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A NEW SUBSPECIES FROM MEXICO OF *ANTHERAEA POLYPHEMUS* (LEPIDOPTERA: SATURNIIDAE)

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ABSTRACT.– A new subspecies of *Antheraea* is described from the region of Los Tuxtlas, Veracruz, Mexico: *A. polyphemus tuxtlasensis* **n. subsp.**

RESUMEN.– Se describe una nueva subespecie de *Antheraea* de la región de Los Tuxtlas, en Veracruz, México: *A. polyphemus tuxtlasensis* **n. subsp.**

KEY WORDS: ***Antheraea polyphemus tuxtlasensis*** n. subsp., Aves, Fagaceae, Mesoamerica, Mexico, Neotropical, Pieridae, Pinaceae, Veracruz.

While studying Mexican material of *Antheraea polyphemus* (Cramer), looking for characters for a cladistic analysis, the senior author found an isolated and morphologically different population not previously described.

Antheraea polyphemus tuxtlasensis Balcázar & Vázquez, **new subsp.**

DIAGNOSIS.– This subspecies can be differentiated from other subspecies of *A. polyphemus* by the following combination of characters. Crenulate termen, principally that of the hindwing; black ring of the eyespot in the hindwing extends basally across the middle of the discal cell, as opposed to that of the forewings; a blue "crescent" of strewn scales present on the eye spot on the ventral side of forewings; apical angles of both pairs of wings falcate; yellow ground color.

DESCRIPTION.– MALE (Fig. 1).– General ground color yellow. ***Forewing***: falcate, termen slightly wavy; antemedial line present dorsally; black ring of the eyespot not extending inside the discal cell; postmedial line black, straight, not wavy and clear, interrupted between C and R5; there are whitish borders on the outer side of the postmedial lines; two subapical triangular patches present. ***Hindwing***: apical angle prominent, crenulate termen; antemedial line present ventrally, represented dorsally by a whitish proximal border of the eyespot; black ring of the eyespot extends inside the discal cell; postmedial line wide and convex distally. ***Genitalia*** (Fig. 2): uncus strong, down-curved, bifid, processes long and elongated; lateral processes of sacculus narrow and long in lateral view; with the typical long posterior projections of the transtilla (= "labide" or "third processus" [Nässig, 1991]), each bearing two small processes, the most cephalad one being very short; juxta robust and prominent; aedeagus small and delicate; vesica dorsal.

FEMALE.– Unknown.

IMMATURE STAGES.– Unknown.

TYPES.– *Holotype* ♂ (Fig. 1): MEXICO.– Ocotal Chico, Sierra de Santa Marta, Los Tuxtlas, Veracruz, 650m. Collector: Rosa Sánchez S. (IBUNAM) 28-29 May 1983 (Instituto de Biología, Universidad Nacional Autonoma de Méxido, MEXICO).

Paratypes: MEXICO.– ***Veracruz:*** Ocotal Chico, Sierra de Santa Marta, Los Tuxtlas, 650 m, 24-25 Jan 1981 (1♂,), RSS; 23-24 May 1983 (1♂), RSS; 19-20 Sep 1979 (2♂), M. Urías; 24-25 Jan 1982 (2♂), RS (IBUNAM, MEXICO).

Fig. 1. *Antheraea polyphemus tuxtlasensis* Balcázar & Vázquez, **new subsp** holotype ♂ (Ocotal Chico, Sierra de Santa Marta, Los Tuxtlas, Veracruz, Méxic (650m).

ETYMOLOGY.– This subspecies is given a toponimic nam referring to the region of Los Tuxtlas, in Veracruz, Mexico.

REMARKS.– Due to the wing shape (crenulate male terme prominent apical angles of both wings), wingspan, and geograph proximity, *A. polyphemus tuxtlasensis* new subsp. is closer to *p. mexicana* Hoffmann than to any other subspecies of *polyphemus*. It differs from the latter in the black periocellar rin which never extends into the discal cell (although not stated previous works, some specimens of *A. p. mexicana* have the bla ring entering the forewing discal cell); and by the characteris yellow ground color. On the other hand the color resembles some extent that of *A. p. olivacea* (Cockerell) of the mounta of Colorado and Utah (Ferguson, 1971; Lemaire, 1978).

