

SIX SPECIES OF TIGER MOTHS
(ARCTIIDAE: LITHOSIINAE, CTENUCHINAE)
NEW TO THE UNITED STATES FAUNA, WITH
NOTES ON THEIR NOMENCLATURE AND
DISTRIBUTION IN MIDDLE AMERICA

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ABSTRACT. Six species of Arctiidae are reported from the United States (Texas and Arizona) for the first time, one in the subfamily Lithosiinae, *Rhabdatomis laudamia* (Druce), and five in the subfamily Ctenuchinae: *Apeplopoda mecrida* (Druce), **new combination**; *Eucereon myrina* Druce; *Eucereon erythrolepis* Dyar; *Pseudosphex leovazquezae* (Pérez & Sánchez), **new combination**; and *Poliopastea clavipes* (Boisduval). Three of these species are also reported south of Mexico for the first time: *Apeplopoda mecrida* (Guatemala and Costa Rica); *Eucereon erythrolepis* (Guatemala and Costa Rica); and *Pseudosphex leovazquezae* (Guatemala). Additional nomenclatural actions taken are: *Saurita improvisa* Schaus is transferred to *Apeplopoda* Watson, **new combination**; *Amycles strigosa* Druce is transferred from *Pseudosphex* Hübner to *Myrmecopsis* Newman, **new combination**.

Additional key words: Mexico, Guatemala, Costa Rica.

Moth collectors in the southwestern United States are continually discovering representatives of Mexico's rich tiger moth fauna not previously reported north of that republic. At least five of these recently were reported, without elaboration, from the United States for the first time by Franclemont (1983): *Gardinia anopla* Hering, *Eudesmia laetifera* (Walker), *Holomelina cetes* (Druce), *Ectypia mexicana* (Dognin), and *Turuptiana extrema* (Walker) [the last and *T. permaculata* (Packard)] were transferred to *Hypercompe* by Watson and Goodger (1986: 29). I now report on the first U.S. occurrence of six additional species that have come to light in the course of routine curation, the study of other collections, and especially through the cooperation of several collectors who submitted their "mystery moths" for identification (see Acknowledgments section at the end of this paper for an explanation of the abbreviations used).

Where it is not intuitively obvious, I have indicated where these genera and species may be interpolated in the "MONA" Check List (Franclemont 1983). In the case of the Ctenuchinae, whose higher classification is virtually nonexistent, where one interpolates additional taxa is essentially arbitrary, as the present MONA Check List order follows neither that of Hampson (1898), Draudt (1915–1917), nor the scheme proposed by Forbes (1939). I also am taking this opportunity to update the nomenclature of the genera and species reported here,

as well as of those taxa already in the MONA Check List which are directly affected by the addition of the new records reported here.

ARCTIIDAE: LITHOSIINAE

Rhabdatomis laudamia (Druce, 1885)

(Fig. 1)

Lithosia laudamia Druce, 1885:131, pl. 13, fig. 4.

Crambidia laudamia (Druce): Kirby 1892:338.

Diarhabdosia laudamia (Druce): Hampson 1900:518, fig. 370; Draudt 1919:243, pl. 33, row h.

Rhabdatomis laudamia (Druce): Field 1964:53, figs. 13, 21, 22; Rindge 1965:3; Beutelspacher 1988b:892.

[Note: See Field (1964) for a more comprehensive synonymy.]

Specimen examined. ARIZONA: Santa Cruz Co., Santa Rita Mts., Madera Canyon, elev. 5000 feet [1525 m], 1 August 1965, Robert Crandall (1 male, LACM).

Distribution. The species has been reported from the Mexican states of Veracruz and Chiapas, south to Colombia (Beutelspacher 1988b:892, Field 1964:54, Rindge 1965:3). I have examined specimens from two additional states in MEXICO: San Luis Potosí: 5 km NE Ciudad del Maíz, elev. 4400 ft [1340 m], 8–10 May 1991, David G. Marqua (1 male, LACM). Oaxaca: Municipio Santiago Comaltepec, Puerto Eligio, elev. 650 m, 1 & 16 November 1980, Eduardo C. Welling M. (7 males, LACM); Municipio Santiago Comaltepec, Puerto Antonio, Sierra de Juárez, elev. 1200 m, 2 November 1980, Eduardo C. Welling M. (2 males, LACM).

