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Besides documenting the first, but not surprising, records of *Morpheis clenchi* from México, this note illustrates a distributional phenomenon that will be observed more commonly as surveys of the Lepidoptera fauna of northwestern México are intensified, namely that species presently known only from the southwestern United States may actually be widespread and common in adjacent northwestern México. Similarly, with more intensive faunal studies in the southwestern United States we may expect to find species presently known only from northwestern México, although perhaps only in isolated, relict populations or as strays. I urge lepidopterists from the United States and México to pool their talents and efforts to conduct a joint survey of this intriguing border-straddling region.

JULIAN P. DONAHUE, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, California 90007-4057.

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A DESCRIPTION OF TOPOTYPICAL MALE *HEMILEUCA DIANA* (SATURNIIDAE)

Additional key words: Colorado, type locality, *Hemileuca grotei*, sister species.

Hemileuca diana Packard (Saturniidae) was first described in 1874 from a single female, collected in 1873; the locality was cited only as "Plum Creek" in Colorado (Packard, A. S. in Hayden, F. V. 1874, Annual Report of the United States Geological and Geographical Survey of the Territories embracing Colorado, being a report of progress of the exploration for the year 1873, Government Printing Office, Washington, D.C., 718 pp.). Prior to F. M. Brown (1972, J. Lepid. Soc. 26:245-247) a more precise location of the type locality of *H. diana* was largely in question because there are many streams in Colorado named "Plum Creek." According to the historical records of Hayden and A. C. Peale (in Hayden *op. cit.*), the most probable Plum Creek would be the northward flowing tributary of the segment of the South Platte River that flows through what is now Douglas County. The most likely *H. diana* type locality on this tributary is along the headwaters of Plum Creek in the area between Larkspur and Palmer Lake (Brown *op. cit.*). This location is slightly southwest of Castle Rock south of Denver, near present Interstate Highway 25. The study area where this research was conducted is along Plum Creek about 12 km W of Castle Rock at the junction of Douglas County roads 46 and 105 (Wolfensberger and Perry Park roads, respectively) very near or in the Christy Ridge housing development. This is about 8 km N of the probable location cited by Brown and well within the presumed type locality area.

Hemileuca diana is recorded from Colorado, Arizona, and Mexico (Ferguson, D. C. 1971, Bombycoidea, Saturniidae (in part), in Dominick, R. B., et al. (eds.), The moths of America north of Mexico, fasc. 20.2A:1-153, col. pls. 1-11, E. W. Classey, London; Tuskes, P. M. 1986, J. Lepid. Soc. 40:27-35), but until quite recently no other specimens were known to have been collected from the type locality. The biology of Arizona *H. diana* has been described (Tuskes *op. cit.*), although comparison of southern Arizona males to topotypical males was not made because such topotypical material was unknown at that time. Topotypical *H. diana* males are now known. At the Christy Ridge housing devel-

opment, between the dates of 28 September and 4 October 1987, 72 *H. diana* males were collected by the authors and R. S. Peigler.

Hemileuca grotei Grote & Robinson is recorded from the Edwards Plateau in central Texas and from New Mexico (Ferguson *op. cit.*; Kendall, R. O. & R. S. Peigler 1981, J. Lepid. Soc. 35:41–50; and Tuskes *op. cit.*). Through comparison of topotypical *H. diana* to Arizona and Mexico *H. diana* and to *H. grotei* populations found in Texas and New Mexico, it is clear the two taxa are closely related, quite possibly sister species, and form the closely knit *H. diana* complex (Tuskes, P. M. 1984, J. Lepid. Soc. 38:281–308, Table 1). Morphological differences of material sampled from various localities seem to indicate that some populations of what are now called *H. grotei* and *H. diana* may be misidentified or even undescribed taxa (see Tuskes 1986 *op. cit.*: p. 28, figs. 2c and 2d). An investigation of the *H. grotei* complex is currently underway.

Topotypical *H. diana* males have been deposited in the Museum of Comparative Zoology, Harvard University, in association with the holotype female; Natural History Museum of Los Angeles County and San Diego Natural History Museum, California; Denver Museum of Natural History, Colorado; National Museum of Natural History, Smithsonian Institution, Washington, D.C.; American Museum of Natural History, New York; and in the personal collections of R. S. Peigler, Colorado; K. L. Wolfe, M. J. Smith, P. M. Tuskes, California; W. A. Nässig, West Germany; C. Lemaire, France; and the authors.

