BULLETIN OF THE ALLYN MUSEUM

3621 Bayshore Rd.
Sarasota, Florida 33580

Published By
The Florida State Museum
University of Florida
Gainesville, Florida 32611

Number 102 29 May 1986

A NEW GENUS AND SPECIES OF EUMAEINI (THECLINAE) FROM WESTERN ARGENTINA (LEPIDOPTERA: LYCAENIDAE)

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In 1984 the American Museum of Natural History (AMNH) acquired the Bruce MacPherson (Salta, Argentina) collection of western Argentinean lycaenid butterflies. Included was an undescribed species belonging to the Tribe Eumaeini (*sensu* Eliot, 1973) more specimens of which were located subsequently at the Allyn Museum of Entomology from collections by Roberto C. Eisele. It cannot be placed in any known genus of Eumaeini. To facilitate recognition of this divergent species and place proper emphasis on its unique genitalic morphology, the insect is described below in a new genus, presently considered monotypic. It is anticipated that further taxa will be discovered that are associated with the following generic description, but to date we know of none and none has been suggested by knowlegable reviewers concerning Eumaeini.

The senior author has examined specimens of and dissected male and female genitalia representing 359 species-level taxa in the Eumaeini, including representatives of 58 named genera relevant to the Neotropical and Nearctic realms, along with 115 entities that are apparently undescribed. This material examined is listed in Appendix 1 according to the groupings illustrated in the Outgroup Taxa appendices of Johnson, 1986a. This listing includes notation of the types that have been examined. This corpus comprises the basis for the diagnosis below.

Noreena, new genus

DIAGNOSIS. Generic status is best established by the morphological characters unique to *Noreena* amongst taxa listed in Appendix 1. Such unique characters are found outstandingly in the female genitalia as follows: (1) the proximal half ("cephalad component") of the ductus bursae is strongly arched; in other groups it is straight or spiral; (2) the point of entry of the ductus bursae is displaced laterad and centrad from its normal position at the distal end of the corpus bursae; (3) as a result of this displacement the ductus seminalis, which, as usual in Eumaeini, emanates from near the distal end of the bursa, is comparatively remote from the ductus bursae; (4) there is a detached sclerotized "shield" at the distal end of the bursa which is not present in other groups. Other characters: In the male, genitalic components treated individually can be duplicated in other groups but the combination of characters (see REMARKS) is unique. The aedeagus of *Noreena*, slightly recurvate caudad with one terminad cornutus and one centrad in the terminal one-fifth of the aedeagal shaft, is similar to the condition of taxa referenced with *Thecla americensis* Blanchard (generally associated with *Strymon* sens. lat.; Appendix 1), but the caecum is far smaller in *Noreena*. Variation in the male androconial scent brand in Eumaeini is vast, but the forewing brand on *Noreena*, compared to taxa of Appendix 1, appears unique as follows: scent brand divided into separate basal and apical sectors, respectively on each side of and separated by the cross vein of the discal cell. Basal portion comprising nearly one-fourth to one-fifth of discal cell length and colored deep brown (under binocular scope); apical sector smaller and beige (under binocular scope) extending from vein 5 (*sensu* Eliot, 1973) to vein 10 on apical side of cross vein. With the naked eye, basal sector appears blackish, apical sector as dull fuscous sheen.

DESCRIPTION: See Diagnosis and Description of type species.

TYPE SPECIES: *Noreena maria*, new species.

