

separating *Catopsilia pomona* from *C. crocale* that is adduced is that *C. pomona* has red antennæ and *C. crocale* black ones. Judging from the behaviour of *C. pyranthe* in Hong Kong, however, this is no distinguishing mark. Looking at a series of twelve I bred here in June, 1912, I find that six are wet season (form *chryseis*) with grey antennæ, five are dry season with pink antennæ, and the twelfth, a sporting individual determined to take no chances, has one grey antenna and one pink one; otherwise being of the dry form!

There are one or two points in connection with the mimicry theory which puzzle me in Hong Kong.

*P. polytes* has two forms of the female here, one of which is like the male and the other is a "mimic" of *P. aristolochiæ*. The mimicking form is almost as common as the ordinary form of the female (*polytes*), yet I have never seen a specimen of *P. aristolochiæ*, either on Hong Kong island itself or in the New Territory, though it has been known to occur in Hong Kong.

Again, *Argynnis niphe*, which is very common in Hong Kong and on the mainland, has a female which might be said to "mimic" *D. chrysippus* or *D. genutia*, both of which are also common, especially the latter, which the female *niphe* most resembles. But *A. niphe* does not, as a rule, occur at either the same place or time as *chrysippus* or *genutia*.

*Niphe* loves the open grassy hilltops, and *genutia* the woods and edges of woods, keeping off hilltops altogether; and *chrysippus*, although not liking such woody spots as *genutia*, does not occur on the breezy uplands with *niphe*. Moreover, *niphe* occurs chiefly during the wet season, *i. e.*, spring and summer, and is hardly ever seen in the autumn here. *Genutia*, on the other hand, is most plentiful in the late autumn, and *Chrysippus*, when it occurs in the summer, does so in places where *niphe* is practically never seen. *Chrysippus* also occurs in the autumn, but is not so common as *genutia*. It seems, therefore, to be waste of energy on the part of the female *niphe* in Hong Kong to copy the colour-scheme of insects which she very rarely comes across. Why is it done at all? She ought to have reverted locally to the colour-scheme of the male.

Hong Kong, 1913.

## THE FIRST FOSSIL MYDAID FLY.

BY T. D. A. COCKERELL.

HANDLIRSCH, in his great work 'Die Fossilen Insekten,' quotes Scudder as reporting "several" Mydaidæ (Midasidæ) from the Florissant shales. On looking up Scudder's exact words, we find that he merely said he had "several species of Midasidæ or Hermoneuridæ." Since the latter family is represented by



several described species from Florissant, Scudder's statement cannot be taken as positive evidence that he had any *Mydaidæ* at all, and up to the present time there has been nothing definite on the palæontology of the family. It is therefore with considerable pleasure that I recognize a veritable *Mydaid* among some materials gathered by one of the University of Colorado expeditions.

*Mydas miocenicus*, n. sp.

Represented by a wing lacking the apex, which was probably about 12 mm. long, the breadth (depth) being a little over 4 mm.; hyaline, with a broad dusky suffusion along the veins, as in some of the living forms; there is especially a fuscous cloud at the end of the discal cell. I cannot see anything in the venation which does not accord excellently with the modern genus *Mydas*. Compared with the wing of *M. vittatus*, as figured by Verrill ('British Flies,' v. p. 607), the following differences are apparent:—

- (1) Alula is broader and less produced.
- (2) End of anal cell is more distant (about 560 microns) from margin of wing.
- (3) Apex of fourth posterior cell more produced and acute, its lower apical side (from divergence of upper branch of fifth longitudinal vein to apex) 1010 microns long.
- (4) Discal cell on the combined second and third posteriors broader, the breadth 290 microns.
- (5) End of first basal cell rather broader, the breadth about 320 microns.
- (6) Stump of vein projecting into submarginal cell from base of second submarginal longer, about 560 microns.

The costa carries many short black bristles.

*M. miocenicus* was found at Station 14, in the Miocene shales of Florissant, Colorado, by Mr. Geo. N. Rohwer.

According to Williston, the known living *Mydaidæ* include about a hundred species, especially found in Australia, Africa, and South and Central America. *Mydas* occurs in New Mexico and Arizona.

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## NOTES ON THE OVA OF *LEUCANIA UNIPUNCTA* (*EXTRANEAE*).

By R. GEOFFREY TODD, F.E.S.

I WAS last year on the South Devonshire coast, and had the good fortune to take two specimens of *Leucania unipuncta* (*extraneae*). A few notes on the ova of this uncommon migrant may be of interest.

The first specimen was taken at sugar on August 28th. It was a female, and in hope of ova was placed in a tin containing grass-heads and dead reed-stems, and fed with sugar and water. It was very sluggish, and as it did not seem inclined to lay, it



Cockerell, Theodore D. A. 1913. "The first fossil mydaid fly." *The Entomologist* 46, 207–208.

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