

EUPTYCHIA MITCHELLII (SATYRIDÆ) IN
MICHIGAN AND INDIANA TAMARACK BOGS

by F. SIDNEY BADGER, JR.

Correspondence with RONALD LEUSCHNER during the winter of 1953-54 resulted in forming a project to locate the type locale of *Euptychia mitchellii* French near Wakelee, Cass County, Michigan, and to determine if this somber but attractive and rare little Satyr was still extant in that area. Correspondence with several parties finally resulted in a letter from MAURICE L. BRISTOL of Elgin, Illinois, in which he very kindly gave the location of the classic Wakelee bog and dates from July 15-20, 1926 to 1928, when he caught this species.

My son and I reached Wakelee the evening of July 22, 1954. The next morning the heavy dew had evaporated under a hot sun by ten o'clock when we entered the bog through an abandoned orchard across a high meadow several hundred feet wide, where *Nymphalis milberti* Latr., *Cercyonis pegala* Fabr. and *Atrytone logan* Edw. were much in evidence. Dropping down into the bog through surrounding trees, we caught several *Euptychia cymela* Cramer and carefully examined them on the underside for the ocelli of *mitchellii*. In the long marsh grass waist-high, *Lethe eurydice* Joh. rose out of the grass at almost every step. After examining a couple of dozen for ocelli, we realized this species was too big and light to be the object of our search. As we worked our way through the trees and shrubs (later realized painfully to be largely Poison Sumac) to small openings where the sun beat down unbearably and the flies bit unmercifully, we started disturbing large skippers from the grass and captured several *Atrytone dion* Edw. and *Poanes viator* Edw. Then in these open areas a flash of flame was seen as a dark little butterfly closed its wings and, as advised by BRISTOL, we were catching a few of the very local *Lephelisca muticum* McAlpine, the jewel-like Swamp Metalmark. In the steaming heat a large dark butterfly glided forth and a ragged female *Euphydryas phaeton* Drury was captured.

We turned deeper into the bog, which was fairly dry but very soft and treacherous of footing with fallen trees in the sphagnum, and found much High Bush Blueberry and Gooseberry but not *mitchellii*. Working north along the edge of the high bank we ran into two *Lethe portlandia* Fabr. and, as we reached more open areas, *Atrytone ruricola* Bdv. and *Poanes massasoit* Scud. Finally, an extensive open meadow area one-fourth mile across and one-half mile deep with high grass and Swamp Milkweed was reached, and here *massasoit* by the thousands were as abundant as any butterfly I have seen in the mid-west, and *Atrytone conspicua* Edw. was now present. *Speyeria cybele* Fabr. and *S. aphrodite* Fabr. were on the flowers, and a few *Lycæna helloides* Bdv. males were caught. One *Boloria selene* Schiff. was taken.

Two weeks later on August 7 the Wakelee bog was visited again with P. SHELDON REMINGTON and, because very few butterflies were flying, was

completely explored on three sides and penetrated deeply. This boggy swampy area is in a depression between cultivated fields and roads and is about one-fourth to one-half mile wide and about one mile long, including the swampy meadow at its north end where collecting is easiest and most species are found. Small streams cross the bog irregularly, and there is much Water-cress on their banks in some areas. This supposedly is the source of *Pieris napi* Linné found in 1956. *Lephelisca muticum* was finally located on Black-eyed Susans, only in the meadow and not in the swamp proper where it was found previously. The species had lost the dark mahogany bloom of two weeks earlier and was somewhat worn. Turtlehead was located near the southern edge of the swamp but no evidence of *Euphydryas phaeton* was found on it. Again we failed to locate *Euptychia mitchellii*.

On July 5, 1955, RONALD LEUSCHNER visited the bog alone. He found *phaeton* swarming in perfect condition and with hard work caught seven *mitchellii*, the males being badly worn but two of the females presentable. *Lephelisca muticum*, however, was not located, but skipper collecting was reported as good.

