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NEOTROPICAL NYMPHALIDAE. IV. REVISION OF ECTIMA

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A. INTRODUCTION

Ectima is another genus of neotropical nymphalid butterflies which required a critical revision to permit accurate identifications. Other genera revised are *Hamadryas* (Jenkins, 1983), *Myscelia* (Jenkins, 1984), and *Catonephele* (Jenkins, 1985). Eight other genera are also under study.

The genus *Ectima* includes four species and three subspecies of relatively small brownish butterflies (some dark bluish males) with a white diagonal cross band on the forewings. The wings have wavy dark lines and usually have white subapical spots on the dorsal forewings and submarginal ocelli on the hindwings. The ventral surfaces of the wings are dull brownish or grey-buff. The females are similar in pattern, but in some species the males have a dark bluish iridescence. The wing venation (Fig. 1) is similar to the large *Batesia*. They have very long middle and hind legs as compared with related nymphalids. The hypandrium or subgenital plate of the male is quite narrow and elongate and is different from other genera.

Ectima was selected for study because it was difficult to identify species, the nomenclature was very confused, and some older names were not identifiable. Also, *Ectima* has been closely associated with *Hamadryas* and included with it in the tribe *Ageroniini* Seitz or *Hamadryini* Orfila.

Ectima is a distinctive genus which does not appear to be closely related to any other genera. While it is a small group with only a few uncommon species, the first species of *Ectima* was described nearly two hundred years ago by Fabricius in 1793, which was a homonym. Replacement names, inaccurate or poor descriptions and misidentifications have resulted in a nomenclatorial mess. Seitz (1915) stated the problem clearly, "The forms of this genus are very nearly allied to each other, and as the older descriptions are inaccurate and the habitat is often not mentioned, the relations of the older names to the forms that are known now, are not always traceable."

This small genus presented a real challenge to untangle the nomenclature. All of the *Ectima* types in the British Museum were carefully studied and photographed. Older collections were also studied, especially the so-called "*liria*" and "*rectifascia*" species.

After examining 20 different museum and private collections, it can be stated that the names used and the identifications of most species and subspecies are incorrect. This also applies to nearly all books, including Seitz (1915). In this widely used reference book

all illustrations are wrongly named or identified. On p. 103a "*rectifascia*" is *E. erycinoides erycinoides*; "*liria U*" is *E. thecla astricta*; "*lirissa U*" is *E. thecla thecla* but (underside is not typical); and *liridis* [sic.] is a very poor representation of the ventral surface probably of *E. lirides* (spelling corrected in text p. 536).

The first revision of the genus was by Fruhstorfer (1908) which did not clarify the names or status of the species and subspecies and resulted in describing two invalid subspecies. The presentation by Seitz (1915) was essentially a restatement of Fruhstorfer (1908). Bryk (1953) contributed to the genus by describing three invalid taxa.

In revising this genus a major problem was establishing the identities of *E. lirina* and *E. erycinoides*, which were not sufficiently described by the Felders in 1867. These two taxa now appear to finally have been accurately identified. Also the first species description of *Ectima liria* Fabricius (1793) was preoccupied. The obscure replacement name *E. thecla* Fabricius (1796) was discovered recently by Dr. Gerardo Lamas (Pers. comm.). These findings have resulted in many name changes in this genus, however, this should result in future stability of names.

A distinctive feature of *Ectima* is their habit of alighting on tree trunks upside down, with the wings outspread flat against the bark in exactly the same manner as *Hamadryas*. *Ectima* has been considered to be closely related to *Hamadryas*, which does not have a hypandrium but has separate rami attached to the sides of the sternites.

The geographic distribution of the genus extends from southern México to northern Argentina with most species and subspecies in South America. The genus is absent from the West Indies.

The adults are relatively uncommon except locally, and are usually not well represented in collections. No common name is known for the group. The name *Ectima* is from the Greek and means "without honor," probably in relation to the rather unimposing appearance and lack of bright colors.

B. MATERIALS AND METHODS

Ectima were collected and studied in the field by the author in thirteen localities in Panamá, Venezuela, Ecuador, Perú and Brazil. They were studied and identified in twenty museum and private collections. Type specimens of five taxa were examined and photographed in the British Museum of Natural History. All of the Fruhstorfer collection of *Ectima* was reviewed in detail.

Ectima are quite variable, and it was of great value to collect series of fresh specimens from single localities to study the range of variation. The characters used for differentiating species and subspecies include wing patterns, wing coloration, wing venation, male genitalia, hypandria and rami, and female genitalia. The larval setal pattern is presented, but there was insufficient larval material to compare species. Keys are presented for identification of adult males and females based on wing coloration and pattern and for male genitalia and hypandria. Keys are also included for identifying subspecies based on wing pattern and coloration.

Data have been compiled for each specimen examined including sex, date, geographic locality, altitude and museum in which it is found. Full data are presented only for rare or new taxa. Other data are summarized for more common species.

The nomenclature of wing veins follows Miller (1970) and the venation of *Ectima* is illustrated in Fig. 1. The terminology for the male and female genitalia follows Klots (1970) and the hypandrium or subgenital plate including rami follows Tuxen (1956).

Male genitalia and hypandria were dissected in ten males and five females. Male specimens were selected from extremes of ranges and for the subspecies. There was little variation in genitalia and hypandria within a species. The genitalia were preserved in small, numbered glycerine-filled vials, and associated with their corresponding specimens.

The distribution maps (Figs. **40-43**) are based on specimens determined by the author. Combined circles, triangles, or squares indicate intergrades between subspecies and an X after a locality name indicates intergrades.

Over 800 specimens were studied and identified, with 580 males and 230 females. After

dissection and further examination, it was found that a few females may have been identified earlier as males. It is sometimes difficult to tell the sex in dried specimens of *E. thecla* and the number of females may be greater than reported. The more pointed forewings of the males and the more rounded wings of the females are usually diagnostic. Color photographs were made of types and critical specimens and these are deposited in the Allyn Museum. The holotype of a new subspecies is in the Allyn Museum. Four species and three subspecies are now included in *Ectima*. Seven taxa are included as new synonyms in this study.

COLLECTIONS EXAMINED

AA - Allyn Museum of Entomology, Florida State Museum, Sarasota, FL (L. D. Miller)
AM - American Museum of Natural History, New York City, N.Y. (F. H. Rindge)
BM - British Museum (Natural History), London, England (R.I. Vane-Wright, P. Ackery)
CA - California Academy of Science, San Francisco, CA (P.H. Arnaud)
CM - Carnegie Museum of Natural History, Pittsburgh, PA (G. Ekis and C. Young)
DM - De la Maza Collection, México City, México
GS - Gordon B. Small Collection, Balboa, Panamá
JC - Dale and Joanne Jenkins Collection, Sarasota, FL
KB - Keith S. Brown Collection, Campinas, Brazil
LA - Los Angeles Co. Museum Natural History, Los Angeles, CA (J.P. Donahue)
MM - Milwaukee Public Museum, Milwaukee, WI (A.M. Young & S.S. Borkin)
MN - Museu Nacional, Rio de Janeiro, Brazil (J. Cândido de Mello Carvalho)
MZ - Museum of Comparative Zoology, Harvard University, Boston, MA (J. Weintraub and M.D. Bowers)
NC - James Neidhofer Collection, Milwaukee, WI (in MM)
PA - Philadelphia Academy of Sciences (in CM)
SI - National Museum of Natural History, Smithsonian Institution, Washington, D.C. (J.F. Gates Clarke and R. Robbins)
ST - Herman Strecker Collection (at Allyn Museum of Entomology) Sarasota, FL (in AA, property of Field Museum of Natural History, Chicago, IL
UC - Universidad Central, Maracay, Venezuela (F. Fernandez)
UN - Universidad Nacional Mayor de San Marcos, Museo de Historia Natural "Javier Prado," Lima, Perú (G. Lamas)
UP - Universidade Federal do Paraná, Curitiba, Brazil (O. Mielke)

C. BIONOMICS

Ectima are found in tropical forest areas, especially in high evergreen tropical forest, semi-deciduous tropical forest, in riverine and gallery forests, and in cut-over and secondary growth areas. They are found in forest openings where trees have fallen, in forest roads and trails, forest edges, and in cut-over and reforested partially open areas. They are most commonly found on tree trunks that have fermented sap from beetle borings or cuts. They may be locally common and a group will swarm together and when disturbed they fly to other tree trunks.

No *Ectima* have been collected at banana or other fruit baits or fruit bait traps even when put in areas where the adults were fairly common. However, adults were found by Joanne Jenkins feeding on fallen decaying fruit of "pluma rosa" or rose apple *Szygium jambos* at El Vigia, Venezuela. Lee Miller (pers. comm.) has observed adults feeding on fallen guava fruit near Puerto Maldonado, Perú.

The adults alight on tree trunks with the wings spread out flat, with the head downward as in *Hamadryas*. The white wing bands are obvious when they are resting. When disturbed they fly upward on the tree trunks or to other trees. They were not heard to make a crackling sound as do *Hamadryas*, even when they were chasing each other or spiraling upward. They are sometimes found associated with *Hamadryas spp., Colabura dirce*, and *Callizona acesta*, which also inhabit tree trunks. The adults fly from about 0800 to 1400

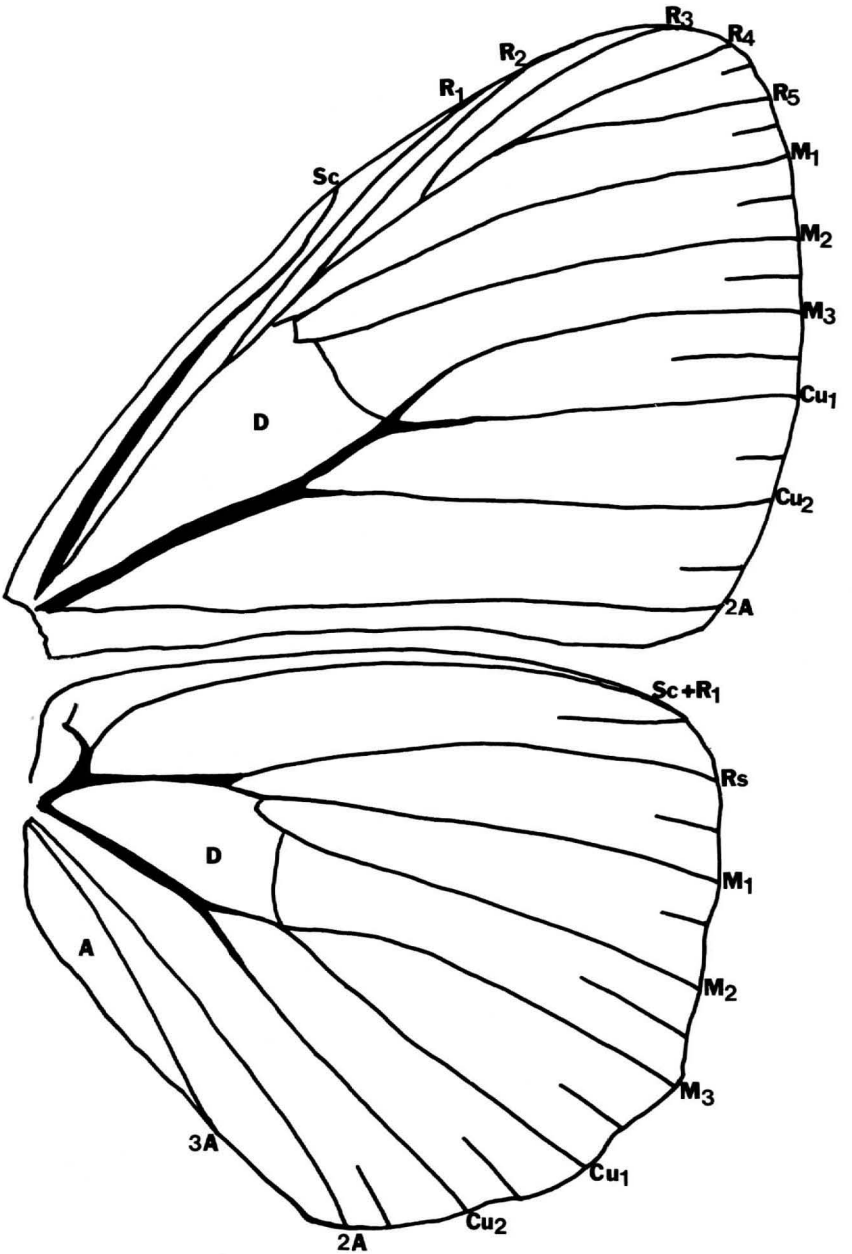


Figure 1. Venation of *Ectima* showing nomenclature of veins according to Miller (1970).

hours during bright sunlight, but I have collected resting adults until 1800 hours.

