REVISION OF THE GENUS THYANTA STÅL, 1862
(HETEROPTERA: PENTATOMIDAE)
II. NORTH AMERICA, CENTRAL AMERICA,
AND THE WEST INDIES

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Abstract.—The species of the pentatomid genus Thyanta Stål occurring north of South America are revised. All northern hemisphere species belong to the subgenera Thyanta and Argeomoma Rider. Diagnoses are given for the genus, subgenera, and the 14 included species and subspecies. The subspecies accerra McAtee is transferred from T. pallidovirens (Stål) to T. custator (Fabricius). The following new synonymy is recognized (junior synonym in parentheses): T. custator accerra McAtee, 1919 (= T. pallidovirens spinosa Ruckes, 1957a), T. pallidovirens (Stål, 1859) (= T. pallidovirens setosa Ruckes, 1957a), and T. maculata (Fabricius, 1775) (= T. casta Stål, 1862b). Lectotype designations are made for Cimex maculatus Fabricius, Pentatoma obsoleta Dallas, P. pallidovirens, T. casta, and T. pseudocasta Blatchley. Thyanta planifrons Ruckes is reported from the United States for the first time. A key is provided for the subgenera, species, and subspecies that occur north of South America.

The genus Thyanta is restricted to the western hemisphere and is one of several fairly large genera in the nominate tribe and subfamily of the Pentatomidae. Historically, identifications in this genus have been difficult. In fact, Jensen-Haarup (1928) commented “The species are very variable, but at the same time inter se much similar both as to colour and sculpture, and also regarding the genital segments; a strict separation of most of the species is, therefore, rather difficult, if not rich and fresh materials of species and specimens are at hand.” There has been no recent treatment of the entire genus, the last being that of Jensen-Haarup in 1928. Malloch (1919), Blatchley (1926), and Torre-Bueno (1939) all reviewed portions of the genus, but their works have become outdated largely due to the addition of many new species and subspecies (Ruckes, 1952, 1956, 1957a, b, c; Rider and Chapin, 1991).

The genus Thyanta is one of a group of pentatomine genera characterized by the lack of a spine or tubercle on the third (second visible) abdominal sternite. Rolston and McDonald (1984) provided a key to separate those genera occurring in the Western Hemisphere north of South America. Because there are many species and many of them are difficult to distinguish, the genus has been divided into two groups according to geographical regions. The present paper reviews those species known to occur north of South America. The South American species of Thyanta were recently revised by Rider and Chapin (1991).

Care should be maintained when using the key to species. It is important to have fresh, mature specimens. After death, specimens tend to become greasy and discolored, making their determinations rather tentative. In the key, when certain characters
are described as black or piceous, the true structural color is black, not just darkened due to discoloration. Teneral specimens and specimens of brown forms often have darkened areas that may be misleading when working through the key. Most characters of the genitalia can be seen without dissecting the specimen; however, accurate determinations may require some dissection. In many cases there are no reliable characters to separate females. The only way to identify females in these instances is by association with males or sometimes by geographical distribution.

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

**Thyanta Stål 1862**


*Type species.* *Cimex peditor* F., 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 three-fourths distance from mesial margin of ostiole to lateral margin of metapleuron. Bucculae evanescent or arcuately truncate at posterior terminations. 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 frenae two-fifths 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 two other pentatomine genera, *Cytocephala* Berg and *Tepa* Rolston and McDonald, from which it can be separated reliably only by differences in the male genitalia. In all northern hemisphere species of *Thyanta*, the head of each paramere lacks a lateral lobe. In *Cytocephala* and *Tepa*, the parameres have well-developed lateral lobes. *Cytocephala* further differs from *Tepa* and *Thyanta* by having minute denticles between the lateral lobe and the apex of the paramere. The parameres of species of *Tepa* and *Thyanta* lack denticles.

Jensen-Haaurup (1928) described the subgenus *Parathyanta* within *Thyanta*. Rolston and McDonald (1984) placed *Parathyanta* in the synonymy of *Cytocephala*. At the same time, they transferred 4 species from *Thyanta* to *Cytocephala* and 6 species from *Thyanta* to *Tepa*. The species of both *Cytocephala* and *Tepa* have been reviewed recently (Rolston, 1972, 1986; Rider, 1986a).

The genus *Thyanta* is divided into three subgenera: *Argosoma* Rider, *Phacidium* Breddin, and *Thyanta*. All 8 species of the subgenus *Phacidium* are restricted to South America and have been treated in an earlier paper (Rider and Chapin, 1991). *Argosoma* contains 20 species, 6 of which are known to occur outside South America. The nominate subgenus contains 9 species of which 7 are known to occur in the area covered by the present paper.
KEY TO SUBGENERA OF THYANTA STÅL

1. Dorsal surface relatively shiny, glossy; punctures relatively large, sparse; pygophoral opening relatively large; posteroventral surface of pygophore produced into small, blunt, chin-like protubercance; ectal surface of each paramere concave; spermathecal bulb globose ........................................... Aregosoma Rider
   - Dorsal surface appearing matte, not shiny; punctures relatively small, dense; pygophoral opening relatively small, posteroventral surface of pygophore not produced into blunt, chin-like protuberance; ectal surface of each paramere convex; spermathecal bulb globose or digitiform ......................................................... 2

