The *E. beckeri*-group of *Edessa* Fabricius, 1803 (Heteroptera: Pentatomidae: Edessinae)

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The *E. beckeri* group of *Edessa* Fabricius, 1803 (Heteroptera: Pentatomidae: Edessinae) from Brazil and Guyana's is proposed and three new species are described- *Edessa beckeri* spec. nov., *Edessa xingu* spec. nov. and *Edessa amazonica* spec. nov. The habitus, the metasternal shield, and the external genital characters of the three species are illustrated and the distribution is given. The drawings are made by the first author, the photographs by the second author. Measurements are given in millimetres.

Introduction

The species belonging to *Edessa* Fabricius, 1803, are famous for the diversity in size, shape and colour. The large number of described species, around 260, covers most of these forms, but it is still possible to find different forms among the species. A good example are the three undescribed species here presented as the *E. beckeri*-group, which have a very typical shape without parallel in he genus *Edessa*. This article is part of a long-term project that aims at a complete revision of the subfamily Edessinae (Fernandes & van Doesburg, 2000).

Description

Edessa beckeri-group

Small to medium sized (between 13 and 19 mm), oblong species, length about twice its width. Dorsal surface almost flat and green (in dried specimens often discoloured to yellow), humeral angles not developed. Pronotum and scutellum with some dark, large and deep punctures among concolorous smaller ones. Antennae yellow contrasting with green of the dorsal surface. Venter yellow with some green markings.

Head.— Head a little broader than long, green with yellow margins, upper side with a few transverse furrows but without punctures; margins of the tylus dark; jugae straight or somewhat curved ventrally, their tips rounded, surpassing tylus; antennae with cylindrical segments; first segment shortest, second shorter than third, fourth subequal to fifth, together longer than preceding three; bucculae slightly divergent, ventral margins straight, anterior margins obtuse; rostrum short, reaching middle of mesosternum; first segment not surpassing bucculae, second shorter than third and fourth together.

Thorax.— Pronotum weakly declivent; anterior corners with a very small tooth each; antero-lateral margins straight, smooth, yellow or light green; postero-lateral margins wavy; scars of the pronotal disc not punctate; ventral part of pronotum with some tiny punctures in posterior half. Scutellum with acute apex. Mesosternum with a small tumescence on anterior margin, ending between the procoxae. Metasternal shield (metasternum) low, flat, smooth, without punctures and sparsely set with fine setae, anteriorly evanescently produced and bifid, receiving only fourth rostral segment; lobes narrowing anteriorly and resting on posterior third of mesosternum. Evaporative area dull, smooth and concolorous with ventral surface; ostiolar peritreme flagellate and extended on 4/5 of the metapleural width. Corium densely uniformly punctuate, veins lighter than their background; membrane transparent. Legs without dots or punctures, green, often faded to greenish yellow.

Abdomen.— Connexivum well exposed, not punctate, each segment with a pair of slightly concave areas; postero-lateral angles of segments II-VI with dark tiny spines; spines of segment VII strongly developed, their inner sides black. Ventral surface smooth, pale yellow with green dots close to spiracles and narrow green stripes on scars and intersegmental regions. Spiracles elliptic. Trichobothria in line with spiracles.

Male.— Pygophore (figs 3, 4) rectangular in dorsal view, both ventral and dorsal surfaces almost flat. Genital cup posteriorly open. Dorsal rim at both sides posteriorly produced, fused with postero-lateral angles, More or less visible by a longitudinal scar (sc). Postero-lateral angles rounded and slightly developed. Ventral rim biconvex. Diaphragma at both sides with a keel-like superior process (sp) near dorsal rim. Parameres (pa) formed by a single flat large piece. Proctiger (p) short, its posterior face setose.

Female.— (fig. 6). Gonocoxites 8 (gc8) weakly convex; most of mesial borders parallel, distal part divergent, forming a small concavity; laterotergites 8 (la8) with small spiracles (s), posterior margin black, transversally convex, not reaching level of postero-lateral angles of seventh segment; gonocoxites 9 (gc9) with a small tumid area inside concavity of gonocoxites 8, posterior margin concave; laterotergites 9 (la9) slightly concave on basal half and surpassing posterior margin of eighth tergite.

