

**REVISION OF THE GENUS *THYANTA* STÅL, 1862
(HETEROPTERA: PENTATOMIDAE) I. SOUTH AMERICA**

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Abstract.—The South American species of the pentatomid genus *Thyanta* Stål are revised. The species of *Thyanta* are grouped into three subgenera based primarily on differences and similarities in male and female genitalia. The nominate subgenus contains nine species of which only three are known to occur in South America. The subgenus *Phacidium* Breddin is exclusively South American and contains eight species. Sixteen of the 20 species of *Argosoma*, new subgenus occur in South America.

Diagnoses are provided for the genus, subgenera, and the 12 previously described species. Fifteen new species are described: *T. (A.) boliviensis*, *T. (A.) curvata*, *T. (A.) emarginata*, *T. (A.) excavata*, *T. (A.) hamulata*, *T. (A.) infuscata*, *T. (A.) obtusa*, *T. (A.) sinuata*, *T. (A.) straminea*, *T. (A.) vadosa*, *T. (A.) xerotica*, *T. (P.) convexa*, *T. (P.) fimbriata*, *T. (P.) robusta*, *T. (T.) rubicunda*. The following new synonymy is recognized (junior synonym in parentheses): *T. (P.) acutangula* Jensen-Haarup, 1928 (= *T. mendozana* Jensen-Haarup, 1928; = *T. crinita* Ruckes, 1957); *T. (A.) brasiliensis* Jensen-Haarup, 1928 (= *T. humeralis* Ruckes, 1956); *T. (A.) patruelis* (Stål, 1859) (= *T. humilis* Bergroth, 1891; = *T. nitidula* Ruckes, 1956); and *T. (A.) testacea* (Dallas, 1851) (= *T. signoreti* Ruckes, 1956). Lectotypes are designated for *Cimex perditior* Fabricius, *Euschistus adjunctor* Walker, *E. fasciatus* Walker, *Pentatoma pilosum* Reed, *P. testacea*, *T. acutangula*, *T. aeruginosa* Berg, and *T. brasiliensis*. A key is provided for the South American species of *Thyanta*.

The genus *Thyanta* Stål belongs in section-one of the nominate tribe of the Pentatominae; that is, its included species lack a spine or tubercle at the base of the 3rd (2nd visible) abdominal segment. It is also characterized by an elongate ostiolar canal that reaches $\frac{3}{5}$ or more of the distance from the mesial margin of the ostiole to the lateral margin of the metapleuron. Rolston (1987) provided a key to this section that separates the seven genera in South America with a similar elongate ostiolar canal.

In the past, identifications in the genus *Thyanta* have been difficult to make because species characters were based on differences in size and coloration, both of which are extremely variable. To make determinations more manageable the genus has been artificially divided into two groups according to geographical area. The present paper reviews the species of *Thyanta* that occur in South America.

Much care is required when working with the key to species. In some cases it will be necessary to have specimens of the green form that are not discolored. When mention is made of black or brown markings on the body surface, this refers to true structural coloration. Teneral specimens and specimens of brown forms tend to become greasy and certain structures darken due to discoloration. Often there are no reliable characters to identify female specimens. Characters of the genitalia can usually be seen without dissecting the specimens, but accurate determinations may require some dissection.

When label data is cited in the text each letter in parentheses represents a separate label with (a) being closest to the specimen. Museum acronyms are defined in the acknowledgments. All measurements are in millimeters. Measurements in parentheses are of the holotype.

Thyanta Stål

Thyanta Stål, 1862a:58; Stål, 1867:529; Stål, 1872:34–35; Distant, 1880:65; Summers, 1898:45; Kirkaldy, 1909:94; Van Duzee, 1917:51; Blatchley, 1926:104, 112–113; Jensen-Haarup, 1928:185–186; Furth, 1974:21–22; Froeschner, 1981:71; McPherson, 1982:48, 76–77; Rolston and McDonald, 1984:74, 76.

Type species. *Cimex perditor* Fabricius, 1794 (by subsequent designation, Kirkaldy, 1909:XXX).

Diagnosis. Third (second visible) abdominal sternite lacking medial spine or tubercle. Each ostiolar ruga sulcate proximally, reaching at least $\frac{3}{4}$ distance from mesial margin of ostiole to lateral margin of metapleuron. Each buccula evanescent or arcuately truncate at posterior termination. Juga and tylus usually subequal in length; rostrum reaching at least to metacoxae. Femora unarmed; superior surface of each tibia usually sulcate. Width of scutellum at distal end of frena $\frac{2}{3}$ or less basal scutellar width. Each paramere narrowly rounded to acute apically, lacking denticles, usually lacking lateral lobe, rarely with spinose lateral lobe.

Comments. The genus *Thyanta* is closely related to *Cyptocephala* Berg and *Tepa* Rolston and McDonald, from which it can be reliably separated only by differences in the male genitalia. Species of *Cyptocephala* and *Tepa* have the head of each paramere bearing a well-developed, apically rounded lateral lobe. Only two South American species of *Thyanta* have a similar lateral lobe, but in both species the apex of the lateral lobe is angulate or spinose. *Cyptocephala* further differs from *Tepa* and *Thyanta* in having a row of minute denticles between the lateral lobe and the apex of the paramere.

Jensen-Haarup (1928) described the subgenus *Parathyanta* within *Thyanta*. Rolston and McDonald (1984) placed *Parathyanta* as a junior synonym of *Cyptocephala*. At the same time they transferred four species from *Thyanta* to *Cyptocephala* and six species from *Thyanta* to *Tepa*. The species of both *Cyptocephala* and *Tepa* have been reviewed recently (Rolston 1972, 1986; Rider 1986b).

The genus *Thyanta* is divided into three subgenera: *Argosoma* new subgenus, *Phacidium* Breddin, and *Thyanta*. Sixteen of the 20 species of *Argosoma* occur in South America. The eight species of *Phacidium* are all restricted to South America. The nominate subgenus contains nine species, only three of which are known to occur in South America.

KEY TO SOUTH AMERICAN SPECIES OF *THYANTA*

1. Juga distinctly longer than tylus and leaving small subquadrate sinus in front of tylus (Fig. 49); superior surface of each tibia asulcate; segment 2 of each antenna at least 1.5 times length of segment 3 (southern South America) *aeruginosa* Berg
- Juga and tylus subequal in length or tylus slightly longer than juga; superior surface of each tibia sulcate; segment 2 of each antenna at most only slightly longer than segment 3 2

- 2(1). Scutellum with medial longitudinal band calloused, pale (Fig. 357); usually continuing onto pronotum; hemelytral membrane with vague fuscous band from distal end of scutellum to apex (Galapagos Islands) *similis* Van Duzee
- Scutellum uncalloused, occasionally a thin medial line present on pronotum; hemelytral membrane not marked as above 3
- 3(2). Inner basal angle of each hemelytral membrane fuscous (Fig. 337); each humeral angle narrowly rounded to nearly acute, but not spinose (Fig. 337) (Ecuador)
- Inner basal angle of each hemelytral membrane hyaline, although membrane may have distal brown flecks; each humeral angle variable, but if inner basal angle of hemelytral membrane somewhat brownish then each humeral angle spinose 4
- 4(3). Posterior termination of each buccula roundly truncate (Fig. 50); anterolateral pronotal margins slightly convex (Fig. 64) (Ecuador, Peru) *convexa*, n. sp.
- Posterior termination of each buccula evanescent (Fig. 214); anterolateral pronotal margins straight to concave 5
- 5(4). Exocorium and apex of corium stramineous, remainder of corium somewhat translucent, brown to green; anterior disk of pronotum stramineous; contrasting with green to brown posterior disk; humeral angles nearly spinose (Fig. 352) (Colombia, Ecuador) *straminea*, n. sp.
- Exocorium pale brown to green, concolorous with corium, except sometimes corium reddish, corium not translucent; coloration of pronotum variable, but if bicolored then humeral angles not spinose 6
- 6(5). Anterolateral and posterolateral abdominal angles piceous; humeral angles spinose 7
- Anterolateral abdominal angles never piceous; posterolateral abdominal angles variable; humeral angles variable 8
- 7(6). Each humeral angle weakly spinose, spines short, protruding beyond base of adjacent corium by the width of an eye or less (Fig. 16) (Galapagos Islands)
- Each humeral angle weakly spinose, spines short, protruding beyond base of adjacent corium by more than the width of an eye (Fig. 1) (southern U.S. to northern Argentina) *setigera* Ruckes
- 8(6). Ventral surface of each humeral angle distinctly margined with piceous; humeral angles distinctly angulate or spinose 9
- Ventral surface of each humeral angle usually concolorous with rest of propleuron, sometimes becoming reddish or brownish, but not piceous; humeral angles variable, but if coloration blackish then humeral angles rounded 10
- 9(8). Humeral angles robustly spinose, directed anterolaterad (Fig. 124); in ventral and dorsal views posterolateral angles of pygophore appearing double-cone-shaped (Figs. 133, 134) (southern Brazil) *robusta*, n. sp. (part)
- Humeral angles angulate but not spinose, somewhat retrorse (Fig. 109); posterolateral angles of pygophore not double-cone-shaped in ventral and dorsal views (Figs. 118, 119) (Bolivia, Argentina, Brazil) *acutangula* Jensen-Haarup
- 10(8). Humeral angles distinctly spinose 11
- Humeral angles angulate, narrowly rounded, or broadly rounded 15
- 11(10). Anterolateral pronotal margins distinctly dentate for $\frac{3}{4}$ distance from head to humeral angles (Fig. 32); lateral margins of body often pink; postspiracular black spots usually lacking (Chile) *rubicunda*, n. sp.
- Anterolateral pronotal margins lacking teeth, or at most a few weak teeth near head; lateral margins of body not pink; postspiracular spots variable 12
- 12(11). Pronotum with transhumeral reddish band; mesial angles of pronotal cicatrices piceous; postspiracular black spots present; posterior margin of pygophore produced posterodorsad medially, with medial emargination (Figs. 9, 10) (southern U.S. to northern Argentina) *perditor* (Fabricius) (part)

- Pronotum lacking transhumeral reddish band, or if extensive areas of red present on pronotum these forming two longitudinally oblong spots near middle on posterior disk; mesial angles of pronotal cicatrices and postspiracular spots variable; posterior margin of pygophore not produced medially (Fig. 88), lacking medial emargination 13
- 13(12). Humeral angles rather robust, directed anterolaterad (Fig. 124); black spot on each posterolateral abdominal angle relatively large, larger than diameter of spiracle; in ventral and dorsal views posterolateral angles of pygophore appearing double-cone-shaped (Figs. 133, 134) (southern Brazil) *robusta*, n. sp. (part)
- Humeral angles smaller, directed laterad and usually only slightly anterad (Figs. 139, 154); black spot on each posterolateral abdominal angle lacking or if present smaller than diameter of spiracle; posterolateral angles of pygophore not double-cone-shaped (Figs. 148, 149, 163, 164) 14
- 14(13). Apex of head broadly rounded (Fig. 140); black spot on each posterolateral abdominal angle distinctly present; pygophore in lateral view sinuously convex (Fig. 150); in caudal view posterior pygophoral margin broadly U-shaped (Fig. 147) (southern and central South America) *acuta* Ruckes
- Apex of head narrowly rounded (Fig. 155); black spot on each posterolateral abdominal angle lacking or minute; pygophore in lateral view concave (Fig. 165); in caudal view posterior pygophoral margin broadly V-shaped (Fig. 162) (Venezuela, Bolivia, Brazil) *cornuta* Ruckes
- 15(10). Males 16
- Females 28
- 16(15). Posteroventral surface of pygophore arcuately sulcate; posterior margin of pygophore with dense fringe of long hairs (southern South America) *fimbriata*, n. sp. (part)
- Posteroventral surface of pygophore asulcate; posterior margin of pygophore with at most a few short hairs 17
- 17(16). Posteroventral surface of pygophore arcuately rounded, not produced into blunt chin-like protuberance (Chile, western Argentina) *juvenca* Stål (part)
- Posteroventral surface of pygophore produced into blunt chin-like protuberance 18
- 18(17). In ectal view each paramere armed with either a spinose or angulate lateral lobe (Figs. 203, 219) 19
- Each paramere unarmed laterally 20
- 19(18). In ectal view lateral lobe of each paramere triangular (Fig. 219); in medial view apex of each paramere curving dorsad and caudad forming a distinct hook (Fig. 217) (Colombia, Peru) *hamulata*, n. sp. (part)
- In ectal view lateral lobe of each paramere spinose (Fig. 203); in medial view apex of each paramere curving gently dorsad, but not forming distinct hook (Fig. 201) (southern South America) *acuminata* Ruckes (part)
- 20(19). Lateral walls of genital cup each with elongate black carina; roughened spiculate area on lateral surface of each paramere linear, elongate (Fig. 233) (Peru, Bolivia, northern Argentina) *boliviensis*, n. sp. (part)
- Lateral walls of genital cup each with black tubercle; roughened spiculate area on lateral surface of each paramere circular, localized 21
- 21(20). Occurring north of the equator 22
- Occurring south of the equator 26
- 22(21). Posterior margin of pygophore in caudal view broadly and sinuously V-shaped (Fig. 302) (Colombia, Venezuela) *sinuata*, n. sp. (part)
- Posterior margin of pygophore in caudal view broadly U-shaped 23
- 23(22). In medial view apex of each paramere rounded, angled dorsad nearly 60 degrees

- from longitudinal axis of head of paramere (Fig. 287) (Venezuela) *curvata*, n. sp. (part)
- In medial view apex of each paramere variable, but if rounded then not angled dorsad beyond 45 degrees from longitudinal axis of head of paramere 24
- 24(23). In ectal view apex of each paramere obtusely rounded (Fig. 312) (Colombia, Venezuela) *obtusa*, n. sp. (part)
- In ectal view apex of each paramere narrowly rounded to spinose 25
- 25(24). In medial view each paramere with apex straight or bending slightly ventrad (Fig. 272), concave ectal surface oriented more mediad than dorsad (Trinidad and Tobago, Venezuela) *vadosa*, n. sp. (part)
- In medial view each paramere with apex curving gently dorsad (Fig. 171), concave ectal surface oriented more dorsad than mediad (Lesser Antilles, northern South America) *testacea* (Dallas) (part)
- 26(21). In medial view apex of each paramere spinose, lacking obtuse protuberance on shaft (Fig. 186) (central and southern South America) *patruelis* (Stål) (part)
- In medial view apex of each paramere usually rounded, presence of obtuse protuberance on shaft variable, but if apex of paramere is nearly spinose then protuberance is well-developed 27
- 27(26). In medial view apex of each paramere narrowly rounded, shaft with prominent obtuse protuberance (Fig. 247) (central and southern South America) *brasiliensis* Jensen-Haarup (part)
- In medial view apex of each paramere broadly rounded, shaft lacking obtuse protuberance (Fig. 324) (coastal desert from southern Ecuador to northern Chile) *xerotica*, n. sp. (part)
- 28(15). Posteromesial angle of each basal plate distinctly and moderately excavated 29
- Posteromesial angle of each basal plate rounded or only slightly emarginate 31
- 29(28). Concavity resulting from excavations in basal plates with sides distinctly divergent (Fig. 282) (Trinidad and Tobago, Venezuela) *vadosa*, n. sp. (part)
- Concavity resulting from excavations in basal plates with sides subparallel or slightly convergent 30
- 30(29). Concavity resulting from excavations in basal plates nearly as long as wide (Fig. 262); surface of basal plates distinctly rugose; distal end of sclerotized rod nearly linear, gradually becoming narrower towards apex (Fig. 263) (Peru) *emarginata*, n. sp. (part)
- Concavity resulting from excavations in basal plates distinctly wider than long (Fig. 267); surface of basal plates weakly rugose; distal end of sclerotized rod swollen subapically, narrowed apically (Fig. 268) (Colombia, Venezuela) *excavata*, n. sp. (part)
- 31(28). Distal end of sclerotized rod nearly linear, gradually becoming narrower towards apex 32
- Distal end of sclerotized rod swollen subapically, narrowed apically 34
- 32(31). Dilation of spermatheca constricted in middle, appearing doubly inflated (Fig. 228) (Colombia, Peru) *hamulata*, n. sp. (part)
- Dilation of spermatheca not constricted in middle, may be narrowed apically, but appearing as single inflation 33
- 33(32). Dilation of spermatheca with inflated portion abruptly narrowed for apical third, ending near apex of sclerotized rod (Fig. 258) (central and southern South America) *brasiliensis* Jensen-Haarup (part)
- Dilation of spermatheca with inflated portion not abruptly narrowed, reaching about $\frac{3}{4}$ distance from base to apex of sclerotized rod (Fig. 243) (Peru, Bolivia, northern Argentina) *boliviensis*, n. sp. (part)

- 34(31). Spermathecal duct swollen into distinct cylindrical structure below proximal flange (Fig. 93) (southern South America) *fimbriata*, n. sp. (part)
 - Spermathecal duct may be swollen and coiled below proximal flange, but not forming distinct cylindrical structure 35
- 35(34). Dorsal punctation minute, dense, surface appearing matte (Chile, western Argentina) *juvenca* Stål (part)
 - Dorsal punctation coarse, relatively sparse, surface glossy, shiny 36
- 36(35). Spermathecal duct with large amount of swelling and coiling below proximal flange, swelling carrot-shaped (Figs. 183, 198) 37
 - Spermathecal duct with relatively small amount of swelling and coiling below proximal flange, swelling not carrot-shaped 38
- 37(36). Occurring in Lesser Antilles, Colombia, Venezuela, and Surinam
 *testacea* (Dallas) (part)
 - Occurring in southern Peru and central Brazil south to Argentina
 *patruelis* (Stål) (part)
- 38(36). Occurring north of the equator 39
 - Occurring south of the equator 41
- 39(38). Usually with two longitudinally oblong reddish transhumeral spots, one on each side of middle (Colombia, Venezuela) *curvata*, n. sp. (part)
 - Dorsal surface lacking all reddish markings 40
- 40(39). Outer jugal margins subparallel for middle third of distance from eyes to apex of head (Fig. 309) (Colombia, Venezuela) *obtusa*, n. sp. (part)
 - Outer jugal margins sinuous, not parallel (Fig. 301) (Colombia, Venezuela)
 *sinuata*, n. sp. (part)
- 41(38). Occurring in the coastal desert from southern Ecuador to northern Chile
 *xerotica*, n. sp. (part)
 - Occurring in Bolivia, Brazil, Paraguay, and Argentina *acuminata* Ruckes (part)

Subgenus *Thyanta* Stål

Diagnosis. Punctures minute, dense. Posterior termination of bucculae evanescent. Anterolateral pronotal margins straight to concave, sometimes marked with piceous; each humeral angle rounded to angulate, often spinose; pronotal cicatrices sometimes marked with piceous in mesial angles. Ostiolar canals acuminate apically. Superior surface of each tibia sulcate.

