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REVISÃO TAXONÔMICA DE *ENNA* (ARANEAE, LYCOSOIDEA, TRECHALEIDAE) DA REGIÃO NEOTROPICAL.

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DISSERTAÇÃO DE MESTRADO

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RESUMO

O gênero Enna foi proposto por O.P.-CAMBRIDGE (1897), tendo como espécie tipo E. velox. Atualmente é representado por cinco espécies: E. velox O.P.-Cambridge, 1897, E. approximata (O.P.-Cambridge, 1893), E. jullieni (Simon, 1898), E. minor Petrunkevitch, 1925 e E. nesiotes Chamberlin, 1925. SIERWALD (1990) retirou este gênero da família Pisauridae e transferiu-o para Trechaleidae, a partir de CARICO (1986). Em recente revisão do gênero Hesydrus, realizada por CARICO (2005a), H. estebanensis Simon, 1898 foi transferido para o gênero Enna. Este gênero apresenta distribuição Neotropical, ocorrente desde o sul do México até o centro-oeste do Brasil. Estas aranhas caracterizam-se por apresentar os tarsos curtos e não flexíveis (retos), a apófise média do palpo do macho é côncava (com formato de "colher"), a divisão dorsal da apófise média é conspícua ventralmente e a apófise tibial retrolateral apresenta uma curta projeção esbranquiçada e pouco esclerotinizada. O epígino da fêmea apresenta a margem posterior mediana levemente projetada ou recortada e espermatecas curtas. A partir dos dados provenientes dos lotes oriundos de coleções estrangeiras e nacionais, observou-se que os representantes deste gênero habitam o mesmo ambiente dos demais gêneros de Trechaleidae comumente encontrados no Brasil. A distribuição das espécies que integram este gênero é restrita às Américas Central e do Sul. Uma das grandes dificuldades de trabalhar-se com Enna, é a falta de material analítico, pois nas regiões de ocorrência deste gênero (como por exemplo, Panamá, Bolívia, Colômbia, Venezuela, etc.) não há grupos de pesquisas em Aracnologia realizando estudos de diversidade que incluam aranhas da família Trechaleidae. Este trabalho objetiva redescrever as cinco espécies conhecidas: E. estebanensis (Simon), E. jullieni (Simon), E. minor Petrunkevitch, E. nesiotes Chamberlin e E. velox O. P.-Cambridge. Também são descritas 18 espécies novas: E. baeza (Equador), E. bartica (Guiana), E. braslandia. (Brasil), E. bonaldoi (Brasil) E. caliensis (Colômbia), E. chickeringi (Honduras), E. colonche (Equador), E. eberhardi (Costa Rica, Panamá), E. hara (Peru), E. huanuco (Peru), E. huarinilla (Bolivia), E. igarape (Brazil), E. kuyuwiniensis (Guyana), E. maya (Honduras, Panamá), E. paraensis (Brasil), E. pecki (Costa Rica), E. riotopo (Equador) and E. rothi (Equador). A partir do exame do holótipo de E. approximata (O. P.-Cambridge), notou-se que o mesmo é baseado em um exemplar jovem, sendo considerado como species inquirenda.

ABSTRACT

Revision of the Neotropical spider genus *Enna* (Araneae, Lycosoidea, Trechaleidae)

The spider genus Enna was proposed by .O.P-CAMBRIDGE (1897), typespecies E. velox. The genus comprises five species: E. velox O.P.-Cambridge, 1897, E. approximata (O.P.-Cambridge, 1893), E. jullieni (Simon, 1898), E. minor Petrunkevitch, 1925 e E. nesiotes Chamberlin, 1925. SIERWALD (1990) removed Enna from Pisauridae and transferred to Trechaleidae after CARICO (1986). Recently the spider genus Hesydrus Simon, 1898 was revised by CARICO (2005a) and H. estebanensis Simon, 1898 was transferred to Enna. This genus presents a Neotropical distribution, occurring from South of México to Central Brazil. These spiders are characterized by short and straight tarsi. The median apophysis of the male palpus is concave ("spoon-like"). The ventral division of the median apophysis is conspicuous ventrally. The retrolateral tibial apophysis presents a whitish, not heavily sclerotized lateral projection (LP). The female epigynum presents a slightly projected posterior median margin and rounded to elliptical short spermathecae. Based on the information available from the specimens's labels, indicates that this spider genus occur in the same type of environment of the other Brazilian genera of Trechaleidae. The distribution of this spider genus is restricted to Central and South America. One of the main difficulties on working with this spider genus is that, in some areas of occurrence of it, is neither collections or Arachnologists, like Panama, Bolivia, Venezuela. The main objective of this work is to redescribe the five known species: E. estebanensis (Simon), E. jullieni (Simon), E. minor Petrunkevitch, E. nesiotes Chamberlin and E. velox O. P.-Cambridge, and describe eighteen new species: E. baeza (Ecuador), E. bartica (Guyana), E. braslandia. (Brazil), E. bonaldoi (Brazil) E. caliensis (Colombia), E. chickeringi (Honduras), E. colonche (Ecuador), E. eberhardi (Costa Rica, Panama), E. hara (Peru), E. huanuco (Peru), E. huarinilla (Bolivia), E. igarape (Brazil), E. kuyuwiniensis (Guyana), E. maya (Honduras, Panama), E. paraensis (Brazil), E. pecki (Costa Rica), E. riotopo (Ecuador) and E. rothi (Ecuador). After the examination of the holotype of E. approximata (O. P.-Cambridge) was noted that the original description was based on an immature female, so it is considered as *species inquirenda*.

APRESENTAÇÃO

Até o momento a maioria dos estudos taxonômicos envolvendo trecaleídeos foram desenvolvidos por J. E. CARICO (1986, 1993, 2005a, 2005b), contribuindo grandemente para o conhecimento taxonômico e distribuição geográfica dos representantes desta família.

Este estudo faz parte de uma série de trabalhos revisivos que estão em andamento, abrangendo os demais gêneros de Trechaleidae Simon, 1890 da região Neotropical. CARICO (1993, 2005a, 2005b) e SILVA et al. (no prelo) revisaram os seguintes gêneros: *Trechalea* Thorell, 1869, *Hesydrus* Simon, 1898, *Paratrechalea* Carico, 2005, *Trechaleoides* Carico 2005 e *Dossenus* Simon, 1898, respectivamente, além da proposição de dois gêneros novos ocorrentes na região norte do Brasil por SILVA & LISE (2006) e SILVA et al. (no prelo) e outro ocorrente no Peru por SILVA & LISE (em preparação).

Devido a estes trabalhos revisivos, decidimos, em parceria com o pesquisador James E. Carico desenvolver a revisão de *Enna*, com base em material depositado em diversas coleções científicas, exame de alguns exemplares tipos e análise de toda a bibliografia disponível. Os resultados desse estudo deram origem ao artigo, aqui apresentado em forma de capítulo:

O artigo intitulado: "Revision of the Neotropical spider genus *Enna* (Araneae, Lycosoidea, Trechaleidae)" será submetido para publicação no periódico **Journal of Arachnology**.

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REVISION OF THE NEOTROPICAL SPIDER

GENUS ENNA (ARANEAE, LYCOSOIDEA, TRECHALEIDAE)

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Running head: SILVA ET AL. – REVISION OF GENUS ENNA

ABSTRACT.– The spider genus *Enna* is revised and the five known species: *E. estebanensis* (Simon), *E. jullieni* (Simon), *E. minor* Petrunkevitch, *E. nesiotes* Chamberlin and *E. velox* O. P.-Cambridge are redescribed. Descriptions of 18 new species include the following: *E. baeza* (Ecuador), *E. bartica* (Guyana), *E. braslandia.* (Brazil), *E. bonaldoi* (Brazil) *E. caliensis* (Colombia), *E. chickeringi* (Honduras), *E. colonche* (Ecuador), *E. eberhardi* (Costa Rica, Panama), *E. hara* (Peru), *E. huanuco* (Peru), *E. huarinilla* (Bolivia), *E. igarape* (Brazil), *E. kuyuwiniensis* (Guyana), *E. maya* (Honduras, Panama), *E. paraensis* (Brazil), *E. pecki* (Costa Rica), *E. riotopo* (Ecuador) and *E. rothi* (Ecuador). The type of *E. approximata* (O. P.-Cambridge), collected in Bugaba, Panama, is based on a juvenile and is considered as a *species inquirenda*. Similarities in the geographical distributions of species of *Enna* with the distributions of species in the genera *Trechalea* and *Hesydrus* are noted. Keywords: Araneae, Trechaleidae, taxonomy, Neotropical region.

O. P.-Cambridge (1897) created a new genus, *Enna*, within the family Pisauridae and designated his new species *E. velox* as its type species. The genus was transferred to the valid but totally ignored Trechaleidae (Simon 1890) until the family was later revived (Carico 1986).. In this work we present the first revision of the genus *Enna*.

Males of *Enna* can be recognized by the presence of short and non-flexible tarsi and metatarsi, and by the following characteristics of the palpus: 1) On the median apophysis, the guide of the distal portion of the dorsal division is curved, directed retrolaterally, and narrowed to an acute point. 2) The the retrolateral tibial apophysis has a small translucent lateral projection (LP, Fig. 1).. The female epigyna are variable, but most are slightly projected on the posterior margin, with the middle field often large and hood-like (Figs. 2, 3).

Based on museum specimen labels, the representatives of *Enna* seem to inhabit rocky stream margins, like some other trechaleid species found in Brazil with which we are familiar, e.g., *Paratrechalea ornata* (Mello-Leitão 1943), *Trechaleoides keyserlingi* (F.O. P.-Cambridge 1903) and *Trechalea bucculenta* (Simon 1898)

In this work we redescribe five of the six, previously known species (Platnick 2006) while the sixth, *E. approximata*, is considered a *species inquirenda*. By describing eighteen new species, we increase considerably the size of the genus as well as enlarge the known geographical distribution of the genus in Central and South America (Figs. 4, 5). Despite the fact that this genus contains numerous species, each , is known from very few specimens in very few localities. For example, *E. velox*, the type-species of the genus, is known only from a single locality in the most northern extent of the generic range in southern Mexico (Fig. 4). Seven additional species are found in Central America in a linear sequence (Fig. 4) similar to the distribution of

three species of *Trechalea* (Carico 1993) found in the same general area. In South America, there are 15 species scattered from Venezuela to central Bolivia (Fig. 5), each also with very limited distributional ranges. Two species, *E. jullieni* and *E. minor*, have localities recorded from both Central America and South America. The very scattered nature of these species distributions suggests a considerable tendency towards endemism with small distributional ranges, and we can therefore expect to find several more species with further collecting, particularly in remote areas in South America yet to be sampled adequately.

The material examined belongs to the following institutions: AMNH, American Museum of Natural History, New York, USA (N.I. Platnick); BMNH, The Natural History Museum, London (P. Hillyard & J. Beccaloni); CAS, California Academy of Sciences, San Francisco, USA (C.E. Griswold); MCN, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Brazil (E.H. Buckup); MCTP, Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul (A.A. Lise); MCZ, Museum of Comparative Zoology, Massachusetts, USA (L. Leibensperger); MNHN, Musèum National d'Histoire Naturelle, Paris, France (C. Rollard); MPEG, Museu Paraense Emílio Göeldi, Brazil (A.B. Bonaldo); MZSP, Museu de Zoologia da Universidade de São Paulo, Brazil (R. Pinto da Rocha); PMNH, Peabody Museum of Natural History, Yale, USA (R.J. Pupedis); UnB, Coleção do Departamento de Zoologia da Universidade Federal de Brasília, Distrito Federal, Brazil (P. Motta).

The nomenclature of the male palpus and female epigynum structures follows Carico (1993, 2005a, 2005b), Silva & Lise (2006) and Silva et al. (2006). To study some of the epigyna, the soft tissue was removed by a combination of dissection with a small surgical blade and immersion in 10% KOH for 12 hours at 25°C. The scanning electron

micrographs (SEM) were made with a Philips XL 20 of Centro de Microscopia e Microanálises (CEMM) of Pontifícia Universidade Católica do Rio Grande do Sul. All the measurements are in millimeters. Differences in drawing styles in this article are the result of difficulties in international exchange of specimens for study.