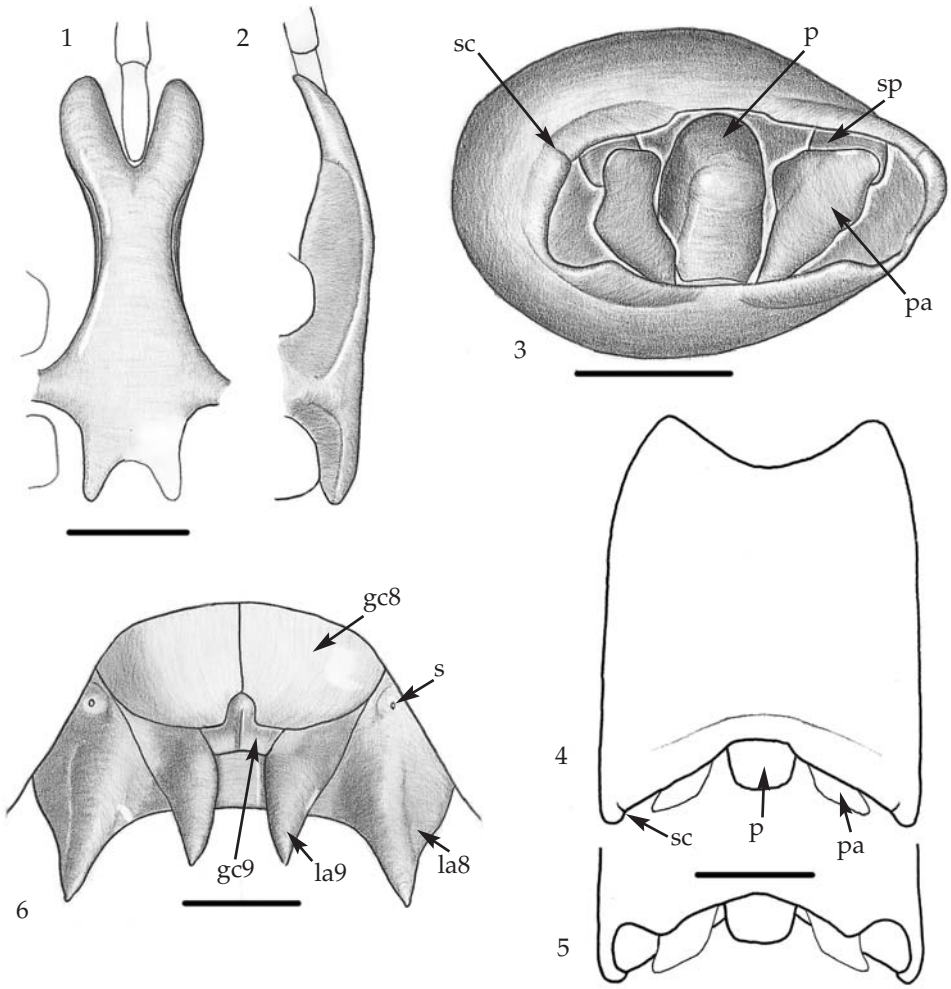
Distribution.— **Guyana's**, **Brazil** (Amazonas, Mato Grosso).

Comments.— This group can be recognised by having the dorsal surface almost flat, the head broader than long, the inner sides of the large caudad spines of seventh abdominal segment black, the pygophore open posteriorly, and the dorsal rim laterally more or less fused, leaving more or less visible scars.

Edessa beckeri spec. nov.
(figs 1-6, 17, 18, 21)

Material.— Holotype (fig. 17), ♂ (MNR), **Brazil**: "Brasil, MT [Mato Grosso] Sinop, BR 163, Km 496, 10.x.76, M. Alvarenga/1284". Paratypes, Brazil, Mato Grosso: 1 ♂ (FURG), same data as holotype, but "x.74/1283"; 1 ♀ (fig. 18) (MNR), "Brasil, MT, Diamantino, Fazenda S. João, III.79, O. Roppa & A. Domingos/963"; 1 ♀ (RMNH), same data, but "x.1979/1285".

