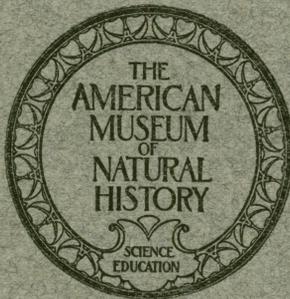


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By T. D. A. COCKERELL



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A FOSSIL MOTH FROM FLORISSANT, COLORADO

By T. D. A. COCKERELL

In 1909 a collection of fossils from the Miocene shales of Florissant, Colorado, was obtained by Messrs. Sternberg, Duce, and Rusk, and transmitted to The American Museum of Natural History. The new species were described by the present writer in the Bulletin of the American Museum, XXV (1910), with the exception of a moth, which was retained with the expectation that it would be described by another. More than ten years have passed and, as the moth has never been recorded, it seems desirable to offer a description. It is represented by a single anterior wing, but this is unusually well preserved. It is a member of the Geometridæ and, although its generic position, in the absence of antennæ, palpi, etc., must remain somewhat uncertain, it appears to fall in the large modern genus *Hydriomena* of Hübner.

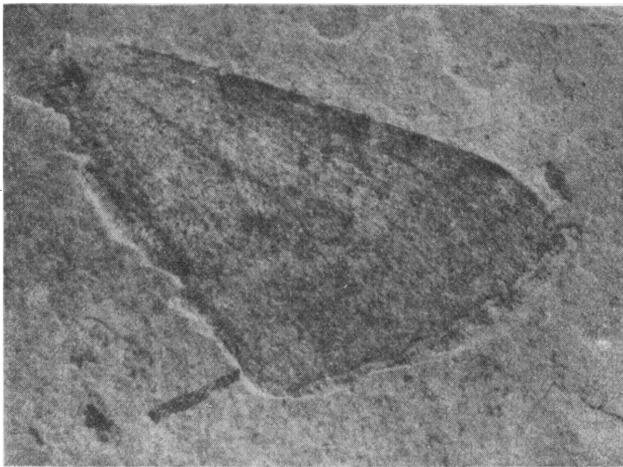


Fig. 1. Fossil Moth, *Hydriomena* (?) *protrita*. Enlarged.

***Hydriomena* (?) *protrita*, new species**

Anterior wing, length 23 mm.; costa distinctly arched before apex; outer margin 14.5 mm., gently convex; hind margin 17 mm.; basal space somewhat pallid; subbasal line very faint, but apparently arched outward, its lower part directed basad, and sharply angled a short distance above hind margin, in the manner of *H. manzanita*

Taylor, except that the curve is less abrupt and the angle is more pronounced; antemedian band also formed after the manner of *H. manzanita*, but more distant from base of wing, with the outward curve broader and less abrupt, though the posterior curve or loop and the angle between the two are nearly the same in the two species; the costal region is strongly infuscated, the dark color being broken by the antemedian band, which appears as a pale subvertical line; near the end of the cell is a distinct discal spot or pair of short transverse bars, apparently representing the dark antemedian mark of *H. manzanita*; the postmedian line is not so far from the antemedian as usual and appears to be formed much as in *H. albifasciata* Packard, inwardly bounding the dark apical and outer marginal areas; the fringe on the outer margin is chequered, as in many species.

The specimen bears the number 14.

So far as it is possible to see, this insect is of an entirely modern type. It is the first American fossil geometrid. The fossil Lepidoptera of Florissant, so far as known at present, are as follows, extinct genera being marked with an asterisk.

BUTTERFLIES

PIERIDÆ

Stolopsyche Scudder*
libytheoides Scudder

LIBYTHEIDÆ

Barbarothea Scudder*
florissanti Scudder
Prolibythea Scudder*
vagabunda Scudder

NYMPHALIDÆ

Prodryas Scudder*
persephone Scudder

Jupiteria Scudder*
charon Scudder
Lithodryas Cockerell*
styx (Scudder)
Apanthesis Scudder*
leuce Scudder
Chlorippe Boisduval
wilmattæ Cockerell
Nymphalites Scudder*
obscurum Scudder
scudderi Beutenmüller
and Cockerell

MOTHS .

SATURNIIDÆ

Attacus (?)
fossilis Cockerell

GEOMETRIDÆ

Hydriomena (?)
protrita Cockerell

TORTRICIDÆ

Tortrix (?)
florissantana Cockerell
destructus Cockerell

ETHMIDÆ

Ethmia (?)
mortuella Scudder

FAMILY UNKNOWN (larva)

Phylledestes Cockerell*
vorax Cockerell

It will be noticed that the butterflies with one exception are assigned to extinct genera. The moths, on the other hand, are doubtfully referred to living genera. It is possible that if we knew the moths better, we could distinguish them from living genera; but it must be confessed that there is nothing in their appearance to suggest this.

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FRANK E. LUTZ, Editor

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