Genus Enna O. Pickard-Cambridge 1897

Enna O. Pickard-Cambridge 1897:232, figs. 13 a, b, c. (type species Enna velox O. Pickard-Cambridge 1897 [Pisauridae]). Roewer 1954:113 (Pisauridae). Bonnet 1956:1656-1657 (Pisauridae). Carico 1986:305 (Transferred to Trechaleidae). Sierwald 1990:8 ("Trechalea genus group"). Carico 1993:226 (Trechaleidae). Sierwald 1993:63 (Trechaleidae). Platnick 2006 (Trechaleidae).

Type species.- Enna velox O. P.-Cambridge 1897.

Diagnosis.– All tarsi and metatarsi are short and straight. Legs I, II and IVare not greatly different in length. The carapace is moderately high. The basal segment of the chelicerae are swollen frontally. A groove is present above each fang origin. The dorsal division of the median apophysis is always larger than the ventral division and is usually concave. The guide of the distal portion of the dorsal division of the median apophysis is absent or extremely reduced, e.g., *E. estebanensis* (Simon), *E. colonche* sp. n. and *E. caliensis* sp. n. (Figs. 58, 59, 67, 81, 82). The ectal division of the retrolateral tibial apophysis is prominent, generally with a small lateral translucent but sclerotized projection (LP, Fig. 1). The middle field of the epigynum is conspicuous, hood-like, concave beneath, and comprises part of the dorsal rim of the epigastric furrow. Internally, each side of the epigynum has a large, conspicuous globose dorsal spermathecum and a small ventral spermathecum (Fig. 2).

Description.– Carapace, moderately high (Figs. 63, 86, 98). Anterior eye row straight to moderately recurved, posterior always recurved (Figs. 6, 17, 22, 30, 62, 64, 85, 87, 99, 115, 133). Chelicerae, base usually enlarged in males, some species with conspicuous lateral carina (Figs. 63, 134). Females with setaceous chelicerae. Promargin and retromargin of left chelicera fang furrow with three teeth equidistant and equal in size, some species present four teeth on right promargin (Fig. 136). Leg lengths variable, usually leg III smallest; short and straight tarsi, all tarsal claws pectinated, number of teeth on upper claws varying from eight to thirteen and lower claw with only one long and slender tooth (Figs. 28, 29, 56, 96, 111, 143). Tarsal organ conspicuous (Figs. 52, 53, 108, 109, 139, 140). Ventral pairs of macrosetae on tibiae: I-4; II-4; III-3; IV-3 or 4 (Figs. 51, 131, 132). Bothrium of trichobothria with conspicuous hood (Figs. 26, 27, 55, 110, 141).

Male palpus (Fig. 1) with median apophysis rounded and concave (Fig. 1), dorsal division of median apophysis is curved. Guide pointed retrolaterally and acuminated (Fig. 1). Ventral division of the median apophysis absent in some species (Figs. 9, 13, 35, 73, 90, 93) and conspicuous on three species: *E. igarape* sp. n., *E. kuyuwiniensis* sp. n., *E. bartica* sp. n. (Figs. 101, 114, 117), or extremely reduced: *E. estebanensis, E. colonche* sp. n. and *E. caliensis* sp. n. (Figs. 58, 67, 81). Retrolateral tibial apophysis prominent, ectal division prominent, with a small translucent lateral projection (LP) (Figs. 95, 106); ental division usually smaller than ectal division (Figs. 8, 14, 34, 59, 66, 73, 80). Female epigynum, small, with median plate convex or elevated with posterior margin slightly projected (Figs. 11, 16, 18, 23, 32, 39, 42, 45, 48, 49, 61, 70, 76, 79, 84, 122, 150); spermathecae longer than wide, head of spermathecae with rounded or elliptical shape (Figs. 10, 15, 19, 20, 24, 33, 38, 41, 44, 47, 50, 60, 69, 75, 78, 83, 121, 149).

Distribution.– North America (southern Mexico) and Central America (Panama, Ecuador, Honduras, Costa Rica) to northern South America (Peru, Bolivia, Colombia, Venezuela, Brazil) (Figs. 4, 5).

Natural history.– Based on the collection data on the labels with some species, these spiders seem to inhabit wet areas near rivers and small rocky streams.

Enna approximata (O. Pickard-Cambridge 1893)

- Perissoblemma approximatum O. Pickard-Cambridge 1893:105, immature female holotype, plate 14, fig.4, Bugaba, Panama, Champion col. (BMNH) (examined). Roewer 1954:113; Bonnet 1956:1656.
- *Enna approximata* (O. Pickard-Cambridge 1893). Petrunkevitch 1911:543; Platnick 2006.

Note.– This species is considered as a *species inquirenda* because the type specimen is an immature female and therefore does not present enough morphological characters to ensure a secure determination relative to any other species.



Figs. 1–3.– Diagrammatic genitalia of *Enna*. 1. left male palpus, ventral view; 2, 3. female genitalia; 2. ventral view; 3. dorsal view. Abbreviations: AF, anterior field of epigynum; CD, copulatory duct; D, duct; DD, dorsal division of median apophysis; ECD, ectal division of retrolateral tibial apophysis; END, ental division of retrolateral tibial apophysis; FD, fertilization duct; G, guide; HS, head of spermathecae; LP, lateral projection of ECD; MF, middle field of epigynum; SS, stalk of spermathecae; ST, subtegulum; T, tegulum; VD, ventral division of median apophysis; VCM, ventral cymbio-tibial membrane; VP, ventral protuberance of male palpal tibia.



Fig. 4.- Distribution of Enna in Central America.



Fig. 5.– Distribution of *Enna* in South America.

Enna velox O. Pickard-Cambridge 1897

Figs. 4, 6-11

Enna velox O. Pickard-Cambridge 1897:232; F.O. Pickard-Cambridge 1901^a:311; Simon 1903:1046; Banks 1909:215; Petrunkevitch 1911:544; Petrunkevitch 1928:101; Roewer 1954:113; Bonnet 1956:1657; Platnick 2006.

Type material.– Holotype male, Teapa, Tabasco, Mexico, 21°52'N, 102°55'W, H.H. Smith col. (BMNH 1905.4.28.864-873) (examined). Female allotype, same locality as holotype (BMNH 1905.4.28.864-873).

Material examined.– Only the type material.

Diagnosis.– This is the only species of *Enna* with a small distal tooth (DT) on the guide (Figs. 8, 9). The lateral projection of the ectal division of the retrolateral tibial apophysis (RTA) is large compared to the size of ental division of RTA and acuminated (Fig. 7). The female epigynum has the posterior margin medially indented, with two sinuous paramedian grooves (Fig. 11).

Description.– *Male*: (Holotype). Carapace (Fig. 6), moderately high, brown, darker on cephalic area, with indistinct submarginal lighter bands except posteriorly, three light spots on each lateral margin (Fig. 6), 4.10 long, 3.50 wide. Clypeus, dark brown, lighter medially, 0.40 high. Anterior eye row, straight, 1.04 wide; posterior 1.86 wide. Eye diameters, interdistances, and median ocular quadrangle: AME 0.27, ALE 0.19, PME 0.27, PLE 0.30; AME-AME 0.15, AME-ALE 0.05, PME-PME 0.56, PME-PLE 0.34, MOQ, 0.67 long, frontal view, anterior width 0.70, posterior width 1.04. Chelicerae, reddish brown, slightly lighter distally, enlarged anteriorly with a flattened area above fangs, without lateral carina, unmarked; promargin and retromargin of fang furrow with three teeth equidistant and equal in size. Sternum, light, darker at margins; 1.90 long, 1.92 wide. Labium, brownish, lighter at anterior margin, darker laterally;

1.28 long, 0.76 wide. Legs, light, unmarked, relative length: I-IV-II-III, I – femur 4.60/ tibia-patella 6.50/ metatarsus 4.80/ tarsus 2.20/ total 18.10; II – 4.60/ 6.20/ 4.50/ 1.90/ 17.20; III – 3.70/ 4.60/ 3.60/ 1.50/ 13.40; IV – 4.50/ 5.70/ 5.20/ 2.00/ 17.40. Abdomen, dorsum and sides with very faint markings due to age (Fig. 6). Venter light brown, scattered setae. Ventral division of median apophysis absent (Figs. 8, 9); guide with a small tooth distally (Fig. 9). Retrolateral tibial apophysis (RTA) prominent, ectal division rounded at apex (Fig. 7); ental division small and subtriangular (Fig. 8).

Female (Allotype): Carapace, moderately high, light brown, darker anteriorly, indistinct submarginal lighter bands, 3.60 long, 3.61 wide. Clypeus, dark brown, lighter at anterior-medial margin, 0.28 high. Anterior eye row straight, 0.94 wide; posterior 1.70 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.25, ALE 0.21, PME 0.30, PLE 0.29; AME-AME 0.13, AME-ALE 0.04, PME-PME 0.48, PME-PLE 0.30, MOQ, 0.63 long, frontal view, anterior width 0.58, posterior width 0.94. Chelicerae, reddish brown, unmarked; promargin of fang furrow with three teeth, middle largest, proximal smallest, retromargin with three teeth equidistant and equal in size. Sternum, light brown, darker at margins; 0.86 long, 0.91 wide. Labium, light brown, lighter at anterior margin, darker laterally at base; 0.40 long, 0.34 wide. Legs, light, unmarked, I – missing; II – femur 4.50/ tibia-patella 5.90; III – femur 4.00/ tibia-patella 4.50/ metatarsus 3.50/ tarsus 1.50/ total 13.50. Abdomen, dorsum light and with indistinct pattern, mostly devoid of setae except at anterior-dorsal margin. Epigynum with anterior field wide, middle field elevated with two small projections on posterior margin (Fig. 11). Spermathecae short, rounded at apex (Fig. 10).

Distribution.– Mexico (Tabasco) (Fig. 4).



Figs. 6–11.– *Enna velox.* 6. male,, dorsal view; 7–9. right male palpus; 7. retrolateral view; 8. ventral view; 9. detail of median apophysis; 10, 11. epigynum; 10. dorsal view; 11. ventral view. Abbreviations: DD, dorsal division of median apophysis; DT, distal tooth of median apophysis; G, guide; HS, head of spermathecae; LP, lateral projection of RTA; ECD, ectal division of RTA; END, ental division of RTA; VP, ventral protuberance of male palpal tibia.

Enna eberhardi, new species

Figs. 4, 12-16

Type material.– Holotype male, Boquete, Panama, 14 August 1983, 10°07'N, 85°21'W, W. Eberhard et al. (MCZ 69711). Female allotype, same locality as holotype (MCZ 69712).

Other material examined.– COSTA RICA: San Jose, San Antonio de Iscazu, 10°58'N, 85°08'W, July 1983, W. Eberhard 4 \bigcirc (MCZ 67209, 67211, 67212, 67213), San Jose, San Antonio de Iscazu, 10°58'N, 85°08'W, 14 August 1983, J.E. Carico, 1 \bigcirc (MCZ 69713), Bajo la Hondura, Braulio Carrillo, 26 July 1983, W. Eberhard, 1 \bigcirc (MCZ63819).

Etymology.– The specific name is a patronym in honor of the collector of the types, W.G. Eberhard.

Conditions.– Male holotype missing right leg I. Female allotype missing right leg IV.

Diagnosis.– The males of *E. eberhardi* are similar to the ones of *E. velox* in the general shape of the median apophysis (Figs. 7–9), but can be distinguished by the absence of the distal tooth on the guide (Figs. 13, 14) and the shorter ectal division of the retrolateral tibial apophysis (Fig. 12). The female epigynum is flattened, straight and smooth at the posterior margin, presenting two rounded projections laterally (Fig. 16).

