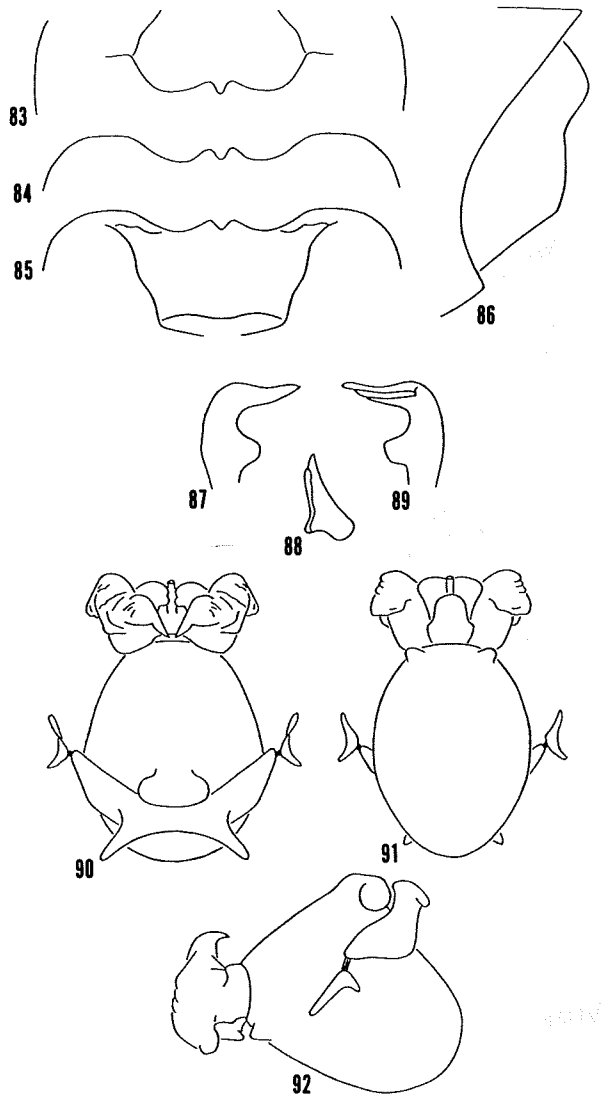
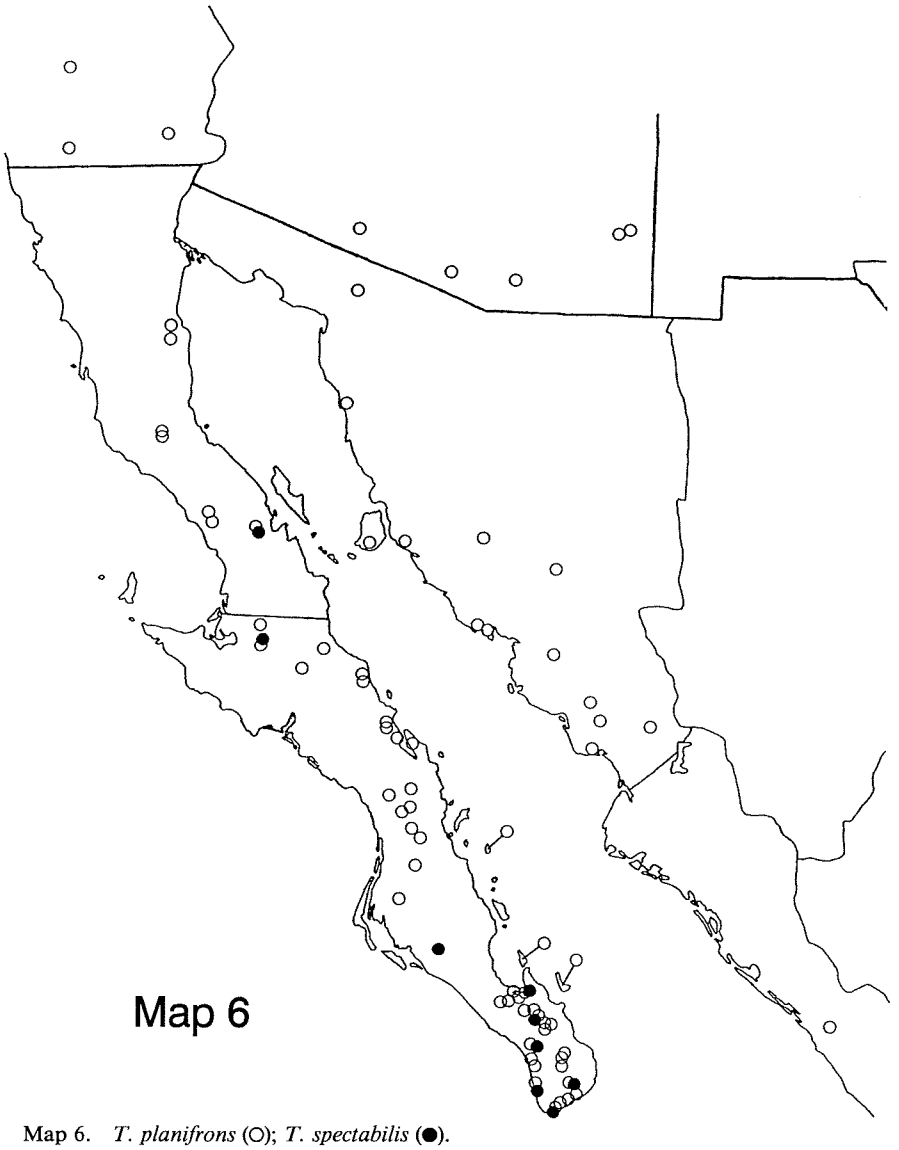


Figs. 83–92. *T. spectabilis.* 83–86. Pygophore. 83. Caudal view. 84. Ventral view. 85. Dorsal view. 86. Lateral view. 87–89. Right paramere. 87. Medial view. 88. Ectal view. 89. Lateral view. 90–92. Theca and related structures. 90. Ventral view. 91. Dorsal view. 92. Lateral view.

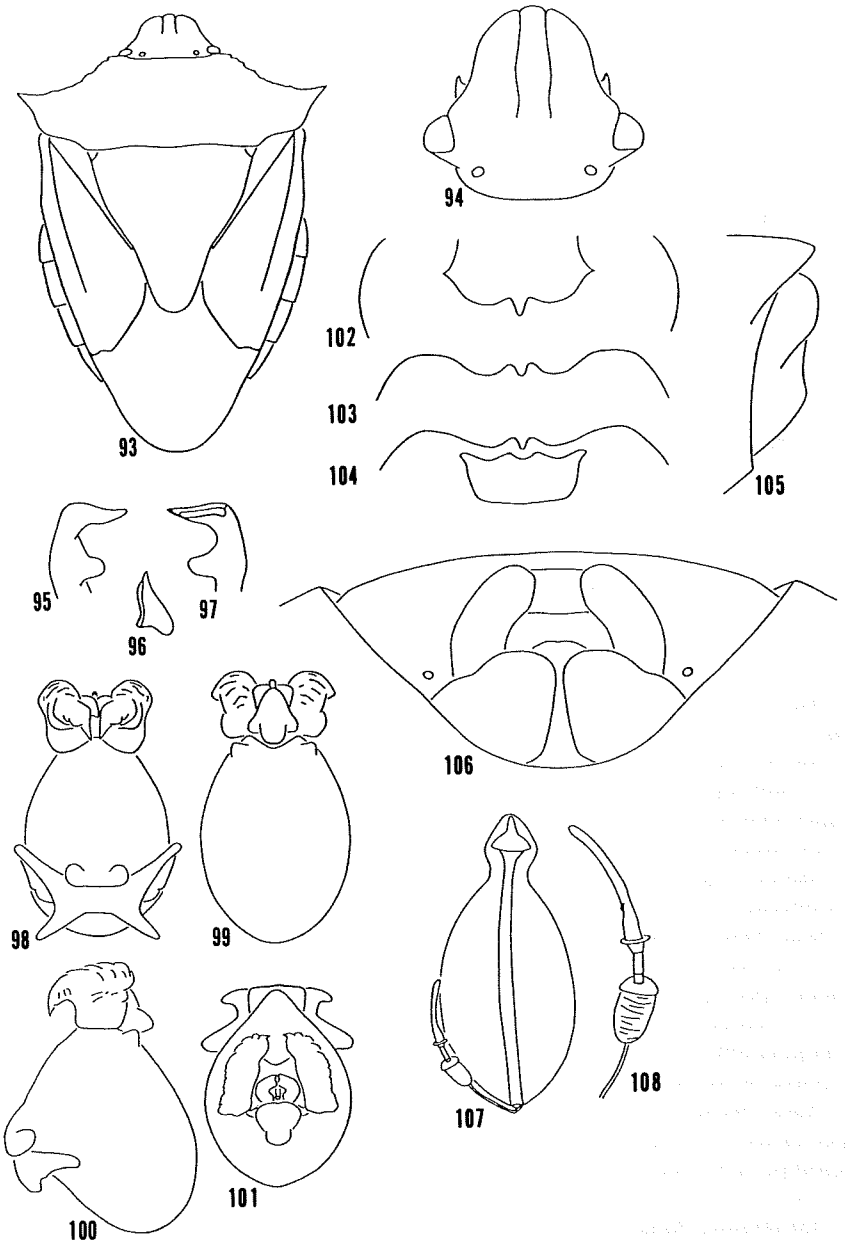
spectabilis are larger than those of *T. perditor.* The only reliable character to separate the two species is the orientation of the humeral spine. In *T. perditor* the humeral angle is directed anterolaterad, while in *T. spectabilis* it is directed primarily laterad and only slightly cephalad.



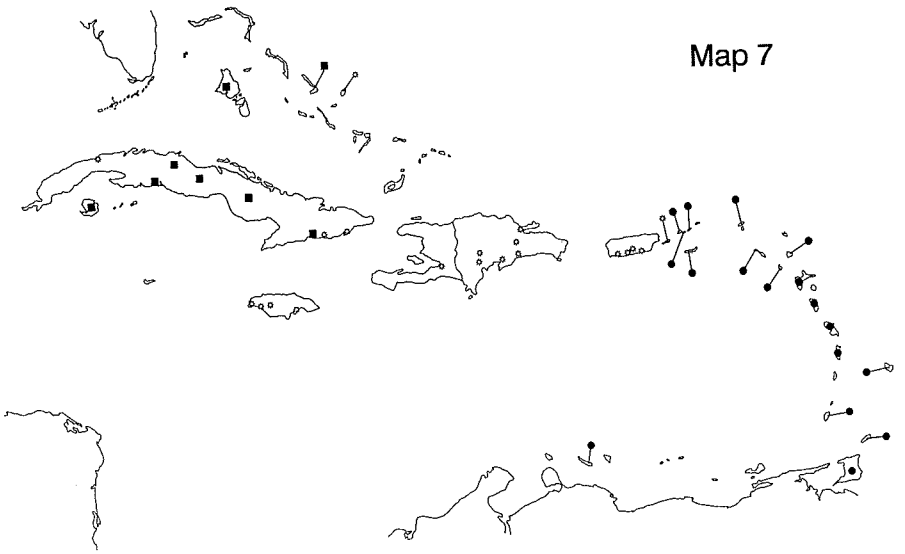
Map 6. *T. planifrons* (O); *T. spectabilis* (●).

