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The *Enithares* SPINOLA, 1837 (Insecta: Heteroptera: Notonectidae) of the Philippines, with descriptions of two new taxa

N. Nieser* & H. Zettel**

Abstract

Enithares gantsophora sp.n. from Mindanao and *E. martini mindoroensis* ssp.n. from Mindoro are described. *Enithares freyi quadrispinosus* LANSBURY, 1967 is elevated to specific rank (*Enithares quadrispinosa*, stat.n.). A key to the Philippine species of *Enithares* is given, and numerous new distribution data are presented.

Key words: Mindanao, Mindoro, Philippines, Notonectidae, *Enithares*, new species, new subspecies, new status, key, distribution.

Zusammenfassung

Enithares gantsophora sp.n. von Mindanao und *E. martini mindoroensis* ssp.n. von Mindoro werden beschrieben. *Enithares freyi quadrispinosus* LANSBURY, 1967 wird in den Artrang erhoben (*Enithares quadrispinosa*, stat.n.). Ein Bestimmungsschlüssel zu den philippinischen *Enithares* Arten ist beigefügt, und zahlreiche neue Verbreitungsdaten werden präsentiert.

Introduction

The Notonectidae fauna of the Philippines is still little known, but seems to be rather poor in species. Four genera are recorded, with *Aphelonecta* LANSBURY, 1965 and *Nychia* STÅL, 1859 represented only by single species (*A. philippina* ZETTEL, 1995; *N. sappho* KIRKALDY, 1901). Presently, six species of the genus *Anisops* SPINOLA, 1837 (*A. yanoi* MIYAMOTO, 1981; *A. kuroiwae* MATSUMURA, 1915; *A. nodulatus* BROOKS, 1951; *A. philippinensis* BROOKS, 1951; *A. stali* KIRKALDY, 1904 and *A. tahitiensis* LUNDBLAD, 1933) are known from the Philippines (BROOKS 1951, LANSBURY 1967, YANO & al. 1981, and unpublished data), and seven species of *Enithares* SPINOLA, 1837, including the one described in this paper. All *Enithares* species except *E. bakeri* are endemic to the Philippines. *Enithares* may be distinguished from other Philippine Notonectidae by the ventro-distal tooth on the mesofemur.

This paper presents descriptions of one new species and one new subspecies, keys for the Philippine Notonectidae genera and *Enithares* species, taxonomic notes, and numerous distribution data for previously described species, which are mainly the results of the authors' field work during the last eight years.

The study was carried out within the frame work of preparing a handbook of Malesian aquatic and semiaquatic bugs.

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Repositories:

BPBM B.P. Bishop Museum, Honolulu, Hawaii, U.S.A.
CZW Coll. Herbert Zettel, Vienna, Austria
JTPC Colorado Entomological Museum [= Coll. John T. Polhemus], Englewood, Colorado, U.S.A.
NCTN Coll. Nico Nieser, Tiel, The Netherlands
NHMW Natural History Museum Vienna, Austria
UPLB Museum of Natural History, University of the Philippines, Los Baños, Laguna, Philippines
USNM U.S. National Museum, Smithsonian Institution, Washington, D.C., U.S.A.

Key to the Philippine Notonectidae genera (modified after LANSBURY 1968)

1 Hemelytral commissure with a defined hair-lined pit at anterior end (**Anisopinae**). ..... ***Anisops***

- Hemelytral commissure without a hair-lined pit at anterior end (**Notonectinae**). **2**

2 Eyes basally contiguous or forming an ocular commissure (**Nychiini**). ..... ***Nychia***

- Eyes basally widely spaced (**Notonectini**). **3**

3 Mesofemur with an antapical tooth. ..... ***Enithares***

- Mesofemur without an antapical tooth. ..... ***Aphelonecta***

Key to the Philippine *Enithares* species and subspecies

1 Nodal furrow more than its own length removed from the membranal suture. **2**

- Nodal furrow less than its own length removed from the membranal suture. **3**

2 Small species, length 7.7 - 8.6 mm; embolium anteriorly not widened; humeral angles of pronotum not laterally produced; lateral arms of the basal plate of aedeagus (terminology after LANSBURY 1968: 359, 439) as in Figure 14. ..... ***E. bakeri***

- Larger species, length 9.0 - 10.5 mm; embolium anteriorly distinctly widened; humeral angles of pronotum laterally produced. ..... [*E. producta*-group]

So far not found in the Philippines, but *E. ektakta* NIESER & CHEN, 1996 occurs on Sangihe Island (Indonesia) close to Mindanao (NIESER & CHEN 1996); this or a closely related species may be discovered on this island.