The largest species in this group. Apex of scutellum with a typical yellow mark.



Figs 1-6, *Edessa beckeri* spec. nov.; 1-2, metasternal shield, ventral and right lateral view, respectively; 3-5, pygophore, (3, posterior view, 4, dorsal view, 5, ventral view), 6, female paratype, genital plates, ventral view. gc8- gonocoxite 8; gc9- gonocoxite 9; la8- laterotergite 8; la9- laterotergite 9; p- proctiger; pa- paramere; s- spiracle; sc- scar of dorsal rim; sp- superior process. Bars represent 1 mm.

Bifurcation of metasternal shield deep enough to fully admit fourth rostral segment; each branch slightly curved and transversally convex (figs 1-2). In the male dorsal rim of pygophore convex (fig. 3), fusion with lateral angles complete, scars almost inconspicuous (figs 3-4). Postero-lateral angles somewhat posteriorly produced (figs 4-5). Ventral rim with two rounded swellings (fig. 5). Parameres (fig. 3) oblong, large, tall, edge dark castaneous. Superior processes (fig. 3) castaneous, rectangular, almost parallel to dorsal rim, distal edge thick and ventrally bent. Proctiger subcylindrical, posterior face slightly convex (fig. 3). In the female (fig. 6), gonocoxites 8 somewhat bent dorso-posteriorly; outline of posterior part rounded with a small medial U-shaped

concavity; gonocoxite 9 with a medial longitudinal low thin keel ending on tumid area; laterotergites 8 and 9 with well developed sharp posterior angles.

Measurements.— Holotype, total length 18.0; pronotal width 9.5; abdominal width 9.2; head length 2.35; head width 2.85. For the male paratype: 18.3, 9.5, 9.2, 2.5, 2.95; female paratype (x.1979), 17.2, 9.0, 8.7, 2.4, 2.8; female paratype (III.79), 16.8, 8.7, 8.6, 2.3, 2.7, length of antennal segments I-V, 1.0, 1.4, 2.0, 3.7, 3.8.

Comments.— This species can be recognised by its large size and the yellow mark on apex of scutellum. Dorsal rim of pygophore completely fused with lateral angles, scars almost inconspicuous; superior processes castaneous, large, rectangular and almost parallel to dorsal rim. Parameres oblong without lobes. Proctiger subcylindrical. Gonocoxites 8 with a small medial U-shaped concavity and gonocoxites 9 with a medial keel. The holotype specimen is missing the last segments of both antennae and the pygophore has been removed and mounted on a card point underneath the specimen.

Distribution (fig. 21).— **Brazil** (Mato Grosso).

Etymology.— The species is named after Mr Johann Becker, scientist of the Museu Nacional, Rio de Janeiro, Brazil, who kindly placed his important collection of Edessinae at our disposal.

Edessa xingu spec. nov.
(figs 7-11, 19, 21)

Material.— Holotype (fig. 19), ♂ (IRSN), **Brazil**, "Coll. R.I.Sc.N.B. Brésil: Mato Grosso, Posto Dionarum (rive du Xingu), 7.xi.1964/M.Gosse" [Parque Indigena do Xingu, Xingu River].

Small species (13.8 mm). The single known specimen is totally yellow probably because of a bad conservation, its original colour may be dorsally green and ventrally yellow. Bifid part of metasternal shield receiving only part of fourth rostral segment; each branch almost straight and transversally convex (figs 7-8). Dorsal rim of pygophore flat (fig. 9), fusion with lateral angles almost complete, scars clearly visible, dark-castaneous (figs 9-10). Postero-lateral angles slightly developed (figs 10-11). Ventral rim with two acuminate swellings (fig. 11). Parameres (fig. 9) short, wide, sharply arched, with a small basal tooth-like lobe, blackish edged. Superior processes (fig. 9) black, large, trapezoid, oblique in posterior view, narrowing from dorsal to ventral part. Proctiger (fig. 9) sharply arched in posterior view due to a narrow dorsal area, posterior face convex.