Thyanta (*Thyanta*) *cubensis* Barber & Bruner
Figs. 93–108, Map 7

Thyanta cubensis Barber and Bruner, 1932:257–258, figs. 4–5; Bruner and Barber, 1949:158; Alayo, 1967:18, 20.



Figs. 93–108. *T. cubensis.* 93. Habitus. 94. Head. 95–97. Right paramere. 95. Medial view. 96. Ectal view. 97. Lateral view. 98–101. Theca and related structures. 98. Ventral view. 99. Dorsal view. 100. Lateral view. 101. Ectal 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.



Map 7. *T. cubensis* (■); *T. obsoleta* (☼); *T. testacea* (●).

Diagnosis. Dorsal coloration brown to green; transhumeral reddish markings lacking.

Lateral jugal margins sinuous, not parallel (Fig. 94). Anterolateral margins of pronotum slightly concave in dorsal view, usually contrastingly pale yellow; humeral angles spinose with spines small and directed anterolaterad (Fig. 93); pronotal cicatrices immaculate. Abdominal sternites with anterolateral angles immaculate, posterolateral angles piceous. Postspiracular black spot present on each side of each abdominal sternite.

Basal plates in caudoventral view with mesial margins straight to slightly convex; posterior margins sinuous; posteromesial angles broadly rounded (Fig. 106). Pygophoral opening subtended by semicircular impression in caudal view; posterior margin of pygophore produced posterodorsad, convex with small, medial, V-shaped emargination in both ventral and dorsal views (Figs. 103, 104); pygophore slightly concave in lateral view (Fig. 105).

Types. Barber and Bruner (1932) described *Thyanta cubensis* from 14♂♂ and 5♀♀ specimens, all from Cuba. The holotype and 11 paratypes were examined. The holotype is housed in the U.S. National Museum of Natural History (Washington, D.C.).

Distribution. Bahama Islands and Cuba (Map 7).

Specimens examined. 32 specimens collected during every month except January, May, June, and November; deposited in AMNH, CAS, ISU, LHR, MSU, USNM. BAHAMA ISLANDS: *Andros Island:* Mangrove Bay. *Cat Island.* CUBA: Boniato. *Archipiélago de los Canarreos:* Isla de Pines. *Camagüey:* Camagüey. *Ciego de Avila:* Baraguá. *Cienfuegos:* Soldad near Cienfuegos. *Granma:* Cayamas. *Pinar del Río:*

Sierra Rangel. *Sancti Spíritus:* Zaza del Medio. *Santiago de Cuba:* Santiago de Cuba. *Villa Clara:* Santa Clara.

Comments. Thyanta cubensis is often smaller than the other species related to *T. perditor,* the humeral spines are shorter, the transhumeral reddish markings are usually absent, and the pronotal and abdominal black markings are reduced or absent.

Thyanta (*Thyanta*) *serratulata* Ruckes
Figs. 109–121

Thyanta serratulata Ruckes, 1957c:178–179, figs. 5–6.

Diagnosis. Body shape broad, stout.

Lateral jugal margins sinuous, not parallel (Fig. 110). Anterolateral pronotal margins immaculate, in dorsal view concave, serrate, especially anteriorly; humeral angles spinose, spines relatively short, directed anterolaterad (Fig. 109). Pronotal cicatrices immaculate or often marked with black in each mesial angle. Postspiracular black spots absent. Anterolateral angles of abdominal sternites immaculate; posterolateral abdominal angles concolorous with rest of segment or sometimes marked with black.

Basal plates in caudoventral view with mesial margins straight to slightly convex; posterior margins sinuous (Fig. 116). Pygophoral opening subtended by semicircular impression; posterior margin of pygophore produced posterodorsad, convex with small, medial, V-shaped emargination in caudal view (Fig. 114); slightly concave in lateral view (Fig. 115).

Types. Ruckes (1957c) described *T. serratulata* from 13♂♂ and 13♀♀ specimens. The holotype and 17 paratypes were examined. The holotype is housed in the California Academy of Sciences (San Francisco).

Distribution. Known only from the type locality: Clarión Island, Revillagigedo Islands, Mexico.

Specimens examined. 21 specimens collected between 27 February and 8 May; deposited in AMNH, CAS, LACM, USNM. MÉXICO: *Colima:* Revillagigedo Islands, Clarión Island.

Comments. Thyanta serratulata can be identified by the broad, stout shape, the short humeral spine, the lack of post-spiracular black spots, and the reduction or absence of black markings on the lateral abdominal angles.

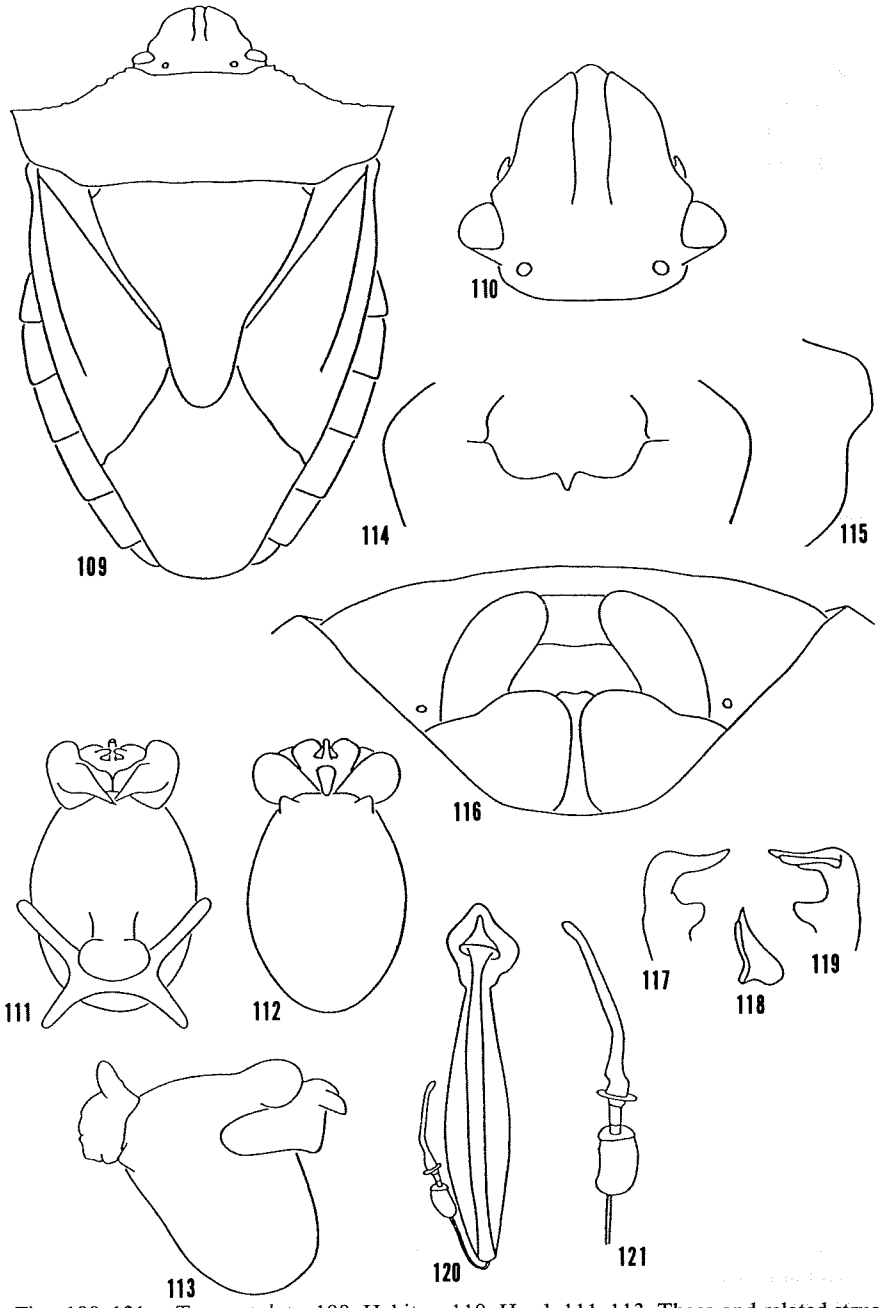
Subgenus *Argosoma* Rider

Thyanta (*Argosoma*) Rider [in Rider and Chapin, 1991:33].

Type species. Pentatoma patruelis Stål, 1859 (by original designation, Rider and Chapin, 1991).

Diagnosis. Punctation coarse, sparse, dorsal surface appearing 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



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

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* Rider). Theca reniform, lacking dorsolateral protuberances; each lateral conjuctival lobe usually with single diverticulum; median penial lobes and penisfilum usually relatively small.

Comments. This is the largest subgenus, containing 20 species, and the included species are also the most difficult to identify. 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, T. brasiliensis* Jensen-Haarup, *T. emarginata* Rider, and *T. hamulata* Rider, 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.