3 Smaller species, length up to 10.6 mm. **4**

- Large species, length 11.3 mm or more. **6**

4 Lateral margin of pronotal fovea produced towards eye and forming a nodule; lateral arms of the basal plate postero-distally with a tooth (Fig. 15) (Eastern Visayas). ..... ***E. foveata***

- Lateral margin of pronotal fovea not produced towards eye, anteriorly blunt and curved ventrad; lateral arms of the basal plate postero-distally without a tooth (but in *E. quadrispinosa* with a step; Figs. 7, 12, 13). **5**

5 Lateral margins of metaxiphus evenly tapering to apex (Fig. 10); apical part of posterior lobe of genital capsule without distinct incision, paramere with a thin finger-like apical part (Fig. 7) (Palawan). ..... ***E. quadrispinosa***

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- Lateral margins of metaxiphus only slightly convergent in basal part, strongly convergent in apical part (Fig. 9), length 7.5 - 10.6 mm; posterior margin of posterior lobe of genital capsule with a distinct incision halfway, paramere without thin finger-like apical part (Fig. 6) (Philippines except Palawan Region). ..... ***E. martini***

  a In average larger, 8.9 - 10.6 mm; lateral arms of the basal plate as in Figure 12 (Mindoro). ..... **ssp. *mindoroensis* n.**

  b In average smaller, usually 7.5 - 8.8 mm, but rarely up to 9.2 mm; lateral arms of the basal plate as in Figure 13 (other islands). ..... **ssp. *martini***

6 Fine punctures on mesoscutellum anteriorly reduced; male: protarsus not dilated; paramere large, elongate-triangular, reaching more than halfway up the posterior lobe of the genital capsule (Fig. 16); length 11.4 - 11.7 mm (North Luzon). ..... ***E. freyi***

- Fine punctures on mesoscutellum reaching middle of anterior margin; male: protarsus distinctly dilated; paramere relatively small, not elongate and not reaching halfway the posterior lobe of the genital capsule (Figs. 1, 2) (species from Mindanao). **7**

7 Lateral margin of pronotal fovea anteriorly curved ventrad without a nodule or tooth (Fig. 4); metaxiphus large, with basal part parallel-sided, apical part triangular (Fig. 11); male metafemur with a broad shallow tubercle midway; posterior lobe of genital capsule massive, lateral arms of basal plate without transverse hooks apically (Fig. 2); length 11.7 - 13.0 mm. ..... ***E. subparallela***

- Lateral margin of pronotal fovea produced towards eye and forming a nodule or tooth (Fig. 3); metaxiphus of normal size with lateral margins in basal part slightly converging (Fig. 8); male metafemur slightly but very gradually widened in middle part; posterior lobe of genital capsule of normal size, lateral arms of basal plate with transverse hooks apically (Fig. 1); length 11.3 - 12.1 mm. ..... ***E. gantsophora* sp.n.**

Descriptions of new taxa

Enithares gantsophora sp.n. (Figs. 1, 3, 5, 8)

Holotype (♂): PHILIPPINES, Mindanao\ Bukidnon, 8km NW Lantapan\ Sonka, Alanib River, 950m\ 8.11.1996, leg.Zettel (92)" (UPLB); **paratypes:** 8 ♂♂, 5 ♀♀, same locality data (NHMW, UPLB, JTPC); 5 ♂♂, 6 ♀♀ "PHILIPPINEN: Mindanao\ Bukidnon, 4km NE Lantapan\ Kaatuan, Kulasihan Riv., 850m\ 9.11.1996, leg.H.Zettel (93)" (NHMW, UPLB, NCTN); 2 ♀♀ "PHILIPPINEN: Mindanao\ Bukidnon, 18km W Lantapan\ Pasak, Tugasan River, 850m\ 10.11.1996,leg.H.Zettel (94)" (NHMW); 2 ♂♂ "PHILIPPINEN: Mindanao\ Bukidnon Pr.,Kaatuan\ Kulasihan Riv.,8.7.\ 1994, leg. Catalań" (CZW).

Description: Generally a medium sized brownish species with its greatest width at a level just anterior of the apex of the scutellum. Dimensions. Body length ♂♂ 11.4 - 12.1 mm, ♀♀ 11.3 - 11.8 mm; body width ♂♂ 4.32 - 4.68 mm, ♀♀ 4.33 - 4.62 mm; humeral width of pronotum ♂♂ 4.32 - 4.51 mm, ♀♀ 4.22 - 4.46 mm; width of head ♂♂ 3.71 - 3.75 mm, ♀♀ 3.69 - 3.90 mm; anterior width of vertex ♂♂ 1.22 - 1.32 mm, ♀♀ 1.30 - 1.40 mm; synthlipsis ♂♂ 0.70 - 0.80 mm, ♀♀ 0.71 - 0.81 mm.