Description.– *Male*: (Holotype). Carapace, moderately high, brown, darker on cephalic area, with indistinct submarginal lighter bands, three light spots on each lateral margin, 3.90 long, 3.20 wide. Clypeus, brownish, lighter medially, 0.30 high. Anterior eye row straight to slightly recurved, 0.94 wide; posterior 1.66 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.20, ALE 0.14, PME 0.28, PLE 0.30; AME-AME 0.12, AME-ALE 0.04, PME-PME 0.40, PME-PLE 0.25, MOQ, 0.58

long, frontal view, anterior width 0.55, posterior width 0.92. Chelicerae, expanded anteriorly, without flattened area or lateral carina, reddish brown, slightly lighter distally, unmarked; promargin with three teeth, middle largest and retromargin of left chelicera fang furrow with three teeth equidistant and equal in size on right side and one retromarginal on right one. Sternum, light brown, darker at margins; 3.70 long, 3.50 wide. Labium, light brown, lighter at anterior margin, darker laterally; 0.80 long, 0.65 wide. Legs, light brown, unmarked, relative length: I-II-IV-III, I – femur 4.50/ tibia-patella 6.20/ metatarsus 4.70/ tarsus 2.00/ total 17.40; II – 4.70/ 6.20/ 4.60/ 1.90/ 17.40; III – 3.90/ 4.70/ 3.70/ 1.40/ 13.70; IV – 4.60/ 5.70/ 5.40/ 1.90/ 17.00. Abdomen, rounded, dorsum light brown with three parallel longitudinal light marks anteriorly and six pairs of light spots posteriorlly, sides with scattered light marks. Venter light, with scattered setae. Palpus with small lateral projection (LP), almost same size of ental division of retrolateral tibial apophysis (Fig. 14). Retrolateral tibial apophysis prominent, ectal division with curved apex (Fig. 12).

Female: (Allotype). Carapace, moderately high, light brown, dark on cephalic area, indistinct submarginal lighter bands, except posteriorly and three light spots on each lateral margin, 3.30 long, 2.90 wide. Clypeus, light brown, lighter medially, 0.26 high. Anterior eye row straight to slightly recurved, 0.86 wide; posterior 1.66 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.20, ALE 0.14, PME 0.24, PLE 0.30; AME-AME 0.12, AME-ALE 0.06, PME-PME 0.50, PME-PLE 0.30, MOQ, 0.58 long, frontal view, anterior width 0.86, posterior width 0.96. Chelicerae, reddish brown, slightly lighter distally, unmarked; promargin with three teeth, middle largest and retromargin of right chelicera fang furrow with three teeth equidistant and equal in size. Sternum, light brown, darker at margins; 1.54 long, 1.60 wide. Labium, brownish, lighter at anterior margin, darker laterally; 0.66 long, 0.60 wide. Legs, light,

indistinct maculae dorsally, relative length: I-IV-II-III, I – femur 3.60/ tibia-patella 5.00/ metatarsus 3.40/ tarsus 1.50/ total 13.50; II – 3.70/ 4.70/ 3.20/ 1.40/ 13.00; III – 3.20/ 3.70/ 2.80/ 1.20/ 10.90; IV – 3.70/ 4.40/ 3.90/ 1.50/ 13.50. Abdomen, rounded, dorsum dark brown with three pairs of light spots, sides diffuse and with scattered light brown spots. Venter light brown, with scattered setae. Epigynum with posterior margin straight, middle field with two concave grooves (Fig. 16). Spermathecae short and head of spermathecae elliptical (Fig. 15).

Variation.- Five females, carapace length 2.8-3.5; 2.4-2.9 wide.

Distribution.- Panama (Boquete), Costa Rica (San Jose) (Fig. 4).



Figs. 12–16.– *Enna eberhardi*, 12–14. right male palpus; 12. retrolateral view; 13. detail of median apophysis; 14. ventral view; 15, 16. epigynum; 15. dorsal view; 16. ventral view. Abbreviations: DD, dorsal division of median apophysis; G, guide; HS, head of spermathecae; LP, lateral projection of RTA; ECD, ectal division of RTA; END, ental division of RTA.

Enna nesiotes Chamberlin 1925

Figs. 4, 17-19

Enna nesiotes Chamberlin 1925:224. Roewer 1954:113. Bonnet 1956:1657. Platnick 2006.

Type material.– Holotype female, Barro Colorado Island, Panama, 09°09'N, 79°50'W, W.C. Allee (MCZ 1290) (examined).

Diagnosis.– The females of *E. nesiotes* can be distinguished from the other females of *Enna* by presenting two rounded deep excavations in the middle field of the epigynum (Fig. 18).

Description.- Female: (Holotype). Carapace (Fig. 17), moderately high, dark brown, lighter on cephalic area, irregular, lighter sub-marginal bands, three light spots on each lateral margin, 3.50 long, 3.00 wide. Clypeus, brown, lighter medially, 0.28 high. Anterior eye row straight, 0.92 wide; posterior 1.70 wide. Eye diameter, interdistances and median ocular quadrangle: AME 0.22, ALE 0.18, PME 0.28, PLE 0.30; AME-AME 0.13, AME-ALE 0.04, PME-PME 0.49, PME-PLE 0.30, MOQ, 0.64 long, frontal view, anterior width 0.55, posterior width 0.98. Chelicerae, light reddish brown, slightly lighter distally, unmarked; promargin with three teeth, middle largest and retromargin of fang furrow with three teeth equidistant and equal in size. Sternum, light brown, darker on margins; 1.54 long, 1.60 wide. Labium, brown, lighter on anterior margin, darker laterally; 0.70 long, 0.64 wide. Legs, light brown, alternating light and dark bands, darker dorsally, relative length: IV-I-II-III, I – femur 3.60/ tibiapatella 5.00/ metatarsus 3.40/ tarsus 1.60/ total 13.60; II – 3.70/ 5.00/ 3.40/ 1.50/ 13.60; III - 3.20/ 3.90/ 2.90/ 0.80/ 10.80; IV - 3.80/ 4.50/ 4.00/ 1.50/ 13.80. Abdomen, dorsum light brown at cardiac area, parallel series of light spots lateral to cardiac area and sides with scattered light (Fig. 17). Venter light brown and unmarked. Scattered setae.

Epigynum with posterior margin slightly projected (Fig. 18); spermathecae rounded and narrower distally (Fig. 19).

Distribution.- Known only from the type locality in Panama (Fig. 4).

Enna chickeringi, new species

Figs. 4, 20, 21

Type.– Female holotype from Lancetilla, Honduras, 15°42'N, 87°28'W, 19 July 1929, A.M. Chickering (MCZ 63821). Female paratype, same locality as holotype (MCZ 63822).

Etymology.– The specific name is a patronym in honor of the collector of the type, A.M. Chickering.

Condition of holotype.– Missing right leg II.

Diagnosis.– The female of *E. chickeringi* is similar to that of of *E. colonche* by having an excavation on the posterior margin of the epigynum (Fig. 61), but can be distinguished by presenting a heavily sclerotized margin and having a deeper excavation on the posterior margin (Fig. 21).

Description.– *Female*: (Holotype). Carapace, moderately high, pale brown, 2.80 long, 2.50 wide. Clypeus, light brown, 0.22 high. Anterior eye row straight, 0.57 wide; posterior 1.46 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.18, ALE 0.12, PME 0.24, PLE 0.27; AME-AME 0.13, AME-ALE 0.03, PME-PME 0.46, PME-PLE 0.24, MOQ, 0.45 long, dorsal view, frontal view 0.50, anterior width 0.52, posterior width 0.82. Chelicerae, reddish-brown; promargin with three teeth, median largest and retromargin of fang furrow with three equidistant and equal in size. Sternum, dark brown 1.50 long, 1.40 wide. Labium light brown, yellowish at anterior margin; 0.60 long, 0.52 wide. Legs, yellowish, without distinct pattern, relative length:

I-IV-III, I – femur 3.10/ tibia-patella 4.40/ metatarsus 2.90/ tarsus 1.40/ total 11.80; II – missing; III – 2.80/ 3.30/ 2.40/ 1.00/ 9.00; IV – 3.10/ 3.80/ 3.30/ 1.50/ 11.70. Abdomen, rounded, with scattered setae, dorsum brownish, with numerous whitish spots and paramedian brownish bands, yellowish laterally, venter light brown. Middle field of epigynum with two long paramedian grooves (Fig. 21); spermathecae short and circular (Fig. 20).

Distribution.- Known only from the type locality in Honduras (Fig. 4).



Figs. 17–21.– *Enna* spp. 17–19. *E. nesiotes*; 17. female, dorsal view; 18, 19. epigynum; 18. ventral view; 19. dorsal view. 20, 21. *E. chickeringi* epigynum; 20. dorsal view; 21. ventral view. Abbreviations: HS, head of spermathecae; LP, lateral projection of RTA.

Figs. 4, 5, 22–29

Enna minor Petrunkevitch 1925:167, 168. Roewer 1954:113. Bonnet 1956:1656. Platnick 2006.

Type material.– Holotype female, Santiago, Panama, 08°06'N, 80°59'W, (PMNH) (examined).

Other material examined.– COLOMBIA, *Departamento de Santander*: Hacienda La Estrella, Quebrada, Oquina, 9°15'N, 73°34'W, 28 February 1959, 1^o (AMNH).

Diagnosis.– The female epigynum of *E. minor* (Fig. 23) is similar to that of *E. jullieni* (Fig. 32) by having a small projection on the middle field of the epigynum, but can be distinguished by a longer and narrower median projection on the posterior margin of the epigynum and by the two lateral projections fitted in a large, middle scape-like projection (Fig. 23).

Description.– *Female*: (Holotype). Carapace (Fig. 22), low, 5.14 long, 4.81 wide; pale brown, darker laterally. Clypeus, light brown, darker laterally, 0.40 high. Anterior eye row slightly recurved, 1.24 wide; posterior 2.13 wide. Eye diameter, interdistances and median ocular quadrangle: AME 0.24, ALE 0.22, PME 0.27, PLE 0.21; AME-AME 0.18, AME-ALE 0.12, PME-PME 0.55, PME-PLE 0.34, MOQ, 0.71 long, dorsal view, frontal view 0.74, anterior width 0.65, posterior width 1.12. Chelicerae, reddish brown with thin and small brownish setae; promargin and retromargin of fang furrow with three subequal and equidistant teeth. Sternum, yellowish with numerous light setae; 2.17 long, 2.48 wide. Labium, orange, light at posterior margin; 0.62 long, 0.77 wide. Legs dark brown, femora with pale brown spots dorsally, relative length: I-IV-II-III, I – femur 7.22/ tibia-patella 9.71/ metatarsus 6.72/

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tarsus 2.98/ total 26.63; II – 7.04/ 8.24/ 7.31/ 2.93/ 25.32; III – 6.05/ 6.88/ 5.47/ 3.15/ 21.55; IV - 7.71/ 9.70/ 9.04/ - / 26.45. Dorsal surface of legs with modified chemosensitive setae (Fig. 25). Tricobothria with distinct hood (Figs. 26, 27). Tarsal claw pectinated, upper claw with eleven teeth and lower claw with one short, slender tooth (Figs. 28, 29). Abdomen, grayish, setaceous, unmarked, light brown ventrally. Epigynum with posterior margin projected (Fig. 23); spermathecae long and slender; head of spermathecae rounded (Fig. 24).

Distribution.- Panama, Colombia (Figs. 4, 5).



Figs. 22–24.– *Enna minor*. 22. female, dorsal view; 23, 24. epigynum; 23. ventral view; 24. dorsal view. Abbreviations: MF, middle field of epigynum; HS, head of spermathecae.



Figs. 25–29.– Morphological details of *E. minor*; 25. chemosensitive setae on tarsus of leg IV; 26. general view of trichobothria on tarsus of leg IV; 27. bothrium; 28. tarsal claw, general view; 29. tarsal claw of leg IV. Abbreviations: LC, lower claw; UC, upper claw.

Enna jullieni (Simon 1898)

Figs. 4, 5, 30–33

Hesydrus jullieni Simon 1898:20.

Enna jullieni (Simon 1898); F.O. Pickard-Cambridge 1901^a:312. Roewer 1954:113. Bonnet 1956:1656. Platnick 2006.

Type material.– Holotype female, Obispo, Panama, Jullien (MNHN 9692) (examined).

Other material examined.– PANAMA, Jullien, 1 (MNHN 9692); COLOMBIA, *Antioquia*: Mutatá, 07°14'N, 76°26'W, December 1963, P.B. Schneble, 1 (MCZ).

Conditions of holotype.– Abdomen and carapace disarticulated, all legs detached, female left palpus missing.

Diagnosis.– The female epigynum of *E. jullieni* (Fig. 32) is similar to that of *E. maya* (Fig. 39) by the shape of the middle field of the epigynum, but can be distinguished by the presence of a median scape-like projection, and by the middle field of the epigynum that is strongly projected (Fig. 31).