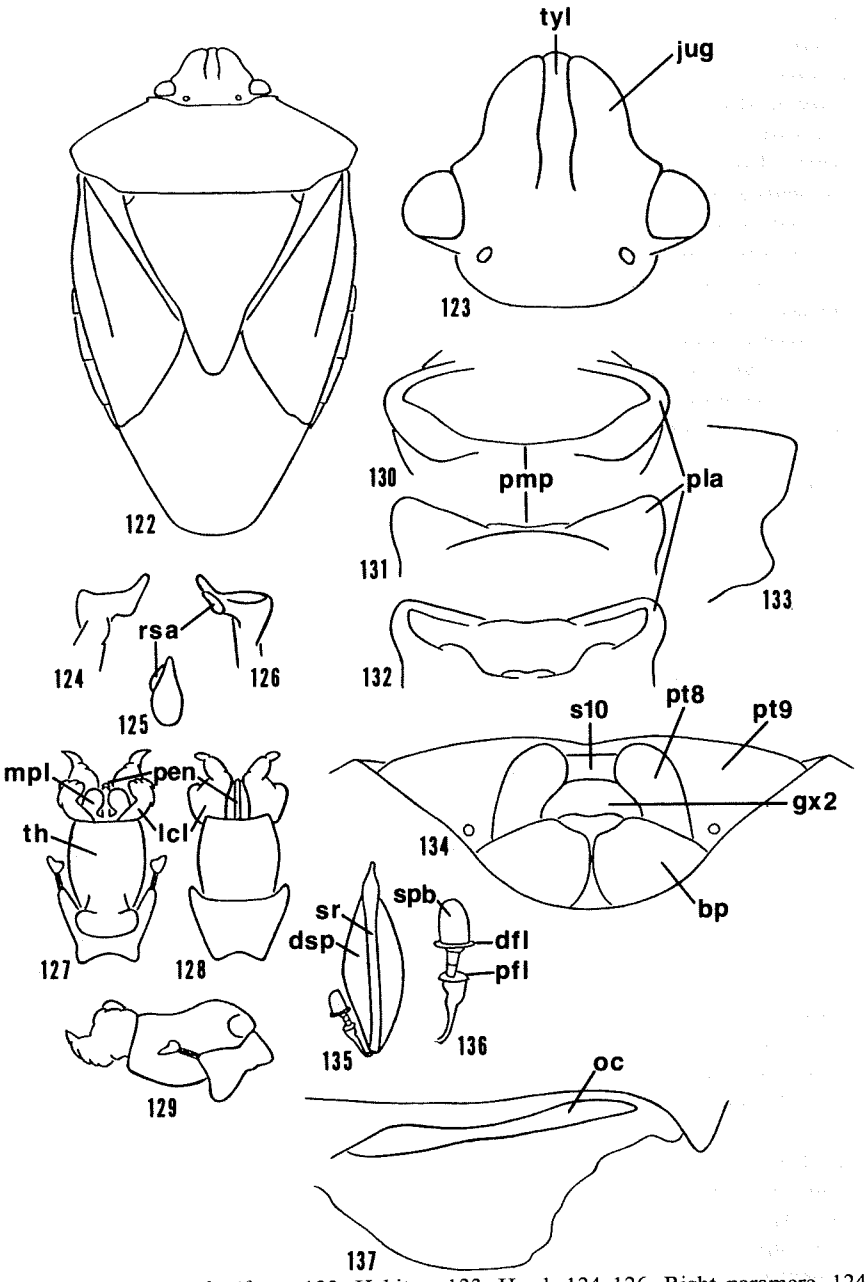
Thyanta (Argosoma) planifrons Ruckes
Figs. 122–137, Map 6

Thyanta planifrons Ruckes, 1956:59–61, fig. 3; Rolston and McDonald, 1984:fig. 33.
Thyanta casta (of authors, not Stål): Uhler, 1894a:231 (part); Van Duzee, 1904:52, 54 (part); Kirkaldy, 1909:94 (part); Banks, 1910:90; Van Duzee, 1917:53 (part); Van Duzee, 1923:127–128; Torre-Bueno, 1939:231 (part); Froeschner, 1988:593 (part).

Diagnosis. Vertex of head relatively flat; lateral jugal margins subparallel for middle third of distance from eyes to apex (Fig. 123). Anterolateral margins of pronotum straight to slightly concave in dorsal view; humeral angles rounded, not or only slightly produced beyond base of adjacent corium (Fig. 122). Pronotal cicatrices immaculate. Rarely with reddish markings on pronotum. Ostiolar canal widening towards apex, wider distally than in middle (Fig. 137). Abdominal sternites lacking black markings, rarely extreme tip of posterolateral angles of abdominal sternites piceous.

Basal plates with mesial margins slightly convex in caudoventral view, separated basally; posterior margins slightly convex; posteromesial angles rounded to slightly emarginate (Fig. 134). Sclerotized rod slightly swollen subapically, narrowed apically (Fig. 135); spermathecal duct only slightly swollen below proximal flange (Fig. 136). Posterior margin of pygophore broadly and shallowly U-shaped in caudal view, slightly sinuous medially (Fig. 130); posterior margin weakly concave in ventral and dorsal views (Figs. 131, 132); posteroventral surface deeply emarginate in lateral view (Fig. 133). Apex of each paramere nearly acute from both medial and ectal views (Figs. 124, 125); concave surface oriented more dorsad than mediad; roughened spiculate area on lateral surface elongate-circular (Fig. 126). Each lateral conjunctival lobe of aedeagus with 1 or 2 non-sclerotized diverticula (Fig. 129); dorsomedial lobe apparently absent (Fig. 128); median penial lobes spatulate (Fig. 127).

Types. Ruckes (1956) described *T. planifrons* from 6♂♂ and 7♀♀ specimens. The



Figs. 122–137. *T. planifrons.* 122. Habitus. 123. Head. 124–126. Right paramere. 124. Medial view. 125. Ectal view. 126. Lateral view. 127–129. Theca and related structures. 127. Ventral view. 128. Dorsal view. 129. Lateral view. 130–133. Pygophore. 130. Caudal view. 131. Ventral view. 132. Dorsal view. 133. Lateral view. 134. Genital plates, caudoventral view.

holotype, which is from 10 miles west of Alamos, Sonora, Mexico, and all 12 paratypes were examined. The holotype is housed in the American Museum of Natural History (New York).

Distribution. Southwestern U.S. and northwestern Mexico (Map 6).

Specimens examined. 535 specimens collected during every month except February; deposited in AMNH, ASUT, CAS, DAR, DBT, EGER, FSCA, LACM, LHR, MSU, TAMU, UAT, UCB, UCR, UIM, UMC, UNAM, USNM. UNITED STATES: Arizona: *Cochise:* Portal; 5 mi W Portal, SWRS. *Pima:* Baboquivari Mountains, Browns Canyon; Organ Pipe Cactus Natl Monument. *Santa Cruz:* Madera Canyon. California: Imperial. *Riverside:* Bautista Canyon; Deep Canyon; Palm Springs. *San Diego:* Borego Valley.

MÉXICO: Canipole; 10 mi SW Canipole; Carmen Island, Porto Ballandra; Puntbunda. *Baja California Norte:* Bahía de los Angeles; Cataviña; 10 mi S Cataviña; 8 km N Punta Prieta; 15 mi N Punta Prieta; San Felipe; 12 mi S San Felipe; 15 mi S San Felipe; San Fernando. *Baja California Sur:* Bahía Concepción; Cabo San Lucas; 3 mi W Caduaño; Comondu; 10 mi SW Comondu; 20 mi N Comondu; 23 mi S Comondu; 14 mi S El Arco Mine; 28 mi S El Arco Mine; 6.5 mi S, 1 mi E El Pescadero; 15 mi N El Rufugio; El Sargento; El Triunfo; 2 mi NW El Triunfo; 6 mi N El Triunfo; Escondido Bay; 3 mi N Guajademi; Hamilton Ranch; 1 km SW Huatamote; Isla Annelvo; Isla Catalán; Isla Cerralvo; Isla Espírita Santo; La Paz; 2 mi S La Paz; 5 mi SW La Paz; 7 mi SW La Paz; 13 mi W La Paz; 14 mi W La Paz; 15 mi W La Paz; 20 mi NW La Paz; 21 mi W La Paz; 23 km W La Paz; 25 mi W La Paz; 26 mi W La Paz; 33.5 km NW La Paz; La Purisima; Las Animas; Las Barracas; Las Tinajitas; 2 mi SE Las Virgenes; 1 mi E Migriño; Miraflores; 5 mi S Miraflores; 4 mi S Mission San Javier; Mulegé; 1 mi S Mulegé; 2 mi S Rancho de la Ventana; 2.6 mi E San Antonio; 3 mi SW San Antonio; 5 mi S San Antonio; 5 mi W San Bartolo; San Domingo; 15 mi S San Domingo; 15 mi N San Ignacio; 27 mi W San Ignacio; San José del Cabo; 2 km W San José del Cabo; 10 mi SW San José del Cabo; 1.3 mi N San José Viejo; 3 mi N San José Viejo; 5 mi S San Miguel; 3 km S, 1.3 km E San Pedro; 3.5 mi NE San Pedro; San Sebastian; 5 mi SE Santa Rosalía; 12 mi S Santa Rosalía; Santiago; 6 mi SW Santiago; Sierra de la Laguna; Todos Santos; 4 mi N Todos Santos; 28–29 km N Todos Santos; Venancio; 30 mi E V. Insurgentes. *Sinaloa:* Mazatlán; 34 mi N Mazatlán. *Sonora:* 10 mi W Alamos; Bahía de los San Carlos; Bahía Kino; 20 mi NNE Ciudad Obregón; El Desemboque; Guaymas, Punta San Antonio; Hermosillo; La Choya; Minas Nuevas; 15 km S Navojoa; 15 mi N Navojoa; San Bernardino, Río Mayo; 20 mi S Sonoyta; Tecoripa; Tiburón Island; Yavaros.

Comments. Thyanta planifrons can be separated from all other congeners by the distal widening of the ostiolar canal. Also, the vertex of the head is relatively flat, a character for which this species was named.

←

135. Spermatheca. 136. Spermathecal pump. 137. Ostiolar canal. Symbols: bp, basal plate; dfl, distal flange; dsp, dilation of spermatheca: gx2, second gonacoxae; jug, juga; lcl, lateral conjunctival lobe; mpl, median penial lobe; oc, ostiolar canal; 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.

The widening of the ostiolar canal is unusual, but not unique. It also occurs in *Tepa jugosa* Van Duzee, a species with essentially the same distribution as *Thyanta planifrons*. The biological significance of this condition is not known, but would make an interesting study. This is the first record of this species from the United States.

