STUDIES ON THE FAUNA OF SURINAME AND OTHER GUYANAS, No. 46.

RECORDS OF SOUTH AMERICAN NOTONECTIDAE

MAINLY FROM THE AMAZON-REGION

by

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The following abbreviations indicate at which collection the specimens have been deposited: A., I.N.P.A. at Manaus; B., Koninklijk Belgisch Instituut voor Natuurwetenschappen at Brussels; K., Zoologiske Museum at Copenhagen; L., Rijksmuseum van Natuurlijke Historie at Leiden; Len., Zoological Institute of Leningrad; W., Entomologisch Laboratorium at Wageningen.

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TABLE 2

SPECIES AND LOCALITIES OF NOTONECTIDAE DISCUSSED IN THIS PAPER

Species	Colombia	Venezuela	Suriname	Pará	Amazonas	Mato Grosso	Goiás	Perú	Chile	Argentina	figures
Notonecta bicirca									×		100–102
Notonecta disturbata						×					103–104
Notonecta indica	×										105–107
Notonecta pulchra					×						
Notonecta sellata										×	
Martarega chinai				×	×						108–109
Martarega membranacea				×	×		×				110, 112
Martarega brasiliensis				×							
Martarega gonostyla			×	×	×	×					
Martarega hungerfordi				×	×						113
Martarega mcateei						×	×				114
Martarega williamsi					×						111
Buenoa absidiata								×			116
Buenoa amnigenus					×						
Buenoa amnigenoidea					×						117–119
Buenoa antigone		×								×	
Buenoa doesburgi			×								
Buenoa fasciata			×								120–123
Buenoa fittkaui							×				124–126
Buenoa fuscipennis										×	
Buenoa gracilis		×									
Buenoa incompta					×						
Buenoa pallipes				×	×						
Buenoa platycnemis		×			×	×					
Buenoa rostra		×									
Buenoa salutis		×		×	×						
Buenoa tarsalis					×						127–129
Buenoa truxali					×						130

Notonecta Linnaeus, 1758

Notonecta bicirca Hungerford, 1926

Notonecta bicirca HUNGERFORD, 1926, p. 12, pl. 2 fig. 1 (Chile).
Notonecta bicirca; HUNGERFORD 1933, p. 137–138, pl. 1 fig. 16, pl. 12 fig. 5 (Chile).
Notonecta bicirca; BACHMANN 1962, p. 104, fig. 2 (Argentina).
Notonecta bicirca; BACHMANN 1963, p. 6 (Argentina).

CHILE, Valparaíso, Santiago; ARGENTINA, Rio Negro, Chubut.

CHILE: Valparáiso, Quillota, 1 ♂, 1 ♀ (Galathea, K.).

Male genital capsule Fig. 1; clasper Fig. 2, 3.

Notonecta disturbata Hungerford, 1926

Notonecta disturbata HUNGERFORD, 1926, p. 13, pl. 12 fig. 7 (Brasil).
Notonecta disturbata; HUNGERFORD 1933, p. 140–141, pl. 1 fig. 13, pl. 12 fig. 7 (Paraguay).
Notonecta disturbata; TRUXAL 1957, p. 13 (Goiás).
Notonecta disturbata; BACHMANN 1961, p. 24 (Argentina).
Notonecta disturbata; BACHMANN 1963, p. 5–6 (Argentina).

BRASIL, Mato Grosso!, Goiás, Rio de Janeiro; PARAGUAY; ARGENTINA, Salta, Tucumán, Formosa, Chaco, Corrientes.

BRASIL: Mato Grosso, Rio das Mortes, Chavantina, *A. 561–8*, 10.VIII. 1965, 1 ♂, 6 ♀ (E. J. Fittkau, A.).

One of the females has the hemielytra ochreous-brownish with a golden tinge, structurally it is identical with the other females of the series.

Male genital capsule Fig. 103; clasper Fig. 105.

Notonecta indica Linnaeus, 1771

Notonecta indica LINNAEUS, 1771, p. 534 ("West Indies").
Notonecta indica; HUNGERFORD 1930, p. 130.
Notonecta indica; HUNGERFORD 1933, p. 113–117, pl. 1 fig. 2, pl. 13 fig. 3 (U.S.A.), Antilles, México, Guatemala, Colombia).
Notonecta indica; NIESER 1967, p. 166–167, fig. 49–51 (Lesser Antilles).
Notonecta indica; NIESER 1968, p. 113–114, fig. 107–108 (Venezuela).

U.S.A., S.E. states; MÉXICO, Tamaulipas, Sinaloa, Guadalajara, Cuernavaca, Yucatán; GUATEMALA; COSTA RICA; COLOMBIA; VENEZUELA; GREATER and LESSER ANTILLES.

COLOMBIA: Nor Cali, 17.VII.1948, 3 ♂, 6 ♀, 2 lv (E. W. Poulsen, K.); Parzudaxi [?], 1 ♂ (K.).

The series from Nor Cali falls well within the range of variability of Antillean *N. indica*. The male from "Parzudaxi" is relatively more slender and has a somewhat lower ocular index value (0.295) than other males of *N. indica* seen by the author (0.369–0.381 in the Nor Cali males, 0.31–0.45 in Antillean specimens, NIESER 1967). The ratio of vertex to synthlipsis is higher in the Parzudaxi specimen (2.86, compared with 2.28–2.35 in Nor Cali and 2.2–2.6 in Antillean males). The Parzudaxi specimen is, however, identical with *N. indica* structurally.

It is possible that the Parzudaxi male is *Notonecta variabilis* Fieber, 1851 (cf. HUNGERFORD 1933, p. 141). Until a series of *N. variabilis* preferably from Brasil becomes available for comparison, the status of Fieber's species remains uncertain.

Male genital capsule of Nor Cali specimen Fig. 105; clasper of Nor Cali specimen Fig. 106, clasper of Parzudaxi specimen Fig. 107.

Notonecta pulchra Hungerford, 1926

Notonecta pulchra HUNGERFORD, 1926, p. 14, pl. 12 fig. 8 (Paraguay).
Notonecta pulchra; HUNGERFORD 1933, p. 131–132, pl. 1 fig. 10, pl. 12 fig. 8).

BRASIL !, Amazonas; PARAGUAY.

BRASIL: Amazonas, Manaus, Lago Janauari, *Si/Sa. 46*, 23.XII.1959, 1 ♂ (Sioli-Sattler, A.).

Notonecta sellata Fieber, 1851

Notonecta Polystolisma var. *sellata* FIEBER, 1851, p. 478 (Buenos Aires).
Notonecta sellata; HUNGERFORD 1930, p. 140.
Notonecta sellata; HUNGERFORD 1933, p. 139–140, pl. 1 fig. 14, pl. 12 fig. 4 (Bolivia, Brasil, Paraguay, Argentina).
Notonecta sellata; BACHMANN 1963, p. 6 (Argentina).
Notonecta sellata; NIESER 1968, p. 115, fig. 111–112 (Argentina).

BOLIVIA; BRASIL, Amazonas, Paraná; PARAGUAY, Guairá, Alto Paraná; ARGENTINA, Misiones, Corrientes, Formosa, Chaco, Stgo del Estero, Salta, Tucumán, La Rioja, Córdoba, Santa Fé, Entre Ríos, Buenos Aires, La Pampa.

