

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

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Fernandes, J.A.M., P.H. van Doesburg & C. Greve. The *E. collaris*-group of *Edessa* Fabricius, 1803 (Heteroptera: Pentatomidae: Edessinae).

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Key words: Heteroptera; Pentatomidae; Edessinae; *Edessa*; new species; new synonym; taxonomy; Neotropical region.

The *E. collaris* group of *Edessa* Fabricius, 1803 (Heteroptera: Pentatomidae: Edessinae) is proposed and the species are described, including one new to science. This group includes two South American (*Edessa collaris* Dallas, 1851 and *E. epulo* Kirkaldy, 1909) and two Central American species (*E. lineigera* Stål, 1862 and *E. panamensis* spec. nov.). *E. lineifera* Bergroth, 1891, is considered to be a junior synonym of *E. collaris* Dallas, 1851. The Lectotypes of *E. collaris* and *E. lineigera* are designated.

## Introduction

The complete revision of the genus *Edessa* is almost impossible due to the high number of species from which 260 are already described. Therefore, we decided to split the genus in small, apparently monophyletic groups of species (Fernandes & Doesburg, 2000). The revision of the *E. collaris*-group is part of this long-term project that aims at the study of the whole subfamily Edessinae.

Erichson (1848) described *E. transversalis*, based on two females from Guyana, followed by Dallas (1851) who described *E. collaris* based on 3 specimens from Brazil and Guyana but the couple from Guyana belongs to another species, *E. epulo*. Stål (1862) described *E. lineigera* based on two females and a male from Mexico and *E. lineata* based on a female from Brazil. Walker (1868) mentioned *E. collaris* and *E. transversalis* in his list. Stål (1872) included his species *E. lineigera* and *E. lineifera* in the subgenus *Hypoxys* but listed outside the subgenus *E. collaris* and *E. transversalis*. Distant (1887) mentioned *E. collaris* in his list and Bergroth (1891) proposed *E. lineifera* as a new name for *E. lineata* Stål, 1862 to resolve the homonymy with *E. lineata* Westwood, 1837. Kirkaldy (1909) in his catalogue listed *E. lineifera*, considered erroneously *E. lineigera* Stål, 1862, to be a junior synonym of *E. collaris* and proposed *E. epulo* as a new name for *E. transversalis* Erichson, 1848, which was preoccupied by *Edessa transversalis* Germar, 1837 (Phyllocephalinae).

Illustrations.— The drawings are by the first author and the photographs are made by the second author. Measurements are given in millimeters. Altitudes in feet are converted in meters by factor 0.305.

### *Edessa collaris*-group

Small species, length 10-15 mm. Dorsal surface green with pale yellow stripes and hemelytrae variegate. Inner margins of spines of seventh abdominal segment black. Ventral surface yellow with green areas. Head, antennae and legs yellow.

Head.— Longer than wide with few punctures and transvers furrows. Jugae longer than clypeus and apical margin somewhat curved ventrally. Margins of clypeus black, with two rows of black punctures on jugae forming a "W". Length of the antennal segments increasing from first to fifth, second and third segments more or less subequal. Bucculae slightly divergent and rounded. Rostrum short, reaching middle of mesosternum in anterior bifurcation of the metasternal shield; first rostral segment shortest, just surpassing bucculae; second longest; third and fourth subequal in length. Ventral surface of the head smooth, without punctures.

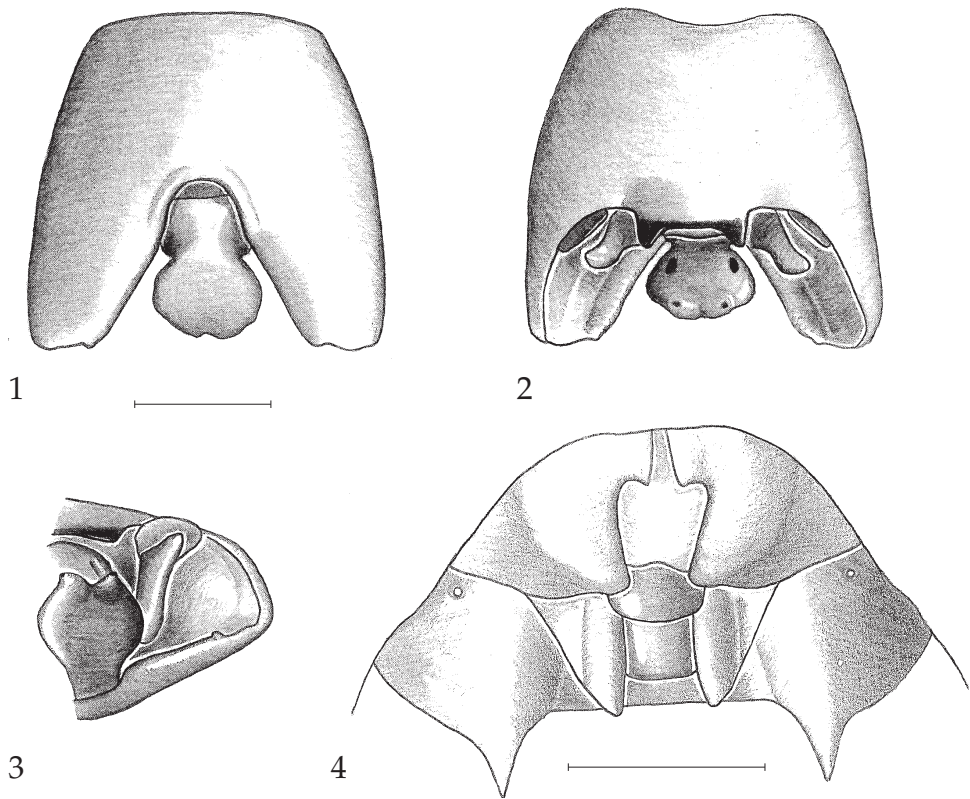
Thorax.— Pronotum green with yellow transvers stripes, punctures together in a mesial band and another one close to the scars. Pronotum strongly bent, antero-lateral margin straight with some short furrows on proximal half, antero-lateral angles acute, but not developed, postero-lateral angles blunt to subacute, slightly prominent, especially in the female. Ventral surface of thorax with some light-green stripes and dots and sparsely punctured. Metasternal shield (metasternum, fig. 12) flat, smooth, without punctures, scantily set with short setae, anteriorly reaching middle of mesosternum and shallowly bifid, each lobe antero-laterally directed and evanescent. Evaporative area dull with some short shallow furrows. Ostiolar peritreme narrow and extended to 2/3 of metapleural width. Scutellum with a narrow longitudinal row of punctures sparsely distributed on proximal half; apex acute. Corium densely punctured, castaneous with outer lateral margin green; veins and calli yellow; membrane castaneous and hyaline.