The larvae feed on the leaves of *Dalechampia*, which is a vine or vine-like shrub in the family *Euphorbiaceae* (Table 1). Larvae of *Ectima thecla astricta* (Fig. 2) were found at Farfan, Panamá in November, 1982 by Mr. Gordon Small (pers. comm.) on *Dalechampia sp.* Larvae of this subspecies were found by L. Daniel Otero (pers. comm.) at Borburata, Venezuela on *Dalechampia diascoreifolia* in July, 1984. The larvae of *Ectima thecla thecla* (misidentified as *Ectima lirina*) were found by Müller (1886) on *Dalechampia sp.* at Blumenau, Santa Catarina, Brazil. Mr. H. Miers (pers. comm.) has reared *Ectima thecla thecla* at Joinvile, Santa Catarina, Brazil on a small tree with pinnate leaves which he identified as "belladonna". This might be a member of the *Solanaceae* known locally as "belladonna".

The pupa is quite distinctive with elongate leaf-like apical horns which have lateral projections (Fig. 3). The pupa is attached to the leaf at the posterior end of the abdomen.

Table 1. Host Plants of *Ectima* Larvae

Euphorbiaceae		
Dalechampia diascoreifolia		
E. thecla astricta	Venezuela	L.D. Otero (pers. comm.)
Dalechampia sp.		
E. thecla astricta	Panamá	G. Small (pers. comm.)
Dalechampia sp.		
E. thecla thecla	S. Brazil	Müller (1886)
Family (?)		
"belladonna" (small tree with pinnate leaves)		
E. thecla thecla	S. Brazil	H. Miers (pers. comm.)

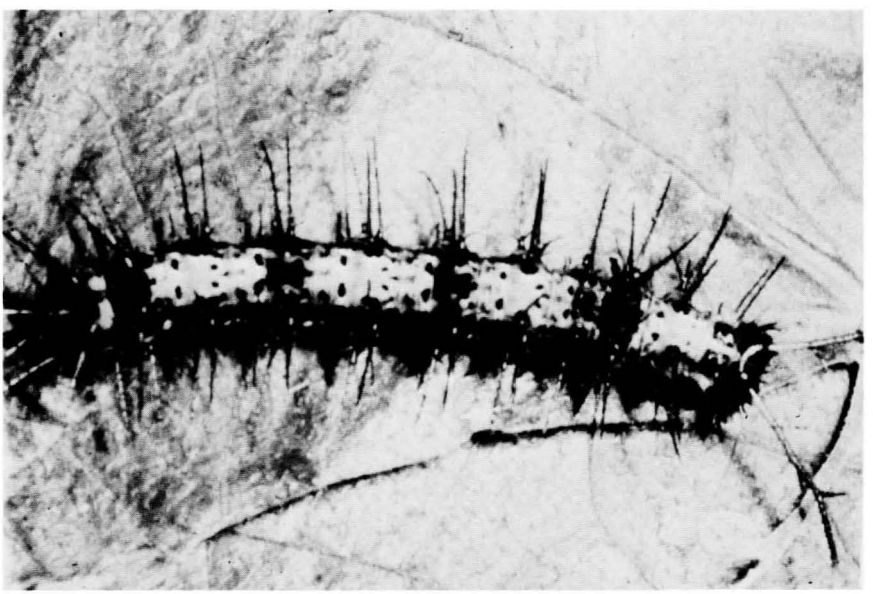


Figure 2. Larva of *Ectima erycinoides erycinoides*, Canal Zone, Panamá.

The adults are found nearly every month of the year, with greater numbers for some species from January to July and from July to December for others. They have been found from near sea level and mostly at low elevations but up to about 950 m. in altitude.

The adults of *Ectima thecla astricta* were found in copula at Tingo María, Perú and photographed by Mr. K.H. Preston-Mafham (photo sent by Dr. Gerardo Lamas) shown in Fig. 4. The adults are resting on a tree trunk with the male above. They are joined end to end and probably supported by the extended rami and hypandrium of the male.

D. PHYLOGENY

In attempting to construct the phylogeny without any known closely related genera, it is not possible to make valid outgroup comparisons. Therefore, "primitive" characters are difficult to ascertain. It is presently thought that *E. iona* and *E. lirides* are the most "primitive" species and that *E. thecla* and *E. erycinoides* have more "advanced" characters.

The character states tentatively considered to be "primitive" in this genus include: 1. ♂ with dark blue-purple iridescence; 2. DFW diagonal postmedian band of separate maculae: 3. hindwing ocelli round; 4. uncus of male genitalia very long; 5, hypandrium shorter; 6. rami with no spines or teeth; 7. no subspeciation; and 8. not widespread, or occurs only in the Guyana and Amazon basin areas. The more "advanced" character states include; 1. ♂ with little or no dark blue-purple iridescence; 2. DFW diagonal postmedian band complete, not macular; 3. hindwing ocelli square or subquadrate; 4. uncus of male genitalia relatively short; 5. hypandrium longer; 6. rami with spines or teeth; 7. species divided into subspecies; and 8. more widespread including extension into Central America.

A cladistic study has been completed using transformation series. Until valid outgroup comparisons can be made, and hopefully more larval descriptions are available, this will be held for revision and later publication.

E. SYSTEMATICS

Ectima is a small compact genus with closely related species not resembling any other genera. The adults have wing venation similar to *Batesia* and enlarged veins similar to

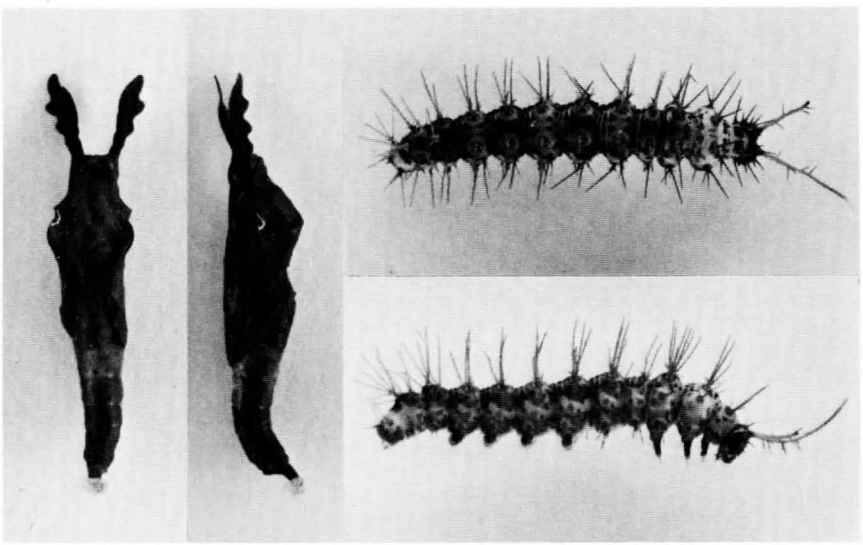


Figure 3. Pupa and larva of *Ectima erycinoides erycinoides*, Borburata, Venezuela.

Hamadryas. The hypandrium and rami are very different from *Hamadryas,* but the habit of alighting flat on tree trunks is similar. *Ectima* has been included with *Hamadryas* in the nymphalid subfamily *Limenitidinae* Behr and tribe *Ageroniini* Seitz, or in the tribe *Hamadryini* Orfila which is considered a synonym (Miller & Brown, 1981). *Ectima* may belong in the Subfamily *Eurytalinae.*

The most common and first described species was *Papilio liria* Fabricius (1793), but this is a homonym. Godart (1824) published a replacement name *E. lirissa.* However, the name *liria* has been used by most authors. As mentioned previously Dr. Lamas (pers. comm.) discovered that Fabricius (1796) realized *liria* was a junior homonym and that he had published *thecla* as a replacement name for *liria.* The genus was established in 1848 by Doubleday who described *Ectima iona* at the same time, so that *iona* is the type-species by monotypy. The Felders (1867) described *Ectima erycinoides* and *Ectima lirina* inadequately, and the identity of these species has been a mystery for over 100 years.

Staudinger (1888) listed the species with brief comments. Fruhstorfer (1908) in his "Neue *Ectima* Rassen," reviewed the species and subspecies of the genus and described a number of synonyms. The same species and subspecies are listed by Seitz (1915). These authors included the Felder species *erycinoides* and *lirina* as unknowns or synonyms of *rectifascia* (Butler & Druce, 1874). After much study and some deductions, it has finally been possible to accurately identify these Felder taxa.

Due to the closeness of relationship of the few species in *Ectima,* there is no need to consider species groups or subgenera. The male genitalia and hypandria and rami of the species and subspecies are quite similar.

Description:

Adult. Antennae long and slender with 34 segments of which 12 form a club. The palpi are slightly hairy, the terminal segment is ⅓ the middle segment. The front legs have a thick coxa; the middle and hind legs are rather long and spiny.

The wing color is brown with dark bands, with a white diagonal postmedian crossband on the dorsal forewing (DFW) and the ventral forewing (VFW). The dorsal hindwing (DHW) has submarginal ocelli or maculae; however, ♂ *lirides* and *iona* may have so much dark bluish-purple iridescence that maculae are difficult to distinguish.

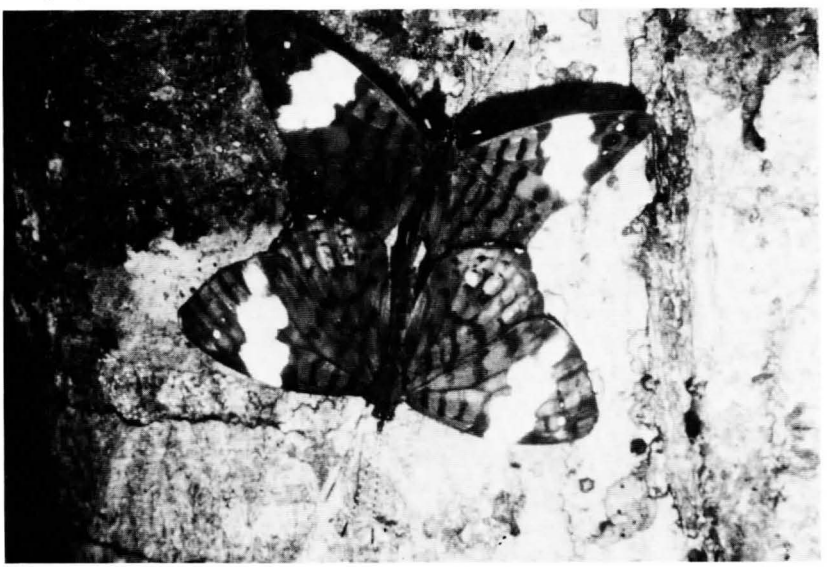


Figure 4. Adults of *Ectima thecla astricta* in copula. Tingo Maria, Perú.

