

ADOPEA LINEOLA (HESPERIIDÆ) IN PENNSYLVANIA
A NEW STATE RECORD

by GEORGE EHLE

In a recent number of the *News*, HARRY K. CLENCH summarized those locality records, published or otherwise, known to him for this introduced North American butterfly. The records listed therein place its distribution chiefly in the Great Lakes region, although a record for southern Ohio (Columbus) is cited. No Pennsylvania record is reported in the summary. It therefore seems timely to report what appears to be a new state record for the insect: namely, its occurrence in Lancaster county, Pennsylvania. Moreover, its discovery in this south-eastern Pennsylvania county may also represent a new eastern limit on its range. (Coincidentally, this new Pennsylvania locality is situated on the same latitude, 40°N., as the Columbus, Ohio, record.)

During the past five years I have been observing a small colony of *Adopaea lineola* Ochs. in Lancaster County, Pennsylvania. The area inhabited by the butterfly is relatively small, of the order of a few acres, and comprises a mixture of farmland, light industrial property, and suburban housing developments, on the outskirts of the city of Lancaster, Pennsylvania.

I first encountered the butterfly in late June 1953, in an extensive hay field on one of the farms in the area. The insect was well past its prime, although I was able to collect a few females in good condition and several worn males. According to the usual local practice, the hay was mowed in early July, and nothing more was seen of the insect that year. No mating or ovipositing was observed, but the females straying into adjacent vegetable gardens exhibited more than casual interest in stray Timothy plants and in corn. Confinement of gravid females with Timothy yielded nothing.

Whether the species is new to the immediate area I cannot say. Prior to 1953, I collected rather extensively in the general vicinity without encountering it. Subsequent to its discovery, I have seen a very few single individuals in grassy spots within a mile radius of the aforementioned hay field. I have never seen the species elsewhere.

I have been observing the species regularly for the past five seasons, especially in the hope of determining its early stages. For several reasons, these efforts have been repeatedly unsuccessful. A major factor is the decrease in the population from that of 1953. A portion of the aforementioned farm has since yielded to industrial expansion, with the resultant displacement of the insect into a small adjoining marsh. Meanwhile, the marsh has been partially cleared and converted to rough pasture, with earlier and more frequent mowing of what little grass now remains in the area. This small "natural" habitat, such as it is, is now surrounded by developed areas which are highly cultivated and landscaped.

Nevertheless, the insect has appeared regularly each year. The males emerge the first week of June (earliest date: 4 June 1955). The females generally appear a week later (earliest date: 11 June 1954). In 1953, the only year the hay stood until July, worn individuals were still on the wing on 4 July. This year (1957), early June was continually overcast and quite cool, and no *lineola* were observed until 12 June, when both sexes in prime condition were on the wing.

In 1954 and 1955, I had again confined females with Timothy without success. Proceeding on the theory that older females might yield eggs more readily, this year I delayed until the latter part of June. During the third week, they were observed daily. No mating or ovipositing could be detected, their major activity consisting of feeding at patches of small thistle. I apparently delayed too long, for on 25 June, after a week-end absence, I searched the area to find only one male straggler. My presumption is that they dispersed into adjoining vegetable gardens, lawns and similar kept areas. This behavior, of course, may have been atypical and a result chiefly of the drastic man-made changes in the area. Certainly, the passing of the original hay fields has made observation much more difficult than in 1953. Too, the ubiquitous "No Trespassing" warnings in localities such as this, either posted or implied, constitute a recognized barrier to observation!

From this small colony, I have taken a few of the pallid form. In view of the diminishing population, an accurate estimate of the proportion of the light form is impossible, but my observations indicate a few per cent, not over five per cent. I observed no pallid specimens this year (1957).

It is interesting to speculate on the mode of introduction and extension of this species. Certainly, Timothy and associated grass species are very likely candidates for the list of preferred food plants. Timothy is a common, widespread European weed of roadsides, fields, and waste places. More important, possibly, from the standpoint of the butterfly is the fact that in the form of hay these grasses are a major article of commerce and are shipped about for use in the dairy and meat packing industries, in specialized agricultural industries, and others. In recent years, diminishing water supplies in many areas has necessitated shipment of hay in increasing amounts to alleviate local shortages, consequently, it seems reasonable to consider commercial hay as an agent for the dispersal of the insect into such widely scattered areas as those already reported.

My identification of the species has kindly been confirmed by Mr. HARRY K. CLENCH of the Carnegie Museum, Pittsburgh, Pa., to whom the information contained herein was transmitted in response to his "Notes on the Occurrence of *Thymelicus lineola* (Hesperiidæ) in North America: a Summary"; *Lepidopterists' News* 10: 151.