Abdomen.— Dorsal surface yellow with two dark bands parallel to lateral margins of scutellum. Connexivum well exposed and densely punctured. Postero-lateral angles of segments II-VII each with a spine-like process, in VII strongly developed and posteriorly directed, its tergite shorter and slightly detached from the ventral one. Ventral surface smooth with green stripes on intersegmental region and green spots encircling spiracles, trichobothria and scars. Spiracles elliptic. Trichobothria in line with spiracles.

Male.— Pygophore trapezoid in dorsal view. Genital chamber open dorso-posteriorly. Postero-lateral angles rounded, not produced and densely covered with long setae. Ventral rim with a deep V-shaped concavity surrounded by a beaded border. Diaphragma covered with long setae and at both sides of proctiger with a black anterior process. Parameres simple. Proctiger vertical on pygophore with a pair of lateral, longitudinal small carinae and a huge dorsally directed, claviform, slightly tumid posterior process, densely covered with long setation (not shown in the figures); top of process anteriorly with a pair of conical swellings bearing black apices.

Female.— Gonocoxites 8 with a mesial concavity. Laterotergites 8 with small spiracles on base; posterior margin produced into a spine. Gonapophysis 9 visible. Laterotergites 9 basally slightly dorsally concave, apices truncate, reaching or surpassing posterior margin of tergite 8.

Comments.— This group can be identified by the yellow transversal stripes on the



Figs 1-4, *Edessa collaris* Dallas, 1851. 1-3, male, pygophore; 1, ventral view; 2, dorsal view; 3, posterior view; 4, female, genital plates, ventral view. Bars represent 1 mm.

green pronotum and a single transverse band on the scutellum. Proctiger with a huge dorsally directed posterior process, densely covered with a wreath of long setae. To distinguish the species, we were not able to find reliable characters on external morphology others than those of the male and the female external genitalia. Therefore, we can use only these to characterise the species.

*Edessa collaris* Dallas, 1851  
(figs 1-4, 19, 20)

*Edessa collaris* Dallas, 1851: 329.

*Edessa lineata* Stål, 1862.

*Edessa lineifera* Bergroth, 1891: 234, **syn. nov.**

Material.— **Brazil**: lectotype ♀ (BMNH), Brazil, "132 [in red], 297. a"; 1 ♀ (NRS), "Brasil, 1833", holotype of *Edessa lineata* Stål, 1862; **Mato Grosso**: 1 ♀ (MNR), Diamantina, Fazenda São João, x-1979, O. Roppa & A. Domingos. 2 ♂♂ (CMNH), 1 ♂ (RMNH), Brazil, Chapada, Acc. No. 2966, Chapada da Campo, Dec., #306, #568, *Edessa collaris* Dallas, det. J.C. Lutz; **Espírito Santo**: 2 ♂♂, 2 ♀♀ (MNR), Cariacica, iii-1981, A.C. Domingos; 1 ♂ (FURG), Linhares, mata da Empresa Capixaba de Pesq.

Agropecuárias, 23-i-[19]77, J. Becker; **Rio de Janeiro**: 1 ♀, (FURG), Porciuncula, xi-61, J. Becker; 1 ♀ (MLP), Rio, Brazil, 10-ix-1901 Q(?). C.B. [Carlos Berg?]; 1 ♀ (E-67) (MNR), Gavea, Rio D.F., 26-v-[19]44, Wygod. leg.; **Guanabara**: 2 ♀♀ (FEM), Corcovado, xii-1963, M. Alvarenga; 1 ♀ **São Paulo**: 1 ♂ (MZSP), Itú, Cerrado, 1-5-xi-1961, Kloss, Martins, Silva. **Argentina**: **Misiones**: 2 ♂♂, 7 ♀♀ (MMB, RMNH), Loreto, xii-1956, J.L. Stehlík; 1 ♂, 1 ♀ (MZSP), Loreto, xii-1961, L.N. Alem, A. Martinez; 1 ♂ (RMNH), Dos de Mayo, xii-1964, F.H. Walz., idem, 1 ♂, 3 ♀♀ (IMLT), iii-1965; 1 ♂, 2 ♀♀ (IMLT), 1 ♀ (RMNH), Misiones, Panamr., i-1960; 1 ♀ (MLP); 1 ♂ (MNHN), *Pygoda lineata* Stål; 2 ♀♀ (MNHN), Museum Paris, Chine [?Chili], S. Stevens 1852, Ed. *Collaris* det. We-I Yang 1935. **Bolivia**: Santa Cruz: 1 ♀ (MZSP), Santa Cruz (500 m), 5-xii-1955, Dirings; 1 ♂ (JEC), Santa Cruz 64 17 Da, 3-vii-1919, Don Foster. **Venezuela**: 1 ♂ (IZM), Cumbre de Choroni AR, 22-v-[19]48, F. Fernandez Y. y F. Aponte, Institute Zool. Agric. Fac. Agron. Univ. Centr. [Maracay], *Edessa epulo* (Erichson) J. Grazia Vieira & M. Becker det. 1971.