The subcostal and median veins are dilated bordering the discal cell on the forewing. R_1 branches basal to the end of the cell; r_1-m_1 is very short (missing in *iona*), m_1-m_2 is heavily curved, m_2-m_3 is very slender and closes the discal cell, joining at the juncture of M_3 and Cu_1. The hindwing discal cell is closed by a slender vein m_2-m_3.

The male genitalia has a curved slightly hairy uncus, an elongate gnathos and prominent gnathos arm. The saccus and aedeagus may be very long (6 mm in *iona*) or shorter 2-3 mm in the other species. The valvae are very elongate with many long setae. The hypandrium is long and quite narrow especially basal to the expansion of the rami which may have chitinous teeth, without teeth, or with elongate flat spines at the ends of the rami. These characters are used to separate species in the key to male genitalia and hypandria.

The female genitalia (Fig. 39) have a short compressed corpus bursa with a pair of chitinized signa patches. The sterigma, lamella antevaginalis and lamella postvaginalis are distinct and can be used to differentiate species.

Larva. The larva of *Ectima thecla astricta* shown in Fig. 2 is dark grey in color with orange markings dorsally. The spines are long and black. The dorsal and subdorsal spines are branched as follows:

	ant. dorsalia											post. dorsalia	
VENEZUELA													
	T1	T2	T3	A1	A2	A3	A4	A5	A6	A7	A8	A7	A8
dorsal	--	--	--	--	--	--	--	--	--	--	--	3	5
subdorsal	2	2	4	1	2	2	2	2	2	2	2	--	--
PANAMA													
dorsal	--	--	--	--	--	--	--	--	--	--	--	3	4
subdorsal	1	2	4	1	2	2	2	2	2	2	2	--	--

The postdorsalia on A8 and A9 are scoli with 3 to 5 branches. The subdorsal spine on T3 has an enlarged base. The anterior dorsalia on A8 are quite long.

The epicranial horns are long with four to six spinules terminating in a round knob. Dorsal spines are present on A7 and A8. Subdorsal spines are present on A7 and A8. Subdorsal spines are present on T1-T3 and A1-A8. Müller (1886) illustrated the head and epicranial horns of larvae of *E. thecla thecla*. The epicranial horns were branched with spinules and terminated in knobs. He compared them to *Hamadryas sp. ign.* Müller (which I have recently found to be a synonym of *Hamadryas epinome* after studying larvae at Curitiba, Brazil which were prepared and partially described by D'Almeida (1922).

The pupa of *E. thecla thecla* was briefly described by Müller (1886) who stated that the pupa is brown, especially in the wing area. The head has horns which he named "hare's ears", which are somewhat shorter and broader than *Hamadryas*. A pupa of *E. e. erycinoides* from Borburata, Venezuela is shown in Fig. 3.

KEY TO SPECIES OF ECTIMA
ADULT MALES AND FEMALES

1a. DFW with a postmedian diagonal band of four elongate or rectangular distinct white maculae; no subapical white spots; DHW with two submarginal ocelli; males with marked purplish iridescence ..... *iona*

1b. DFW with an entire postmedian diagonal white band, not broken into separate maculae 2

2a. Upper surface of wings with very dark ground color, contrasting with white postmedian band on DFW, borders broadly on M_3 and contains no dark markings,

very dark subapical area containing small white spots; DHW blackish or very dark, submarginal ocelli not readily visible; males with some bluish iridescence *lirides*
2b. Upper surface of wings brownish or grey brown with some contrasting dark bands and markings; males with no (or very slight) blue iridescence 3
3a. DHW with four or five submarginal blackish subquadrate or rectangular markings which may contain a small distal white bar ..... *erycinoides*
3b. DHW with circular submarginal ocelli, usually with a lighter colored central spot ..... *thecla*

KEY TO MALE GENITALIA AND HYPANDRIA OF ECTIMA

1a. Hypandrium with elongate flat spines at ends of rami ..... *erycinoides*
1b. Hypandrium without elongate flat spines at ends of rami 2
2a. Hypandrium without 1 or 2 chitinous teeth at ends of rami; saccus and aedeagus very elongate (about 6 mm in length) ..... *iona*
2b. Hypandrium with 1 or 2 chitinous teeth at ends of rami, saccus and aedeagus shorter (about 2-3 mm) 3
3a. Hypandrium elongate (6 mm); aedeagus strongly bent; uncus with few short hairs ..... *lirides*
3b. Hypandrium shorter (4 mm); aedeagus slightly curved, uncus with more and longer hairs (especially in *thecla thecla)* ..... *thecla*

Genus **Ectima** Doubleday, 1848

Ectima Doubleday, 1848. Gen. Diurn. Lep. (2): pl. 42, fig. 4. Type-species by monotypy: *Ectima iona* Doubleday, 1848. ibid (2): pl. 42, fig. 4. Only *iona* was cited on plate 42 of the first publication of the name *Ectima*, and that species is therefore the type-species of this genus by monotypy (the relevant portion of the text was published ((1):227) July, 1849).

Ectima iona Doubleday [1848]
Figs. **5-8, 33, 37, 40**

Ectima iona Doubleday [1848] Gen. Diurn. Lep. (2): pl. 42, f. 4. (text(1): 227, published July 1849). TL: "Amazonas". Syntypes: BM 15-98, Rh. 9245, 1 ♂, Rh. 9246, 1 ♀ (Examined).
=*Ectima iona* Hewitson, 1850. Ann. Nat. Hist. Ser. 2:434. redescription in text. [*Junior homonym*].
=*Ectima jona* Hewitson, Staudinger, 1888. Exot. Schmett. p. 126 t. 43 ♂ [*Lapsus calami*]
=*Ectima jonia* Hewitson, Schatz & Röber, 1892. Die Familien und Gattungen. p. 138 [*Lapsus calami*].

Description: Male. Upper wing surface with black lines and maculae with a purplish iridescence. The DFW has a postmedian diagonal band of four separate snow-white elongate rounded maculae. There are no subapical white spots. The DHW has two postmedian circular ocelli from M_3 to Cu_2. The underwing surface is buff-brownish with dark lines and the VFW has a white band of maculae similar to the DFW. DFW with radius vein and M_1 branch without any r_5-m_1 cross vein. Male genitalia with saccus and aedeagus very elongate (about 6 mm in length); hypandrium elongate branched into rami without flat spines or teeth at the tip.

Female. Pattern of dark lines and maculae similar to male; white band on DFW with white maculae more fused forming a band instead of separate maculae.

Average wing length ♂ (21-24)22 mm; ♀ (20-25)23 mm.

Distribution: Occurs from Guyane to Venezuela (perhaps Colombia) to eastern Ecuador, Perú and Bolivia and the Amazon basin area of Brazil.

Taxonomy and Variation: This species is relatively uncommon so that no large series have been studied from single localities. There is considerable variation in size and especially the amount of dark blue iridescence of males; older and worn specimens have less blue. There is much variation in the females, with the diagonal band of white maculae of the DFW varying from separate white maculae to fused larger maculae forming an irregular band.

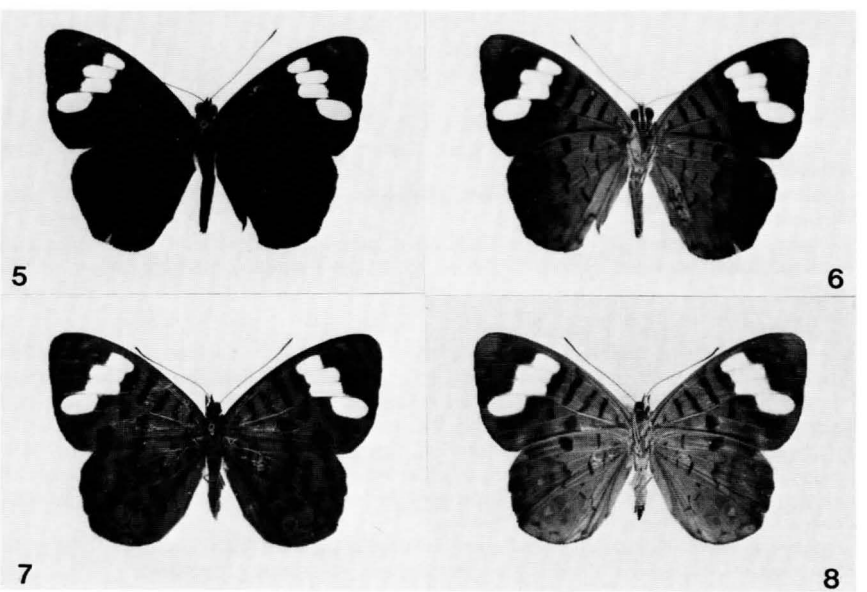
I have examined the ♂ and ♀ types in the BM, and they are typical of the general population.

Biology: The adults are found in tropical everygreen and semi-deciduous tropical forest especially in river valleys. They are relatively rare or uncommon except locally. The adults alight on tree trunks upside down with wings flat and outspread like *Hamadryas*. I have collected it in eastern Venezuela near El Dorado in a forest road in relatively undisturbed semi-deciduous forest.

Adults have been collected every month of the year with more found in March and July. They are found at lower altitudes usually in areas along rivers.

There are no reports known on the immature stages or food plants.

Specimens Examined: 60 ♂ 35 ♀
GUYANE: *Guyane,* Gourdonville; Kourou River; St. Jean du Maroni; Godebert; SURINAM: No specific locality. GUYANA: *Mazaruni-Potaro,* Potaro River; Kamakusa; Aunai; Essequibo River; VENEZUELA: *Monagas,* Caripito; *Bolívar,* Suapure; El Dorado km 88; *Amazonas,* La Esmeralda; COLOMBIA: *Cundinamaraca,* Bogotá (?); Irvilla, Villa Nova (not located); ECUADOR: *Napo,* Rio Napo; No specific locality; PERÚ: *Loreto,* Iquitos; Pebas; Rio Ucayali; Yurimaguas; *San Martín,* Tarapoto; *Madre de Dios,* Boca Rio la Torre; BOLIVIA: *Santa Cruz,* Las Juntas; BRAZIL: *Amazonas,* Benjamin Constant; São Paulo de Olivença; Manaus; 100 km N. Manaus; Maués; Isla da Baliza; *Acre,* Alto Jurau; *Pará,* Obidos; Aveiro; Rio Tapajós; Itaituba; Santarem; *Maranhão,* Imperatriz;



Figures 5-8. *Ectima iona* Doubleday. ♂ dorsal (5) ventral (6) surfaces. GUYANA, *Mazaruni-Potaro,* Potaro River (AA). ♀ dorsal (7) ventral (8) surfaces. GUYANA, *Mazaruni-Potaro,* Potaro River (AA).

Mato Grosso, São Felíz, Barra do Garças; Villa Bella, Barra do Bugres; Alto Rio Arinos, Diamantino; *Rondônia*, Calama; Vilhena; Riozinho, "Amazon S."