Description.– *Female*: (Holotype). Carapace (Fig. 30), moderately high, 3.01 long, 2.53 wide; grayish laterally. Clypeus, yellowish, unmarked, 0.25 high. Anterior eye row slightly recurved, 0.75 wide; posterior 1.42 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.17, ALE 0.12, PME 0.25, PLE 0.25; AME-AME 0.15, AME-ALE 0.06, PME-PME 0.40, PME-PLE 0.31, MOQ, 0.40 long, dorsal view, frontal view 0.49, anterior width 0.81, posterior width 0.45. Chelicerae, orange with small light setae; promargin and retromargin of fang furrow with three teeth equal in size and equidistant. Sternum, yellowish with brown setae; 1.32 long, 1.40 wide. Labium, orange, darker on anterior margin; 0.55 long, 0.49 wide. Legs, yellowish,

unmarked, relative length: IV-I-II-III, I – femur 3.21/ tibia-patella 4.32/ metatarsus 3.02/ tarsus 1.32/ total 11.87; II – 3.12/ 4.12/ 2.83/ 1.19/ 11.26; III – 2.53/ 3.10/ 2.42/ 1.03/ 9.08; IV – 3.23/ 3.81/ 3.60/ 1.24/ 11.88. Abdomen, rounded, setaceous, grayish (Fig. 30); venter yellowish. Middle field of epigynum with two lateral elevations, posterior margin divided and slightly projected (Figs. 31, 32). Head of spermathecae rounded and curved at base (Fig. 33).

Distribution.- Panama, Colombia, Venezuela (Figs. 4, 5).

Enna braslandia, new species

Figs. 5, 34–36

Type material.– Holotype male, Braslândia, "Labirinto da Lama", Distrito Federal, Brazil, 15°42'S, 48°13'W, 26 January 2004, F. Jordão (UBZ 3097).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Diagnosis.– The male palpus of *E. braslandia* (Figs. 35, 36) resembles that of *E. huanuco* (Fig.73) by the shape of the lateral lamella (LL) of the median apophysis, but can be differentiated by a long, slender and acute guide.

Description.– *Male*: (Holotype). Carapace, moderately high, yellowish, with indistinct submarginal band, lateral margins with three light brown spots; covered with short, dark, setae, 4.30 long, 3.50 wide. Clypeus, yellowish, 0.37 high. Anterior eye row straight, 0.92 wide; posterior 1.70 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.23, ALE 0.17, PME 0.30, PLE 0.33; AME-AME 0.10, AME-ALE 0.06, PME-PME 0.31, PME-PLE 0.35, MOQ, 0.64 long, dorsal view, anterior width 0.50, posterior width 0.84. Chelicerae, dark reddish brown, irregular maculae on faces, lateral carina conspicuous on distal lateral third, no frontal flat

surfaces; promargin with three teeth, middle largest; retromargin with three teeth, equal in length. Sternum, pale yellow, unmarked, 2.10 long, 1.90 wide. Labium, dark brown, lighter on anterior margin, 0.84 long, 0.72 wide. Legs light yellow, alternating and indistinct dark markings on dorsal surface of femora, I – femur 6.10/ tibia-patella 8.80/ metatarsus 6.90/ tarsus 2.70/ total 24.50, II – 5.90/ 8.00/ 6.20/ 2.50/ 22.60, III – 4.60/ 5.30/ 4.30/ 1.70/ 15.90, IV – 5.90/ 7.00/ 7.20/ 2.50/ 22.60. Ventral pairs of macrosetae on tibiae: I-4, II-4, III-3, IV-4. Abdomen, rounded, dorsum and sides light background color with diffuse pattern above and longitudinal bands laterally; unmarked ventrally, with many long dorsal setae, shorter ventrally. Palpus with ventral division of median apophysis absent; guide small and acuminated, without basal tooth (Figs. 35, 36). Retrolateral tibial apophysis with ectal division (ECD) prominent, rounded on apex (Fig. 34); lateral projection (LP) rounded. Ental division (END) small, presenting a semi-circular shape (Fig. 34).

Distribution.- Known only from the type locality in Brazil (Fig. 5).



Figs. 30–36.– *Enna* spp. 30–33. *Enna jullieni*; 30. female, dorsal view; 31–33 epigynum; 31. lateral view; 32. ventral view; 33. dorsal view. 34–36. *E. braslandia*, right male palpus; 34. retrolateral view; 35. detail of median apophysis; 36. ventral view. Abbreviations: DD, dorsal division of median apophysis; G, guide; HS, head of spermathecae; LL, lateral lamella; ECD, ectal division of RTA; END, ental division of RTA.

Enna maya, new species

Figs. 4, 37-39

Type material.– Holotype female, Copan, Honduras, 14°55'S, 88°55'W, 08. March 1939 (AMNH). Paratype: one female, Costa Rica, N. Banks (MCZ 63820).

Etymology.– The specific name is a noun in apposition and refers to the Mayan civilization, occupant of the type locality in the 16th century.

Conditions of holotype.– Material bad preserved, thin cuticle, left legs II and III missing, left leg I missing metatarsus and tarsus, left leg IV missing tarsus.

Diagnosis.– The female of *E. maya* is similar to the ones of *E. jullieni* (Fig. 31) by having a ventrally projected epigynum (Fig. 37), but can be distinguished by the median marginal projection (Fig. 39) of the posterior margin of the epigynum and the small projections on the head of spermathecae (Fig. 38).

Description.– *Female*: (Holotype). Carapace, low, 4.39 long, 3.98 wide; orange, darker laterally. Clypeus, dark brown, 0.31 high. Anterior eye row straight, 1.14 wide; posterior 2.07 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.27, ALE 0.15, PME 0.58, PLE 0.18; AME-AME 0.15, AME-ALE 0.12, PME-PME 0.55, PME-PLE 0.46, MOQ, 0.55 long, dorsal view, frontal view 0.65, anterior width 0.68, posterior width 1.48. Chelicerae, orange with small light setae; promargin with three teeth equidistant, middle largest; retromargin with three teeth equidistant, subequal in size. Sternum, pale brown with dark setae; 1.92 long, 1.89 wide. Labium, reddish brown, darker on posterior margin, 0.71 long, 0.68 wide. Legs, light brown, femora unmarked, yellowish ventrally, relative length: I-IV-II-III, I – femur 4.15/ tibia-patella 6.05/ metatarsus 4.16/ tarsus 1.66/ total 16.02; II – 4.23/ 5.64/ 4.06/ 1.24/ 15.17; III – 3.81/ 4.39/ 3.32/ 1.07/ 12.59; IV – 3.90/ 5.39/ 4.39/ 1.74/ 15.42. Abdomen, oval, grayish, setaceous, indistinct light brown pattern dorsally, grayish ventrally. Middle

field of epigynum with a median irregular projection (Figs. 37, 39). Spermathecae small, rounded with distal projections (Fig. 38).

Distribution.- Honduras (Copan), Costa Rica (Fig. 4).

Enna pecki, new species

Figs. 4, 40-42

Type material.– Holotype female, Guanacaste Debris, Potrero Bagaces river, Costa Rica, 10°00'N, 84°00'W, 07 July 1966, S. Peck (AMNH).

Etymology.– The specific name is a patronym in honor of the collector of the type, S.B. Peck.

Conditions of holotype.– Right legs I, II, III missing, left leg IV missing metatarsus and tarsus.

Diagnosis.– The female of *E. pecki* resembles the ones of *E. velox* (Fig. 11) by presenting a rounded scape-like projection on the middle field of the epigynum (Fig. 42), but can be distinguished by the larger and rounded head of the spermathecae (Fig. 41).

Description.– *Female*: (Holotype). Carapace, moderately low, 2.93 long, 2.79 wide; brownish, dark brown laterally. Clypeus, dark brown, 0.14 high. Anterior eye row straight, 0.76 wide; posterior 1.38 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.14, ALE 0.11, PME 0.21, PLE 0.16; AME-AME 0.06, AME-ALE 0.08, PME-PME 0.26, PME-PLE 0.14, MOQ, 0.40 long, dorsal view, frontal view 0.49, anterior width 0.43, posterior width 0.78. Chelicerae, dark brown, sparse brownish setae; promargin with three teeth equidistant and equal in size, retromargin with three teeth, middle largest. Sternum, yellowish with dark brown setae; 1.21 long, 1.06 wide. Labium, light brown, lighter at posterior margin; 0.32 long, 0.31 wide. Legs, yellowish, unmarked, relative length: IV-II-IIII, I – femur 2.92/ tibia-
patella 4.52/ metatarsus 2.93/ tarsus 1.33/ total 11.70; II – 3.05/4.53/3.05/1.46/12.09; III – 2.52/3.32/1.99/1.05/8.89; IV – 3.32/4.12/3.33/1.59/12.35. Abdomen, brownish, dorsum with indistinct light spots, grayish ventrally. Posterior margin of epigynum elevated and heavily sclerotized (Figs. 40, 42). Stalk and head of spermathecae almost touching each other (Fig. 41).

Distribution.- Known only from the type locality in Costa Rica (Fig. 4).

Enna paraensis, new species

Figs. 5, 43–45

Type material.– Holotype female, Mapuerá river, Pará, Brazil, 01°45'S, 55°51'W, 15 January 1938, H.G. Hassler (AMNH).

Etymology.- The specific name refers to the type locality.

Conditions of holotype.– Right leg III missing tarsus, right leg IV and left leg II missing.

Diagnosis.– The female of *E. paraensis* (Fig. 45) resembles the ones of *E. caliensis* (Fig. 84) by the shape of the projection of the posterior margin of the epigynum, but can be distinguished by the rounded head of the spermathecae (Fig. 44).

Description.– *Female*: (Holotype). Carapace, low, 3.73 long, 3.32 wide; two paramedian yellow bands dorsally. Clypeus, yellowish, brownish laterally, 0.27 high. Anterior eye row slightly recurved, 0.86 wide; posterior 1.76 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.18, ALE 0.12, PME 0.25, PLE 0.21; AME-AME 0.15, AME-ALE 0.07, PME-PME 0.53, PME-PLE 0.28, MOQ, 0.52 long, dorsal view, frontal view 0.66, anterior width 0.55, posterior width 1.03. Chelicerae, orange with small setae, darker on anterior margin; promargin and retromargin of fang furrow with three teeth. Sternum, yellowish with small dark brown

setae; 1.66 long, 1.57 wide. Labium, dark brown, lighter on posterior margin, 0.58 long, 0,49 wide. Legs, yellowish, unmarked, relative length: I-IV-II-III, I – femur 4.06/ tibiapatella 5.97/ metatarsus 3.98/ tarsus 1.82/ total 15.83; II – 3.98/ 5.88/ 3.73/ 1.74/ 15.33; III – 3.32/ 3.90/ 2.65/ 1.33/ 11.20; IV – 4.15/ 4.73/ 4.81/ 1.66/ 15.35. Abdomen, setaceous, yellowish dorsally with sparse dark spots, lighter ventrally. Middle field of the epigynum with lateral sulci, posterior margin smooth (Fig. 43, 45).

Distribution.- Known only from the type locality in Brazil (Fig. 5).

Enna rothi, new species

Figs. 5, 46–56

Type material.– Holotype female, Napo, 12 km from Baeza, Quijos, Equador, 00°27'S, 77°53'W, 10 September 1994, V. Roth (CAS).

Etymology.– The specific name is a patronym in honor of the collector of the type, V.D. Roth.

Conditions of holotype.- Left leg IV missing.

Diagnosis.– The female of *E. rothi* is similar to the ones of *E. hara* (Fig. 76) and *E. baeza* (Fig. 79) by the shape of the projection of the middle field of the epigynum (Figs. 48, 49), but can be separated from the previous two by the shape of the head of spermathecae (Figs. 47, 50).