Colour. Colour variable, with a gradual transition from light to dark specimens. Eyes castaneous with blackish mottling, vertex and pronotum sordid yellow to light brown, pronotum in anterior part usually somewhat darker than in posterior part. Scutellum from yellowish to dark brown with lighter lateral margins; hemelytra yellowish with a

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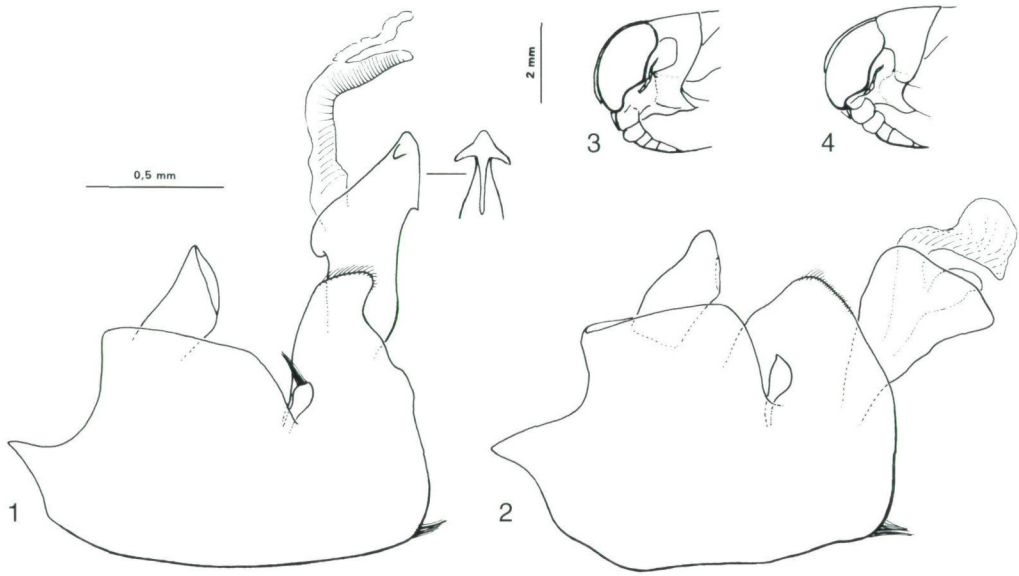

Figs. 1 - 4: (1, 2) Genital capsule of (1) *Enithares gantsophora* sp.n. and *E. subparallela*; (3, 4) head and pronotum, lateral view, of (3) *E. gantsophora* sp.n. and (4) *E. subparallela*.

dull black patch anteriorly just behind humeral angles of pronotum, in addition variable dark brown to blackish marks (mostly due to colouration of hind wings shining through) notably on posterior part of corium and on membranes. Venter and legs predominantly pale, rostrum, coxal plates, metacoxa and metatrochanter, and abdominal pilosity blackish. Legs with irregular darker marks.

Structural characteristics. Anterior margin of head transverse, with vertex hardly protruding, width of head slightly less than two and a quarter times its median length (3.7 : 1.7). Median length of head about one and a quarter times the anterior width of vertex (1.7 : 1.3) and subequal to median length of pronotum (1.6 : 1.5). Anterior width of vertex about 1.7 - 1.9 times synthlipsis. Humeral width of pronotum nearly three times its length (4.3 : 1.5), humeral angles rounded, ill defined, lateral margins slightly diverging posteriorly, hind margin gently sinuate. Dorsal margins of pronotal foveas behind eyes pointing straightly caudad, virtually parallel. Lateral margin of pronotal fovea pointing straight at bent of posterior eye margin, and forming there at least a knob-like projection, sometimes a distinct tooth (Fig. 3). Embolium only slightly expanded anteriorly. Nodal furrow hardly curved cephalad, slightly less than its own length removed from membranal suture (0.55 : 0.65). Protrochanter narrow posteriorly, without ventral nodule; mesotrochanter roundly angulate posteriorly. Apex of metaxiphus strongly acute, its sides converging somewhat more strongly on apical half than in basal half where they are slightly thickened (Fig. 8). Connexiva of segments 1 - 3 with small black spines, not ridged.

Male. Protibia, protarsus, mesotibia, and mesotarsus distinctly flattened externally. Second segment of protarsus 2.8 times, third segment 1.8 times longer than wide. Ventral pilosity of mesofemur separated in a dorsal and ventral band the latter much