Male (figs 1-3).— Dorsal rim of pygophore project over proctiger by a pair of long tooth-like black processes; ventral rim rounded with a tiny spine on edge of concavity. Superior processes large, thin, transversally rounded, drop-like, barely concave, reaching or surpassing dorsal rim. Parameres long, reaching dorsal rim, somewhat anteriorly expanded, apex acute, laterally curved. Free (expanded) part of process of proctiger rounded, anterior face with two large lateral black calli, apex with two big conical swellings close to mesial line.

Female (fig. 4).— Gonocoxites 8 slightly convex and dorsally curved, distal 4/5 of mesial margins concave with a small tooth on base; posterior margin convex or slightly acuminate. Spines of laterotergites 8 slightly produced not reaching level of tops of segment VII. Gonocoxite 9 rectangular and convex. Gonapophysis 9 visible, dark castaneous.

Measurements.- Total length: 9.2-14.8; pronotal width: 5.6-8.8; abdominal width: 5.0-7.6; head width: 1.8-2.4; head length: 0.9-1.6.

Comments.— In the BM are three specimens, one male and two females, attributed as “types” of *Edessa collaris* Dallas, 1851. But Dallas (1851: 329-330) in his description mentioned only “♀”, so only the two females are to be regarded as syntypes: a. “Brazil. Presented by Francis Walker Esq.” and: b. “British Guiana. Presented by Sir Robert Schomburgk.” They represent two different species, from which we are designating a. from Brazil as the lectotype of *Edessa collaris* Dallas, 1851. The other, paralectotype specimen from Guyana belongs to *Edessa epulo* Kirkaldy, 1909, just as the male “type” from Guyana, both labeled: “B. Guiana, 44/85. b”. We examined also the female holotype of *E. lineata* Stål, 1862 “Brasil, 1833” (fig. 19, NRS), renamed *Edessa lineifera* by Bergroth (1891: 234) and which we consider to be conspecific with *Edessa collaris* Dallas, 1851.

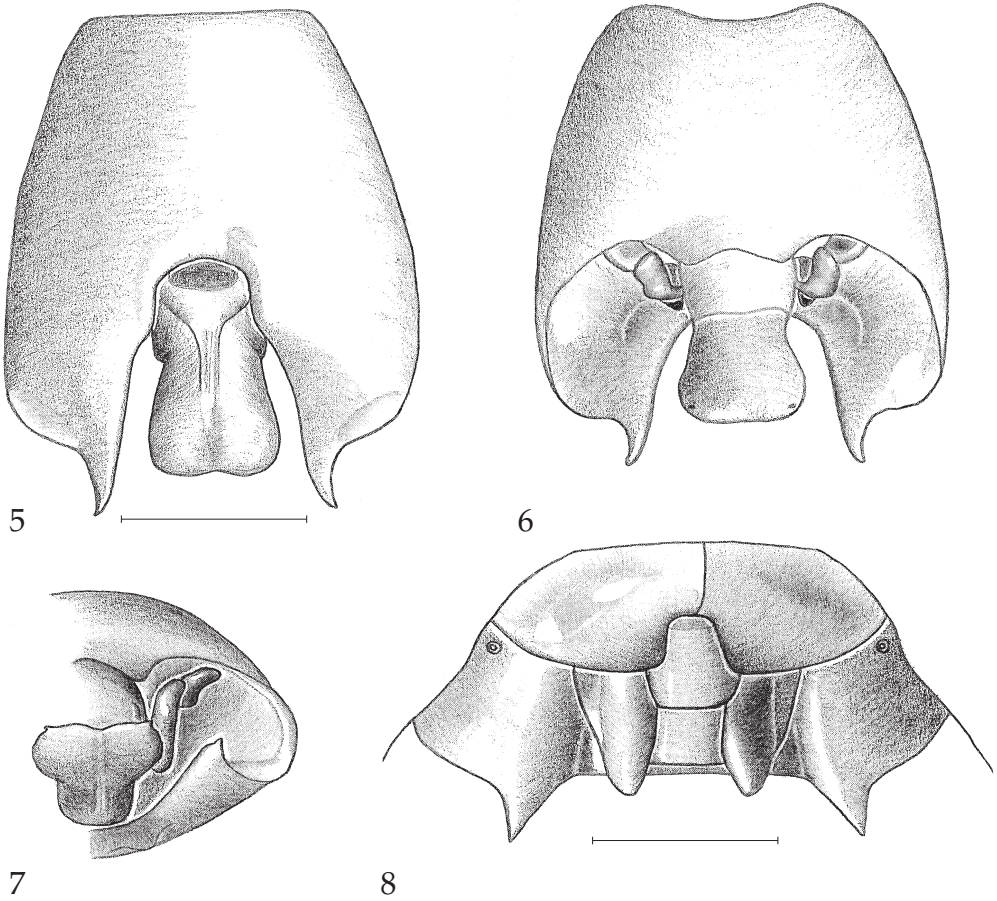
This species can be recognized by the rounded ventral rim of the pygophore and the tiny spine on the edge of the concavity. Anterior face of proctiger’s process with two large lateral black calli and apex with a pair of big conical swellings close to mesial line. Gonocoxites 8 deeply concave on mesial margins.