Description.– *Female*: (Holotype). Carapace low, dark brown, darker laterally, 4.78 long, 4.25 wide. Clypeus, light brown, darker laterally, 0.21 high. Anterior eye row slightly straight, 1.12 wide; posterior 1.86. Eye diameter, interdistances and median ocular quadrangle: AME 0.24, ALE 0.20, PME 0.28, PLE 0.30; AME-AME 0.12, AME-ALE 0.14, PME-PME 0.40, PME-PLE 0.50, MOQ, 0.49 long, dorsal view, frontal view 0.65, anterior width 0.62, posterior width 0.99. Chelicerae, reddish brown

with yellowish setae, darker laterally; promargin and retromargin with three teeth equidistant and subequal in size. Sternum, yellowish with sparse light setae, 2.07 long, 2.01 wide. Labium, dark brown, yellowish laterally; 0.71 long, 0.80 wide. Legs, light brown, femora with sparse brownish spots dorsally, relative length: IV-I-II-III, I – femur 7.04/ tibia-patella 9.71/ metatarsus 6.78/ tarsus 2.66/ total 26.19; II – 6.51/ 9.44/ 5.71/ 2.79/ 24.45; III – 5.32/ 5.71/ 5.45/ 1.59/ 18.07; IV – 6.65/ 8.11/ 6.91/ 2.92/ 24.59. Base of macrosetae prominent (Fig. 51). Tarsal organ conspicuous on dorsal surface of leg IV (Figs. 52, 53). Bothrium with prominent hood (Fig. 55). Tarsal claw pectinated, with distinct eleven teeth on upper claw and one short, slender tooth on lower claw (Fig. 56). Slit sense organ on lateral of right leg II conspicuous (Fig. 54). Abdomen, small, dorsum light brown with two paramedian brown bands, setaceous, grayish ventrally. Middle field of epigynum with two deep grooves; posterior margin elevated (Figs. 46, 48, 49). Head of spermathecae rounded and small (Figs. 47, 50).

Distribution.- Known only from the type locality in Ecuador (Fig. 5).



Figs. 37–48.– *Enna* spp., female epigyna. 37–39. *E. maya*; 37. posterior view; 38. dorsal view; 39. ventral view. 40–42. *E. pecki*; 40. posterior view; 41. dorsal view; 42. ventral view. 43–45. *E. paraensis*; 43. posterior view; 44. dorsal view; 45. ventral view. 46–48. *E. rothi*; 45. posterior view; 47. dorsal view; 48. ventral view.



Figs. 49–56.– Morphological details of *Enna rothi*. 49, 50 epigynum; 49. ventral view; 50. dorsal view; 51. ventral macrosetae of tibia I; 52. tarsal organ of leg IV, general view; 53. tarsal organ of leg IV; 54. slit sense organ of right leg II; 55. bothrium of leg IV; 56. tarsal claw of leg IV. Abbreviations: AF, anterior field of epigynum; HS, head of spermathecae; LC, lower claw; MF, middle field of epigynum; SS, stalk of spermathecae; TO, tarsal organ; UC, upper claw.

Enna colonche, new species

Figs. 5, 57-61

Type material.– Holotype male, Colonche river, Ecuador, 02°01'S, 80°40'W, (CAS). Paratypes: two females, same location as holotype (CAS).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Conditions of holotype.– Specimen was apparently dried resulting in blanching of the color pattern along with shriveling of the abdomen and some distortion of legs and carapace.

Diagnosis.– The male of *E. colonche* (Figs. 57–59) resembles the ones of *E. estebanensis* (Fig. 67) by the presence of a lateral acute projection on dorsal division of median apophysis and a reduced ventral division of the median apophysis, but differs by the less curved guide (Figs. 58, 59) and by the ectal division of the tibial apophysis which is curved and ventrally pointed (Fig. 57). The female presents a rounded median excavation on the posterior margin of the epigynum (Fig. 61).

Description.– *Male*: (Holotype). Carapace, moderately high, blanched due to drying, 3.60 long, 3.00 wide; dark brown. Clypeus, blanched due to drying, 0.35 high. Anterior eye row straight to slightly procurved, 0.90 wide; posterior 1.70 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.23, ALE 0.16, PME 0.28, PLE 0.28; AME-AME 0.16, AME-PLE 0.03, PME-PME 0.52, PME-PLE 0.30, MOQ, 0.62 long, dorsal view, frontal view 0.68, anterior width 0.56, posterior width 0.96. Chelicerae, reddish brown, lighter distally, lateral carina present; promargin with three teeth, equidistant, middle largest and retromargin of fang furrow with three teeth, proximal two, closer together. Sternum, blanched due to drying; 1.45 long, 1.50 wide. Labium, pale brown, lighter on anterior margin; 0.63 long, 0.61 wide. Legs, blanched

due to drying, relative length: I-IV-II-III, I – femur 3.70/ tibia-patella 5.50/ metatarsus 4.00/ tarsus 1.90/ total 15.10; II – 3.80/ 5.30/ 3.60/ 1.70/ 14.40; III – 3.20/ 3.80/ 2.80/ 1.30/ 11.10; IV – 3.80/ 4.60/ 4.30/ 1.80/ 14.50. Abdomen, blanched due to drying, with scattered setae. Palpus with dorsal division with two distal grooves (Figs. 58, 59). Ectal division of RTA with lateral projection (LP) triangular and ental division slender and acuminated (Fig. 57).

Female: (Allotype). Carapace, as in male, 2.70 long, 2.70 wide. Clypeus, as in male, 0.25 high. Anterior eye row straight to slightly procurved, 0.82 wide; posterior 1.52 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.20, ALE 0.13, PME 0.22, PLE 0.22; AME-AME 0.12, AME-ALE 0.05, PME-PME 0.48, PME-PLE 0.26, MOQ, 0.52 long, dorsal view, anterior width 0.49, posterior width 0.90. Chelicerae, reddish brown, lighter distally; promargin and retromargin with three teeth. Sternum, as in male; 1.35 long, 1.45 wide. Labium, as in male; 0.63 long, 0.55 wide. Legs, blanched due to drying, relative length: IV-II-I-III, I – femur 2.90/ tibia-patella 3.90/ metatarsus 2.40/ tarsus 1.20/ total 10.40; II – 3.10/ 3.80/ 2.60/ 1.20/ 0.70; III – 2.70/ 3.00/ 2.20/ 1.10/ 9.00; IV – 3.20/ 3.80/ 3.50/ 1.40/ 11.90. Ventral pairs of macrosetae on tibiae: I-4; II-4; III-3; IV-4. Abdomen, as in male, with scattered setae. Epigynum with short, elliptical spermathecae, largely separated from each other (Fig. 60).

Distribution.- Known only from the type locality in Ecuador (Fig. 5).



Figs. 57–61. *Enna colonche*. 57–59. right male palpus; 57. retrolateral view; 58. detail of median apophysis; 59. ventral view; 60, 61. epigynum; 60. dorsal view; 61. ventral view. Abbreviations: DD, dorsal division of median apophysis; G, guide; HS, head of spermathecae; LP, lateral projection of RTA; ECD, ectal division of RTA; END, ental division of RTA; VD, ventral division of median apophysis.

Enna estebanensis (Simon 1898)

Figs. 5, 62-70

Hesydrus estebanensis Simon 1898: 20. Roewer 1954:137

Enna estebanensis (Simon): Carico 2005a: 786. Platnick 2006.

Type material.– Syntypes, two males and three females, from San Esteban, Venezuela (MNHN 17925) (examined and designated male lectotype and one male and two females paralectotypes).

Diagnosis.– The male palpus of *E. estebanensis* (Figs. 65-67) is similar to that of *E. colonche* (Figs. 57–59) by the general shape of the median apophysis and the reduced ventral division of the median apophysis (Fig. 66), but can be differentiated by a small protuberance on the dorsum of the ectal division of the retrolateral tibial apophysis (Fig. 67), and the female epigynum which presents a small median groove on the posterior margin of the epigynum (Fig. 70).

Description.– *Male*: (Lectotype). Carapace (Figs. 62, 63), light brown, moderately high, 3.48 long, 2.85 wide. Clypeus, dark brown, unmarked, 0.31 high. Anterior eye row straight (Fig. 64), 0.86 wide; posterior 1.61 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.15, ALE 0.10, PME 0.21, PLE 0.12; AME-AME 0.15, AME-ALE 0.06, PME-PME 0.46, PME-PLE 0.34, MOQ, 0.41 long, dorsal view, frontal view 0.49, anterior width 0.37, posterior width 0.89. Chelicerae, orange, with light setae, projected anteriorly (Fig. 63), and with distal depressions on anterior surface (Fig. 64); lateral carina prominent (Fig. 63); promargin and retromargin of fang furrow with three subequal and equidistant teeth. Sternum, yellowish, with small brownish setae; 1.39 long, 1.42 wide. Labium, yellowish, lighter on anterior margin; 0.31 long, 0.46 wide. Legs, yellowish, unmarked, relative length: I-IV-II-III, I – femur 3.76/ tibia-patella 5.06/ metatarsus 3.81/ tarsus 1.99/ total 14.62; II –

3.40/4.56/3.23/1.57/12.76; III – 2.49/3.48/2.90/1.24/10.11; IV – 3.81/4.23/4.15/1.66/13.85. Abdomen (Figs. 62, 63), elongated, setaceous, dorsum with sparse grayish spots, yellowish ventrally. Palpus with a reduced ventral division; dorsal division with a small pointed lateral lamella (Fig. 67). Ectal division prominent (Figs. 65, 66). Ental division of retrolateral tibial apophysis sclerotized and subtriangular (Fig. 66).

Female: (Paralectotype). Carapace, as in male, 2.94 long, 2.63 wide. Clypeus, yellowish, 0.21 high. Anterior eye row slightly straight, 0.77 wide; posterior 1.42 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.15, ALE 0.10, PME 0.16, PLE 0.13; AME-AME 0.15, AME-ALE 0.07, PME-PME 0.43, PME-PLE 0.31, MOQ, 0.40 long, dorsal view, frontal view 0.43, anterior width 0.46, posterior width 0.83. Chelicerae, as in male, without lateral carina; promargin and retromargin of fang furrow with three teeth. Sternum, light brown, unmarked, with brownish setae; 1.17 long, 1.48 wide. Labium, dark brown, lighter on anterior margin; 0.49 long, 0.52 wide. Legs, yellowish, unmarked, relative length: IV-I-II-III, I – femur 2.82/ tibia-patella 4.31/ metatarsus 2.98/ tarsus 1.41/ total 11.52; II – 2.90/ 4.15/ 2.40/ 1.25/ 10.70; III – 2.57/ 2.82/ 2.15/ 1.07/ 8.61; IV – 3.32/ 3.90/ 3.56/ 1.32/ 12.10. Abdomen, rounded, setaceous, coloration as in male. Epigynum with posterior margin excavated (Figs. 68, 70). Head of spermathecae elliptical and copulatory openings conspicuous in dorsal view (Fig. 69).

Distribution.- Known only from the type locality in Venezuela (Fig. 5).



Figs. 62–70.– *Enna estebanensis*. 62–64. male; 62. dorsal view; 63. lateral view; 64. frontal view; 65–67. left male palpus; 65. dorsal view; 66. retrolateral view; 67. ventral

view; 68–70. epigynum; 68. posterior view; 69. dorsal view; 70. ventral view. Abbreviations: CO, copulatory ducts; HS, head of spermathecae; LL, lateral lamella; LP, lateral projection of RTA; ECD, ectal division of RTA; END, ental division of RTA; VD, ventral division of median apophysis; VP, ventral protuberance of male palpal tibia.

Enna huanuco, new species

Figs. 5, 71–73

Type material.– Holotype male, Divisoria, Huanuco, Peru, 09°30'S, 75°50'W, 23 September 1946 (AMNH).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Conditions of holotype.- Right leg I missing.

Diagnosis.– The male of *E. huanuco* is similar to that of *E. braslandia* by the general shape of the median apophysis and the retrolateral tibial apophysis (Fig. 35), but can be distinguished by the smaller and rounded guide of the median apophysis (Figs. 71-73).

Description.– *Male*: (Holotype). Carapace, moderately low, 4.39 long, 3.73 wide; dark brown with lateral brownish bands. Clypeus, light brown, 0.25 high, Anterior eye row slightly straight, 1.02 wide; posterior 2.01 wide. Eye diameters and interdistances and median ocular quadrangle: AME 0.23, ALE 0.12, PME 0.24, PLE 0.25; AME-AME 0.46, AME-ALE 0.16, PME-PME 0.58, PME-PLE 0.44, MOQ, 0.52 long, dorsal view, frontal view 0.65, anterior width 0.64, posterior width 1.05. Chelicerae, dark brown with small light brown setae, slightly enlarged at base; promargin and retromargin of fang furrow with equal and equidistant teeth. Sternum, brownish, with dark setae; 1.51 long, 1.55 wide. Labium, brownish, lighter on anterior

margin; 0.46 long, 0.71 wide. Legs light brown, unmarked, relative length: IV-I-II-III, I – femur 4.81/ tibia-patella 6.97/ metatarsus 4.64/ tarsus 2.07/ total 18.49; II – 4.89/ 6.31/ 4.31/ 1.82/ 17.33; III – 4.15/ 4.88/ 3.41/ 1.49/ 13.93; IV – 4.73/ 5.72/ 4.87/ 1.99/ 17.31. Abdomen, oval, grayish, setaceous, dorsum with light brown spots anteriorly, light brown ventrally. Dorsal division of median apophysis with small grooves (Fig. 73). Median apophysis without basal tooth (Fig. 73). Ectal division of retrolateral tibial apophysis acuminated (Fig. 72). Ventral protuberance of male palpal tibia prominent (Fig. 71).