Remarks. This is the most puzzling of the new records reported here: not only is it the first and only specimen of this species ever taken, to my knowledge, in a locality that has been heavily collected for 50 years, but it is the most disjunct from its nearest known localities in central Mexico. At rest, this inconspicuous species resembles (and is presumably in a mimicry complex with) a lampyrid beetle, and for this reason may be overlooked by most collectors. *Rhabdatomis* Dyar, 1907, and its species *laudamia*, may be placed between *Lycomorpha* and *Hypoprepia* in the MONA Check List (Franclemont 1983).

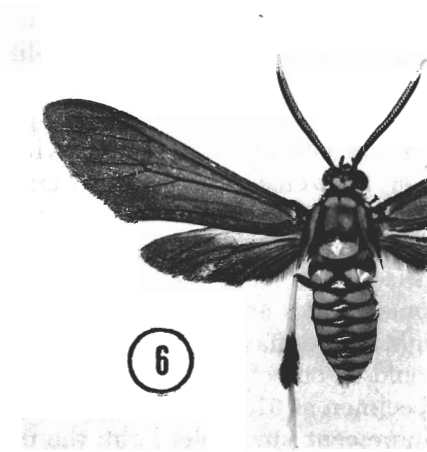
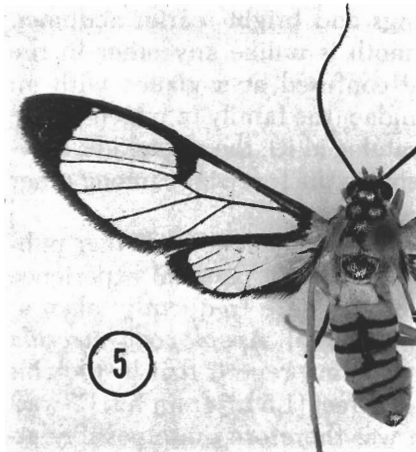
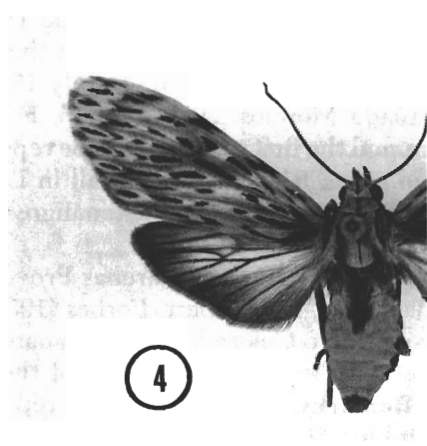
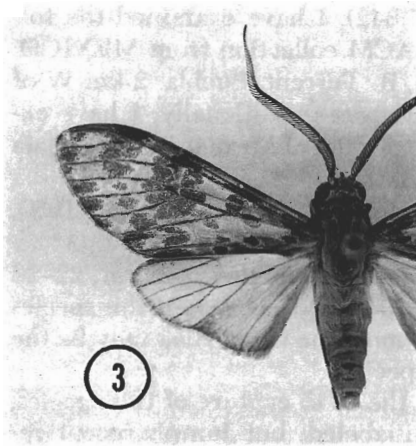
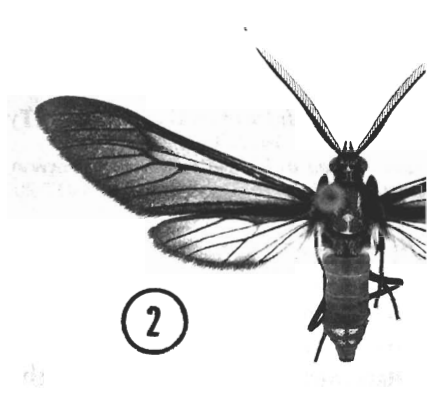
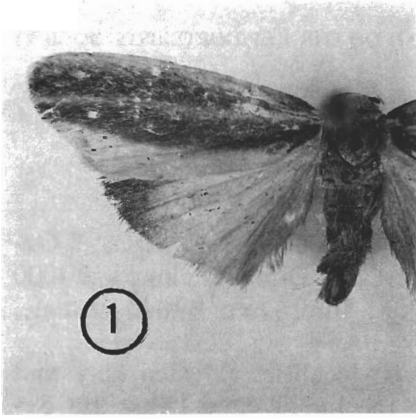
ARCTIIDAE: CTENUCHINAE

Apeplopoda mecirida (Druce, 1889), **new combination**

(Fig. 2)

Gymnopoda mecirida Druce, 1889:84 (Type locality: Mexico City); Druce 1897:342, pl. 71, fig. 12; Kirby 1892:138.

Saurita mecirida (Druce): Hampson 1898:272; Zerny 1912:81; Draudt 1915:92, pl. 15, row e.