Ectima lirides Staudinger [1885] **[Stat. rev.]**
Figs. 9-10, 34, 41

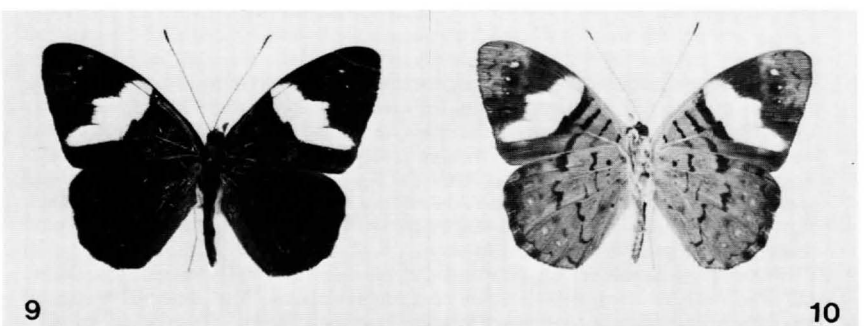
Ectima lirides Staudinger [1885], Exot. Tagf. 1:126, t. 43 ♂ f. [11] ("*Liria* Fabr. var.?).
TL: Perú, *Loreto*, Pebas. Syntypes: 2♂ syntypes Mus. Zool. Berlin.
Ectima liria lirides Staudinger, Fruhstorfer, 1908. Stett. Ent. Zeit. p. 43.
=*Ectima liria liridis* Staudinger, Seitz, 1915. pl. 103b. [*Lapsus calami*].

Description: Male. Upper wing surfaces quite dark with dark purplish iridescence. The black stripes and maculae do not contrast as in other species. DFW with median white band snow-white, without any dark inclusions. The outer margin of the band strongly stepped at M_2, and at Cu_1 with white, broadly extending to near margin in Cu_1 to Cu_2 space. There are two or three white subapical spots. Radius vein and M_1 connected with a short cross vein r_5-m_1 where they branch. DHW with obscure circular ocelli. VFW with white diagonal band surrounded by black. There are two to three white subapical spots. Ground color of VHW buff-brown with dark brown markings. Four or five submarginal ocelli present. Uncus with few short hairs, aedeagus strongly bent; hypandrium with one or two chitinous teeth at ends of rami.

Female. Similar to male except lighter in color and without dark purplish iridescence. Average wing length ♂ (22-24)23, ♀ 23 mm.

Distribution: Occurs in the Amazon basin from eastern Ecuador and Perú to Obidos on the Amazon River in Brazil. The record from Bogotá, Colombia is probably a locality error.

Taxonomy and Variation: This species was described as a species, but Staudinger indicated that it was probably a variety of *liria*. Fruhstorfer, in 1908 and Seitz, 1915 made it a subspecies of *liria*. It is here recognized as a species based on the male genitalia and hypandrium, the distinct markings of the male, and the geographic distribution and no observed intergradation. However, the species is relatively rare, only 32 specimens being found, and more study is desired. There is not much variation in the few specimens studied, but some specimens of *E. thecla astricta* from São Paulo de Olivença have a narrower white band and slightly resemble *lirides*.
Biology: Occurs in tropical rain forest especially near rivers. I have collected only one male, sitting upside down with wings outspread flat, on a tree trunk by a forest trail in deep evergreen tropical forest near the Amazon River at Explorama Camp near Mazán 65 km NE of Iquitos, Perú.



Figures **9-10.** *Ectima lirides* Staudinger. ♂ dorsal (**9**) ventral (**10**) surfaces. PERÚ, *Loreto*, Iquitos (JC).

Adults have been collected from July to December and at lower altitudes along rivers up to an elevation of 500 m.

Nothing has been reported on the immature stages or host plants.

Specimens Examined: 24 ♂ 8 ♀

COLOMBIA: *Cundinamarca,* Bogotá (1 spec. in BM, very doubtful locality label) (?); ECUADOR: *Napo,* Latas 500 m, 1 ♂ Sep. SM; No specific locality 1 ♂ MN: PERÚ: *Loreto,* Pucallpa 150 m, 1 ♂ Dec. UN; Iquitos 1 ♂ MN; Pebas 1 ♂ ST; BM; Middle Rio Ucayali 1 ♂ Jul. AM: Explorama Camp (Mazán) 1 ♂ Aug. JC; Caballococha BM; Nauta BM; *Madre de Dios,* Shintuya 460 m 1 ♂ Jul. AA; BRAZIL: *Amazonas,* Benjamin Constant 2 ♂ MN; São Paulo de Olivença 3 ♂ 3 ♀ MN; BM; Tefé, 1 ♂ MN, 2 spec. BM; Tonantins, BM; Manicoré, BM; Maués, BM; Ipiranga, 1 ♂ Nov. MN; *Pará,* Obidos, BM; *Rondônia,* Jaru 1 ♂ Aug. KB.

Ectima erycinoides C. & R. Felder, 1867

Ectima erycinoides was fairly accurately described by the Felders, when they referred to the white diagonal band of the DFW with a straight inner margin and the DHW with subquadrate ocelli. However, it was considered unknown to Staudinger (1892), and Fruhstorfer (1908) and Seitz (1915) included *lirina* and *erycinoides* as questionable synonyms of *rectifascia.*

E. erycinoides extends from México to Ecuador and is divided into the nominate form from Guatemala to Colombia with a new subspecies in Ecuador and an unnamed form in Mexico.

Description: Male. Upper surfaces of wing light brown with blackish elongate lines or bands. DFW with a white diagonal band, relatively narrow. A large white subapical spot with two smaller white spots in a dark circular area (total spots rarely 2 or 4). DHW with dark submarginal subquadrate maculae which may contain a white mark. DFW with radius vein and M_1 connected by short r_s-m_1 crossvein at branch. VFW white band surrounded by dark colored areas; a large white subapical spot and two smaller white spots. Base color of wings light ochre with brown lines. VHW with subapical ocelli present. Hypandrium with elongate flat spines at ends of rami.

Female. Similar to male but much lighter grey-brown base color. Ventral surface similar to male but paler and not so distinctively marked with wavy lines.

Key to Subspecies of *E. erycinoides*

1a. DFW with postmedian diagonal white band with proximal margin straight to Cu_1, then stepped and deeply indented and outwardly offset at Cu_1, band constricted in this area; DFW and VFW third dark band (submedian) of discal cell may be outwardly convex (W. Ecuador) ..... *ecuadorensis*

1b. DFW with postmedian diagonal white band with proximal margin nearly straight and not constricted; third dark band of discal cell not outwardly convex 2

2a. VFW discal cell with no basal dark cross band; submedian (second) cross band inwardly concave; this band on DFW also inwardly concave. DHW and VHW with large dark outer postmedian macula in R_s-M_1; DHW with four additional quadrate ocelli, three with white distal elongate marks; VHW with four prominent dark ocelli with white centers; distal to this median dark band are two elongate whitish maculae in R to M_2 (S. México) ..... subsp.

2b. VFW discal cell with dark basal cross band, submedian cross band straight. DHW and VHW without large dark outer postmedian macula in R_s-M_1; VHW with a large dark postmedian ocellus with white center in M_1-M_2, other ocelli, smaller or missing; dark median wavy line broad. (Guatemala to Colombia) ..... *erycinoides*

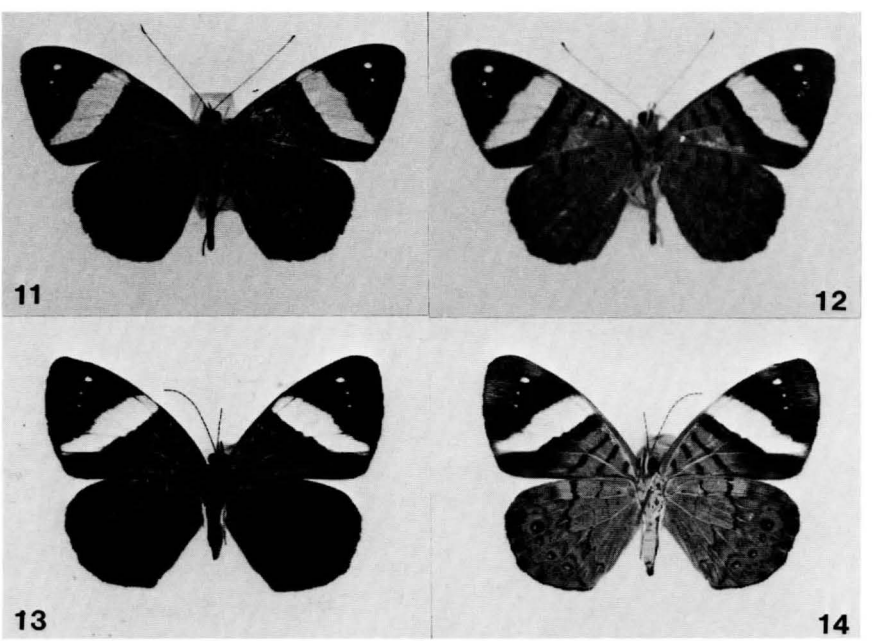
Ectima erycinoides erycinoides C. & R. Felder, 1867 **[Stat. rev.]**
Figs. 11-14, 35, 38, 42

Ectima erycinoides C. & R. Felder, 1867. Reise Nov. Lep. 3:409-410, no. 623. TL: "Nova Granada:Muzo." = Colombia [*Boyacá*], Muzo. Syntypes: Unknown.
=*Ectima rectifascia* Butler & Druce, 1874. Proc. Zool. Soc. London 25(3):345 n. 162. TL: Costa Rica, Cartago. Syntype: BM 15-99, Rh. 9244 1 ♂ HT (Examined) Figs. **11-12.** **[Syn. nov.]**
=*Ectima chiriquensis* Staudinger. There is 1 ♂ from Chiriquí, Panamá in the Strecker collection with this name as a synonym of *E. rectifascia*. Probably an unpublished manuscript name **[Nomen nudum]**.

Description: As in *E. erycinoides* except for differences for *E. e. erycinoides* listed in the key to subspecies. Average wing length ♂ (21-25)22 mm, ♀ (19-24)23 mm.

Distribution: Presently known to occur from eastern Guatemala to central Colombia.

Taxonomy and Variation: This species has been identified as *E. rectifascia* in most collections and books, such as in Godman & Salvin (1883) and Seitz (1915). The identification as *E. erycinoides* is clear from Felders' description but the types have not been found. I have studied the "holotype" of *E. rectifascia* in the BM and it is typical of the general population of the nominate subspecies. There is some variation in darkness of the males and the presence of a faint dark blue iridescence. The VHW may be buff to light ochre in color and there is some variation in the presence of ocelli from M_2 posteriorly. The ocellus in M_1-M_2 is always large and dark.



Figures **11-14.** *Ectima erycinoides erycinoides* C. & R. Felder. ♂ dorsal (**11**) ventral (**12**) surfaces. COSTA RICA, [*Cartago*] Cartago. Syntype, *Ectima rectifascia* Butler & Druce (BM). ♀ dorsal (**13**) ventral (**14**) surfaces. PANAMÁ, *Colón*, Piña (AA).

Biology: Adults have been collected in evergreen tropical forest, and semi-deciduous tropical forest. They occur in forest roads and trails and openings and at the edges of forests. The adults alight on tree trunks with the wings outspread as in *Hamadryas*. The subspecies appears to be rare and localized in Nicaragua to Guatemala but is locally common in Panamá and Costa Rica.

Adults have been collected every month of the year with perhaps more from July to December. The subspecies occurs from near sea level to an altitude of 1200 m.