ARGENTINA: Buenos Aires, I.1877, 1 ♂ (W. Sörensen, K.); Río de la Plata, "Sommer", 1 ♂, 1 ♀ (K.).

Martarega White, 1879

Martarega chinai Hynes, 1948

Martarega chinai HYNES, 1948, p. 358–359, fig. 1 (Trinidad).
Martarega chinai; TRUXAL 1949, p. 9, pl. 1 fig. 1, pl. 2 fig. 9, pl. 3 fig. 3, 4 (Brasil, Bolivia).
Martarega chinai; BACHMANN 1961a, p. 30 (Argentina).
Martarega chinai; MENKE & TRUXAL 1966, p. 3 (Venezuela).

TRINIDAD; VENEZUELA; BOLIVIA; BRASIL, Amazonas, Pará!; ARGENTINA, Salta.

BRASIL: Amazonas, Manaus, Rio Cuieiras, Igarapé da Arara, *A. 410–1*, 22.II.1962, 1 ♂; Rio Solimões, Paraná do Careiro, *A. 224–1*, 31.VII.1961, 2 ♀ (E. J. Fittkau, A.); Ilha do Careiro, Lago do Rei, *S. 316*, 28.IX.1959, 1 ♂, 7 ♀ (H. Sioli, A.); Manacapurú, Lago Catalão, *Si/Sa.8*, 22.IX.1958, 3 ♂, 1 ♀; Manaus, Lago Janauari, *Si/Sa.22*, 17.IX.1959, 2 ♂, 1 ♀; same, *Si/Sa.46*, 23.XII.1959, 4 ♀ (Sioli-Sattler, A.).
Pará, Rio Trombetas, Lago Salgado, *B. 25*, 16.IV.1948, 3 ♂ (R. Braun, A.); Thomé Assu, Igarapé Agua Branco, *S. 182*, 18.XI.1946, 7 ♀ (H. Sioli, A.).

This species is very similar to *M. membranacea*. The opaque bands on the hemielytra are too variable to be of much use for identification, the same applies to a lesser extent to the apical spine of the hemielytron which should be distinctly shorter than the membrane in *M. chinai*, whereas it should at least reach the tip of the membrane in *M. membranacea*.

The male genital capsule and left clasper (Fig. 108–109) are also variable.

The most reliable feature distinguishing *M. chinai* from *M. membranacea* is the presence of a spine on the trochanter of the male

middle leg of *M. chinai*; *M. membranacea* does not have a trochanteral spine.

Martarega membranacea White, 1879

Martarega membranacea WHITE, 1879, p. 271 (Amazonas).
Martarega membranacea; TRUXAL 1949, p. 7–8, pl. 1 fig. 4, pl. 2 fig. 10, pl. 3 fig. 1, 2 (British Guiana, Brasil, Bolivia).
Martarega membranacea; NIESER 1968, p. 119, fig. 115 (Suriname).

GUYANA (formerly British Guiana); SURINAME, Suriname; BRASIL, Amazonas, Pará, Goiás; ECUADOR; BOLIVIA, Llanos de Mojos.

BRASIL: Amazonas, Rio Negro, Barcelos, *A. 333*, 7.II.1962, 1 ♂; Manaus, Rio Cuieiras, Igarapé da Arara, *A. 410–1*, 22.XI.1962, 1 ♂ (E. J. Fittkau, A.); Manaus, Rio Negro, *Sa.835*, 18.IX.1959, 2 ♂ (W. Sattler, A.); Mamacapurú, Lago Calado, *S. 49*, 14.VIII.1941, 1 ♂; Rio Paracuní, Maués, *S. 328*, 1.XI.1959, 1 ♂, 1 ♀; Missão Cururú, *S. 336*, 1.II.1960, 5 ♂ (H. Sioli, A.); Manacupurú, Lago Catalão, *Si/Sa.8*, 29.IX.1959, 9 ♂, 2 ♀; same, *Si/Sa. 43*, 18.XII.1959, 1 ♂, 1 ♀; Rio Negro, Lago Janauari, *Si/Sa. 22*, 17.IX.1959, 1 ♂; same, *Si/Sa. 45*, 23.XII.1959, 1 ♂; same, *Si/Sa. 46*, 23.XII.1959, 2 ♂, 2 ♀; Manacapurú, Rio Solimões, *Si/Sa. 35*, 1.XII.1959, 1 ♀; same, *Si/Sa. 39*, 2.XII.1959, 1 ♂ (Sioli-Sattler, A.); Careiro, Lago Comprido, *239*, 8.IV.1964, 1 ♂ (G. Marlier, B.).
Pará, Rio Trombetas, Lago Salgado, *B. 25*, 16.IV.1941, 1 ♀ (B. Braun, A.); Santarém, Laguinho, *S. 8*, 6.XII.1940, 2 ♂, 1 ♀; Thomé-assú, Igarapé Agua Branca, *S. 182*, 18.XI.1946, 2 ♀; same, *S. 184*, 18.XI.1946, 2 ♂; Thomé-assú, Açude Arraia, *S. 187*, 20.XI.1946, 7 ♂, 1 ♀; Itaituba, Igarapé Bom Jardim, *S. 169*, 13.VIII.1946, 1 ♀; Rio Tapajós, Lago Curi, *S. 215*, 10.I.1948, 2 ♀; R. Tapajós, Jacaré, *S. 251-b*, 29.IX.1950, 17 ♂, 12 ♀ Rio Arapiuns, Lago da Boca do Igarapé Mentai, *S. 275-b*, 13.XI.1952, 3 ♀; Zona Bragantina, Igarapé near Pirabas, *S. 295*, 10.XI.1953, 1 ♂, 1 ♀; same, *S. 296-a*, 10.XI. 1953, 3 ♀; Z. Bragantina, Igarapé afluente do Marituba, *S. 313-b*, 1 ♂ (H. Sioli, A.).
Goiás, near Formosa, Lagoa feia, *A. 575*, 3.X.1965, 1♂, 3 ♀ (E. J. Fittkau, A.).

This species has been recorded for Argentina (DE CARLO 1935). Dr. DE CARLO kindly informed me that the specimens cited by him as *M. membranacea*, in reality belong to *M. uruguayensis* (Berg). *M. membranacea* has not yet been found in Argentina.

Hemielytron of male Fig. 13; left genital clasper of male Fig. 11.

Martarega brasiliensis Truxal, 1949

Martarega brasiliensis TRUXAL, 1949, p. 16, pl. 4 fig. 3, 4 (Brasil, Perú).
Martarega brasiliensis; NIESER 1968, p. 120–121, fig. 117 (Suriname).

SURINAME, Suriname; BRASIL, Pará!, Ceará, Pernambuco; PERÚ, Lorete.

BRASIL: Pará, Rio Paru, Missão Tiryo (near the border with Suriname), *A. 360*, 22.III.1962, 1 ♂, 2 ♀; same, quiet bay, *A. 360–3*, 24.III.1962, 1 ♀ (E. J. Fittkau, A.); Rio Arapiuns, Rio Aruã, *S. 255-b*, 29.V.1952, 2 ♂, 1 ♀ (H. Sioli, A.).