FIGS. 1-6. Arctiidae new to the United States fauna (FWL = forewing length): 1, *Rhabdatomis laudamia* (FWL = 9.5 mm); 2, *Apeplopoda mecrida* (FWL = 14.5 mm); 3, *Eucereon myrina* (FWL = 14.5 mm); 4, *Eucereon erythroleptis* (FWL = 16.5 mm); 5, *Pseudosphex leovazquezae* (female) (FWL = 11.0 mm); 6, *Poliopastea clavipes* (FWL = 14.5 mm).

Mystrocneme dulcicordis Dyar, 1907:51 (Type localities: Mexico City and Orizaba, Mexico); Zerny 1912:76.

Rhynchopyga dulcicordis (Dyar): Hampson 1914:181, pl. 9, fig. 24.

Saurita dulcicordis (Dyar): Draudt 1917:203, synonym of *Saurita mecrida*.

Specimens examined. ARIZONA: Cochise County: Douglas, 7 October 1945, W. W. Jones (1 female, LACM); Douglas, elevation 4000 feet [1220 m], 4 May 1986, UV light, P. M. Jump, Acc. #1040, (1 male, Jump collection).

Distribution. In addition to the type localities (Mexico City and Orizaba, Veracruz), and the Hidalgo specimens cited below (in Remarks), *Apeplopoda mecrida* has been reported from the city of Durango, Durango, Mexico (Druce 1897:342). I have examined the following additional specimens in the LACM collection from MEXICO: Mexico: Valle de Bravo, 24 July 1985, R. Turrent. Puebla: 2 km W of Cañada Morelos, 20 July 1976, E. Giesbert. Additionally, I have examined the first specimens to be reported south of Mexico, in Guatemala and Costa Rica, as follows (all in LACM):

GUATEMALA: Quezaltenango: Cantel, elev. 2200 m, 23 June 1987, E. C. Welling M.

COSTA RICA: Puntarenas Prov.: Monteverde, elev. 1400 m, 22–23 May 1974, E. Giesbert. Forbes (1939, 1942) did not record this species from Barro Colorado Island, Panama; montane Costa Rica may be the southern limit of distribution of the species.

Remarks. I was reluctant to report the 1945 capture of this species, thinking that it might have been mislabeled, but Jump's recent recollection of this moth in the same locality confirmed the much older record. With semi-hyaline brown wings and bright scarlet abdomen and thoracic dorsum, this wasp-like moth is unlike any other in the U.S.A., although it could possibly be confused at a glance with an aposematic/mimetic species of Zygaenidae (the family in which Druce first described it and in which Kirby cataloged it); the zygaenids, however, have chaetosemata and 2 anal veins in the forewing, among other differences.

Behavioral observations on the wasp-like ctenuchines, whether published or on label data, are scanty at best. In my personal experience some species are strictly diurnal while others are frequently taken at light; some may be both nocturnal and diurnal. *Apeplopoda mecrida* could be one of the latter. Jump (pers. comm.) reports that he took his specimen at 0730 h, MST, at rest about 5 feet [1.5 m] from his 15-watt fluorescent ultraviolet light; the moth was therefore quite possibly attracted to the light, perhaps as late as dawn, but still could have been a resting diurnal specimen within the search area of the collector. Diurnal activity of this species is, however, confirmed by at least one

of the three Mexican specimens, taken by butterfly collectors, that I have examined at CMNH. The field notes for a male (Hidalgo: 5 mi [8 km] N. Zimapán, 2140–2280 m, Sta. 17b, 12 January 1966, oak-piñon-juniper dense scrub, Clench & Miller CM-CUA Exp. 1966) indicate that the moth was diurnal, “apparently feeding on yellow *Senecio* flowers” [Asteraceae] (L. D. Miller specimen No. 1966-485). The other two specimens (1 male, 1 female), lacking behavioral data but presumably obtained in the course of routine diurnal butterfly collecting, also were taken on the same expedition in the state of Hidalgo: 4 mi [6.5 km] NE Jacala, 1740 m, Sta. 13, 10 January 1966, oak-juniper scrub (subhumid).

Apeplopoda mecrida may be placed before *Cosmosoma* in the MONA Check List (Franclemont 1983).