REMARKS: Compared to Eumaeini referenced in Appendix 1, the caudad terminus of the ductus bursae in *Noreena* ("caudad component" tapering to the lamellal lips) is similar to those of *Michaelus* Nicolay (e.g. *M. vibidia* (Hewitson) [type species]) or *Parrhasius* Hübner from whose taxa Nicolay, 1979, removed *Michaelus* as a monophyletic assemblage). In the wings, *Noreena* is notably like *Michaelus hecate* (Godman and Salvin). These resemblances, however, have not been sufficient to establish a taxonomic relationship. In the male genitalia, general facies of *Noreena* are suggestive of several disparate groups of Eumaeini; in the valvae *Noreena* resembles particularly some of the *Thecla "loxurina* Group" (*sensu* Draudt, 1919). The aedeagus in *Noreena's* type species, with its very limited caecum, recurved terminus, and both internal and terminal cornuti, may prove to be generically diagnostic, as may the male androconial scent brand. Characters in the male, however, cannot be seen as unique at this time as those in the female. There are other Eumaeini taxa which show combinations of characters quite disparate from other tribe members. Some of these are referenced along with *Thecla parthenia* Hewitson in Appendix 1. Morphological innovation in such taxa is so extreme as to make immediate taxonomic association with other Eumaeini uncertain. Such hiatuses are probably caused, as with *Noreena*, by these taxa having other immediate sister taxa which are yet to be discovered. This provides further rationale for the description of *Noreena*.

Noreena maria, new species

Figs. 1, 2

DIAGNOSIS: *N. maria* is most similar in wing pattern to *Michaelus hecate* (as in Nicolay, loc. cit.) but differs markedly as follows: (a). the presence of a submarginal *and* postmedian band on the forewing under surface (the former is obsolescent to lacking in

hecate); and (b). the lack of continuance of the median band on the hindwing under surface costad past vein M_1 (the median band is complete in *hecate*), but instead the basad fusion of this continuous band (which is rather disjunct in *hecate*) with the "parallel cell-end streaks" (Nicolay, loc. cit.) and the costad postbasal marking. On *hecate* the median line is disjunct and complete, with the parallel cell-end streaks and costad postbasal marking occurring as separate basad components. In addition, the ground color of the wing under surface is gray on *maria* (brown on *hecate*), the white submarginal hindwing markings are far lighter than on *hecate* (and uniquely marked black on *maria* at each vein interspace), and on *maria* there is no suffusion or specialized coloration between the anal lobe and the tail at vein Cu_2. On the upper surface of the wings, the male of *maria* is more broadly brown across the forewing apex and subapex than *hecate* and the female of *maria* is completely dark brown, not brightly washed pale blueish as in *hecate*.

DESCRIPTION: *Male*. Upper surface of the wings: Forewing dull brown from apex to subapex, rest of wing dull dark iridescent blue; hindwing mostly slightly lighter iridescent blue dusted silverish marginad. Forewing with large androconial patch distad in the discal area; hindwing with tail at terminus of vein Cu_2. Under surface of the wings: Ground color dull gray, forewing with submarginal and post median lines from costa to at least vein Cu_2. Hindwing with vivid orange at the anal lobe and "Thecla-spot", obsolescent white macular submarginal arc heavily colored black at each vein interspace and a prominent continuous line from the inner margin to vein M_1, thereafter joined basad as one line engulfing the parallel cell-end streaks and costad postbasal marking. Median area costad vein M_1 is immaculate. Length of Forewing: 12.0 mm. (holotype). *Female*: As on male except upper surface lacking androconial patch and completely brown. Length of Forewing: 13.0 mm. (allotype). *Male Genitalia* (Fig. 2): Lateral surface of vinculum well defined, saccus broadly parabolic. Valvae separate, ventrad surface tapered caudad with terminus and subterminus somewhat jagged on the lateral edges. Aedeagus with small