2. Pygophoral opening subented by semicircular or rectangular impression; posterior margin of pygophore with medially emarginate production in middle; theca large, subtriangular, with small protuberance on each side near lateral dorsal margin; proximal end of sclerotized rod cone-shaped; spermathecal bulb digitiform ........................................... Thyanta Stål
   - Posteroventral surface of pygophore smoothly arcuate or with distinct sulcus, not with semicircular or rectangular impression; posterior margin of pygophore nearly transverse, lacking medial production; theca reniform, lacking protuberances on lateral dorsal margin; proximal end of sclerotized rod may be slightly swollen, but not cone-shaped; spermathecal bulb globose ........................................... Phacieidium Broddin

KEY TO SPECIES OF THYANTA OCCURRING NORTH OF SOUTH AMERICA

1. Anterolateral margins of pronotum piceous; mesial angle of each pronotal cicatricic black ........................................................................................................ 2
   - Anterolateral margins of pronotum not piceous; coloration of mesial angle of each pronotal cicatricic variable, often immaculate ........................................... 3

2. Piceous markings along anterolateral pronotal margins relatively broad, usually easily visible from dorsal view; pygophoral opening subented by semicircular impression; general form relatively broad (eastern U.S.) ........................................... calceata (Say)
   - Piceous markings along anterolateral pronotal margins relatively narrow, not easily visible from dorsal view; pygophoral opening subented by rectangular impression; general form relatively narrow (coastal plain from central Louisiana to Florida to New York) ........................................... castor castor (Fabricius)

3. Humeral angles rounded to angulate, but never spinose ........................................................................... 4
   - Humeral angles distinctly spinose ................................................................................................. 6

4. Dorsal punctuation minute, dense, surface appearing matte; pygophoral opening subented by rectangular impression; ectal surface of each paramere convex, lacking dorsomedial concave surface (Fig. 34); spermathecal bulb digitiform (Fig. 47) ......................................................................................................................... 5
   - Dorsal punctuation coarse, sparse, surface glossy; posteroventral surface of pygophore produced into blunt chin-like protuberance; each paramere with dorsomedial surface concave (Fig. 126); spermathecal bulb globose (Fig. 136) ........................................................................................................... 10

5. Postspiracular black spot usually present on each side of each abdominal sternite and usually larger in diameter than adjacent spiracle; if absent or smaller than spiracle, then humeral angles usually angulate (eastern U.S.) ........................................... castor castor (McAtee) (part)
   - Postspiracular area of each abdominal sternite immaculate; or, if black spot present, then spot is usually smaller in diameter than adjacent spiracle; humeral angles rounded, never angulate (western U.S.) ........................................... palleidosirens (Stål)

6. Mesial angle of each pronotal cicatricic often marked with black; posteroventral angle of each abdominal sternite usually black; pygophoral opening subented by


semicircular impression, posterior margin with distinct medial slit (Fig. 71) ........................................ 7
- Without above black markings; pygophoral opening subtended by rectangular impression, posterior margin straight, concave, or sinusous, without medial slit (Fig. 41) (southwestern U.S.; Mexico; Guatemala)  
    *castor acerara* McAtee (part) 7(6).
    Complete or partial transhumeral reddish band usually present; both anterolateral and posterolateral angles of each abdominal sternite usually piceous ........................................................................... 8
- Reddish band between humeral angles usually absent; each abdominal sternite with anterolateral angle immaculate, each posterolateral angle with at most a small black spot .......................................................... 9

8(7). Humeral angles directed anterolaterad, usually approaching a 45-degree angle with longitudinal axis of body (Fig. 63) (southern U.S. to northern Argentina) ................................................. ........................... *perditter* (Fabricius)
- Humeral angles directed primarily laterad and only slightly anterad (Fig. 78) (Baja California, Mexico) .............................................................. *spectabilis* Ruckes

9(7). Yellow anterolateral pronotal margins contrasting with rest of pronotum; pronotal cicatrices immaculate; usually smaller than 9.0 mm long by 6.0 mm wide (Cuba; British West Indies) .............................................. *cubensis* Barber & Bruner  
- Anterolateral pronotal margins concolorous with rest of pronotum; mesial angle of each pronotal cicatrice usually black; usually larger than 9.0 mm long by 6.0 mm wide (Revillagigedo Islands, Mexico) .............................................................. *seriolusata* Ruckes

10(4). Southern Florida; West Indies ................................................................. 11
- Southwestern U.S.; Mexico; Central America ................................. 12