Nomenclature. Watson (in Watson et al. 1980:14) proposed the replacement generic name *Apeplopoda* for *Gymnopoda* Felder, 1874 (type species: *Gymnopoda ochracea* Felder, 1874), which is preoccupied by *Gymnopoda* Macquart, 1835 (Diptera). “*Saurita*” *mecrida*, clearly congeneric with what I have identified as *Apeplopoda ochracea*, has been consistently misplaced since Hampson (1898:272) transferred it to *Saurita* (type species: *Sphinx cassandra* Linneaus, a stout-bodied species with broad hind wings), based on the superficial similarity he found in a few external characters. Hampson did, however, segregate 6 species of *Saurita* (his section I), including *mecrida* and *ochracea*, on the basis of “Hind wing with the inner area very narrow,” but did not assign a genus-group name to this assemblage. I have not examined the remaining 4 species in this group [*Saurita* *cryptoleuca* (Walker), *biradiata* (Felder), *tristissima* (Perty), and *tenuis* (Butler)], so their formal transfer to another genus (or genera) would be premature, considering the present uncertainty of ctenuchine classification.

I have, however, examined specimens of the Costa Rican species *Saurita improvisa* Schaus (1912:36), described since Hampson’s monograph, and find it to be congeneric with *Apeplopoda ochracea*, and consequently transfer it to that genus: *Apeplopoda improvisa* (Schaus), **new combination.**

Eucereon myrina Druce, 1884
(Fig. 3)

Eucereon myrina Druce, 1884:84, pl. 9, fig. 10 (Type locality: Guatemala: [Baja Verapaz]: San Gerónimo [Jerónimo]); Kirby 1892:199; Druce 1897:362; Hampson 1898:508; Beutelspacher 1988a:471.

Eucereon myrina (Druce): Zerny 1912:141; Draudt 1915:180, pl. 25, row g. [Note: *Eucereon* Zerny (1912:137) is an unjustified emendation of *Eucereon* Hübner; see Watson et al. 1980:67.]

Eucereon aff. *myrina* (Druce): Beutelspacher 1982:409.

Eucereon aff. *myrina* (Druce): Beutelspacher 1982:fig. 13.

Euceron [sic] *myrina* (Druce): Beutelspacher 1988a:466. [Note: *Euceron* is an incorrect subsequent spelling of *Eucereon* Hübner.]

Specimens examined. ARIZONA: Cochise Co.: Huachuca Mts., Ash Canyon, 5100 feet [1555 m], 27 July (1 male) & 3 August (1 female) 1981, N. McFarland (LACM); Huachuca Mts., mouth of Miller Canyon, 5000 feet [1524 m], 6 September 1970, C. Henne (1 male, LACM). Pima Co.: Santa Rita Mts., N end, Rosemont Area, 31°48–53'N, 110°42–47'W, UV light, Ridge Area, Sec. 36 [2nd digit obliterated by pin hole], elev. 5600 feet [1700 m], Anamax Mine Inventory, 11 August 1975, J. Busacca & C. Olson (1 male, Univ. of Arizona, Tucson). Santa Cruz Co.: Santa Rita Mts., Madera Canyon, 5000 feet [1524 m], 2 August 1981, R. Leuschner (1 female, Leuschner collection); same locality, 10 August 1981, R. Crandall (1 male, LACM).

Distribution. *Eucereon myrina* is common and widespread in Mexico; I have seen specimens from Sonora, Sinaloa, Jalisco and Baja California Sur on the west and San Luis Potosí on the east, south to Chiapas. The species was described from Guatemala, but I have not seen any specimens from there or any farther south.

Nomenclature. See comments under *Eucereon erythroleptis*.

Eucereon erythroleptis Dyar, 1910

(Fig. 4)

Eucereon erythroleptis Dyar, 1910:232 (Type locality: Mexico: [Veracruz]: Cordoba) (holotype female in USNM, examined).

Eucereon [sic] *erythroleptis* [sic] (Dyar): Zerny 1912:139. [Note: *Eucereon* Zerny (1912:137) in an unjustified emendation of *Eucereon* Hübner; see Watson et al. (1980:67).]

Eucereon erythroleptis [sic] Dyar: Hampson 1914:331, as junior subjective synonym of *Eucereon pilati*[t] Walker, in error. [Note: *erythroleptis* is an incorrect subsequent spelling of *erythroleptis*.]

Eucereon [sic] *erythroleptis* (Dyar): Draudt 1915:176, pl. 25, row b.

Euceron [sic] *erythroleptis* (Dyar): Beutelspacher 1988a:466. [Note: *Euceron* is an incorrect subsequent spelling of *Eucereon* Hübner.]

Euceron [sic] *erythroleptis* (Dyar): Beutelspacher 1988a:469. [Note: *Euceron* is an incorrect subsequent spelling of *Eucereon* Hübner.]

Specimen examined. TEXAS: Webb Co., Laredo, 20 September 1971, T. W. Taylor, 1 female [LACM].

