

there are scattered white pines (*Pinus strobus*). Bog rosemary (*Andromeda glaucophylla*) and swamp laurel (*Kalmia polifolia*) are common, and there is some Labrador tea (*Ledum grænländicum*) and purple chokecherry (*Aronia prunifolia*). The sedge *Carex pauciflora* is common, especially in water sites. Cotton grass (*Eriophorum spissum*) is frequent and conspicuous, as are the occasional pitcher plants (*Sarracenia purpurea*). No sundews (*Drosera*) or orchids were seen." This bog lies in the NE $\frac{1}{4}$ of Sec. 14, T42N, R16W, Schoolcraft County. It is on the west side of Highway M94 about 1.25 miles south of a large bend in the road, and is bounded on the north by a low pine-covered ridge which makes a good landmark. It is the only area of peaty soil in the vicinity.

At the Montreal meetings in August I told Dr. KLOTS about the discovery of *B. frigga* in Michigan, and he thought it would prove to be the same as the form occurring in Quebec and northern Ontario. Later the specimen was sent to him for inclusion in his forthcoming revision of the genus, and he reported that it is neither that form nor typical *frigga saga*. More material will be needed to decide whether or not it is a new subspecies, and attempts will be made this season to capture additional specimens at the original locality and elsewhere in the vicinity.

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UNUSUAL OCCURRENCE OF *MELITÆA NYCTEIS* (NYMPHALIDÆ) IN LANCASTER COUNTY, PENNSYLVANIA

by GEORGE EHLE

This southeastern Pennsylvania county is predominately a low-lying, gently rolling agricultural region. Mountainous counties border it on the north and west, the southernmost ridges of the Alleghenies penetrating the county on its northern border. While the hilly portion reaches 1100 feet above sea level in a few spots, most of the county ranges between 300 and 600 feet. Although *Melitæa nycteis* Doubleday has been reported from various southern Pennsylvania localities, and even to the south, it is usually described as a northern species and an upland butterfly in this latitude (40°). It therefore would be expected only casually and locally in this county, and then probably only at the higher elevations.

Consequently, I was not unduly concerned at not finding it during my first few years of collecting in Lancaster County in the late 1930's. Prior to moving to the county, I had collected *M. nycteis*, along with *M. harrisii* Scudder and *Phyciodes batesii* Reakirt, in northern Pennsylvania and lower New York, and was naturally curious to observe these and other familiar species in the new situation. I remained on the lookout for them over the years as I studied new and not-too-familiar species, but after thirteen years of collecting over the greater part of the county I practically despaired of finding any of these species nearby.

During the summer of 1953, however, I chanced upon a rather isolated area which I had previously overlooked, — a weedy, brushy, overgrown flat along the Susquehanna River. The area is swampy in spots and is occasionally flooded, as it was during the spring of 1956. Elevation here is about 250 feet above sea level. In this low-lying area of fairly limited extent, I was pleasantly surprised to find a large colony of *M. nycteis*. Although the river itself and a high, parallel railroad embankment both tend to offer physical barriers, the butterfly seems to be naturally confined to the area, especially in the immediate vicinity of the foodplant which grows in profusion along the swamp edges.

The colony is so large that one may observe with ease all stages of the insect during a single season. Two well-defined broods are produced each year. The immature larvæ emerge from hibernation toward the end of April and commence feeding on the new shoots of the foodplant. The first adults appear on the wing late in May. By July 1, these have practically disappeared. The first individuals of the second brood are on the wing toward the end of July, and fly until early September. Finally, immature larvæ are seen congregating on the underside of the dying leaves until frost. There is such an abundance of material in this colony that one may easily duplicate this seasonal cycle through any and all stages by means of simple rearing practices, as I have done.

While there is noticeable variation within both broods, some individuals being lighter, some quite darker than average, both broods are remarkably consistent in population, emergence dates, flight duration, and the like. Furthermore, the broods are practically indistinguishable from one another as regards wing spread, wing pattern, and other adult characteristics. Many reared specimens have been parasitized by both a dipterous fly and a wasp.

In this locality, the foodplant appears to be principally, if not exclusively, *Actinomeris alternifolia*. (I am indebted to local botanists for this identification.) It is a fairly common weed in moist locations throughout the county. Having observed *M. nycteis* in considerable detail in the aforementioned swampy situation, I now searched for the butterfly in other likely locations where the same foodplant was found.