Posterior margins of basal plates sinuous, posteromesial angles entire (Fig. 13). Distal end of sclerotized rod cone-shaped (Fig. 14); spermathecal bulb digitiform; cylindrical structure present below proximal flange (Fig. 15).

Pygophoral opening small, subtended on posteroventral surface by a rectangular or semicircular impression; posterior margin of pygophore straight to concave in caudal view, with medially incised protuberance in middle (Fig. 9). Each paramere F-shaped, obtuse protuberance on shaft usually prominent, apex spinose, ectal surface convex (Fig. 3), roughened spiculate area on lateral surface linear (Fig. 4). Each lateral conjunctival lobe of aedeagus with single spinose diverticulum (Fig. 6); dorsomedial conjunctival lobe usually well-developed (Fig. 7); theca large, subtriangular in lateral view, with dorsolateral protuberance on each side near caudal limit (Fig. 8); medial penial lobes and penisfilum moderate in size.

Comments. Species of the subgenus *Thyanta* have the pygophoral opening subtended by a semicircular or rectangular impression, and the posterior margin is distinctly emarginate medially. Species of *Phacidium* have the posteroventral surface

of the pygophore arcuately rounded or sulcate, and the posterior margin not emarginate medially. The posteroventral surface of the pygophore in species of *Argosoma* is produced into a blunt chin-like protuberance. Also, species of *Argosoma* have the ectal surface of each paramere concave, while it is convex in both *Phacidium* and *Thyanta*.

The female genitalia are also useful in separating species of *Thyanta* and *Phacidium*. In *Thyanta* the distal end of the sclerotized rod is cone-shaped, and the spermathecal bulb is digitiform. In *Phacidium* the distal end of the sclerotized rod is swollen subapically and narrowed distally, and the spermathecal bulb is globose. The female genitalia of both *Phacidium* and *Argosoma* are very similar, but females can usually be separated by the relative density of the dorsal punctation. The dorsal punctation is relatively dense in *Phacidium*, while it is less dense and more coarse in *Argosoma*.

Thyanta (Thyanta) perditor (Fabricius)

Figs. 1-15, Map 1

Cimex perditor Fabricius, 1794:102; Fabricius, 1803:163.

Pentatoma fascifera Palisot de Beauvois, 1817:150, fig. 8. (syn. by Dallas, 1851)

Pentatoma collaris Westwood, 1837:40. (syn. by Dallas, 1851)

Cimex transversalis Herrich-Schäffer, 1841:66. (syn. by Dallas, 1851)

Cimex dimidiatus Herrich-Schäffer, 1841:fig. 629. (syn. by Dallas, 1851)

Pentatoma dimidiatum: Herrich-Schäffer, 1844:94.

Euschistus perditor: Dallas, 1851:206; Walker, 1867:247.

Pentatoma (Mormidea) perditor: Guérin-Méneville, 1857:367.

Thyanta perditor: Stål, 1862a:58, Stål, 1862b:104; Stål, 1868:29; Stål, 1872:34; Uhler, 1872:399 (part); Uhler, 1876:289; Uhler, 1877:404 (part); Distant, 1880:66; Berg, 1884:100; Distant, 1893:333; Lethierry and Severin, 1893:148; Uhler, 1893:705; Uhler, 1894a:230 (part); Uhler, 1894b:173; Distant, 1900b:432; Van Duzee, 1904:52, 53 (part); Van Duzee, 1907:9; Kirkaldy, 1909:95; Banks, 1910:90; Zimmer, 1911:14 (part); Barber, 1914:523; Van Duzee, 1917:51-52; Barber, 1923:12; Blatchley, 1926:113, 114-115 (part); Barber, 1939:292-293; Torre-Bueno, 1939:230; Ruckes, 1957a:1, 20.

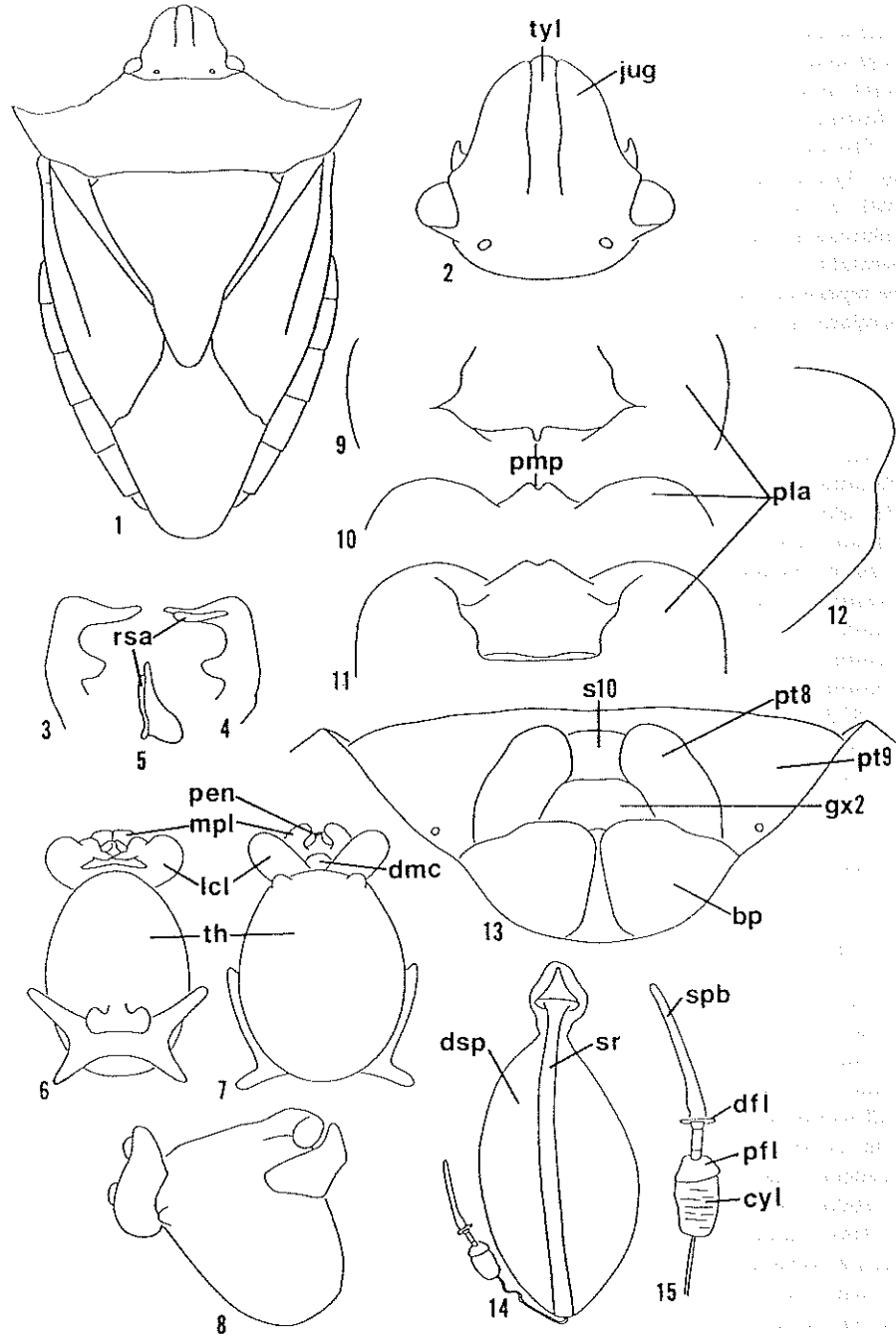
Euschistus fasciatus Walker, 1867:245. (syn. by Stål, 1872)

Euschistus adjunctor Walker, 1867:249. (syn. by Stål, 1872)

Diagnosis. Transhumeral rubiginous band usually present; often tylus and vertex of head reddish.

Outer jugal margins sinuous, not parallel (Fig. 2). Each humeral angle spinose, spine directed anterolaterad and protruding beyond adjacent corium by more than half width of eye; anterolateral pronotal margins not piceous, concave in dorsal view (Fig. 1). Mesial corner of each pronotal cicatrice black. Each abdominal sternite with postspiracular black spot on each side. Both anterolateral and posterolateral angles of abdominal sternites usually piceous.

Basal plates in caudoventral view with mesial margins straight to slightly convex, separated basally; posterior margins sinuous (Fig. 13). Pygophoral opening subtended by semicircular impression; posterior margin of pygophore produced posterodorsad, in ventral and dorsal views convex medially with small medial V-shaped emargination (Figs. 10, 11); posterior margin concave in lateral view (Fig. 12).



Types. Fabricius (1794) described *Cimex perditor* from 2♀♀ and 2♂♂ without designating a holotype or paratypes. The ♂ specimen labeled (a) "C: perditor" (b) "Thyanta perditor F." is designated lectotype. The remaining ♂ and 2♀♀ are designated paralectotypes. They have the following label data: (a) "Thyanta perditor F." (♂); (a) [green paper; no writing] (b) "Thyanta perditor F." (♀); and (a) [green paper; no writing] (b) "♀" (c) "Type" (d) "Thyanta perditor F." (♀). All four specimens, which are housed in the Universitetets Zoologiske Museum (Copenhagen, Denmark), were examined.

Pentatoma fascifera Palisot de Beauvois, *P. collaris* Westwood, *Cimex transversalis* Herrich-Schäffer, and *C. dimidiatus* Herrich-Schäffer were all placed as junior synonyms of *T. perditor* by Dallas (1851). The type specimens of Herrich-Schäffer are apparently no longer in existence, but the descriptions, including the figure of *C. dimidiatus*, agree reasonably well with *T. perditor*. The type specimens for *P. fascifera* and *P. collaris* were not examined.

Pentatoma fascifera was described from Santo Domingo, Dominican Republic (Palisot de Beauvois, 1817). Although its description is rather short, it does not differ in any significant way from *T. perditor*. Also, *T. perditor* is the only species of *Thyanta* in the Dominican Republic that has distinctly spinose humeral angles.

Westwood (1837) described *P. collaris* from the island of St. Vincent in the West Indies. Its description fits *T. perditor* in all respects, and *T. perditor* is the only species of *Thyanta* with distinctly spinose humeral angles that occurs on St. Vincent.

Walker (1867) described *Euschistus fasciatus* and *E. adjunctor*. Both of these species were placed as junior synonyms of *T. perditor* by Stål (1872). In neither case did Walker designate a holotype or paratypes, and it is difficult to ascertain how many specimens he examined. *Euschistus fasciatus* was described from at least two specimens, but only one syntype was located. It is here designated lectotype and has the following label data: (a) "Type" (b) "58.135 Mex. (Oajaca)" (c) "12. EUSCHISTUS FASCIATUS." [dorsal surface], "West Indies" [ventral surface]. Only one syntype of *E. adjunctor* was located. This specimen, labeled (a) "Type" (b) "Belize" [dorsal surface], "51 117" [ventral surface] (c) "39. EUSCHISTUS ADJUNCTOR." [dorsal surface], "O varius aut ochraceus, dense p" [ventral surface], is designated lectotype. Both lectotypes were examined and are typical specimens of *T. perditor*; both are conserved at the British Museum of Natural History (London, England).

At one time *Euschistus rubiginosus* Dallas was considered a synonym of *T. perditor*.

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Figs. 1–15. *T. perditor*. 1. Habitus. 2. Head. 3–5. Right paramere. 3. Medial view. 4. Lateral view. 5. Ectal view. 6–8. Theca and related structures. 6. Ventral view. 7. Dorsal view. 8. Lateral view. 9–12. Pygophore. 9. Caudal view. 10. Ventral view. 11. Dorsal view. 12. Lateral view. 13. Genital plates, caudoventral view. 14. Spermatheca. 15. Spermathecal pump. Symbols: bp, basal plate; cyl, cylindrical structure below proximal flange; dfl, distal flange; dmc, dorsomedial conjunctival lobe; dsp, dilation of spermatheca; gx2, second gonacoxa; jug, juga; lcl, lateral conjunctival lobe; mpl, median penial lobe; pen, penisfilum; pfl, proximal flange; pla, postero-lateral angle of pygophore; pmp, posterior margin of pygophore; pt8, eighth paratergite; pt9, ninth paratergite; rsa, roughened spiculate area on lateral surface of paramere; spb, spermathecal bulb; sr, sclerotized rod; s10, tenth sternite; th, theca; tyl, tylus.

Rider (1986a), however, examined the holotype and determined that it was a species of *Euschistus* and a senior synonym of *E. incus* Rolston.

Distribution. *Thyanta perditor* is the most widely distributed species in the genus, occurring from the southern United States to northern Argentina (Map 1).

Specimens examined. 167 specimens collected during every month of the year; deposited in AMNH, BMNH, CAS, CELM, CU, DAR, DBT, EGER, FSCA, IAS, LHR, QCAZ, SMEK, UCB, UNAM, UNCM, USNM. COLOMBIA: La Ceja, S. H. Antioquia: Bello; Medellín Valley; Sopetrán; Union. Cundinamarca: Sylvania, 60 km SW Bogotá. Magdalena: San Jerónimo; Santa Marta. Tolima: 9 km NW Espinal. Valle del Cauca: Bitaco Valley, 1 km above Bitaco; Buga; Palmira; Pance, 11 km S Cali; 1 km W Yumbo. VENEZUELA: El Valle. Lara: Sarare. Monagas: 4 km S El Rosario. SURINAM: Paramaribo: Paramaribo. FRENCH GUIANA: Cayenne: Macouria. ECUADOR: Bucay; Coto Callao; Juive; Oriente Río Negro; Pallatanga. Cotopaxi: Pifo. Imbabura: Chachimburo; Ibarra. Morona-Santiago: Macas, Río Upano. Napo: Baeza. Pichincha: Cugobambilla; Diluriguin; H. la Esperie; Palmeras; Pomasqui; Puembo; Pululahua; Quito; San Rafael; Tandapi; Valle de los. Tungurahua: Ambato Mulalillo. PERU: Valle Chanchamayo. Amazonas: Bagua Chica. Ayacucho: Huanta; Río Pampas. Cuzco: Macchupichu. Huánuco: 30 mi NE Huánuco; Pozuzo; Tingo María. Junín: Estancia Naranjal San Ramón. Lima: Barranca; Lima. BOLIVIA: Prov. Sara; Tropical. Chuquisaca: Monteagudo. Cochabamba: Prov. Chapare, Alto Palmar; Prov. Chapare, Chapare; Prov. Chapare, Christal-Mayu. La Paz: Coroico; Yungas de La Paz. Santa Cruz: Prov. Ichilo, Buena Vista. BRAZIL: Warta PR. Ceará: Barbalha. Mato Grosso: 35 mi W Araguaia; Independencia. Minas Gerais: Viçosa. Pará: Almeirim, São Raimundo. Parañá: 20 mi S Pato Branco. São Paulo: Barretos; 10 mi S Guapara. ARGENTINA: Jujuy. Misiones. Salta: Campo Santos de Salta.

