

A EUROPEAN SKIPPER, *ADOPAEA LINEOLA*, AT COLUMBUS, OHIO

by EDWARD S. THOMAS

The European skipper, *Adopaea lineola* Ochseneimer, according to KLOTS: *A Field Guide to the Butterflies*, has been reported from London, Ontario, southern Michigan, and northern Ohio. The Ohio State Museum has specimens representative of the last two areas, collected and presented by Dr. GEORGE W. RAWSON. The localities are: Findlay, Ohio; Detroit, Michigan (Mack Avenue); and Wayne County, Michigan (see Rawson, G. W., *Journ. N. Y. Ent. Soc.*, vol. 39: pp. 503-506; 1931).

To the stations listed by KLOTS may now be added Columbus, Ohio. On June 13, 1952, Mr. JOSEPH W. ENKE, Battelle Institute, Columbus, brought me a specimen of *A. lineola* which he captured along the Chesapeake and Ohio Railroad tracks, just north of King Avenue in Columbus. On June 19, Mr. ENKE guided me to the place, where we found the butterflies plentiful. My student helper, Mr. BRICE METZGER and I were able to collect 19 specimens, 12 ♂♂ and 7 ♀♀, in an hour's time. All were in fresh condition.

The embankment along the railroad right of way was covered with a dense stand of weeds, through which a number of the specimens were cruising. Their flight was slower and more sluggish than that of most American skippers. Occasionally, however, a cruising male would encounter another perched on the vegetation, when a spirited combat would ensue, with the participants swirling upward for a number of feet in the air before separating.

Individuals were observed feeding upon the flowers of alfalfa (*Medicago sativa**), yellow sweet-clover (*Melilotus officinalis*), and yarrow (*Achillea millefolium*). There were two or three colonies of Indian hemp (*Apocynum cannabinum*) in flower. Although the flowers of this plant are favorites with many kinds of butterflies, no *Adopaea* were observed on them.

The butterflies were found over a stretch of at least a quarter of a mile along the tracks, though the great majority of them were concentrated in the area close to King Avenue where the vegetation was much more lush. They seemed to be plentiful in the vicinity of some patches of quack-grass (*Agropyron repens*). FROHAWK in *The Complete Book of British Butterflies* gives *Agropyron*, along with timothy (*Phleum pratense*) and heath false brome grass (*Brachypodium pinnatum*) as preferred foodplants in Great Britain. Timothy was also plentiful in this site.

In addition to the plants already mentioned, the following were common to abundant: downy brome grass (*Bromus tectorum*); yellow goatsbeard (*Tragopogon pratensis*); rib-grass plantain (*Plantago lanceolata*); Canada goldenrod (*Solidago canadensis*); wild parsnip (*Pastinaca sativa*); white sweet clover (*Melilotus alba*); tall fescue-grass (*Festuca elatior*); and wild grape (*Vitis* prob. *riparia*). Less common plants in the area where the butterflies were most prevalent were: common milkweed (*Asclepias syriaca*); wild carrot (*Daucus carota*); dandelion (*Taraxacum officinale*); spear thistle (*Cirsium vulgare*); Virginia creeper (*Parthenocissus quinquefolia*); field bind-

*Latin names of plants are those of *Gray's Manual of Botany*, eighth edition.

weed (*Convolvulus arvensis*); Jerusalem artichoke (*Helianthus tuberosus*); prickly lettuce (*Lactuca scariola*); black bindweed (*Polygonum convolvulus*); yellow rocket (*Barbarea vulgaris*); red-top (*Agrostis alba*); common mullein (*Verbascum thapsus*); black mustard (*Brassica nigra*); and burdock (*Arctium minus*). It will be noted that the great majority of these plants are common weeds of European origin.

The Columbus branch of the C. & O. Railroad connects directly with Detroit. Whether this fact is of significance as regards any relationship between the Detroit colony of *A. lineola* and the one at Columbus is, of course, not known.

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THE APPARENT INFLUENCE OF ISOLATION IN SOME SPECIES OF GEOMETRIDAE

by GEORGE F. PRONIN

Much has been written in Europe about melanism in Lepidoptera, sometimes said to be caused by industrial gases. An explanation made was that fumes arising from industries had contaminated the air.

I have observed the dark forms of *Boarmia crepuscularia* Schiff. in two different places: Lutsk, Wolhynia, Poland, and Marienbad, Czechoslovakia. I am satisfied that in both cases the melanistic population resulted from the isolation in which the broods lived.

At Lutsk the broad-leaf host trees of *B. crepuscularia* were surrounded by large fields, and the moths had to mate with their nearest relatives; the introduction of new blood was not readily possible. The situation at Marienbad was similar, only in that case the isolation was caused by a large area of a pure stand of spruce (*Picea* sp.) which extended for many kilometers; the host trees were not numerous on the mountainside near the town, and the beautiful dark *B. crepuscularia* "form nigra" existed only because of the isolation.

Interesting observations were made of *Amphidasis betularia* "form double-dayaria" dark form (= carbonaria), which I caught in 1943 in the town garden ("Volkspark") of Lodz, Poland, using a caged female of this species.

8 June: a ♂ of *Amphidasis* was attracted and caught; 12, 16, 22 June: each a ♂ of *A. betularia* "f. double-dayaria"; 8 July: I found a pair of this dark form *in copula*, indicating that the population was numerous.

I reared the progeny from the above mating and obtained 14 pupae. The last caterpillar pupated on 31 August 1943. Next year (1944) the moths emerged, all of *A. betularia* f. double-dayaria: 27 May, 2 ♀♀; 29 May, 2 ♀♀; 30 May, 1 ♂; 31 May, 2 ♂♂ and 2 ♀♀; 1 June, 2 ♂♂ and 2 ♀♀. One pupa died, but upon dissection proved to be of the same dark form.