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LACTURIDAE, NEW FAMILY (LEPIDOPTERA: ZYGAENOIDEA)

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ABSTRACT.– The pantropical family LACTURIDAE, **new family**, is given a formal description and compared with other families in Zygaenoidea.

KEY WORDS: Africa, *Aictis*, *Anticrates*, Australian, Bismarck Is., Borneo, *Callithrinca*, Celastraceae, Central America, Chile, Congo, Costa Rica, distribution, *Epopsia*, Ethiopian, *Eustixis*, Guatemala, *Gymnogramma*, hostplants, India, Indonesia, *Lactura*, **LACTURIDAE** new family, larvae, Megalopygidae, Mexico, Micronesia, Micropterigidae, Moraceae, morphology, Nearctic, Neotropical, New Guinea, North America, *Nosymna*, Oriental, Papuan, Philippines, pupae, Pyralidae, Samoa, Sapotaceae, Sarawak, Sikkim, Somabrachyidae, South Africa, South America, Southeast Asia, Sri Lanka, Taiwan, taxonomy, *Thyridectis*, *Toiana*, *Trychnomera*, USA, Yponomeutidae, Yponomeutoidea, Zygaenidae.

Formerly included among the family Yponomeutidae (Yponomeutoidea), the few pantropical genera associated with *Lactura* have been shown to be an isolated group for several years (Kyrki, 1984). Recently, the group has been placed in Zygaenidae by some authors (Common, 1990; Nye and Fletcher, 1991), but as a separate family in more recent catalogs (Heppner, 1992, 1995a). My earlier noting of the group as a family was without formal definition, awaiting a treatment of the family in a pending work on Lepidoptera classification (Heppner, 1995b). Thus, a formal description is offered herein. A number of species of Lacturidae are illustrated by Clarke (1965), still placed in the older Meyrick (1914) concept of Yponomeutidae.

The family includes 138 described species, mainly tropical Australian-Papuan (82 sp.) and Oriental (28 sp.). Most species are known in *Lactura* (81 sp.), with another large contingent in the Old World genus *Anticrates* (36 sp.). Only 6 species are known from the southern Nearctic and 11 from the Neotropical region (all in *Lactura*). The Ethiopian region has 9 known species, 7 of these included in the endemic genus *Gymnogramma*. Endemic genera in Australia include *Aictis*, *Epopsia*, *Thyridectis*, and *Trychnomera*. Meyrick (1914) tentatively synonymized *Epopsia* Turner, 1903, with *Anticrates* Meyrick, 1905, but I list it separately herein, pending further study, so as not to synonymize the well-known name *Anticrates*. The Papuan and Southeast Asian genus *Nosymna* includes 7 species. No Lacturidae are known for the Palearctic.

Some other genera still in Yponomeutidae may also require transfer to Lacturidae with further study. The only summary of species has been for the Nearctic, where Barnes and McDunnough (1913) compared several species and described two from the southern United States. A complete catalog of included species will be prepared for the new *Lepidopterorum Catalogus* series (Heppner, in prep. c).

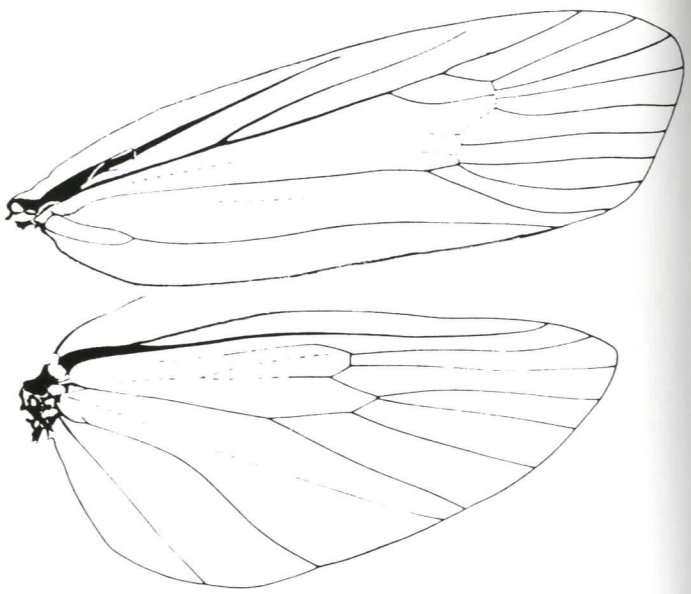

Fig. 1. Wing venation of *Lactura* sp., Australia (after Common, 1990).

LACTURIDAE, new family

Type-genus: *Lactura* Walker, 1854, List Lepid. Ins., 2:485. (Type-species *Lactura dives* Walker, 1854, ibid., 2:485. Type locality: "New Holland," [Bismarck Is.])

