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NOTES ON CYLLOPSIS, ESPECIALLY FROM MEXICO, WITH DESCRIPTION OF A NEW SPECIES (LEPIDOPTERA: SATYRIDAE)

Lee D. Miller

Allyn Museum of Entomology

and

Javier de la Maza E.

Nicolas San Juan 1707, Mexico 12, D.F., Mexico, and Field Associate, Allyn Museum of Entomology

In the nine years since the senior author published his revision of the genus *Cyllopsis* (L. Miller, 1974), a number of new or previously poorly known taxa have come to his attention. Some of these records and descriptions were incorporated into L. Miller (1978), but the de la Mazas have accumulated still more material, and these specimens form most of the basis of the present paper.

Interestingly, most of the new records here recorded involve the apparently more primitive members of the genus, those without the pronounced "gray patch" on the ventral hindwing. It was this group that L. Miller (1974) postulated would be the least likely to have additional new species. It is obvious from the specimens discovered by the junior author and his family that *no* generalities such as that should be made concerning *Cyllopsis*. This seems to be a general truth when one is dealing with euptychiine satyrids, perhaps because of the many misidentifications in the literature and the great many "species of convenience" which may be actually sibling species swarms.

The taxa described and discussed in this paper are found in the Sierra Madre Occidental and the Sierra Madre Oriental of Mexico, with the exception of two Central American taxa of which one previously had been synonymized.

Cyllopsis clinas (Godman and Salvin)

Figures **1**, **2**, (♂) **3**, **4**, (♀)

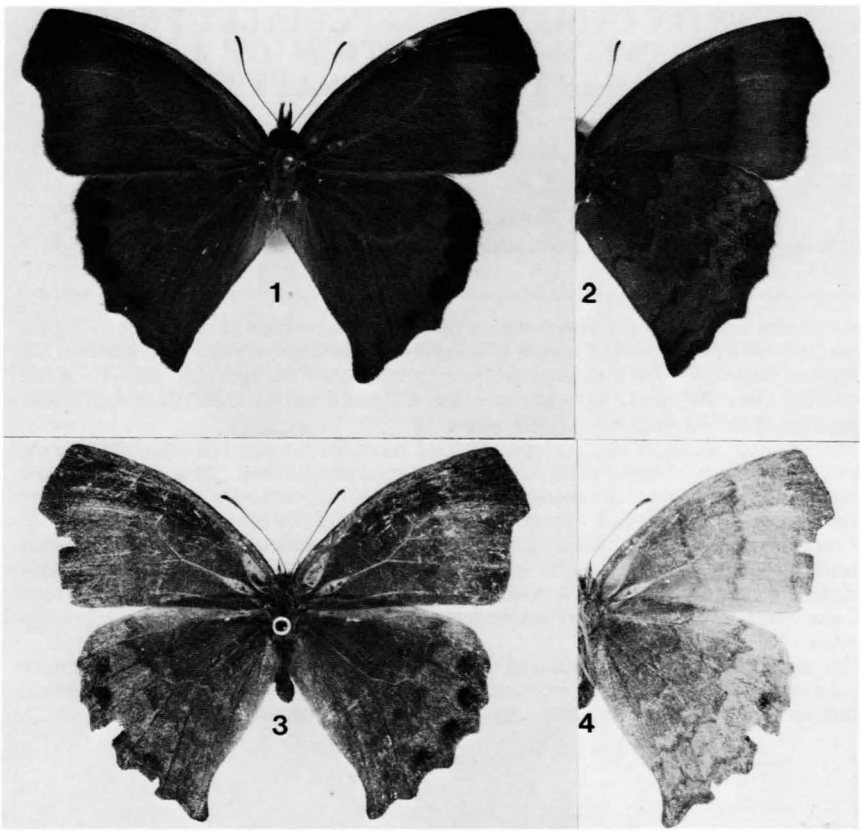
This species was previously known only from the ♂, but the junior author has found examples of the ♀. It is one of these specimens that forms the basis for the description

of that sex.

Female: Upper surface similar to that of ♂ (L. Miller, 1974: 7), but differing in the following particulars: some slight rusty shading outside extradiscal band of both wings, especially capping the anterior three ocelli of hindwing; all bands showing through slightly from beneath. Under surface generally paler and duller than in ♂, with bands of both wings contrasting more with ground color; hindwing ocelli less prominent than in ♂ and capped proximad with slight rust overscaling.