Female.— Unknown.

Measurements.— Total length 12.5; pronotal width 6.9; abdominal width 6.9; head length 2.0; head width 2.3; length of antennal segments I-V, 0.7, 1.0, 1.7, 2.9, 3.0.

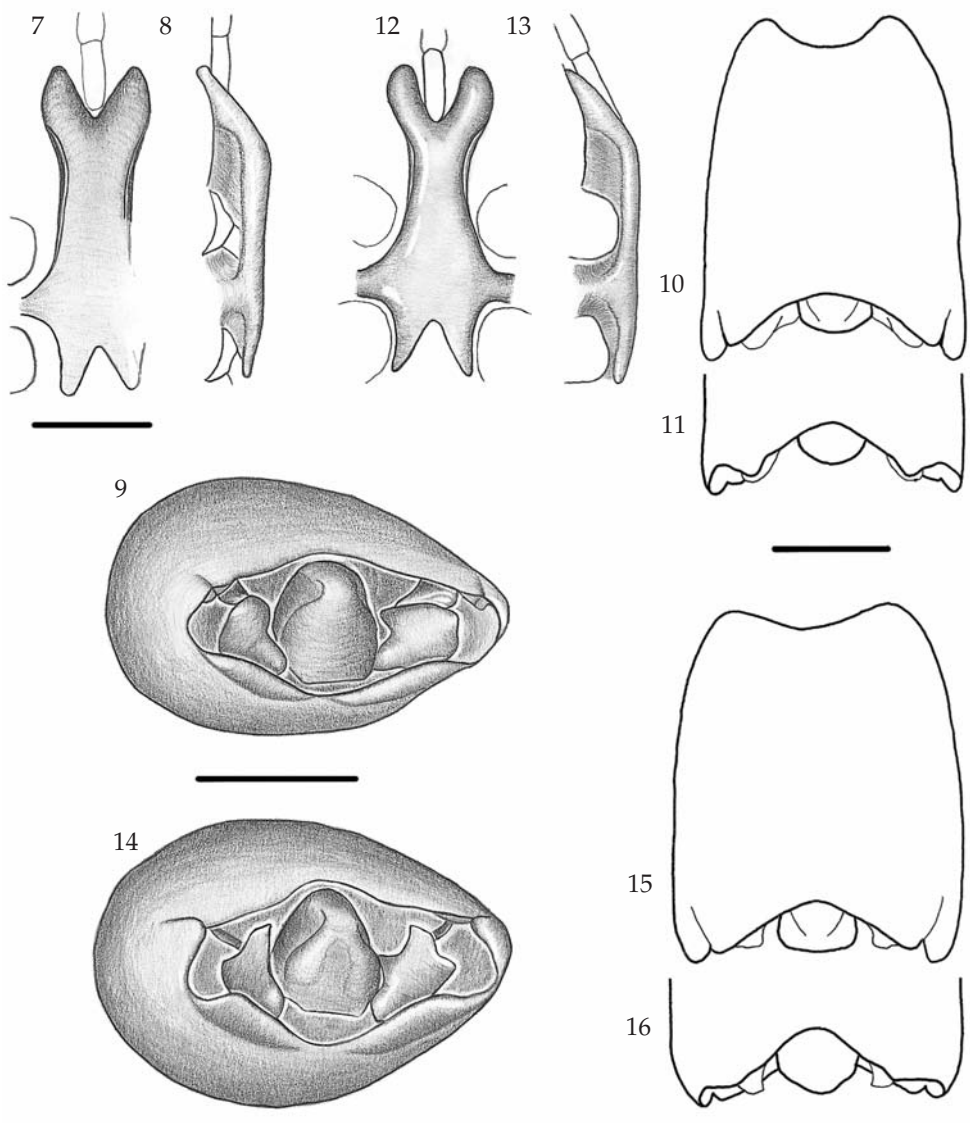
Comments.— This species can be identified by the almost complete fusion between dorsal rim of the pygophore and its lateral angles, but scars still conspicuous, the superior processes large, narrowing from dorsal to ventral part, and the parameres short, sharply arched, with a single ventral tooth-like lobe.