No records of immature stages or of the host plants are known to me.

Specimens Examined: 117 ♂ 42 ♀

GUATEMALA: *Verapaz* 1 ♂ BM; NICARAGUA: *Rio San Juan*, Chontales, 1 ♂ BM; COSTA RICA: *Puntarenas*, Palmar Norte; Golfito; Palmar Sur; *Cartago*, Cartago; Turrialba; *San José*, San José; *Alajuela*, San Mateo, *Limón*, Guápiles; Rio Estrella; Rio Banano; *Heredia;* Rio Peje 950 m; PANAMÁ; *Chiriquí*, Chiriquí; Bugaba; *Panamá*, Cerro Campana 1200 m; Rio Piedras; *Colón*, Piña 300 m; *Canal Zone*, Coca Sola; Barro Colorado Isl.; Gatun; *Darién*, Cana 400 m; Veraguas; COLOMBIA: *Boyacá*, Tunja; *Cauca*, Juntas; *Cundinamarca*, Bogotá; Cananche; *Santander;* Santander, La Borrascosa; La Sevilla Isl.; Burica Isl.

Ectima erycinoides ecuadorensis [Ssp. Nov.]
Figs. **15-18, 35, 38, 42**

Description: Male. Upper surface of wing light brown with elongate dark stripes or bands. DFW with postmedian diagonal white band with proximal margin straight to Cu_1 then stepped and deeply indented, band also strongly constricted at Cu_1; outer margin of band

Figures **15-18.** *Ectima erycinoides ecuadorensis* Jenkins. ♂ dorsal (**15**) ventral (**16**) surfaces. Paratype, ECUADOR, *Guayas*, Dos Puentos (CM). ♀ dorsal (**17**) ventral (**18**) surfaces. Paratype, ECUADOR, *Guayas*, San Rafael (SI).

broad at M_2 indented and constricted at Cu_2 and a narrow elongate tapering white macula in Cu_1-Cu_2. A fairly large white subapical spot followed by two small white spots in a dark circular area. DFW and VFW with third dark band (submedian) in discal cell may be outwardly convex. DHW with submarginal subquadrate ocelli.

Female. Similar to male but lighter base color.

Average wing length ♂ 24-25 mm, ♀ 21 mm.

HOLOTYPE: ECUADOR: *El Oro,* Piedras 300 m. 1 ♂ 3 Jul. 41, ex. coll. F. M. Brown (AA).
PARATYPES: ECUADOR: *Guayas,* El Triunfo 1 ♀ Apr. 64 (CM); Dos Puentes 600 m, 1 ♂ Mar. (CM); San Rafael 1 ♀ May (SI); *Los Rios,* Playas de Montalvo 1 ♀ Apr. (AM); *Chimborazo,* Chimbo 1 ♂ (BM); *Bolívar,* Rio La Chima 1 ♂ (BM). Deposition of type material; Holotype ♂ in Allyn Museum. Paratypes; 1 ♂ 1 ♀ in Carnegie Museum; 1 ♀ in Smithsonian Museum Natural History; 1 ♀ in American Museum Natural History, and 2 ♂ in British Museum (Natural History).

Distribution: Presently known only from western Ecuador.

Taxonomy and Variation: Since only 4 ♂ and 3 ♀ have been examined, no variation of any significance has been found.

Biology: Adults have been collected from 300 to 600 m elevation, and in March and April.

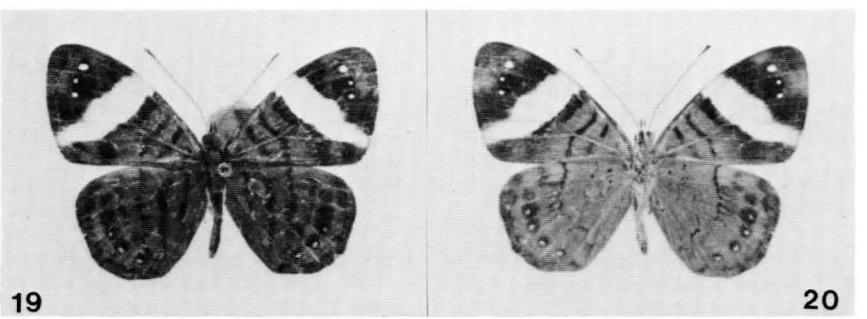
Immature Stages: Nothing is known about the immature stages or host plants.

Ectima erycinoides Ssp.
Figs. **19-20, 42**

Description: Female. DFW same as *e. erycinoides*; DHW with five (instead of four or three with two fused in *E. e. erycinoides*), subquadrate dark submarginal markings, including one in R_5-M_1 (absent or very weak in *E. e. erycinoides*); VFW with second cross line from base concave instead of straight; VHW with all submarginal ocelli from M_1-2A with dark rings (instead of just in M_1-M_2); postmedian line dark and very undulating and zigzag, touching median line in several places (absent or diffused line in *E. e. erycinoides*); dark ocellus in R_5-M_1 (dark ocellus missing in R_5-M_1 in *E. e. erycinoides*).

Wing length ♀ 22 mm. This ♀ specimen appears distinctive, but it is not given a name until the male and more specimens are found to merit its recognition. It is distinct from specimens from Guatemala and Nicaragua in the BM.

MÉXICO, *Chiapas,* Chajul, Rio Lacantun, May 5, 1981, 1 ♀, Javier de la Maza, E. (in coll. de la Maza).



Figures 19-20. *Ectima erycinoides* subsp. ♀ dorsal (19) ventral (20) surfaces. MÉXICO, *Chiapas,* Chajul, Rio Lacuntun (DM).

Ectima thecla (Fabricius, 1796)

This species has been known as *Ectima liria* Fabricius 1793 for nearly 200 years. It is fairly common especially in southeastern Brazil and has been given quite a few names. The name *thecla* was published as a replacement name for *liria* by Fabricius (1796) in a list of emendations. This was kindly brought to my attention by Dr. Gerardo Lamas.

This species is the most common of the genus and is found from Costa Rica to Argentina in three distinct subspecies. It is highly variable so that a number of synonyms exist.

Description: Male. Dorsal wing surface brownish with some light purple iridescence, with dark lines or bands and maculae. DFW white postmedian band usually wide with irregular edges. Subdistal area with a relatively large white spot followed by a dark circular area which may or may not have two additional small white spots. DHW with submarginal circular ocelli usually with white central marks. VFW with white diagonal postmedian band surrounded by dark, with subapical spots as on DFW. VHW grey to brown with brown wavy lines and circular submarginal ocelli present. DFW with radius vein and M_1 with a short r_5-m_1 cross vein at branch. Male genitalia with saccus and aedeagus shorter (2-3 mm), uncus with many hairs; hypandrium with 1 or 2 chitinous teeth at ends of rami.

Female. Similar to male but lighter base color and no purplish iridescence.

Key to Subspecies of *Ectima thecla*

1a. DFW with one (rarely a minute second spot) subapical white spot; postmedian white band containing one or more complete or partial brown ocellus rings ..... *thecla*

1b. DFW with three or four subapical white spots; postmedian white band without any brown ocellus rings 2

2a. DFW with distal margin of postmedian white band smooth, band relatively narrow ..... *lirina*

2b. DFW with distal margin of posterior white band very irregular, undulate or stepped ..... *astricta*

Ectima thecla thecla (Fabricius, 1796) **[Stat. rev.]**
Figs. **21-24, 36, 39, 43**

=*Papilio liria* Fabricius, 1793. Ent. Syst. 3(1): 239. no. 747. TL: "In Indiis". TYPE: ex Drury, might be at Macleay Museum, Australia. (Fig. in Donovan, 1800. Ins. Ind. pl. 37, f. 5) (Homonym).

Papilio thecla Fabricius, 1796. Ind. Alph. Ent. Syst. Emend. et Auctam 8:124, no. 747 [*Replacement name*].

=*Nymphalis lirissa* Godart [1824] Enc. Meth. 9:406, no. 186 [*Second replacement name*].

=*Papilio liria* Jones, Icon. 1783-1785. Illus. 2, no. 318 as *liria*, tab. 23, fig. 2, Vol. 3(4): pl. 23, fig. 2 (Slide no. 318).

=*Ectima liria exilita* Fruhstorfer, 1908. Stett. Ent. Zeit. 69:43. TL: Paraguay 2 ♂ Syntypes: BM 15-98, 1 ♂ Paraguay and 1 ♀ Mapiri, Bolivia (Examined) **[Syn. nov.]**.

=*Ectima liria* ab. *exilita* Fruhstorfer, Seitz, 1915:5:536.

=*Ectima liria infirma* Fruhstorfer, 1908. Stett. Ent. Zeit. 42. TL: Brazil, Bahia. Syntypes: BM 1 ♂ 1 ♀ (Examined) **[Syn. nov.]**.

=*Ectima liria* forma *subtusmonotona* Bryk, 1953. Ark. für Zool. Serie 2, Band 5(1): 112. TL: Argentina, Posadas. Holotype: 1 ♂ HT, Reichsmuseum Stockholm. **[Syn. nov.]**.

Description: As in *E. thecla* except for differences for *E. liria liria* listed in the key to subspecies.

Average wing length ♂ (19-23) 21 mm, ♀ (18-22) 20 mm.

Taxonomy and Variation: Fabricius described this species as *Papilio liria* in 1793 in Ent.

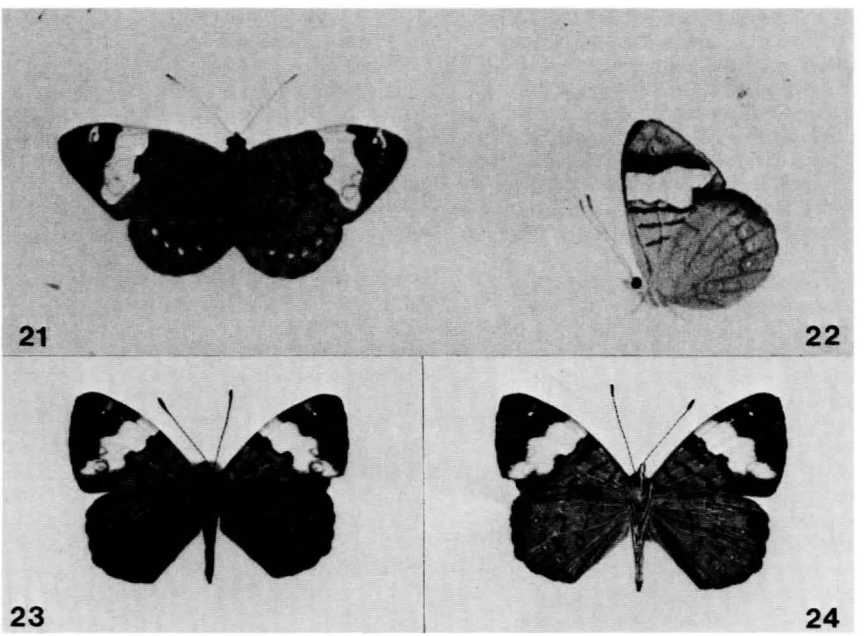
Syst. 3(1):239, no. 747. An excellent figure recognizable as this subspecies (*thecla thecla*) was printed in Jones *Icones*, but unpublished with a date of "1785" for photo no. 318 in Vol. 3(4) Pl. XXIII. Hemming, in a letter to Prof. Carpenter dated 24 Nov. 1945 states that the "Icones" contains figures of 365 types mostly described by Fabricius in 1793 in his Ent. Syst. Since the specimen described by Fabricius was from the Drury Coll. and this figure cites the original no. 747 description and Drury, it is probable that this specimen was the holotype of Drury. Since the Drury collection is probably destroyed, I recommend that this figure be designated the type of *liria* and for the replacement name *thecla*. The Jones *Icones* was photographed and distributed by the Hope Department in 1979. (See Figs. 21 and 22).