*Edessa epulo* Kirkaldy, 1909  
(figs 5-8, 21)

*Edessa transversalis* Erichson, 1848: 610 (not Germar, 1837); Walker, 1868: 428; Stål, 1872: 60; Lethierry & Severin, 1893: 195.

*Edessa collaris* Dallas, 1851: 329 (partim).

*Edessa epulo* Kirkaldy, 1909: 157 (new name).



Figs 5-8, *Edessa epulo* Kirkaldy, 1909. 5-7, male, pygophore; 5, ventral view; 6, dorsal view; 7, posterior view; 8, female, genital plates, ventral view. Bars represent 1 mm.

Material.— **Guyana:** Lectotype ♀ of *Edessa transversalis* Erichson, 1848 (fig. 21, MNB): “Brit. Guyana Schomburgk /*transversalis* Er. Schomb./ 287 /Typus (red)/ Zool.Mus.Berlin /”; 1 ♂, 1 ♀ (BMNH), “B. Guiana, 44/85, b / Type” (♀ is paralectotype of *Edessa collaris* Dallas, 1851, ♂ has no type status). **Trinidad** (& Tobago): 1 ♀ (FURG), Curepe 12-iv-1977, F.D. Bennett; 1 ♂ (FURG), Santa Margarita, Circular Rd., 7-i-[19]76, F.D. Bennett; 1 ♀ (DARC), Simla, Arima Blanchisseuse Rd., 600 ft [183 m], black light trap, 30-vii-[19]75, J. Price.

Male (figs 5-7).— Dorsal rim biconvex over proctiger and concolorous. Ventral rim with a long spine on the edge of the concavity. Superior processes small, dorso-ventrally flattened, thick, not reaching dorsal rim. Parameres short, straight, subrectangularly truncate on apex, not reaching dorsal rim. Free (expanded) part of process of proctiger trapezoid, anterior face without black calli, apex with small conical swellings close to corners.



Female (fig. 8).— Gonocoxites 8 flat, curved dorsally on distal 1/5, distal half of mesial margins widely concave, posterior margins slightly rounded. Spines of laterotergites 8 slightly produced, not reaching level of tops of segment VII. Gonocoxite 9 rectangular and convex. Gonapophysis 9 visible and concolorous.

Measurements.— Total length: 9.4-13.7; pronotal width: 5.6- 8.2; abdominal width: 5.3-7.4; head width: 2-2.4; head length: 1.2-1.4.

Comments.— Erichson's material consists of two female syntypes; the one bearing the name label "*transversalis* Er. Br. Guy. Schomb.", measuring 14 mm, is here designated lectotype of *Edessa transversalis* Erichson, 1848. *Edessa epulo* can be recognized by the ventral rim with a long spine on the edge of the concavity. Superior processes small dorso-ventrally flattened. Shape of the parameres and absence of black calli on anterior face of the proctiger's process. Gonocoxites 8 flat, distal half of mesial margin widely concave.

*Edessa lineigera* Stål, 1862  
(figs 9-13, 22)

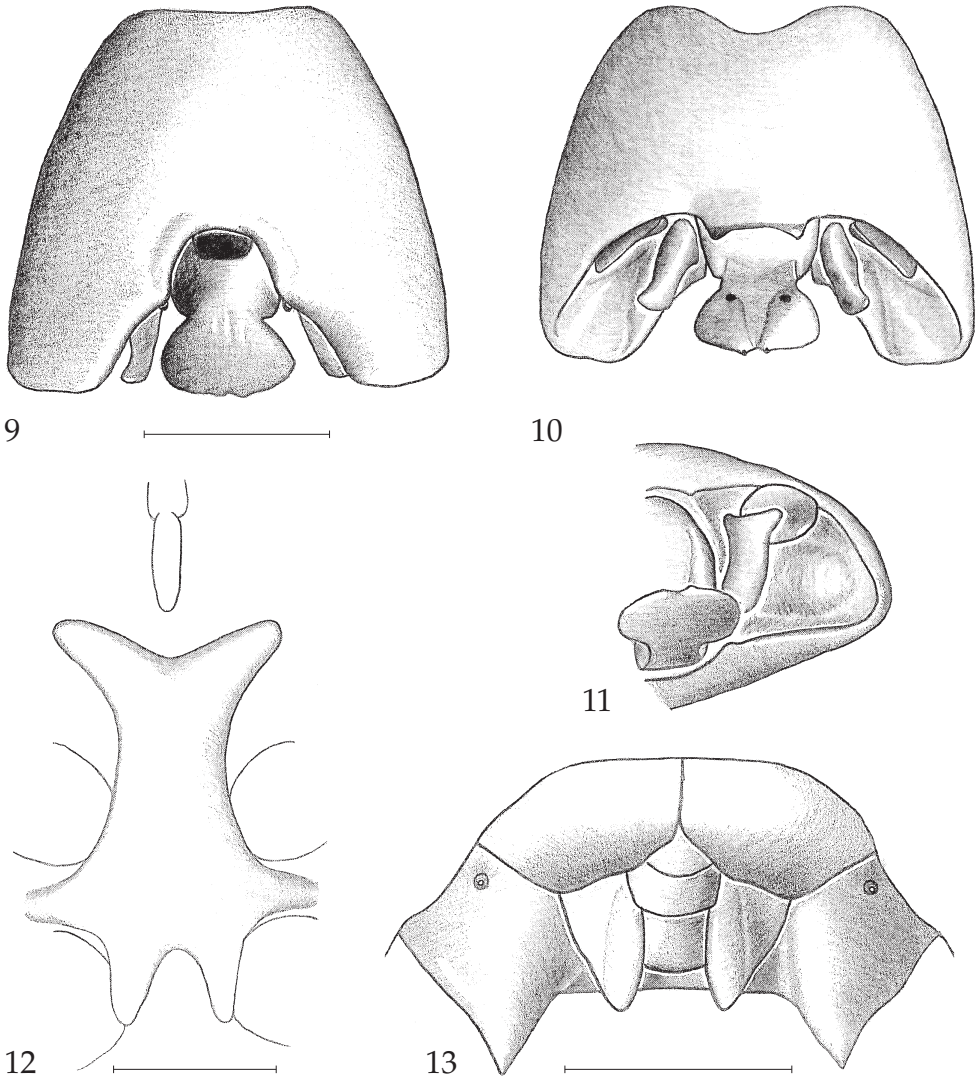
*Edessa lineigera* Stål, 1862: 113.