In 1972, Ferguson designated a lectotype of *A. p. mexicana* male from Jalapa, Veracruz. This subspecies is known from Sierra Madre Oriental (*Nuevo León*: Potrero Redondo; Cola

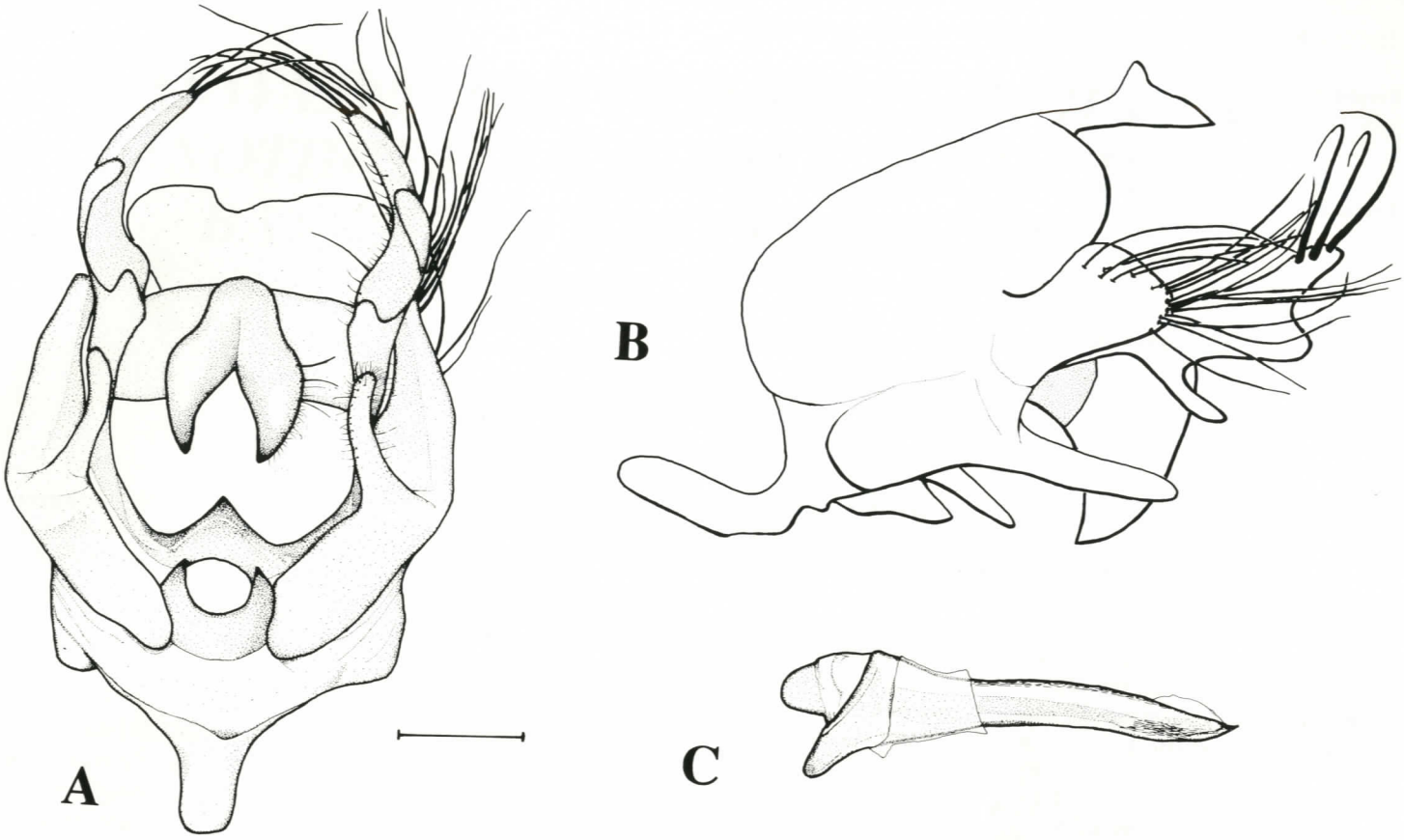

Fig. 2. *Antheraea polyphemus tuxtlasensis* Balcázar & Vázquez, **new subsp.**, male genitalia (holotype, MABL 1991): **a**) ventral view; **b**) lateral view; **c**) aedeagus in lateral view.

Caballo. *Puebla*: Huauchinango; Xicotepec, Villa Juárez. *Tamaulipas*: Cumbres de Ciudad Victoria. *Veracruz*: Jalapa; Orizaba), Trans-Mexican Volcanic Belt (*Michoacán*: Uruapan. *Morelos*: Cuernavaca), Sierra Madre del Sur (*Guerrero*: Acahuizotla) (Balcázar, 1991), and Sierra Madre de Chiapas. Despite the proximity of the type locality of *A. p. mexicana* (near the junction of the Trans-Mexican Volcanic Belt and the Sierra Madre Oriental) and the Sierra de los Tuxtlas, the later is physiogeographically and biogeographically different.