Comments. Only three species of the nominate subgenus occur in South America, *T. perditor*, *T. rubicunda*, and *T. setigera*. *Thyanta setigera* occurs only on the Galapagos Islands and can usually be recognized by the relatively short humeral spines that protrude beyond the base of the adjacent corium by less than the width of an eye. *Thyanta rubicunda* can be identified by the strong denticulations along the anterolateral pronotal margins, and usually by the absence of black markings on the anterolateral angle of each abdominal segment. In contrast, *T. perditor* has relatively longer humeral spines that protrude beyond the base of the adjacent corium by more than the width of an eye, has the pronotal denticulations reduced and restricted to the half nearest the head, and usually has the anterolateral angle of each abdominal segment marked with black.

Thyanta (Thyanta) setigera Ruckes

Figs. 16-31

Thyanta perditor (of authors, not Fabricius): Heidemann, 1901:365; Barber, 1934: 282; Van Duzee, 1937:112.

Thyanta setigera Ruckes, 1957c:179-180, figs. 7, 8; Linsley and Usinger, 1966:133; Froeschner, 1981:71; Froeschner, 1985:43-44.

Diagnosis. Ovate. Dorsal surface green or brown, usually with at least partial transhumeral rubiginous band.

Apex of head broadly rounded; outer jugal margins sinuous, not parallel (Fig. 17). Anterolateral margins of pronotum concave in dorsal view, immaculate, with at most a few weak denticles near head; each humeral angle acute, weakly spinose, oriented laterad, spine protruding beyond base of adjacent corium by less than half width of eye (Fig. 16). Mesial angle of each pronotal cicatrice piceous. Postspiracular black spot present on both sides of each abdominal sternite; posterolateral angles and usually anterolateral angles of each abdominal sternite marked with black.

Mesial margins of basal plates in caudoventral view nearly straight, separated basally; posterior margins sinuous (Fig. 29). Pygophoral opening subtended by semi-circular impression; posterior margin in caudal view distinctly convex with medial V-shaped emargination (Fig. 25), concave in lateral view (Fig. 28).

Types. Ruckes (1957c) described *T. setigera* from 24♂♂ and 27♀♀ specimens, all from the Galapagos Islands. The holotype and 27 paratypes were examined. The holotype is housed in the California Academy of Sciences (San Francisco).

Distribution. Galapagos Islands, Ecuador.

Specimens examined. 39 specimens collected between 25 February and 17 June, and on 26 November; deposited in AMNH, CAS, CU, DAR, LACM, SMEK, UCB, USNM. ECUADOR: GALAPAGOS ISLANDS: *Fernandina Island:* nr. Española Island. *Gardner Island:* nr. Española Island. *Isabela Island:* Banks Bay; Tagus Cove. *N. Seymour Island.* *Rábida Island.* *San Cristóbal Island.* *Santa Cruz Island:* 1.5 mi N Academy Bay; Bellavista; Conway Bay; Sullivan Bay. *Santiago Island.*

Comments. The only other species of *Thyanta* that occurs on the Galapagos Islands is *T. similis*. *Thyanta setigera* is easily separated from *T. similis* by the spinose humeral angles. The humeral angles are rounded in *T. similis*.

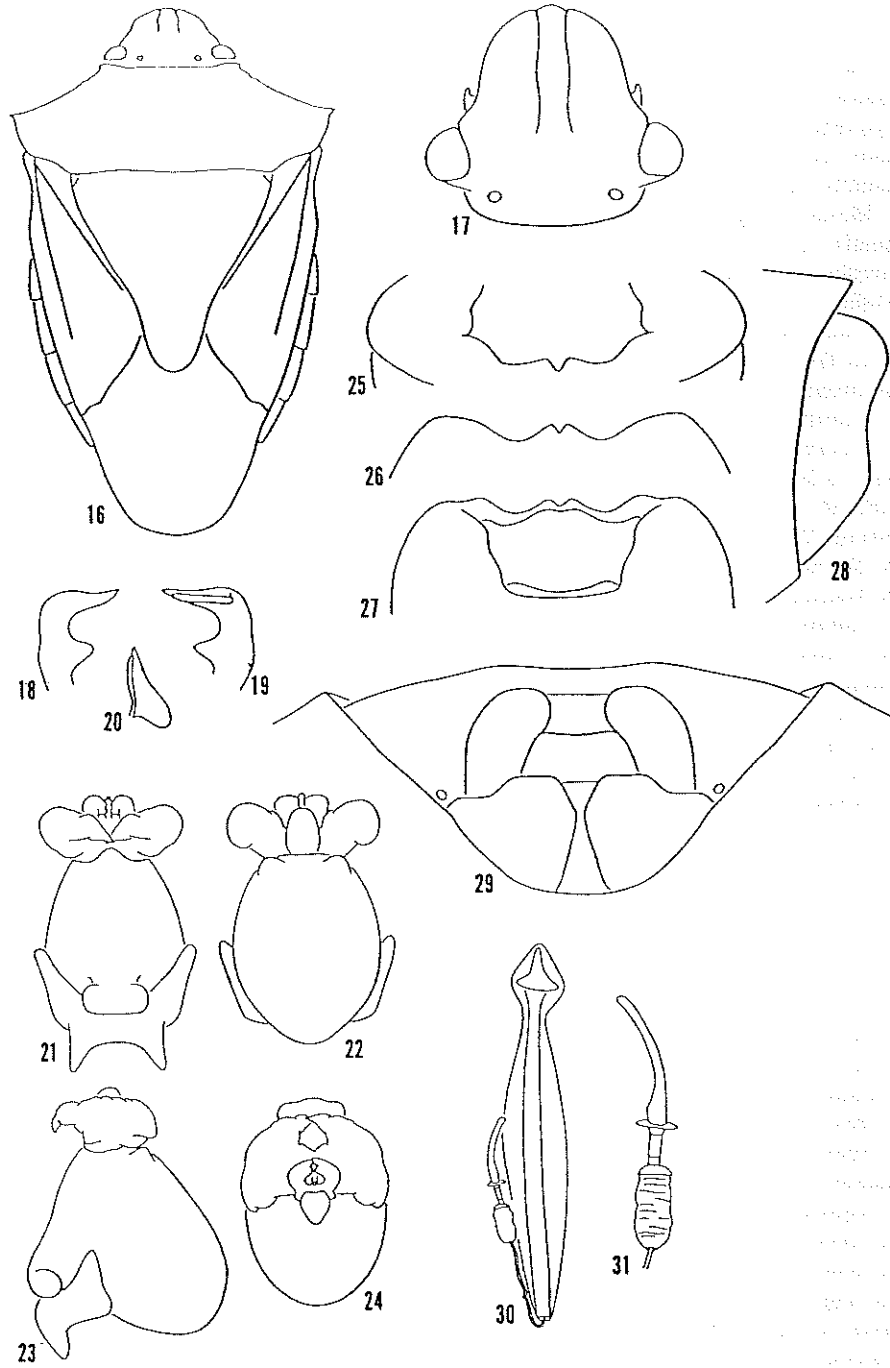
The relatively short humeral spines of *T. setigera*, protruding beyond the base of the adjacent corium by less than the width of an eye, readily distinguish this species from *T. perditor*. The only other related species occurring in South America is *T. rubicunda* which has strong denticulations along the anterolateral pronotal margins and usually lacks any black markings on the anterolateral angles of the abdominal segments. In contrast, *Thyanta setigera* has reduced pronotal denticulation and usually the anterolateral angle of each abdominal segment is marked with black.

***Thyanta (Thyanta) rubicunda* Rider, new species**

Figs. 32–47, Map 1

Description. Elongate ovate, dorsal surface pale to medium green or brown, often with pinkish-red markings between humeri, on apex of scutellum, and along lateral margins of pronotum, coria, and connexiva; punctures usually concolorous with surface.

Apex of head broadly rounded; outer jugal margins sinuous, not parallel, only slightly concave in front of eyes (Fig. 33). Antennae pale brown to green, distal fourth of segment 3 dark brown, segments 4–5 entirely dark brown. Anterolateral pronotal margins in dorsal view concave, strongly denticulate for $\frac{2}{3}$ distance nearest head; humeral angles spinose, oriented anterolaterad, spines relatively short (Fig. 32). Mesial angle of each pronotal cicatrice piceous. Coria densely and uniformly punctate; distal margins convex; costal angles angulate, reaching to middle of penultimate connexival segments (Fig. 32); hemelytral membranes hyaline with a few scattered



brown flecks. Connexiva narrowly exposed; posterolateral angle of each segment usually immaculate, sometimes minutely marked with black.

Ventral surface pale brown to green; punctures usually concolorous with surface. Rostrum pale brown to green, segment 4 mostly black, apex reaching between metacoxae. Femora and tibiae pale brown to green, tarsal segments and apex of each tibia darker. Postspiracular black spots lacking (except in brown form); posterolateral angles of each abdominal sternite at most minutely marked with black; anterolateral angles usually immaculate.

Mesial margins of basal plates in caudoventral view weakly concave, separated basally, almost contiguous apically; posterior margins sinuous, posteromesial angles broadly rounded (Fig. 45). Distal end of sclerotized rod cone-shaped (Fig. 46); spermathecal bulb digitiform, spermathecal duct forming distinct cylindrical structure below proximal flange (Fig. 47). Pygophoral opening subtended by semicircular impression; posterior margin nearly straight with medial V-shaped emargination in caudal view (Fig. 41); trisinuous in ventral and dorsal views (Figs. 42, 43); posterolateral angles prominent in lateral view (Fig. 44). Apex of each paramere spinose in ectal view (Fig. 36); shaft rather robust at base with small tubercle (Fig. 34); roughened, spiculate area on lateral surface linear (Fig. 35). Each lateral conjunctival lobe of aedeagus with single diverticulum (Fig. 37); dorsomedial lobe present (Fig. 38).

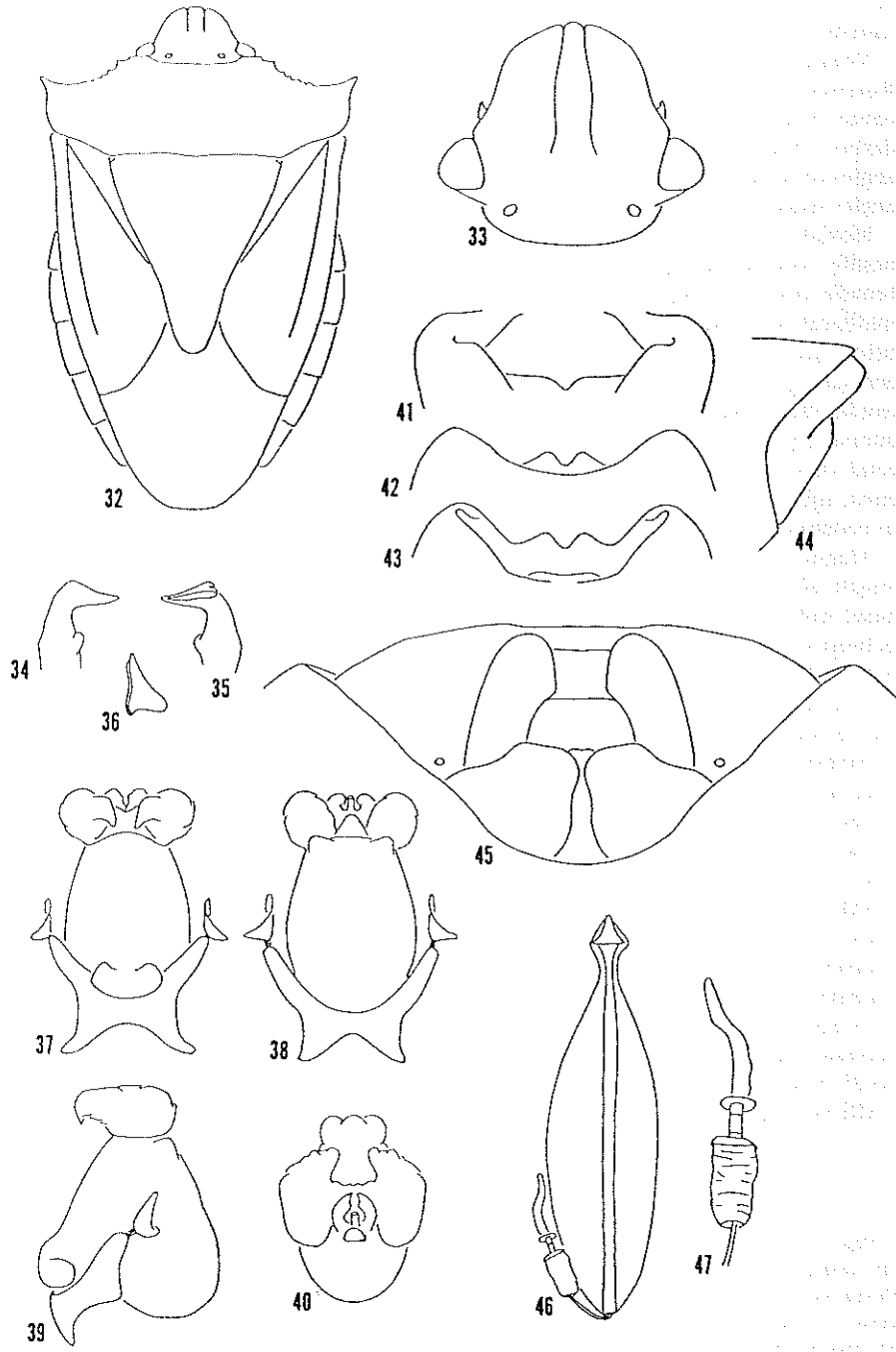
Measurements. Total length 8.28–10.72 (9.54); total width 5.83–7.02 (6.62); medial length of pronotum 1.62–2.13 (1.95). Medial length of scutellum 3.48–4.53 (3.86); basal width 3.20–3.75 (3.42); width at distal end of frena 1.07–1.47 (1.40). Length of head 1.72–1.90 (1.72); width 2.23–2.54 (2.30). Length of segments 1–5 of antennae 0.40–0.44 (0.44), 0.92–0.98 (0.92), 0.92–1.03 (0.92), 1.03–1.10 (1.03), and 1.07–1.14 (1.14), respectively. Length of segments 2–4 of rostrum 1.32–1.47 (1.34), 0.74–0.88 (0.77), and 0.74–0.77 (0.74), respectively.

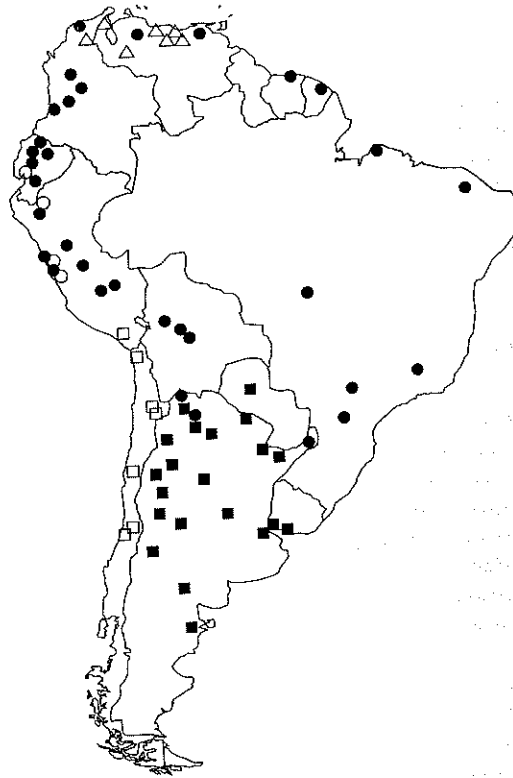
Holotype. ♂ labeled (a) "Pocos, Antofagaste Prov. E. of Atacama Salt Lk., Chile March 1955, Luis E. Pena, Collector" (b) "*Thyanta juvenca* Stal, Lutz '57." Deposited in the American Museum of Natural History (New York).