*Edessa collaris*; Kirkaldy, 1909: 156 (partim, incorrect synonymy).

Material.— **Mexico**: Lectotype ♂ (NRS) "Mexico/Sallé". 2 Paralectotypes: 1 ♀ (fig. 22, NRS), same data as lectotype, 1 ♀ (NHMW), "/Mexico Coll. Signoret/ *lineigera* det. Stal"/"; 1 ♂, 1 ♀ (BMNH), "58.135 Mex (Oajaca); 1 ♀, (MNHN), *Edessa lineigera* Stål, comp. w. syntype, Wien; 1 ♂ (MNB), Soconusco 2.8; Vera Cruz: 1 ♀ (HBC), Las Tuxtlas, 23-30-v-[19]79, F. Soria; 1 ♂, 1 ♀ (HBC), San Andrés Tuxtla, 22-vii-[19]72, H. Brailovsky; 1 ♀ (HBC), 1 ♀ (HBC), H. Brail. Est. Biol. Tuxtlas, 25-i-[19]71, Nict. Veracruz: Estacion de Biologia Tropical los Tuxtlas (HBC). **Guatemala**: 2 ♀♀ (RMNH), Panzós. **El Salvador**: 4 ♂♂, 3 ♀♀ (IRSN), Tamanique (La Libertad), 4-v-1960, R.I.Sc.N.B., I.G.22.899, J. Bechyné; 1 ♀ (CAS), Quetzaltepeque 6 mi W, 500 m, 15-vii-1963, D.Q. Canagnaro & M.B. Irwin. **Costa Rica**: Guanacaste: 1 ♂ (LAES), 3-6 km NW Canas, 2-7 vi-1980, La Pacifica, J. Wappes; 2 ♂♂, 3 ♀♀ (FURG), 2 ♂♂, 4 ♀♀ (LAES), 13 mi. S.E. of Liberia, 400' [122 m], 12-vii-1974, C.W. & L. O'Brien & Marshall; San Jose: 1 ♂ (DTC), San Jose-Escazu, i-1998, F.D. Parker; Heredia: 2 ♂♂, 2 ♀♀ (JEC), Finca la Selva Verde, 12 km S. Puerto Viejo, 500 ft [152 m], 23-26-ix-1986, J.E. Eger; 2 ♂♂, 3 ♀♀ (FEM), Santa Rosa National Park, 20-xi-1979 - 27-vii-1980, D.H. Janzen & W. Hallwachs; 1 ♀ (MNHN), 1920, Paul Serre; 2 ♂♂ (MNHN, MNB) San Isidro, 1600 ft [488 m] Champion; 1 ♂, 1 ♀ (CAS), Underwood, vi-1902, EP VanDuzee; 1 ♀ (SEM), J.R. de la Torre-Bueno coll.; 1 ♀ (DTC), Puntarenas Prov., Monte Verde, 20-ii-1988, at light, D.B. Thomas; 1 ♀ (LAES), Puntarenas, 4-6 km S Sta. Elena, 4-7-vi-1980, J.E. Wappes; 1 ♂ (DARC), Alogueta, 2 mi SE Fortuna, 21-vii-1966, J.B. Karren. ?**Panama**: 1 ♀ (MNHN), Darien, 33-96, F. Geay.

Male (figs 9-11).— Dorsal rim of the pygophore project over proctiger in a pair of short tooth-like black processes. Ventral rim straight, edge of the wide ventral concavity without a spine. Superior processes transversally drop-like, flat, large, rounded, barely concave, reaching or surpassing dorsal rim. Parameres long, reaching dorsal rim, anteriorly expanded, apices acute, laterally curved. Free (expanded) part of process of proctiger rounded, anterior face with two small black lateral calli, apex with tiny conical swellings close to mesial line.

Female (fig. 13).— Gonocoxites 8 convex and dorsally curved, distal 0.6 of mesial margins concave, posterior margins acuminate. Spines of laterotergites 8 produced almost reaching level of tops of spines of segment VII. Gonocoxite 9 rectangular and flat. Gonapophysis 9 visible and concolourous.



Figs 9-13, *Edessa lineigera* Stål, 1862. 9-11, male, pygophore; 9, ventral view; 10, dorsal view; 11, posterior view; 12, metasternum and end of rostrum; 13, female, genital plates, ventral view. Bars represent 1 mm.

Measurements.— Total length: 10.0-13.4; pronotal width: 6.1-8.2; abdominal width: 5.3-7.2 head width: 1.9-2.3; head length: 1.3-1.7.

Distribution.— Mexico and Middle Americas.