Distribution (fig. 21).— **Brazil** (Mato Grosso).

Etymology.— The species is named after the type locality, Xingu in Mato Grosso, Brazil.

Edessa amazonica spec. nov.
(figs 12-16, 20, 21)

Material.— Holotype (fig. 20), ♂ (MNHN), **French Guyana**, "Itani [Itany, Litani(e) River] (Guyanes) Mission M. Boulard, P. Jauffret et P. Pompanon Muséum Paris"/"Carbet [field camp] Lavaud, [5°29′ N-54°10′ W], (Rive Surinamienne) 3-4.xii.1975". Paratypes: 1 ♂ (FURG), Brazil, Amazonas, "Estirãodo



Figs 7-11, *Edessa xingu* spec. nov.; 7-8, metasternal shield, ventral and right lateral view, respectively; 9-11, pygophore: 9 posterior view, 10 dorsal view, 11 ventral view.

Figs 12-16, *Edessa amazonica* spec. nov.; 12-13, metasternal shield, ventral and right lateral view, respectively; 14-16, pygophore: 14 posterior view, 15 dorsal view, 16 ventral view. Bars represent 1 mm.

Fig. 17, 18, *Edessa beckeri* spec. nov. 17, holotype, ♂ (pygophore removed); 18, paratype, ♀ from Mato Grosso, Diamantino; fig. 19, *Edessa xingu* spec. nov., holotype, ♂; fig. 20, *Edessa amazonica* spec. nov., holotype, ♂.

Equador (Rio Javari) Am-Br, x.1979 Alvarenga, M. col."/"04°33' S-71°38' W".; 1 ♂ (BMNH), "Brit. Guiana: [Guyana], Confluence of Oronoque & New Rivers. 650 ft. [200 m], ix-xii.1937."/"Brit. Mus. 1938-319."

Small species (12.5-14 mm). Scutellum unicoloured; no trace of a lighter mark at the top can be detected. Bifid part of metasternal shield short, receiving part of fourth rostral segment, each branch straight and somewhat laterally flattened (figs 12-13). Dorsal rim of pygophore flat (fig. 14), fusion with lateral angles incomplete, scars well visible and black (figs 14-15). Postero-lateral angles not developed (figs 15-16). Ventral rim with two weakly swollen areas (fig. 16). Parameres (fig. 14) small, subrectangular, blackish edged, with a proximal and another distal thin, black, tooth-like lobe. Superior processes (fig. 14) small, thin, trapezoid, black, oblique in posterior view with a ventral thick part. Proctiger (fig. 14) sharply arched in posterior view due to a narrow dorsal area, most of posterior face with a tumid frame.

Female.— Unknown.

Measurements.— Holotype, total length 12.4; pronotal width 6.7; abdominal width 6.6; head length 1.8; head width 2.25; length of antennal segments I-V, 0.75, 1.0, 1.75, 3.25, 3.4. Paratype from Guyana, equal dimentions; Paratype from Amazonas, Rio Javari, total length 13.6; pron.w. 7.5; abd.w. 7.3; head l. 2.1; head w. 2.5.

Comments.— Of the three available specimens, only the one from Ecuador remained its green colour. The photographed holotype specimen (fig. 20) and that from Guyana are totally yellow. It is well-known that the green pigment in many insects is very unstable. This species can be recognised by the not completely fused dorsal rim of the pygophore forming a black scar with its lateral angles; the superior processes small, thin, with a thick ventral area, the parameres with two thin, black tooth-like lobes, and the posterior face of proctiger with a tumid frame. This species is clearly related to *E. xingu*, both share the flat dorsal rim, the shape and colour of superior processes and the dorsally narrowed proctiger.