Thyanta (Argosoma) maculata (Fabricius)
Figs. 138–152, Map 8

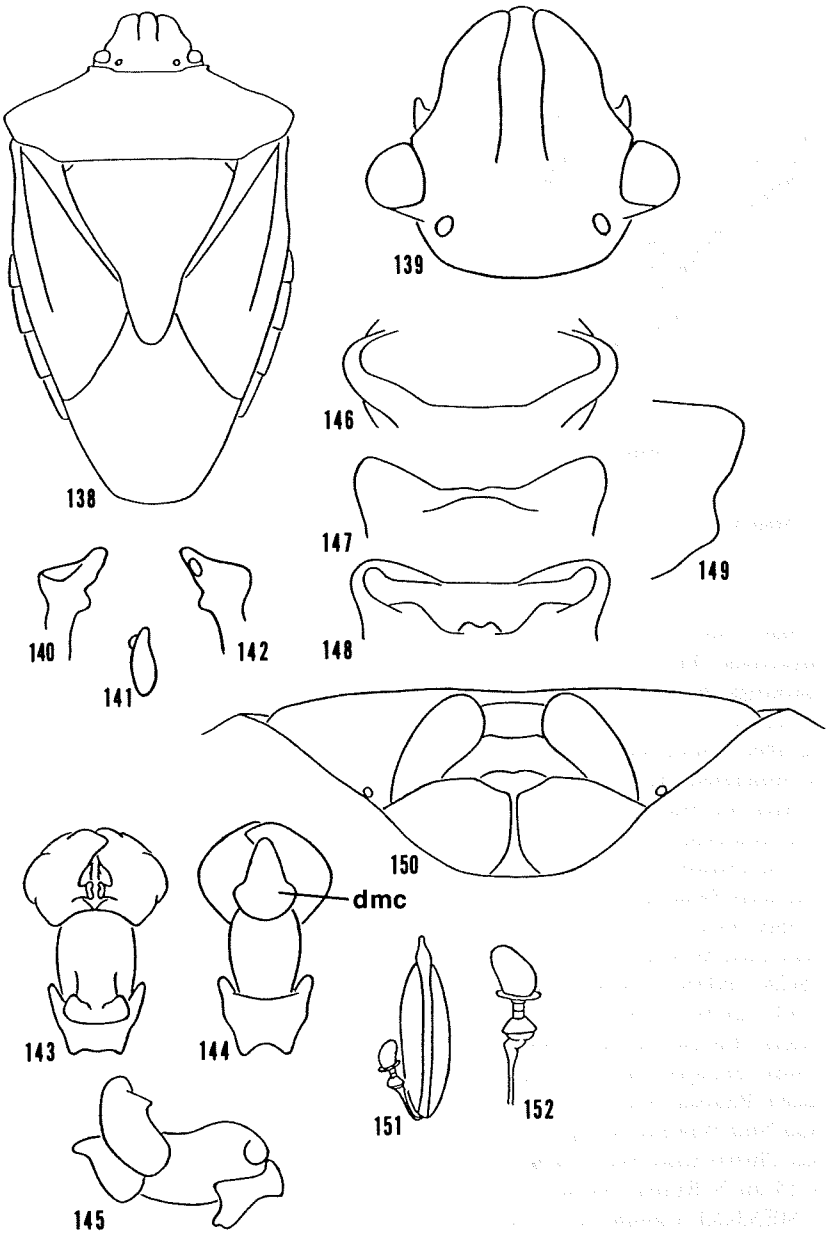
Cimex maculatus Fabricius, 1775:704.
Thyanta casta Stål, 1862b:104; Stål, 1872:35; Uhler, 1876:7; Distant, 1880:66; Uhler, 1886:7; Uhler, 1894a:231 (part); Lethierry and Severin, 1893:147; Kirkaldy, 1909: 94 (part); Malloch, 1919:217, fig. 74; Torre-Bueno, 1939:231 (part); Froeschner, 1988:593 (part). **NEW SYNONYMY**.
Euschistus castus: Walker, 1867:244.
Thyanta maculata: Stål, 1872:35; Distant, 1893:334; Lethierry and Severin, 1893: 148; Kirkaldy, 1909:94; Rolston and McDonald, 1984:fig. 29.

Diagnosis. General color green to brown; often with varying amounts of reddish on pronotum between humeral angles, often forming two oblong spots, one on each side of middle. Apices of scutellum and coria occasionally rubiginous.

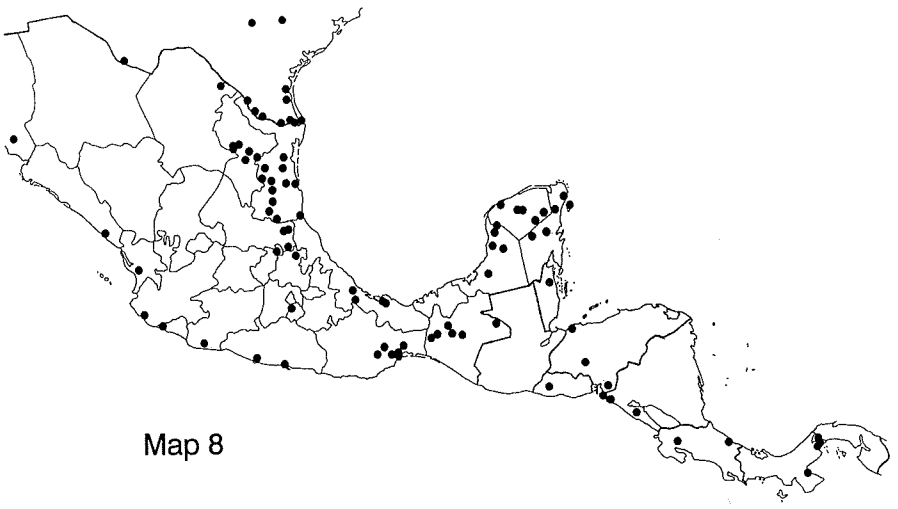
Lateral jugal margins sinuous, not quite parallel (Fig. 139). Anterolateral margins of pronotum nearly straight in dorsal view; humeral angles rounded to angulate, usually produced beyond base of adjacent corium by less than half width of eye (Fig. 138); pronotal cicatrices immaculate. Ostiolar canals acuminate apically. Posterolateral angles of abdominal sternites piceous, sometimes only minutely so. Postspiracular spots usually absent, though sometimes present in brown form.

Basal plates with mesial margins slightly convex in caudoventral view, separated basally; posterior margins convex; posteromesial angles slightly emarginate (Fig. 150). Sclerotized rod swollen subapically, narrowed apically (Fig. 151); spermathecal duct moderately swollen and coiled below proximal flange (Fig. 152). Posterior margin of pygophore broadly and shallowly U-shaped in caudal view (Fig. 146); lateral angles prominent in ventral and dorsal views, chin-like protuberance relatively small (Figs. 147, 148); emarginate below middle in lateral view (Fig. 149). Apex of each paramere obtusely rounded in ectal view (Fig. 141); concave surface oriented more mediad than dorsad, shaft rather robust with small medial protuberance (Fig. 140); roughened spiculate area on lateral surface circular (Fig. 142). Aedeagus with lateral and dorsomedial conjunctival lobes large (Fig. 144), each lateral lobe with single, slightly sclerotized diverticulum (Fig. 143); penisfilum and median penial lobes obscured by conjunctiva (Fig. 145).

Types. Fabricius (1775) described *Cimex maculatus* from "America" without designating a holotype or paratypes. It is not possible to determine from his original description how many specimens he examined, but evidently he had more than one, as he mentions a variation. Only one syntype was located and examined. It is a ♀ in poor condition (apex of abdomen destroyed, left forewing missing, etc.), but it does possess the characters that define this species. It has the following label data: (a) "maculatus" (b) "Thyanta maculata F.," and is here designated the lectotype. This specimen is housed in the Universetetets Zoologiske Museum (Copehagen, Denmark).



Figs. 138–152. *T. maculata.* 138. Habitus. 139. Head. 140–142. Right paramere. 140. Medial view. 141. Ectal view. 142. Lateral view. 143–145. Theca and related structures. 143. Ventral view. 144. Dorsal view. 145. Lateral view. 146–149. Pygophore. 146. Caudal view. 147. Ventral view. 148. Dorsal view. 149. Lateral view. 150. Genital plates, caudoventral view. 151. Spermatheca. 152. Spermathecal pump. Symbol: dmc, dorsomedial conjunctival lobe.



Map 8. *T. maculata.*

Stål (1862b) described *T. casta* from Mexico without designating a holotype or paratypes. One syntype, a ♀, was located and examined. Although it lacks the reddish markings that many specimens of *T. maculata* possess, it differs structurally in no significant manner from *T. maculata.* Because it is not possible to determine the number of specimens upon which Stål's description was based, the syntype specimen is designated the lectotype. It is labeled as follows: (a) "Mexico Coll. Signoret." (b) "Casta det. Stal" (c) "TYPE" (d) "Coll. Nat.-Mus. Wien" (e) "Thyanta casta STAL." The lectotype is housed in the Naturhistorisches Museum (Vienna, Austria).

Distribution. Southern Texas southward through Mexico and Central America to southern Panama (Map 8).

Specimens examined. 499 specimens collected during every month of the year; deposited in AMNH, ARH, BMNH, CAS, CNC, CUC, DAR, DBT, EGER, ENGL, FSCA, INHS, LACM, LHR, LSU, MSU, MSUE, OSU, OSUC, SMEK, TAMU, UAT, UCB, UCS, UGA, UMAA, UNAM, UNSM, UUSL. UNITED STATES: Texas: Brazos. *Burnet:* Inks Lake State Park. *Cameron:* Boca Chica; 3 mi SW Boca Chica; Brownsville; Harlingen; Sabal Palm Grove Sanctuary near Southmost. *Hidalgo:* Bentsen Rio Grande Valley State Park; Edinburg; McAllen; Progresso; Santa Ana Natl Wildlife Refuge. *Kleburg:* Kingsville. *Presidio:* Presidio. *San Patricio:* Corpus Christi Lake State Park; Nueces River, 5 mi SW Mathis. *Starr:* Falcon Heights; 4–15 mi N Roma. *Webb:* Laredo. *Zapata:* 1 mi E Falcon Lake; Falcon State Park.