Paratypes. 5♂♂, 13♀♀. Labeled same as holotype except (b) "J C Lutz Collection 1961" (♀ USNM); (a) "Rayado Aconc. 18-VIII-1960" (b) "L. Campos colector" (♂ IAS); (a) "CHILE: San Pedro de Atacama, N. of Atacama Salt Lake, Antofagaster Prov. V-1-6-1964" (b) "L.E.Pena Collector" (2♀♀ AMNH); (a) "Estancia Castilla Vallenar" (b) "8- Mayo 1969.-" (c) "J.Aranda Colector" (♂ DAR; ♀ IAS); "Chile. Vallenar 3.VII.86 En alfalfa Col. SAG" (♂ IAS); "CHILE Pudahuel Vegetación 25.V.85 Col. R. Hevia" (♂ IAS); (a) "Chaca (Chile?) 11-5-55 L.E. Pena" (b) "*Thyanta juvenca* Stal, Det. J.C. Lutz" (♀ AMNH); (a) "Chile Mamina IX.17.51" (b) "THOMAS F. HALSTEAD COLLECTION, California Academy of Sciences Accession" (♀ CAS); (a) "Rio Lluta, Arica Dept. Tarapaca Prov., Chile Nov. 11-13, 1955; 500 Mt.

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Figs. 16–31. *T. setigera*. 16. Habitus. 17. Head. 18–20. Right paramere. 18. Medial view. 19. Lateral view. 20. Ectal view. 21–24. Theca and related structures. 21. Ventral view. 22. Dorsal view. 23. Lateral view. 24. Caudal view. 25–28. Pygophore. 25. Caudal view. 26. Ventral view. 27. Dorsal view. 28. Lateral view. 29. Genital plates, caudoventral view. 30. Spermatheca. 31. Spermathecal pump.





Map. 1. *T. (P.) aeruginosa*, (■); *T. (P.) convexa*, (○); *T. (A.) curvata*, (△); *T. (T.) perditor*, (●); *T. (T.) rubicunda*, (□).

Luis E. Pena, Collector" (b) "J C Lutz Collection 1961" (c) "Thyanta juvenca Stal" (♀ USNM); (a) "LOMAS de PEÑUELAS LA SERENA -II-1953" (b) "Thyanta chilensis H.S. Det. D.B.Thomas 1978" (♀ MNHS); "LOMAS de PEÑUELAS. LA SERENA -II-1953" (♀ MNHS); (a) "Los Andes, Chile" (b) "17-V-79 Coll. G. Gordh" (♀ UCR); (a) "Peñueles 8-3-53" (b) "Thyanta chilensis H.S. Det. D.B. Thomas 1978" (♀ DBT); (a) "Arequipa Peru 10,28, '98" (b) "Herbert Osborn Collection" (♂ 2♀♀ OSU), except 1♀ with (c) "may be patruelis St." and 1♀ with (c) "Arequipa: Oct. 30,98." (OSU).

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Figs. 32-47. *T. rubicunda*. 32. Habitus. 33. Head. 34-36. Right paramere. 34. Medial view. 35. Lateral view. 36. Ectal view. 37-40. Theca and related structures. 37. Ventral view. 38. Dorsal view. 39. Lateral view. 40. Caudal view. 41-44. Pygophore. 41. Caudal view. 42. Ventral view. 43. Dorsal view. 44. Lateral view. 45. Genital plates, caudoventral view. 46. Spermatheca. 47. Spermathecal pump.

Distribution. Peru and Chile (Map 1).

Comments. This species can be identified by the reduced amount of black markings on the abdominal venter, by the shape and orientation of each humeral spine, by the denticulation along the anterolateral pronotal margins, and usually by the pinkish coloration along the lateral margins of the body. The shape of the paramere is also unique within the nominate subgenus. The obtuse protuberance on the shaft of the paramere is reduced and nearer the base of the shaft.

Etymology. In Latin, *rubicunda* means pink-bordered, a character that many specimens of this species exhibit.

Subgenus *Phacidium* Breddin

Phacidium Breddin, 1912:92; Rolston and McDonald, 1984:83-84 (syn. with *Thyanta*).

Type species. *Phacidium euchlorum* Breddin, 1912 (by monotypy).

Diagnosis. Punctuation small, relatively dense, dorsal surface appearing matte. Distal end of sclerotized rod swollen subapically, narrowed and sometimes elongate distally (Fig. 76); spermathecal bulb globose, usually with relatively large amount of coiling below proximal flange, sometimes forming cylindrical structure (Fig. 62). Posteroventral surface of pygophore arcuately rounded or with deep, broad sulcus; posterior margin entire, sinuous (Fig. 51), or sometimes broadly V-shaped (Fig. 69). Each paramere apically acute, ectal surface convex (Fig. 58), lacking dorsomedial concave surface.

Comments. The male genitalia are useful in separating species of *Phacidium* from species of the other two subgenera (see comments under subgenus *Thyanta*). The female genitalia are also useful in separating species of *Phacidium* and *Thyanta*. Females of *Argosoma* can be recognized by their relatively sparse and coarse dorsal punctuation.

Thyanta (Phacidium) aeruginosa Berg

Figs. 48-63, Map 1

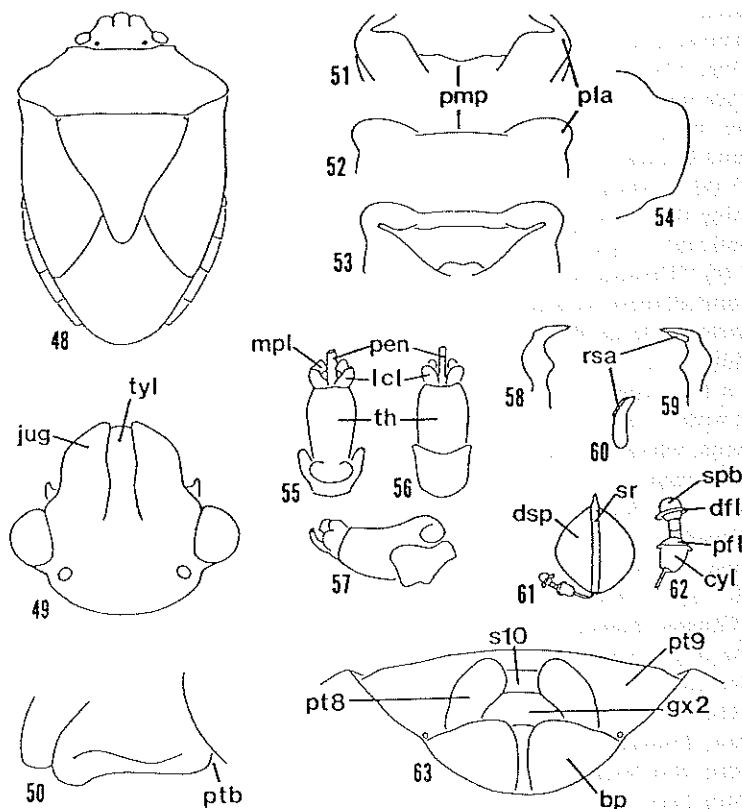
Thyanta aeruginosa Berg, 1878:24; Lethierry and Severin, 1893:147; Kirkaldy, 1909:94; Rolston and McDonald, 1984:83-84.

Phacidium euchlorum Breddin, 1912:92-93. (syn. by Rolston and McDonald, 1984)

Diagnosis. Ovate, distinctly convex; dorsal punctuation minute, dense.

Head declivitous; juga distinctly longer than tylus, outer jugal margins subparallel for middle third of distance from eyes to apex (Fig. 49). Segment 2 of each antenna at least 1.5 times as long as segment 3. Posterior termination of each buccula arcuately truncate. Anterolateral margins of pronotum weakly carinate, straight to slightly concave; each humeral angle rounded, at most protruding slightly beyond base of adjacent corium (Fig. 48); pronotal cicatrices immaculate, often slightly paler than surrounding surface. Hemelytral membranes hyaline, lacking brown flecks. Connexiva and abdominal venter lacking all black markings. Superior surface of each tibia asulcate.

Mesial and posterior margins of basal plates straight to slightly convex, posteromesial angles rounded (Fig. 63). Sclerotized rod slightly swollen subapically, narrowed



Figs. 48–63. *T. aeruginosa*. 48. Habitus. 49. Head. 50. Buccula, lateral view. 51–54. Pygophore. 51. Caudal view. 52. Ventral view. 53. Dorsal view. 54. Lateral view. 55–57. Theca and related structures. 55. Ventral view. 56. Dorsal view. 57. Lateral view. 58–60. Right paramere. 58. Medial view. 59. Lateral view. 60. Ectal view. 61. Spermatheca. 62. Spermathecal pump. 63. Genital plates, caudoventral view. Symbols: bp, basal plate; cyl, cylindrical structure below proximal flange; dfl, distal flange; dsp, dilation of spermatheca; gx2, second gonacoxa; jug, juga; lcl, lateral conjunctival lobe; mpl, median penial lobe; pen, penisfilum; pfl, proximal flange; pla, posterolateral angle of pygophore; pmp, posterior margin of pygophore; ptb, posterior termination of buccula; pt8, eighth paratergite; pt9, ninth paratergite; rsa, roughened spiculate area on lateral surface of paramere; spb, spermathecal bulb; sr, sclerotized rod; s10, tenth sternite; th, theca; tyl, tylus.

apically (Fig. 61); spermathecal bulb globose; spermathecal duct forming cylindrical structure below proximal flange (Fig. 62).

Posteroventral surface of pygophore arcuately rounded; posterior margin of pygophore sinuously U-shaped in caudal view (Fig. 51); slightly convex in lateral view (Fig. 54); posterolateral angles prominent in ventral and dorsal views (Figs. 52, 53). Apex of each paramere spinose, curving gently mediad from ectal view (Fig. 60); ectal surface convex, lacking dorsomedial concave surface (Fig. 58); roughened, spic-

ulate area on lateral surface elongate, linear (Fig. 59). Aedeagus with each lateral conjunctival lobe somewhat reduced, apices of median penial lobes visible from lateral view (Fig. 57); penisfilum well-developed (Fig. 55); theca lacking dorsolateral protuberance near caudal limit (Fig. 56).

Types. Berg (1878) described *T. aeruginosa* from at least 1♂ and 3♀♀ from Buenos Aires and Mendoza, Argentina, without designating a holotype or paratypes. The ♀ labeled (a) "Typus" (b) "Buenos Aires" (c) "1398" is designated lectotype. The remaining three specimens are designated paralectotypes. They have the following label data: (a) "Typus" (b) "Mendoza" (c) "1398" (2♀♀); and (a) "Typus" (b) "Buenos Aires" (c) "Thyanta aeruginosa Berg" (d) "1398" (♂?—abdomen missing). The lectotype and all three paralectotypes were examined, and are conserved in the Universidad Nacional de La Plata (Argentina).

Breddie (1912) described *Phacidium euchlorum* from 1♀ and 2♂♂; without designating a holotype or paratypes. Rolston and McDonald (1984) synonymized this species with *T. aeruginosa* and designated a lectotype and paralectotypes. The type specimens, which are housed in the Université Louis Pasteur, Strasbourg, France, were examined.

Distribution. Southern South America (Map 1).

Specimens examined. 260 specimens collected between 24 September and 25 June; deposited in AMNH, BMNH, CAS, CU, DAR, LHR, MBR, MLP, SMEK, UNL, USNM, ZMB. PARAGUAY: Gran Chaco, 260 km W Paraguay R. ARGENTINA: Ibarra Grasso. *Buenos Aires:* Buenos Aires; Lujan; Punta Lara; Quesada; Santa de la Ventana; Tigre. *Catamarca:* Chaco: Resistencia. *Chubut:* Trelew. *Córdoba:* Ao. Te-gua; Córdoba. *Corrientes:* Concepción. *Formosa:* Gran Guardia. *Jujuy:* Jujuy. *La Rioja:* Guandacol; 20 km N La Rioja; Los Robles. *Mendoza:* Mendoza; 100 km N Mendoza; Potrerillos; San Martin; San Rafael; 40 km N San Rafael. *Neuquén:* Barrancas. *Río Negro:* General Fernandez Oro. *San Juan:* San Juan; 51 mi N San Juan. *San Luis:* Buena-Vista R. Batavia. *Santa Fe:* Carcaraña; Ceres; Montevideo; Santa Fe; Santa Fe River Salt Flats; Villa Ana. *Santiago del Estero:* Chaco de Santiago; Rio Salado. *Tucumán:* San Miguel de Tucumán. URUGUAY: *Colonia:* La Estanzuela. *Montevideo:* Montevideo. *San José:* Santa Luzia.

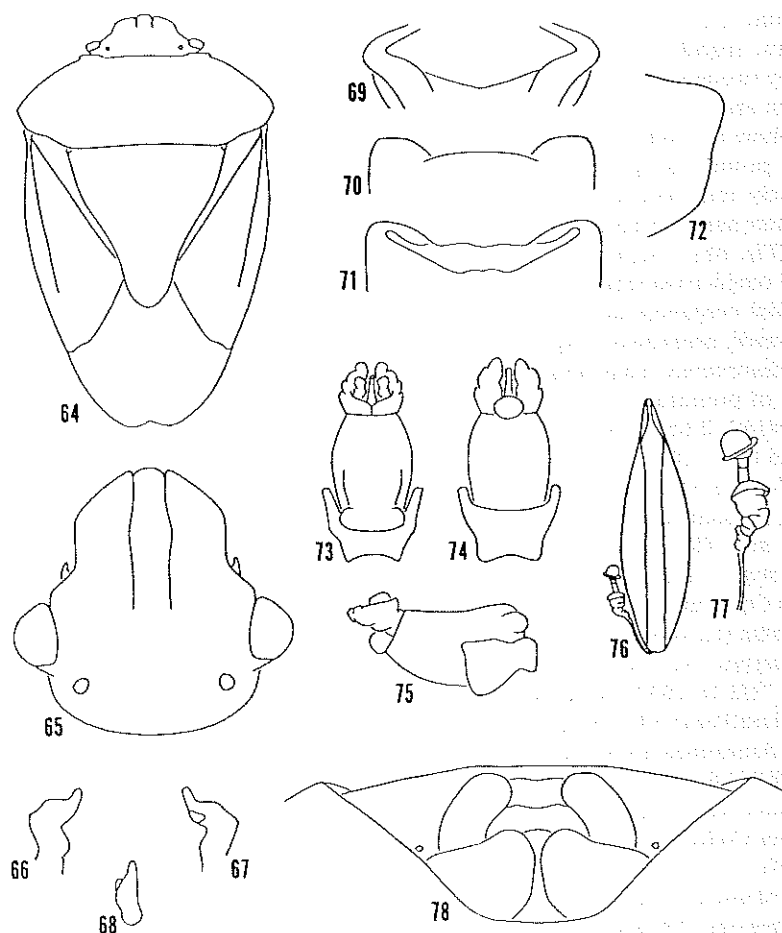
Comments. *Thyanta aeruginosa* can be separated from all other congeners by the asulcate tibiae, the juga which are distinctly longer than the tylus, and the second antennal segment which is distinctly longer than the third segment.

***Thyanta (Phacidium) convexa* Rider, new species**

Figs. 64–78, Map 1

Description. General form ovate, distinctly convex. Dorsal surface stramineous to pale brown, punctures dark brown to dark green, a few interstitial pale points scattered on each corium.

Dorsal surface of head transversely convex; juga and tylus subequal in length or tylus slightly longer than juga. Outer jugal margins subparallel for middle third of distance from eyes to apex (Fig. 65). Antennae pale brown to green, segments 3–5 usually faintly darker on distal half of each segment. Anterolateral pronotal margins weakly convex in dorsal view (Fig. 64), concolorous with rest of pronotum. Humeral angles narrowly rounded, protruding slightly beyond base of adjacent coria (Fig. 64). Pronotal cicatrices immaculate. Apex of each corium narrowly rounded, usually



Figs. 64-78. *T. convexa*. 64. Habitus. 65. Head. 66-68. Right paramere. 66. Medial view. 67. Lateral view. 68. Ectal view. 69-72. Pygophore. 69. Caudal view. 70. Ventral view. 71. Dorsal view. 72. Lateral View. 73-75. Theca and related structures. 73. Ventral view. 74. Dorsal view. 75. Lateral view. 76. Spermatheca. 77. Spermathecal pump. 78. Genital plates, caudoventral view.

reaching beyond middle of penultimate connexival segment; posterior margin of corium convex; hemelytral membranes hyaline with several faint brown flecks. Connexiva pale brown, posterolateral angle of each segment usually black.

Ventral surface pale brown to green; abdominal punctures concolorous with surface; punctures on thoracic pleura usually dark brown. Posterior termination of each buccula roundly truncate. Rostrum reaching to posterior margin of third (second visible) abdominal segment. Ostiolar canal acuminate distally. Legs pale brown to green. Postspiracular black spot usually present on each side of each abdominal sternite. Posterolateral angles of abdominal sternites piceous.