11(10). Osistoiar canal narrowed at middle, becoming slightly wider towards apex (Fig. 137); posterolateral angle of each abdominal sternite usually immaculate; apex of each paramere nearly spinose in medial view (Fig. 124) (southwestern U.S.; northwestern Mexico) ................................................... *planifrons* Ruckes
- Osistoiar canal acuminate apically; posterolateral angle of each abdominal sternite piceous, sometimes only a minute portion of the tip piceous; apex of each paramere narrowly rounded in medial view (Fig. 140) (southern Texas; Mexico; Central America) ................................. *maculata* (Fabricius) .......................................................... 12(10).
    Each paramere in medial view with apex straight or bending slightly ventrad (Fig. 155), concave surface oriented more mediad than dorsad; posteromesial angles of basal plates distinctly excavated, resulting concavity broadly U-shaped (Fig. 165) (Trinidad and Tobago; Venezuela) ........................................... *sadoa* Rider
- Each paramere in medial view with apex curving slightly dorsad, orientation of dorsiomedical concave surface variable; posteromesial angles of basal plates rounded or weakly emarginate ........................................................................................................................................ 13

13(12). Concave surface of each paramere oriented more mediad than dorsad (southern Florida) ............................................................. *pseudocosta* Blatchley
- Concave surface of each paramere oriented more dorsad than mediad .... 14

14(13). Apex of each paramere rounded in ectal view (Fig. 186); spermathecal duct with relatively small amount of swelling and coiling below proximal flange (Fig. 197) (Greater Antilles) ........................................................................... *obsolata* (Dallas)
- Apex of each paramere spinose in ectal view (Fig. 201); spermathecal duct with large amount of swelling and coiling below proximal flange, swelling carrot-shaped (Fig. 212) (Lesser Antilles; northern South America) ................................. *testacea* (Dallas)

Subgenus *Thyanta* Stål

*Diagnosis.* Punctures minute, dense. Posterior terminations of bucculae evanescent. Anterolateral pronotal margins straight to concave, sometimes marked with piceous;
humeral angles 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 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. 5). 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 mediad. Species of Phacidium have the posteroventral surface of the pygophore arcately rounded or sulcate, and the posterior margin is not emarginate mediad. The posteroventral surface of the pygophore in species of Argosoma is produced into a blunt, chin-like protuberance. The ectal surface of each paramere is concave in Argosoma and 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 dorsal punctuation which is relatively dense in Phacidium and less dense and more coarse in Argosoma.

**Thyanta (Thyanta) calceata** (Say)
Figs. 1–15, Map 1

*Pentatoma calceata* Say, 1831:8.

*Thyanta custator* (of authors, not Fabricius): Herrich-Schäffer, 1844:96, 106, fig. 771; Uhler, 1886:7 (part); Lethierry and Severin, 1893:148 (part); Kirkaldy, 1909:94 (part); Banks, 1910:90 (part).

*Thyanta custator calceata*: Uhler, 1872:399.


Diagnosis. General form broad, ovate. Transhumeral rubiginous band usually present; vertex of head and tylus often reddish.

Lateral jugal margins nearly parallel for middle third of distance from eyes to apex (Fig. 2). Humeral angles rounded to angulate; anterolateral pronotal margins piceous, straight to weakly concave in dorsal view (Fig. 1); mesial angle of each pronotal
cicatrice piceous. Each abdominal sternite with postspiracular spot on each side and posterolateral angles piceous.

Mesial margins of basal plates in caudoventral view slightly concave; posterior margins sinuous; posteromesial angles rounded (Fig. 13). Posterolateral angles of pygophore continuing onto posteroventral surface as vague carinae, forming semicircular impression in caudoventral view. Posterior margin of pygophore produced posterodorsad, in ventral and dorsal views appearing convex with small, medial, V-shaped emargination (Figs. 10, 11); slightly concave in lateral view (Fig. 12).

Types. The type specimen of Pentatoma calceata is apparently no longer in existence, and Say's original description (1831) will fit equally well for either T. calceata or T. custator. Previous usage has, however, fixed both species, and therefore designation of a neotype is not necessary.


Angelina, Aransas, Bowie, Brazos, Camp, Cherokee, Dallas, Harris, Harrison, Jasper, Lamar, Sabine, Smith, Walker, Virginia: Charolett, Chesterfield, Clifton Forge City, Fairfax, Falls Church, Floyd, Gloucester, Hanover, King & Queen, Montgomery, Nelson, New Kent, Norfolk, Pulaski, Virginia Beach, Wythe. West Virginia: Monroe, Roane, Upshur.

*Comments.* *Thyanta calceata* can be separated from all other congeners except *T. custator custator* by the distinctly black anterolateral pronotal margins. It can be reliably distinguished from *T. c. custator* only by the male genitalia. In *T. calceata*, the pygophoral opening is subtended by a semicircular impression; this impression

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, dorso-medial conjunctival lobe; dsp, dilation of spermatheca; gx2, second gonacoxae; jug, juga; lcl, lateral conjunctival lobe; mpl, median penial lobe; pen, penisilium; pfl, proximal flange; pla, posterolateral angle of pygophore; pmp, posterior margin of pygophore; p8, eighth paratergite; p9, ninth paratergite; rsa, roughened spiculate area on lateral surface of paramere; spb, spermathecal bulb; sr, sclerotized rod; s10, tenth sternite; th, theca; tyl, tylos.
is rectangular in *T. c. custator*. Specimens of *T. calceata* are generally shorter and broader than specimens of *T. c. custator*, and the black markings on the anterolateral pronotal margins are usually darker and more extensive in *T. calceata*. These last two characters, however, may be apparent only when a series of specimens of each species can be compared.