MÉXICO: *Campeche:* Calkiní; 12 mi E Campeche; El Remate; Escárcega; Ruínas Edzna; km 54, Carr. Campeche-Merida. *Chiapas:* Aguacero, 16 km W Ocozocoautla; Chicoasen Dam Area; 13 mi W Cintalpa; 2 mi N Ocozcoautla; Ruínas Bonampak; San Cristóbal de las Casas; Santo Domingo, 15 mi SE Simojovel; Simojovel; Suchiapa. *Coahuila:* Arroyo de la Zorra. *Colima:* 2 mi N Manzanillo. *Guerrero:* Acapulco de Juárez; 3.7 mi E Marquelia; Tecpan de Galeana. *Hidalgo:* Otongo. *Jalisco:*

Chamela; Estacion de Biología Chamela. *Michoacán:* Acahuato. *Morelos:* 4.4 mi E Cuernavaca; Villa de Ayala. *Nayarit:* 15 km E San Blas. *Nuevo León:* Apodaca; 3 mi E Galeana; 16 mi S Linares, Anegade Arroyo; 4.1 mi S Montemorelos; Monterrey; 4 mi S Monterrey; 5 mi S Monterrey, Valle Alto; 6 mi S Monterrey. *Oaxaca:* 2.7 mi NW El Camaron; El Charquito; 6 mi W Jalapa del Marques; 8 mi N La Ventosa; Puerto Escondido; Salina Cruz; Tehuantepec; 11 mi W Tehuantepec; 12 mi W Tehuantepec; 13 km W Tehuantepec; 44 mi W Tehuantepec; 2.1 mi NW Totolapán. *Querétaro:* 1 mi NW Ayutla. *Quintana Roo:* 1 km N Coba; 20 km N Felipe Carrillo Puerto; 54 mi SE Peto; San Isidrio Puerto Morelos; 2 mi NE San Miguel; River El Ramonal; Rancho El 24; Xcun Nuevo; km 146, Carr. Chetumal-Cancún; km 146, Carr. Chetumal-Pto Juarez. *San Luis Potosí:* 12 mi S Ciudad Mante; Ciudad Valles; 11 km E Ciudad Valles; El Banito; El Salto Falls; Tamazunchale; 5 mi N Tamazunchale; 30 mi S Tamazunchale; Tamuín. *Sinaloa:* 1 mi NW El Venadillo; Mazatlán; 5 mi N Mazatlán; 10 mi S Mazatlán; Presidio River near Caton. *Sonora:* 7 mi W Alamos. *Tamaulipas:* Abasolo; Antiguo Morelos; Bocatoma, Ciudad Victoria; 6 mi S Ciudad Victoria; 25 mi S Ciudad Victoria; 5 mi SSE Gómez Farías; 6 mi S Gómez Farías; Guemes; Hidalgo; 8 mi N Jiménez; La Pesca; Llera; 5 mi N Llera; 13 km E Magiscatzin; Punta Piedras; Río Corona, 30 km N Ciudad Victoria; San Fernando; 6.2 mi S San Fernando; 25 mi SE San Fernando; Tampico; Villagran. *Veracruz:* Córdoba; Cotaxtla; Cotaxtla Expt Stn; Cuitlahuac; Lake Catemaco Area; Ojo de Agui; Puente Nacionale; San Andres Tuxtla; 5 mi S Santiago Tuxtla; Tolome; 10 mi W Veracruz. *Yucatan:* Chichén Itzá; Piste; Progreso; 12 km N Quintana Roo, Hwy 295; 13 mi E Valladolid; 13.3 mi S Valladolid; 1 km S Xcalacoop; 10 km N Xcalacoop.

BELIZE: *Belize:* 12 mi NW Belize City. EL SALVADOR: Ruínas San Andres. HONDURAS: Choluteca. *Comayagua:* 5 mi NW Comayagua. *Cortes:* Puerto Cortés. NICARAGUA: Chinandega; N side Cosgóina Volcano, Gulf of Fonseca. *Managua:* Jiloa; Masachapa. *COSTA RICA:* Limón. *Guanacaste:* La Pacifica, near Cañas. PANAMA: Chitré; La Chorrera. *Canal Zone:* Barro Colorado Island; Base of Cerro Galera. *Darien:* Santa Fe.

Comments. Thyanta maculata was originally distinguished from other congeners by the presence of two oblong reddish macules, one on each side of the middle of the pronotum. Fewer than half the specimens of *T. maculata* actually exhibit this character. Also, several other species of *Thyanta* are known to have the same type of maculation in at least some specimens (*T. pseudocasta* Blatchley, *T. brasiliensis* Jensen-Haarup, *T. curvata* Rider).

Thyanta maculata can be separated from other congeners except *T. pseudocasta* by the structure of the male genitalia. Each paramere is rather robust with the apex rounded, and the dorsomedial concave surface is oriented more mediad than dorsad. *Thyanta pseudocasta* has very similar male genitalia, but the aedeagus is slightly different. The aedeagus of *T. maculata* has a dorsomedial conjunctival lobe, while the same structure is apparently absent in *T. pseudocasta.* The two forms can usually be separated based upon the prominence of the humeral angles. Each humeral angle in *T. maculata* is usually produced beyond the base of the adjacent corium by less than half the width of an eye, while in *T. pseudocasta* each humeral angle usually protrudes beyond the corium by more than half the width of an eye.

Thyanta maculata is a variable species, especially with respect to size and coloration. For example, specimens from the Yucatan peninsula of Mexico average much

smaller than specimens from other parts of the range, but they do not differ in any other significant manner.

Thyanta (Argosoma) vadosa Rider
Figs. 153–167

Thyanta (Argosoma) vadosa Rider [in Rider and Chapin, 1991:55].

Diagnosis. Ovate; dorsal surface green to pale brown; some interstitial areas of pronotum, scutellum, and elytra pale yellow; sometimes marked with reddish-purple between humeral angles, on apex of scutellum, and on tylus and vertex of head. Punctures green to pale brown.

Apex of head arcuately rounded; lateral jugal margins sinuous, subparallel for middle third of distance from eyes to apex (Fig. 154); vertex convex. Anterolateral margins of pronotum in dorsal view straight to slightly concave; humeral angles rounded to angulate, often projecting beyond base of adjacent corium (Fig. 153). Pronotal cicatrices immaculate. Punctation becoming sparse medially, central portion of pronotal disc subcalloused. Posterior third of pronotum often darker than rest of pronotum. Posterolateral angles of connexival segments piceous. Ostiolar canals acuminate apically. Postspiracular black spots usually absent (except in brown form); posterolateral angles of abdominal sternites piceous, sometimes only minutely so.

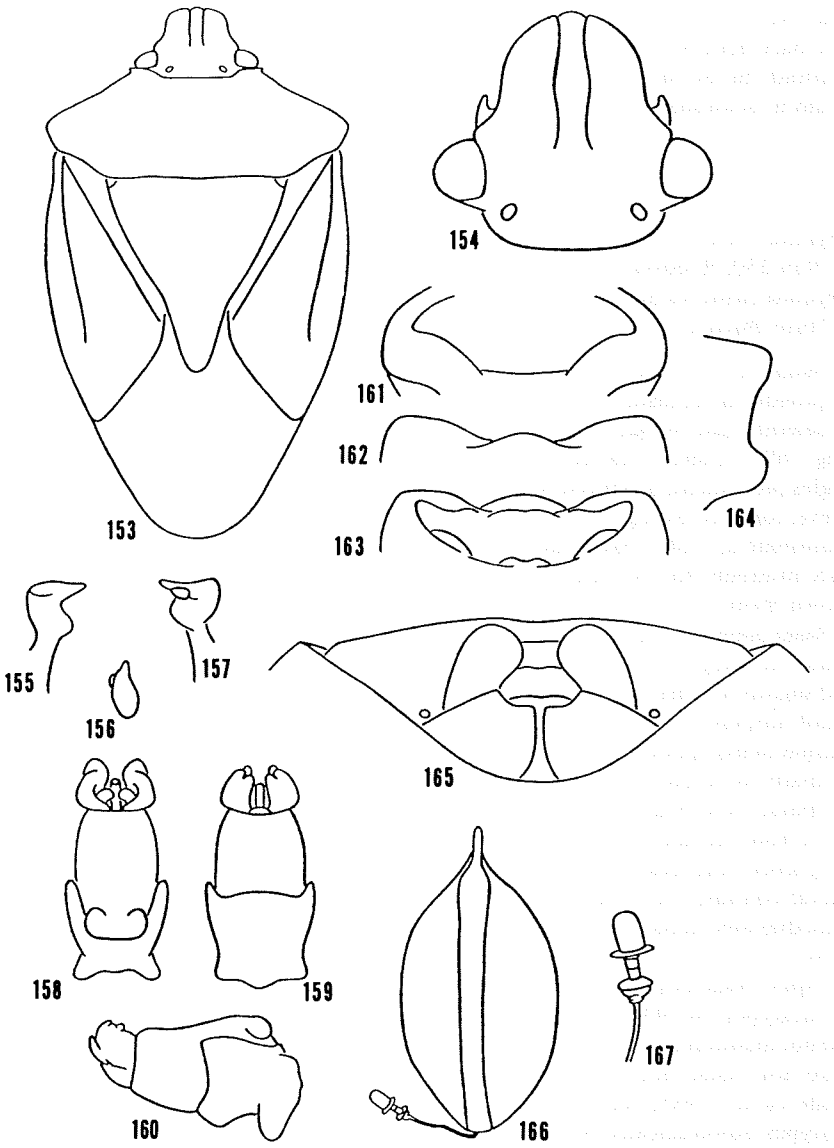
Mesial margins of basal plates straight to slightly convex in caudoventral view; posterior margins slightly convex; posteromesial angles broadly and shallowly emarginate, lateral sides of concavity resulting from excavations in basal plates divergent, not parallel (Fig. 165). Distal end of sclerotized rod swollen subapically, narrowed apically (Fig. 166); spermathecal duct moderately swollen and coiled below proximal flange (Fig. 167). Posterior margin of pygophore in caudal view broadly U-shaped, medial portion straight to slightly convex (Fig. 161); chin-like protuberance appearing relatively narrow in ventral and dorsal views (Figs. 162, 163); pygophore deeply emarginate in lateral view (Fig. 164). Each paramere with concave surface oriented mediad; from ectal view, parameral apex angling gently mesad (Fig. 156); from medial view, apex acutely angulate, straight or bending slightly ventrad (Fig. 155); roughened spiculate area on lateral surface circular (Fig. 157). Each lateral conjunctival lobe of aedeagus without sclerotized diverticula (Fig. 160); dorsomedial conjunctival lobe weakly developed (Fig. 159); median penial lobes spatulate (Fig. 158).

Types. Rider [in Rider and Chapin, 1991] described *T. vadosa* from 5♂♂ and 5♀♀ female specimens. The holotype ♂ was examined and is deposited in the Canadian National Collection, Ottawa, Canada.

Distribution. Trinidad and Tobago; Venezuela.

Specimens examined. 9 specimens collected in January, February, March, May, July, September, and October, deposited in AMNH, ARH, CNC, USNM. BRITISH WEST INDIES: *Tobago. Trinidad:* Bejucal; Curepe, Santa Margarita Circular Road; Saint Augustine; Santa Margarita Hill.

Comments. In general appearance this is a typical species of the *maculata* group. The shape of the emargination in the posteromesial angle of each basal plate of the female is distinctive. *Thyanta emarginata* and *T. excavata* both have the posteromesial angles of the basal plates deeply emarginate, but the sides of the resulting concavity are nearly parallel, not divergent as in *T. vadosa.* The male genitalia are



Figs. 153–167. *T. vadosa.* 153. Habitus. 154. Head. 155–157. Right paramere. 155. Medial view. 156. Ectal view. 157. Lateral view. 158–160. Theca and related structures. 158. Ventral view. 159. Dorsal view. 160. Lateral view. 161–164. Pygophore. 161. Caudal view. 162. Ventral view. 163. Dorsal view. 164. Lateral view. 165. Genital plates, caudoventral view. 166. Spermatheca. 167. Spermathecal pump.

also distinctive. *Thyanta vadosa* is the only species with the apex of each paramere not only acutely angulate (almost acuminate) but also straight or bending slightly ventrad. In the *maculata* group, all other species having the apex of each paramere acute to acuminate also have the apex bending dorsad.