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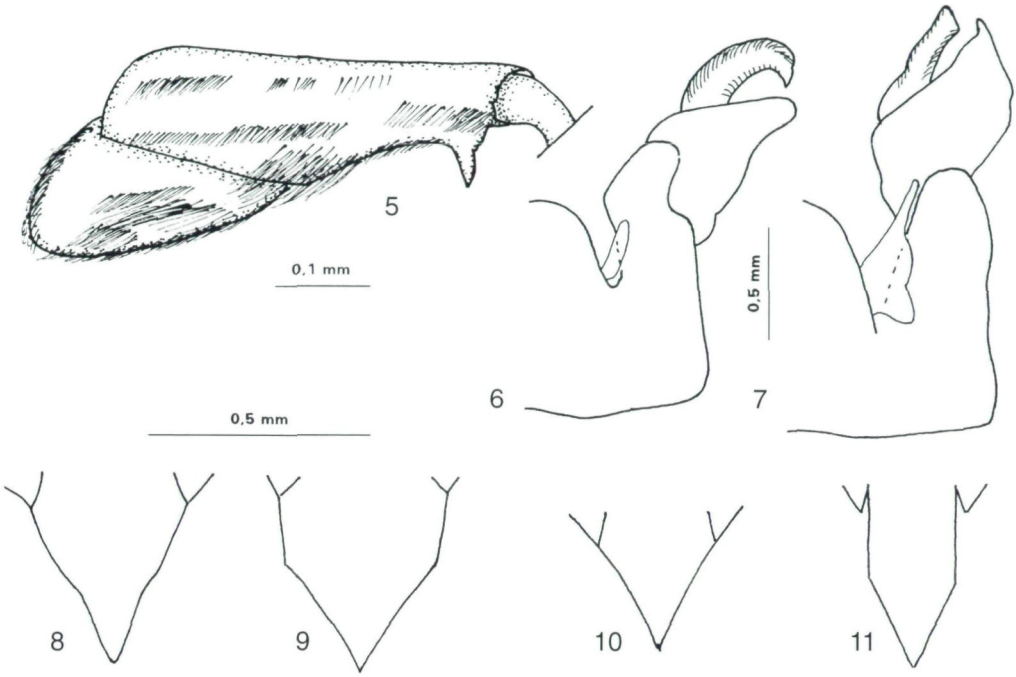

Figs. 5 - 11: (5) *Enithares gantsophora* sp.n., mesofemur and mesotrochanter; (6, 7) outline of posterior lobe of the genital capsule of (6) *E. martini martini* and (7) *E. quadrispinosa* (6, 7: after LANSBURY 1968); (8 - 11) metaxiphus of (8) *E. gantsophora* sp.n., (9) *E. martini martini*, (10) *E. quadrispinosa*, and (11) *E. subparallela*.

more strongly developed (Fig. 5). Genital capsule as in Figure 1, lateral arms of basal plate apically with a pair of laterad pointing hooks.

Female. Protibia, protarsus, mesotibia, and mesotarsus weakly flattened externally, tarsi more elongate than in male. Ventral pilosity of mesofemur similar to that of male but posterior band consisting of much shorter hairs.

Etymology: gantsophoros (Greek composite adjective meaning bearing hooks or barbs) referring to the transverse spines in the apical part of the lateral arms of the basal plate.

Comparative notes: With the key given by LANSBURY (1968) this species runs to *E. hippokleides* KIRKALDY, 1898 or *E. ripleyana* LANSBURY, 1968. Males of these species lack transverse spines in the apical part of the lateral arms of the basal plate, a characteristic which seems to be unique in *E. gantsophora* sp.n. (Fig. 1). For distinction from *E. subparallela* LANSBURY, 1968, described from the same area, see the key.

Distribution: Mindanao: Bukidnon.

Habitats: The Alanib River and the Kulasihan River are middle sized streams coming from Mt. Kitanglad, and running through secondary vegetation. The water velocity is high, and the streams are in some stretches more than one meter deep (at the beginning of the dry season). The Tugasan River is the largest of the three streams, running through farm land, and more influenced by man; here only two specimens of *Enithares*

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gantsophora sp.n. could be found. *Enithares gantsophora* sp.n. lives in quiet, deep bays at the edge of the streams, sometimes intermixed with *E. martini*. Sampling sites were situated at elevations of 850 m and 950 m a.s.l., distinctly lower than the type locality of *E. subparallela* on the same mountain (1480 m a.s.l.).

Enithares martini mindoroensis **ssp.n.** (Fig. 12)

