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A NEW *CHLOSYNE* CHECKERSPOT FROM NORTHEAST MEXICO (LEPIDOPTERA: NYMPHALIDAE: NYMPHALINAE)

P. A. OPLER

C. P. Gillette Museum of Arthropod Diversity, Dept. of Bioagricultural Sciences and Pest Management,
Colorado State University, Fort Collins, CO 80523, USA

ABSTRACT.– *Chlosyne kendallorum* **n.sp.** is described from Estado del Nuevo Leon, Mexico, and is compared to the related *C. gorgone* and *C. harrissii*.

KEY WORDS: *Anthocharis*, *Baronia*, *Chlosyne*, ***Chlosyne kendallorum*** n.sp., distribution, Mexico, Nearctic, Neotropical, Nuevo Leon, *Nymphalis*, Papilionidae, Pieridae, *Polygonia*, relicts, taxonomy.

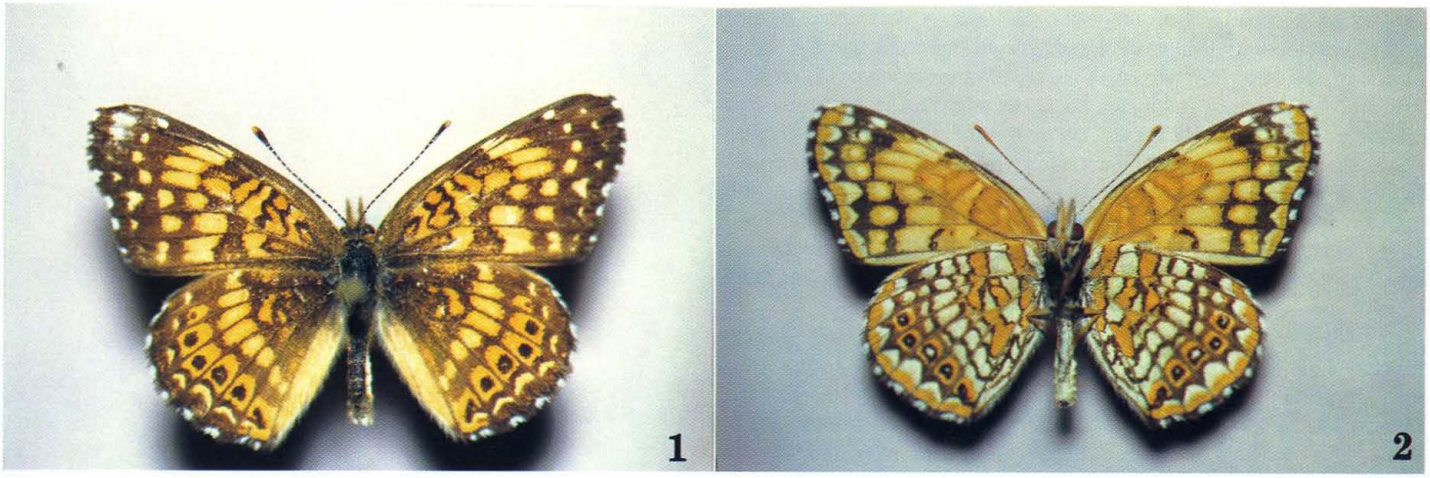

Fig. 1-2. *Chlosyne kendallorum* Opler, male: 1) dorsal surface; 2) ventral surface.

The genus *Chlosyne* is an assemblage of New World species that includes both temperate species that are primarily orange above with a checkered pattern on the ventral hindwing ("checkerspots") and brightly colored mimetic species ("patches"). The two groups are unified by their similar genitalia (Bauer, 1961). Few records of *Chlosyne* checkerspots are known from Mexico (Stanford and Opler, 1993). The species described herein is a checkerspot that is intermediate in facies between *C. gorgone* (Hübner) and *C. harrisii* (Scudder), resembling the former above and the latter below (Fig. 1).