Comments.— The three syntypes of *Edessa lineigera* Stål, 1862 (Mexico/Sallé), a male and a female deposited in Stockholm (Stål collection) and a female deposited in Viena (Signoret collection) were examined. We here designate the single male from Mexico/Sallé as the lectotype of *Edessa lineigera* Stål, 1862 deposited in the Stockholm Museum. This species was considered synonym of *E. collaris* by Kirkaldy, but the gen-

italia of both are different and therefore we re-use *E. lineigera* (International Code on Zoological Nomenclature Art. 23, 1). This species can be identified by the straight ventral rim of pygophore and lack of spines on the edges of the widely open ventral concavity. Anterior face of process of proctiger with two small lateral black calli and apex with tiny conical swellings close to mesial line.

*Edessa panamensis* spec. nov.  
(figs 14-17)

Material.— **Panama:** holotype ♂ (BMNH), Bugaba, 800–1500 ft [244-457 m], Champion. Paratypes (5 ♂♂, 7 ♀♀): 1 ♀ (FURG), C.Z. Cardenas Village, 17-18-v-1980, E. Riley & Le Doux; 1 ♂, 3 ♀♀ (FURG), 1 ♀ (RMNH), C.Z., K-1 rd. nr. Ft. Kolbe, 19-v-[19]80, E. Riley & Le Doux; 1 ♂ (FURG), 1 ♂ (DEC), Pipeline Road, Canal Zone, 14-vi-[19]75, D. Engleman; 1 ♀ (DEC), Canal Zone, B.C.I., 28-vii-[19]74, H. Hespénhiede; 1 ♀ (DEC), Las Cumbres, 9°06'N 79°32'W, Lt.trap, 29-xi-[19]73, Henk Wolda; 1 ♂ (CAS), Gatun Lake, Tres Rios, 1931, T.O. Zschokke, EP VanDuzee collection; 1 ♂ (DARC), Canal Zone, Barro Colorado Is., 23-v-1967, R.E. Beer.

Male (figs 14-16).— Postero-lateral angle of pygophore slightly projected over genital cup. Dorsal rim projected over proctiger by a pair of short tooth-like black processes. Ventral rim almost straight with a small spine on both side on the edge of the concavity. Superior processes transvers, drop-like rounded, thin, small, barely concave, not reaching dorsal rim. Parameres short, not reaching dorsal rim, straight, subrectangularly truncate at apex. Free (expanded) part of process of proctiger rounded, anterior face with two small submesial black calli, apex with small conical swellings close to mesial line.

Female (fig. 17).— Gonocoxites 8 strongly convex, dorsally curved, distal third of mesial margin concave, posterior margin slightly rounded. Spines of laterotergites 8 slightly produced, not reaching level of tops of spines of segment VII. Gonocoxite 9 rectangular and flat. Gonapophysis 9 visible and concolorous.

Measurements.— Total length: 12.0-14.4; pronotal width: 7.5-8.4; abdominal width: 6.6-7.4; head width: 2.2-2.3; head length: 1.4-1.5.

Distribution.— Panama.

Etymology.— Named after the type locality, Panama.

Comments.— This species can be recognized by the almost straight ventral rim of the pygophore and the small spine on the edge of the ventral concavity. Parameres short and truncate at apex. Expanded part of proctiger with two small conical swellings and two small submesial calli. Female with a shallow concavity in mesial margins of gonocoxites 8; posterior spines of the laterotergites 8 relatively short.

### Acronyms of the museal collections

Studied specimens belong to the following collections:

BMNH - The Natural History Museum, London, U.K.

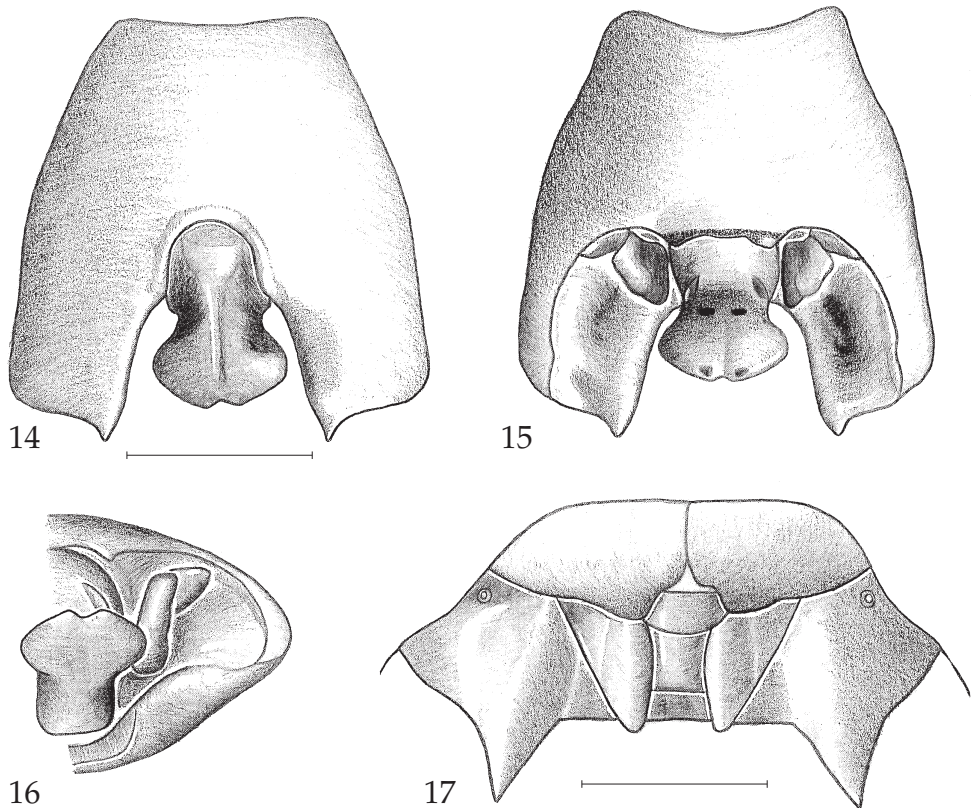
CAS - California Academy of Sciences, San Francisco, Calif., USA.