Martarega gonostyla Truxal, 1949

Martarega gonostyla TRUXAL, 1949, p. 12–13, pl. 1 fig. 5, 7, pl. 2 fig. 1,5 (Brasil, Bolivia).
Martarega gonostyla; NIESER 1968, p. 120 fig. 116 (Suriname).

SURINAME, Suriname; BRASIL, Amazonas, Pará!, Mato Grosso!; BOLIVIA.

SURINAME: Suriname, Brownsberg, Waktibasoekreek, 10.VIII.1958, 9 ♂, 5 ♀, 2 lv (D. C. Geijskes, W.).
BRASIL: Amazonas, Rio Negro, Manaus, Igarapé de Gigante, *A. 198–3*, 3.VII.1961, 1 ♀ brachypterous; Manaus, S. Antonio, *A. 281–1*, 12.XII.1961, 1 ♂, 2 ♀ brach.; Rio Negro, Manaus, Igarapé Barro Branco, *A. 400*, 30.VII. 1962, 2 ♀ brach.; same, *A. 147–2*, 8.V.1961, 1 ♀ macropterous (E. J. Fittkau, A.); Manaus, Igarapé da Coambraia, *S. 305-b*, 26.X.1956, 1 ♂, 1 ♀ brach.; Missão Cururú, *S. 20*, 2.IV.1941, 3 ♂, 1 ♀ brach.; same *S. 88*, 6.IV.1942, 1 ♀ brach. (H. Sioli, A.).
Pará, Belém, Igarapé near Bem Fica, *Sa. 863*, 12.V.1962, 2 ♀ macr.; Igarapé at 180 Km from São Miguel along the road from Belém to Brasilia, *Sa. 851*, 16.XI.1960, 3 ♀ brach. (W. Sattler, A.) (as the author was not able to locate São Miguel, this locality can be in Goiás too).
Mato Grosso, Sra. do Roncador, Igarapé at Km 125, *A.559*, 17.VIII.1965 3 ♀ macr. (E. J. Fittkau, A.).

The identification of the macropterous females from Sra. do Roncador is somewhat doubtful. The specimens have slightly more yellow along the inner margin of the clavus than typical *M. gonostyla*. The specimens are not identical with macropterous *M. uruguayensis* (Berg) or, judging from the description of JACZEWSKI 1928, with *M. mcateei* Jaczewski.

Martarega hungerfordi Truxal, 1949

Martarega hungerfordi TRUXAL, 1949, p. 12, pl. 1 fig. 6, pl. 2 fig. 4, pl. 4 fig. 1, 2 (British Guiana).
Martarega hungerfordi; NIESER, 1968, p. 119–120, fig. 114 (Suriname).

GUYANA; SURINAME, Nickerie, Saramacca, Suriname; BRASIL!, Amazonas, Pará.

BRASIL: Amazonas, Rio Negro Manaus, Rio Branquinho, *A. 169*, 23.IV. 1961, 2 ♀; Rio Negro, Barcelos, *A. 333*, 7.II.1962, 1 ♀ (E. J. Fittkau, A.). Pará, Rio Arapiuns, Lago da Boca, *S. 275-b*, 13.XI.1952, 28 ♂, 10 ♀ (H. Sioli, A.).

Hemielytron of female: Fig. 113.

Martarega mcateei Jaczewski, 1928

Martarega mcateei JACZEWSKI, 1928, p. 134–135, fig. 36–38, 42, 43 (Paraná).
Martarega mcateei; TRUXAL 1949, p. 18, 20, pl. 2 fig. 2, 3.

BRASIL, Goiás!, Mato Grosso!, Paraná.

BRASIL: Goiás, near Formosa, Lagoa feia, *A. 575*, 3.X.1965, 1 ♀.
Mato Grosso, streaming waters between Cuiabá and Goiania, *A. 577–1*, 18.X.1965, 1 ♀ (E. J. Fittkau, A.).

Length 6.2–6.5 mm. Colour (dorsally) luteous, eyes black, hemielytra opaque with a wide hyaline median band (Fig. 114).

Width of head 1.42–1.50 mm. Length of ocular commissure 0.35–0.39 mm. Ratio femur: tibia of fore leg 0.92–0.97. Larger spines along the inner margin of the hind femur 12–16, dark. Base of hind femur emarginated exteriorly.

These specimens have been compared with female specimens of *M. uruguayensis* (Berg) from the Argentina by Dr. A. O. BACHMANN and Dr. J. A. DE CARLO. In these specimens the length of the females was 5.5–6.1 mm, the ocular commissure less than 1/3 the width of the head (contrary to the specimens studied by JAC-

ZEWSKI 1928), ratio femur: tibia of fore leg 1–1.1, the number of larger spines along the hind margin of hind femur 10–15, their colour yellowish, the base of the hind femur emarginated.

The most useful differences between females of these species might be: the width of the median longitudinal hyaline band (Fig. 114–115), the ratio femur: tibia of the fore legs (about 0.95 in *M. mcateei*, about unity or slightly more in *M. uruguayensis*) and the colour of the larger spines on the inner margin of the hind femur (dark in *M. mcateei*, yellowish in *M. uruguayensis*).

Martarega williamsi Truxal, 1949

Martarega williamsi TRUXAL, 1949, p.13–14, pl. 2 fig. 6, pl. 3 fig. 5, 6.

CANAL ZONE; ECUADOR; PERÚ; BRASIL, Amazonas.

BRASIL: Amazonas, Rio Negro near Içana, Jararacca Igarapé, *S. 263-c*, 18.IX.1952, 1 ♂, 1 ♀; same, Jaitíua Igarapé, *S. 270*, 24.IX.1952, 1 ♀ (H. Sioli, A.).

This species is rather similar to *M. gonostyla* in general appearance. *M. williamsi* is, however, somewhat smaller on the average, has an additional thin opaque longitudinal stripe reaching from the base of the hemielytron to about 1/3 its length, the left clasper of the male genital capsule (Fig. 111) is shorter and relatively much thicker.

Buenoa Kirkaldy, 1904

Buenoa absidiata Truxal, 1953

Buenoa absidiata TRUXAL, 1953, p. 1391–1392, fig. 48 (Perú).

PERÚ.

PERÚ; Lima, 1 ♂ (Galathea, K.).

Male, foreleg Fig. 116.

Buenoa amnigenus (White, 1879)

Buenoa amnigenus WHITE, 1879, p. 271 (Amazonas).
Buenoa amnigenus; TRUXAL 1953, p. 1462–1465, fig. 36, 70 (British Guiana, Brasil, Perú, Bolivia, Paraguay).
Buenoa amnigenus; NIESER, 1968, p. 122 fig. 118, 120–121 (Suriname).

GUYANA; SURINAME, Coronie, Saramacca; BRASIL, Amazonas, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Goiás, Mato Grosso, Paraná; PERÚ, Huanuco; BOLIVIA, Llano de Mojos, Sara; PARAGUAY, Guairá.