Diagnosis.– Adults are small to medium in size (12-60mm wingspan). *Head*: vertex smooth-scaled; labial palpus upcurved, 3-segmented; maxillary palpus 1-2-segmented; haustellum normal, naked; antenna filiform; antennal pecten absent; compound eye normal, entire; ocellu absent; chaetosema present; thoracic tympana absent; wing couplin frenulate; wing venation heteroneurous (Fig. 1). *Forewing*: subtriangula and elongated, pterostigma absent, humeral vein absent, Sc entire (short) chorda present, all veins present and usually not stalked, cell wit median vein absent (vestigial), M_3 meets CuA_1 at end of cell, Cu present (reduced), anal veins as A_{1+2} with basal fork, A_3 not eviden *Hindwing*: similar to forewing but usually more triangular, apex can b somewhat pointed, $Sc+R_1$ to near apex, M_2-M_3 meet at end of cell, A_1 usually with reduced basal fork, A_3 prominent, A_4 not evident; tibial spu

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formula 0-2-4. *Legs*: foretibial epiphysis absent. *Abdomen*: abdominal articulation tortricoid; abdominal tympana absent; no glands evident on abdominal sternites. *Female genitalia*: usually with simple ovipositor. *Male genitalia*: usually with elongated uncus, valvae simple.

Larva usually hypognathous, somewhat slug-like, head retractible into prothorax; head with 6 stemmata, usually in a semi-circle; thoracic legs developed; L-group is trisetose; abdomen with short prolegs developed on A3-6 and A10 (A10 prolegs sometimes reduced); crochets in a biordinal mesal penellipse.

Pupa is adecticous, obtect and incomplete; dorsal abdominal spines present as single row per segment (A2-8); pseudocremaster of curved spines. Pupation is in a stiff cocoon; pupa protruded at eclosion.

Distribution.– Lacturidae are pantropical in distribution. In the Old World from central to southern Africa; in Southeast Asia from India to Indonesia, north to the Philippines (but not to Taiwan); in Australia (mostly Queensland) and New Guinea, and to parts of Micronesia (Samoa). In the New World, they are primarily tropical, with a few species in the southern United States; one species is known from Chile.

Biology.– Few species are known biologically. The only North American species with known larvae, *Lactura pupula* (Hübner), feeds on leaves of various species of *Bumelia* (Sapotaceae). The larva superficially resembles the body shape and scolus arrangment of Micropterigidae larvae. Other New World species have not been reared.

Australian species of *Lactura* are reported by Common (1990) as leaf feeders on *Ficus* sp. (Moraceae) and *Planchonella australis* (Sapotaceae). He notes *Thyridectis psephonoma* Meyrick on *Cassine australis* (Celastraceae). Most species in Australia are known from rainforests in Queensland.

Remarks.– One of the clearest distinctions of Lacturidae from Zygaenidae in wing venation is the presence of a forewing chorda. Lacturidae lack ocelli, yet have chaetosemata, both character states opposite of most Zygaenidae, but mirrored in Somabrachyidae and Megalopygidae. Both of the latter families have bipectinate antennae, while Lacturidae have filiform antennae.

SYNOPSIS OF LACTURIDAE

AICTIS Turner, 1926

Aictis Turner, 1926, Trans. Roy. Soc. S. Aust., 50:146. (Type-species: *Aictis erythrozona* Turner, 1926, ibid., 50:146. Type locality: Queensland, Australia).

Species: Monobasic.

ANTICRATES Meyrick, 1905

Anticrates Meyrick, 1905, J. Bombay Nat. Hist. Soc., 16:612. (Type-species: *Anticrates chrysantha* Meyrick, 1905, ibid., 16:612. Type locality: Sri Lanka).

Pyrozela Meyrick, 1906, J. Bombay Nat. Hist. Soc., 17:414. (Type-species: *Pyrozela xanthomima* Meyrick, 1906, ibid., 17:415. Type locality: Sri Lanka).

Species: 36 (India to Australia, New Guinea, Samoa, South Africa).

CALLITHRINCA Meyrick, 1913

Callithrinca Meyrick, 1913, Exot. Microlepid., 1:140. (Type-species: *Psecadia evocatella* Walker, 1863, List Lepid. Ins., 28:537. Type locality: Borneo).

Species: 2 (Borneo and Samoa).

EPOPSIA Turner, 1903

Epopsia Turner, 1903, Proc. Linn. Soc. NSW, 28:89. (Type-species: *Epopsia metreta* Turner, 1903, ibid., 28:90. Type locality: Queensland, Australia).

Species: Monobasic.

GYMNOGRAMMA Zeller, 1852

Gymnogramma Zeller, 1852, Lepid. Microp. Caffr., 104. (Type-species: *Gymnogramma rufiventris* Zeller, 1852, ibid., 104. Type locality: Natal, South Africa).

Eremothyris Walsingham, 1897, Trans. Ent. Soc. London, 1897:47. (Type-species: *Eremothyris hollandi* Walsingham, 1897, ibid., 1897:48. Type locality: Rep. Congo).

Species: 7 (Africa).

LACTURA Walker, 1854

‡*Eustixis* Hübner, [1827-31], Zuträge Samml. Exot. Schmett., 3:24. (Type-species: *Eustixis pupula* Hübner, [1827-31], ibid., 3:24 (fig. 489-490) (subsequently designated by Grote, 1874, Bull. Buffalo Soc. Nat. Sci., 2:152). Type locality: Georgia, USA).