Thyanta (*Argosoma*) *pseudocasta* Blatchley
Figs. 168–182, Map 9

Thyanta pseudocasta Blatchley, 1926:114, 120; Blatchley, 1930:64; Torre-Bueno, 1939:230; Rolston and McDonald, 1984:figs. 26, 34; Froeschner, 1988:594.
Thyanta casta (of authors, not Stål): Barber, 1914:523; Van Duzee, 1917:53 (part); Torre-Bueno, 1939:231 (part); Froeschner, 1988:593 (part).

Diagnosis. General color pale green to pale brown, sometimes with anterior half of pronotum reddish.

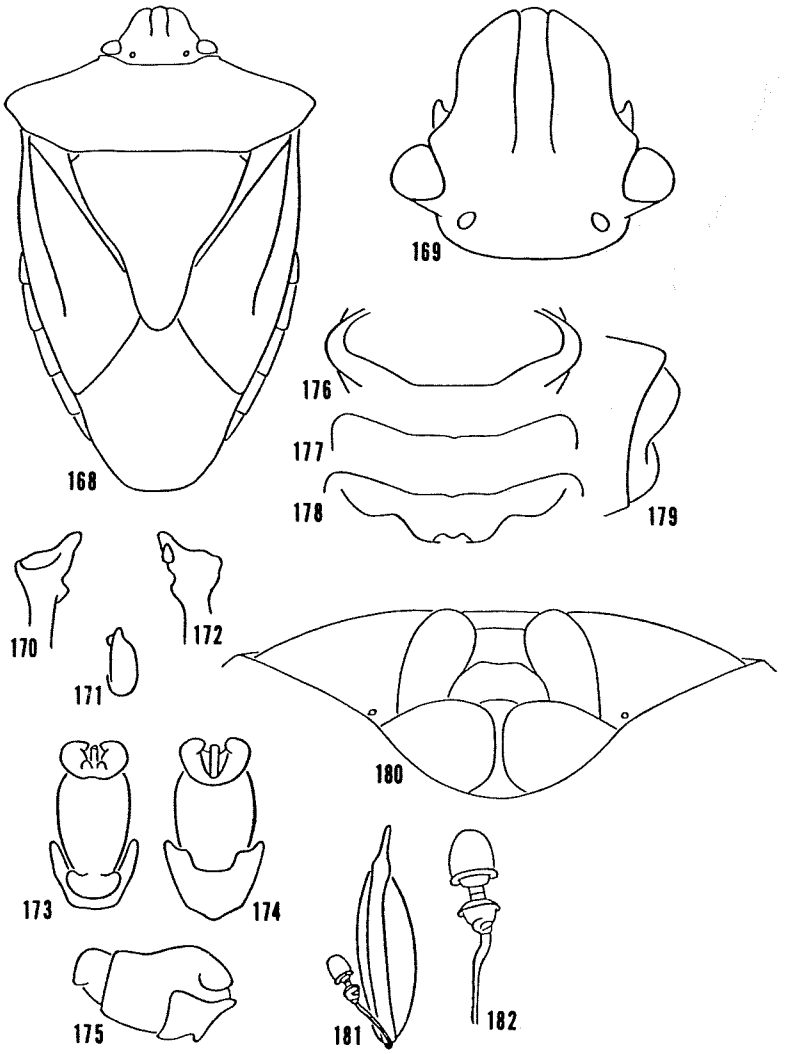
Lateral jugal margins subparallel for middle third of distance from eyes to apex (Fig. 169). Anterolateral margins of pronotum nearly straight in dorsal view; humeral angles prominent, produced beyond base of adjacent corium by more than half width of eye, rounded to angulate (Fig. 168). Pronotal cicatrices immaculate. Ostiolar canals acuminate apically. Posterolateral angles of abdominal sternites piceous, sometimes only minutely so. Postspiracular black spots usually absent, sometimes present in brown form.

Basal plates in caudoventral view with mesial margins straight to slightly convex; posterior margins evenly convex, posteromesial angles rounded (Fig. 180). Sclerotized rod slightly swollen subapically, narrowed apically (Fig. 181); spermathecal duct with small amount of swelling and coiling below proximal flange (Fig. 182). Posterior margin of pygophore in caudal view broadly and shallowly U-shaped, slightly sinuous medially in caudal, ventral, and dorsal views (Figs. 176–178); pygophore emarginate in lateral view (Fig. 179). Apex of each paramere from ectal view nearly acute (Fig. 171); from medial view narrowly rounded; concave surface facing mediad (Fig. 170); roughened spiculate area on lateral surface circular (Fig. 172). Aedeagus with each lateral conjunctival lobe apparently lacking sclerotized diverticula (Fig. 175); dorsomedial lobe apparently absent (Fig. 174); median penial lobes relatively small (Fig. 173).

Types. Blatchley (1926) described *T. pseudocasta* without designating a holotype or paratypes. In 1930, however, he designated 1♂ specimen as "type" (lectotype). He did not mention any of the other syntypes. Although actual paralectotype designations were not made, according to the International Code of Zoological Nomenclature (Ride et al., 1985, sect. 74a[iv]), once the lectotype is designated the remaining syntypes automatically become paralectotypes. Accordingly, no such designations are needed, but labels have been added to the specimens to indicate their actual status.

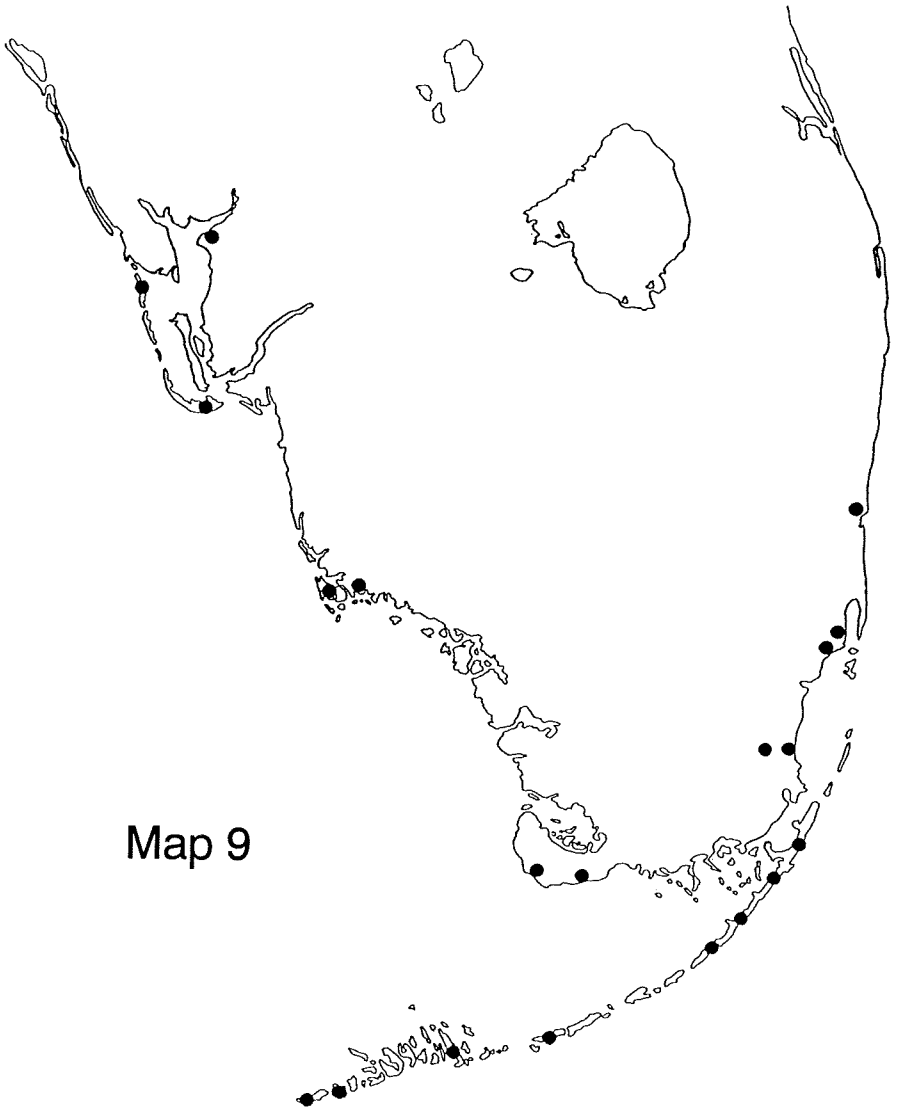
Regrettably, the ♂ lectotype is in deplorable condition; all that remains is the head and pronotum. It has the following label data: (a) "Miami Fla. W. S. B. Coll. 3-11-24" (b) "Purdue Blatchley collection" (c) "TYPE" (d) "Thyanta pseudocasta Blatchley." The lectotype is deposited in the Purdue University Collection (W. Lafayette, IN).

Ten additional specimens that are believed to be part of the original syntype series



Figs. 168–182. *T. pseudocasta.* 168. Habitus. 169. Head. 170–172. Right paramere. 170. Medial view. 171. Ectal view. 172. Lateral view. 173–175. Theca and related structures. 173. Ventral view. 174. Dorsal view. 175. Lateral view. 176–179. Pygophore. 176. Caudal view. 177. Ventral view. 178. Dorsal view. 179. Lateral view. 180. Genital plates, caudoventral view. 181. Spermatheca. 182. Spermathecal pump.

have been located: 1♂ and 2♀♀ labeled (a) "Miami Fla. W. S. B. Coll. 3-11-24" (b) "Purdue Blatchley collection" (AMNH, PUL), except 1♀ labeled (c) "Thyanta pseudocasta Blatchley" (LSU); 3♂♂ and 2♀♀ labeled (a) "C. Sable Fla. W. S. B. Coll. 2-23-19" (b) "Purdue Blatchley collection" (PUL), except 1♂ labeled (b) "H G Barber Colln1950" (USNM), and 1♂ and 1♀ labeled "4-5-25" (AMNH); 1♂ labeled (a) "K.



Map 9. *T. pseudocasta.*

West Fla. W. S. B. Coll. 3-2-19" (b) "Purdue Blatchley collection" (PUL); and 1♂ labeled (a) "Coxam Fla. W. S. B. Coll. 3-8-21" (b) "Purdue Blatchley collection" (LSU). The lectotype and all but one paralectotype were examined.