The following description of a topotypical *H. diana* male is based on a specimen (Fig. 1a) collected 4 October 1987 by the senior author and R. S. Peigler very near the presumed type locality.

HEAD: Eyes dark brown near black. All hairs black. Labial palps absent. Antennae black, bipectinate, 7 mm long, with 36 segments. **THORAX:** Collar off-white, thoracic tufts light gray with black bases, pronotum clothed with short, light rust-red hairs with mixed black to light gray bases, meso- and metathorax clothed with rust-red tufts. **LEGS:** Femur covered with very long dark rust and white hairs, tibia with shorter black and white hairs, tarsi black and sparsely covered with short black hairs, claws brown. **ABDOMEN:** Abdominal segments I–VII covered dorsally with black hairs, longer sparser hairs white. Caudal segments covered with long burnt orange hairs. Ventrally segments I–IX covered with shorter black and white hairs. Intersegmental spaces black. **FOREWING:** Elongated, length 23 mm, ground color dark brown with dark brown veins, antemedian band absent; yellow, bare, crescentic bar in center of black discal spot, postmedian band white, originating at base of R5, 3 mm wide at R5, intersected proximally by discal spot; discal spot completely interrupting postmedian band transforming it to two profound dashes, band terminating at anal vein. Band 1–2 mm wider ventrally than dorsally. Postmedian area moderately suffused with silver-gray scales. **HINDWING:** Length 18 mm, ground color light black with light black veins, antemedian band absent, black discal spot partially obscured by ground color and fading into postmedian band, postmedian band white, 3 mm wide at R, tapering sharply to tornus, and terminating at anal vein. Dorsal and ventral postmedian band width the same. Postmedian band originating at Sc. Proximal margin of postmedian band not sharply defined but grading from ground color to white. Distal margin of postmedian band sharply defined. Anal margin heavily clothed in long, light black hairs

Material examined ($n = 50$) demonstrates remarkably uniform morphological characteristics; differences occur only in wing length, the amount of development of the fore- and hindwing postmedian bands, and the suffusion of silver-gray scales in the forewing postmedian area. The forewing is always elongated as in *H. magnifica* (Rotger) and *H. hera hera* (Harris). The ground color of the fore- and hindwings remains constant while forewing length varies between 21.0 mm and 24.5 mm ($\bar{x} = 23.3$ mm), hindwing length varies from 16.0 mm to 20.0 mm ($\bar{x} = 18.0$ mm). Although the forewing postmedian band is rarely reduced to two slight dashes, it is always conspicuously developed, varies