During the winter of 1955-56, further planning on the *mitchellii* project was made with the help of MOGENS NIELSEN of Lansing, Michigan, and WILBUR MACALPINE of Birmingham, Michigan. MACALPINE kindly sent the writer a male *mitchellii* caught July 4, 1940, at the Wakelee swamp. NIELSEN gave the location of a bog in St. Joseph County, Michigan, and one in LaGrange County, Indiana, where the species had been taken sparingly. Also the writer and NIELSEN in June, 1956, located a likely bog near Fremont, Steuben County, Indiana, where marsh grass and Poison Sumac abounded between hilly woods and an extensive swampy meadow. Tamarack was present on the edge of the meadow as also was Pink Lady Slipper. The consensus was that July 4 was the optimum date for *mitchellii*, but the writer suspected this was at least a week past the peak. However, since most species were appearing seven to ten days late in June, 1956, because of the cold spring, it was decided to visit all likely bogs on July 5, 6 and 7.

July 5 was cloudy, cold and rainy but at noon, July 6 at Kokomo, Indiana, the west became fully cleared and a trip north was started with an initial stop at a large swampy meadow in southern Kosciusko County, Indiana. *Poanes massasoit*, *Atrytone conspicua* and *Lethe eurydice* were all that could be found, but no Tamarack or Poison Sumac were present. By six p.m. the bog in the Three Rivers State Game Reserve of St. Joseph County, Michigan, was reached. The floating area of the bog was first entered using high leather boots. From the first hummock reached, two male *Euptychia mitchellii* were netted immediately in perfect condition. More were seen but it was felt impossible to avoid contact with Poison Sumac in this area because of the treacherous footing, and the edge of the bog was skirted until a drier area was found. There in the waist-high marsh grass the typical weak flight of *mitchellii* was first noted, by which the butterfly flies along the tops of the waves of marsh grass alternately appearing and disappearing and giving the effect of a bobbing flight. A total of nine males and two females were

taken. Many more males were both seen and netted but released. All were in perfect condition; probably peak emergence was still three or four days away. Collecting conditions were excellent as regards temperature, but biting insects were numerous and were kept off with "6-12." Other species in this area were *Boloria selene*, *Atrytone logan* and *dion*, *Polites verba* Edw. and *Speyeria aphrodite*. At seven o'clock collecting, which was still good, was stopped for fear of missing a motel room in Three Rivers.

July 7 was cool and clear and the Wakelee bog was reached by nine-thirty. Collecting was started in the high meadow between the road and swamp. *Atrytone logan* and *Lycæna phlaeas* were abundant. On BRISTOL's recommendation every white butterfly seen in this area was examined, and today the first one was completely devoid of any marking, a perfect summer form of *Pieris napi*. *Euphydryas phaeton* was showing up occasionally. Again *Cercyonis pegala* was abundant, and for the first time *Strymon titus* Fabr. was found abundantly on milkweed. *Euptychia cymela* was again in the trees bordering the bog, but on our entry into the bog the big surprise was the abundance of *mitchellii*.

The bog proper was entered at five points along its length; at all points *mitchellii* was present, three or four to the smallest glade. In the larger grassy areas its bobbing flight along the waves of grass was characteristic apparently of the males searching for the females which here, too, were infrequent. All were in perfect condition. But with the rough and uncertain footing and the difficulty of first bottling and then transferring to paper in the high grass with Poison Sumac on every side, at least half the specimens, which are very loosely scaled, were rubbed to a greater or less extent. The females were particularly fragile due to a considerably less dense scaling than the males. Their color is a buff rather than the dark brown of the male, due apparently to the fewer scales. Their bodies particularly readily lose their covering, revealing a bright green color. Every female caught should have been carried right through to paper and the stock jar without further movement in the swamp in order to preserve each in the perfect condition when netted. The ocelli of the underside, which are slightly visible on the top side of the males, are quite evident in the females due to this light scaling.

After two years of planning and work, the excitement of the writer can be imagined, in finding the Wakelee colony so abundant and under cool, comfortable weather conditions. Twice a single swing of the net caught three males. The males extended out into the swampy meadow some hundred yards from the open trees in an area where Poison Sumac was just starting to grow. The species occurred for a distance of more than a half a mile and to a depth of from one hundred to at least six hundred feet with a frequency of about one to every fifty square feet. It is believed that a conservative estimate of the size of the colony is in excess of 5,000 on the date in question, when the peak had probably not been reached. Actually only twenty-five specimens were taken at Wakelee.