Distribution (fig. 21).— **French Guyana**, **Brazil** (Amazonas), **Guyana**.

Etymology.— The species is named after the region of origin, Amazonia.

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The following abbreviations are used:

BMNH =	Natural History Museum, London.
FURG =	Department of Zoology, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.
IRSN =	Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium.
MNHN =	Muséum National d' Histoire Naturelle, Paris, France.
MNR =	National Museum, Rio de Janeiro, Brazil.
RMNH =	National Museum of Natural History, Leiden, The Netherlands.

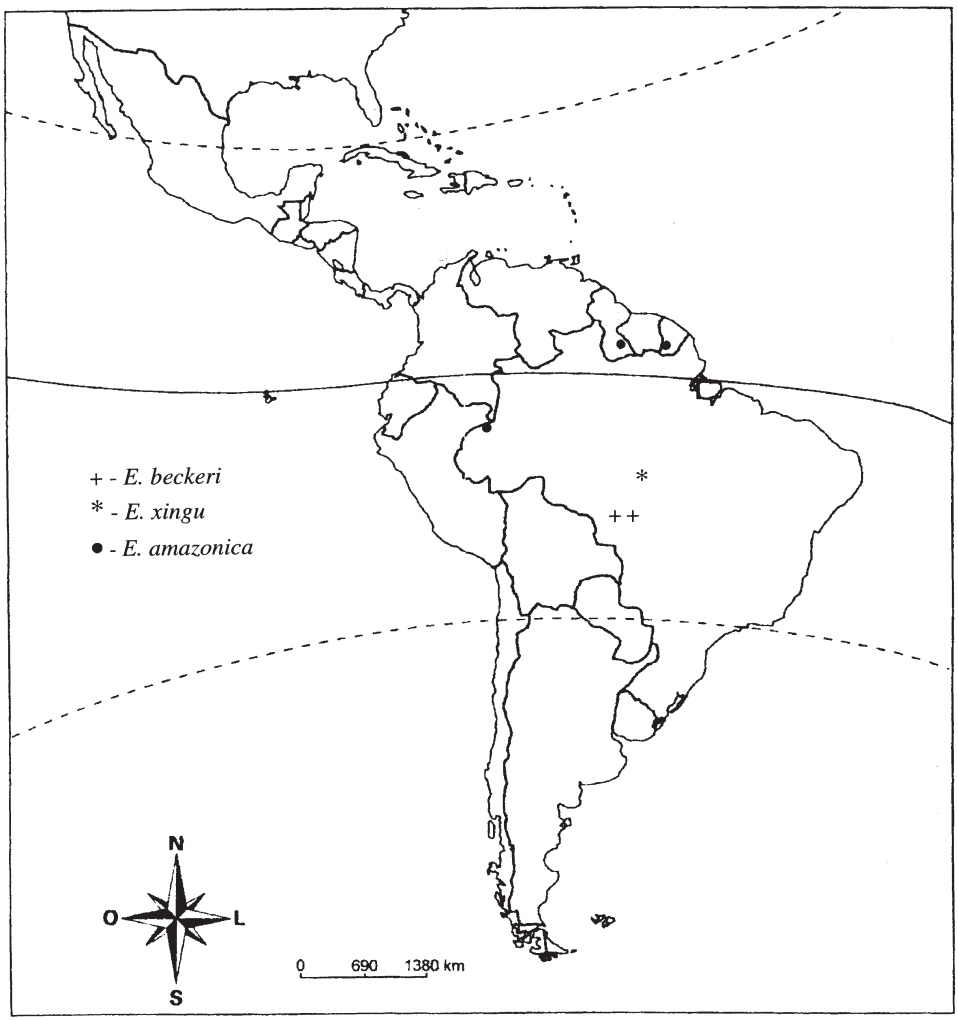

Fig. 21, distribution map of the species belonging to the *Edessa beckeri*-group.

Reference

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