Holotype (♂): "PHILIPPINEN - Mindoro\ 28 km S Calapan 1993\ Balete 100-700m (19)\ leg. Jäch 27.-29.11." (NHMW); **paratypes:** 1 ♂ "PHILIPPINEN - Mindoro\ 20 km W Calapan 1993\ Hidden Paradise (10)\, leg. Jäch 20.-21.11." (NHMW); 2 ♀♀ "PHILIPPINEN: Mindoro or.\ Baco, SW Calapan, Hidden\ Paradise, 20.-21.11.1992\ leg. H. Zettel (16)" (NHMW); 1 ♀ "PHILIPPINEN: Mindoro or.\ Tamaraw Beach, Talipanan\ River, W Puerto Galera\ leg. H. Zettel (19)" (NHMW); 1 ♂, 2 ♀♀ "PHILIPPINEN: Mindoro or.\ W Puerto Galera, Tamaraw\ Beach, Talipanan river\ lg.Zettel 23.11.1993(30)" (NHMW, UPLB); 4 ♂♂, 4 ♀♀ "PHILIPPINEN: Mindoro Or.\ Mindoro Beach, W Puerto\ Galera, 24.11.1993\ leg. H. Zettel (31a)" (NHMW, UPLB, NCTN); 1 ♂, 2 ♀♀ "PHILIPPINEN - Mindoro\ SE Puerto Galera\ 14.11.1993 100m\ leg. Jäch (3)" (NHMW, NCTN); 1 ♀ "Philippinen: Mindoro Or.\ W Puerto Galera, Aninuan\ Waterfalls, 27.1.1999\ leg. H. Zettel (168)" (CZW); **further material:** 3 larvae, leg. Zettel, locality # 17 (NHMW); 1 larva, leg. Zettel, locality # 30 (NHMW); 4 larvae, leg. Zettel, locality # 31a (NHMW, UPLB); 2 larvae "PHILIPPINEN: Mindoro or.\ Big Tabinay riv., 4km SE\ Puerto Galera,12.11.1994\ leg. H. Zettel (62)" (CZW, UPLB).

Description: A medium sized species, strongly varying in colour, with its greatest width at humeri of pronotum. Dimensions. Body length ♂♂ 9.2 - 10.6 mm, ♀♀ 8.9 - 9.4 mm; humeral width of pronotum ♂♂ 3.52 - 4.16 mm, ♀♀ 3.41 - 3.70 mm; width of head ♂♂ 2.93 - 3.32 mm, ♀♀ 2.78 - 2.90 mm; anterior width of vertex ♂♂ 0.95 - 1.08 mm, ♀♀ 1.01 - 1.05 mm; synthlipsis ♂♂ 0.57 - 0.62 mm, ♀♀ 0.54 - 0.58 mm.

Colour. Colour very variable, as in ssp. *martini*; lightest specimen dorsally yellowish brown with some indistinct greyish patches on hemelytra; darkest specimens with hind margin of pronotum, mesoscutellum (except two bright yellow marks) and apical third of hemelytra blackish, anterior two thirds of hemelytra in different tones of grey; colour of other specimens in between. Colouration of venter and legs yellowish to brownish.

Structural characteristics. Anterior margin of head transverse, with vertex hardly protruding, width of head slightly more than two times its median length (3.3 : 1.6). Median length of head about one and a third times anterior width of vertex (1.6 : 1.2) and subequal to median length of pronotum (1.6 : 1.7). Anterior width of vertex about 1.5 times synthlipsis. Humeral width of pronotum nearly three times its length, humeral angles rounded, lateral margins distinctly diverging posteriorly, hind margin gently sinuate. Dorsal margins of pronotal foveas behind eyes pointing straightly caudad, virtually parallel. Lateral margin of pronotal fovea pointing anteriad in posterior part, then gently curved ventrad. Embolium only slightly expanded anteriorly. Nodal furrow hardly curved cephalad, distinctly less than its own length removed from membranal suture. Protrochanter narrow posteriorly, without ventral nodule; mesotrochanter rounded posteriorly. Apex of metaxiphus acute, its sides subparallel in basal half, strongly convergent in distal half (comp. Fig. 9). Connexiva of segments 1 - 3 with small black spines, not ridged.

Male. Protibia, protarsus, mesotibia, and mesotarsus weakly flattened externally. Second segment of protarsus 2.6 times, third segment 1.9 times as long as wide. Ventral pilosity of mesofemur separated in a dorsal and ventral band, the latter much more strongly developed. Genital capsule with posterior margin of posterior lobe with distinct incision;

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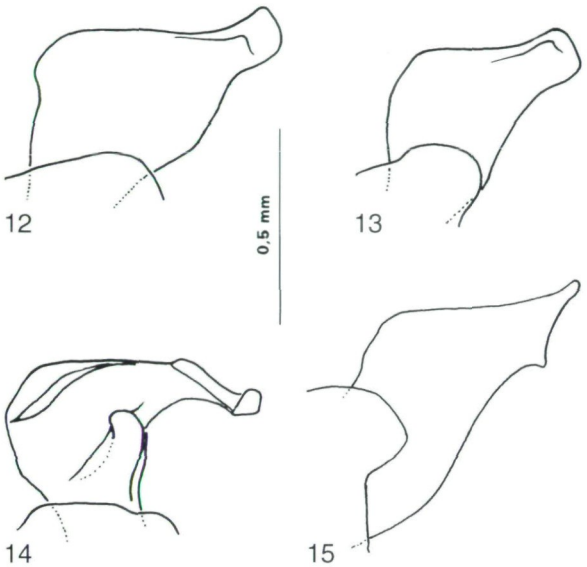

Figs. 12 - 15: Lateral arms of the basal plate of the aedeagus in (12) *E. martini mindoroensis* ssp.n., (13) *E. martini martini*, (14) *E. bakeri*, (15) *E. foveata*.

lateral arms of basal plate apically forming a small knob, their postero-distal margin convex (Fig. 12).

