TROPICAL LEPIDOPTERA, 5(2): 123-125

A NEW *TEBENNA* SPECIES FROM THE GALÁPAGOS ISLANDS (LEPIDOPTERA: CHOREUTIDAE)

J. B. HEPPNER[1] AND BERNARD LANDRY

Florida State Collection of Arthropods,
DPI, FDACS, P. O. Box 147100, Gainesville, Florida 32614, USA; and
CLBRR, Agriculture Canada, CEF, Neatby Bldg., Ottawa, Ontario K1A 0C6, Canada

ABSTRACT.– *Tebenna galapagoensis*, **n. sp.**, is described from the Galápagos Islands, Ecuador.

KEY WORDS: Asteraceae, Colombia, Compositae, Ecuador, Mesoamerica, Neotropical, Oceania, Rapa Id., South America, taxonomy, ***Tebenna galapagoensis*** n. sp.

The Lepidoptera fauna of the Galápagos Islands, the well-known island group near the coast of Ecuador, has been incompletely known, although a number of collections have been made and reported on. Most past studies have been on the larger moths and butterflies (Beebe, 1923; Butler, 1877; Schaus, 1923), with the most recent study being that of Hayes (1975). The microlepidoptera, however, remain little known, with only 11 species being recorded for the islands by Meyrick (1926); four more were later added by Linsley and Usinger (1966) and Linsley (1977). Recent collecting on the islands, mostly by the junior author (BL), has resulted in considerably more material of microlepidoptera than has previously been available for study, noted already in two recent papers on Pterophoridae (Landry and Gielis, 1992; Landry, 1993). Among these new collections are examples of a new species of metalmark moth, in the genus *Tebenna*; the first record of Choreutidae from the Galápagos Islands.

Tebenna galapagoensis Heppner & Landry, **new sp.**

Diagnosis.– The new species is distinguished especially by the prominent subterminal orange line in the forewing along the wing apex and termen, repeated in the hindwing as a yellow subterminal line.

Description.– Wing expanse: 9.5-12.0mm.

MALE.– Forewing length: 4.3-5.5mm. *Head*: Vertex and frons fuscous, scales white-tipped. Labial palpus white, with dark fuscous rings; fringe on 2nd segment very long. Antenna fuscous, with white ring per segment; ♂ with long ventral setae. *Thorax*: fuscous, scales white-tipped; venter white, with fuscous stria from coxa to dorsum or wing base on each segment. Legs white with fuscous rings. *Forewing*: fuscous, with orange at basal quarter and as subterminal line at apex and along termen; white-tipped scales at 1/3 and a broader field at 2/3 and to subtermen, plus a thin white stria at basal 1/4 from dorsal margin; black at midwing and near dorsal margin at 2/3; silvery markings along costal margin and along cubital vein at basal 1/4, and near apex at 3/4 and tornus, plus in black spot midwing and part of white field; terminal

Fig. 1. *Tebenna galapagoensis* Heppner & Landry, n. sp.: a) adult on flower of *Darwiniothamnus*, Isabela Id., March 1989 (B. Landry photo); b) ♀ paratype, Isabela Id.

1. Contribution No. 808, Section of Entomology, Division of Plant Industry, Florida Dept. of Agriculture and Consumer Services, Gainesville, FL.

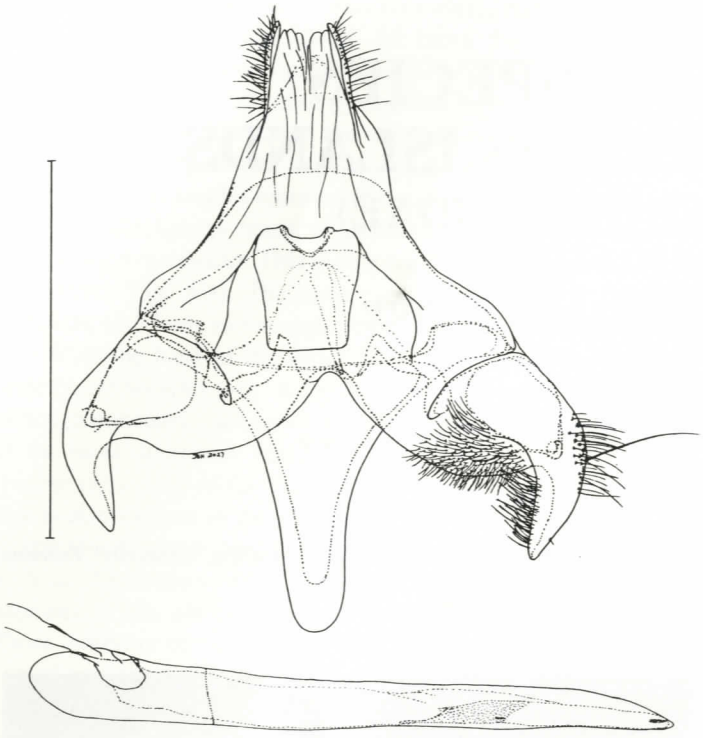

Fig. 2. Male genitalia of *Tebenna galapagoensis* Heppner & Landry, n. sp., holotype, Isabela Id. (slide JBH 2027) (scale line = 0.5mm).