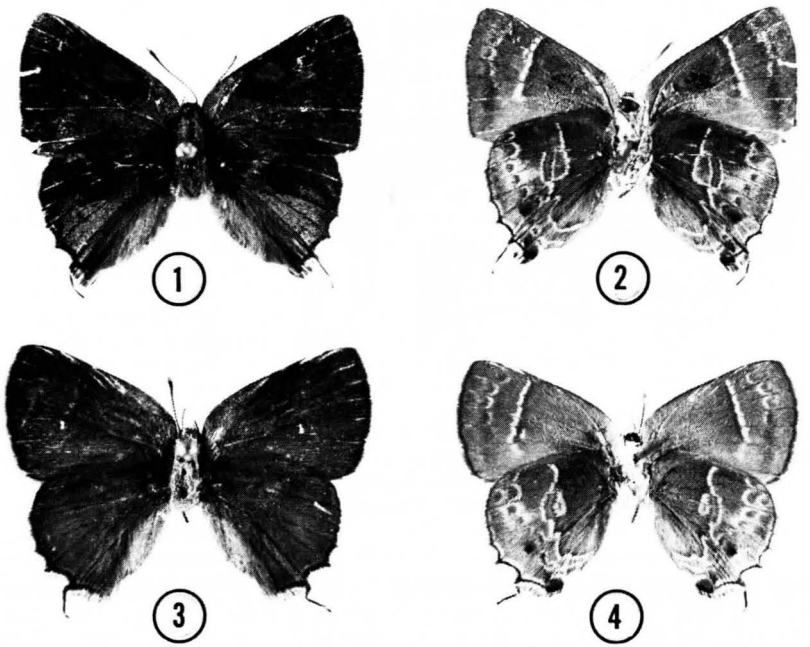

Figure 1: Holotype and allotype of *Noreena maria*. 1. Holotype, male, upperside; 2. same, underside. 3. Allotype female, upperside; 4. same, underside.

caecum, then long slender shaft with recurvate terminus; two cornuti. Brush organs two densely packed brush strips anchored ventrad at saccal vincular junction. *Female Genitalia* (Fig. 2): Ductus bursae with two sclerotized components, major one caudad, angled wider toward the terminus and with noticable lamellal lips. Second component cephalad, with a short transparent juncture and a more sclerotized horn curving shortly dorsad and joining the corpus bursae in a central position. A sclerotized shield caudad on bursal sac. Ductus seminalis adjoins latter mentioned shield. Two thornlike signa in cephalic half of corpus bursae. Major characters of Diagnosis referenced in Fig. 2.

TYPES: Holotype male, allotype, female, Mosconi, Salta Province, Argentina, Male, 7 May 1976: Female, 2 May 1978. Collected by Bruce MacPherson. Deposited AME. Paratypes: AME — type locality, 15 May 1976, MacPherson (one female); AMNH — type locality, June 1975, Eisele (one male), type locality, May 1978, Eisele (one female).

REMARKS: This species is as yet known only from the type locality, which lies 10 km. south of Tartagal, Argentina, at about 500 m. elevation in a dry wooded habitat. The external similarity to *hecate,* distributed through Mexico southward to El Salvador (Nicolay, loc. cit.) is probably homoplasy. However, since these taxa might be confused, *hecate* is referenced in the Diagnosis.

ETYMOLOGY: This genus and species are named for Noreena Maria van Valkenberg, with thanks for her aid to the Theclid Research Fund, AMNH.