Fabricius in 1796 realized that *liria* was a homonym and published a replacement name *thecla*. Godart [1824] was unaware of this action and published a second replacement name *lirissa* and cites the Jones *Icones* figure of *liria*.

Fruhstorfer (1908) published descriptions of *E. liria exilita*, and Seitz (1915) made it an aberration of *liria*. Fruhstorfer also published *E. liria infirma* in (1908). I have carefully examined the types of both subspecies in the BM, and they are synonyms of *E. thecla thecla*. *Ectima liria* forma *subtusmonotana* Bryk (1953), is based on a common variation of grey-umber underside found in series from several localities and is a synonym.

E. thecla thecla is quite variable, having only a small part of a brown circular ocellus found in the northern part of its range, to two complete ocelli in the white band on the DFW in the southern part of the range. The color and dark markings on the VHW are also quite variable. There is intergradation in the northeastern part of the range with *E. t. lirina* and in Bolivia and Mato Grosso, Brazil with *E. t. astricta*.

Biology: E. t. thecla is found in tropical evergreen forest, but more commonly in tropical



Figures 21-24. *Ectima thecla thecla* (Fabricius) ♀ dorsal (21) ventral (22) surfaces. "In Indiis". Lectotype *Papilio liria* Fabricius and *Papilio thecla* Fabricius, in Jones *Icones*. ♀ dorsal (23) ventral (24) surfaces. BRAZIL, *São Paulo*, Indiana (MM).

semi-deciduous forest. It is also found in second-growth forest and riverine gallery forest and especially in stream valleys. Adults occur in openings in forests, in roads and trails and at the edge of forests. They are especially attracted to trees with sap flows due to injury from beetles. I have collected series (in company with *Hamadryas fornax* and other species of *Hamadryas* and *Colabura dirce*) from trees with sap flows.

Adults have been collected nearly every month of the year, and at elevations from near sea level to about 500 m.

Immature Stages: Larvae were found on *Dalechampia sp.* at Blumenau, Santa Catarina, Brazil, and the pupa was described by Müller (1886). Larvae were reared on "belladonna" by H. Miers (pers. comm.) at Joinvile, Santa Catarina, Brazil.

Specimens Examined ♂ 159 ♀ 71

BRAZIL: *Bahia,* Santo Antônio da Barra Z; Bahia X; *Pernambuco,* Serra do Communaty; Recife; Brejão; *Espírito Santo,* Linhares, Colantina; Santa Leopoldina; Conceição Barra, *Mato Grosso,* Chapada X; Buriti-30 km NE Cuiabá X, Barra do Bugres; Araputanga; *Minas Gerais,* Tijuco, Serra do Caraça; Caxambú; São Lourenço; *Paraná,* Ponta Grossa; Caviúna; "North Paraná"; Castro; Rolândia; Terra Boa; Curitiba; Iguaçu; *São Paulo,* São Paulo; Bauru; Iporanga; Santos; Araras; Mogi-Guaçu; Indiana:Araçatuba; Sumaré; Angatuba; Porto Cabral; Cantareira; Loreto; Campinas; *Rio de Janeiro,* Rio de Janeiro; Nova Friburgo; Laguna de Sacuarema; Gávea; Petrópolis; Tijuca; Santo Antônio dos Brotos; Rio Gávea; Jacarepaguá; Estr. Canoas; Rio Itatiaia; Corcovado, Peinuras; *Santa Catarina;* St. Catherines, Nova Teutonia; Rio do Sul, Itapiranga; Pinhal; Lapa; Joinvile; São Bento do Sul; PARAGUAY; *Paraguarí,* Sapucuy; ARGENTINA: *Misiones,* no locality; Posadas (Bryk, 1953).

Ectima thecla astricta Fruhstorfer, 1908 **[Stat. rev.]**
Figs. **4, 25-28, 36, 39, 43.**

Ectima liria astricta Fruhstorfer, 1908. Stett. Ent. Zeit. 43-44. TL: Perú, Pozuzo. Syntypes: BM 15-80. 1 ♂ 1 ♀ (Examined). Figs. **25-28.**

Ectima liria peruviana Bryk, 1953. Ark. för Zool. 2(5):112-113. TL: Perú, [San Martín] Roque. 1 ♂ HT & 3 ♂ paratypes, Stockholm, Riksmuseum **[Syn. nov]**.

Ectima liria peruviana form *4-pupillata* Bryk 1953. Ark. för Zool. 2(5):112-113. TL: [Panamá] Chiriquí. Holotype: "1 ♂ RM". **[Syn. nov.]**.

Description: As in *E. thecla* except for differences for *E. thecla astricta* listed in the key to subspecies. Average wing length ♂ (18-23)21 mm, ♀ (19-21)20 mm.

Distribution: Occurs from Costa Rica to northern Venezuela, western Colombia and Ecuador, and Perú with intergrades with *E. t. thecla* in Bolivia and Mato Grosso, Brazil.

Taxonomy and Variation: This subspecies was described by Fruhstorfer in 1908 from Perú, ♂ ♀ "ohn genauere Lokalitat von A. Bang-Haas erworben." I have examined ♂ and ♀ labeled syntypes in the BM with green Fruhstorfer labels from Pozuzo, Perú. These are typical of the general population of the subspecies. Bryk (1953) described *E. liria peruviana* from Roque, Perú, and it is a clear synonym. It is possible to find either three or four white subapical spots on the DFW from any locality and his forma *4-pupillata* is a synonym. The description by Bryk leaves doubt whether he considered *4-pupillata* as a form of *E. rectifascia* (this is a synonym of *E. erycinoides*), since he considered *E. rectifascia* as a vicariant of *E. liria.*

There is variation in the white apical spots (3 or 4) in the DFW, and in the white diagonal band there may be entire white bordering Cu_2 or this area may have brown extending slightly or deep into this white area between Cu_1 and Cu_2. In intergrades with *E. t. thecla,* Pasco, Perú, Bolivia and Mato Grosso, there is a small amount of a circular ocellus in

the white band at the distal part in M_3-Cu_1. This is broad area of gradual intergradation, but no other characters were found to vary forming a separate population.

Biology: This *Ectima* was fairly common at El Vigia, Venezuela in a partially cut evergreen tropical forest in a small river valley in April 1982.

The adults were found on large and small trees at 1.5 to 6 m from the ground. They were resting on the trees and were readily disturbed. They perched with wings outspread with the head downward. When disturbed by a person or another *Ectima* they flew rapidly upward in the tree or to another tree trunk. Joanne Jenkins saw four adults feeding on decaying fruit of Rose apple, "pluma rosa" *Szygium jambos.* They chased each other and would alight on a tree and then resume their chase. We have never heard them make any cracking noise.

Adults are active in the morning from 0800 hours, and have been collected until 1800 hours, but are most active from about 1000 to 1400 hours during bright sunlight. When disturbed they flew and returned to the same place. Adults were found on tree trunks in a cut over and replanted forest. They were not observed to be attracted to fallen rotting fruit of guanabana in this forest.

Adults have been collected nearly every month of the year with more records from January to July. The species occurs from near sea level to 950 m altitude.

Immature Stages: Larvae have been found on *Dalechampia sp.* at Farfan, Panamá by Mr. Gordon Small (pers. comm.) and reared on *Dalechampia diascoreifolia* at Borburata, Venezuela by Luis Daniel Otero (pers. comm.).

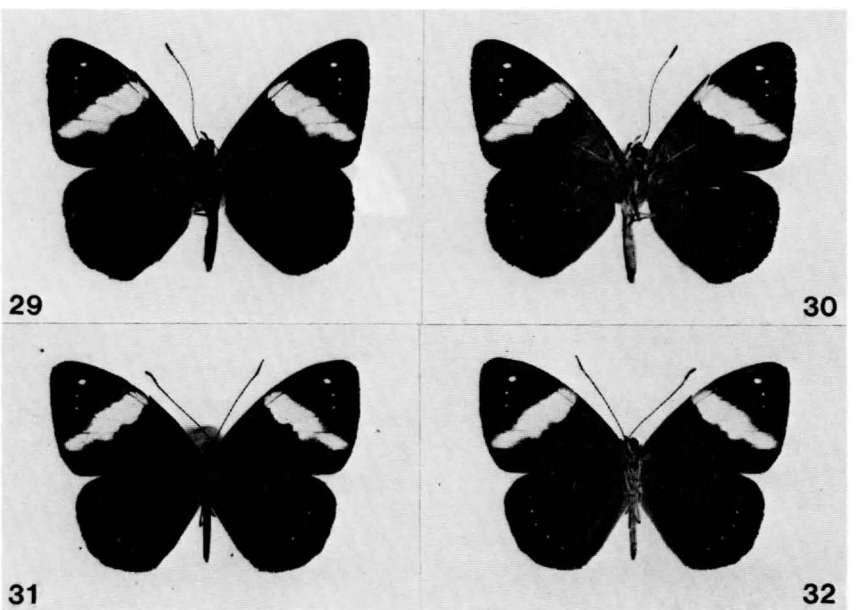
Figures 25-28. *Ectima thecla astricta* Fruhstorfer. ♂ dorsal (25) ventral (26) surfaces. PERÚ, *Huánuco,* Pozuzo. Syntype *Ectima liria astricta* Fruhstorfer (BM). ♀ dorsal (27) ventral (28) surfaces. PERÚ, *Huánuco,* Pozuzo. Syntype *Ectima liria astricta* Fruhstorfer (BM).

Specimens Examined: 201 ♂ 64 ♀

COSTA RICA: *Puntarenas,* San Vito; PANAMÁ: *Chiriquí,* Chiriquí; Santa Cruz; *Veraguas,* Veraguas; Santa Fe; *Panamá,* Herrera, Chepo; Cerro Campana; *Canal Zone,* Ancón; Cocoli; Farfan; COLOMBIA: *Tolima,* Rio Chile 800 m; Payande, Rio Frio; Rio Soldaña; Mina Vieja; *Valle,* Juntas, Rio Cauca; Rio Dagua; *Cundinamarca,* Bogotá; *Risaralda,* Santa Rita; *Santander,* Carere; *Boyacá,* Muzo, *Magdalena;* Santa Marta; *Cauca,* Rio Maripa; *Putumayo,* Umbria; VENEZUELA: *Carabobo,* Las Quiguas, Esteban Valle; Puerto Cabello; Yuma 300 m; Montalbán, San Esteban; Valencia; Rio Borburata; *Aragua,* Guacamayo, Maracay, El Limón, Choroni; *Distrito Federal,* Puerto la Cruz; *Anzoategui;* Barcelona; *Mérida,* Mérida, El Vigia; Santa Clara; *Yaracuy;* Aroa; *Zulia,* La Kasmera; *Cojedes;* San Carlos; *Bolívar,* Rio Cuchivero; PERÚ: *Loreto,* Nauta; Caballococha; Achinamiza; Iquitos, Rio Cachiyachu; Pucallpa; Santa Sofia, Rio Utoquinia; *San Martín,* Lamas to Urcopata; Mayobamba; Tarapoto; *Huánuco,* Tingo María, Iparia, Pozuzo, Bosque Nacional; *Pasco,* Puente Paucartambo 800 m X; Oxapampa; *Junín,* Rio Perené, La Merced; Chanchamayo X; El Campamento; BOLIVIA: *Cochabamba,* Cochabamba; *La Paz,* Apolabamba; Rio Mapiri; *Santa Cruz,* Buenavista, Portachuela, Rio Surutu; Prov. Sara, Rio Yapacani; BRAZIL: *Amazonas,* Tefé; Mato Grosso, Diamantino X; Cuiabá X; Chapada; Barra do Bugres X; *Rondônia,* Porto Velho.