BRASIL: Amazonas, Rio Solimões, Paraná de Terra Nova, *A. 134*, 15.III. 1961, 1 ♀ macr.; R. Solimões, Paraná do Careiro, *A. 222–1*, 28.VIII.1961, 1 ♂ macr.; R. Solimões, Rio Janauari, *A. 299–2*, 9.VIII.1966, 1 ♀ macr. (E. J. Fittkau, A.); Manacapurú, R. Solimões, Lago de Catalão, *Si/Sa.8*, 22.IX. 1959, 9 ♂, 3 ♀ macr.; Manaus, Ilha do Careiro, Lago de Rei, *Si/Sa.11*, 29.IX. 1959, 1 ♂ macr.; Manaus, Boca do Paracuuba, *Si/Sa.46*, 23.XII.1959, 1 ♂ brach., 10 ♂, 2 ♀ macr. (Sioli-Sattler, A.); Amazonie *29*, 1 ♂, 1 ♀ brach.; Tiririca, Lago Rio Preto de Eva, *33*, 14.VII.1963, 1 ♀ macr.; Paraná do Carreiro (Crato), *45*, 2.VIII.1963. 1 ♂ macr.; Lago Redondo, *46*, 3.VIII.1963, 2 ♂, 2 ♀ brach., 1 ♀ macr.; same, *R5–67*, 30.VIII.1963, 5 ♂, 2 ♀, macr. (G. Marlier, B.); Antonio *8*, 1 ♀ (A.).

Buenoa amnigenoidea n. sp.

BRASIL: Amazonas, Rio Negro, Mandi Igarapé, in front of Içana, *S. 335*, 18.XII.1959, 3 ♂, 4 ♀; Rio Negro, Rio Uaupés, near Içana, *S. 332*, 14.XII. 1959, 1 ♀ (H. Sioli, A.); Antonio *99*, 1 ♀, all specimens brachypterous (A).

Length, male 5.12–*5.22*–5.31, female 5.30–*5.34*–5.42 mm; pronotal humeral width, male 1.23–*1.26*–1.27, female 1.21–*1.23*–1.23 mm.

Colour, sordid white, hemielytra with small brownish dot at apex of costal margin of clavus.

Male, head with vertex continous with eyes to slightly protuberant, width of head 4.3–4.6 times the anterior width of vertex and slightly less than promotal humeral width. Vertex 12–14 times the width of the very narrow synthlipsis. Median head length 0.75–0.85 times that of pronotum. Tylus hardly inflated. Rostral prong (Fig. 118) slightly longer than third rostral segment, with base originating in basal third of segment. Pronotum about 0.6 times longer

than broad with faint indications of carinae on disc; hind margin evenly rounded or very slightly truncated medially. Lateral margins convergent anteriorly. Median length of scutellum about as long as pronotum (0.85–1.05). Fore femur (Fig. 117), somewhat thickened at apex, without stridulatory area. Fore tibia relatively narrow at base as seen from outer side, tibial comb consisting of about 20 teeth, the apicals wider than the basals.

Female differing from male in that greatest width of head is 3.8–4.1 times the anterior width of vertex which is 11–14 times as wide as synthlipsis. Tylus hardly inflated. Pronotal humeral width about twice the median length.

This species is very similar to *B. amnigenus* and *B. incompta*, males of these species have shorter rostral prongs and narrower apices to their fore femora. The synthlipsis of *B. amnigenoidea* is narrower than in *B. incompta* but the eyes are not holoptic as in males of *B. amnigenoidea*.

Holotype male, allotype female, 1 ♂ and 2 ♀ paratypes *S. 335*, 1 ♀ paratype *S. 332* and 1 ♀ paratype 'Antonio *99*, at Manaus, 1 ♂, 1 ♀ paratype *S. 335* in collection of author.

Buenoa antigone antigone (Kirkaldy, 1899)

Buenoa antigone KIRKALDY, 1899, p. 30 (Jamaica).
Buenoa antigone antigone; TRUXAL 1953, p. 1376–1379, fig. 42 (West Indies, México, Guatemala, Brasil, Ecuador, Perú, Bolivia, Paraguay, Argentina).
Buenoa antigone antigone; NIESER 1967, p. 168–171, fig. 53, 60, 70, 75 (Lesser Antilles).
Buenoa antigone antigone; NIESER 1968, p. 130, fig. 135–136 (Venezuela).

MÉXICO, Tamaulipas, Hidalgo, Vera Cruz, Chiapas; GUATEMALA; VENEZUELA; BRASIL, Rio Grande do Norte, São Paulo, Santa Catarina; ECUADOR; PERÚ, Tarma, San Martín; PARAGUAY, Guairá; ARGENTINA, Salta, Misiones!. – GREATER and LESSER ANTILLES.

VENEZUELA: Lago de Valencia, 6.VII.1891, 1 ♂ (Meinert, K.); Las Trinchéras, Entrada, 30.XII.1891, 1 ♂, 1 ♀ (Meinert?, K., No. 572); Caracas, 1891 (A. Teplov, Len.).
ARGENTINA: Misiones, Loreto, 18.I.1931, 18 ♂, 28 ♀ (A. Globlin, Len.).

Buenoa doesburgi Nieser, 1968

Buenoa doesburgi, NIESER, 1968, p. 124–125, fig. 124–126 (Suriname).

SURINAME, Saramacca!, Suriname, Marowijne.

SURINAME: Saramacca, Tafelbergexpeditie, Kappelsavanne, N. lijn, boskreek, 21.III.1958, 12 ♂, 21 ♀; same, N. lijn, 2e kreek, 21.III.1958, 1 ♀; same, N.W. lijn, Coppenamekreek, 21.III.1958, 1 ♂, 7 ♀; same N.W. lijn, 2e en 3e kreek, 21.III.1958, 1 ♂, 5 ♀ (Geijskes, W.).

As the type series (NIESER 1968) was rather short, the following measurements are given, based on the sample from N. lijn, boskreek [N.trail, creek in forest] only.

Length in mm

male $\bar{x}$ = 5.59	s = 0.112	n = 10	*female* $\bar{x}$ = 5.95	s = 0.175	n = 10

Humeral width of pronotum (in mm)

male $\bar{x}$ = 1.58	s = 0.038	n = 10	*female* $\bar{x}$ = 1.69	s = 0.061	n = 10

Ocular index

male $\bar{x}$ = 0.132	s = 0.0067	n = 10	*female* $\bar{x}$ = 0.169	s = 0.0274	n = 10

Buenoa fasciata n. sp.

SURINAME: Saramacca, Tafelbergexpeditie, Kappelsavanne, N.W. lijn, 2e en 3e kreek [N.W. trail, 2nd and 3rd creek], 21.III.1958, 4 ♂, 1 ♀ (D. C. Geijskes, W.).

Length, male 4.80–*4.88*–5.00, female 5.00 mm; pronotal width, male 1.34–*1.38*–1.42, female 1.40 mm.

Colour, yellowish, eyes dark brown. Base of scutellum, tergites adjacent to scutellum and tergites in apical third blackish. Central region of tergites with an orange tinge. Base of apex of hemielytra infuscated to blackish.