Mesial margins of basal plates in caudoventral view convex; posterior margins sinuous, slightly concave, posteromesial angles rounded (Fig. 78). Sclerotized rod slightly swollen subapically, distinctly narrowed apically (Fig. 76); spermathecal duct swollen and with much coiling below proximal flange (Fig. 77). Posterior margin of pygophore in caudal view U-shaped, medial portion concave (Fig. 69); posterolateral angles prominent in ventral and dorsal views (Figs. 70, 71); posteroventral surface arcuately rounded, not produced caudad in lateral view (Figs. 72). Apex of each paramere narrowly rounded in ectal view (Fig. 68), curving distinctly dorsad in medial view (Fig. 66); roughened, spiculate area on lateral surface circular (Fig. 67). Each lateral conjunctival lobe of aedeagus with single rounded diverticulum (Fig. 73); dorsomedial conjunctival lobe distinct (Fig. 74); median penial lobes and penisfilum moderately prominent (Fig. 73).

Measurements. Total length 6.31–7.18 (6.31); total width 4.10–4.73 (4.42); medial length of pronotum 1.51–1.73 (1.51). Medial length of scutellum 2.80–3.13 (2.83); basal width 2.65–2.98 (2.87); width at distal end of frena 1.03–1.25 (1.07). Length of head 1.64–1.81 (1.64); width 2.03–2.19 (2.06). Length of segments 1–5 of antennae 0.37–0.40 (0.37), 0.70–0.81 (0.81), 0.72–0.83 (0.74), 0.98–0.99 (0.98), and 0.99–1.03 (1.03), respectively. Length of segments 2–4 of rostrum 1.21–1.42 (1.21), 0.66–0.74 (0.68), and 0.81–0.83 (0.83), respectively.

Holotype. ♂ labeled (a) "Peru S.A. III.19 1937 E.G. Smyth" (b) "J.R.de la Torre-Bueno Collection K.U." Deposited in the Snow Entomological Museum, University of Kansas (Lawrence).

Paratypes. 1♂, 7♀♀. Labeled same as holotype (2♀♀ SMEK); labeled as holotype except "III.16 1937" (♀ SMEK); labeled as holotype except "I.26 1936" (♀ SMEK); (a) "Lima(Peru) VI. 1939 leg. Weyrauch" (b) "W K W 5776" (♂ USNM); "Peru. Dpto. Amazonas 43 K. ne. Chikiaco 1050' 6–10 XI 1978 L. J. Barkley" (♀ LHR); (a) "PERU:8 km. NE. Pucusana, Lima. IX-12-54" (b) "E.I.Schlinger & E.S.Ross collectors" (♀ CAS); (a) "PERU Chancay river valley III-15-51" (b) "Ross and Michelbacher Collectors" (♀ CAS); (a) "ECUADOR Guayaquil" (b) "12-1-53 at light" (♀ USNM).

Distribution. Ecuador and Peru (Map 1).

Comments. *Thyanta convexa* and *T. aeruginosa* are very similar in general appearance and are the only two species in the genus that have the posterior termination of each buccula roundly truncate; in all other species it is evanescent. *Thyanta convexa* differs from *T. aeruginosa* in having the superior surface of each tibia sulcate and the juga and tylus subequal in length. *Thyanta convexa* further differs from all other congeners by the slightly convex anterolateral pronotal margins and the male genitalia.

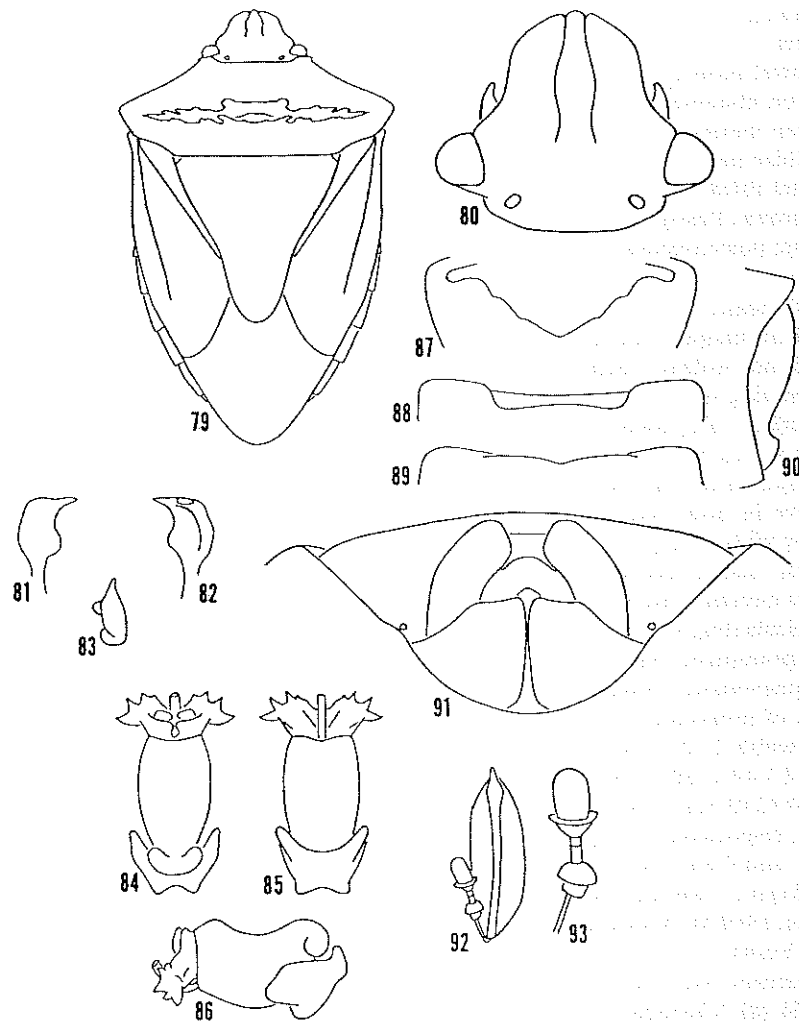
Etymology. Named for the convex anterolateral margins of the pronotum.

***Thyanta (Phacidium) fimbriata* Rider, new species**

Figs. 79–93, Map 4

Description. Dorsal surface brown to medium green; usually anterior disc of pronotum paler than posterior disc.

Head evenly rounded apically; outer jugal margins sinuous, not parallel (Fig. 80). Antennae green to brown, distal third of segment 3 reddish-brown, segments 4–5 entirely reddish brown. Anterolateral margins of pronotum in dorsal view concave;



Figs. 79-93. *T. fimbriata*. 79. Habitus. 80. Head. 81-83. Right paramere. 81. Medial view. 82. Lateral view. 83. Ectal view. 84-86. Theca and related structures. 84. Ventral view. 85. Dorsal view. 86. Lateral view. 87-90. Pygophore. 87. Caudal view. 88. Ventral view. 89. Dorsal view. 90. Lateral view. 91. Genital plates, caudoventral view. 92. Spermatheca. 93. Spermathecal pump.

each humeral angle narrowly rounded to angulate, protruding beyond base of adjacent corium (Fig. 79). Each pronotal cicatrice marked with piceous in mesial angle. Usually an elevated, pale, subcalloused line present between humeral angles. Hemelytra uniformly punctate, lateral margin at base pale, subcalloused; posterior margins convex (Fig. 79); costal angle rounded, usually reaching to near middle of penultimate connexival segment; hemelytral membranes hyaline with few to many pale brown flecks.

Connexiva narrowly exposed, brown to green; posterolateral angle of each segment piceous.

Ventral surface pale to medium brown, rarely with small dark-brown spots scattered on abdomen. Rostrum pale brown, most of segment 4 black, apex reaching between metacoxae or slightly beyond. Ostiolar canal acuminate apically. Femora and tibiae pale brown to green with fuscous spot on superior surface of each femur at distal third, rarely with scattered small brown spots; tarsal segments reddish or dark brown. Postspiracular black spot usually present on each side of each abdominal sternite; posterolateral angles of each sternite piceous, anterolateral angles immaculate.

Basal plates in caudoventral view subtriangular; mesial margins slightly convex; posterior margins sinuous, posteromesial angles narrowly rounded (Fig. 91). Sclerotized rod swollen subapically, narrowed apically (Fig. 92); spermathecal duct swollen, forming small cylindrical structure below proximal flange (Fig. 93). Posteroventral surface of pygophore deeply sulcate, becoming shallow laterally, obtuse carina below sulcus bearing row of long setae; posterior margin of pygophore sinuously V-shaped in caudal view, also bearing row of setae (Fig. 87); pygophore shallowly concave in both ventral and dorsal views (Figs. 88, 89); in lateral view, broadly convex with emargination ventrally (Fig. 90). Each paramere robust, apex spinose in both medial and ectal views (Figs. 81, 83); roughened, spiculate area on lateral surface circular (Fig. 82). Each lateral conjunctival lobe of aedeagus with 3-4 spinose diverticula (Fig. 84); dorsomedial conjunctival lobe apparently absent (Fig. 85); penis-filum prominent (Fig. 85); median penial lobes relatively small (Fig. 84).

Measurements. Total length 6.47-8.44 (8.04); total width 4.49-5.91 (5.60); medial length of pronotum 1.55-1.84 (1.84). Medial length of scutellum 2.80-3.72 (3.39); basal width 2.72-3.39 (3.16); width at distal end of frena 1.07-1.40 (1.40). Length of head 1.44-1.68 (1.68); width 1.88-2.21 (2.12). Length of segments 1-5 of antennae 0.35-0.42 (0.42), 0.74-0.81 (0.79), 0.72-0.96 (0.96), 0.94-1.18 (1.18), and 0.74-1.18 (1.18), respectively. Length of segments 2-4 of rostrum 1.16-1.34 (1.34), 0.70-0.77 (0.70), and 0.66-0.81 (0.81), respectively.

Holotype. ♂ labeled "BRAZIL, Sao Paulo: Serra da Bocaina S. Jose Barreiro 1650 m., Jan. 1969 M. Alvarenga." Deposited in the American Museum of Natural History (New York).

Paratypes. 3♂♂, 2♀♀. "São Paulo Campos do Jordão 16.XII.1944. F. Lane col." (♂ MZRS); (a) "Curitiba-Pr. IX-1960 R. Lange leg." (b) "Lange" (♂ MAPA); (a) "Porto Alegre 11.10.50" (b) "Rio Grande do Sul, Pe. Buck leg." (♀ MAPA); (a) "Jordao R Parana Braz. 12 II 52" (b) "C J Drake Coll. 1956" (♂ USNM); and (a) "Jello 1." (b) "Z.M.B. Hem." (♀ ZMB).

Distribution. Southern Brazil (Map 4).

Comments. The distinct sulcus on the posteroventral surface of the pygophore and the double row of long setae are unique within the genus. The cylindrical structure below the proximal flange of the spermatheca is unique within this subgenus.

Etymology. Named for the double row of long hairs on the pygophore.

Thyanta (Phacidium) juvenca Stål

Figs. 94-108, Map 4

Thyanta juvenca Stål, 1862b:104; Stål, 1872:35; Lethierry and Severin, 1893:148; Berg, 1900:89; Kirkaldy, 1909:94; Jensen-Haarup, 1928:189.

Euschistus juvenecus: Walker, 1867:247.

Pentatoma pilosum Reed, 1898:132. (syn. by Kirkaldy, 1909)

Diagnosis. Medium-sized; slightly convex dorsally, distinctly convex ventrally. Dorsal surface pale to medium green, usually with yellow or red markings on apex of tylus, on apex of scutellum, on each humeral angle, and on legs.

Apex of head narrowly rounded; outer jugal margins sinuous, not parallel (Fig. 95). Anterolateral margins of pronotum straight to slightly concave in dorsal view; humeral angles obtusely to narrowly rounded, protruding only slightly beyond base of adjacent coria (Fig. 94). Each pronotal cicatrice usually immaculate, sometimes marked with black in mesial angle.

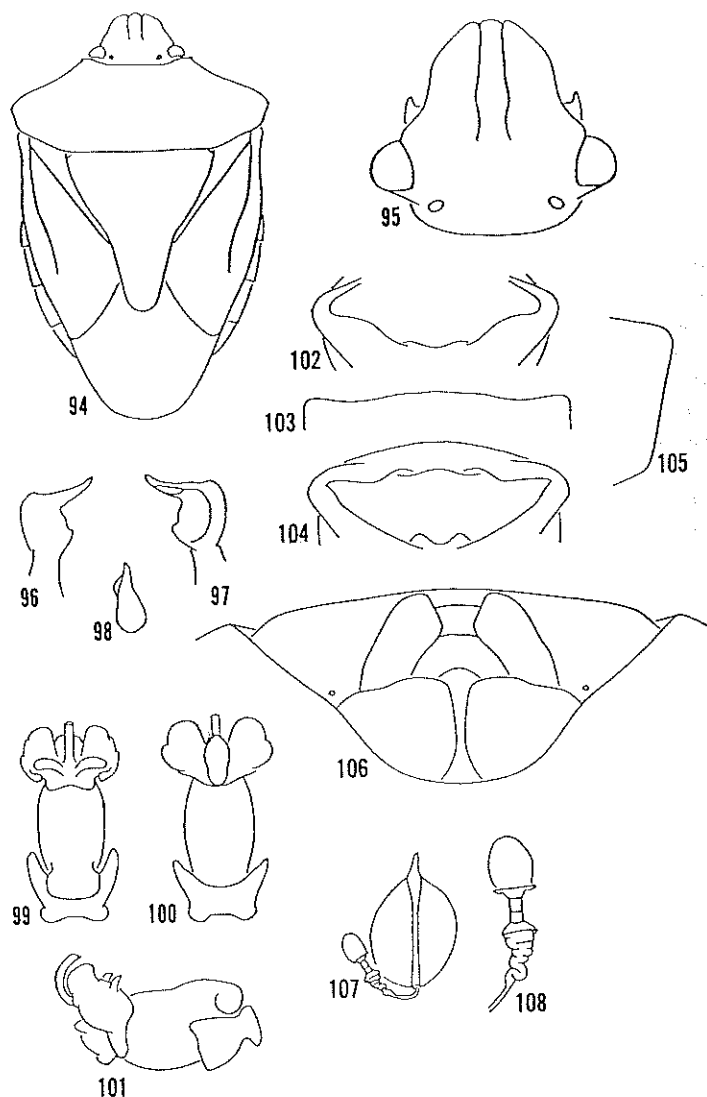
Mesial margins of basal plates in caudoventral view straight to slightly convex; posterior margins sinuously convex; posteromesial angles rounded (Fig. 106). Sclerotized rod relatively short, swollen subapically; narrowed apically (Fig. 107); spermathecal duct with large amount of swelling and coiling below proximal flange (Fig. 108). Posterior margin of pygophore shallowly and sinuously U-shaped in caudal view (Fig. 102); posteroventral surface of pygophore straight in lateral view (Fig. 105); slightly convex in ventral and dorsal views (Figs. 103, 104). Each paramere robust; apex spinose, curved gently laterad in ectal view (Fig. 98), curving gently dorsad in medial view (Fig. 96); shaft with nearly angulate protuberance at middle; roughened, spiculate area on lateral surface linear (Fig. 97). Each lateral conjunctival lobe of aedeagus with single rounded diverticulum (Fig. 101); dorsomedial conjunctival lobe moderately large (Fig. 100) penisfilum prominent, median penial lobes small, inconspicuous (Fig. 99).

Types. Stål (1862b) described *T. juvenca* from 1♂ from Chile. In the original description, he states that the type specimen was placed in the "Mus. Helsingfors" in Finland. The type specimen was not located in the Universitetets Zoologiske Museum (Helsingfors, Finland). However, the original description is adequate to fix the species. In his description, Stål says "Thorax marginibus lateralibus anticis integris, levissime sinuatis, angulis lateralibus obtusis, vix prominulis." Only three species of *Thyanta* are known to occur in Chile: *T. juvenca*, *T. xerotica* and *T. rubicunda*. *Thyanta xerotica* is relatively rare and occurs only in the very northern areas of Chile. *Thyanta rubicunda* has each humeral angle produced into an acute spine. *Thyanta juvenca* is the only common and widespread species in Chile that has each humeral angle obtusely rounded as in the above description.