row of scales basally fuscous, white-tipped. Fringe fuscous. Venter pale fuscous, with pale white line similar to orange dorsal line near termen. *Hindwing*: fuscous, with yellow subterminal line and terminal row of scales as in FW; wing center with faint bands of white-tipped scales. Fringe fuscous. Venter pale fuscous. *Abdomen*: fuscous; venter white, with fuscous rings (1 per segment). *Male genitalia* (Fig. 2): tegumen short, with thin lateral arms becoming a broad central band. Vinculum short, gradually narrowing to long narrow saccus. Uncus membranous, with narrow and setose socii. Gnathos absent. Valva short, ventrally articulated, with setal field on saccular margin, with recurved apical hook-like appendage having a ventral setal field and dorsal setae, including one very long seta. Anellus a long, fork-like plate (folded in Fig. 2). Aedeagus long and narrow, coming to acute point; phallobase rounded; cornutus indistinct as minute spines.

FEMALE (Fig. 1).– Forewing length: 4.7-5.3mm. Same maculation as male; ♀ antenna thin and lacking prominent ventral setae. *Female genitalia* (Fig. 3): Ovipositor short; papilla analis setose, simple; apophyses relatively short, subequal. Ostium bursae a sclerotized funnel merging to constriction at base; antrum rounded, with margins over sternal plate, with acute central point; ductus bursae narrow, gradually widening to junction with bursa; ductus seminalis narrow, from near ostium base. Corpus bursae simple, an elongated oval sac (pear-shaped in ventral view), with usual spinose interior walls; signum a strongly sclerotized and curved ventral fold of the bursa wall, tapering at both ends.

Types.– *Holotype* ♂: Galápagos Is. (Ecuador).– *Isabela Id.*: Sierra Negra rim (NE), 15 Mar 1989, swept from flowers & leaves *Darwiniothamnus*, B. Landry (slide JBH 2027) (CNC #21925). *Allotype* ♀: same data (slide JBH 2028) (CNC).

Paratypes (28♂, 21♀).– ***Isabela***: Same data as holotype: 13♂, 4♀. *Sierra Negra* rim, 4 Mar 1989 (2♀), from flowers and leaves of *Darwiniothamnus*, B. Landry (BL slide 666). *Puerto Villamil* (1km W), 3 Mar 1989 (1♂); (15km N), 25 May 1992 (2♀). *Volcan Darwin*, 630m

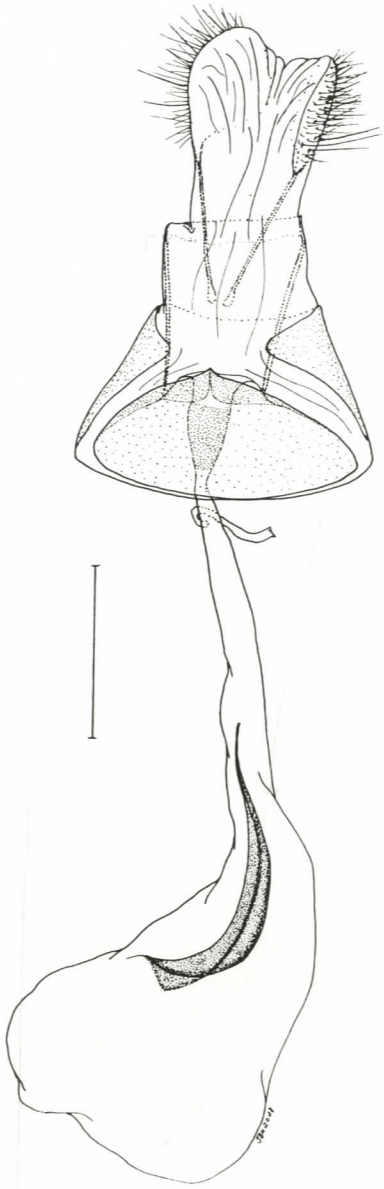

Fig. 3. Female genitalia of *Tebenna galapagoensis* Heppner & Landry, n. sp., allotype, Isabela Id. (slide JBH 2028) (scale line = 0.5mm).

elev., 16 May 1992 (1♂); 1000m elev., 18 May 1992 (4 ♂, 2♀) (BL slide 664 ♂); 1240m elev., 19 May 1992 (3♂, 2♀), B. Landry. ***Pinta***: 400m elev., 18 Mar 1992 (2♂, 1♀), B. Landry (BL slide 667). ***Santa Crúz***: *Finca S. Devine*, 17 Mar 1989 (1♀), B. Landry. *Finca Vilema*, 2km W Bella Vista, 1 Apr 1992 (2♀), B. Landry. *Mirador* vic. (w. of Media Luna), 620m, 26 May 1970 (1♀), R. Silberglied (USNM). ***Santiago***: *Aguacate*, 520m elev., 6 Apr 1992 (3♂, 4♀), B. Landry (BL slides 665 ♂, 668 ♀). *Bahía Espumilla*, 4 Apr 1992 (1♂), B. Landry.