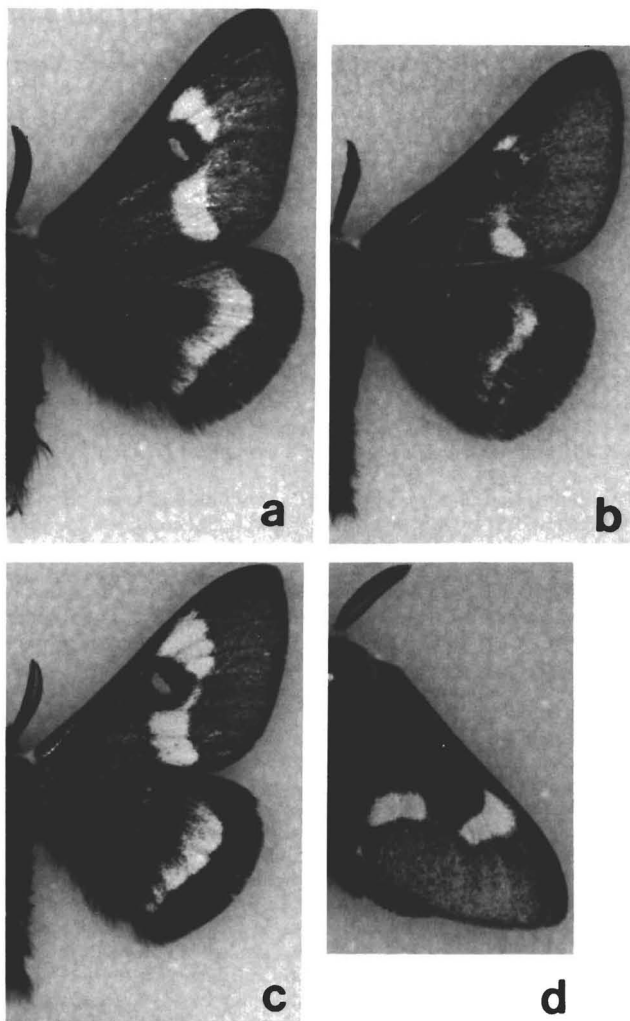


FIG. 1. a-d. Topotypical *Hemileuca diana* males, showing wing pattern variation. All specimens from Plum Creek, Douglas County, Colorado; collected by S. E. Stone, D. E. Bowman, and R. S. Peigler, 28 September-4 October 1987.

in width from 2 to 6 mm at R5, and is completely disrupted by the discal spot in 37 (74%) of the males examined (Fig. 1b). In 13 (26%) of the males examined, the discal spot penetrates the postmedian band but fails to disrupt it entirely; the band remains connected distally by a thin (<1 mm) portion of the band (Fig. 1c). The postmedian area is suffused with silver-gray scales in 40 (80%) of the males examined; the amount of suffusion varies from slight to very pronounced (Fig. 1d). The hindwing postmedian band is always present. It is well developed in 46 (92%), but reduced to a dash or dot in 4 (8%) of the males examined.

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STEPHEN E. STONE,¹ 18102 East Oxford Drive, Aurora, Colorado 80013.

DONALD E. BOWMAN, 1602 Ulysses Street, Golden, Colorado 80401.

¹ Natural Resource Specialist, U.S. Department of the Interior, National Park Service, Denver Service Center, 12795 W. Alameda Parkway, Lakewood, Colorado 80225.

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DIURNAL NECTARING BY A *CATOCALA* MOTH (NOCTUIDAE)

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At about 1200 h on 4 August 1988, I was surprised to see a *Catocala* moth (Noctuidae) nectaring on Canada thistle (*Cirsium arvense* (L.) Scop.; Asteraceae) at the Whiteshell Nuclear Research Establishment, 8 km south of Lac du Bonnet, Manitoba. The temperature was about 21°C, with a slightly hazy sun and a light north wind. After feeding for a few minutes, the moth flew to rest on the trunk of a cultivated poplar (*Populus* sp.; Salicaceae).

I identified the moth as *C. briseis* W. H. Edwards, based on illustrations in texts by C. V. Covell, Jr. (1984, A field guide to the moths of eastern North America, Houghton Mifflin, Boston, 496 pp.), W. J. Holland (1903, The moth book, 1968 reprint by Dover Publications, New York, 479 pp.), and T. D. Sargent (1976, Legion of night: The underwing moths, Univ. of Massachusetts Press, Amherst, 222 pp.). The most distinctive features were an irregular whitish band between the postmedian and subterminal lines on the dorsal surface of the mainly blackish forewing, and a smaller whitish patch between this band and the body. The hindwing was boldly banded with black and scarlet above, and more subdued below. The only similar species, *C. grotiana* Bailey, is apparently unknown in Manitoba (D. C. Hawks and R. R. Hooper pers. comm.).

Catocala moths are largely nocturnal, and are usually observed by day only if disturbed (Sargent *op. cit.*). It is possible that this individual had been flushed by a predator, and was subsequently attracted to the thistle flower before finding a new resting place. It may well, however, have initiated feeding behavior without such stimulus. Diurnal feeding has previously been observed in several *Catocala* species at "sugar" patches left over from prior baiting trips (T. D. Sargent pers. comm.).

Although adults of many *Catocala* species visit bait readily (Sargent *op. cit.*), little is known about their natural feeding habits. Sargent cites two species taken while nectaring at night, both by M. C. Nielson in Michigan: *C. unijuga* Walker at milkweed (*Asclepias* sp.; Asclepiadaceae) and joe-pye-weed (*Eupatorium* sp.; Asteraceae), and *C. mira* Grote at wild bergamot (*Monarda* sp.; Lamiaceae). In Manitoba and elsewhere, Canada thistle is a favored nectar source for several butterflies (Opler, P. A. & G. O. Krizek 1984, Butterflies east of the Great Plains, Johns Hopkins Univ. Press, Baltimore, 294 pp.).

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PETER TAYLOR, P.O. Box 597, Pinawa, Manitoba R0E 1L0, Canada.

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