Male, anterior margin of head, as seen from above, truncate, vertex continuous with eyes; greatest width of head 7.4–8.0 times the anterior width of vertex and less than pronotal humeral width. Anterior width of vertex 3.8–5.0 times synthlipsis. Median pronotal length 1.3–1.6 times longer than head. Tylus inflated, rostral prong (Fig. 121) slightly longer than third rostral segment, with base originating at base of segment. Pronotal humeral width 2.1–2.5 times its length, disc not tricarinate, sometimes with very slight

indications of carinae. Lateral margins anteriorly convergent, hind margin truncated medially. Median length of scutellum 1.3–1.5 times longer than pronotum. Fore femur (Fig. 120) without stridulatory area. Fore tibia rather thick and parallel sided, with stridulatory comb (Fig. 122) consisting of about 18 teeth of nearly equal thickness. As seen from the outer side, the anterior apex of fore tibia bluntly projecting (Fig. 123).

Female, differing from male in that: Anterior width of vertex 5.2 times synthlipsis. Median pronotal length 1.2 times longer than head. Humeral width of pronotum 2.3 times its length, disc not tricarinate. Lateral margins of pronotum strongly convergent anteriorly and nearly straight.

Holotype male, allotype female, 2 ♂ paratypes at Wageningen, 1 ♂ paratype in collection of author.

Buenoa fittkaui n. sp.

BRASIL: Goiás, near Formosa, Lagoa feia, *A. 575*, 3.X.1965, 6 ♂, 3 ♀ (E. J. Fittkau, A.).

Length, male 5.92–*5.97*–6.00, female 5.90–*6.00*–6.10 mm; pronotal humeral width male 1.20–*1.33*–1.38, female 1.31–*1.33*–1.40 mm.

Colour, sordid white, but the specimens have probably been in alcohol.

Male, head with vertex continuous with eyes or very slightly protruding. Greatest width of head about five times the width of vertex, slightly less than pronotal humeral width. Vertex 3.2–3.5 times synthlipsis. Median head length 0.75–0.90 times the length of pronotum. Tylus flat, with short hairs at base and long hairs along lateral margins. Rostral prong (Fig. 125) longer than third rostral segment, with base originating in apical part of third segment. Pronotum about half as long as wide, moderately tricarinate, lateral margins very slightly convergent towards anterior margin. Posterior margin slightly sinuate. Median length of scutellum about 1.4 times longer than pronotum. Fore femur (Fig. 124) not greatly thickened at apex, with stridulatory area consisting of about 19–22 sclerotized ridges. Fore tibia with stridulatory comb consisting of 20–22 teeth,

the apical 4 or 5 thicker and broader than the remainder. Inner margin of hind femur with about 20 rather small and thin spines in a ventral row, restricted to apical half.

Female, differing from male in that: Greatest width of head 4.5–4.8 times the anterior width of vertex. Median head length equal or slightly less than median length of pronotum. Vertex about 3.5–4 times synthlipsis. Tylus flat, not hairy. Pronotal disc with faint median carina, lateral margins anteriorly slightly convergent. Posterior margin evenly rounded or slightly sinuate. Median length of scutellum 1.25–1.45 times longer than pronotum.

The specimens studied had fairly developed flight wings although the claval suture was only slightly developed.

This species is structurally near *B. communis* Truxal, which has a stridulatory comb with 30 or more teeth. The hairy tylus of *B. fittkaui* separates them easily from similar species.

Holotype male, allotype female, 3 ♂, 1 ♀ paratypes at Manaus; 1 ♂, 1 ♀ paratype in collection of author. (One male was badly damaged and has not been used as paratype).

Buenoa fuscipennis (Berg, 1879)

Anisops fuscipennis Berg, 1879, p. 198–199 (Argentina).
Buena fuscipennis; Truxal 1953, p. 1460–1462, fig. 7, 28, 71 (Venezuela, Brasil, Bolivia, Chile, Paraguay, Uruguay, Argentina).
Buenoa fuscipennis; Nieser 1968, p. 131–132, fig. 137–138 (Argentina).

Venezuela; Brasil, Paraná, Santa Catarina; Bolivia; Paraguay; Uruguay; Argentina, Misiones, Corrientes, Entre Ríos, Santa Fé, Córdoba, Buenos Aires, Río Negro; Chile, Valparaíso, Santiago, Maule.

Argentina: Misiones, Loreto, 18.I.1931, 7 ♂, 7 ♀ (A. Ogloblin, Len.).

Buenoa gracilis Truxal, 1953

Buenoa gracilis Truxal, 1953, p. 1439–1442, fig. 64 (México, Honduras, Panamá, Perú, West Indies).
Buenoa gracilis; Nieser 1967, p. 178–180, Fig. 56, 63, 71, 76 (Lesser Antilles, Venezuela).

MÉXICO, Veracruz, Guerrero, Oaxaca, Chiapas, Campeche; HONDURAS; PANAMÁ; VENEZUELA; PERÚ. – GREATER and LESSER ANTILLES.

VENEZUELA: Puerto Cabello, 3.I.1892, 1 ♂, 8 ♀; Lago de Valencia, 29.XII. 1891, 1 ♀ (Meinert, K.).

Buenoa incompta Truxal, 1953

Buenoa incompta TRUXAL, 1953, p. 1466–1467, fig. 73 (Brasil, Bolivia).
Buenoa incompta; NIESER 1968, p. 126, fig. 119, 127–128 (Suriname).

SURINAME, Coronie, Saramacca, Suriname, Commewijne; BRASIL, Amazonas, Paraíba, Goiás; BOLIVIA, Llano de Mojos.

SURINAME: Brownsberg, bergkreek gouddelverskamp [Waktibasoe creek], 10.VIII.1958, 1 ♂, 1 ♀, 1 lv (Geijskes, W.); Afobaka, sideroad near Brownsberg, in pool, 20.XII.1964, 5 ♂, 4 ♀ (Geijskes, L.); Brokopondo, 23.III.1965, 6 ♀ (G. F. Mees, L.).
BRASIL: Amazonas, Rio Solimões, Igarapé Amataura, *A. 240*, 27.VIII. 1961, 1 ♂ (E. J. Fittkau, A.).

Buenoa pallipes (Fabricius, 1803)

Notonecta pallipes FABRICIUS 1803, p. 103.
Buenoa pallipes; TRUXAL 1953, p. 1418–1421, fig. 56 (México, Honduras, Costa Rica, West Indies, Colombia, Perú, Paraguay).
Buenoa pallipes; NIESER 1967, p. 182–184, fig. 55, 65, 72, 77 (Lesser Antilles).

MÉXICO, Oaxaca, Chiapas; HONDURAS; COSTA RICA; COLOMBIA; PERÚ, Amazonas; PARAGUAY, Guairá; BRASIL!, Amazonas, Pará. – GREATER and LESSER ANTILLES. – HAWAII.

BRASIL: Amazonas, Rio Marauia, Missão S. Antonio, *A. 474*, 10.I.1963, 1 ♀; same, Terminal station, *A. 500*, 26.I.1963, 2 ♀; same, isolated pond, *A. 500–5*, 26.I.1963, 1 ♀ (E. J.Fittkau, A.).
Pará, Sra. de Tumucumaque, *Sa. 858*, 16.II.1961, 1 ♀; same, *Sa. 860*, 9.II. 1961, 1 ♂, 3 ♀ (W. Sattler, A.).

Buenoa platycnemis (Fieber, 1851)

Anisops platycnemis FIEBER, 1851, p. 485 (Puerto Rico).