Kyrki (1990) noted this genus (not *Eustixia* Hübner, 1823, a genus in Pyralidae) as a senior synonym of *Lactura*. The names have been further confused due to two Hübner species having the same specific name: *Eustixia pupula* Hübner, 1823, in Pyralidae, and *Eustixis pupula* Hübner, [1827-31], in Lacturidae. *Eustixis* could have been a subsequent misspelling, but is here taken as an unused senior synonym, to be suppressed (Heppner, in prep. b) so both the genus name *Lactura* and the species name *L. pupula* can be maintained in use; this solution is supported by Nye and Fletcher (1991).

Lactura Walker, 1854, List Lepid. Ins., 2:485. (Type-species: *Lactura dives* Walker, 1854, ibid., 2:485. Type locality: "New Holland", Bismarck Is.).

Dianasa Walker, 1854, List Lepid. Ins., 2:488. (Type-species: *Dianasa suffusa* Walker, 1854, ibid., 2:488. Type locality: Australia).

Mieza Walker, 1854, List Lepid. Ins., 2:527. (Type-species: *Mieza igninix* Walker, 1854, ibid., 2:527. Type locality: Florida, USA).

Sarbena Walker, [1865], List. Lepid. Ins., 31:256. (Type-species: *Sarbena conflagrans* Walker, [1865], ibid., 31:256. Type locality: New Guinea), preocc. (Walker, 1862, Noctuidae: Nolinae).

Themiscyra Walker, [1865], List Lepid. Ins., 32:258. (Type-species: *Themiscyra laetifera* Walker, [1865], ibid., 31:258. Type locality: Moreton Bay, Queensland, Australia).

Cyptasia Walker, 1866, List Lepid. Ins., 35:1836. (Type-species: *Cyptasia egregiella* Walker, 1866, ibid., 36:1837. Type locality: Swan R., New Guinea).

Buxeta Walker, 1866 (repl. name for *Sarbena*), List. Lepid. Ins., 35:1982. (Type-species: *Sarbena conflagrans* Walker, [1865], ibid., 31:256).

Enaemia Zeller, 1872, Verh. Z.-B. Ges. Wien, 22:562. (Type-species: *Enaemia psammitis* Zeller, 1872, ibid., 22:562. Type locality: Texas, USA).

Pseudotalara Druce, 1885, Biol. C. Am., Lepid. Heter., 1:126. (Type-species: *Pseudotalara chrysippa* Druce, 1885, ibid., 1:126. Type locality: Guatemala).

Pseudocaprima Walsingham, 1900, *In* Swinhoe, Cat. Lepid., 2:563. (Type-species: *Pseudocaprima callopisma* Walsingham, 1900, ibid., 2:563. Type locality: New Guinea).

Epidictica Turner, 1903, Proc. Linn. Soc. NSW, 28:81. (Type-species: *Epidictica calliphylla* Turner, 1903, ibid., 28:81. Type locality: Queensland, Australia).

Hedycharis Turner, 1903, Proc. Linn. Soc. NSW, 28:90. (Type-species: *Hedycharis phoenobapta* Turner, 1903, ibid., 28:90. Type locality: Brisbane, Queensland, Australia).

Eriopyrrha Meyrick, 1913, Exot. Microlepid., 1:141. (Type-species: *Mieza colabristis* Meyrick, 1907, Proc. Linn. Soc. NSW, 32:89. Type locality: New Guinea).

Species: 81 (Australia, New Guinea and Solomon Is.; Indonesia; southern USA and Mexico to Costa Rica; 1 sp. in Chile).

NOSYMNA Walker, 1864

Nosymna Walker, 1864, List Lepid. Ins., 29:831. (Type-species: *Nosymna repletella* Walker, 1864, ibid., 29:831. Type locality: Sarawak).

Androgyne Walsingham, 1900, *In* Swinhoe, Cat. Aust. Lepid., 2:565. (Type-species: *Androgyne punctata* Walsingham, 1900, ibid., 2:566. Type locality: Sikkim and Assam, India).

Species: 7 (Sikkim to Indonesia)

THYRIDECTIS Meyrick, 1886

Thyridectis Meyrick, 1886, Proc. Linn. Soc. NSW, 11:1045. (Type-species: *Thyridectis psephonoma* Meyrick, 1886, ibid., 11:1046. Type locality: New South Wales, Australia).

Species: Monobasic.

TOIANA Walker, 1866

Toiana Walker, 1866, List Lepid. Ins., 35:1732. (Type-species: *Toiana venosella* Walker, 1866, ibid., 35:1732. Type locality: Sarawak).

Species: Monobasic (Borneo).

TRYCHNOMERA Turner, 1913

Trychnomera Turner, 1913, Proc. Linn. Soc. NSW, 38:199. (Type-species: *Trychnomera anthemis* Meyrick, 1913, Proc. Linn. Soc. NSW, 38:199. Type locality: Kuranda, Queensland, Australia).

Species: Monobasic.

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