Distribution. Southern Florida (Map 9).

Specimens examined. 153 specimens collected during every month of the year; deposited in AMNH, ARH, CAS, CNC, CU, DAR, DBT, EGER, FSCA, LHR, LSU,

MSU, PUL, SMEK, UCB, UCS, UGA, UMC, USNM. UNITED STATES: Florida: Caxambus. *Broward:* Fort Lauderdale. *Charlotte:* Charlotte Harbor Area, Little Gasparillo Island; Punta Gorda. *Collier:* Marco Island; Royal Palm Park. *Dade:* Biscayne Bay; Coral Gables; Homestead; Miami. *Lee:* Sannibel Island. *Monroe:* Big Pine Key; Cape Sable; Everglades Natl Park; Key Largo; Key West; Marathon Key; Plantation Key; Stock Island; Tavernier Key; 9 mi NW Key Largo.

Comments. Thyanta pseudocasta can be separated from all congeners except *T. maculata* because the concave surface of its paramere is oriented more mediad than dorsad. *Thyanta pseudocasta* may actually be a subspecies of *T. maculata.* The male genitalia of the two species are very similar, but there are some differences in the aedeagus. *Thyanta maculata* has a prominent dorsomedial conjunctival lobe, while this structure is apparently absent in *T. pseudocasta.* Also, the humeral angles are more prominent in *T. pseudocasta.* Because these species represent reproductively isolated populations, a conservative approach is taken, and they are retained as full species.

Thyanta (*Argosoma*) *obsoleta* (Dallas)
Figs. 183–197, Map 7

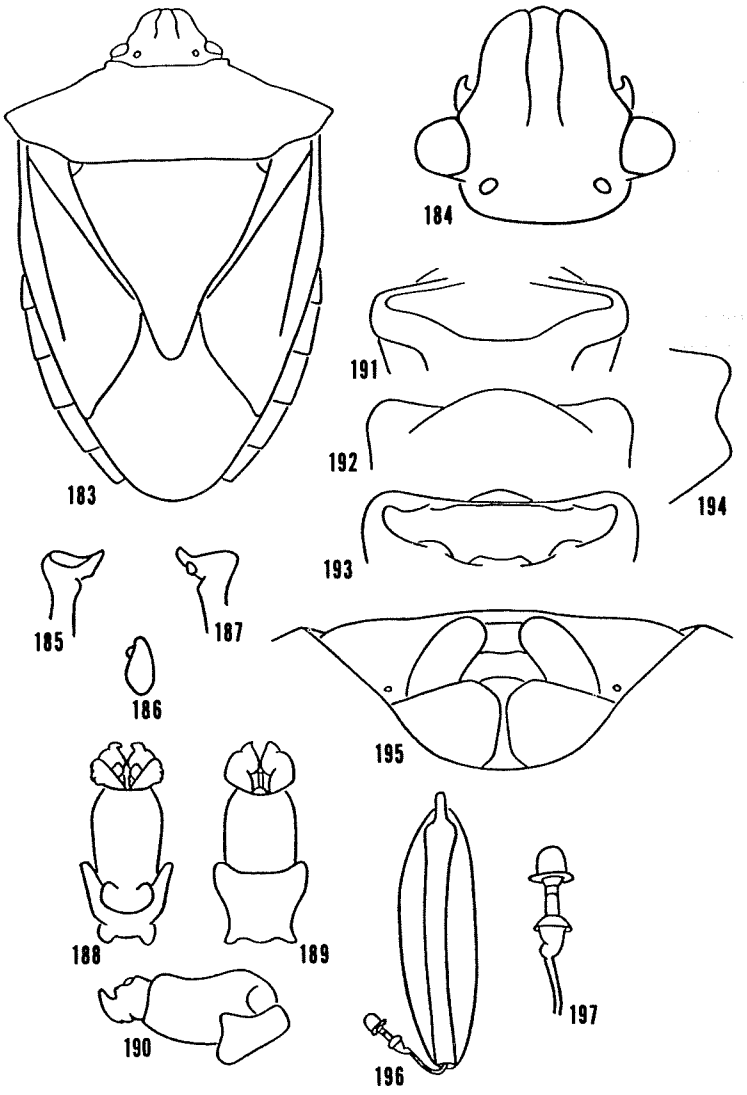
Pentatoma obsoleta Dallas, 1851:251; Walker, 1867:289.
Thyanta obsoleta: Lethierry and Severin, 1893:148; Kirkaldy, 1909:94.
Thyanta casta (of authors, not Stål): Van Duzee, 1904:52, 54 (part); Kirkaldy, 1909: 94 (part); Barber, 1923:12; Barber, 1939:292–293.

Diagnosis. Coloration green to pale brown, often with transhumeral reddish markings that sometimes form two oblong spots, one each side of middle.

Lateral jugal margins subparallel for middle third of distance from eyes to apex (Fig. 184). Anterolateral margins of pronotum straight to slightly concave in dorsal view; humeral angles rounded to angulate, usually produced beyond base of adjacent corium by about half width of eye (Fig. 183). Pronotal cicatrices immaculate. Ostiolar canals acuminate apically. Posterolateral abdominal angles piceous; postspiracular black spots usually absent, sometimes evident in brown form.

Mesial margins of basal plates in caudoventral view straight to slightly convex; posterior margins slightly convex; posteromesial angles broadly rounded (Fig. 195). Sclerotized rod swollen subapically, narrowed apically (Fig. 196); spermathecal duct moderately swollen below proximal flange with only slight amount of coiling (Fig. 197). Posterior margin of pygophore broadly and shallowly U-shaped in caudal view (Fig. 191); in lateral view concave (Fig. 194); posterior margin only slightly concave in dorsal view, posterolateral angles not prominent (Fig. 193); posteroventral surface distinctly produced into blunt chin-like protuberance in ventral view (Fig. 192). Each paramere apically rounded in ectal view (Fig. 186); narrowly rounded from medial view, curving dorsad; concave surface oriented more dorsad than mediad (Fig. 185); roughened spiculate area on lateral surface circular (Fig. 187). Each lateral conjunctival lobe of aedeagus with 1 or 2 subacute diverticula (Fig. 190), dorsomedial lobe reduced (Fig. 189); median penial lobes large, spatulate (Fig. 188); penisfilum reduced.

Types. Dallas (1851) described *Pentatoma obsoleta* from Jamaica without designating a holotype or paratypes, and it is not possible to determine the number of specimens upon which he based his description. Only 1♀ syntype was located, and



Figs. 183–197. *T. obsoleta.* 183. Habitus. 184. Head. 185–187. Right paramere. 185. Medial view. 186. Ectal view. 187. Lateral view. 188–190. Theca and related structures. 188. Ventral view. 189. Dorsal view. 190. Lateral view. 191–194. Pygophore. 191. Caudal view. 192. Ventral view. 193. Dorsal view. 194. Lateral view. 195. Genital plates, caudoventral view. 196. Spermatheca. 197. Spermathecal pump.

it is here designated the lectotype. It is labeled (a) "Jamaica" [dorsal surface], "45 1111" [ventral surface] (b) "Type" (c) "35. *Pentatoma obsoleta.*" The lectotype, which is housed in the British Museum of Natural History (London), was examined.

Distribution. Greater Antilles (Map 7).

Specimens examined. 60 specimens collected during every month of the year except September; deposited in AMNH, ARH, BMNH, CAS, CNC, CU, DAR, DBT, ENGL, LHR, OSU, SMEK, UAT, USNM. BAHAMA ISLANDS: San Salvador Island. CUBA: *Ciudad de la Habana:* El Cano; Havana. *Guantánamo:* Guantánamo Bay Naval Base, Caravella Point. *Santiago de Cuba:* Daiquirí; Jarahueca. JAMAICA: Bluefields; Christiana; Mona, near Kingston; St. Andrew Ferry; Try. Duncans. *St. Andrew:* Bamboo Lodge near Irish Town. *Westmorland:* Negril, Negrillo Cottages. HAITI: Diquini. *Ouest:* Port-au-Prince. DOMINICAN REPUBLIC: Los Hidalgos; 8 mi up Macorís River, Santo Domingo. *Distrito Nacional:* La Victoria; Santo Domingo City. *Peravia:* 13 km NW Baní. *Samaná:* Sánchez. *San Cristóbal. San Juan:* 16 km SE San Juan; 28 km E San Juan. PUERTO RICO: Aguirre; Fortuna A.E.S. *Humacao:* Vieques Island, Puerto Real. *Mayagüez:* Guánica Forest, Hwy 334 at Ranger Station. *Ponce:* Coamo Springs; Ponce.

Comments. Examination of the male genitalia is necessary to separate this species from other species in the *maculata* group. *Thyanta obsoleta* can be distinguished from other Northern Hemisphere species by its apically rounded parameres, which have the concave surface oriented more dorsad than mediad.

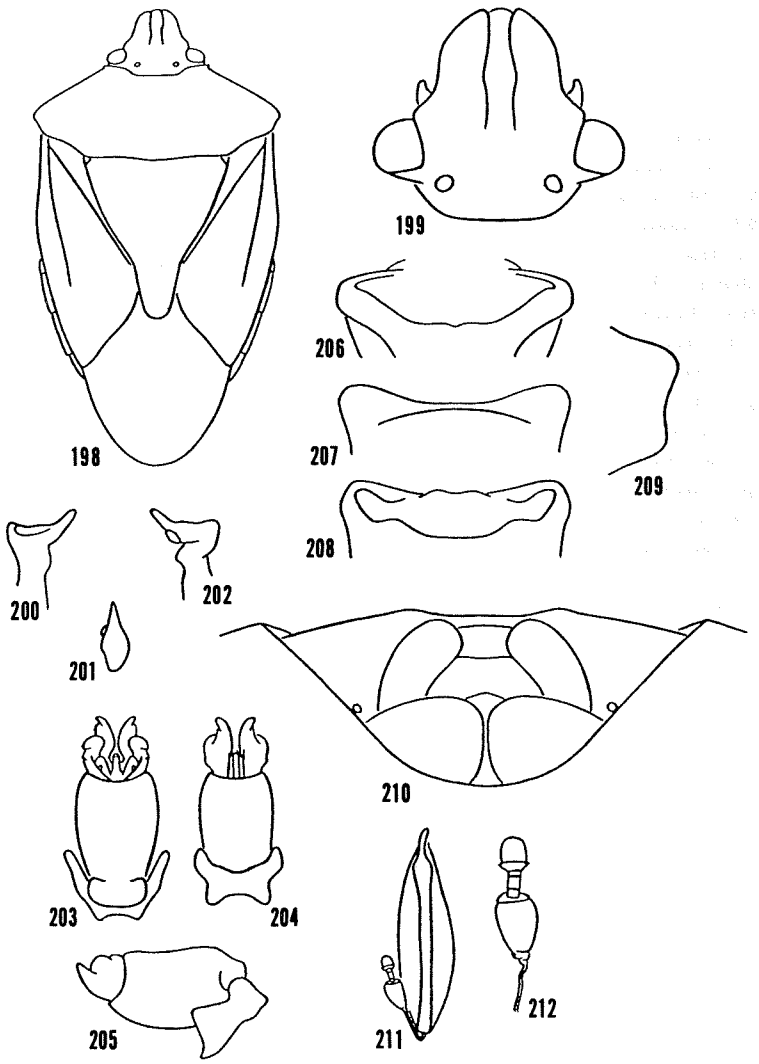
Thyanta (*Argosoma*) *testacea* (Dallas)
Figs. 198–212, Map 7

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 (syn. by Rider and Chapin, 1991).
Thyanta (*Argosoma*) *testacea:* Rider and Chapin, 1991.