Distribution.- Known only from the type locality in Peru (Fig. 5).

Enna hara, new species

Figs. 5, 74–76

Type material.– Holotype female, Hara, Department of San Martin, Peru, 07°00'S, 76°50'W, 1-30 June 1947, F. Woytkowski (AMNH).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Conditions of holotype.– Right legs I, III missing and right leg IV detached.

Diagnosis.– The female of *E. hara* are similar to that of *E. baeza* by the general shape of the middle field of the epigynum (Fig. 79), but can be distinguished by the rounded shape of the head of spermathecae (Fig. 75).

Description.– *Female*: (Holotype). Carapace, moderately low, 5.47 long, 4.81 wide; dorsum light brown with three light brown paramedian bands near cephalic area. Clypeus, orange, 0.37 high. Anterior eye row straight, 1.27 wide; posterior 2.35 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.24, ALE 0.18, PME 0.31, PLE 0.15; AME-AME 0.22, AME-ALE 0.09, PME-PME 0.21, PME-PLE

0.25, MOQ, 0.69 long, dorsal view, frontal view 0.71, anterior width 0.71, posterior width 1.17. Chelicerae, dark brown with small light brown setae; promargin and retromargin of fang furrow with three subequal and equidistant teeth. Sternum, brownish, with small brownish setae; 2.01 long, 2.23 wide. Labium, light brown, darker on anterior margin; 1.02 long, 0.93 wide. Legs, light brown, unmarked, relative length: I-IV-II-III, I – femur 5.47/ tibia-patella 8.63/ metatarsus 5.56/ tarsus 2.65/ total 22.31; II – 4.73/ 6.88/ 5.39/ 2.57/ 19.57; III – 4.39/ 5.97/ 4.48/ 2.07/ 16.91; IV – 5.39/ 7.05/ 6.60/ 2.73/ 21.77. Abdomen, oval, grayish, setaceous, dorsum with light brown spots on anterior region, yellowish ventrally. Epigynum with middle field presenting two lateral sulci (Fig. 76). Posterior margin of epigynum smooth (Figs. 74, 76). Spermathecae small (Fig. 75); head of spermathecae rounded and elongated (Fig. 75).

Distribution.- Known only from the type locality in Peru (Fig. 5).

Enna baeza, new species

Figs. 5, 77-79

Type material.– Holotype female, Napo, Quijos, 12 km from Baeza, Ecuador, 00°27'S, 77°53'W, 10 September 1994, V. Roth (CAS).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Diagnosis.– The female epigynum of *E. baeza* (Fig. 79) is similar to that of *E. rothi* (Figs. 48, 49) by the general shape and by the presence of a short projection on the head of spermathecae (Fig. 47, 50, 78) but can be distinguished by the shape of the middle field of the epigynum and by the median projection on the posterior margin (Fig. 79).

Description.– *Female*: (Holotype). Carapace low, light brown, darker laterally, 4.52 long, 3.99 wide. Clypeus, light brown, 0.23 high. Anterior eye row slightly straight, 1.13 wide; posterior 1.87. Eye diameter, interdistances and median ocular quadrangle: AME 0.19, ALE 0.18, PME 0.32, PLE 0.20; AME-AME 0.26, AME-ALE 0.12, PME-PME 0.44, PME-PLE 0.40, MOQ, 0.51 long, frontal view, anterior width 0.58, posterior width 1.01. Chelicerae, reddish brown with yellowish setae, darker laterally; promargin and retromargin with three teeth equidistant and equal in size. Sternum, yellowish with short light brown setae, 2.00 long, 2.21 wide. Labium, dark brown, 0.66 long, 0.81 wide. Legs, light brown, femora slightly darker dorsally, relative length: I-II-IV-III, I – femur 5.98/ tibia-patella 8.64/ metatarsus 5.71/ tarsus 2.26/ total 22.59; II - 6.11/ 8.24/ 5.32/ 2.39/ 22.06; III - 4.65/ 5.32/ 4.52/ 1.86/ 16.35; IV - 6.13/ 6.91/2.79/2.24/18.07. Abdomen, short with a wide spot anteriorly, near to cardiac region and two paramedian white bands extending to posterior region; dorsum dark brown, setaceous, yellowish ventrally. Middle field of epigynum with a pair of median deep grooves (Fig. 77); posterior margin moderately elevated and with two lateral projections (Fig. 79). Head of spermathecae rounded, short and with short pointed projections (Fig. 78).

Distribution.– Known only from the type locality in Ecuador (Fig. 5).



Figs. 71–79.– *Enna* spp. 71–73. *E. huanuco*, left male palpus; 71. prolateral view; 72. retrolateral view; 73. ventral view. 74–76. *E. hara*, epigynum; 74. posterior view; 75. dorsal view; 76. ventral view. 77–79. *E. baeza*, epigynum; 77. posterior view; 78. dorsal view; 79. ventral view. Abbreviations: G, guide; HS, head of spermathecae; LL, lateral

lamella; LP, lateral projection of RTA; ECD, ectal division of RTA; END, ental division of RTA; VP, ventral protuberance of male palpal tibia.

Enna caliensis, new species

Figs. 5, 80–84

Type material.– Holotype male, Valle, Cali, Colombia, 03°26'N, 76°31'W, 05 March 1973, H. Levi (MCZ 63818). Allotype: one female, same locality as holotype (MCZ 70112).

Etymology.- The specific name refers to the type locality.

Diagnosis.– The male palpus of *E. caliensis* (Figs. 80-82) is similar to that of *E. huarinilla* (Figs. 90–93) by the shape of the lateral projection of the ectal division of the retrolateral tibial apophysis, but can be distinguished by the presence of a reduced, laterally projected ventral division of the median apophysis (Figs. 81, 82). The female epigynum presents a median scape-like projection on the posterior margin (Fig. 84), and the head of the spermathecae has a small, rounded lateral projection (Fig. 83).

Description.– *Male*: (Holotype). Carapace, moderately low, lighter distally, darker on anterior region of cephalic area, scattered long setae, 7.00 long, 5.70 wide. Clypeus, dark brown, 0,62 high. Anterior eye row straight, 1.46 wide; posterior 2.65. Eye diameters, interdistances and median ocular quadrangle: AME 0.38, ALE 0.25, PME 0.33, PLE 0.40; AME-AME 0.24, AME-ALE 0.11, PME-PME 0.67, PME-PLE 0.55, MOQ, 0.77 long, frontal view, anterior width 0.80, posterior width 1.40. Chelicerae, reddish brown, with distinct basal lateral carina, flattened area distally and frontally; promargin with three teeth, middle largest and retromarginal with three teeth on fang furrow, equidistant and equal in size, distal two close to each other, small tooth

proximal to other three and near base of third tooth. Sternum, yellowish, darker on margins; 3.12 long, 3.04 wide. Labium, dark brown, lighter at anterior margin, darker laterally; 1.60 long, 1.28 wide. Legs, light brown, unmarked, covered by dense setae, relative length: I-II-IV-III, I – femur 8.00/ tibia-patella 11.60/ metatarsus 8.30/ tarsus 4.65 / total 31.40; II – 8.00/ 11.00/ 7.70/ 3.19/ 29.90; III – 6.80/ 8.12/ 6.21/ 2.79/ 23.90; IV – 7.70/ 9.70/ 8.20/ 3.30/ 28.90. Ventral pairs of macrosetae on tibiae: I-4; II-4; III-3; IV-4. Abdomen, dorsum dark brown, light at cardiac area, pair of longitudinal light spots lateral to cardiac area, continued posteriorly with three pairs of light spots, sides unmarked, venter light, integument folded, dense long setae, shorter ventrally. Palpus with dorsal division of median apophysis without distal grooves (Figs. 81, 82); ectal division of RTA prominent and curved, rounded at apex (Fig. 80). Tegulum with small lateral groove (Fig. 82). Ventral protuberance of male palpal tibia prominent (Fig. 80).

Female (Allotype, MCZ 63818). Carapace, pale brown, darker on anterior part of cephalic area, scattered setae, 6.70 long, 5.70 wide. Clypeus, dark brown, 0.64 high. Anterior eye row straight, 1.50 wide; posterior 2.66 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.32, ALE 0.22, PME 0.38, PLE 0.42; AME-AME 0.22, AME-ALE 0.12, PME-PME 0.66, PME-PLE 0.62, MOQ, 0.90 long, dorsal view, frontal view 0.87, anterior width 0.84, posterior width 1.36. Chelicerae, dark reddish brown, unmarked; promargin with three teeth, middle largest and retromargin of fang furrow with three teeth, equal in size, distal two closer to each other. Sternum, as in male; 3.00 long, 1.25 wide. Legs, brownish, unmarked, covered with dense setae, relative length: IV-I-II-III, I – femur 7.10/ tibia-patella 9.80/ metatarsus 6.60/ tarsus 3.00/ total 26.50; II – 7.20/ 9.80/ 6.30/ 2.80/ 26.10; III – 6.20/ 7.71/ 5.31/ 2.30/ 21.70; IV – 7.20/ 8.90/ 7.50/ 3.10/ 26.70. Abdomen, dorsum and sides dark brown, lighter

ventrally, unmarked, venter with dense long setae. Epigynum with conspicuous copulatory ducts (Fig. 83); posterior margin slightly projected (Fig. 84).

Distribution.– Known only from the type locality in Colombia (Fig. 5).



Figs. 80–84.– *Enna caliensis*. 80–82. right male palpus; 80. retrolateral view; 81. detail of median apophysis; 82. ventral view; 83, 84. epigynum; 83. dorsal view; 84. ventral view. Abbreviations: CO, copulatory ducts; DD, dorsal division of median apophysis;

ECD, ectal division of retrolateral tibial apophysis (RTA); G, guide; HS, head of spermathecae; LP, lateral projection of RTA; VD, ventral division of median apophysis; VP, ventral protuberance of male palpal tibia.

Enna huarinilla, new species

Figs. 5, 85-96

Type material.– Holotype male, La Paz, near Coroico (Huarinilla river), Bolivia 16°30'S, 68°09'W, 3000m, 31 July 1994, A.D. Brescovit (MCN 23799).

Etymology.– The specific name is a noun in apposition and refers to the type locality.

Diagnosis.– The palpus of *E. huarinilla* (Figs. 88-90) is similar to that of *E. caliensis* (Figs. 80–82) by the general shape of the retrolateral tibial apophysis (Figs. 89, 90, 94), but can be distinguished by the absence of the ventral division of the median apophysis and a shorter and less acute guide (Figs. 90–93).

Description.– *Male*: (Holotype). Carapace, moderately low (Fig. 86), dark brown, with a median light brown stripe at cephalic area (Fig. 85), 6.88 long, 5.89 wide. Clypeus, dark brown, 0,70 high. Anterior eye row slightly procurved (Fig. 87), 1.50 wide; posterior 2.63. Eye diameters, interdistances and median ocular quadrangle: AME 0.34, ALE 0.20, PME 0.40, PLE 0.41; AME-AME 0.20, AME-ALE 0.10, PME-PME 0.70, PME-PLE 0.60, MOQ, 0.78 long, frontal view, anterior width 0.82, posterior width 1.37. Chelicerae, reddish brown, without lateral carina (Fig. 86); promargin with three teeth and retromargin with three teeth on fang furrow, equidistant and equal in size. Sternum, light brown, small setae, darker on margins; 2.57 long, 2.91 wide. Labium, dark brown, lighter on anterior margin; 1.24 long, 1.32 wide. Legs, light brown, unmarked, relative length: I-II-IV-III, I – femur 10.10/ tibia-patella 15.82/

metatarsus 11.71/ tarsus 4.67 / total 42.28; II – 9.71/ 14.63/ 10.11/ 3.19/ 37.64; III – 8.11/ 10.12/ 8.11/ 2.79/ 29.13; IV – 9.04/ 11.83/ 10.91/ 3.85/ 35.63. Ventral pairs of macrosetae on tibiae: I-4; II-4; III-3; IV-3. Tarsal claw with nine teeth on upper claw and one short, slender tooth on lower claw (Fig. 96). Abdomen, setaceous, dorsum dark brown to grayish, three light brown small bands anteriorly (Fig. 85); venter light brown. Palpus with dorsal division of median apophysis concave (Figs. 90–93); ectal division of RTA long and rounded at apex (Figs. 89, 94). Lateral projection prominent and subtriangular (Figs. 88, 90, 95). Tegulum with small median protuberance (Figs. 91, 92). Ventral protuberance of male palpal tibia prominent (Fig. 89).