The Tuxtlas Mountains are an isolated, late Cenozoic volcanic range, 88.5km long and 53.1km wide, stretching northwest to southeast along the Isthmus of Tehuantepec (Ross, [1976]-77; Raguso and Llorente, 1991). The type locality of *A. p. tuxtlasensis* is situated in the only substantial oak-pine forests in the area, on the southern slopes of the Santa Marta volcano (Ross, [1976]-77). Sousa (1968) and Sarukhán (1968) have suggested that the presence of *Quercus* in these tropical areas of Mexico represent a relictual condition from other ages when the weather was cooler. They correlated this condition with Pleistocene glaciers. The Sierra de los Tuxtlas is surrounded by the Gulf Coast Plain, which has an altitudinal range from 0-200 masl (Ferrusquía, 1993); hence the extreme isolation of the montane habitats in the region. We consider that this isolation has led to the appearance of *A. p. tuxtlasensis*, as has been suggested for other montane or submontane endemic taxa in the area: the quail-dove *Geotrygon carrikeri* Wetmore, and birds such as *Atlapetes brunneinucha apertus* and *Chlorospingus opthalmicus wetmorei* (Escalante *et al.*, 1993), and the pierid *Dismorphia eunoe popoluca* Llorente and Luis (1988). There is evidence of the extreme differentiation of the Los Tuxtlas populations of the bush tanager *Chlorospingus ophtalmicus* and the brush-finch *Atlapetes brunneinucha* in allozyme characters (Peterson *et al.*, 1992).

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LITERATURE CITED

Balcazar-L., M. A.

1991. Sistemática y biogeografía del género *Antheraea* Hübner en Norteamérica (Lepidoptera: Saturniidae). Master's thesis, Univ. Nacional Autonoma de México. 71pp.

Escalante-P., P., A. G. Navarro-S., and A. T. Peterson

1993. A geographic, historical, and ecological analysis of avian diversity in Mexico. *In* T. P. Ramamoorthy *et al.* (eds.),

Biological Diversity of Mexico: Origins and Distribution, 280-299. New York: Oxford Univ. Pr.

Ferguson, D. C.
1971-72. Bombycoidea, Saturniidae. *In* R. B. Dominick (ed.), *The Moths of America North of Mexico*. London: E. W. Classey. 275pp., 22 pl.

Ferrusquía V., I.
1993. Geology of Mexico: a synopsis. *In* T. P. Ramamoorthy *et al.* (eds.), *Biological diversity of Mexico: Origins and Distribution*, 3-107. New York: Oxford Univ. Pr.

Lemaire, C.
1978. *Les Attacidae americains. The Attacidae of America (=Saturniidae). Attacinae*. Neuilly-sur-Seine. 238pp., 49 pl.

Llorente-B., J., and A. Luis
1988. Nuevos Dismorphiini de México y Guatemala (Lepidoptera: Pieridae). *Folia Ent. Mex.* (Mexico City), 74:159-178.

Nässig, W. A.
1991. New morphological aspects of *Antheraea* Hübner and attempts towards a reclassification of the genus (Lepidoptera, Saturniidae). *In* H. Akai and M. Kiuchi (eds.) *Wild Silkmoths*, 1-8. Tokyo: Internatl. Soc. Wild Silkmoths.

Peterson, A. T.
1992. Species status of *Geotrygon carrikeri*. *Bull. Brit. Ornith. Club* (London) 113(3):166-168.

Peterson, A. T., P. Escalante-P., and A. Navarro-S.
1992. Generic variation and differentiation in Mexican populations of common bush-tanagers and chestnut-capped brush-finches. *Condor* (Santa Clara), 94:244-253.

Raguso, R. A., and J. Llorente-B.
[1991]. The butterflies (Lepidoptera) of the Tuxtlas Mts., Veracruz, Mexico, revisited: species-richness and habitat disturbance. *J. Res. Lepid.* (Beverly Hills), 29:105-133. (1990)

Ross, G. N.
[1976]-77. An ecological study of the butterflies of the Sierra de Tuxtla, in Veracruz, Mexico. *J. Res. Lepid.* (Beverly Hills), 14:103-124, 169-188, 233-255 (1975 [1976]); 15:41-60 (1976), 109-128, 185-200, 225-240 (1976 [1977]); 16:87-130 (1977).

Sarukhán, J.
1968. Los tipos de vegetación arbórea de la zona cálido-húmeda de México. *In* T. D. Pennington, and J. Sarukhan (eds.), *Manual para la identificación de los principales árboles tropicales de México*, 3-46. Mexico City: Inst. Investigaciones Forestales - FAO.

Sousa, M.
1968. Ecología de las leguminosas de los Tuxtlas, Veracruz. *An. Inst. Biol. Mex. Ser. Bot.* (Mexico City), 39:121-160.