This specimen is somewhat worn and almost is in too poor condition to warrant illustration. Nevertheless, we figure both sexes to facilitate identification of material that may be collected in the future. The ♀ is slightly smaller than the ♂ from Omilteme, Guerrero (forewing length 20.1 mm), but there can be little doubt as to the conspecificity of the two specimens.

A total of three ♂ and two ♀ specimens were taken by the de la Maza family in Guerrero at a slightly lower elevation than the Omilteme ones mentioned by L. Miller (1974: 7-8). The data for these specimens are: MEXICO: GUERRERO: Cerro Teotepec



Figures 1-4: *Cyllopsis clinas* (Godman and Salvin). 1-2, ♂ upper (1) and under (2) sides; MEXICO; GUERRERO; Omilteme. Allyn Museum photos 840118-2/3. 3-4, ♀ upper (3) and under (4) sides; MEXICO; GUERRERO; Cerro Teotepec (cloud forest). Allyn Museum photos 840118-4/5. All illustrated specimens in Allyn Museum of Entomology collection.

(cloud forest), 1800 m; xii (de la Maza colln.; A). The presence of this species on Cerro Teotepec suggests that *clinas* might be primarily a cloud forest insect and not an associate necessarily of high altitude: it is evidently not so extremely rare as has been thought in the past.

Perhaps even more interesting than the discovery of the ♀ of *clinas* was the discovery by Jorge and Adolfo White L. of a new species that seems to be related to *clinas,* but is abundantly distinct. This species is furthermore the most primitive member of the genus and tends to link *Cyllopsis* with *Pindis* R. Felder. The ♂ genitalia are clearly of the *Cyllopsis* type, but the arms of the brachia are less firmly attached than in other species of the genus (they are not free, however, as in *Pindis*). This species is described below.

Cyllopsis whiteorum, new species

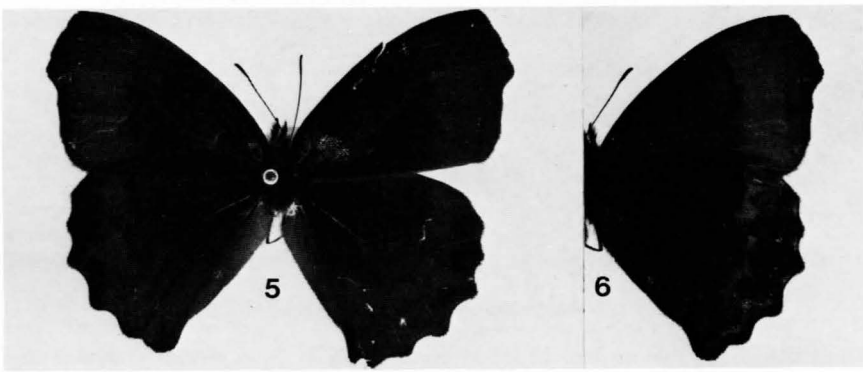
Figures **5, 6,** (Holotype ♂), **7,** (♂ genitalia)

Male: Forewings relatively broader than those of *C. clinas;* hindwings also somewhat broader and with tornal lobe not extremely prominent as in *clinas.*

Head, thorax and abdomen covered with dark gray-brown dorsal hairs and dense dark brown ones on ventral surface. Palpus clothed with dark brown hairs dorsad and long, dark brown ones intermingled with shorter light brown hairs ventrad. Antenna dark brown dorsad narrowly ringed with tan; below fulvous-tan narrowly ringed with dark brown; tip of club ferruginous. Legs clothed with mixed brown and grayish scales.

Upper surface of forewing rich brown, darker toward costa and margin, with a large dark androconial patch mostly outside the cell and extending from Cu_2-2A to M_2-M_3; a faint fuscous marginal line suggested in tornal half of wing. Hindwing above also rich brown, slightly paler outside extradiscal line that shows through faintly from below, with two well-developed fuscous submarginal ocelli in M_2-M_3 and M_3-Cu_1 and fainter ones in M_1-M_2 and Cu_1-Cu_2; margins of wing slightly darker and with hint of marginal dark line throughout.