Distribution.- Known only from the type locality in Bolivia (Fig. 5).



Figs. 85–90.– *Enna huarinilla*. 85–87. male; 85. dorsal view; 86. lateral view; 87. frontal view; 88–90. left male palpus; 88. dorsal view; 89. retrolateral view; 90. ventral view. Abbreviations: ECD, ectal division of retrolateral tibial apophysis (RTA); LP, lateral projection of RTA; VP, ventral protuberance of male palpal tibia.



Figs. 91–96.– Morphological details of *Enna huarinilla*. 91–95. left male palpus; 91. ventral view; 92. palpal bulb, ventral view; 93. median apophysis, ventral view; 94. retrolateral view; 95. ectal division of retrolateral apophysis; 96. tarsal claw of right leg IV. Abbreviations: DD, dorsal division of median apophysis; ECD, ectal division of retrolateral tibial apophysis; G, guide; LP, lateral projection of retrolateral tibial apophysis; ST, subtegulum; T, tegulum.

Enna igarape, new species

Figs. 5, 97-111

Type material.– Holotype male, Igarapé da Lontra, Rio Urucu, Porto Urucu, Coari, Amazonas, Brazil, 04°21'S, 49°32'W, 23 July 2003, D.D. Guimarães (MPEG 1435). Female allotype, one female, same locality of holotype (MPEG 1433). Paratypes, three females, Estrada LUC 36, Rio Urucu, Porto Urucu, Coari, Amazonas, Brazil, D.D. Guimarães (MPEG 1432), one female, same locality of holotype (AMNH); one female, same locality of holotype (MCZ 69736).

Other examined material.– BRAZIL, *Acre*: Senador Guiomard, rio Iquiri, 10°10'S, 67°50'W, Expedição Departamento de Zoologia USP 12 (MZSP 11730).

Etymology.– The specific name is a noun in apposition and refers to "igarapé", a Tupi-Guarani Indian name for narrow channel between two small portions of land.

Diagnosis.– The male palpus of *E. igarape* (Figs. 100, 101) is similar to that of *E. kuyuwiniensis* (Figs. 112-114) by the shape of the lateral projection on the retrolateral tibial apophysis, but can be distinguished from *E. bartica* (Figs. 116, 118) by the presence of only one basal tooth on the dorsal division of the median apophysis. The female epigynum presents a median excavation on the posterior margin (Figs. 102, 107) and small spermathecae, which are far separated (Fig. 103).

Description.– *Male*: (Holotype). Carapace (Figs. 97, 98), moderately high, 2.57 long, 2.13 wide; pale brown with a paramedian yellowish band, light brown laterally. Clypeus, brownish, 0.18 high. Anterior eye row straight (Fig. 99), 0.65 wide; posterior 1.33 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.14, ALE 0.09, PME 0.24, PLE 0.15; AME-AME 0.09, AME-ALE 0.06, PME-PME 0.37, PME-PLE 0.21, MOQ, 0.37 long, dorsal view, frontal view 0.46, anterior width 0.43, posterior width 0.77. Chelicerae, dark brown with small setae. Sternum, yellowish with

small light brown setae, 1.08 long, 1.17 wide. Labium, dark brown, lighter on anterior margin; 0.48 long, 0.46 wide. Legs, yellowish, unmarked, relative length: I-IV-II-III, I – femur 3.07/ tibia-patella 4.56/ metatarsus 3.23/ tarsus 1.41/ total 12.27; II – 2.98/ 4.39/ 2.98/ 1.24/ 11.59; III – 2.40/ 2.98/ 2.41/ 0.91/ 8.70; IV – 2.98/ 3.73/ 3.75/ 1.23/ 11.69. Tarsal organ conspicuous (Figs. 108, 109). Bothrium prominent (Fig. 110). All tarsal claws pectinated, upper claw with nine teeth and lower claw with one long tooth (Fig. 111). Abdomen (Figs. 97, 98), rounded, setaceous, dorsum pale brown with sparse light spots, darker at laterals, yellowish ventrally. Palpus with ental division of retrolateral tibial apophysis absent (Figs. 100, 101, 106). Dorsal division of median apophysis concave (Figs. 101, 104); guide very short (Fig. 104). Subtegulum with two small projections at posterior margin (Figs. 101, 104).

Female: (Allotype). Carapace, as in male, 2.38 long, 2.07 wide. Clypeus, light brown, 0.15 high. Anterior eye row straight, 0.68 wide; posterior 1.33. Eye diameters, interdistances and median ocular quadrangle: AME 0.15, ALE 0.07, PME 0.16, PLE 0.12; AME-AME 0.11, AME-ALE 0.06, PME-PME 0.40, PME-PLE 0.21, MOQ, dorsal view 0.36, frontal view 0.43, anterior width 0.43, posterior width 0.74. Chelicerae, reddish brown, with brownish light setae. Sternum medium brown; 1.02 long, 1.08 wide. Labium, dark brown; 0.40 long, 0.38 wide. Legs, yellowish, dorsum of femora with sparse brownish spots, relative length: IV-I-II-III, I – femur 3.56/ tibiapatella 4.98/ metatarsus 3.41/ tarsus 0.99/ total 12.94; II – 3.65/ 4.31/ 2.57/ 1.16/ 11.69; III – 2.90/ 3.40/ 2.73/ 0.98/ 10.01; IV – 3.32/ 4.48/ 4.31/ 1.49/ 13.60. Abdomen coloration as in male. Epigynum small, posterior margin elevated and sclerotized with a median groove (Figs.102, 107). Spermathecae short, with rounded head (Fig. 103).

Distribution.- Brazil (Amazonas, Acre) (Fig. 5).



Figs. 97–103.– *Enna igarape*. 97–99. male; 97. dorsal view; 98. lateral view; 99. frontal view; 100, 101. left male palpus; 100. ventral view; 101. retrolateral view; 102–103. female epigynum; 102. ventral view; 103. dorsal view. Abbreviations: DD, dorsal division of median apophysis; ECD, ectal division of retrolateral tibial apophysis (RTA); HS, head of spermathecae; LP, lateral projection of RTA; VD, ventral division of median apophysis.



Figs. 104–112.– Morphological details of *Enna igarape*. 104–106 left male palpus; 104. ventral view of bulb; 105. retrolateral view; 106. ectal division of retrolateral tibial

apophysis; 107. female epigynum, ventral view; 108. tarsal claw of right leg IV, general view; 109 detail of tarsal organ; 110, bothrium of lef leg II; 111. tarsal claw of leg II. Abbreviations: DD, dorsal division of median apophysis; ECD, ectal division of retrolateral tibial apophysis; G, guide; LP, lateral projection of retrolateral tibial apophysis; ST, subtegulum; T, tegulum.

Enna kuyuwiniensis, new species Figs. 5, 112–115

Type material.– Holotype male, Kuyuwini river, Kuyuwini, Guyana, 02°13'N, 59°18'W, 20 November 1937, H.S. Hassler (AMNH).

Etymology.- The specific name refers to the type locality.

Conditions of holotype.- Legs and palpus disarticulated, setae removed.

Diagnosis.– The male palpus of *E. kuyuwiniensis* (Figs. 12-14) resembles that of *E. igarape* (Figs. 100, 101, 104) by the shape of the lateral projection of the retrolateral tibial apophysis, but differs from the other males of *Enna* by the presence of a prominent and acuminated ventral division of the median apophysis (Figs. 113, 114). The dorsal division of median apophysis presents two lateral teeth (Figs. 113, 114).

Description.– *Male*: (Holotype). Carapace, moderately high, light brown, indistinct submarginal lighter bands, three spots on each lateral margin, 3.30 long, 2.60 wide. Clypeus, dark brown, lighter on anterior margin, 0.30 high. Anterior eye row slightly recurved (Fig. 115), 0.84 wide; posterior 1.56 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.20, ALE 0.14, PME 0.26, PLE 0.28; AME-AME 0.12, AME-ALE 0.02, PME-PME 0.50, PME-PLE 0.26, MOQ, 0.37 long, dorsal view, anterior width 0.50, posterior width 0.97. Chelicerae, light reddish, scattered longitudinal dark spots. Sternum, light brown, darker on margins, 1.40 long, 1.44 wide. Labium, dark brown, lighter at anterior margin, darker laterally, 0.64 long, 0.50 wide. Legs light brown, unmarked, I – missing, II – femur 3.80/ tibia-patella 5.00/

metatarsus 3.51, IV – femur 3.7. Ventral pairs of macrosetae on tibiae: II-4. Abdomen, rounded, dorsum light with one pair of irregular dark spots laterally in anterior 2/3; posterior 1/3 with transverse alternating dark and light lines corresponding to folds in integument. Sides of abdomen with scattered smaller dark spots. Venter light brown and unmarked, with scattered setae. Palpus with median apophysis prominent; guide short (Fig. 114). Retrolateral tibial apophysis with ectal division (ECD) prominent, elongated and acuminated, with curved tip (Figs. 112, 113); lateral projection of ECD is triangular (Fig. 113) and ental division (END) is short, sub-triangular (Fig. 113).

Distribution.- Known only form the type locality in Guyana (Fig. 5).



Figs. 112–118.– *Enna* spp. 112–115. *E. kuyuwiniensis*; 112–114. right male palpus. 112. retrolateral view; 113. ventral view; 114. detail of median apophysis; 115. frontal view of carapace; 116–118. *E. bartica*; 116–118. right male palpus; 116. retrolateral

view; 117. detail of median apophysis; 118. ventral view. Abbreviations: DD, dorsal division of median apophysis; G, guide; LP, lateral projection; ECD, ectal division of RTA; END, ental division of RTA; VD, ventral division of median apophysis.

Enna bartica, new species

Figs. 5, 116–118

Type material.– Holotype male, Kartabo, Bartica, Cuyuni-Mazaruni, Guyana, 06°24'N, 58°37'W, Tropical Research Station, New York Zoological Society (AMNH). Paratype, one male from right margin of Uatumã river, Amazonas, Brazil, 03°06'S, 60°48'W, 30 August 1985, G.A. Languth (MCN 23793).

Etymology.– The specific name is a noun in apposition and refers to the type locality.

Conditions of holotype.- Missing legs I and II and tarsus IV.

Note.– The paratype from Amazonas, Brazil, deposited on MCN, presents only the left palpus, the spider body was misplaced and not yet found.

Diagnosis.– The male palpus of *E. bartica* (Figs. 116-118) resembles that of *E. igarape* (Figs. 101, 104) by the shape of the ventral division of the median apophysis, but can be distinguished by the shape of the median apophysis which presents two lateral teeth (Figs. 117, 118).

Description.– *Male*: (Holotype). Carapace, moderately high, faint evidence of wide submarginal light band; pattern obscured due to age of specimen, 3.90 long, 3.40 wide; light brown, with indistinct brown bands, dark brown laterally. Clypeus, light brown, 0.36 high. Anterior eye row straight, 0.96 wide; posterior 1.80 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.25, ALE 0.16, PME 0.30, PLE 0.32; AME-AME 0.13, AME-ALE 0.03, PME-PME 0.53, PME-PLE 0.30, MOQ, 0.56 long, frontal view 0.64, anterior width 0.62, posterior width 1.04.

Chelicerae, reddish-brown, lighter distally. Sternum, light, 1.72 long, 1.68 wide. Labium, dark reddish-brown, lighter at anterior margin, 0.84 long, 0.72 wide. Legs, light brown, obscure dark brown markings on dorsal surface of femora, III – femur 3.80/ tibia-patella 4.60/ metatarsus 3.60/ tarsus 1.50/ total 13.50; IV – 5.00/ 6.00/ 5.70. Abdomen, dorsum light brown with scattered pairs of dark maculae; sides light with scattered dark maculae. Venter light, unmarked. Palpus with dorsal and ventral divisions of median apophysis prominent (Figs. 117, 118); RTA prominent, ental division absent and ectal division coiled and rounded at apex (Fig. 118). Ventral protuberance on male palpal tibia prominent (Fig. 116).