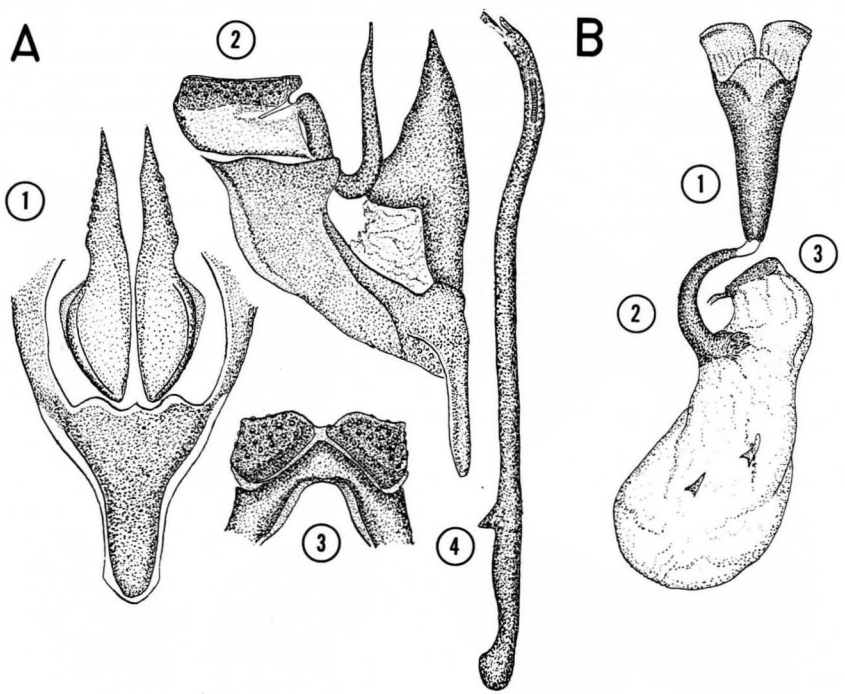

Figure 2: Male and Female Genitalia of *Noreena maria*. A. Male genitalia, *N. maria*: 1. Ventral view, vinculum and saccus with valvae in place; 2. Lateral view, genital configuration minus aedeagus; 3. Dorsal view, caudad vincular arc and labides; 4. Lateral view cornutus in place. B. Female genitalia, *N. maria*: 1. CAUDAD COMPONENT of text; 2. CEPHALAD COMPONENT of text; 3. SCLEROTIZED SHIELD of text.

Acknowledgements

The authors wish to thank two anonymous reviewers of an initial description of *N. maria* for their comments regarding its lack of any apparent generic affinity in Eumaeini. Concerning the descriptions of *Noreena* as a monotypic genus, the authors wish to thank Col. John N. Eliot and an anonymous reviewer for numerous helpful suggestions. We are also grateful to Dr. Lee D. Miller (AME) and Roberto Eisele (Salta, Argentina) for location of additional specimens. Dr. Fredrick H. Rindge (AMNH) has kindly facilitated working arrangements for the Theclid Research Fund.

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APPENDIX 1

TAXA EXAMINED: Following are listed the taxa examined for comparison to *Noreena*. They are grouped in general accordance with the clusters illustrated in the Appendices of Johnson, 1986a (as outgroups in his Callophryina [*Callophrys*-related taxa] revision). Callophryine taxa studied, since these are so numerous, are listed in abbreviated form at the end of the Appendix. Paragraphs designate variously clustered taxa on a gradistic basis whose overall facies have been used as general outgroupings for cladistic analysis. The taxa from *Strymon* through *Parrhasius* are those evidencing most general similarities to *Noreena*. Format as follows: M= male genitalia examined; F= female genitalia examined; t= species is type of genus; T= type specimen examined.

Strymon melinus Hübner (M,F,t); *Eiseliana koehleri* Toledo (=*Thecla punona* Clench) (M,F,T,t); *Thecla schausi* (M,T); *Thecla tegaea* Hewitson (M,T); *Thecla elongata* Hewitson (M,T); *Thecla atrana* Schaus (M); *Thecla catadupa* Hewitson (M,F,T); *Strymon acis* (Drury) (M,F); *Strymon albata* (Felder) (M,F); *Strymon martialis* (Herrich-Schäffer) (M); *Strymon limenia* (Hewitson) (M); *Strymon columella* (Fabricius) (M,F); *Strymon cestri* (Reakirt) (M); *Strymon thordesa* (Hewitson) (M); *Strymon faunalia* (Hewitson) (M); *Strymon hygela* (Hewitson) (M); *Strymon crossaea* (Hewitson) (M); *Strymon rufofusca* (Hewitson) (M,F); *Strymon cydia* (Hewitson) (M); *Strymon davara* (Hewitson) (M); *Strymon yojoa* (Reakirt) (M); *Strymon daraba* (Hewitson) M,F); *Strymon mulucha* (Hewitson) (M); *Strymon avalona* (Wright) (M); *Strymon bebrycia* (Hewitson) (M); *Strymon alea* (Godman & Salvin) (M); *Strymon pan* (Drury) (M).

Electrostrymon endymion (Fabricius) (M,F,t); *Electrostrymon denarius* (Butler & Druce) (M,F); *Electrostrymon sethon* (Godman & Salvin) (M,F); *Electrostrymon plusios* (Godman & Salvin) (M,F); *Electrostrymon joya* (Dognin) (M,F); *Electrostrymon regatus* (Druce) (M); *Electrostrymon persius* (Druce) (M) *Electrostrymon nubilum* (Druce) (M); *Electrostrymon cyphara* (Hewitson) (M); *Electrostrymon angelia* (Hewitson) (M); *Electrostrymon angelia dowi* Clench (M); *Electrostrymon angelia pantoni* (Comstock & Huntington) (M);

Electrostrymon angelia boveri (Comstock & Huntington) (M).