Chlosyne kendallorum Opler, **n. sp.**

Description - MALE: Forewing length 14.5-16.2mm. *Head:* Vertex covered with broad, flattened scales and scattered hair-like orange scales. Front covered with mixture of black and white flattened scales and erect hair-like orange and white scales. Lapial palpi erect, pointed, 1.3mm. In length, covered with elongate orange and black scales dorsally and elongate white scales ventrally. Eyes globose, naked. Antennae orange covered with flattened black scales with narrow rings of white scales at intersegmental joints; shaft with 16 segments; apical portion of nudum and venter of shaft naked. *Thorax:* Fuscous, covered dorsally with flattened green-black iridescent scales and covered ventrally with both flattened and hair-like white scales. Legs covered with flattened orange scales. *Forewing:* Fringe of elongate black scales with groups of white scales between vein endings. Dorsal surface has ground black with "checkerspot pattern" as follows: base mainly black with black-bordered orange patch in cell; postbasal irregular orange band bordered by black; submedian with pale orange band and orange bar in cell; median with short black bar on costa, pale orange area at end of cell and narrow black patch posteriorally; postmedian band of variously shaped pale orange spots separated by black scaling along veins; outer ¼ of wing black with submarginal and marginal rows of pale orange spots—whitish toward costa. Ventral surface with ground orange; basal ½ unmarked; postmedian pale orange band; submarginal row of ovoid orange patches surrounded by black; small off-white spots in cells R3 and R5; margin orange subtended by inward-pointing off-white triangles. *Hindwing:* Fringe as on forewing. Ground black with postbasal small orange patch in cell; median band of pale orange quadrate patches separated by black scaling along veins; postmedian dark orange band more or less equal in width with roundish black spots in cells Rs [minute], M1, M2, M3 [containing a few pale orange scales] , CuA1, and CuA2; submarginal line of inward-directed pale orange crescents in all vein interspaces; cells 3A and 1A+2A orange. Ventral surface with with ground off-white and "checkerspot pattern" as follows: basal orange band; postbasal orange bar in cell; submedian irregular orange band with narrow off-white band outwardly; median off-white band bordered inwardly and outwardly by black lines and broken by black lines along veins; postmedian narrow off-white band lined with black along veins; postmedian orange band with circular black spots filled with off-white scales in cells M1, M2, M3, CuA1, and CuA2; submarginal row of off-white crescents extending into black field; and narrow marginal orange band. *Abdomen:* Covered dorsally and laterally with shiny black quadrate scales and scattered long orange hair-like scales. Venter covered with white flattened scales. *Male genitalia* (Fig. 2): Typical of *Chlosyne*, each valve with 3 processes. Process one consists of an inner-directed heavily sclerotized prong from dorsal edge of valve, process two a

recurved predominantly smooth pointed hook at dorsoposterior corner of valvae, and process three a slightly broad heavily sclerotized bluntly pointed prong directed posterad. The latter prong located just ventrad of the recurved hook (Fig. 2).

Types.– *Holotype* ♂: Mexico.– Nuevo Leon: 40 km WSW Cola de Caballo, 13 May 1978, R. O. and C. A. Kendall.

Paratypes (3 ♂): Mexico.– Nuevo Leon: 40 km WSW Cola de Caballo, 13 May 1978, R. O. and C. A. Kendall.

Type deposition.– Holotype deposited in U. S. National Museum of Natural History, Washington, DC. Paratypes deposited in Universidad Autonoma de Mexico, Mexico, DF; Texas A & M University, College Station, TX; and C. P. Gillette Museum of Arthropod Diversity, Colorado State University, CO.

Distribution.– Known only from the type locality in the Sierra Madre Orientale of western Estado del Nuevo Leon.

Flight Periods.– Known only from the date of collection. Probably at least bivoltine, based on latitutude of collection and voltinism of related species (Opler, 1992).