Distribution.- Guyana (Kartabo), Brazil (Amazonas) (Fig. 5).

Enna bonaldoi, new species

Figs. 5, 119-146

Type material.– Holotype male, Igarapé da Tartaruga, Rio Urucu, Porto Urucu, Coari, Amazonas, Brazil, 04°21'S, 49°32'W, 23 July 2003, A.B. Bonaldo (MPEG 2662). Paratypes, one female from Porto Urucú, rio Urucú, Igarapé da Lontra, Coari, Amazonas, Brazil, 04°31'S, 49°38'W, A.B. Bonaldo (MPEG 1427).

Other examined material.– BRAZIL: *Amazonas*, Igarapé da Tartaruga, Porto Urucu, rio Urucu, Coari, 04°21'S, 49°32'W, 24 July 2003, D.D. Guimarães 2 \Im (MPEG 1429), A.B. Bonaldo, \Im , \Im (MPEG 1430), A.B. Bonaldo, 3 \Im , 6 \Im (MPEG 1425), 24 July 2003, D.D. Guimarães, \Im (MPEG 1431), Igarapé da Lontra, 04°31'S, 49°38'W, 23 July 2003, A.B. Bonaldo, 6 \Im , 4 \Im (MPEG 1426), 3 \Im , 2 \Im , (MPEG 1428), D.D. Guimarães, 3 \Im , 2 \Im (MPEG 1427), \Im , \Im , (MCN 41060), \Im , \Im , (MCTP 19478), \Im , \Im , (IBSP 63148), \Im , \Im , (AMNH). **Etymology.**– The specific name is a patronym in honor of the collector of the types, A.B. Bonaldo.

Diagnosis.– The male palpus of *E. bonaldoi* (Figs. 119–127) is similar to that of *E. riotopo* (Figs. 147, 148) by the general shape of the median apophysis, but can be distinguished by the shape of the guide (Fig. 120), which is acuminated and subtriangular and by the shape of the ental division of the retrolateral tibial apophysis (Figs. 119, 120). The middle field of the female epigynum is small and the heads of the spermathecae are small and rounded (Figs. 121, 122, 128).

Description.- Male: (Holotype). Carapace moderately high, 2.40 long, 2.00 wide; yellowish, no distinct pattern, covered with short, dark setae. Clypeus, pale, no distinct pattern, 0.22 high. Anterior eye row straight (Fig. 133), 0.63 wide; posterior 1.15 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.15, ALE 0.11, PME 0.23, PLE 0.25; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.25, PME-PLE 0.16, MOQ, 0.46 long, frontal view, anterior width 0.34, posterior width 0.65. Chelicerae, dark brown with small setae, slightly enlarged anteriorly, with distinct lateral carina (Figs. 134–138). Sternum, yellowish with small light brown setae, 1.20 long, 1.20 wide. Labium, dark reddish-brown, lighter at anterior margin; 0.42 long, 0.42 wide. Legs, pale brown, obscure annular dark markings on all segments except tarsi, relative length: IV-I-III, I – femur 2.90/ tibia-patella 4.00/ metatarsus 3.12/ tarsus 1.40/ total 10.90; II - 2.80/ 3.56/ 2.70/ 1.20/ 9.06; III - 2.16/ 2.52/ 2.08/ 0.88/ 7.64; IV -2.68/ 3.20/ 3.40/ 1.40/ 10.68. Straight tarsi, all claws dentate, upper claw with ten teeth and lower claw with one long, slender tooth (Fig. 143). Tarsal organ located on anterior third of tarsus (Fig. 139), slightly elevated (Fig. 140). Tricobothria conspicuous (Fig. 141). Sensory organs (slit sense) laterally on tarsus (Fig. 142). Spinnerets (Fig. 144): ALS (Fig. 145) yellowish, with numerous cylindrical ampullate gland (CY); PLS (Fig.

146) light, with numerous aciniform ampullate glands (AC). Abdomen 2.3 long, dorsum white, fine reticulations, scattered pairs of dark maculae; sides with scattered dark maculae. Venter white laterally, otherwise pale and unmarked. Palpal tibia with ventral protuberance prominent (Fig. 119). Retrolateral tibial apophysis with ectal division short and coiled at distal portion; ental division small and covered by ectal division in retrolateral view (Figs. 119, 127). Palpal bulb with tegulum and subtegulum prominent (Figs. 120, 123).

Female: (Allotype). Carapace, as in male, 2.28 long, 2.00 wide. Clypeus, light brown, dark, transverse spot medially under AME, 0.20 high. Anterior eye row straight, 0.60 wide; posterior 1.15. Eye diameters, interdistances and median ocular quadrangle: AME 0.14, ALE 0.10, PME 0.22, PLE 0.23; AME-AME 0.07, AME-ALE 0.04, PME-PME 0.27, PME-PLE 0.16, MOQ, dorsal view 0.44, frontal view, anterior width 0.35, posterior width 0.66. Chelicerae, light brown, no distinct pattern. Sternum pale brown; 1.12 long, 1.16 wide. Labium, dark brown, lighter at anterior margin; 0.40 long, 0.42 wide. Legs, color as in male, relative length: IV-I-II-III, I – femur 2.50/ tibia-patella 3.36/ metatarsus 2.40/ tarsus 1.16/ total 9.42; II – 2.40/ 3.12/ 2.20/ 1.06/ 8.78; III – 2.00/ 2.30/ 1.80/ 0.86/ 6.96; IV – 2.84/ 3.00/ 3.24/ 1.28/ 10.36. Abdomen, 3.04 long, coloration as in male. Epigynum small, posterior margin smooth (Figs. 121, 128). Head of spermathecae short, rounded and with small apical projections (Fig. 122).

Distribution.- Brazil (Amazonas) (Fig. 5).



Figs. 119–122.– *Enna bonaldoi*. 119, 120. right male palpus; 119. retrolateral view; 120. ventral view; 121, 122. epigynum; 121. dorsal view; 122. ventral view. Abbreviations: ECD, ectal division of retrolateral tibial apophysis; HS, head of spermathecae; VP, ventral protuberance of male palpal tibia.


Figs. 123–130. Morphological details of *Enna bonaldoi*. 123–127. left male palpus. 123, ventral view of bulb; 124, median apophysis; 125, general view of guide; 126, guide; 127, ectal division of retrolateral tibial apophysis; 128, female epigynum, ventral view; 129, serrula of left endite; 130, scopula of left endite. Abbreviations: AF, anterior field of epigynum; CO, copulatory opening; DD, dorsal division of median apophysis; ECD, ectal division of retrolateral tibial apophysis; G, guide; MF, middle field of epigynum; SC, scape of epigynum; ST, subtegulum; T, tegulum; VD, ventral division of median apophysis.



Figs. 131–138. Morphological details of *Enna bonaldoi*. 131, tibial macrosetae, general view; 132, base of macrosetae; 133, male carapace, frontal view; 134, lateral carina of male chelicerae; 135, anterior depression of chelicerae; 136, promarginal teeth of chelicerae; 137, setae of chelicerae; 138, anterior sulci of chelicerae, posterior view. Abbreviation: LC, lateral carina.



Figs. 139–146. Morphological details of *Enna bonaldoi*. 139, position of tarsal organ of leg II; 140, tarsal organ; 141, bothrium; 142, slit sense organ of tarsus of leg IV; 143, tarsal claw of leg IV; 144, male spinnerets, general view; 145, anterior lateral spinneret; 146, posterior lateral spinneret. Abbreviations: AC, acinform ampullate gland; ALS, anterior lateral spinneret; AT, anal tubercle; CY, cylindrical ampullate gland; LC, lateral carina; PLS, posterior lateral spinneret; PMS, posterior median spinneret; TO, tarsal organ.

Enna riotopo, new species

Figs. 5, 147-150

Type material.– Holotype male, Riotopo river, Tungurahua, Ecuador, 01°24'S, 78°12'W, 17 June 1943, HEF DLF – Exline/Peck (CAS). Paratypes: two males and one female, Pastaza river near Wapota, Ecuador, 01°30'S, 78°05'W, elevation 1300m, 2 April 1938, W.C. MacIntyre (MCZ).

Etymology.– The specific name is a noun in apposition taken from the type locality.

Diagnosis.– The male palpus of *E. riotopo* (Figs. 147, 148) resembles that of *E. bonaldoi* (Figs. 119, 120) by the shape of the median apophysis and the absence of the ventral division of the median apophysis, but differs by the small grooves on the lateral lamella (Fig. 148) and by the slender shape of the ectal division of the retrolateral tibial apophysis that is curved and ventrally pointed (Fig. 147). The female presents a rounded median triangular excavation on the posterior margin of the epigynum and two small median accessory spermathecae (Fig. 150).

Description.– *Male*: (Holotype). Carapace, moderately high, pale brown, no clear pattern, covered with short, light setae, blanched due to drying, 2.32 long, 2.00 wide; dark brown. Clypeus, pale brown, no distinct pattern, light setae, 0.20 high. Anterior eye row straight, 0.65 wide; posterior 1.10 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.17, ALE 0.12, PME 0.21, PLE 0.22; AME-AME 0.05, AME-PLE 0.05, PME-PME 0.26, PME-PLE 0.18, MOQ, 0.45 long frontal view 0.68, anterior width 0.35, posterior width 0.64. Chelicerae, dark brown, slightly enlarged anteriorly, no distinct groove above fang but flattened area instead, lateral carina conspicuous; promargin with three teeth, equidistant, middle largest and retromargin of fang furrow with four teeth, equidistant, proximal two largest. Sternum,

light brown, unmarked, 1.10 long, 1.10 wide. Labium, dark reddish-brown, lighter at anterior margin; 0.41 long, 0.42 wide. Legs, pale brown, obscure annular dark markings on II segments except tarsi, relative length: I-IV-II-III, I – femur 2.80/ tibia-patella 3.90/ metatarsus 2.92/ tarsus 1.40/ total 11.02; II – 2.64/ 3.32/ 2.50/ 1.16/ 9.62; III – 1.76/ 2.30/ 1.94/ 0.96/ 6.96; IV – 2.72/ 3.00/ 3.32/ 1.32/ 10.36. Abdomen, 1.9 long, shriveled and pattern obscured due to drying. Palpus with dorsal division with two pointed projections at anterior portion (Fig. 148). Ectal division of RTA prominent, rounded at apex and ventrally pointed and ental division enlarged at base and dorsally pointed (Fig. 147).

Female: (Allotype). Carapace, as in male, 2.24 long, 2.00 wide. Clypeus, as in male, 0.25 high. Anterior eye row straight, 0.67 wide; posterior recurved 1.20 wide. Eye diameters, interdistances and median ocular quadrangle: AME 0.16, ALE 0.11, PME 0.21, PLE 0.22; AME-AME 0.06, AME-ALE 0.06, PME-PME 0.30, PME-PLE 0.20, MOQ, 0.48 long, dorsal view, anterior width 0.36, posterior width 0.69. Chelicerae, dark brown, lighter distally, no pattern, long light setae; promargin with three teeth, middle largest and retromargin with three teeth, distal largest, proximal smallest. Sternum, as in male; 1.05 long, 1.25 wide. Labium, as in male; 0.46 long, 0.45 wide. Legs, as in male, relative length: IV-I-II-III, I – femur 2.76/ tibia-patella 3.64/ metatarsus 2.50/ tarsus 1.20/ total 10.10; II – 2.64/ 3.30/ 2.28/ 1.04/ 9.26; III – 2.24/ 2.50/ 1.94/ 1.00/ 7.68; IV – 2.96/ 3.28/ 3.40/ 1.28/ 10.92. Abdomen, 2.6 long, coloration as in male, with scattered setae. Epigynum with short, posterior margin a deep triangular excavation (Fig. 150); rounded spermathecae, with two small accessory spermathecae (Fig. 149).

Distribution.- Known only from the type locality in Ecuador (Fig. 5).



Figs. 147–150.– *Enna riotopo*. 147, 148. right male palpus; 147. retrolateral view; 148. ventral view; 149, 150. epigynum; 149. dorsal view; 150. ventral view. Abbreviations: ECD, ectal division of retrolateral tibial apophysis; END, ental division of the retrolateral tibial apophysis; HS, head of spermathecae; VP, ventral protuberance of male palpal tibia.

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