Thecla americensis Blanchard (M,F,T); *Thecla tucumana* Druce (M,F,T); *Thecla bicolor* Philipi (M,F,T); *Thecla quadrimaculata* Hewitson (M,F,T); *Thecla heodes* Druce (M,F); *Thecla tarania* Hewitson (M,T)

Euristrymon ontario (W. Edwards) (M,F); *Euristrymon favonius* (J. E. Smith) (M,F,t); *Euristrymon polingi* (Barnes and Benjamin) (M).

Hypostrymon critola (Hewitson) (M,F,t); *Hypostrymon margarita* (Draudt) (M,F).

Ministrymon leda (Edwards) (M,F,t); *Ministrymon ines* (Edwards) (M,F); *Ministrymon clytie* (W. Edwards) (M,F).

Phaeostrymon alcestis (W. Edwards) (M,F,t).

Nesiostrymon celida (Lucas) (M,F,t).

Chlorostrymon telea (Hewitson) (M,F,t); *Chlorostrymon simaethis* (Drury) (M,F).

Tmolus echion (Linnaeus) (M,F,t); *Tmolus azia* (Hewitson) (M,F); *Tmolus mutina* (Hewitson) (M,F); *Tmolus venustus* (Druce) (M); *Tmolus cydrara* (Hewitson) (M,F); *Tmolus* n.sp. Johnson and Matusik (1986) (F,T); *Tmolus* n.sp. Johnson (1986b) (M,F,T).

Parrhasius polibetes (Stoll) (M,F,t); *Parrhasius m-album* Boisduval & LeConte; *Magnastigma hirsuta* (Prittwitz) (M,F,t); *Magnastigma elsa* (Hewitson) (M,F); *Magnastigma milto* (Godman & Salvin) (M,F); *Magnastigma casmilla* (Hewitson) (F); *Michaelus jebus* (Godart) (M,F); *Michaelus thordesa* (Hewitson) (M); *Michaelus ira* (Hewitson) (M); *Michaelus vibidia* (Hewitson) (M,F). (Godman & Salvin) (M,F); *Olynthus narbal* (Stoll) (M,F,t).

Panthiades pelion (Cramer) (M,t); *Panthiades stigmatos* (Druce) (M); *Panthiades ostia* (Hewitson) (M); *Panthiades epytus* (Godman & Salvin) (M); *Panthiades arindela* (Hewitson) (M); *Panthiades polama* (Schaus) (M); *Panthiades phoenissa* (Hewitson) (M); *Panthiades ortygnus* (Cramer) (M); *Panthiades fancia* (Jones) (M,F); *Panthiades orgia* (Hewitson) (H); *Panthiades teleontes* (Druce) (M); *Panthiades selica* (Draudt) (M,F); *Panthiades hewitsoni* (Kirby) (M); *Panthiades battus* (Cramer) (M,F); *Panthiades hebraeus* (Hewitson) (M); Panthiades pelion (Cramer) (M); *Panthiades boreas* (Felder & Felder) (M), *Panthiades paphlagon* (Felder & Felder) (M); *Panthiades ochus* (Godman & Salvin) (M,F); *Thecla gabina* Godman & Salvin (M,F); *Chalybs janais* (Cramer) (M,F,t); *Cycnus phaleros* (Linnaeus) (M,F,t); *Harkenclenus titus* (Fabricius) (M,F,t);

Satyrium fuliginosa (W. Edwards) (M,F,t); *Satyrium sylvinus* (Boisduval) (M,F,t); *Satyrium californica* (W. Edwards) (M,F,); *Satyrium acadica* (W. Edwards) (M,F); *Satyrium edwardsii* (Grote & Robinson) (M.F); *Satyrium calanus* (Hübner) (M,F); *Satyrium caryaevorus* (McDunnough) (M,F); *Satyrium kingi* Klots (M,F); *Satyrium liparops* (Boiduval) (M,F); *Satyrium tetra* (W. Edwards) (M,F); *Satyrium saepium* (Boiduval) (M,F); *Satyrium auretorum* (Boiduval) (M,F).