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

Lateral jugal margins subparallel for middle third of distance from eyes to apex (Fig. 199). Anterolateral pronotal margins straight to slightly concave; humeral angles angulate to rounded, usually produced beyond base of adjacent corium by about half width of eye (Fig. 198). Pronotal cicatrices immaculate. Ostiolar canals acuminate apically. Posterolateral abdominal angles not marked with black or only minutely so; postspiracular black spots usually absent, sometimes evident in brown form.

Basal plates in caudoventral view with mesial margins convex, separated basally; posterior margins convex (Fig. 210). Distal end of sclerotized rod slightly swollen subapically, narrowed apically (Fig. 211); spermathecal duct greatly swollen below proximal flange, carrot-shaped (Fig. 212). Posterior margin of pygophore broadly and shallowly U-shaped in caudal view (Fig. 206); slightly concave in lateral view (Fig. 209). Each paramere apically acute in both medial and ectal views (Figs. 200, 201); concave surface oriented more dorsad than mediad; roughened spiculate area



Figs. 198–212. *T. testacea.* 198. Habitus. 199. Head. 200–202. Right paramere. 200. Medial view. 201. Ectal view. 202. Lateral view. 203–205. Theca and related structures. 203. Ventral view. 204. Dorsal view. 205. Lateral view. 206–209. Pygophore. 206. Caudal view. 207. Ventral view. 208. Dorsal view. 209. Lateral view. 210. Genital plates, caudoventral view. 211. Spermatheca. 212. Spermathecal pump.

on lateral surface circular (Fig. 202). Aedeagus with dorsomedial lobe apparently absent (Fig. 204).

Types. Dallas (1851) described *Pentotoma testacea* from "S. America" without designating a holotype or paratypes, and it is not possible to determine how many

syntypes he had. Rider and Chapin (1991) designated the only known ♀ syntype as lectotype. The lectotype, which is conserved in the British Museum of Natural History (London), was examined.

Distribution. Lesser Antilles and northern South America (Map 7).

Specimens examined. 250 specimens collected during every month of the year, deposited in AMNH, ARH, BMNH, CAS, CU, DBT, EGER, ENGL, INHS, LACM, LHR, LSU, MSUE, SMEK, TAMU, USNM. BRITISH VIRGIN ISLANDS: *Tortola Island.* U.S. VIRGIN ISLANDS: *St. Croix:* Canaan; Christiansted; E Hill; Experiment Station Grounds; Hams Bluff. *St. John:* Estate Carolina, NW of Coral Bay; Virgin Islands Natl Park. *St. Thomas:* Charlotte Amalie; Estate Lilliendahl; Frenchman's Bay. BRITISH WEST INDIES: *Anguilla:* N of Road Bay. *Antigua:* Coolidge; Coolidge airport. *Bequia. Dominica:* Antrim; Cabrit Swamp; Clarke Hall; Grande Savane; Macoucheri; Mero Beach; Salybia; Springfield Estate; S Chiltern. *Grenada:* Caliveny Estate; Grand Anse, St. Georges Parish; Granville; Mt Gay Estate; St. Georges; Santeurs. *Montserrat:* Galway's Estate; Plymouth. *St. Kitts:* W Farm Gut. *St. Lucia:* 1.5 mi N Canaries. *Tobago:* Bucco Bay; Grafton Estate. *Trinidad:* St. George Co., Curepe C.I.B.C. *Union.* FRENCH WEST INDIES: *Guadeloupe:* Sur Cotonnier. *Martinique:* Diamant; Sainte Anne. BARBADOS: Edge Hill; Freshwater Bay; Groves St. George. CURAÇAO.

Comments. Thyanta testacea is very closely related to the other species in the *maculata* group, and can be reliably identified only by examination of the male genitalia. The apically acute parameres curving gently dorsad will separate it from all congeners except *T. patruelis,* which it closely resembles. 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 forms with *T. testacea* restricted to northern South America and the Lesser Antilles, and *T. patruelis* occurring from northeastern Brazil and southern Peru southward.

ACKNOWLEDGMENTS

This study would not have been possible without the kind help of the many curators and colleagues who generously lent specimens. The following is a list of institutions and their curators who provided valuable assistance (acronyms are those used in the text; DAR is senior author's collection): AMNH—American Museum of Natural History, New York, R. T. Schuh; ARH—University of Florida, Agricultural Research Center, Homestead, R. M. Baranowski; ASUT—Arizona State University, Tempe, F. F. Hasbrouck; AUA—Auburn University, Auburn, AL, W. E. Clark; BMNH—British Museum (Natural History), London, England, W. R. Dolling; CAS—California Academy of Sciences, San Francisco, P. H. Arnaud, Jr.; CNC—Canadian National Collection, Ottawa, Ontario, R. Foottit; CU—Cornell University, Ithaca, NY, J. K. Liebherr; CUC—Clemson University, Clemson, SC, J. C. Morse; DBT—D. B. Thomas personal collection, Tuxtla Gutierrez, Mexico; EGER—J. E. Eger personal collection, Tampa, FL; ENGL—H. D. Engleman personal collection, Coco Solo, Panama; FMNH—Field Museum of Natural History, Chicago, IL, E. H. Smith; FSCA—Florida State Collection of Arthropods, Gainesville, F. W. Mead; INHS—Illinois Natural History Survey, Champaign, D. Voegtlin; ISU—Iowa State University, Ames, J. Laffoon; LACM—Los Angeles County Museum of Natural History, CA, C. L. Hogue; LHR—L. H. Rolston personal collection, Baton Rouge, LA; LSU—Louisiana State University, Baton Rouge, J. B. Chapin; MSU—Mississippi State University, Mississippi State, R. L. Brown, P. R. Miller; MSUB—Montana State University, Bozeman, S. Rose; MSUE—Michigan State University, East Lansing, R. L. Fischer; NCSU—North Carolina State Uni-

versity, Raleigh, C. Parron; NDSF—North Dakota State University, Fargo, E. U. Balsbaugh, Jr.; NMSU—New Mexico State University, Las Cruces, G. S. Forbes, J. R. Zimmerman; ODAS—Oregon Department of Agriculture, Salem, R. L. Westcott; OSU—Ohio State University, Columbus, C. A. Triplehorn; OSUC—Oregon State University, Corvallis, K. A. Phillips; POLH—University of Colorado, Polhemus collection, Englewood, J. T. Polhemus; PUL—Purdue University, West Lafayete, IN, A. V. Provonsha; SIUC—Southern Illinois University, Carbondale, J. E. McPherson; SMEK—Snow Museum of Entomology, University of Kansas, Lawrence, P. D. Ashlock; TAMU—Texas A&M University, College Station, J. C. Schaffner; UAT—University of Arizona, Tucson, F. G. Werner; UCB—Essig Museum of Entomology, University of California, Berkeley, J. A. Powell; UCR—University of California, Riverside, S. I. Frommer; UCS—University of Connecticut, Storrs, J. E. O'Donnell; UGA—University of Georgia, Athens, C. L. Smith; UIM—University of Idaho, Moscow, J. B. Johnson; UMAA—University of Michigan, Ann Arbor, B. M. O'Conner; UMC—University of Missouri, Columbia, R. L. Blinn, T. R. Yonke; UNAM—Instituto de Biología, Universidad Nacional Autónomia de Mexico, Mexico City, DF, H. Brailovsky; UNL—University of Nebraska, Lincoln, B. C. Ratcliffe; USNM—U.S. National Museum of Natural History, Washington, DC, R. C. Froeschner, T. J. Henry; UUSL—University of Utah, Salt Lake City, J. Loye; VPI—Virginia Polytechnic Institute and State University, Blacksburg, M. Kosztarab; WSU—Washington State University, Pullman, R. S. Zack.

We would like to give special thanks to those who arranged the loan of pertinent type material: N. M. Anderson, Universetetets Zoologiske Museum, Copenhagen, Denmark (*maculata, perditor*); P. H. Arnaud, Jr., California Academy of Sciences, San Francisco (*serratulata, spectabilis*); W. R. Dolling, British Museum (Natural History), London (*obsoleta, testacea*); R. C. Froeschner and T. J. Henry, National Museum of Natural History, Washington, D.C. (*cubensis*); A. Kaltenbach, Naturhistorisches Museum, Vienna, Austria (*casta*); P. Lindskog, Naturhistoriska Riksmuseet, Stockholm, Sweden (*pallidovirens*); A. V. Provonsha, Purdue University, West Lafayette, Indiana (*pseudocasta*); R. T. Schuh, American Museum of Natural History, New York (*planifrons*). The holotypes for *accerra* (USNM), *setosa* (AMNH), and *spinosa* (AMNH) were examined while the senior author visited the respective museums.

We also thank D. J. Schotzko and F. Merickel, University of Idaho, who generously sent specimens of *T. pallidovirens* preserved in Carnoy's solution for some of the chromosome work discussed in this paper. The chromosome study was also assisted by a Sigma Xi Grant-in-Aid of Research and a Theodore Roosevelt Fund Field Research Grant.

We would also like to thank J. A. Moore, L. H. Rolston (Louisiana State University), and D. B. Thomas, Jr. (USDA-ARS, Tuxtla, MX) for their critical reviews of the manuscript. We are especially grateful to L. H. Rolston who provided important suggestions and encouragement throughout this entire project.

This publication was approved by the Director of the Louisiana Agricultural Experiment Station as manuscript number 90-17-4416.

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Received 27 September 1990; accepted 23 January 1991.