Distribution. *Eucereon erythroleptis* has hitherto only been known from Mexico; I have examined specimens from the states of Sinaloa (July, August, December), San Luis Potosí (May), Quintana Roo (July–October), and Veracruz (July). Additionally, I report here the first records south of Mexico, from Guatemala (three departamentos) and Costa Rica (all in LACM):

GUATEMALA: Alta Verapaz: Finca El Salto, 2 km N Tukurú, 19°00'N, 90°07'W, elev. 320 m, moist forest, 11–21 May 1991, Peter Hubbell (1

female, LACM). Jutiapa: Finca Cerro Gordo, 11 km S Moyuta, elev. 515 m, 14–18 July 1991, Peter Hubbell (3 males). Zacapa: La Unión, 850 m, 12 September, 3 November, and 10 December 1972, E. C. Welling M. (3 males); 3 km E La Unión, cloud forest at 1540 m, 12–17 August 1991, Peter Hubbell (1 female).

COSTA RICA: Puntarenas Province, Monteverde [ca. 1400 m], 16 June 1972, C. L. Hogue & J. Dockweiler (1 female).

Remarks. *Eucereon erythrolepsis* is very similar in size and appearance to the sympatric *E. pilatii* Walker, 1854 (frequently misspelled “*pilati*”; type locality Honduras), a species I have seen from as far north as San Luis Potosí, Mexico, and which may eventually be discovered in Texas. The two may be distinguished as follows: in *E. erythrolepsis* the forewing ground color is usually grayish; the largest rectilinear spot on the forewing is in the lower distal end of the discal cell; the red abdomen is dorsally unspotted posterad of the dark brown basal patch (but apex of abdomen is black in both species); and the male genitalia have a broad, spoon-shaped valva, a simple uncus, and a stout, dorsoventrally curved, paired superuncus. In *E. pilatii* the forewing ground color is brown; the largest rectilinear forewing spot is *below* the end of the discal cell, in cell Cu_1-Cu_2 ; each abdominal segment posterad of the basal patch has a middorsal black spot; and the male genitalia have a slender valva abruptly terminating in a sharp point, a massive Y-shaped uncus, and a paired superuncus of long, curved, slender, pointed arms. The figures of both species in my copy of “Seitz” (Draudt 1915: pl. 25, row b) are very poor, but do accurately depict the dorsal abdominal differences.

Nomenclature. *Eucereon* is a large, heterogeneous genus badly in need of revision. Several genera have been resurrected from the synonymy of *Eucereon*, including *Theages* Walker (Travassos 1962, 1964) and *Galethalea* Butler (Travassos 1952a). The sole species of *Eucereon* previously listed for the North American fauna (*carolina*) actually belongs to *Nelphe*, another former synonym of *Eucereon* that has been resurrected (Travassos 1952b, 1952c). (Complete bibliographic and type species information for these genera may be found in Watson et al. 1980.) A revised synonymy for *Eucereon* and *Nelphe*, and their species in America north of Mexico (in MONA Check List format), would be:

EUCEREON Hübner, [1819] 1816

ERITHALES Poey, 1832

EUCEREON Walker, 1854 [misspelling]

EUCEREA Walker, 1856 [misspelling]

ACRIDOPSIS Butler, 1876

EUCEREUM Zerny, 1912 [unjustified emendation]

EUCERON Beutelspacher, 1988 [misspelling]

EUCERERON Beutelspacher, 1988 [misspelling]

8270.1 *myrina* Druce, 1884

8270.2 *erythrolepis* Dyar, 1910

erythrolepis Hampson, 1914 [misspelling]

NELPHE Herrich-Schäffer, [1858] 1850–1858

8271 *carolina* Hy. Edwards, 1886

confinis (Druce, 1884), not H.-S. [misident.]

confine (Hampson, 1898), in part, not H.-S.

cubensis (Schaus, 1904)

Pseudosphex leovazquezae (Pérez & Sánchez, 1986),

new combination

(Fig. 5)

Abrochia leovazquezae Pérez & Sánchez, 1986:234 (Type locality: Mexico: Veracruz: Cerro

Specimens examined. TEXAS: Hidalgo Co., Santa Ana Refuge, 13 November 1971 (1 female); same locality, 23 September 1973 (1 male); both specimens collected by A. & M. E. Blanchard (USNM).

Distribution. *Pseudosphex leovazquezae*, described from Veracruz, Chiapas, and San Luis Potosí, frequently is taken at lights in eastern Mexico. I have examined approximately 100 specimens from the following states (arranged north to south) and months (collections of USNM, R. B. Nagle, E. C. Knudson, CNC, CMNH, UCB and LACM): Nuevo León (July), Tamaulipas (June, July); San Luis Potosí (March, May–August, October, November); Veracruz (June, August); Oaxaca (July, September, November); Chiapas (May); and Quintana Roo (June–December).