Female. Protibia, protarsus, mesotibia, and mesotarsus subcylindrical, tarsi more elongate than in male. Ventral pilosity of mesofemur similar to that of male but posterior band consisting of much shorter hairs.

Comparative notes: Similar to *E. martini martini* in most characters, but usually larger (length 8.9 - 10.6 mm in ssp. *mindoroensis*, 7.5 - 9.2 mm in ssp. *martini*), and with lateral margin of pronotum more pointed anteriad than ventrad. An important difference is found in the lateral arms of the basal plate which are postero-distally convex in ssp. *mindoroensis* (Fig. 12), but straight or concave in ssp. *martini* (Fig. 13). Surprisingly (because adults vary considerably in colouration), both subspecies differ consistent in the colour pattern of the larvae; in ssp. *martini* tergite 1 is completely black (the black transverse stripe appears evenly wide), but in ssp. *mindoroensis* the anterior one fourth to two thirds of tergite 1 is yellow (the black transverse stripe appears more or less narrowed in the middle).

Distribution: Oriental Mindoro.

Habitats: *Enithares martini mindoroensis* ssp.n. was found in quiet bays of streams or in pools on the banks of streams, not differing in this regard from the nominate subspecies.

Notes on the other species

Enithares bakeri BROOKS, 1948 (Fig. 14)

Enithares bakeri BROOKS, 1948: 40.

Material examined: 4 ♂♂, 3 ♀♀, 6 larvae "PHILIPPINEN: Mindoro\ Puerto Galera, Sabang\ 19.11.-1.12.1992\ leg. H. Zettel", "Small La Laguna (10)\ flache Tümpel [shallow ponds], 1.12." (NHMW); 4 ♂♂,

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1 ♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, S Big\ La Laguna, 22.11.1993\ leg. H. Zettel (29)" (NHMW); 2 ♂♂ "Philippinen: Marinduque\ 10 km W Boac, Mainit\ Mainit Hot Spring, 14.2.\ 1998, leg.H.Zettel (137)" (NHMW, UPLB); 1 ♂ "Philippinen: Siquijor\ Lazi, Poo River\ 1.3.1997\ leg. H. Zettel (121)" (UPLB); 1 ♂, 1 ♀ "Philippinen: Siquijor\ San Juan, "Swimmingpool"\ 2.3.1997\ leg. H. Zettel (122)" (CZW); 1 ♀ "Philippinen: Biliran\ 7 km N Almeria, Masa-\ gongsong, 13.3.1998\ leg. H. Zettel (160)" (CZW); 1 ♀ from Mindanao, Cotabato South, Lake Sebu area (see NIESER & CHEN 1996).

Distribution: Philippines: Mindoro (Oriental), Marinduque, Negros (Occidental), Siquijor, Biliran, Mindanao (Surigao, Cotabato South); Indonesia: Sulawesi, Flores, Moluccas; Malaysia: Sabah.

Habitats: *Enithares bakeri* belongs to a group of small species (also including *E. mandalayensis* DISTANT, 1910 from the Southeast Asian mainland; *E. uncata* LUNDBLAD, 1933 from Sumatra, Java, and Borneo [specimens from Sarawak in NHMW]; and *E. genitalis* LUNDBLAD, 1933 from Java), which inhabit stagnant waters, including pools and paddy fields. In this respect, *E. bakeri* differs strongly from all other Philippine *Enithares* species, which inhabit lentic parts of streams or pools associated with streams and rivers.

Enithares foveata LANSBURY, 1968 (Fig. 15)

Enithares foveatus LANSBURY, 1968: 429.

Material examined: 1 ♂, 1 ♀ "Philippinen: Biliran\ SE Almeria, Balagombong\ Falls, 14.3.1998\ leg. H. Zettel (161)" (CZW); 6 ♂♂, 5 ♀♀, 6 larvae "Philippinen: N. Samar\ Veriato, El Amigo\ Veriato Falls, 16.3.\ 1998, leg.Zettel (162)" (CZW, UPLB).