Reed (1898) described *Pentatoma pilosum* from 2♂♂ from Chile without designating a holotype. The ♂ labeled (a) "Sin. Hem. Chile Coll. EC Reed" (b) "CJ Drake Coll. 1956" is designated lectotype. The ♂ labeled (a) "Sin. Hem. Chile Coll. ECreed" (b) "CJ Drake Coll. 1956" (c) "Pent. spe nov." (d) "*juvenca*" (e) "*Thyanta*" is designated paralectotype. Kirkaldy (1909) properly placed this species as a junior synonym of *T. juvenca*. Both specimens were examined and are housed in the U.S. National Museum of Natural History (Washington, D.C.).

Distribution. Chile (Map 4).

Specimens examined. 79 specimens collected from 7 September to 17 May; deposited in AMNH, CAS, CNC, DAR, EGER, ENGL, FSCA, LHR, MNHS, UCR, UCS, USNM, ZMB. CHILE: *Atacama*: Río Manflas. *Bíbío*: Arauco; Queime, E. Concepción. *Coquimbo*: Rivadavia; Vicuña. *El Libertador General Bernardo O'Higgins*: Rancagua; 10 km N San Fernando; San Vicente de Tauga. *Maule*: Cauquenes; La Jaula. *Cord.* Curicó; coast nr. Mataquito R. *Región Metropolitana de Santiago*:



Figs. 94-108. *T. juvenca*. 94. Habitus. 95. Head. 96-98. Right paramere. 96. Medial view. 97. Lateral view. 98. Ectal view. 99-101. Theca and related structures. 99. Ventral view. 100. Dorsal view. 101. Lateral view. 102-105. Pygophore. 102. Caudal view. 103. Ventral view. 104. Dorsal view. 105. Lateral view. 106. Genital plates, caudoventral view. 107. Spermatheca. 108. Spermathecal pump.

Buín; Co San Ramon; Clovillo; Curacaví; El Canelo; La Matancilla; Los Maitenes; Melocoton; Quebrada Macul; Quilicura; Rinconada Maipú; San Bernardino; Santiago. Tarapacá: Arica. Valparaíso: La Cruz; Los Andes; Ocoa; Papudo.

Comments. *Thyanta juvenca* is closely related to *T. acutangula*, which may actually

be a subspecies of the former. The male genitalia of the two species are nearly identical. *Thyanta juvenca* has each humeral angle obtusely rounded, while in *T. acutangula* each humeral angle is distinctly angulate.

Thyanta (Phacidium) acutangula Jensen-Haarup
Figs. 109–123, Map 4

Thyanta acutangula Jensen-Haarup, 1928:189, 190–191.

Thyanta mendozana Jensen-Haarup, 1928:189, 190. NEW SYNONYMY.

Thyanta crinita Ruckes, 1957b:44–46. NEW SYNONYMY.

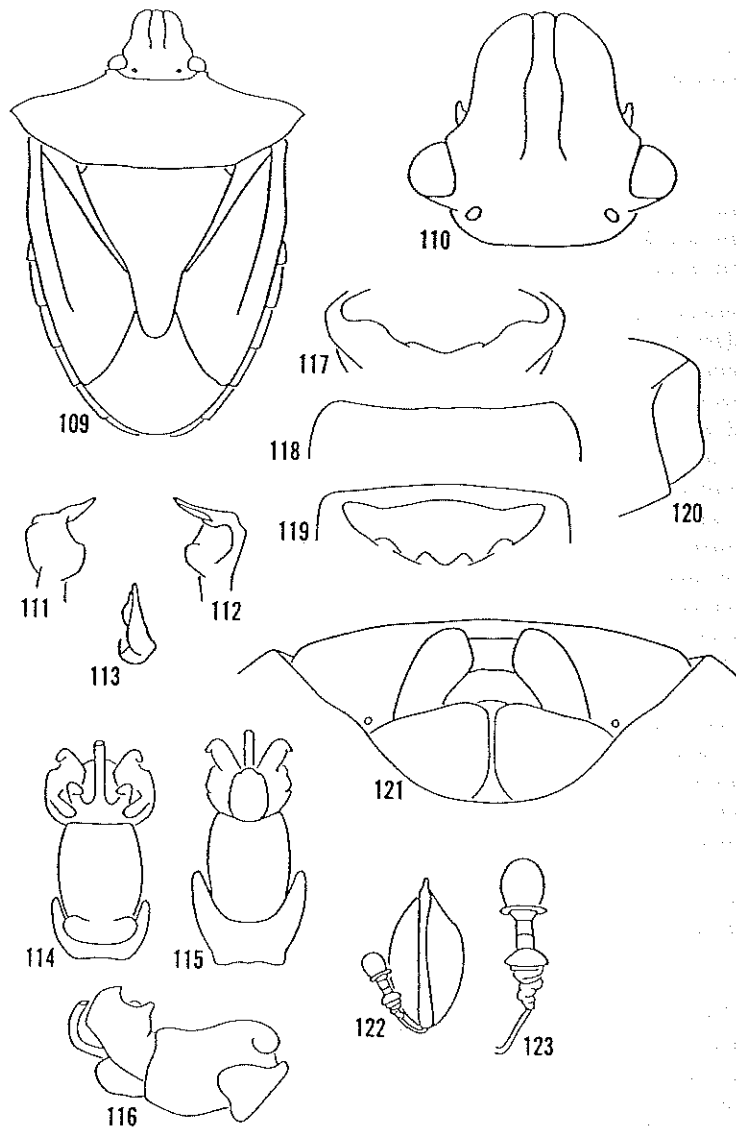
Diagnosis. Medium-sized; ovate. Dorsal surface pale brown to dark green, sometimes dark brown, often marked with yellow around pronotal cicatrices, along anterolateral margins of pronotum, and on apex of scutellum; punctures usually concolorous with surface, sometimes brown.

Head evenly rounded apically; outer jugal margins sinuous, nearly parallel for middle third of distance from eyes to apex (Fig. 110). Anterolateral margins of pronotum slightly concave in dorsal view; humeral angles angulate to spinose, flaring dorsad and slightly caudad, apices usually piceous (Fig. 109). Pronotal cicatrices immaculate or sometimes marked with black in mesial angles.

Mesial margins of basal plates in caudoventral view straight to slightly convex; posterior margins convex; posteromesial angles rounded (Fig. 121). Sclerotized rod slightly swollen subapically, narrowed but not elongate apically (Fig. 122); spermathecal duct swollen and coiled below proximal flange (Fig. 123). Posteroventral surface of pygophore rounded; posterior margin sinuously U-shaped in caudal view, medial portion concave (Fig. 117). Posterior margin of pygophore nearly straight in ventral view (Fig. 118); slightly convex in dorsal view, posterolateral angles not at all prominent (Fig. 119); straight to weakly concave in lateral view (Fig. 120). Each paramere robust, acuminate spinose in medial and ectal views (Figs. 111, 113); roughened spiculate area on lateral surface narrow, elongate (Fig. 112). Each lateral conjunctival lobe of aedeagus spinose apically and with rounded, partially sclerotized diverticulum ventrally (Fig. 114); dorsomedial conjunctival lobe present (Fig. 115); median penial lobes hooked; penisfilum large, elongate, curving ventrad (Fig. 116).

Types. Jensen-Haarup (1928) described *T. acutangula* from 3♂♂ and 3♀♀ all from Mendoza Province in Argentina. He did not, however, designate a holotype or paratypes. The ♂ labeled (a) "Est. Pedregal Prov. de Mendoza Rep. Argentina J.-Hrp." (b) "Type Coll. J=Hrp." (c) "Coll. Jensen-Haarup" (d) "*Thyanta acutangula* Jensen-Haarup leg." is designated lectotype. The remaining five specimens are designated paralectotypes. They have the following label data: (a) "Mendoza" (b) "Coll. Jensen-Haarup" (c) "Type Coll. J=Hrp." (d) "*Thyanta acutangula* Jensen-Haarup leg" (♂); (a) "Mendoza 25.3.08" (b) "Type Coll. J=Hrp." (c) "Coll. Jensen-Haarup" (d) "*Thyanta acutangula* Jensen-Haarup leg" (♂); labeled as lectotype except (b) and (c) are reversed and (d) "*Thyanta acutangula* J-Hrp. Coll. Jensen-Haarup" (♀); (a) "Chacr. de Coria Prov. de Mendoza Rep. Argentina Jensen-Haarup" (b) "Type Coll. J=Hrp." (c) "Type" (d) "*Thyanta acutangula* Jensen-Haarup leg." (♀); and (a) "Mendoza 12.4.07" (b) "Type Coll. J=Hrp." (c) "Type" (d) "*Thyanta acutangula* n. sp. J-Hrp." (♀). All six specimens were examined and are conserved in the Universitetets Zoologiske Museum (Copenhagen, Denmark).

Jensen-Haarup (1928) described *T. mendozana* from 1♂ from the province of



Figs. 109-123. *T. acutangula*. 109. Habitus. 110. Head. 111-113. Right paramere. 111. Medial view. 112. Lateral view. 113. Ectal view. 114-116. Theca and related structures. 114. Ventral view. 115. Dorsal view. 116. Lateral view. 117-120. Pygophore. 117. Caudal view. 118. Ventral view. 119. Dorsal view. 120. Lateral view. 121. Genital plates, caudoventral view. 122. Spermatheca. 123. Spermathecal pump.

Mendoza, Argentina. The holotype is of the brown form and is slightly teneral, making some characters hard to distinguish. Although the holotype has the humeral angles obtusely rounded, it does have fuscous markings on the ventral surface of each humeral angle, a trait characteristic of *T. acutangula*. Its male genitalia are virtually indistinguishable from those of *T. acutangula*. The holotype was examined and is housed in the Universitetets Zoologiske Museum (Copenhagen, Denmark).

Ruckes (1957b) described *T. crinita* from 1♂ and 2♀♀ from Argentina. The holotype and one paratype were examined, and they do not differ in any significant respect from *T. acutangula*. These specimens are housed in the Cornell University collection (New York).

Distribution. Western Argentina (Map 4).

Specimens examined. 135 specimens collected from 6 January to 5 April; deposited in AMNH, CAS, CU, EGER, IML, LHR, MBR, MLP, PUL, USNM, ZMB. BOLIVIA: *Chuquisaca*: Muyupampa. *Cochabamba*: 30 mi SW Cochabamba. *La Paz*: Sorata. *Mataral*: Santa Rosa. ARGENTINA: *Catamarca*: Belén; El Rodeo. *Chubut*: Altares; Puerto Madryn. *Córdoba*: Alta Garcia; 5 mi N Deán Funes; Guanaco Muerto. *La Pampa*: Lihuel Calel; Puelén. *La Rioja*. *Mendoza*: Chacr. de Coria; El Sosneado; Est. Pedregal; Portrerillos. *Neuquén*: Barrancas. *Río Negro*: Choele-Choele; General Fernández Oro; San Antonio Oeste; Villa Regina. *Salta*: Cafayate; Cnel. Moldes; Metán; San Lorenzo. *San Luis*: Beasley; San Luis; San Martín. *Tucumán*: Amaicha del Valle; Crest ridge, NW Tucumán; Quebrada de Lules; Río Calchuquier.

Comments. This species is related to *T. juvenca*, and may actually be a subspecies of that species. The genitalia of the two species are nearly identical. *Thyanta acutangula* can be separated from *T. juvenca* by the angulate to spinose humeral angles.

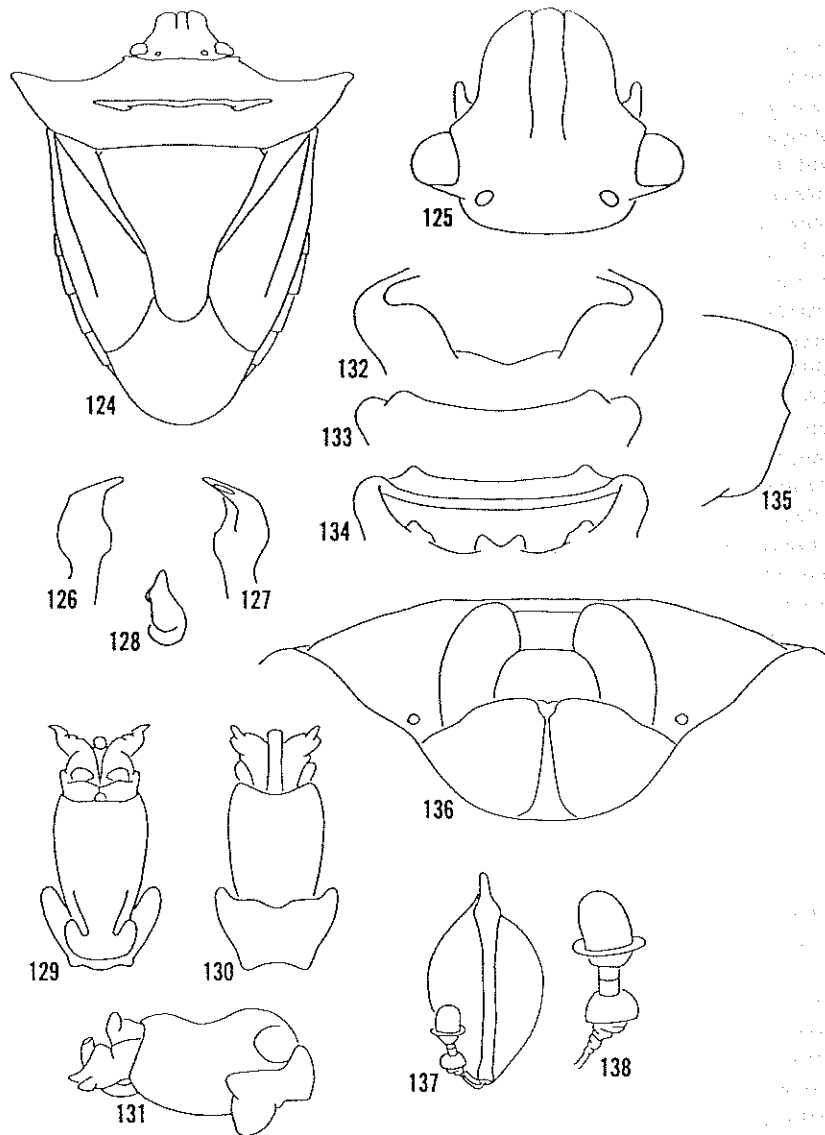
***Thyanta (Phacidium) robusta* Rider, new species**

Figs. 124–138, Map 4

Description. Medium to large; dorsal surface dusky brown to greenish brown; broadly ovate, robust. Punctures brown, usually becoming fuscous near each humeral angle and in irregular band just posterior to transhumeral pale subcalloused line.

Apex of head evenly rounded; outer jugal margins nearly parallel for middle third of distance from eyes to apex (Fig. 125). Antennae brown, segments 1–2 sometimes vaguely marked with fuscous, segments 3–5 often reddish. Anterolateral margins of pronotum concave in dorsal view; humeral angles produced anterolaterad and dorsad, spinose (Fig. 124). Mesial angle of each pronotal cicatrice marked with fuscous, sometimes only vaguely so. A raised transhumeral subcalloused line usually present. Disc of pronotum anterior to cicatrices depressed, punctures crowded, small. Hemelytra with exocorium of each more densely punctate than rest of corium; posterior margin of corium convex, costal angle narrowly rounded, usually reaching beyond middle of penultimate connexival segment (Fig. 124); hemelytral membranes hyaline with numerous fuscous flecks. Connexiva green to brown, posterolateral angles black, sometimes posterior margin of each segment marked with fuscous.

Ventral surface pale brown to green; punctures usually concolorous with surface, sometimes pale brown. Rostrum pale brown to green, apical half of segment 4 piceous, reaching to anterior margin of third (second visible) abdominal sternite. Ostiolar canals acuminate apically. Humeral angles often piceous. Femora and tibiae pale brown, tarsal segments darker, reddish; femora sometimes marked with a few pale



Figs. 124-138. *T. robusta*. 124. Habitus. 125. Head. 126-128. Right paramere. 126. Medial view. 127. Lateral view. 128. Ectal view. 129-131. Theca and related structures. 129. Ventral view. 130. Dorsal view. 131. Lateral view. 132-135. Pygophore. 132. Caudal view. 133. Ventral view. 134. Dorsal view. 135. Lateral view. 136. Genital plates, caudoventral view. 137. Spermatheca. 138. Spermathecal pump.

brown spots, usually one dark brown to fuscous spot on superior surface at distal third. Postspiracular black spot usually present on each side of each abdominal sternite; posterolateral angle of each abdominal sternite piceous.