This species has not been previously reported south of Mexico. I have examined a single specimen from GUATEMALA: Jutiapa: Finca Cerro Gordo, 11 km S Moyuta, elev. 515 m, 14–18 July 1991, Peter Hubbell (1 female, LACM).

Remarks. This recently described species is remarkably similar in appearance to over a score of wasplike Neotropical species in several diverse genera. Species of *Pseudosphex* may be readily distinguished from similar-appearing genera by having a large, fully developed hind-wing discal cell with only three posterior veins (vein M_2 absent). A very similar species, to be described later, is widely distributed in Mexico, principally on the Pacific Slope.

Nomenclature. Although the genus *Pseudosphex* is already included in the North American fauna (Franclemont 1983:119), the species placed in it actually belongs in another genus. The confusion arose when Hampson (1898:154), followed by Draudt (1915:38), wrongly consid-

ered the type species of *Pseudosphex* to be *Pseudosphex polistes* Hübner, instead of *Pseudosphex zethus* Hübner, with the result that their concept of *Pseudosphex* is actually *Myrmecopsis* Newman. The species they placed in *Chrysostola* and *Abrochia*, respectively, belong in *Pseudosphex*. Complete bibliographic and type species information for these genera may be found in Watson et al. (1980). A revised synonymy for these two genera and their species in America north of Mexico (in MONA Check List format) would be:

PSEUDOSPHEX Hübner, 1818

SPHECOMORPHA Hübner, 1808 [rejected]

SPHECOMORPHA Hübner, 1818 [unavailable]

ABROCHIA Herrich-Schäffer, 1855

CHRYSOSTOLA Herrich-Schäffer, [1855]

SPHECOPSYCHE Dognin, 1898

PSEUDARGYROEIDES Klages, 1906

PSEUDARGYROIDES Zerny, 1912 [unjustified emendation]

8276.1 *leovazquezae* (Pérez & Sánchez, 1986)

MYRMECOPSIS Newman, 1850

SPHECOPSIS Felder, 1874

PSEUDOSPHEX of authors, not Hübner, 1818

8277 *strigosa* (Druce, 1884) (*Amycles*), **new combination**

Poliopastea clavipes (Boisduval, 1870)

(Fig. 6)

Mastigocera clavipes Boisduval, 1870:81 (Type locality: Mexico).

Mastigocera calvipes [sic] (Boisduval): Druce 1884:49, pl. 6, fig. 20; Druce 1897:339.

[Note: *calvipes* is an incorrect subsequent spelling of *clavipes*.]

Drucea clavipes (Boisduval): Kirby 1892:130.

Horama clavipes (Boisduval): Hampson 1898:420; Draudt 1915:143, pl. 21, row i; Zerny 1912:121.

Poliopastea clavipes (Boisduval): Dietz & Duckworth 1976:22, figs. 10–12, pl. 3, figs. 17–18; Beutelspacher 1984:172, 179, fig. 19; Beutelspacher 1988a:464.

Specimen examined. TEXAS: Hidalgo Co., Santa Ana Wildlife Refuge, 28 October 1986, E. C. Knudson (1 male, Knudson collection).

Distribution. Widespread and frequently collected in Mexico, reported as far south as Venezuela (Hampson 1898:420); melanic specimens may be confused with other species (see Remarks). In the course of this study I have examined specimens from the Mexican states of Colima, Michoacán, Quintana Roo, San Luis Potosí, and Sinaloa.

Remarks. This moth may be overlooked because of its resemblance to the more common *Horama panthalon texana* (Grote). *Poliopastea clavipes* is variable in coloration; although it is the only non-black member of the genus, melanic specimens are common (but all specimens

retain the iridescent metallic spots and the white antennal tips). Completely black specimens resemble *P. laconia* (Druce), while black specimens with orange hind tarsi resemble *P. laciades* (Schaus); in fact, "normal" yellow/brown specimens of *P. clavipes* look very similar to these two species when photographed under ultraviolet light (Dietz & Duckworth 1976:22, pl. 3, figs. 17, 18). Forbes (1939:131) noted that *P. laconia* and *P. laciades* appeared to have identical male genitalia, and speculated that the two species may merely be color forms of each other, while Dietz and Duckworth (1976:22) observed that the male genitalia of *P. laciades* and *P. clavipes* also appeared identical, and suggested the possibility of a polymorphic species, an hypothesis supported by my examination of scores of specimens from Mexico and Guatemala. All three "species" are sympatric over much or all of their ranges. *Poliopastea* is clearly in need of revision; until then, however, some simple rearing experiments to ascertain the number of "species" among the offspring of a single parent female would aid significantly in the resolution of the polymorphism question.