Under surface of forewing rich brown, paler between extradiscal and marginal lines, with slightly reddish-brown transcellular and extradiscal bands extending posteriad to Cu_2 and a cell end bar of same color: a zigzag submarginal dark brown line extending



Figures **5-6:** *Cyllopsis whiteorum,* new species, Holotype ♂, upper **(5)** and under **(6)** surfaces; MEXICO: OAXACA: near Guelatao, km. 169 Valle Nacional-Oaxaca Hwy., 28.iii.1975 (J. White L.); Allyn Museum collection. Allyn Museum photo nos. 840103-1/2.

from costa to tornus and a single dark marginal line following the contour of the wing from costa to inner angle. Hindwing below with basal two-thirds dull brown bounded distad by a slightly-reddish brown, crenulate extradiscal band, then paler, purplish-brown area to level of ocelli and hint of dark brown crenulate band just distad of ocelli; two black ocelli with offset silver pupils in M_1-M_2 and M_2-M_3 and a wavy silver submarginal line anteriad and posteriad of ocelli; marginal area from M_3 to tornus red-brown bordered proximally with dark brown.

Length of forewing of Holotype ♂ 24.7 mm., that of the single ♂ Paratype 24.0 mm.

♂ genitalia as illustrated; uncus relatively longer than that of *C. clinas;* brachia arms less firmly attached to tegumen and more strongly curved dorsad than in *clinas* and valvae more finely tapered distad (compare figure of *clinas* genitalia in L. Miller, 1974: fig. 7).

Androconial scales examined only under light microscopy, but more or less typical for the genus.

Female: Unknown.

Described from two ♂ specimens collected near Guelatao, Oaxaca, Mexico, at an elevation of 2100 m. in a pine-oak forest.

HOLOTYPE ♂: MEXICO: OAXACA: near Guelatao, km. 169 on road from Valle Nacional to Cd. Oaxaca; 28.iii.1975 (J. White L.); ♂ genitalia slide M-6340 (Lee D. Miller).

PARATYPE ♂: Same data and collector as Holotype.

Disposition of type-series: Holotype ♂ in Allyn Museum of Entomology; ♂ Paratype in the collection of the de la Maza family.

It is with great pleasure that we dedicate this distinctive new species to Srs. Jorge and Adolfo White Lopez of Mexico, D. F., Mexico, enthusiastic lepidopterists and friends of the junior author, who were responsible for collecting the type specimens.

C. whiteorum is apparently closer phylogenetically to *C. clinas* than to any other *Cyllopsis,* but the superficial resemblance is not so evident genitalically. The ♂ genitalia of the present species are more reminiscent of members of the *argentella* group, and the grayish scaling outside the extradiscal hindwing band suggests an affinity with the "gray patch" species. Nevertheless, the present insect has more of the putatively plesiomorphic (primitive) characters in *Cyllopsis,* and it seems probable that it belongs near the stem of the genus. Within *Cyllopsis, clinas* is probably the immediate sister species of *whiteorum.*

The suggestion of the freeing of the brachia arms suggests affinity with *Pindis,* and that genus is considered to be the sister group of *Cyllopsis.* Within the Euptychiini, the

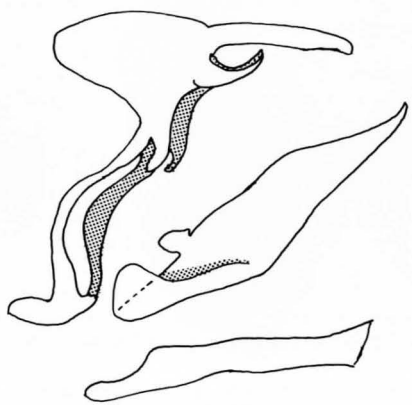


Figure 7: ♂ genitalia of *Cyllopsis whiteorum,* Holotype, ♂ genitalia preparation M-6340 (Lee D. Miller).

state of having the brachia fused basally to the tegumen has been considered (erroneously?) an apomorphic characteristic, but the final placement of *Cyllopsis* within the tribe is still under review.

C. whiteorum occurs further south than does *C. clinas,* at a lower elevation and apparently in a more mesic environment. Both species are highly localized and still quite rare in collections.