Most species of *Thyanta* occur in two color forms, a green form in the warmer months and a brown form in the cooler months. This is particularly well documented in *T. calceata* (McPherson, 1977a, b, 1978a, b; McPherson and Paskewitz, 1982; McPherson et al., 1983).

**Thyanta (Thyanta) custator custator** (Fabricius)

Figs. 16–30, Map 2

*Cimex custator* Fabricius, 1803:164.

*Pentatoma custator*: Dallas, 1851:251; Walker, 1867:288.

*Thyanta custator*: Stål, 1862a:58; Stål, 1872:34–35 (part); Uhler, 1872:399 (part); Uhler, 1876:289–290 (part); Uhler, 1886:7 (part); Van Duze, 1904:53 (part); Kirkaldy, 1909:94 (part); Van Duze, 1909:155–156; Banks, 1910:90 (part); Barber, 1911:108–111 (part); Barber, 1914:523; Van Duze, 1917:52 (part); Blatchley, 1926:113, 115–116 (part); Torre-Bueno, 1939:231 (part); Ruckes, 1957a:1–2, 4–13, 20, 22, fig. 1; Ueshima, 1963:149, 152–153; Hoffman, 1971:44–45; Furth, 1974:22, 23, fig. 45; McPherson, 1982:76–77, 80–81, fig. 73; Rolston and McDonald, 1984:figs. 24, 28; Froeschner, 1988:593.

*Thyanta accerra* (of authors, not McAtee): Blatchley, 1926:114, 118.


**Diagnosis**. Dorsal surface green to brown, often with varying amount of reddish coloration between humeral angles, sometimes extending along anterolateral pronotal margins and onto basal margin of corium.

Lateral jugal margins sinuous, not parallel (Fig. 17). Anterolateral margins of pronotum and mesial angle of each pronotal cicatrice piceous. Anterolateral pronotal margins slightly concave in dorsal view; humeral angles rounded to angulate, never spinose (Fig. 16). Ventral surface yellow-green to brown, posterolateral angles of abdominal sternites black. Each abdominal sternite with postspiracular black spot on each side.

Mesial margins of basal plates nearly straight in caudoventral view; posterior margins sinuous; postero mesial angles narrowly rounded (Fig. 28). Each posterolateral angle of pygophore continuing onto posteroventral surface as vague carina, forming rectangular impression; mesial portion of posterior margin slightly convex with small, V-shaped, emargination in middle in both ventral and dorsal views (Figs. 25, 26); pygophore slightly concave in lateral view (Fig. 27).
Map 2. *T. custator custator.*

**Types.** The type specimen of *Cimex custator* is apparently no longer in existence (Zimsey, 1964), and the original description does not adequately fix the species. Fabricius' description will fit either *T. custator custator* and *T. calceata* equally well. Previous usage, however, has fixed both species, and therefore the designation of a neotype is not necessary.

**Distribution.** Coastal plain from central Louisiana to Florida to New York, and the Bahama Islands (Map 2).

**Specimens examined.** 1,243 specimens collected during every month of the year; deposited in AMNH, ARH, AUA, BMNH, CAS, CNC, CUC, DAR, DBT, FMNH, FSCA, INHS, ISU, LHR, LSU, MSU, MUSE, NCSU, OSUC, PUL, SIUC, SMEK, TAMU, UAT, UCB, UCR, UCS, UGA, UIM, UMC, USNM, UUSL, WSU. UNITED STATES: Alabama: Baldwin, Barbour, Covington, Dallas, Escambia, Henry, Houston, Lee, Macon, Madison, Mobile. Florida: Alachua, Bay, Brevard, Broward, Charlotte, Clay, Collier, Columbia, Dade, De Soto, Dixie, Duval, Franklin, Gadsden, Glades, Gulf, Hamilton, Hardee, Hendry, Highlands, Hillsborough, Holmes, Indian River, Jackson, Lake, Lee, Leon, Levy, Liberty, Madison, Manatee, Marion, Martin, Nassau, Okaloosa, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, St. Johns, St. Lucie, Santa Rosa, Sarasota, Seminole, Sumter, Suwanee, Taylor, Volusia,

Comments. This species has been the subject of much confusion in the past. At one time the name T. custator was applied to nearly all specimens from the entire United States. Ruckes (1957a) showed that the true custator form is confined to the coastal plain from Louisiana to Florida to New York, but he felt that it was a separate species distinct from the accerra form. The two forms have virtually identical genitalia. They cross-breed readily in the laboratory; and where their distributions overlap, specimens intermediate between the two forms are found fairly frequently. The two forms have a very narrow overlap in their respective ranges, however, and specimens taken from outside the area of overlap are usually easily identified. These two forms probably are more correctly considered subspecies.