Mesial margins of basal plates in caudoventral view nearly straight; posterior margins sinuously convex; posteromesial angles weakly emarginate (Fig. 136). Sclerotized rod swollen subapically, distinctly narrowed apically (Fig. 137); spermathecal duct slightly swollen and coiled below proximal flange (Fig. 138). Posteroventral surface of pygophore arcuately rounded; posterior margin in caudal view U-shaped, medial portion concave (Fig. 132). Pygophore in lateral view emarginate on dorsal half (Fig. 135); each lateral angle appearing double-cone-shaped in both ventral and dorsal views (Figs. 133, 134). Each paramere robust, apex nearly spinose in medial view (Fig. 126); apex narrowly rounded, curved slightly mediad in ectal view (Fig. 128); roughened, spiculate area on lateral surface linear, short (Fig. 127). Each lateral conjunctival lobe of aedeagus with 1-2 diverticula (Fig. 131); dorsomedial conjunctival lobe apparently absent (Fig. 130); penisfilum and median penial lobes prominent (Fig. 129).

Measurements. Total length 7.41-9.78 (7.41); total width 6.47-8.04 (6.47); medial length of pronotum 1.71-1.99 (1.71). Medial length of scutellum 3.31-4.08 (3.40); basal width 3.20-3.84 (3.28); width at distal end of frena 1.21-1.66 (1.40). Length of head 1.62-1.81 (1.62); width 2.08-2.36 (2.12). Length of segments 1-5 of antennae 0.40-0.52 (0.40), 0.81-0.94 (0.81), 1.07-1.20 (1.07), 1.14-1.25 (1.14), and 1.16-1.21 (1.21), respectively. Length of segments 2-4 of rostrum 1.25-1.62 (1.25), 0.74-0.81 (0.74), and 0.77-0.96, respectively.

Holotype. ♂ labeled "ANA RECK (MUN. CAXIAS DO SUL R. S. 9-IV-55, BRASIL E. W. GRUMAN leg." Deposited in the Florida State Collection of Arthropods (Gainesville).

Paratypes. 2♂, 5♀♀. Labeled same as holotype (♂ FSCA); (a) "SAO PAULO Br., Mráz" (b) "Z.M.B. Hem." (♂ ZMB); (a) "Gramado, R.G. do Sul, Brasil 6-I-50 J. Becker 123" (b) "Thyanta det RISailer" (c) "Thyanta acuta Ruckes varietal form" (d) "Compared with type. Much more robust. H. Ruckes" (♀ USNM); "GRAMADO 2. 1954 RGS BRASIL" (♀ MZRS); "Brazil, Paraná 30 mi. W Irati 23 FEB 1980 D.B. Thomas Coll." (♀ DBT); (a) "Tasimbé 24 II 57" (b) "218" (♀ MZRS); and (a) "Pinheiral 28 I 53" (b) "217" (♀ MZRS).

Distribution. Brazil (Map 4).

Comments. This is a fairly distinctive species, although it is closely related to *T. acuta* and *T. cornuta*. It can be separated from these species by the larger, more robust shape, and by the characters of the male genitalia. The double-cone-shaped posterolateral angles of the pygophore in ventral and dorsal views will separate this species from both *T. acuta* and *T. cornuta*.

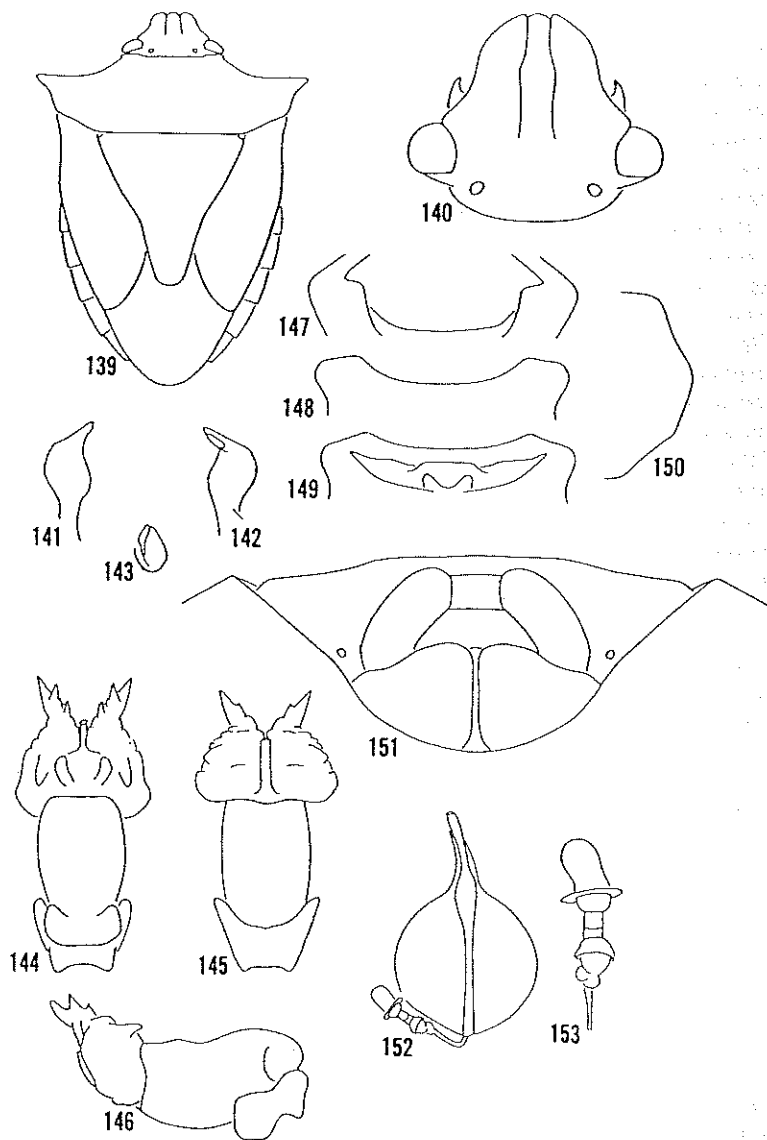
Etymology. Named for the robust form of the humeral angles.

Thyanta (Phacidium) acuta Ruckes

Fig. 139-153, Map 4

Thyanta acuta Ruckes, 1952:67-68.

Diagnosis. Medium-sized; ovate. Dorsal surface green to dark brown, sometimes with the following structures reddish: two spots on posterior disc of pronotum, one



Figs. 139-153. *T. acuta*. 139. Habitus. 140. Head. 141-143. Right paramere. 141. Medial view. 142. Lateral view. 143. Ectal view. 144-146. Theca and related structures. 144. Ventral view. 145. Dorsal view. 146. Lateral view. 147-150. Pygophore. 147. Caudal view. 148. Ventral view. 149. Dorsal view. 150. Lateral view. 151. Genital plates, caudoventral view. 152. Spermatheca. 153. Spermathecal pump.

on each side of middle, extending to include nearly entire dorsal surface of pronotum; dorsal surface of head; marginal band on scutellum along each frenum; and all of hemelytra except exocorium.

Apex of head evenly rounded; outer jugal margins sinuous, not parallel (Fig. 140). Anterolateral margins of pronotum concave in dorsal view; humeral angles produced primarily laterad and only slightly anterodorsad, spinose (Fig. 139). Mesial angle of each pronotal cicatrice piceous; transhumeral subcalloused line usually present.

Mesial margins of basal plates in caudoventral view nearly straight; posterior margins sinous; posteromesial angles rounded (Fig. 151). Sclerotized rod swollen at about two-thirds distance from base, apical, narrowed portion elongate (Fig. 152); spermathecal bulb globose, slightly elongate, small amount of coiling of spermathecal duct below proximal flange (Fig. 153). Posteroventral surface of pygophore arcuately rounded; posterior margin in caudal view U-shaped, medial portion slightly concave (Fig. 147); pygophore in lateral view nearly arcuately convex (Fig. 150). Each paramere rather robust, apex nearly spinose in medial view (Fig. 141); blunt, robust in ectal view (Fig. 143); roughened, spiculate area on lateral surface slightly elongate (Fig. 142). Each lateral conjunctival lobe of aedeagus with 3-4 spinose diverticula apically (Fig. 146) and 1 hooked sclerotized diverticulum ventrally (Fig. 144); penisfilum large, dorsomedial conjunctival lobe apparently absent (Fig. 145).

Types. Ruckes (1952) described *T. acuta* from 1♂ and 1♀ from Paraguay. Although he described this species under the name *T. acuta*, the name placed on the label with the specimens is *T. acutissimus*. The remaining label information, however, matches exactly that given in the original description, and the specimens fit the description for *T. acuta*. The holotype was examined and is housed at the University of Michigan Museum (Ann Arbor).

Distribution. Southern South America (Map 4).

Specimens examined. 41 specimens collected from 2 September to 1 April; deposited in AMNH, CNC, LHR, MBR, MLP, USNM, ZMB. BOLIVIA: *El Beni:* Trinidad. *La Paz:* Apolo. *Santa Cruz:* Santa Cruz. BRAZIL: *Raco, Mato Grosso:* Cuiabá. *Mato Grosso do Sul:* Corumbá; Salobra. *Minas Gerais:* 60 km W Araxá. *Santa Catarina:* Nova Teutônia. *São Paulo:* Teodoro Sampaio. PARAGUAY: *Caaguazú:* Estancia Primera. *Central:* Lago Yloycaraiy, N of San Bernardino. *Concepción:* Horqueta. *Cordillera:* Caacupé. *Guaira:* Villarrica. ARGENTINA: *Misiones:* Igazú; Leandre Alem; San Ignacio; Victoria.

Comments. This species is closely related to *T. robusta* and *T. cornuta*. It can be separated from *T. robusta* by the less robust form and by the form of the posterolateral angles of the pygophore, which are not double-cone-shaped when viewed ventrally or dorsally. The posterior margin of the pygophore in caudal view is U-shaped in *T. acuta* and V-shaped in *T. cornuta*.

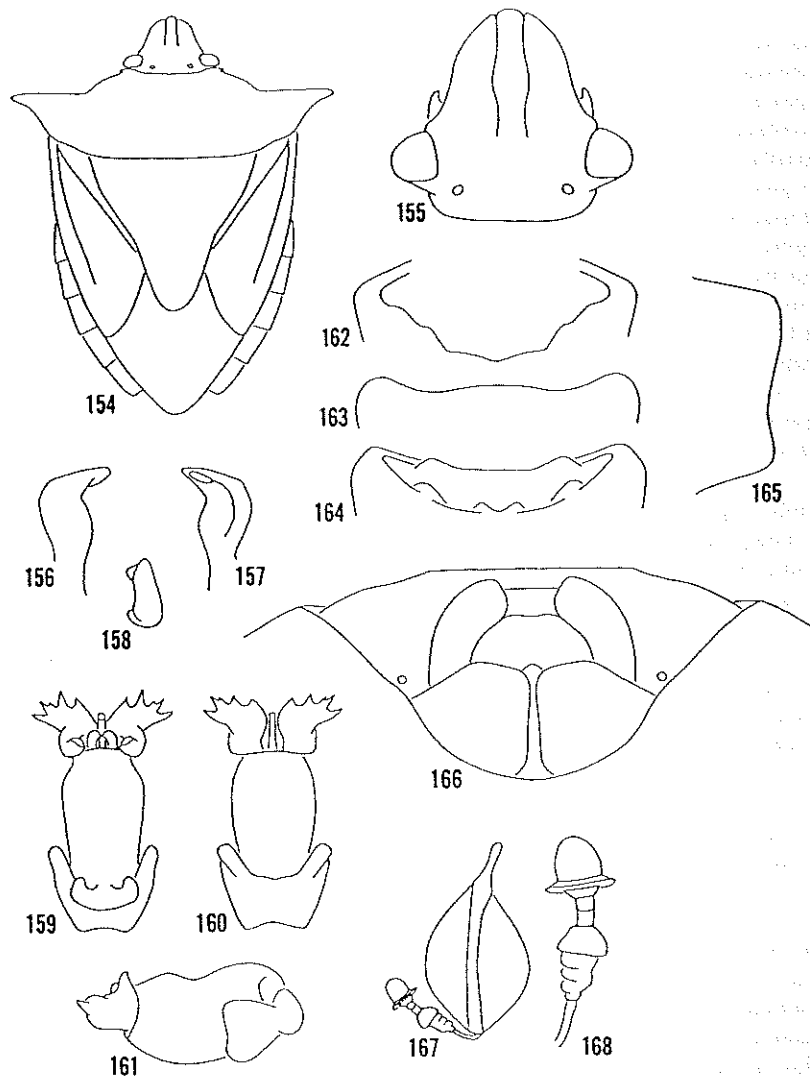
Thyanta (Phacidium) cornuta Ruckes

Figs. 154-168, Map 4

Thyanta cornuta Ruckes, 1956:66-68.

Diagnosis. Small to medium; ovate. Dorsal surface olivaceous green; punctures pale brown, sometimes reddish on pronotum and hemelytra.

Outer jugal margins sinuous, not parallel; apex of head narrowly rounded (Fig.



Figs. 154-168. *T. cornuta*. 154. Habitus. 155. Head. 156-158. Right paramere. 156. Medial view. 157. Lateral view. 158. Ectal view. 159-161. Theca and related structures. 159. Ventral view. 160. Dorsal view. 161. Lateral view. 162-165. Pygophore. 162. Caudal view. 163. Ventral view. 164. Dorsal view. 165. Lateral view. 166. Genital plates, caudoventral view. 167. Spermatheca. 168. Spermathecal pump.

155). Anterolateral margins of pronotum angularly concave in dorsal view; humeral angles produced primarily laterad and slightly anterodorsad, spinose (Fig. 154). Pronotal cicatrices usually immaculate, sometimes vaguely marked with fuscous in each mesial angle; subcalloused line between humeral angles lacking.

Mesial margins of basal plates in caudoventral view nearly straight; posterior margins sinuously convex; posteromesial angles broadly rounded (Fig. 166). Sclerotized rod relatively short, swollen subapically, narrowed apical portion elongate (Fig. 167); spermathecal duct swollen and coiled below proximal flange (Fig. 168). Posteroventral surface of pygophore arcuately rounded; posterior margin in caudal view sinuously V-shaped, lateral margins distinctly divergent (Fig. 162). Pygophore in lateral view nearly straight to slightly concave (Fig. 165); in ventral view, lateral angles slightly prominent, medial portion slightly convex (Fig. 163). Each paramere robust, apex nearly spinose in medial view (Fig. 156); rounded in ectal view (Fig. 158); roughened spiculate area on lateral surface linear, short, near apex (Fig. 157). Each lateral conjunctival lobe of aedeagus with 4-5 spinose diverticula apically and 1 slightly sclerotized diverticulum ventrally (Fig. 159); dorsomedial conjunctival lobe apparently absent (Fig. 160); median penial lobes relatively small, penisfilum moderately large (Fig. 160).

Types. Ruckes (1956) described *T. cornuta* from 1♂ and 2♀♀ from Brazil. Because the ♂ specimen was missing the pygophore, he designated one of the ♀ specimens holotype. All three specimens were examined and are housed in the American Museum of Natural History (New York).

Distribution. Northern and central South America (Map 4).

Specimens examined. Eight specimens collected in January, June, July, September, and November, deposited in AMNH, UCV. VENEZUELA: *Bolívar*: San Cayetano. BOLIVIA: *El Beni*: Río Iténez opposite Costa Marques, Brazil. BRAZIL: Chavantina. *Mato Grosso*: Chapada.

Comments. This species is closely related to *T. acuta* and *T. robusta*. It can be separated from those species by the more acuminate humeral angles, and by the characters of the male genitalia. *Thyanta acuta* has the posterior margin of the pygophore U-shaped with the sides nearly vertical. The posterior margin of *T. cornuta* is sinuously V-shaped with the sides not at all approaching the vertical axis of the body. *Thyanta robusta* has the posterolateral angles double-cone-shaped in ventral and dorsal views; *T. cornuta* does not.

Subgenus *Argosoma* Rider, new subgenus

Type species. *Pentatoma patruelis* Stål, 1859.

Diagnosis. Punctuation coarse, sparse, dorsal surface appearing shiny, glossy. Anterolateral margins of pronotum straight to slightly concave, concolorous with surface of pronotum; humeral angles rounded to angulate, rarely spinose; pronotal cicatrices usually immaculate, sometimes faintly marked with fuscous in mesial angles. Posterior termination of each buccula evanescent.

Distal end of sclerotized rod with or without subapical swelling, never cone-shaped; spermathecal bulb globose; spermathecal duct below proximal flange slightly to greatly swollen and coiled, but never forming distinct cylindrical structure. Pygophoral opening relatively large; posterior margin usually broadly and shallowly U-shaped; posteroventral surface of pygophore produced into blunt chin-like protuberance. Each paramere acute to narrowly rounded apically, obtuse protuberance on shaft moderate in size to absent, possessing distinct dorsomedial concave surface; roughened, spiculate area on lateral surface of paramere usually circular, rarely linear (*T. boliviensis*). Theca reniform, lacking dorsolateral protuberances; each lateral conjunctival lobe

usually with single diverticulum; median penial lobes and penisfilum usually relatively small.