Cyllopsis hedemanni R. Felder

This species was divided into two subspecies by L. Miller (1974: 9-13). Further material at hand suggests that the subspecies *vetones* (Godman and Salvin) should be retained for Costa Rican and Panamanian populations on the basis of the heavier ventral surface maculation, as suggested by Godman and Salvin (1879-1901: 94). Series of these specimens are more heavily marked than the somewhat similar specimens from Mexico or Guatemala, contrary to what L. Miller (1974: 11) claimed on limited series from southern Central America.

Further specimens of *C. h. tamaulipensis* L. Miller have been examined, both from Gomez Farias (the type-locality) and from Rancho Pico do Oro, near Los Kikos, both in Tamaulipas. All of these specimens share the distinguishing characteristics of *tamaulipensis.*

The distributions of the three subspecies of *C. hedemanni* may be summarized as follows:

C. hedemanni tamaulipensis L. Miller: restricted to Tamaulipas, Mexico.

C. hedemanni hedemanni R. Felder: Mexico, except for Tamaulipas, south to Nicaragua (?Costa Rica).

C. hedemanni vetones (Godman and Salvin): Costa Rica to Panama.

Cyllopsis rogersi (Godwin and Salvin)

Miller (1974: 15) had seen only three ♂ specimens of this species and quoted part of Godman and Salvin (1879-1901: 92) as the description of the ♀. Subsequently, six ♂ and five ♀ specimens from various parts of Costa Rica and Panama have come to the Allyn Museum collection, and it is from these ♀ specimens that the description herein given is taken.

Female: Head, thorax, abdomen and appendages as in ♂. Upper surface of wings with rusty shading medially on both wings and extradiscal bands of fore- and hindwings strongly indicated. Under surface generally paler and duller than in ♂ and with pale area between extradiscal and submarginal lines much more contrasting in the present sex.

Length of forewings of the ♀ specimens before us range from 20.7 to 22.1 mm., averaging 21.6 mm.

The additional material in the Allyn Museum collection of *C. rogersi* is from the following localities:

COSTA RICA: SAN JOSE: Bajo la Hondura, 1200 m, viii (1 ♂); HEREDIA: Rio Sarapiqui, 700 m, vi (1 ♂ 2 ♀); vic. Cariblanco 1300 m, vi (1 ♀).

PANAMA: CHIRIQUI: Cerro Colorado, 1480 m, viii (2 ♂ 2 ♀); Santa Clara, 1350 m, ix (2 ♂).

Obviously, *C. rogersi* is now known from Chiriqui as predicted by L. Miller (1974).

Cyllopsis caballeroi Beutelspacher

This species is nearest to *C. jacquelineae* L. Miller (Beutelspacher, 1981), but the doubled ocelli on the hindwing of *caballeroi* tend to connect members of the *rogersi* and *argentella* groups. The under surface banding, however, serves to separate *jacquelineae* and *caballeroi* from all other *Cyllopsis,* and those two species are obviously sister taxa.

The junior author has determined from field experience that there are three separate

locations of "semi-evergreen seasonal forest" along the west coast of Mexico. All of these exhibit high degrees of endemism and are located as follows: 1) Nayarit, Jalisco and Colima; 2) Guerrero and most of Oaxaca; and 3) coastal Chiapas, presumably extending into adjacent Guatemala. The intervening areas surrounding the mouth of the Rio Balsas (and much of Michoacan) separate areas 1) and 2), and the Isthmus of Tehuantepec separates 2) and 3): both of these intervening areas are quite xeric and break the mesic forest into pockets. *C. caballeroi* is restricted to the northern area (area 1) and could be found either in coastal Colima or Nayarit, as well as in Jalisco. *C. jacquelineae,* similarly, is found in area 2); it was described from Oaxaca and was recently collected by the de la Mazas in Guerrero (Arroyo Faisanal, near Atoyac, 1100 m). This, the first Guerrero record for *jacquelineae,* tends to support the existence of the Guerrero-Oaxaca center of endemism, as do the distributions of *Baronia brevicornis* Godman and Salvin, *Phanus rilma* Evans and several other butterfly taxa analyzed by Llorante B. (1980).