Thyanta c. custator and T. calcata are the only two species in the genus with distinctly black anterolateral pronotal margins. They can be separated reliably from each other only by the characters of the male genitalia. The pygophoral opening in T. c. custator is subtended by a rectangular impression, while this impression is semicircular in T. calcata. When large series are present, some separation can be made based on the general shape of the body; T. custator is slightly longer and narrower than T. calcata. Fortunately, there is very little overlap in their distributions.

Thyanta (Thyanta) custator accerra McAtee

Figs. 31–47, Map 3

Thyanta custator var. accerra McAtee, 1919:16.

Thyanta custator: Stål, 1872:34–35 (part); Uhler, 1872:399 (part); Uhler, 1876:289–290 (part); Uhler, 1877:40; Popoeoe, 1884:62; Uhler, 1886:7 (part); Lethier and Severin, 1893:148 (part); Osborn, 1894:121; Uhler, 1894a:230–231; Van Duzee, 1894:171; Blatchley, 1895:269; Gillette and Baker, 1895:16; Van Duzee, 1904:53 (part); Barber, 1906:260; Kirkaldy, 1909:94 (part); Banks, 1910:90 (part); Barber, 1911:108–111 (part); Zimmer, 1912:232–233; Torre-Bueno, 1914:92; Van Duzee, 1914:4–5 (part); Van Duzee, 1917:52 (part); Hart, 1919:184–185; Malloch, 1919:217, fig. 75; Blatchley, 1926:113, 115–116 (part); Torre-Bueno, 1939:231 (part).

Thyanta perditor (of authors, not Fabricius): Uhler, 1872:399 (part); Uhler, 1876:289 (part); Uhler, 1877:404 (part); Popoeoe, 1884:62; Uhler, 1886:7; Osborn, 1894:121; Uhler, 1894a:230 (part); Gillette and Baker, 1895:16; Van Duzee, 1904:52–53 (part); Kirkaldy, 1909:95 (part); Zimmer, 1911:232 (part); Torre-Bueno, 1914:92; Malloch, 1919:217, fig. 79; Blatchley, 1926:113, 114–115, fig. 24 (part).
Thyanta pallido-virens (of authors, not Stål): Banks, 1910:90 (part); Rolston and McDonald, 1984:fig. 31.


Thyanta pallidovirens spinosa Ruckes, 1957a:18–19; Ward et al. 1977:40; Froeschner, 1988:593. NEW SYNONYMY.

Diagnosis. Green to dark brown, sometimes with varying amounts of reddish coloration between humeral angles, often extending onto basal margin of each corium. Lateral jugal margins sinuous, not parallel (Fig. 33). Humeral angles rounded to angulate (spinose in desert areas of southwestern United States and Mexico); anterolateral margins of pronotum straight to concave in dorsal view (Figs. 31, 32), stramineous to green, sometimes reddish, but never piceous; pronotal cicatrices immaculate. Each abdominal sternite with postspiracular black spot present on each side (eastern U.S.) or absent (western U.S.). Posterolateral angles of abdominal sternites immaculate or minutely marked with piceous. Mesial margins of basal plates in caudoventral view slightly concave; posterior margins sinuous; posteromesial angles rounded (Fig. 45). Posterolateral angles of pygophore continuing onto posteroverentral surface of pygophore as vague carinae, forming rectangular impression; mesial portion of posterior margin of pygophore convex with slight mesial emargination in ventral and dorsal views (Figs. 42, 43); pygophore only slightly concave in lateral view (Fig. 44).

Types. McAtee (1919) described accerra as a variety of T. custator, he examined four specimens: three from Barachias, Alabama, and one from San Antonio, Texas. Blatchley (1926) elevated accerra to full species rank, but his concept of the species was incorrect. Blatchley's T. accerra was actually T. c. custator. The type specimens, which are housed in the U.S. National Museum of Natural History (Washington, D.C.), were examined.

Ruckes (1957a) described T. pallidovirens spinosa from 75♂♂ and 51♀♀ specimens. The holotype, which was examined, is from Patagonia, Santa Cruz Co., Arizona, and is deposited in the American Museum of Natural History (New York).

Distribution. Eastern two-thirds of U.S. west to Montana, Nevada, and southern California; Mexico; and Guatemala (Map 3).

Specimens examined. 8,677 specimens collected during every month of the year, deposited in AMNH, ARK, ASUT, AUA, BMNH, CAS, CNC, CUC, DAR, DBT, EGER, ENGL, FMNH, FSCA, INHS, ISU, LACM, LHR, LS, MSU, MSUB, MSUE, NCSU, NDSF, NMSU, OSUC, POL, PUL, SIUC, SMEK, TAMU, UAT.

Map 3

Map 3. T. custator accerta.