Buenoa platycnemis; TRUXAL 1953, p. 1421–1426, fig. 57 (U.S.A., México, Costa Rica, Panamá, Canal Zone, Colombia, Venezuela, Brasil, Perú, Greater Antilles, Lesser Antilles).
Buenoa platycnemis; NIESER 1967, p. 181–182, Fig. 58, 64, 69, 80 (Lesser Antilles, Venezuela).
Buenoa platycnemis; NIESER 1968, p. 133, Fig. 141–142 (Venezuela).

U.S.A., Texas, Florida; MÉXICO, Sonora, Jalisco, Vera Cruz, Micoacán, México D.F., Morelos, Guerrero, Chiapas, Campeche, Yucatán; COSTA RICA; PANAMÁ; CANAL ZONE; COLOMBIA; VENEZUELA; BRASIL, Amazonas!, Maranhão, Goiás, Mato Grosso!; PERÚ, Amazonas. – GREATER and LESSER ANTILLES.

VENEZUELA: Caracas, 6.VII.1891, 5 ♂, 5 ♀; Lago de Valencia, 29.XII.1891, 1 ♂; Las Trinchéras, Entrada, 30.XII.1891, 3 ♂, 7 ♀; Puerto Cabello, 3.I.1892, 4 ♂, 2 ♀ (Meinert, K.).
BRASIL: Amazonas, Belterra, Lago da Maritima, *S. 125*, 29.V.1946, 1 ♀ (H. Sioli, A.).
Mato Grosso, Chavantina, Rio das Mortes, *A. 561–8*, 10.VIII. 1965, 9 ♂, 21 ♀ (E. J. Fittkau, A.).

Buenoa rostra Truxal, 1953

Buenoa rostra TRUXAL, 1953, p. 1395–1396, fig. 50 (Venezuela, Trinidad).
Buenoa rostra; NIESER 1967, p. 184, fig. 54, 66, 73, 78 (Trinidad).
Buenoa rostra; NIESER 1968, p. 133, fig. 143–144 (Venezuela).

VENEZUELA; TRINIDAD.

VENEZUELA: Lago de Valencia, 6.VII.1891, 2 ♂; Las Trinchéras, Entrada, 30.XII.1891, 1 ♂, 2 ♀ (Meinert, K.).

Buenoa salutis Kirkaldy, 1904

Buenoa salutis KIRKALDY, 1904, p. 124 (Guyane française).
Buenoa salutis; TRUXAL 1953, p. 1469–1472, fig. 39, 74 (Venezuela, British Guiana, Guyane française, Brasil, Bolivia, Paraguay).
Buenoa salutis; NIESER 1968, p. 127–128, fig. 129–130 (Suriname).

VENEZUELA; GUYANA; SURINAME, Suriname; GUYANE FRANÇAISE; BRASIL, Amazonas, Pará, Ceará, Paraíba, Pernambuco, Goiás, Sao

Paulo, Paraná, Rio Grande do Sul; BOLIVIA, Sará, Llano de Mojos; PARAGUAY, Guairá; ARGENTINA, Buenos Aires.

VENEZUELA: Lago de Valencia, 6.VII.1891, 2 ♀ brach. (Meinert, K.).
BRASIL: Amazonas, Rio Solimões, Xiborena, Igarapé Victorea regia, *A. 183*, 5.VI.1961, 4 ♂, 1 ♀, brach.; R. Solimões, Paraná do Careiro, *A. 224–1*, 31.VII.1961, 1 ♂ macr. (E. J. Fittkau, A.); Manacapurú, Lago Calado, *S. 49*, 14.VIII.1941, 2 ♀ brach.; Rio Madeira, Tres Casas, Lago Comprido, *S. 83–1*, 6.XII.1941, 1 ♀ macr.; Rio Cuparí, Flechal, Lago Silvestre, *S. 210*, 29.XII. 1947, 1 ♀ brach. (H. Sioli, A.); Manacapurú, Rio Solimões, Lago de Ressaca, *Si/Sa.5*, 26.XII.1959, 1 ♀ brach.; same, Lago de Catalão, *Si/Sa. 8*, 22.IX.1959, 2 ♂ macr.; same, Paraná do Piranha, *Si/Sa. 37*, 1.XII.1959, 1 ♀ brach. (Sioli-Sattler, A.); Tiririca, Lago Rio Preto de Eva, *33*, 14.VII.1963, 4 ♂, 6 ♀ macr.; Paraná do Careiro (Crato), *45*, 2.VIII.1963, 1 ♂ macr.; Lago Redondo, *46*, 3.VIII.1963, 1 ♂ brach.; same, *R5–67*, 30.VIII.1963, 1 ♂, 1 ♀ brach.; same, *s.n.*, 5.V.1964, 1 ♀ brach.; Paraná de Anama (Solimões), *219*, 28.III.1964, 1 ♂, 1 ♀ macr.; Lago Comprido (Careiro), *239*, 1 ♂, 1 ♀ brach. (G. Marlier, B.). Pará, Zona Bragantina, Quatipuru, Campo Bem-Bem, *A. 514–1*, 4.IV.1963, 1 ♂, 1 ♀ brach.; same, Campo Santarém-Macaco, *A. 518*, 6.IV.1963, 1 ♀ brach. (E. J. Fittkau, A.); Santarém, Laguinho, *S. 7*, 6.XII.1940, 1 ♂ macr.; same, *S. 8*, 6.XII.1940, 1 ♂ brach., 1 ♂ macr.; between Santarém and M. Alegre, Várzea, Cacual Grande, *S. 242*, 27.VIII.1950, 1 ♂ macr.; Rio Tapajós, Fordlândia, Parná do Cassepa, *S. 346*, 17.XII.1956, 3 ♂ brach., 1 ♀ macr. (H. Sioli, A.); Santarém, (F.A.O.), *120*, 8.XII.1963, 1 ♂ macr. (G. Marlier, A.).

Buenoa tarsalis Truxal, 1953

Buenoa tarsalis TRUXAL, 1953, p. 1392–1395, fig. 49 (Brasil).

BRASIL: Amazonas!, Pará, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Rio de Janeiro.

BRASIL: Amazonas, Rio Negro, Rio Marauia, Missao S. Antonio, *A. 474*, 10.I.1963, 3 ♂ (E. J. Fittkau, A.).

This species is near *B. antigone* which does not have the first tarsal segment of the middle leg emarginate as in *B. tarsalis* (Fig. 129).

Male, fore leg Fig. 127; rostral prong Fig. 128.

Buenoa truxali Nieser, 1968

Buenoa truxali NIESER, 1968, p. 128–130, fig. 131–134 (Suriname).

SURINAME, Marowijne, Suriname; BRASIL!, Amazonas.

BRASIL: Amazonas, Rio Negro, Rio Marauia, Missão S. Antonio, small pond in bed of rivulet, *A. 474*, 10.I.1963, 34 ♂, 22 ♀; Manaus, Rio Cuieiras, Igarapé Agua Encarnada, *A. 551–1*, 27.VII.1965, 24 ♂, 21 ♀ (E. J. Fittkau, A.).

Males of this species are easily recognizable by the anterior apical edge of the fore tibia which is sharply produced. In *B. fasciata* n. sp. this edge is more bluntly produced (Fig. 123, 130).