Notes: This species was previously only known from the male holotype and one female paratype from Leyte; the examined specimens are the first records from Biliran and Samar, where they were found intermixed with *E. martini*, but seem to prefer bays with deeper water. Most specimens are dorsally very light, yellowish brown coloured, often with a diffuse dark patch at the claval commissure; but one specimen is dark coloured, similar to dark specimens of *E. martini*, and one of intermediate colouration. *Enithares foveata* can be easily distinguished from syntopic *E. martini* by larger size, anteriad produced lateral margin of the pronotal fovea, and in males by a postero-distal tooth on the lateral arms of the basal plate.

Enithares freyi BROOKS, 1948 (Figs. 16, 17)

Enithares freyi BROOKS, 1948: 48.

Material examined: holotype (♂): "MtProvPI [= Mountain Province]/ Benguet", "15-VII-46/ DG Frey", "♂", "Enithares/ freyi/ Det./ G.T.Brooks", "HOLOTYPE/ Enithares freyi/ Det. G.T.Brooks" (USNM); **further material:** 1 ♂, 3 ♀♀, 6 larvae "Philippinen: LZ, Mount.Pr.\ S Sagada, Bagnen, slopes of \ Mt.Polis, 1600 m, 26.2.\ 1999, leg. H. Zettel (189)" (NHMW, UPLB).

Notes: This species was known only by the holotype. It was rediscovered in the Sagada area, Mountain Province, in large, 40 - 60 cm deep pools of a stream in an altitude of about 1600 m a.s.l. John T. Polhemus collected *E. freyi* in Benguet (Polhemus, pers. comm.).

Middle leg of male see Figure 17; male genitalia see Figure 16. The body shape is more slender than in *E. subparallela* and *E. gantsophora* and resembles a very large *E. martini*. For comparison see the key and notes under *E. quadrispinosa*.

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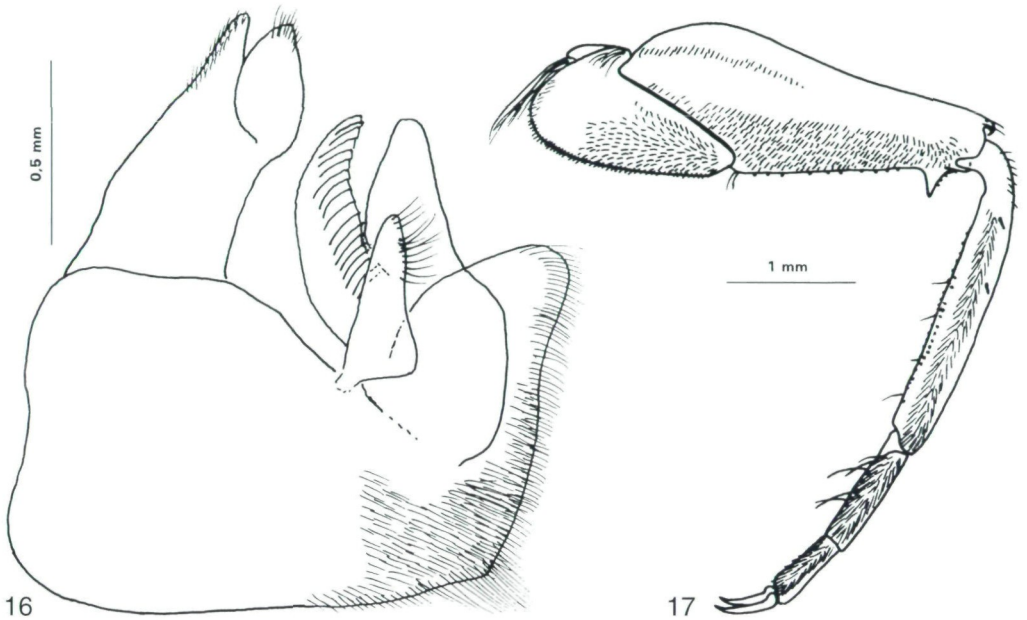

Figs. 16 - 17: *Enithares freyi*, holotype, ♂: (16) genital capsule, (17) middle leg.

Enithares martini martini KIRKALDY, 1898 (Figs. 6, 13)

Enithares martini KIRKALDY, 1898: 151.

Material examined: paralectotype (des. LANSBURY 1968)**:** "Para-\ type", "Manila\ Coll. Signoret", "biimpressa\ Uhl.\ det. Signoret", "Enithares\ martini\ Kirk.\ det. Kkldy. 98\ SYNTYPE" (NHMW); **further material:** more than 200 adult specimens (and more than 30 larvae) from the following provinces: Luzon: Mountain Province, Benguet, Zambales, Laguna, Quezon, Albay; Marinduque; Catanduanes; Ticao; Masbate; Sibuyan; Tablas; Panay: Antique, Ilo-Ilo; Negros: Occidental, Oriental; Cebu; Samar: Northern Samar; Biliran; Camiguin; Mindanao: Zamboanga del Sur, Misamis Occidental, Bukidnon, Cotabato South (in CZW, NCTN, NHMW, UPLB).