Strymonidia thalia (Leech) (M,F,t); *Strymonidia pruni* Linnaeus (M,F); *Strymonidia spini* Schiffermueller (M,F).

Callipsyche behrii (Edwards) (M,F,t)

Arawacus linus (Sulzer) (M,F,t); *Arawacus aetolus* Sulzer (M,F); *Brangas caranus* (Stoll) (M,F,t): *Rekoa meton* (Cramer) (M,F,t). *Rekoa bourkei* (Kaye) (M,F).

Evanus regalis (Cramer) (M,F,t); *Atlides halesus* (Cramer) (M,F,t); *Pseudolycaena marsyas* (Linnaeus) (M,F,t); *Calycopis cecrops* (Fabricius)= *poeas* (Hübner) (M,F,t); *Calycopis isobeon* (Butler and Druce) (M,F); *Calycopis bellera* (Hewitson) (M); *Calycopis vitruvia* (Hewitson) (M); *Calycopis fractuna* Field (M); *Calycopis beon* (Cramer) (M,F); *Calycopis keta* Field (M); *Calystryma atrox* Butler (M,F); *Calystryma barza* Field (M); *Calystryma naka* Field (M); *Calystryma blora* Field (M); *Calystryma tifla* Field (M); *Calystryma meleager* (Druce) (M,F); *Calystryma cinniana* (Hewitson) (M); *Calystryma trebula* (Hewitson) (M,F).

Arcus imperialis (Cramer) (M,F,t); *Thecla pathenia* Hewitson (M); *Eumaeus minijas* Hübner (M,F,t); *Theorema eumeonia* Hewitson (M,F,t).

Erora laeta (W. Edwards) (M,F,t); *Erora quaderna* (Hewitson) (M,F). *Thecla opisina* Druce (M,F); *Thecla vevenae* Dyar (M,F).

Thecla hybla Druce (M,F,T); *Thecla oxida* Hewitson (M,F,T); *Thecla mirma* (Hewitson) (M,F); *Thecla tyrrius* (Druce) (M); *Thecla commodus* Felder & Felder (M,F,T); *Thecla arria*

Hewitson (M,F,T); six undescribed taxa in this assemblage (M,F) presently under study.

Thecla loxurina Felder & Felder (M,F,T); *Thecla atymnides* Draudt (M,F,T); *Thecla quindiensis* Draudt (M,F); *Thecla atymna* Hewitson (M,F,T); *Thecla amatista* Dognin (M,F,T); eleven undescribed taxa in this assemblage (M,F) presently under study.

Other Eumaeini: *Siderus parvinotus* Kaye (M,F,t); *Theritas mavors* Hübner (M,F,t); *Argus ledereri* (Boisduval) (M,F,t); *Theclopsis lebena* (Hewitson) (M,F,t); *Ipidecla miadora* Dyar (M,F,t); *Calliscista ocellifera* Grote (M,F,t); *Dolymorpha jada* (Hewitson) (M,F,t); *Chattendenia m-album* (Knoch) (M,F,t); *Fixenia herzi* (Fixen) (M,F,t); *Iaspis temesa* (Hewitson) (M,F,t); *Nordmannia myrtale* (Klug) (M,F,t); *Thestius photeus* (Cramer) (M,F,t); *Oenomaus ortygnus* (Cramer) (M,F,t); *Polyniphes dumenilii* (Godart); *Mithras nautes* (Cramer) (M,F,t); *Pseudothecla lunulata* (Erschoff) (M,F,t); *Eupsyche m-album* (Boisduval & LeConte) (M,F,t)

The monophyletic assemblage including the genera of common usage *Incisalia, Ginzia, Sandia, Xamia, Cyanophrys, Mitoura, Callophrys,* and the *culminicola* Group (of Draudt 1919) has been revised (Johnson 1986a) and includes the following outgroup taxa of *Noreena* which are not listed in full here because of length: Total number of species level taxa examined: 164. Total number of these described prior to Johnson (1986a): 69, of which the types of 49 species were locatable and examined. Total number of new species level taxa described by Johnson (1986a) of which all types were examined: 95.

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