MÉXICO: Aguascalientes: Aguascalientes; Arroyo San Pedro, 38 mi N Aguascalientes. Baja California Norte: Bahía de los Ángeles; Canyon del Tajo; El Diabo Dry Lake, San Felipe Valley; Ensenada; Gonzaga Bay; Guadalupe Canyon; 4 mi SW La Zopopita; L Cantilupe Canyon; 60 mi S Mexicali; Mission San Borja; Perpabul; 13 mi S Puertocitos; 24 mi N Punta Prieta; 9 mi SE Rancho Laguna Chapala; 7 mi NE Ranch Rosario; San Felipe; 15 mi S San Felipe; 19 km S San Quintín. Baja California Sur: Bahía Concepción; 40 mi S El Arco Mine; La Paz; 7 mi SW La Paz; 25 mi W La Paz; Las Tinajas; Loreto; 10.3 mi SW Los Mendanos; 8 mi SW Mission San Javier; 15 mi N San Ignacio; San José de Comondú; 4 mi W San José del Cabo; 5 mi SE Santa Rosalía; 10 mi W Santa Rosalía; Santiago; 1 mi E Todos Santos; 4 mi N Todos Santos; 30 mi E V. Insurgentes; 45.5 mi E V. Insurgentes. Chiapas: Cintalpa; Comitán. Chihuahua: Ciudad Camargo; 20 mi SW Ciudad Camargo; 25 mi SW Ciudad Camargo; Catarina; Chihuahua; 3 mi NW Chihuahua; 16 mi SE Chihuahua; 46 mi N Chihuahua; 1.1 mi S Colonel Alvaro Obregon; Ciudad Delicias; 3 mi SE
Ciudad Delicias; 10 mi S Ciudad Delicias; El Herradero; Gallego; 8 mi S Gallego; 10 mi W Gallego; Garcia; Hidalgo del Parral; 8 mi NE Hidalgo del Parral; 25 mi W Hidalgo del Parral; 44 mi S Hidalgo del Parral; Huejotitlan; 6 mi WSW Jiménez; 10 mi N Jiménez; 24 mi N Jiménez; La Befa; 11.1 km S RR at La Junta; Madera; Marqueño; Matachine; 6 mi NE Mecoqui; Moctezuma; Nuevo Casas Grandes; 43 mi SE Nuevo Casas Grandes; 45 mi NW Nuevo Casas Grandes; 2 km W Oginaga, Río Conchos; 7 mi E Pedernales; Salaises; Samalayuca; San José Babicora; Santa Barbara; 63 mi W Santa Barbara; Santa Clara; Santa Clara Canyon, 5 mi W Parrita; Valle de Olivos; Valle de Zaragoza; 23 mi N V. Ahumada; 15 mi S V. Matamoros. Coahuila: 10 mi S Allende; 10 mi S Ciudad Acuña; Arroyo de la Zorra; 20 mi SE Arteaga; Boquillas del Carmen; 14.3 mi S Castaños; Guadalupe; 12 mi N Hermanas; La Gloria, S of Monclova; Nueva Rosita; Saltillo; 1 mi E Saltillo; 1 mi SE Saltillo; 4 mi S Saltillo; 6 mi NE Saltillo; 7 mi SSW Saltillo; 12.4 mi S Saltillo; 15 mi N Saltillo; 15 mi S Saltillo; 16 mi SE Saltillo; 17 mi SE Saltillo; 20 mi SE Saltillo; 29 mi SE Saltillo; 39 mi W Saltillo; 66 km S Saltillo; 5 km N San Esteban; San Jose de la Niña; San Pedro de las Colonias; 12 mi SE San Pedro de las Colonias; Serranas del Burro; Torreón; 22 mi N Zaragoza. Durango: 8 mi S Canutillo; 30 mi N Cuencamé; 14 mi S Donata Guerra; Durango; 11 mi W Durango; 20 mi W Durango; 25 mi S Durango; 69 mi N Durango; Encino; Guadalupe Victoria; La Loma; 2 mi S Menores de Arriba; Navajos, 20 mi E El Salto; Nombre de Dios; 18 mi SE Nombre de Dios; Pedricena; 3 mi NW Pedricena; Rodeo; San Juan del Río; Santa Lucia; 5 mi NE Sauz. Guanajuato: León. Guerrero: Iguila. Hidalgo: Tasquillo. Jalisco: 2 mi S Ciudad Guzmán; Lagos de Moreno; 5.6 mi NE Lagos de Moreno; 13 mi SW Lagos de Moreno, San Juan de los Lagos; 1 mi NE V. Hidalgo. Michoacán: 10.3 mi W Morelia; Zamora. Morelos: Ruinas Xochicalco, Tepoztlán. Nayarit: San Blas. Nuevo León: Apodaca; Aramberri; 3 mi E Galeana; Hacienda Vista Hermosa, V. Santiago; 9 mi W Iturbide; Linares; 10 mi S Linares; 15 mi W Linares; 16 mi S Linares; 1.7 mi S Montemorelos; 15 mi SE Montemorelos; Monterrey; 4 mi S Monterrey; 5 mi S Monterrey; 6 mi S Monterrey; 10 mi W Monterrey; Paso Mamulique; Peña Nevada Zaragoza; Pesquería; 10 mi N Providencia; 41 mi S Sabinas Hidalgo; 22 mi S San Roberto; 40 mi S San Roberto; 46 mi NW San Roberto; Santiago; Vallecillo. Oaxaca: 3 mi SE El Tule; 10 mi N Miltepec; Mitla; Oaxaca; 2 mi NW Oaxaca; Ruinas Zaachila; 13 km W Tehuantepec; 22 mi SE Totalapaín, San José Viejo. Puebla: Atlatlán; 11 mi SE Atlatlán; 19 mi NW Calcaaleapan; Chilac; Puebla; 6 mi SW Tehuacán; 7 mi NE Tehuacán; Valseguita. Querétaro: Oro. San Luis Potosí: 3 mi W Cedral; 12 mi W Ciudad del Maíz; 20 mi S Ciudad Valles; 19.6 mi N El Huizache; 28.5 mi S El Huizache; El Salto; 34 mi S Salinas; 10 mi NE San Luis Potosí; 31 mi S San Luis Potosí; 46 mi N San Luis Potosí; 84 mi NE San Luis Potosí; 123 mi NE San Luis Potosí; V Hidalgo; 12 mi NE V. Hidalgo. Sinaloa: Los Mochis; 5 mi N Mazatlán; 46 mi E Mazatlán. Sonora: 20 mi SE Agua Prieta; 65 mi SE Agua Prieta; Alamos; 7 mi SE Alamos; 7 mi W Alamos; 10 mi W Alamos; Bahía Kino; 1 mi W Caborca; Cabullona; Campo Utah; El Desemboque; El Fuerte; 5 mi E Esqueda; 20 mi S Estacion Llano; Guaymas; 26 mi SE Guaymas; Hermosillo; 40 mi N Hermosillo; 42 mi S Hermosillo; 9 mi NNE Imuris; La Chira; La Choya; La Floresta Ranch, 8 mi E Tastiota; Magdalena; Minas Nuevas; Mira Mar Beach; Navojoa; 5 mi E Navojoa; Nogales; Palm Canyon, 17 mi E Magdalena; Pitiquito; Pozo Coyote; Puerto Peñasco; San Bernardino, Río Mayo; 8 mi S Santa Ana; Santa Rosa Ranch; Santa Teresa; Sonora; 20 mi S Sonoyta;
38 km S Sonoyta; Tastiota; Tiburón Island; V. de Seris, 5 mi SW Hermosillo; Yavaros. 
Tamaulipas: Ciudad Victoria; 25 mi S Ciudad Victoria; 81 mi NW Ciudad Victoria; 
35 km N El Limon; Gómez Farias; Guemes, 15 mi N Ciudad Victoria; Lago Republica 
Española; Matamoros; San Fernando; San José. Veracruz: 1 mi NE Acultzingo; 
Orizaba. Zacatecas: 4 mi NE Concepción del Oro; Fresnoillo; 1 mi N Fresnoillo; 8 mi 
S Fresnoillo; 9 mi S Fresnoillo; 25 mi W Fresnoillo, Laguna Balderama; 14 mi N Luis 
Moya; Sain Alto; 28 mi NE Sierra Viejo. 
GUATEMALA: Jutiapa: 6 mi NE El Progreso.