Comments. This is the largest subgenus, containing 20 species, and is also the most difficult in which to identify the included species. It is often necessary to examine the male genitalia in order to make accurate determinations. Within geographical areas, the internal female genitalia are usually distinctive.

This subgenus can be divided into two groups based primarily on the structure of the spermatheca. In *T. boliviensis*, n. sp., *T. brasiliensis* Jensen-Haarup, *T. emarginata*, n. sp., and *T. hamulata*, n. sp., the sclerotized rod is somewhat elongate and lacks any subapical swelling. The remaining species have the sclerotized rod shorter and distinctly swollen subapically, becoming narrowed apically.

Thyanta (Argosoma) testacea (Dallas)

Figs. 169–183, Map 2

Pentatoma testacea Dallas, 1851:250; Walker, 1867:289.

Thyanta testacea: Stål, 1872:35; Berg, 1878:23, Lethierry and Severin, 1893:148; Kirkaldy, 1909:95.

Thyanta casta (of authors, not Stål): Uhler, 1893:705; Uhler, 1894b:174.

Thyanta signoreti Ruckes, 1956:65–66, fig. 7. NEW SYNONYMY.

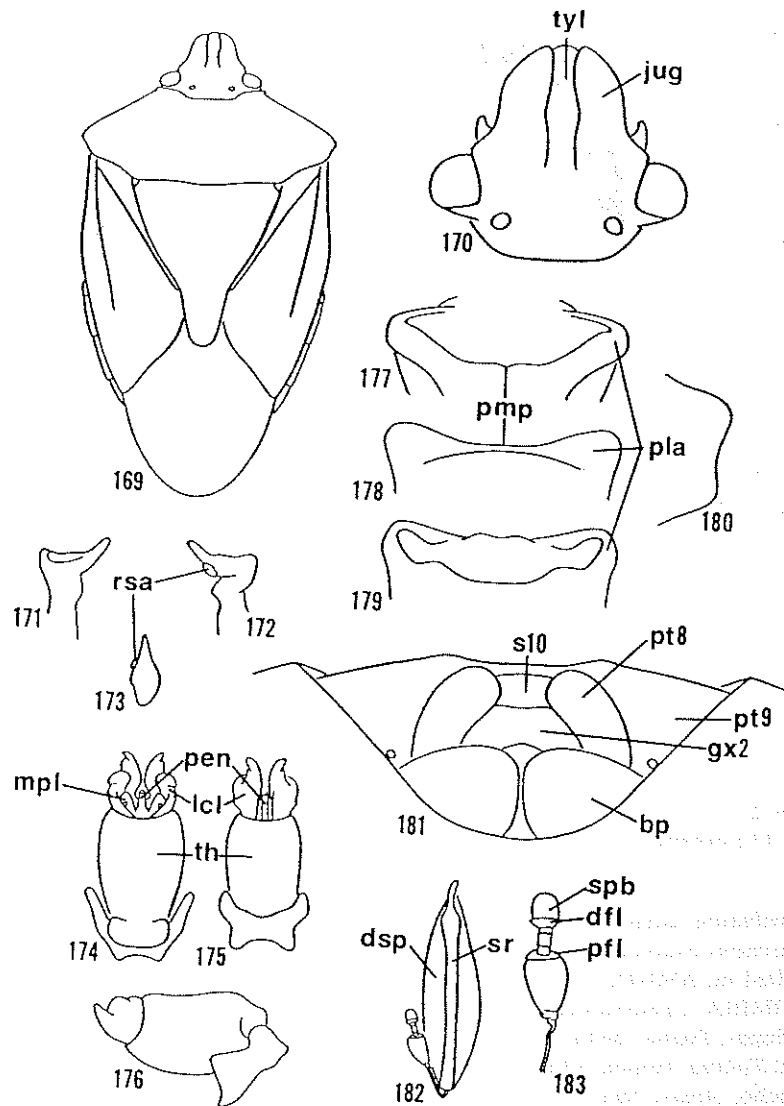
Diagnosis. General color green to brown, rarely with rubiginous transhumeral markings.

Outer jugal margins subparallel for middle third of distance from eyes to apex (Fig. 170). Anterolateral pronotal margins straight to slightly concave; humeral angles rounded to angulate, usually produced beyond base of adjacent coria by about one-half width of eye (Fig. 169). Pronotal cicatrices immaculate. Ostiolar canals acuminate apically. Posterolateral abdominal angles not marked with black or only minutely so; postspiracular black spots absent (sometimes evident in brown form).

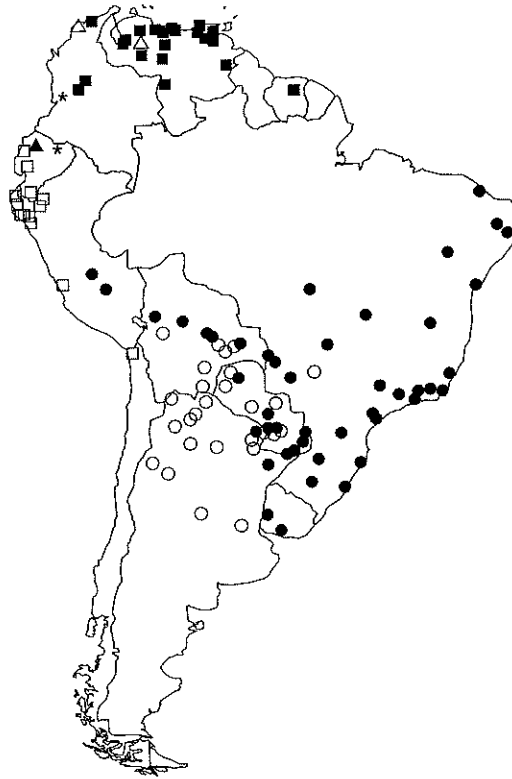
Basal plates in caudoventral view with mesial margins convex, separated basally; posterior margins convex (Fig. 181). Distal end of sclerotized rod slightly swollen subapically, narrowed apically (Fig. 182); spermathecal duct greatly swollen below proximal flange, carrot-shaped (Fig. 183). Posterior margin of pygophore broadly and shallowly U-shaped in caudal view (Fig. 177); slightly concave in lateral view (Fig. 180). Each paramere apically acute in both medial and ectal views (Figs. 171, 173); concave surface oriented more dorsad than mediad; roughened spiculate area on lateral surface circular (Fig. 172). Aedeagus with dorsomedial lobe apparently absent (Fig. 175).

Types. Dallas (1851) described *Pentatoma testacea* from "S. America" without designating a holotype or paratypes, and it is not possible to determine how many syntypes he had. Only 1♀ syntype was located and is here designated lectotype. It has the following label data: (a) "Type" (b) "40 3.30 809" [ventral surface] (c) "36. PENTATOMA TESTACEA," [dorsal surface], "hil. 136, pl. 1, f. 5. Sign." [ventral surface]. The lectotype, which is conserved in the British Museum of Natural History (London), was examined.

Ruckes (1956) described *T. signoreti* from 1♂ and 3♀♀ from Colombia. The holotype and two paratypes were examined and do not differ in any significant way from *T. testacea*. The holotype is conserved in the Naturhistorisches Museum (Vienna, Austria).



Figs. 169–183. *T. testacea*. 169. Habitus. 170. Head. 171–173. Right paramere. 171. Medial view. 172. Lateral view. 173. Ectal view. 174–176. Theca and related structures. 174. Ventral view. 175. Dorsal view. 176. Lateral view. 177–180. Pygophore. 177. Caudal view. 178. Ventral view. 179. Dorsal view. 180. Lateral view. 181. Genital plates, caudoventral view. 182. Spermatheca. 183. Spermathecal pump. Symbols: bp, basal plate; dfl, distal flange; dsp, dilation of spermatheca; gx2, second gonacoxa; jug, juga; lcl, lateral conjunctival lobe; mpl, median penial lobe; pen, penisfilum; pfl, proximal flange; pla, posterolateral angle of pygophore; pmp, posterior margin of pygophore; pt8, eighth paratergite; pt9, ninth paratergite; rsa, roughened spiculate area on lateral surface of paramere; spb, spermathecal bulb; sr, sclerotized rod; s10, tenth sternite; th, theca; tyl, tylus.



Map. 2. *T. (A.) acuminata*, (O); *T. (A.) infusata*, (▲); *T. (A.) patruelis*, (●); *T. (A.) sinuata*, (△); *T. (A.) straminea*, (*); *T. (A.) testacea*, (■); *T. (A.) xerotica*, (□).

Distribution. Lesser Antilles and northern South America (Map 2).

Specimens examined. 113 specimens collected during every month of the year; deposited in: AMNH, BMNH, CU, EGER, INHS, LACM, LHR, TAMU, USNM. COLOMBIA: *Cundinamarca*: Guayabetal; Melgar. *Magdalena*: La Jagua, 80 km S Valledupar; Pueblo Bello, 45 km W Valledupar, Sierra Nevada de S. Marta; Santa Marta. *Tolima*: Honda. VENEZUELA: Mesa de Playa. *Amazonas*: Gualtibo; Puerto Ayacucho. *Apure*: San Fernando. *Aragua*: 5 km NW Colonia Tovar; El Limón; Maracay; Rancho Grande. *Bolívar*: km 107 El Dorado Santa Elena. *Carabobo*: Mariara; Naguanagua. *Distrito Federal*: Serranía El Avila. *Guárico*: Calabozo; Hato El Samon cr. El Punzon Las Mercedes; Hato Las Lajas. *Lara*: 12 km N Cubiro; Torrellero. *Mérida*: 5 km NW Timotes. *Miranda*: El Jarillo Agua Fría. *Monagas*: Caripito; Jusepín; Maturín; 42 km SE Maturín. *Nueva Esparta*: El Robledar; Las Marites; Salamanca. *Portuguesa*: Aparición. *Sucre*: Cumaná. *Trujillo*: Cd de las Mesa de Esnujaque; Puerta. SURINAM: Mairmost Plantation. *Para*: Zanderij I., Boven.

Comments. *Thyanta testacea* can be reliably identified only by an examination of the male genitalia. The apically spinose parameres curving gently dorsad will separate

it from all other congeners except *T. patruelis*. The chin-like protuberance on the posteroventral surface of the pygophore is somewhat less prominent in *T. testacea* than in *T. patruelis*. There does seem to be a geographical separation of the two species with *T. testacea* restricted to northern South America and the Lesser Antilles and *T. patruelis* occurring from northeastern Brazil and southern Peru southward.

Thyanta (Argosoma) patruelis (Stål)

Figs. 184–198, Map 2

Pentatoma patruelis Stål, 1859:226–227; Walker, 1867:289.

Thyanta patruelis: Stål, 1862a:58; Stål, 1872:35; Berg, 1878:23; Lethierry and Severin, 1893:148; Kirkaldy, 1909:95.

Thyanta humilis Bergroth, 1891:225–226. NEW SYNONYMY.

Thyanta nitidula Ruckes, 1956:62–63, fig. 4; Rolston and McDonald, 1984:fig. 30. NEW SYNONYMY.

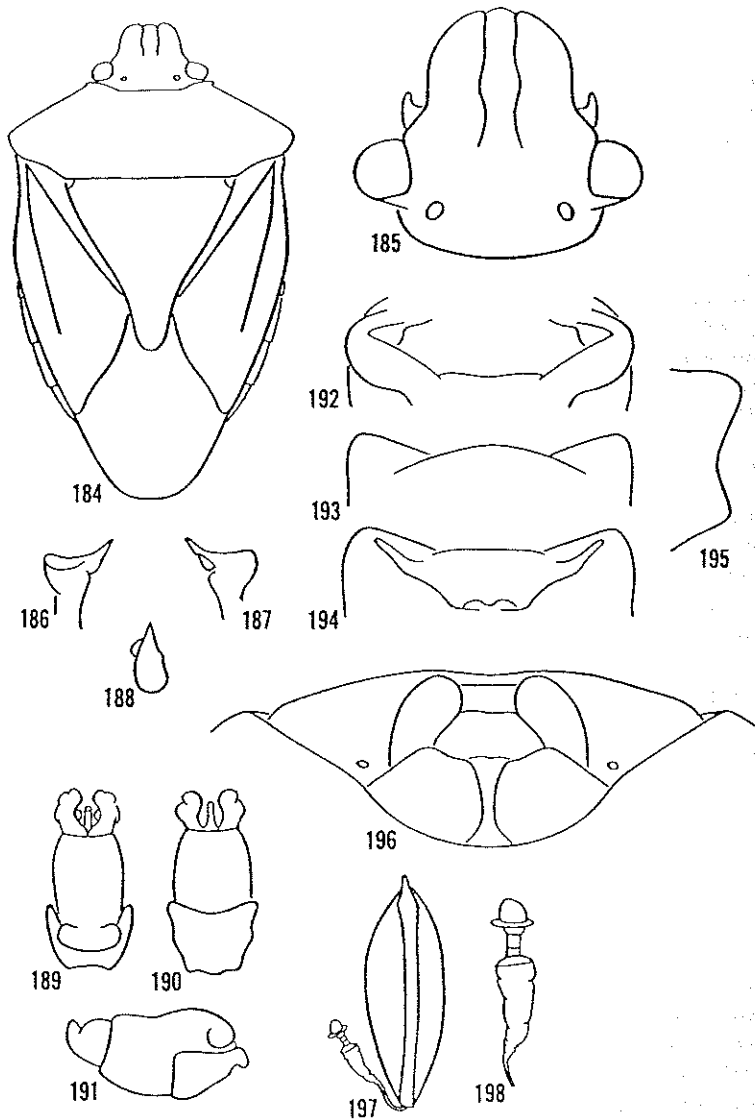
Diagnosis. Small to medium; dorsal surface green to brown, often with reddish-purple markings between humeral angles, on dorsal surface of head, on apex of scutellum, and on apex of each corium; punctures concolorous with surface.

Outer jugal margins subparallel for middle third of distance from eyes to apex (Fig. 185). Anterolateral margins of pronotum straight to weakly concave in dorsal view; humeral angles rounded to angulate, produced beyond base of adjacent coria by width of eye or less (Fig. 184). Pronotal cicatrices immaculate. Connexiva narrowly exposed; posterolateral angle of each segment usually marked with piceous, sometimes only minutely so. Ostiolar canals acuminate apically. Postspiracular spots lacking; posterolateral angles of abdominal sternites usually piceous.

Mesial margins of basal plates straight to slightly convex, separated basally; posterior margins straight to slightly convex; posteromesial angles rounded or slightly emarginate (Fig. 196). Sclerotized rod slightly swollen subapically, narrowed apically (Fig. 197). Spermathecal duct greatly swollen below proximal flange, carrot-shaped (Fig. 198). Posterolateral angles of pygophore only slightly prominent in lateral view (Fig. 195); posteroventral surface of pygophore distinctly depressed between blunt chin-like protuberance and posterior margin of pygophore; posterior margin of pygophore broadly and shallowly U-shaped in caudal view (Fig. 192). Apex of each paramere distinctly spinose in both medial and ectal views (Figs. 186, 188), roughened spiculate area on lateral surface ovoid (Fig. 187). Each lateral conjunctival lobe of aedeagus with 1–2 nonsclerotized diverticula (Fig. 191); dorsomedial lobe absent (Fig. 190); penisfilum small, median penial lobes spatulate, nearly hidden by conjunctival lobes (Fig. 189).

Types. Stål (1859) described *P. patruelis* from 1♀ specimen from Rio de Janeiro, Brazil. The holotype, which is conserved in the Naturhistoriska Rikorska Rikomuseet (Stockholm, Sweden), was examined.

Bergroth (1891) described *Thyanta humilis* from at least two specimens from Minas Gerais, Brazil. Grazia (1987) made lectotype and paralectotype designations. The lectotype was examined, and is currently housed in the Museum National d'Histoire Naturelle (Paris, France). Although this specimen is smaller and somewhat more depressed than the holotype of *T. patruelis*, there are very few differences that will separate the two (see Comments below).



Figs. 184–198. *T. patruelis*. 184. Habitus. 185. Head. 186–188. Right paramere. 186. Medial view. 187. Lateral view. 188. Ectal view. 189–191. Theca and related structures. 189. Ventral view. 190. Dorsal view. 191. Lateral view. 192–195. Pygophore. 192. Caudal view. 193. Ventral view. 194. Dorsal view. 195. Lateral view. 196. Genital plates, caudoventral view. 197. Spermatheca. 198. Spermathecal pump.