mild winter.

Species also taken on the 10th include Pieris virginiensis, Euchloe olympia (a rather late record; this butterfly is rarely seen hereabouts), I. henrici, M. gryneus, and numbers of the common Papilios. It was very striking to see the exotic, tropical-looking andria flying among the typically more northern species such as olympia and virginiensis. One cannot help but think that here, in Lee County, one sees these species near the limits of their northeastern and southern ranges, respectively. Does anyone know of any records of Anaea andria further to the northeast than Lee County, Virginia? It will certainly be of interest to monitor the colony in years to come!

1987 FIELD TRIP INFORMATION

TRIP 1 - Bearcamp Road, Bullitt County, Kentucky

Early April visits to this site by C. V. Covell and others turned up several interesting records, including: Celastrina ebenina (nigra), Pieris virginiensis, Incisalia henrici, and Cyllopsis gemma.

TRIP 2 - Green Swamp, Brunswick County, North Carolina

From April 12-17, 1987, George Balogh, Bob Borth, John Hyatt, Loran Gibson, Mike McInnis, and families spent varying amounts of field time in this area. The trip was rewarding as most target species were encountered. Despite good diversity, species abundance was below expectations. This was probably caused by a controlled burning program conducted in the area during late 1986 and a delayed emergence of most species due to the cool spring. A complete species listing, provided by Loran Gibson, follows:

E. clarus
E. brizo
E. juvenalis
L. accius
A. hianna/loammi
A. aesculapius
A. carolina
A. reversa
A. alternata

E. marcellus
P. glaucus
P. troilus
P. palamedes

F. midea
P. sennae
A. nicippi

C. cecrops
M. hesseli
I. irus
I. henrici
I. niphon
S. melinus
E. comyntas
C. ladon

P. tharos
V. virginiensis
V. atalanta
J. coenia

C. gemma

Trip 3

Date: July 11, 1987
Location: Black Mountain, Harlan Co., Kentucky

Target Species: Erora laeta, Speyeria diana and Speyeria aphrodite

Details: Contact Loran Gibson regarding meeting places (maps) and times. Please note that Loran's telephone number was incorrectly

advertised in the last issue of the newsletter. The correct number is: (606) 261-4515.
Address: Loran D. Gibson
5505 Taylor Mill Road
Taylor Mill, Kentucky 41015

Trip 4

Date: August 15, 1987
Location: Pennyrile Forest, Christian Co., Kentucky
Target Species: Calephelis muticum, Parrhasius m-album, Amblyscirtes belli
Details: Contact Loran Gibson as above.

Loran and I explored this site again on May 16, 1987. We recorded forty (40) species, including several "choice catches" (see partial listing below). This promises to be an excellent field trip; plan to attend.

Erynnis martialis
Atrytonopsis hianna
Amblyscirtes aesculapius
Amblyscirtes belli
Amblyscirtes hegon
Mitoura gryneus
Anaea andria
Cyllopsis gemma

ADDITIONS TO THE KENTUCKY FAUNAL LIST

Charlie Covell has provided specifics on three (3) recent additions to the Kentucky Faunal List, which now numbers 2,183 species.

Ethmia macelhosiella (Busck)
OECOPHORIDAE 8642
982

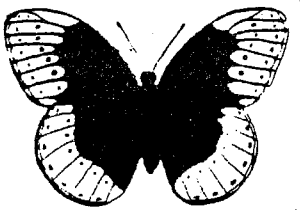
Lexington, Fayette Co., at black light, October 27, 1984, one female, J. S. Nordin (det. Covell from Powell Revision).

Cabera erythemaria (Guenee)
GEOMETRIDAE 4614
6677

Red River Gorge, Menifee Co., NE of Slade, Road 9A, Indian Creek, elev. 750 ft., August 29, 1984, J. S. Nordin (det. Covell)

Nepytia semiclusaria (Walker)
GEOMETRIDAE 5111
6908

Whitley Co., E. of Cumberland Falls, Rt. 90, Moonbow Cottages, July 1, 1979, J. S. Nordin (det. Covell).



NEWS AND NOTICES

Bay Checkerspot Thwarts United Technologies

The "Wall Street Journal" recently (April 23, 1987) publicized the endangered species conflict involving Euphydryas editha bayensis and United Technologies. Dennis Murphy and Paul Ehrlich (both of Stanford U.) have been spearheading the butterfly's cause. It is an interesting article; send a self-addressed, stamped envelope to the Editor for a copy.

Florida Collecting Policies

A thorough review of current governmental policies in Florida, by Dave Baggett, will appear in Vol. 13, No. 4 of this newsletter. Dave's review of this subject will be very helpful for those of you that are planning to visit southern Florida during the fall/winter peak season.

NEW ADDRESSES

Richard A. Anderson
836 Amelia Court NE
St. Petersburg, Florida 33702

Jeff R. Slotten
4083 Sunbeam Road
Jacksonville, Florida 32217

Kevin Thomas
1315 S. 3rd Street, #405
Louisville, Kentucky 40208

NEW MEMBERS

Harry Pavulaan
1919 N. Daniel St., #201
Arlington, Virginia 22201

Susan Reigler
3200 Tucker Station Road
Louisville, Kentucky 40299

WANTED

Ova of the Imperial Moth and the Hickory Horned Devil. Will purchase or exchange ova from Giant or Polydamas Swallowtails: Paul Pfenninger
4085 Floral Drive
Boynton Beach, FL 33436

THE KENTUCKY LEPIDOPTERIST
M. L. McInnis, Editor
22 Benchmark
New Albany, Indiana 47150

FIRST CLASS

Loran D. Gibson
5505 Taylor Mill Rd.
Taylor Mill, KY 41015