Additional species taken on this date at Wakelee were a fine series of fresh *Euphydryas phaeton*, also *Poanes massasoit*, *Boloria toddi* Holland and

selene, *Atrytone dion* and *uricola*, *Speyeria cybele* and *aphrodite*, *Strymon acadica* Edw. and *falacer* Godart and *Achalarus lyciades* Geyer. *Lephelisca muticum* was not found on this date.

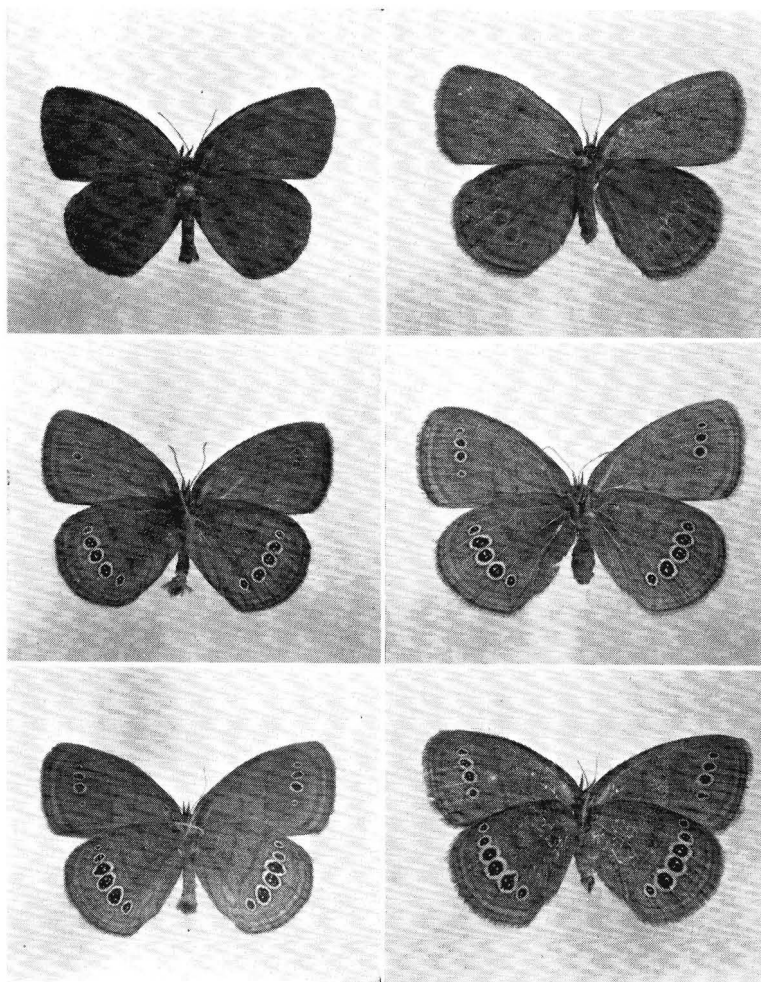
At noon the Wakelee area was left behind and the attempt was made to find *mitchellii* in Indiana, the state of the writer's specialization. HOMER PRICE, an Odonata specialist and an avid lepidopterist of Payne, Ohio, concentrates considerable collecting time on lakes, ponds, swamps and bogs. He had reported taking *mitchellii* at Cedar Lake, Lagrange County, Indiana. This was the next stop. The Cedar Lake road passes right through a marshy area off one end of the lake. Entering this bog, we found both *Atrytone logan* and *Strymon acadica* on the edge. In the bog, footing was precarious, but marsh grass and Poison Sumac indicated a good area for *mitchellii*. Within a few minutes a fresh male was caught and within a half hour three more males were taken and a few others were seen, but the species was rare in comparison with the two Michigan bogs visited. A worn *Euphydryas phaeton*, the writer's first in Indiana, was caught. *Lethe eurydice* was also in the marsh grass.

The next bog visited was the one previously mentioned in the extreme north-east corner of Indiana about one mile south west of Fremont, Steuben County. Here again *mitchellii* was abundant along the edge of the bog among the Poison Sumac. Here the butterflies were visible for a greater distance due to more open areas, and the curious up and down bobbing flight over the grass top was particularly noticeable. A dozen specimens were taken out of several hundred seen, and all were very fresh. This bog in the more open area was full of Cinquefoil just starting to bloom, but careful coverage failed to locate *Lycæna dorcas* Kirby. However, also present were *Boloria toddi*, *Nymphalis antiopa* Linné, *Poanes massasoit* and *Atrytone conspicua*.