CMNH - Carnegie Museum of Natural History, Pittsburg, Pa., USA.

DARC - D.A. Rider collection, N. Dakota State University, Fargo, N.D., USA.

DEC - Dodge Englemann collection, Miami, Fla., USA.





Figs 14-17, *Edessa panamensis* spec. nov.; 14-16, male, pygophore; 14, ventral view; 15, dorsal view; 16, posterior view; 17, female, genital plates, ventral view. Bars represent 1 mm.

- DTC - Donald Thomas collection, Weslaco, Tex., USA.  
 FEM - Frost Entomological Museum, The Pennsylvania State University, Pa., USA.  
 FURG - Department of Zoology, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.  
 HBC - Harry Brailovsky collection, Instituto de Biología, México.  
 IMLT - Fundacion - Instituto Miguel Lillo, Universidad Nacional de Tucumán, Argentina.  
 IRSN - Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgique.  
 IZM - Instituto de Zoología Agrícola, Fac. Agron. Univ. Centr., Maracay, Venezuela.  
 JEC - John Eger collection, Tampa, Fla., USA.  
 LAES - Louisiana Agricultural Experiment Station, Louisiana State University, Baton Rouge, La., USA.  
 MLP - Museo de La Plata, Argentina.  
 MMB - Moravske museum, Brno, Czech Republic.  
 MNB - Museum für Naturkunde, Berlin, Deutschland.  
 MNHN - Muséum National d'Histoire Naturelle, Paris, France.

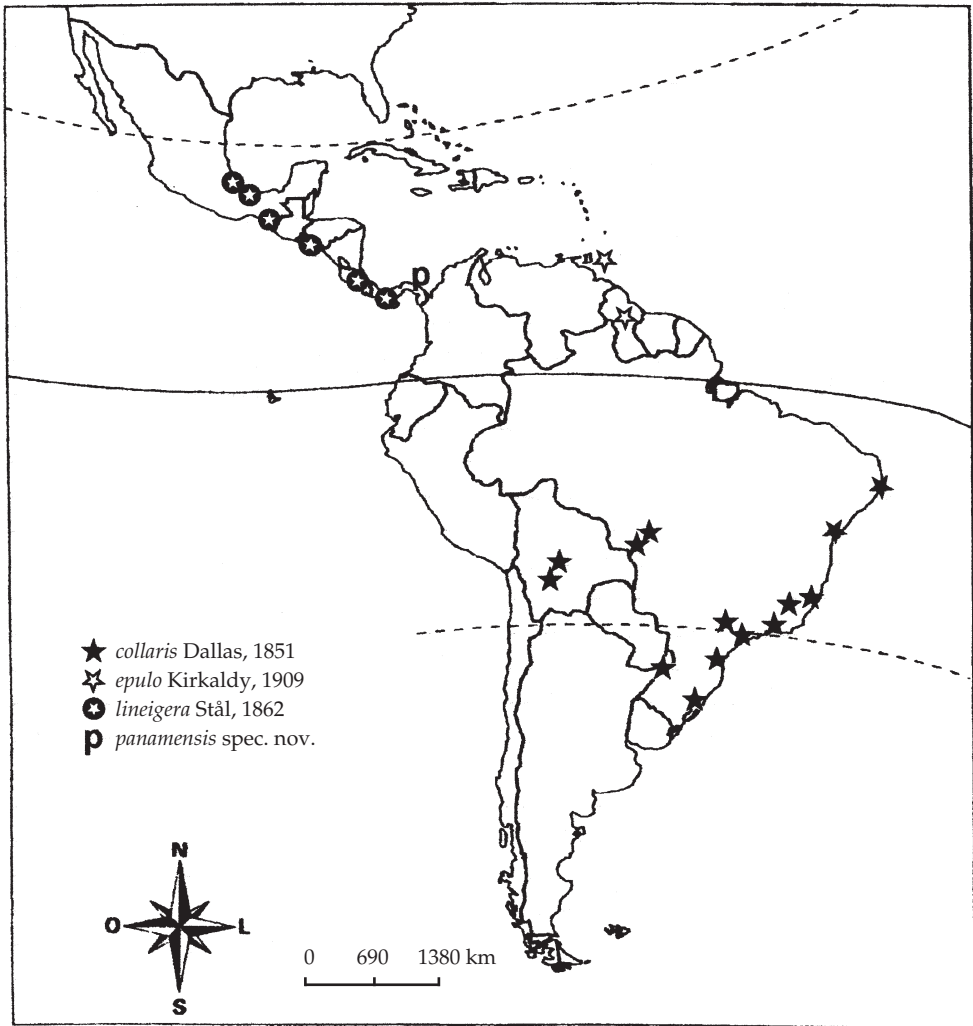
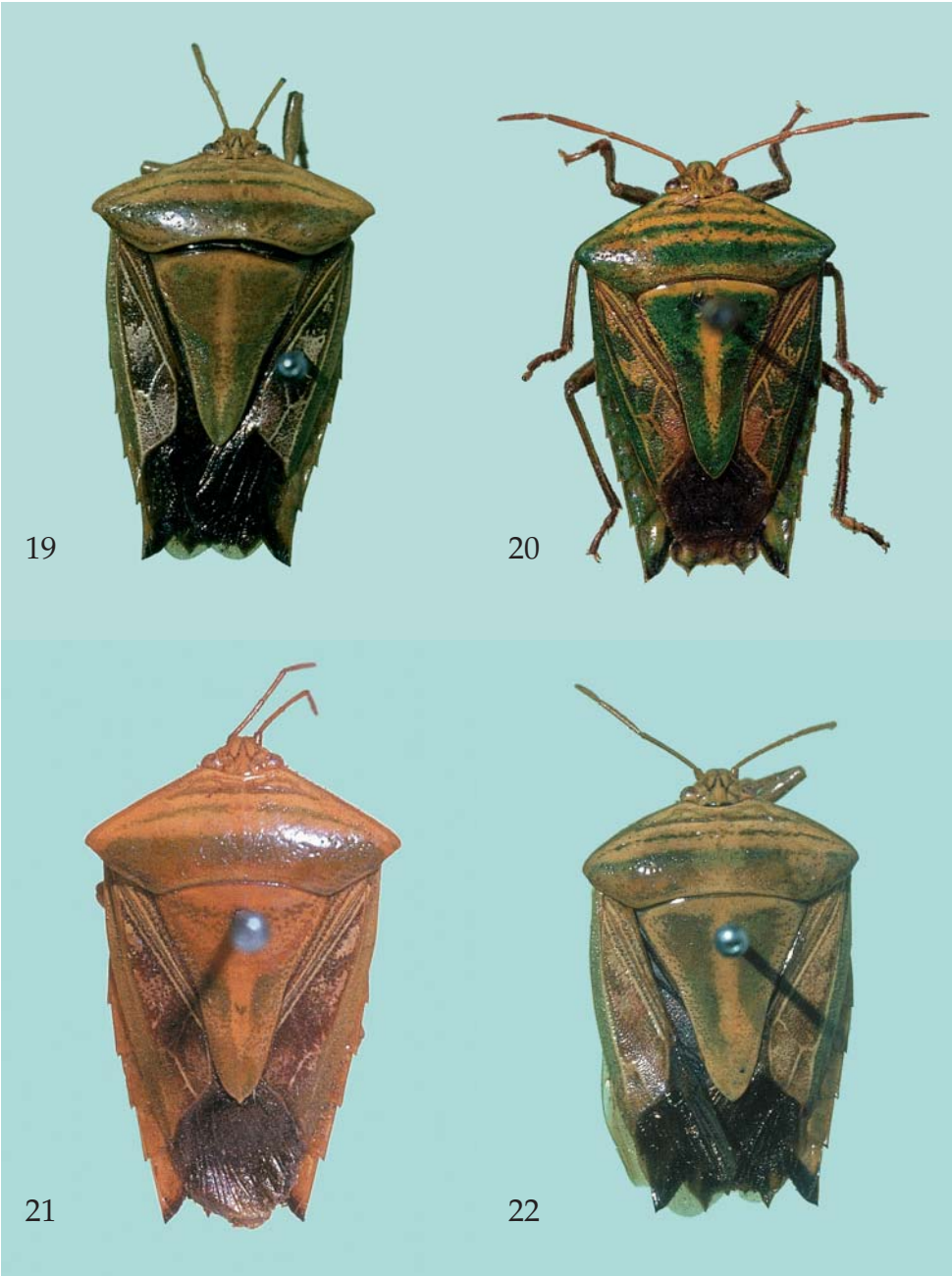