These efforts were unsuccessful until August 1955, when I very unexpectedly encountered the butterfly in a second location about fifteen miles from the first. Although this location is a much drier environment than the swamp, it is not essentially different, being overgrown with brush and weeds, including the aforementioned foodplant.

My reaction to the discovery was more one of perturbation than of pleasant surprise, as will be readily understood from consideration of the following facts. The site of the second discovery is a small suburban waste area, which is largely circumscribed by farm land in high cultivation. It was partly cleared prior to 1940 but is now densely overgrown, with very limited open area. Being only a few minutes' drive from my home, it became a favorite collecting spot during the gasoline rationing years of the early 1940's. I established my basic Lancaster County collection with material taken here, at the same time studying and rearing many of the common local species. For the past fifteen years I have visited the site at least monthly, and long ago despaired of ever finding anything new here except that of casual or stray occurrence. This intimate knowledge of the area rules out the possibility of the butterfly's occurring here during these years.

When first encountered, the population numbered about twenty. The butterflies were all past their prime, and no mating, ovipositing, or any evidence thereof, could be detected. They disappeared a week or so later. Understandably, plans were made to keep a close watch on the site during the next season.

During the spring of 1956, I visited the spot weekly as the emergence time for the spring brood approached. During June, when the spring brood was in full flight in the swamp, not one adult was uncovered in the suburban site. I continued to check the site weekly during the summer. In the swamp, the second brood began to emerge in early August as usual. On August 25, two fresh specimens of *nycteis*, male and female, were observed at the suburban site. Subsequently closely spaced visits disclosed a few more individuals, totalling about twenty males and females, as in 1955.

Reasoning that these few individuals might have strayed from a nearby major colony, I immediately searched the surrounding countryside. As noted before, this is heavily cultivated farmland and thus rather unlikely environment for the species. Nevertheless, I eventually uncovered an extensive stand of the foodplant bordering a creek less than one-half mile from the site. Extensive search here, however, disclosed no sign of *nycteis*. Here, apparently, were all the earmarks of a favorable environment, yet the only *nycteis* in the vicinity were a dozen or so individuals confined to the drier, weedy hillside not far away!

My observations of the swamp colony over the past four years strongly affirm a constancy of habit in this species, as characterized by its very close association with the foodplant, little or no tendency toward straying, and freedom from sporadic or erratic occurrence. When applied to the population at the suburban site, these observations lead to the simple conclusion that it is a localized, self-contained population, new to the immediate area as of 1955.

The suburban area adjoins a cemetery and for years has served as a dumping ground for plant trash such as flowers, shrubbery, tree cuttings, and the like. Leaf tobacco is a major crop in the county, and tobacco stems and refuse are a popular fertilizer and mulch. In recent years, tons of such tobacco refuse have been dumped at the site for use in the cemetery. One possible explanation,

then, of the sudden appearance here of *nycteis* in 1955 is its introduction in immature form on this plant refuse. The relatively few individuals in a quite restricted environment, its absence in nearby favorable situations, and the absence of the 1956 spring brood, all strongly suggest a transitory situation.

Novel situations such as the one just described are invariably interesting and challenging, and at the same time perturbing and generally inexplicable. The major significance of this discovery, however, probably resides in its potential bearing on the general subject of insect distribution, motility, and related population fluctuations, especially as a result of man's interference.

The "introduced" population, if it is that, will certainly bear further watching during future seasons. It should have little difficulty in becoming established at the suburban site or in the vicinity, for the foodplant is plentiful and fairly widespread. If it fails to reappear in succeeding seasons, the only logical conclusion will be that this small colony was artificially introduced, perhaps, by rare coincidence, on plant material transported from the vicinity of the larger swamp colony.

ADDENDUM

Since the above was written, both localities described were visited regularly during 1957. In the swamp area, both broods were observed as usual, the flights occurring in early June and early August respectively. For the third consecutive year, no evidence of a spring brood was found at the "new" site or in the vicinity thereof.

Visits to the latter area in July, August, and September 1957 also failed to disclose a second brood. No change in the foodplant situation or in any other aspects of the locality could be detected. Whether this small colony has now disappeared, thus ending its two-year existence, remains to be determined by future observation.

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