Paratypes are deposited in the following collections: the Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador; the Charles Darwin Research Station, Santa Crúz Id., Galápagos Is., Ecuador; the Florida State Collection of Arthropods, Gainesville, Florida (FSCA); the National Museum of Natural History, Washington, DC (USNM); the Natural History Museum, London, England (BMNH); the Canadian National Collection, Agriculture Canada, Ottawa, Canada (CNC); and B. Landry's personal collection, Aylmer, Québec.

Distribution.– Known from Isabela, Pinta, Santa Crúz, and Santiago Islands thus far.

Flight period.– March to May.

Hosts.– Unknown; the collection record on *Darwiniothamnus* (Asteraceae) indicates a likely possible host, since *Tebenna* species typically feed on composites and usually are also found in close proximity to their hostplants. Investigations on this matter would be worth undertaking as there are no Lepidopteran hosts known to be associated with this endemic genus of shrubs which contains three species (Lawesson and Adsersen, 1987).

Biology.– Unknown.

Remarks.– This new *Tebenna* is distinct from other species discovered thus far from mainland South America and Mesoamerica. *Tebenna* comprises 29 species worldwide (Heppner, 1981), with a number of new species already known in collections, particularly from the neotropics. One undescribed species from Colombia is perhaps nearest to *T. galapagoensis*, being easily separated by its larger size and the lack of prominent orange or yellow subterminal lines on the wings; the genitalia are similar but larger. As with other elements of the Galápagos fauna, relationships are to the Neotropical region and not to Oceania (Meyrick, 1926). The only Oceania *Tebenna* known was described as *Tebenna bradleyi* Clarke (1971), from Rapa Island, possibly the same as *Tebenna micalis* (Mann) from the Palearctic region, but the Rapa Id. species is very different in maculation and genital details from *T. galapagoensis*.

ACKNOWLEDGMENTS

We wish to thank the Ecuadorian Ministry of Agriculture and Galápagos National Park authorities, and the authorities of the Charles Darwin Research Station, for allowing field work and providing logistical support to B. Landry in 1989 and 1992. Also thanked are Joyce Cook, Moraima Inca, Ricardo Palma, Stewart B. Peck, Bradley J. Sinclair, and Eduardo Vilema for companionship and help in the field. Field work was supported by an operating grant to Prof. S. B. Peck, Carleton University, Ottawa, from the Natural Sciences and Engineering Research Council of Canada, for field research on arthropod evolution.

LITERATURE CITED

Beebe, W.
1923. Notes on Galapagos Lepidoptera. *Zoologica* (New York), 5:50-59.

Butler, A. G.
1877. Lepidoptera. *In* A. Günther, Account of the zoological collection made during the visit of H.M.S. "Peterel" to the Galapagos Islands. *Proc. Zool. Soc. London*, 1877:86-91, pl. 11-13.

Clarke, J. F. G.
1971. The Lepidoptera of Rapa Island. *Smithson. Contr. Zool.* (Washington), 56:1-282.

Hayes, A. H.
1975. The larger moths of the Galápagos Islands (Geometroidea, Sphingoidea & Noctuoidea). *Proc. Calif. Acad. Sci.* (San Francisco), 40:145-208.

Heppner, J. B.
1981. Family Choreutidae. *In* J. B. Heppner and W. D. Duckworth, Classification of the superfamily Sesioidea (Lepidoptera: Ditrysia), 45-58. *Smithson. Contr. Zool.* (Washington), 314:1-144.

Landry, B.
1993. Additions to the knowledge of the Pterophoridae (Lepidoptera) of the Galápagos archipelago, Ecuador, with descriptions of two new species. *Zool. Meded.* (Leiden), 67:473-485.

Landry, B., and C. Gielis
1992. A synopsis of the Pterophoridae (Lepidoptera) of the Galápagos Islands, Ecuador. *Zool. Verh.* (Leiden), 276:1-42.

Lawesson, J. E., and H. Adsersen
1987. Notes on the endemic genus *Darwiniothamnus* (Asteraceae-Astereae) from the Galápagos Islands. *Opera Bot.* (Lund), 92: 7-15.

Linsley, E. G.
1977. Insects of the Galápagos (Supplement). *Proc. Calif. Acad. Sci.* (San Francisco), 125:1-50.

Linsley, E. G., and R. L. Usinger
1966. Insects of the Galápagos Islands. *Proc. Calif. Acad. Sci.* (San Francisco), 33:113-196.

Meyrick, E.
1926. On microlepidoptera from the Galapagos Islands and Rapa. *Trans. Ent. Soc. London*, 1926:269-278.

Schaus, W.
1923. Galapagos Heterocera with descriptions of new species. *Zoologica* (New York), 5:23-48.