On July 15 a Tamarack bog forty miles south of the Michigan line near Pierceton, Kosciusko County, was located and carefully explored. The typical marsh grass and Poison Sumac were present, but no butterflies of any type were in the bog area. About one-half mile from the bog in a dry area, but with much marsh grass, *Atrytone conspicua* and *massasoit* were present and here were found two firsts for the writer in Indiana, one a worn *Strymon caryævorus* McD. and second, two male *Speyeria aphrodite* of the regular form instead of the dark *alcestis* typical of northern Indiana.

On July 28 the bog in Three Rivers Game Area was visited again. *E. mitchellii* was missing, but the other butterflies noted on July 6 were present. Also, one *Lephelisca muticum* was found. At Wakelee bog on the same date only one *mitchellii* was found. Fresh male *Lephelisca muticum* were found and fourteen were taken, but no females were found. Four *Lycæna helloides* males and one female were taken in perfect condition. The skippers were not abundant, and no *Atrytone viator* were located. Two *Pieris napi* were seen in the wooded bog but not netted, but the strong flight pattern indicated they were not *Pieris rapæ* Linné.

The Wakelee bog was visited June 21, 1957, and while a few *Pieris napi* and *Euphydryas phaeton* were caught, *Euptychia mitchellii* was not found at



Euptychia mitchellii, males left, females right. TOP PAIR (uppersides, some ocelli from underside showing through hindwings): left, Cedar Lake, La Grange Co., Ind., 7 July 1956; right, Kakelee bog, Cass Co., Mich., 4 July 1957. MIDDLE PAIR (undersides, minimum development of ocelli): left, near Fremont, Steuben Co., Ind., 7 July 1956; right, Wakelee bog, 7 July 1956. BOTTOM PAIR (undersides, maximum development of ocelli): left, Cedar Lake, 7 July 1956; right, Wakelee bog, 4 July 1957.

all. Species not previously found in this bog were the more common *Polites mystic* Scud. and *peckius* Kirby, *Poanes hobomok* Harris and *Melitæa nycteis* Dbldy. A beautiful plant of the pink and white Queen Lady Slipper, *Cypripedium reginæ*, in full bloom was noted.

On July 4, 1957, both the Three Rivers Game Reserve and Wakelee bogs were visited with JAMES E. SHIELDS, and *mitchellii* was in the same condition and numbers at Three Rivers bog as on July 6 of 1956. However, at Wakelee the *mitchellii* were much more advanced than on July 7 of the previous year, some males being worn but the females fresh. Its abundance was about one-fifth that of the previous year. MOGENS C. NIELSEN and JOHN H. NEWMAN were also in both these bogs later on the same day and reported the same conditions. A total of about one hundred *mitchellii* were taken by the four collectors in these two bogs on that date. In the wooded area of the Wakelee bog, *Lethe portlandia* was fairly abundant, and some very large specimens were seen flying high in the trees but were not netted. *Lethe creola* Skinner has been reported from this county and it seems possible that this may be a locale.

The Cedar Lake bog was visited on July 19, 1957, and two female *mitchellii* were caught as well as a number of *phaeton*. However, on this date the Wakelee bog, when again inspected, showed no *mitchellii*, numerous *Lephelisca muticum* and a single *Lycæna helloides*.

SUMMARY

The indications from these observations over a four-year period are that *Euptychia mitchellii* is still a resident of the Tamarack bogs along the Michigan-Indiana line and, when found at its peak, is locally common. In these bogs *Lephelisca muticum* appears two weeks later and is much less abundant although its distribution is, of course, much wider. *E. mitchellii*'s peak appearance probably varies by as much as two weeks according to weather conditions and during average years is the first week in July. Because of the fragility and loose-scaled condition of the Satyr, good collecting time is probably very short, possibly less than a week. Collecting conditions are difficult and to a degree hazardous and in normal summer weather very hot and rendered unpleasant by biting swamp-flies and Poison Sumac. Hence the scarcity in collections of this very local mid-western species.

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