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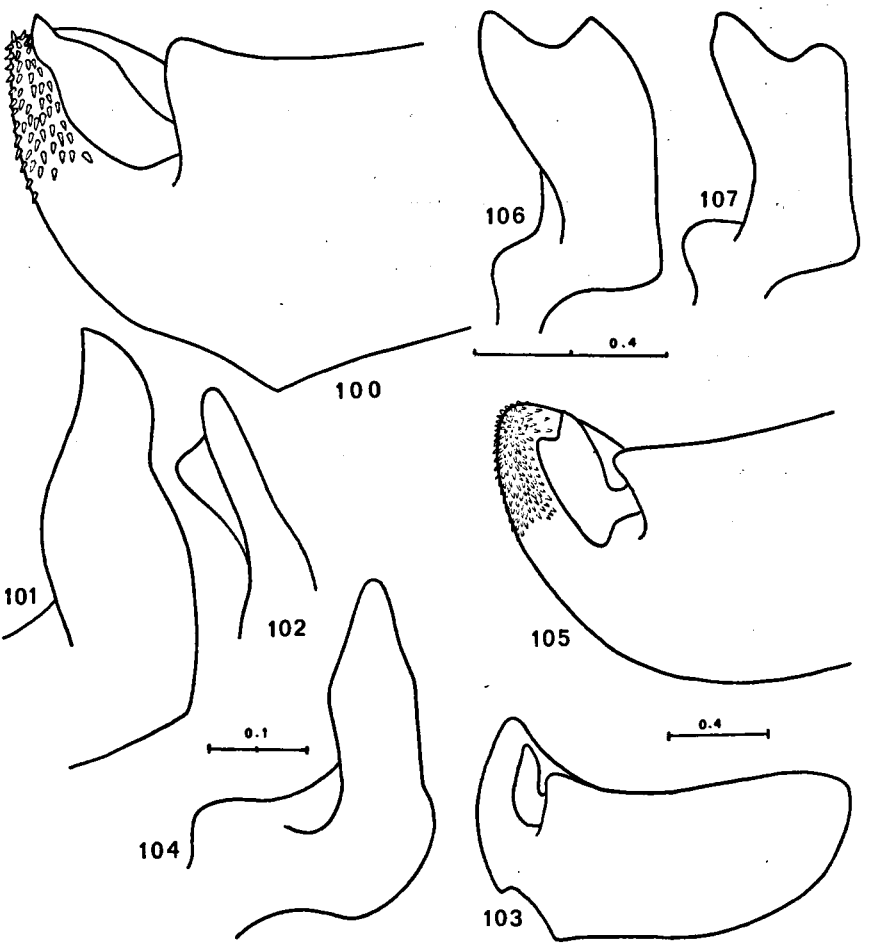

Fig. 100–102. *Notonecta bicirca*, male, from Chile: 100, apex of genital capsule; 101–102, different views of genital clasper.

Fig. 103–104. *Notonecta disturbata*, male, from Mato Grosso: 103, genital capsule; 104, clasper.

Fig. 105–107. *Notonecta indica*, male, from Colombia: 105–106, genital capsule and clasper of specimen from Nor Cali; 107, clasper of specimen from Parzudaxi.

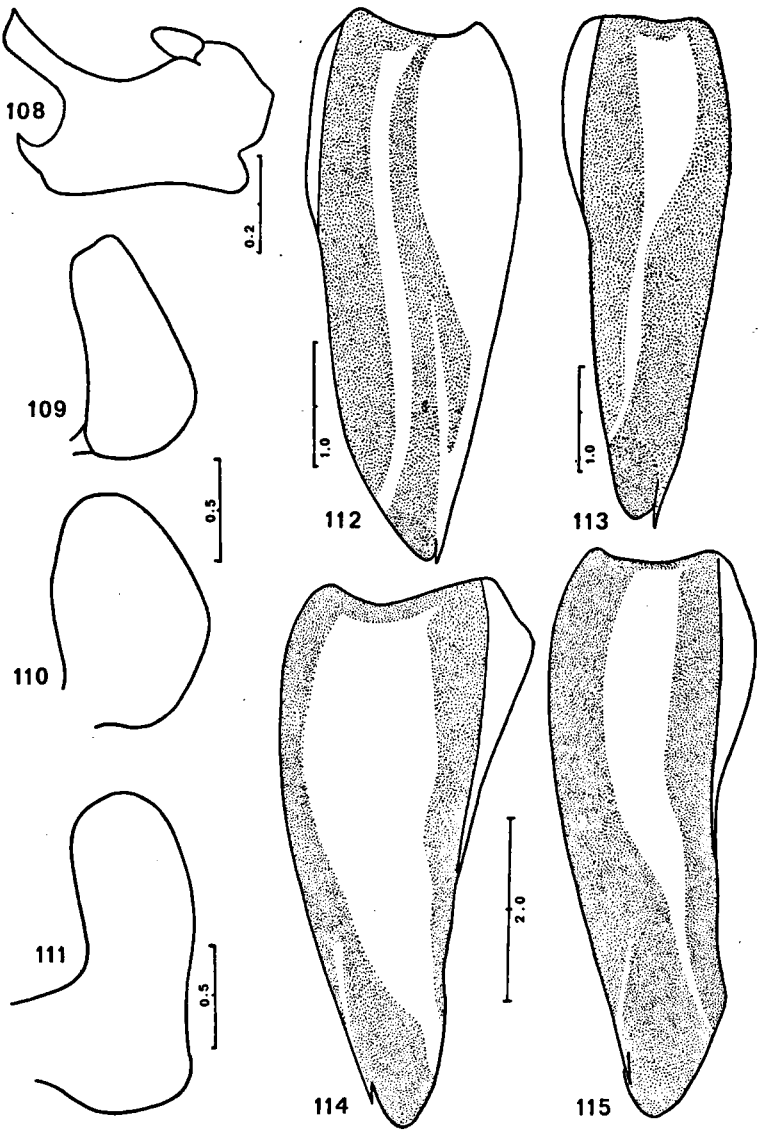

Fig. 108–109. *Martarega chinai*, male, from Amazonas: 108, genital capsule; 109, left clasper.

Fig. 110–111. Left genital claspers of male *Martarega*: 110, *M. membranacea* from Amazonas; 111, *M. williamsi* from Amazonas.

Fig. 112–115. Hemielytra of brachypterous *Martarega*: 112, *M. membranacea*, male, from Amazonas; 113, *M. hungerfordi*, female, from Amazonas; 114, *M. mcateei*, female, from Mato Grosso; 115, *M. uruguayensis*, female, from Argentina.