Comments. This subspecies is extremely variable and has been the subject of much 
confusion in the past. Its relationship with the nominate subspecies is discussed under 
the comments section of that subspecies.

Ruckes (1957a) divided T. pallidovirens into four subspecies: pallidovirens from 
the far western U.S.; setosa from the northwestern U.S.; spinosa from the south-
western U.S. and Mexico; and accerra from the eastern U.S. Ueshima (1963) showed 
that specimens of pallidovirens from California have a different chromosome number 
than specimens from the eastern U.S. (14 + XY in the male versus 16 + XY, 
respectively). Because of this difference, he believed that the two populations were 
generically isolated and were probably two distinct species. The difference in chro-
mosome number has been confirmed in the present study. Cross-breeding and free-
choice mating experiments also have been conducted, the results of which support 
the separation of the two taxa into distinct species (e.g., specimens from California 
and Louisiana mated and laid eggs, but the eggs were infertile).

Ruckes (1957a) described T. pallidovirens setosa from Idaho and eastern areas of 
Oregon and Washington. During this study, specimens from Nez Perce Co., Idaho 
were karyotyped. They had a chromosome complement of 14 + XY in the male, 
the same as T. pallidovirens from California.

Ruckes (1957a) described T. pallidovirens spinosa from the southwestern U.S. 
Ueshima (1963) karyotyped specimens of this form collected from southeastern 
California. He found that males had a chromosome complement of 14 + XY, and 
he concluded that the designation of spinosa as a subspecies of T. pallidovirens was 
probably correct. During the present study, however, specimens karyotyped from 
several localities in southern Arizona were found to have a chromosome complement 
of 16 + XY. Also, in cross-breeding experiments, specimens from Arizona and 
Louisiana readily interbred with no apparent difficulties and produced viable young. 
Therefore, it is probable that spinosa is T. custator accerra, not T. pallidovirens.