Ectima thecla lirina C. & R. Felder, 1867 **[Stat. rev.]**
Figs. **29-32, 36, 39, 43.**

Ectima lirina C. & R. Felder, 1867. Reise. Nov. Lep. 3:409. n. 622. TL: "Brasilia/Coll. Felder". Type: 1 ♂ syntype in BM Rothschild Coll. labelled "Brasil, type/Felder Collection". (Examined) **[Stat. rev.]** I designate this specimen lectotype.



Figures **29-32.** *Ectima thecla lirina* C & R Felder. ♂ dorsal (**29**) ventral (**30**) surfaces. GUYANE, *Guyane,* Moroni River (AA). ♀ dorsal (**31**) ventral (**32**) surfaces. Guyane, *Guyane,* Mana River (CM).

Description: As in *E. thecla* except for differences for *E. thecla lirina* listed in the key to subspecies. Average wing length ♂ (18-24)21 mm, ♀ (15-22)19 mm.

Distribution: Occurs from eastern Venezuela through Guyane and south in Brazil to the lower Amazon with intergrades with *E. thecla thecla* in Bahia and perhaps Espírito Santo.

Taxonomy and Variation: Ectima lirina was described by the Felders in 1867. The following description, translation from Latin, is not sufficiently detailed to permit accurate identification and *lirina* has been a mystery:

> "622 *Ectima lirina* C. & R. Felder, 1867. nobis.
> ♂ upper surface suffused dark, as in *E. liria*, forewing narrow basal stripe less broken, white band on the inside almost entire, carved out near the lower discoidal vein to such an extent forming a slight bend, more narrow toward the side, hindwing as in *Liria*. Lower surface as in *Liria*, but forewing white band almost entire and the posterior discal stripe rather flexuous. Habitat: Brasil? Coll. Felder. Larger than any of the existing specimens of *E. Liria* F. (*Lirissa* Gey.)"

Staudinger (1888), Fruhstorfer (1908) and Seitz (1915) did not know *lirina*, but listed it as unknown or a synonym of *rectifasciata*. In studying the Rothschild collection in the BM in 1983, I saw a Felder specimen marked "type" but did not recognize it as *lirina*. I tentatively described other specimens as a new subspecies as "*thecla theclina*," but recognized it as close to the Latin description of *lirina*. I sent a picture of "*theclina*" to Mr. Phil Ackery at the BM who compared it with the Felder "type" from Brazil and stated it appeared to be the same as "*theclina*". He stated, "The forewing has three subapical white spots, and no partial or complete ocelli within the post-median band; distal margin of postmedian band smooth... overall similar to *erycinoides*, although perhaps a little smaller." This is an excellent characterization of *E. thecla lirina*, since in males the DHW ocelli are dark (but circular) and less obvious than other *thecla*. This appears to finally resolve the *lirina* problem. (I have reexamined and confirmed this at the BM, 8 June 1985.)

There is much variability in the color and size of the central white spot in the DHW ocelli. Some are completely dark, especially in Venezuela and Guyana, and have larger white central spots. The wing size varies from 15 to 25 mm. In intergrades with *E. t. thecla*, two posterior subapical white spots of the DFW become less distinct white, and some evidence of grey ocelli markings appear in the postmedian white band of the DFW.

Biology: This subspecies is found in tropical evergreen and tropical semi-deciduous forest. I have collected it in southeastern Venezuela in a forest road and have observed it near a narrow forest trail. The adults were on tree trunks and were readily disturbed and flew upwards rapidly and lit higher in the trees.

Adults have been collected in February and May to August, November and December. They have been found from near sea level to over 200 m in elevation.

Nothing is known about the food plants or immature stages.

Specimens Examined: 9 ♂ 6 ♀

VENEZUELA: *Bolívar*, El Bochinche, Reserva Forestal Imataca, 200 m, 1 ♀ Dec. UC; El Dorado km. 88, 1 ♂ Jun. JC; GUYANE: no locality BM; *Guyane*, Moroni River, 1 ♂ AA; Mana River 1 ♀ May CM; Cayenne 1 ♂ 1 ♀ SI; GUYANA, *Mazaruni-Potaro*, Omai 1 ♂ SI; no locality BM; BRAZIL: *Pará*, Cuminá 1 ♂ 1 ♀ Aug. Nov. UP; Rio Surubiu, Obidos 1 ♂ AM, 2 ♂ MN: Itaituba BM; Juruti BM; Santarem 1 ♀ MN; Monte Cristo, Tapajós; *Amazonas*, Ipiranga Feb. 1 ♂ AM; Manaus 1 ♀ MN; São Paulo de Olivença Aug. 1 ♂ GS in SI; 100 km N Manaus 1 ♂ KB; *Maranhão*, no specific locality in BM; *Alagoa*, Maceió Jul. 1 ♂ X.

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Many museum curators have been helpful in permitting study of their collections and photographing and borrowing specimens. Gordon B. Small kindly supplied pictures of a larva (Fig. 2) and Luis Daniel Otero a larva and pupa (Fig. 3). Mr. K. H. Preston-Mafham made available (through Dr. Gerardo Lamas) a picture of mating of *Ectima* (Fig. 4).

I am most grateful to my wife, Joanne F. Jenkins, who accompanied me and collected and observed *Ectima* in several countries, for help in curation of our collection, for providing excellent secretarial assistance, and for inking all drawings.

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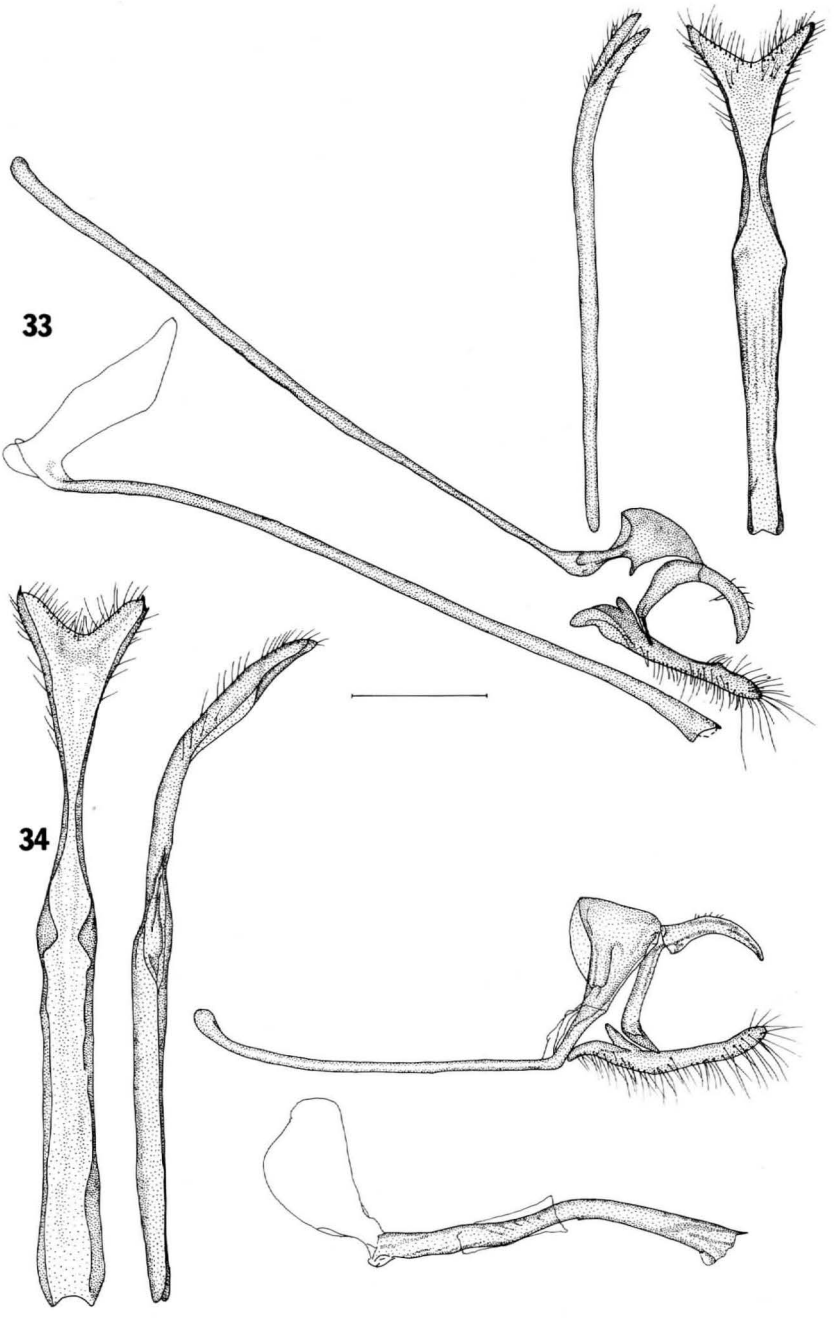
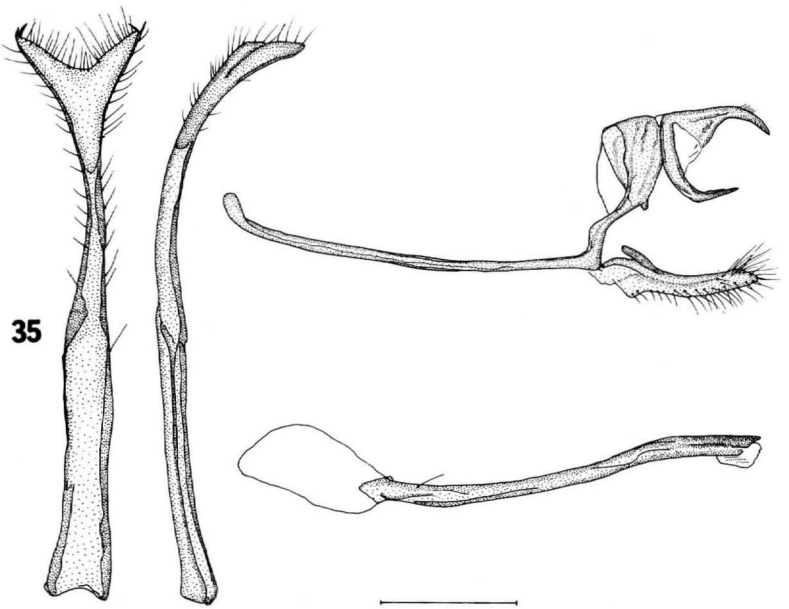
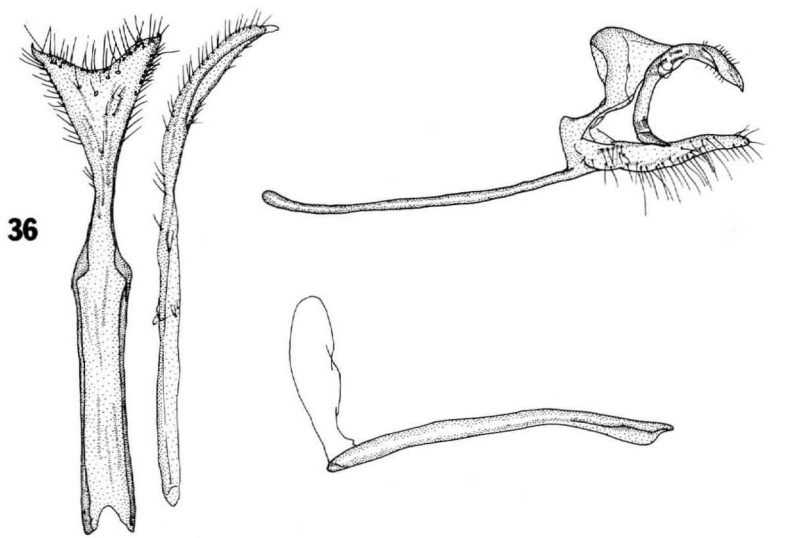
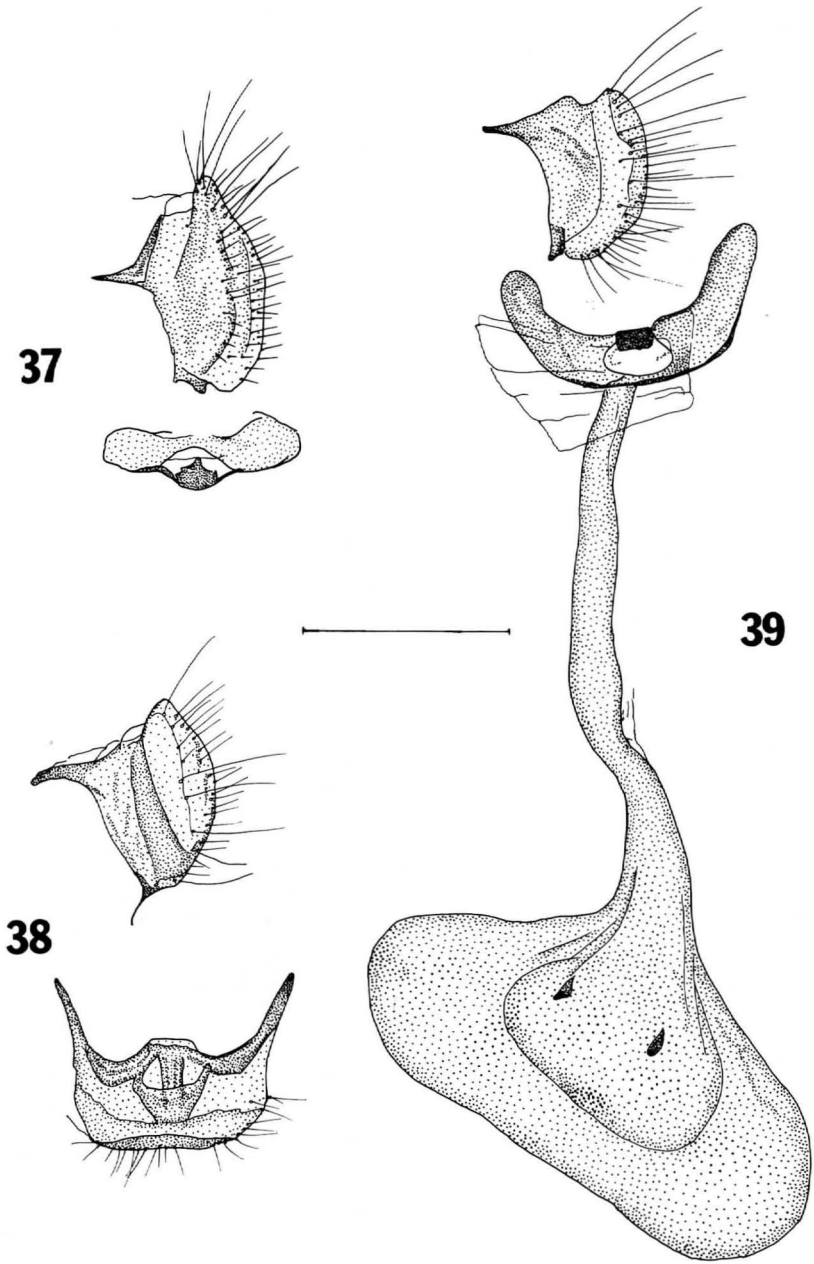