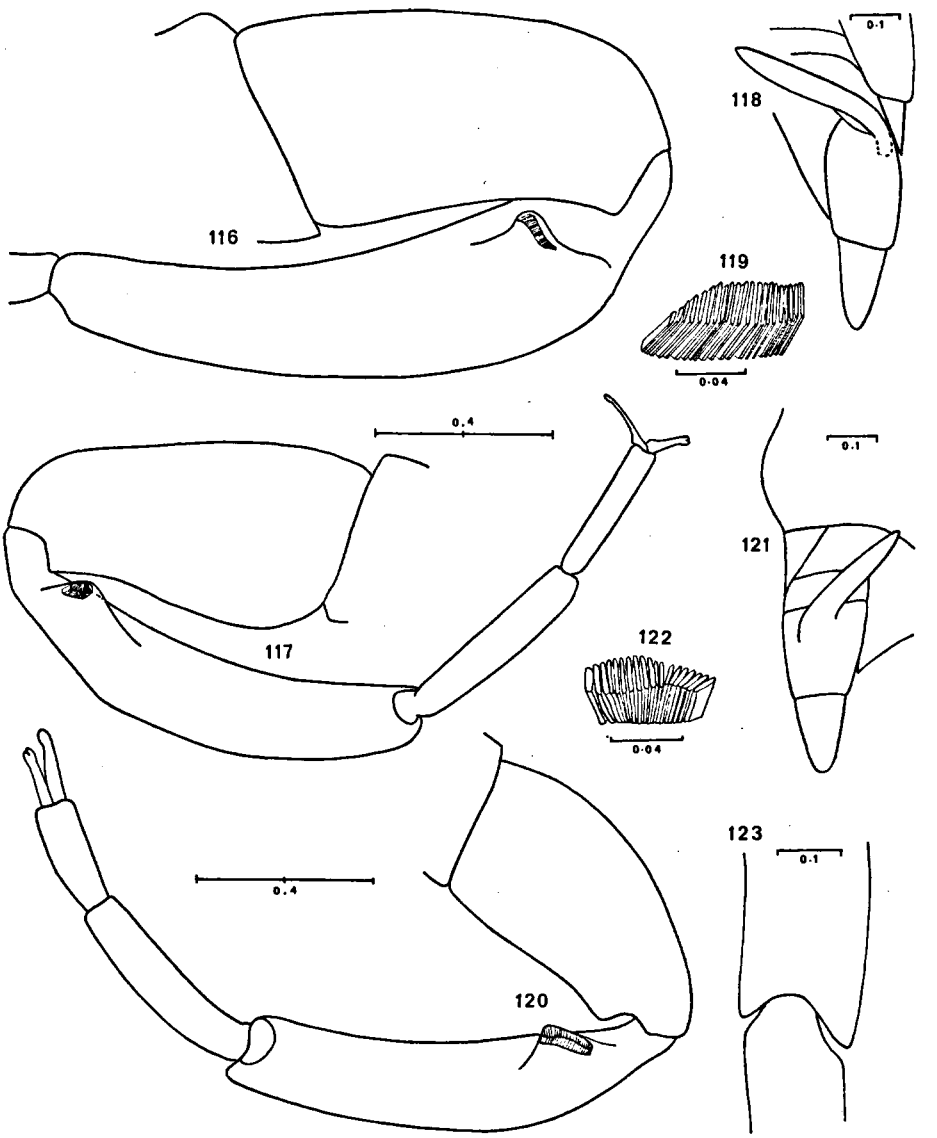

Fig. 116. *Buenoa absidiata*, male, from Perú: fore leg.
Fig. 117–119. *Buenoa amnigenoidea*, male paratype, from Amazonas: 117, fore leg; 118, rostrum; 119, tibial comb.
Fig. 120–123. *Buenoa fasciata*, male paratype, from Suriname: 120, fore leg; 121, rostrum; 122, tibial comb; 123, apex of right fore tibia seen from outer side.

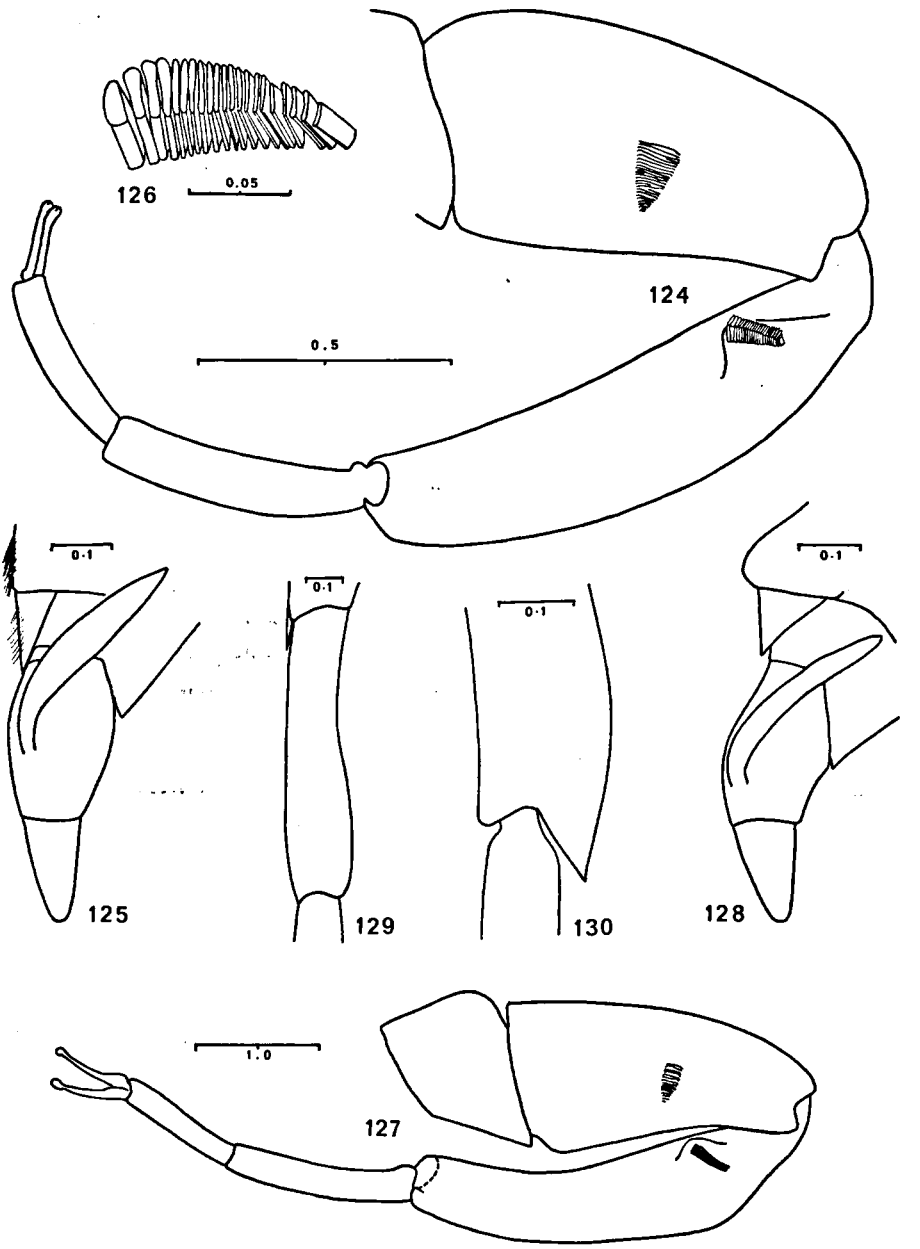

Fig. 124–126. *Buenoa fittkaui*, male paratype, from Goiás: 124, fore leg; 125, rostrum; 126, tibial comb.

Fig. 127–129. *Buenoa tarsalis*, male, from Amazonas: 127, fore leg; 128, rostrum; 129, first tarsal segment of intermediate leg.

Fig. 130. *Buenoa truxali*, male, from Amazonas: apex of right fore tibia seen from outer side.