Further records from literature: Luzon: Ifugao, Rizal, "Balbalasan" [locality unknown to the authors]; Mindanao: Zamboanga del Norte, Zamboanga del Sur, Misamis Oriental; Sulu: Jolo (LANSBURY 1968, NIESER & CHEN 1996, YANO & al. 1981).

Distribution: probably all over the Philippine Islands except in the Palawan Region and in Mindoro.

Habitats: *Enithares martini* is a common species of not too shallow (minimum usually about 30 cm), shaded pools close to streams and rivers, where it is sometimes found in large numbers. It also inhabits lentic bays in these streams, where it is sometimes intermixed with other species (e.g. *E. gantsophora* sp.n., *E. foveata*). YANO & al. (1981) recorded two specimens of *E. martini* from a paddy field in Ifugao, which may be either an exceptional record, or a misidentification of *E. bakeri*.

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Enithares quadrispinosa LANSBURY, stat.n. (Fig. 7)

Enithares freyi quadrispinosus LANSBURY, 1967: 94-96.

Material examined: 1 ♂, 3 ♀♀ "PHILIPPINEN: Palawan\ 9 km W P. Princesa\ Iwahig,Balsahan riv.\ lg.Zettel,24.3.1994(48)" (NHMW); 1 ♂ "PHILIPPINEN: Palawan\ 2 km N Sabang, 0-10m\ 29.3.1994\ leg. H. Zettel (52c)" (NHMW); 2 ♂♂, 1 ♀ "PHILIPPINEN: Palawan\ 10 km NE Quezon\ Tumarbon Falls,4.4.\ leg. Zettel 1994 (58a)" (NHMW); 7 ♂♂, 8 ♀♀ "PHILIPPINEN: Palawan\ Brooke's Point\ Mate, 31.3.1994\ leg. H. Zettel (54)" (NHMW, UPLB, NCTN); 5 ♂♂, 5 ♀♀, 4 larvae "PHILIPPINEN: Palawan\ 7 km N Narra, Estrella\ Falls, 2.4.1994\ leg. H. Zettel (57)" (NHMW, UPLB); 2 ♂♂, 1 ♀ "PHILIPPINEN: Palawan\ 7 km N Narra, Estrella\ Falls, 5.4.1994\ leg. H. Zettel (59)" (NHMW).

Notes: Lansbury could not study the type of *E. freyi*. However, in his revision (LANSBURY 1968) he cited a letter from Dr. R.C. Froeschner (USNM), who compared types of *freyi* and *quadrispinosa*: "To summarize on *quadrispinosus* and *freyi*, they appear extremely close and show only the differences of chaetotaxy on the ventral side of middle tarsus". A comparison of specimens of *quadrispinosa* with the type of *E. freyi* by the junior author furnished important differences in male genitalia proving that *E. quadrispinosa* should be regarded as a distinct species.

The lateral arms of basal plate are distally broad in *E. quadrispinosa*, but tapered in *E. freyi*, and the paramere is distally narrow and finger-like in *E. quadrispinosa*, but slender and triangular in *E. freyi*. Externally both species differ in size, chaetotaxy of the mesotarsus (LANSBURY 1968), and in the segment 2 of the protarsus, which is slightly more slender in *E. freyi*.

So far, *E. quadrispinosus* is the only *Enithares* species known from Palawan, where it is quite abundant.

Enithares subparallela LANSBURY, 1968 (Figs. 2, 4, 11)

Enithares subparallela LANSBURY, 1968: 408.

Material examined: paratype (♂): "P. I., MINDANAO\ Bukidnon, 1480m.\ Mt. Katanglad [= Kitanglad]\ 27-31. X. 1959", "C.M. Yoshimoto\ Collector", "Enithares\ subparallela\ Lansbury ♂\ paratype\ Det. I. Lansbury" (BPBM).

Catalogue of Philippine *Enithares* species and summarized island records

New records are marked by an asterisk (*).

Enithares bakeri BROOKS, 1948	Mindoro*, Marinduque*, Negros, Siquijor*, Biliran*, Mindanao
Enithares foveata LANSBURY, 1968	Leyte, Biliran*, Samar*
Enithares freyi BROOKS, 1948	Luzon (North)
Enithares gantsophora **sp.n.**	Mindanao*
Enithares martini martini KIRKALDY, 1898	Luzon, Marinduque*, Catanduanes*, Ticao*, Masbate*, Sibuyan*, Tablas*, Panay*, Negros*, Cebu*, Samar*, Biliran*, Camiguin*, Mindanao, Jolo
Enithares martini mindoroensis **ssp.n.**	Mindoro*
Enithares quadrispinosa LANSBURY, 1967, **stat.n.**	Palawan
Enithares subparallela LANSBURY, 1968	Mindanao

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