ACKNOWLEDGMENTS

Numerous individuals and institutions have assisted in this study by drawing my attention to new records, through the loan or gift of specimens, and by providing access to the collections in their care. Institutions, their abbreviations as used in this paper, and their curators include CMNM (Carnegie Museum of Natural History, J. E. Rawlins); CNC (Canadian National Collection, Agriculture Canada, J. D. Lafontaine); LACM (Natural History Museum of Los Angeles County); UCB (University of California, Berkeley, J. A. Powell); USNM (U.S. National Museum of Natural History, Smithsonian Institution, D. C. Ferguson & R. W. Hodges). I thank the following individuals for their generous cooperation: R. Crandall, P. M. Jump, R. H. Leuschner, R. B. Nagle, and T. W. Taylor; E. C. Knudson deserves special mention: not only did he discover one third of the records reported here, but his initial inquiry about the identity of what was then an undescribed species of *Pseudosphex* launched my project to catalog and study the Neotropical Ctenuchinae. Some of the LACM specimens cited in this paper were prepared and curated with the aid of two collection improvement grants from the National Science Foundation (BSR-8410742 and BSR-8800344), which are gratefully acknowledged. My thanks to Don Meyer for cheerfully executing the photographs and to Brian P. Harris for technical assistance.

LITERATURE CITED

- BEUTELSPACHER B., C. R. 1982. Mariposas del suborden Heterocera (Lepidoptera) de "Cahuare", Chiapas, México (Familias Ctenuchiidae [sic], Arctiidae, Pericopidae, Diopitidae, Sphingidae y Saturniidae). An. Inst. Biol. Univ. Nac. Autón. de Méx. 52, Ser. Zool. (1):407-425, 60 figs.
- . 1984. Lepidópteros de Chamela, Jalisco, México III. Familias Castniidae, Ctenuchiidae [sic], Arctiidae, Pericopidae y Diopitidae. An. Inst. Biol. Univ. Nac. Autón. de Méx. 55, Ser. Zool. (2):169-184, 53 figs.
- . 1988a. Catálogo de la colección Roberto Müller (Lepidoptera) del Museo de Historia Natural de la Ciudad de México VI. Familias Castniidae, Zygaenidae, Ctenuchiidae [sic] y Nolidae. An. Inst. Biol. Univ. Nac. Autón. de Méx. 58, Ser. Zool. (1): 455-473.