Figures 33-34. ♂ genitalia and hypandria of *Ectima*. (33) *Ectima iona* (34) *Ectima lirides*.





Figures 35-36. ♂ genitalia and hypandria of *Ectima*. (35) *Ectima erycinoides* (36) *Ectima thecla*.



Figures 37-39. Sterigma and papilla anale of ♀ genitalia of *Ectima*. (37) *Ectima iona*. (38) *Ectima erycinoides*. (39) *Ectima thecla* (also shows corpus bursa).

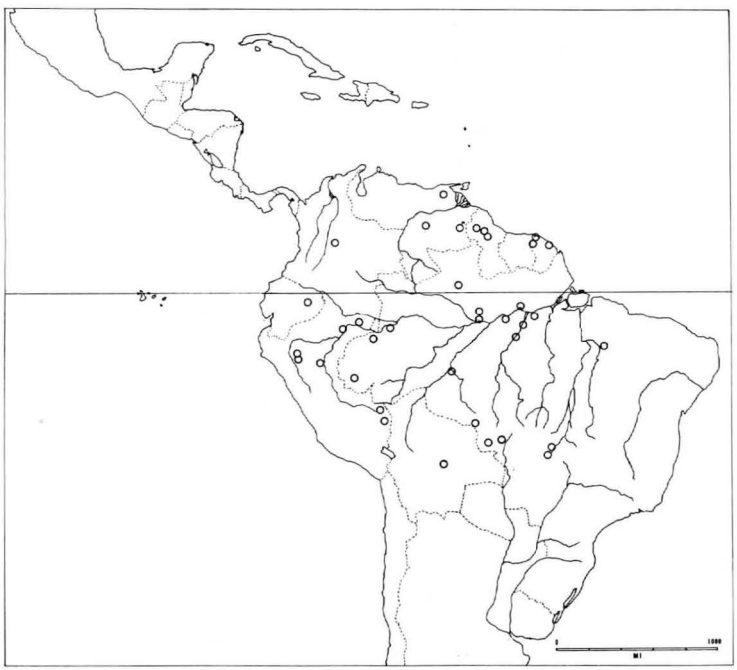


Figure 40. Distribution of *Ectima iona*.

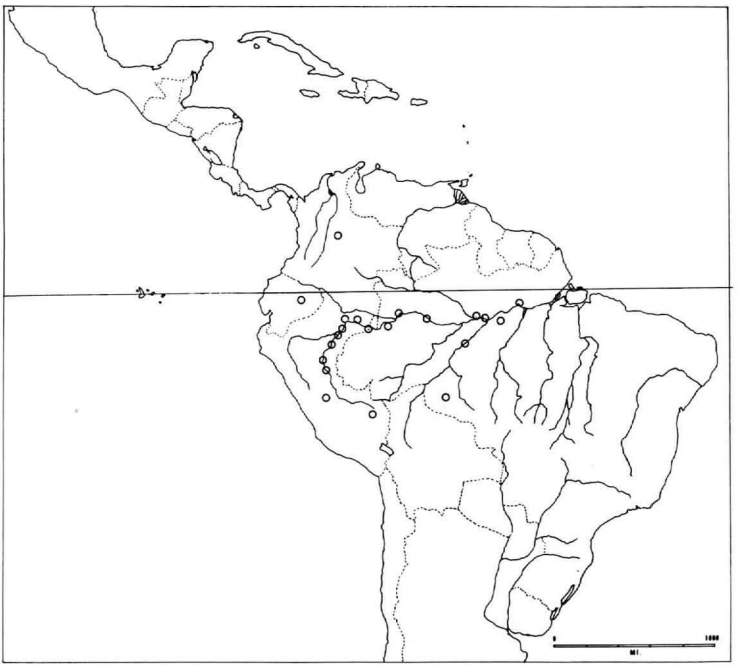


Figure 41. Distribution of *Ectima lirides*.

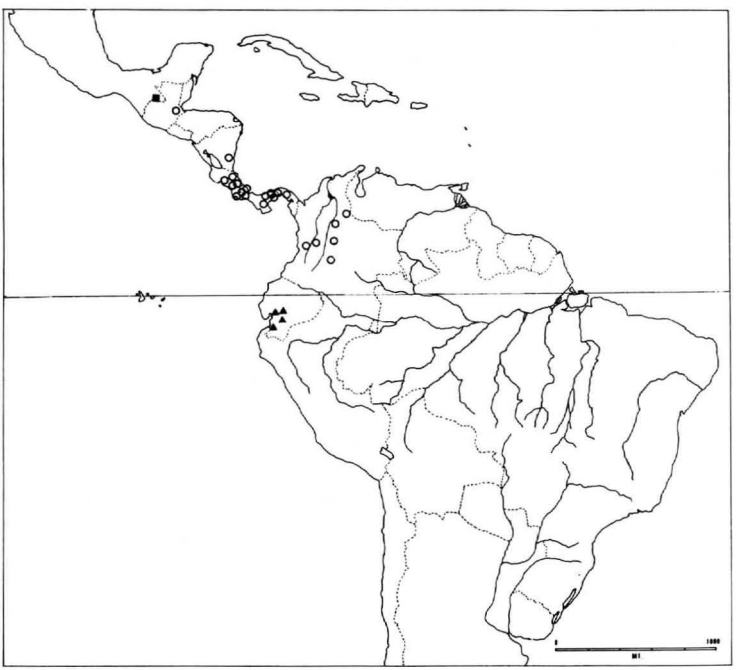


Figure 42. Distribution of *Ectima erycinoides*. ○ = *e. erycinoides;* ▲ = *e. ecuadorensis;* ■ = *e.* subsp.

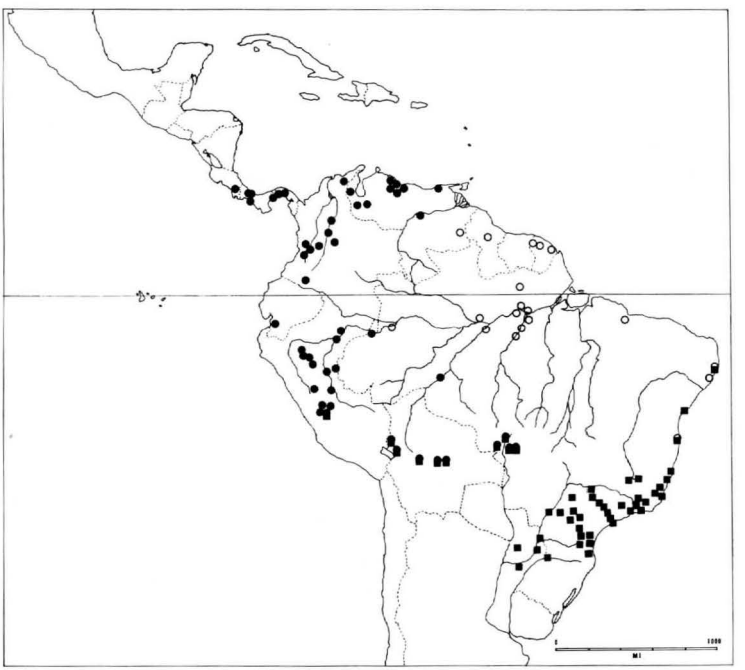


Figure 43. Distribution of *Ectima thecla*. ■ = *t. thecla;* ● = *t. astricta;* ○ = *t. lirina.*

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