Fig. 18. Distribution map of the species belonging to the *Edessa collaris*-group.

- MNR - Museu Nacional, Rio de Janeiro, Brazil.  
 MZSP - Museu de Zoologia de São Paulo, São Paulo, Brazil.  
 NHMW - Naturhistorisches Museum in Wien, Wien, Oesterreich.  
 NRS - Naturhistoriska Riksmuseet, Stockholm, Sweden.  
 RMNH - Nationaal Natuurhistorisch Museum, Leiden, The Netherlands.  
 SEM - Snow Entomological Museum, University of Kansas, Lawrence, Kans., USA.

#### Acknowledgements

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Figs 19-22. Habitus of *Edessa* species, dorsal aspect. Fig. 19, *Edessa collaris* Dallas, 1851, female, from Brazil; holotyp of *Edessa lineata* Stål, 1862, (NRS); length 14 mm. Fig. 20, *Edessa collaris* Dallas, 1851, female from Loreto, Misiones, Argentina (MMB), showing better preservation of the colours; length 12 mm. Fig. 21, *Edessa epulo* Kirkaldy, 1909, female, Guyana, lectotype of *Edessa transversalis* Erichson, 1848 (MNB); length 14.7 mm. Fig. 22, *Edessa lineigera* Stål, 1862, female paralectotype, from Mexico (NRS); length 13 mm.

Achterberg (Leiden), Dr P.H. Arnaud, Jr., Dr N.D. Penny (San Francisco), Mr J. Becker (Rio de Janeiro), Dr H. Brailovsky (México), Dr J. Carayon (Paris), Dr U. Göllner-Scheiding and Dr J. Deckert (Berlin), Dr P. Dessart (Bruxelles), Dr J. Eger (Tampa), Mr G. Ekis (Pittsburg), Dr Dodge Engleman (Miami), the late Dr F. Fernández Yépez (Maracay), Mr V. Gapud (Lawrence), Dr Jocélia Grazia (Porto Alegre), Dr A. Kaltenbach (Wien), Mr H.C. Kim (Pennsylvania), Mr J.E. Rawlings (Pittsburg), Dr D.A. Rider (Fargo), Dr L.H. Rolston (Baton Rouge), Dr R.A. Ronderos and Ing. Agr. Dr L. de Santis (La Plata), Dr J.L. Stehlik (Brno), Dr D. Thomas (Weslaco), Drs J. van Tol (Leiden), Dr S. Vanin (São Paulo), Dr B. Viklund (Stockholm), Mr M. Webb (London), Dr A. Willink (Tucumán), and Dr H. Zettel (Wien).

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