- 1988b. Catálogo de la colección Roberto Müller (Lepidoptera) del Museo de Historia Natural de la Ciudad de México VII. Familia Arctiidae. An. Inst. Biol. Univ. Nac. Autón. de Méx. 58, Ser. Zool. (1):891-915.
- BOISDUVAL, J. B. A. D. 1870. Considérations sur des Lépidoptères envoyés du Guatemala à M. de l'Orza. Oberthür & fils, Rennes. 100 pp.
- DIETZ, R. E. & W. D. DUCKWORTH. 1976. A review of the genus *Horama* Hübner and reestablishment of the genus *Poliopastea* Hampson (Lepidoptera: Ctenuchidae). Smithsonian Contrib. Zool. 215:53 pp.
- DRAUDT, M. 1915-1917. Family Syntomidae, pp. 33-230. In Seitz, A. (ed.), The Macrolepidoptera of the world 6: The American Bombyces and Sphinges. Alfred Kernen Verlag, Stuttgart. 1328 pp. [incomplete in English edition], 198 plates.
- 1918-1919. Subfamily Lithosiinae, pp. 241-293. In Seitz, A. (ed.), The Macrolepidoptera of the world 6: The American Bombyces and Sphinges. Alfred Kernen Verlag, Stuttgart. 1328 pp. [incomplete in English edition], 198 plates.
- DRUCE, H. 1889. Descriptions of new species of Lepidoptera, chiefly from Central America. Ann. Mag. Nat. Hist. 6(4):77-94.
- 1881-1891. Biología Centrali-Americana. Insecta. Lepidoptera-Heterocera 1:1-490. R. H. Porter and Dulau & Co., London.
- 1891-1900. Biología Centrali-Americana. Insecta. Lepidoptera-Heterocera 2:1-622. R. H. Porter and Dulau & Co., London.
- 1881-1900. Biología Centrali-Americana. Insecta. Lepidoptera-Heterocera 3:plates 1-101. R. H. Porter and Dulau & Co., London.
- DYAR, H. G. 1907. Descriptions of new American Lepidoptera. J. New York Entomol. Soc. 15:50-53.
- 1910. Descriptions of some new species and genera of Lepidoptera from Mexico. Proc. U.S. Natl. Mus. 38:229-273.
- FIELD, W. D. 1964. Moths of the genus *Rhabdatomis* Dyar (Arctiidae: Lithosiinae). Proc. U.S. Natl. Mus. 115:47-60.
- FORBES, W. T. M. 1939. The Lepidoptera of Barro Colorado Island, Panama. Bull. Mus. Comp. Zool. Harvard 85(4):vii, 97-322, pls. 1-8.
- 1942. The Lepidoptera of Barro Colorado Island, Panama. No. 2. Bull. Mus. Comp. Zool. Harvard 90(2):265-406, pls. 9-16.
- FRANCLEMONT, JOHN G. 1983. Arctiidae, pp. 114-119. In Hodges, R. W. et al. (eds.), Check list of the Lepidoptera of America north of Mexico. E. W. Classey Ltd. & Wedge Entomological Research Foundation, London.
- HAMPSON, G. F. 1898. Catalogue of the Lepidoptera Phalaenae in the British Museum. Vol. 1. Trustees Brit. Mus. (Nat. Hist.), London. xxi + 559 pp., pls. 1-17.
- 1900. Catalogue of the Lepidoptera Phalaenae in the British Museum. Vol. 2. Trustees Brit. Mus. (Nat. Hist.), London. xx + 589 pp., pls. 18-35.
- 1914. Catalogue of the Lepidoptera Phalaenae in the British Museum. Supplement. Vol. 1. Trustees Brit. Mus. (Nat. Hist.), London. xxviii + 858 pp., 41 pls.
- KIRBY, W. F. 1892. A synonymic catalogue of Lepidoptera Heterocera. (Moths.). Vol. 1. Sphinges and Bombyces. Gurney & Jackson, London. xxi + 951 pp.
- PÉREZ RUIZ, H. & R. SÁNCHEZ SARABIA. 1986. Entomofauna de la región de Los Tuxtlas, Veracruz III. Descripción y algunas notas sobre la ecología de una nueva especie del género *Abrochia* H.-Schäff. (Lepidoptera, Ctenuchidae). An. Inst. Biol. Univ. Nac. Autón. de Méx. 56, Ser. Zool. (1):233-240.
- RINDGE, F. H. 1965. Notes on *Rhabdatomis* from Middle America (Lepidoptera: Arctiidae). J. New York Entomol. Soc. 73:2-6.
- SCHAUS, W. 1912. New species of Heterocera from Costa Rica.—XII. Ann. Mag. Nat. Hist. 8(9):34-57.
- TRAVASSOS, L. 1952a. Contribuição ao conhecimento dos "Arctiidae". XXVIII. (Lepidoptera, Heterocera). Rev. Brasil. Biol. 12:151-160, 32 figs.
- 1952b. Contribuição ao conhecimento dos "Arctiidae". XXIX. Gênero "Nelphe" H.-Schaeffer, 1858. Rev. Brasil. Biol. 12:325-330, 20 figs.
- 1952c. Contribuição ao conhecimento dos "Arctiidae". XXX. Espécies do gênero "Nelphe" H.-Schaeffer, 1855 [sic]. Rev. Brasil. Biol. 12:369-384, 41 figs.

- 1962. Gênero *Theages* Walker, 1855 (Lepidoptera). Nota preliminar. Atas. Soc. Biol. Rio de Janeiro 6(6):58–59, 4 figs.
- 1964. Contribuição ao conhecimento dos Arctiidae (Lepidoptera-Heterocera) gênero *Theages* Walker, 1855. Anais Acad. Brasileira Ciências 36:173–188, 41 figs.
- WATSON, A., D. S. FLETCHER & I. W. B. NYE. 1980. In Nye, I. W. B. (ed.), The generic names of moths of the world. Vol. 2. Trustees of the British Museum (Natural History), London. xiv + 228 pp.
- WATSON, A. & D. T. GOODGER. 1986. Catalogue of the Neotropical tiger-moths. Occ. Pap. Syst. Entomol. 1:71 pp., 82 figs. on 4 col. pls.
- ZERNY, H. 1912. Syntomidae. In Wagner, H. (ed.), Lepidopterorum Catalogus, pars 7. W. Junk, Berlin. 179 pp.

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