Cyllopsis parvimaculata L. Miller

This species previously was known from only the type locality, Tenancingo, Mexico, Mexico. Collecting by the de la Maza family has revealed it on at least Cerro Teotepec, Guerrero, at an elevation of 1800 m, where it is sympatric and probably synchronic with *C diazi* L. Miller. The present species is easy to distinguish genitalically by the shouldered valvae (L. Miller, 1974: 38; fig. 84), which led the author to determine that *parvimaculata* was the central Mexican representative of the Guatemalan *C. guatemalena* L. Miller and *schausi* L. Miller. The presence, therefore, of *parvimaculata* in the mountains of Guerrero is not surprising.

Cyllopsis pseudopephredo (R. Chermock)

This species, described from a single ♂ taken at "San Angel, D. F., Mexico", long was known only from the type specimen. It has been sought near the type locality for many years but has never been collected again. We now have reason to believe that all subsequent attempts to collect this insect may have been concentrated in the wrong area.

Two years ago, Mr. Roy O. Kendall sent a series of a strange-looking *Cyllopsis* to the senior author for identification. These specimens were from Cola de Caballo (Horsetail Falls), Nuevo Leon, Mexico. Genitalic dissection showed that these structures were of the distinctive type associated with Chermock's type specimen of *pseudopephredo* (compare genitalia illustration in L. Miller, 1974: 60, fig. 141). Superficially, the specimens also conform with the holotype of *pseudopephredo,* especially in the absence of a well-defined androconial patch on the ♂ forewing.

The long series collected in a short time by Kendall and the lack of specimens from the "type locality" suggests that the type specimen of *pseudopephredo* may have come from the eastern flanks of the Sierra Madre Oriental, rather than from the much higher and drier central valley. Having *pseudopephredo* localized where Kendall's material came from is in much more harmony with the distribution of other members of the *pephredo* group, *e. g.,* lower elevation mesic forests. The type specimen of pseudopephredo was from the collection of C. C. Hoffmann, and since Hoffmann received material from a number of sources, we feel that the holotype of *C. pseudopephredo* was either mislabelled and actually came from the Sierra Madre Oriental or that it was a stray far from its normal habitat.

The Kendall material consisted of nine specimens (three ♂ and six ♀) which were collected in October, 1979. Mr. Kendall has graciously placed a ♂ and two ♀ specimens in the Allyn Museum of Entomology.

ACKNOWLEDGMENTS

The efforts of many people have been expended in collecting the specimens on which

this paper is based. Most of the new information was gathered by the de la Maza family, and the types of *C. whiteorum* were taken by Srs. Jorge and Adolfo White Lopez of Mexico, D. F. Much valuable Mexican material was sent to us by Mr. and Mrs. Roy O. Kendall of San Antonio, Texas, and Dr. and Mrs. William W. McGuire of Colorado Springs, Colorado. Panamanian and Costa Rican specimens were shipped to us by Mr. Philip J. DeVries, Austin, Texas, Mr. Gordon B. Small, Jr., Balboa, Canal Zone, Panama, and Dr. Robert Robbins, now of the Natural Museum of Natural History, Washington, D.C. To all of these people we owe a heartfelt vote of thanks.

LITERATURE CITED

Beutelspacher B., C. R., 1981. Una nueva especie de *Cyllopsis* Felder (Lepidoptera: Satyridae. *An. Inst. Biol. UNAM*, (1): 361-366; illustrated.

Godman, F. D., and O. Salvin, 1879-1901. *Biologia Centrali-Americana.* Insecta. Lepidoptera-Rhopalocera. London: 2 vols. + 1 vol. of illustrations.

Llorante Bousquets, J. E., 1980. Sinopsis sistematica y biogeografica de los Dismorphiinae de Mexico con especial referencia al genero *Enantia* Huebner (Lepidoptera: Pieridae). Thesis, Universidad Nacional Autonomia de Mexico: 179 pp. + illustrations.

Miller, L. D., 1974. Revision of the Euptychiini (Satyridae). 2. Cyllopsis R. Felder. *Bull. Allyn Mus..*, (20); 98 pp.; illustrated.

----------, 1978. Notes and descriptions of Euptychiini (Lepidoptera: Satyridae) from the Mexican region. J. Lepid. *Soc.*, 32(2): 75-85; illustrated.

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