Hosts.– Unknown. Since both *C. gorgone* and *C. harrisii* feed on Asteraceae, one or more hosts in this family is likely for *C. kendallorum*.

Diagnosis.– *Chlosyne kendallorum* **n. sp.** is intermediate in wing maculation between *C. harrisii* and *C. gorgone*, but seems closer to the former species, and the relationship is most likely phylogenetic as well. A comparison of the male genitalia of these two closely related species with that of *C. kendallorum* indicates that the valve of *C. harrisii* has a thinner more recurved dorsalposterior hook and that the ventral prong is located more dorsally and is directed more inwardly. The ventral edge of the valve of *C. gorgone* is more gradually curved distally and the ventral prong is directed posterioral-ly and is aligned with the valve's ventral curvature. Moreover, the dorsoposterior hook is only slightly recurved and has two small aligned teeth on its outer convex surface. Additional study of this species group is necessary to elucidate the phylogenetic relationships of its constituent taxa.

Remarks.– Previously known Mexican relicts of temperate species include *Baronia brevicornis* (Salvin) (Papilionidae), *Anthocharis limonea* Butler (Pieridae), and the nymphalids *Polygonia haroldi* Dewey and *Nymphalis cyanomelas* (Doubleday & Hewitson) (de la Maza, 1987). The species is named in honor of Roy and Connie Kendall who collected the type series and who contributed so much to our understanding of the butterflies and moths of Texas and northern Mexico.

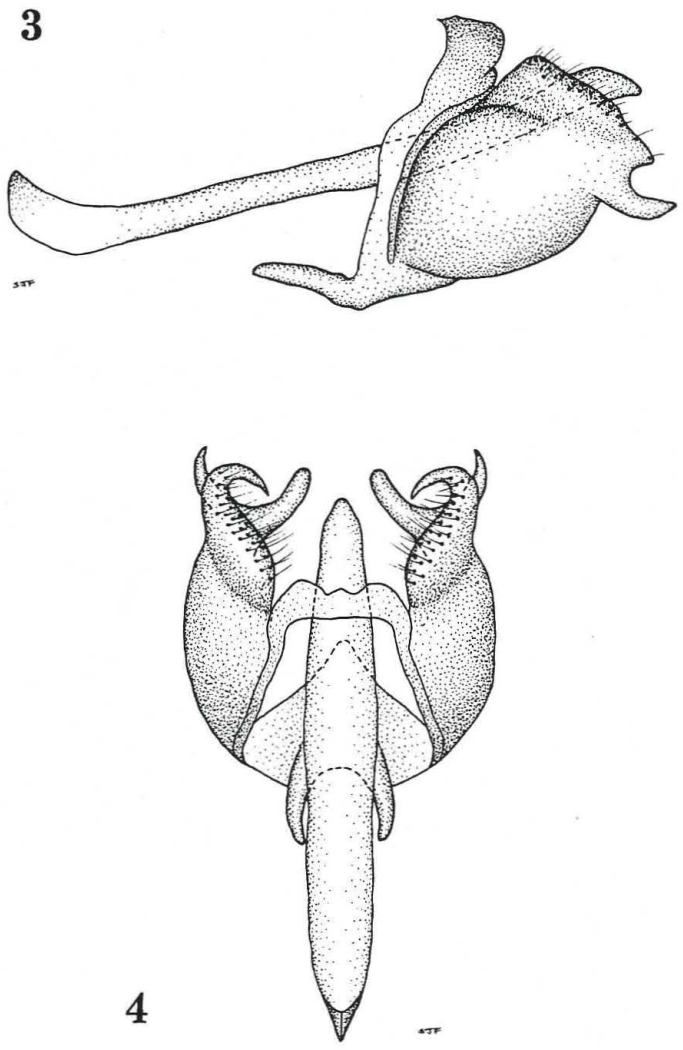

Fig. 3-4. *Chlosyne kendallorum* Opler, male genitalia: 3) lateral view; 4) dorsal view.

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