Ruckes (1957a) used the spinose humeral angles of T. pallidovirens spinosa to 
separate it from T. custator accerra (= his T. p. accerra). This character is relatively 
variable, however. Long series from many localities within the range of spinosa 
usually include specimens with spinose humeral angles and specimens with rounded 
humeral angles, as well as many intermediates. Geographical separation of the two 
forms is not complete, and therefore spinosa is placed as a junior synonym of T. c. 
accerra.

Distinguishing T. custator accerra and T. pallidovirens can be difficult. In general, 
specimens of T. c. accerra (excluding the spinosa form) have a postspiracular black 
spot on each side of each abdominal sternite, while specimens of T. pallidovirens do 
not. However, some (< 10%) specimens of T. pallidovirens have postspiracular black 
spots, but the spots are usually smaller than the adjacent spiracle. Conversely, some
(<10%) specimens of *T. c. accerra* lack postspiracular black spots. Fortunately, the two species are geographically separated except in the southwestern U.S., where *T. pallidovirens* overlaps considerably with the spinosa form of *T. c. accerra*. These two forms can usually be separated by the degree of spinosity of the humeral angles. *Thyanta pallidovirens* always has rounded humeral angles, while the spinosa form of *T. c. accerra* usually has angulate to spinoose humeral angles. Also, most specimens of *T. pallidovirens* have at least a partial reddish transhumeral band, a condition that is rare in the spinosa form of *T. c. accerra*.

**Thyanta (Thyanta) pallidovirens** (Stål)

Figs. 48-62, Map 4

*Pentatoma pallidovirens* Stål, 1859:227; Walker, 1867:288.


*Thyanta custator* (of authors, not Fabricius): Uhler, 1872:399 (part); Uhler, 1876:289–290 (part); Kirkaldy, 1909:94 (part); Van Duzee, 1914:4–5 (part); Van Duzee, 1916:231; Van Duzee, 1917:52 (part).

*Thyanta pallidovirens setosa* Ruckes, 1957a:17–18; Froeschner, 1988:593. NEW SYNONYMY.

**Diagnosis.** Dorsal coloration often with varying amounts of reddish between humeral angles, often extending onto basal margin of each corium and along anterolateral pronotal margins; sometimes apex of scutellum reddish.

Lateral jugal margins sinuous, not parallel (Fig. 49). Anterolateral margins of pronotum straight to slightly concave in dorsal view, green to reddish, never piceous; humeral angles rounded (Fig. 48); pronotal cicatrices immaculate. Postspiracular black spots usually lacking; if present, then usually smaller than adjacent spiracle. Posterolateral angles of abdominal sternites immaculate.

Basal plates in caudoventral view with mesial margins straight to slightly concave; posterior margins sinuous; posteromesial angles narrowly rounded (Fig. 60). Posterolateral angles of pygophore continuing onto posteroventral surface of pygophore as carinae, forming rectangular impression; posterior margin slightly concave in caudal view, usually with small, medial, V-shaped emargination (Fig. 56); posterolateral angles prominent in ventral and dorsal views (Figs. 57, 58); pygophore slightly concave in lateral view (Fig. 59).

**Types.** Stål (1859) described *Pentatoma pallidovirens* from 15 and 18 specimen from California without designating a holotype or paratype. The 4 specimen labeled (a) “California” (b) “Kinb.” (c) “Type” (d) “Typus” (e) “*Thyanta pallidovirens* Stål” (f) “109 51” (g) “349 84” (h) “Riksmuseum Stockholm” is designated the lectotype. The 2 specimen labeled (a) “California” (b) “Kinb.” (c) “♀” (d) “Type.” (e) “Allo- typus” (f) “350 84” (g) “Riksmuseum Stockholm” is designated paralectotype. The lectotype and the paralectotype, which are conserved in the Naturhistoriska Riksmuseet (Stockholm, Sweden), were examined.

Ruckes (1957a) described *T. pallidovirens setosa* from 18♀ and 10♂ specimens.
Map 4

Map 4. *T. pallidovirens.*

The holotype, which was examined, is from Pullman, Whitman Co., Washington, and is deposited in the American Museum of Natural History (New York).

Distribution. Western U.S. (Map 4).

Specimens examined. 3,606 specimens collected during every month of the year, deposited in AMNH, CAS, DAR, EGER, FMNH, FSCA, INHS, ISU, LACM, LHR, LSU, MSU, MSUB, MSUE, NCSU, ODAS, OSUC, PUL, SIUC, SMEK, TAMU, UCB, UCR, UCS, UGA, UIM, UNAM, USNM, UUSL, WSU. CANADA: *British*
Columbia: Cache Ck; Coldstream; Comox; Lytton; Malahat; Nanaimo; Vancouver Is; Royal Oak; Saanich Dist; Vernon; Victoria; Wellington.


Comments. Ruckes (1957a) distinguished T. pallidovirens setosa from other U.S. Thyanta by the increased amount of pilosity on the legs and rostrum. This is a difficult character to discern. The brown upper-vernal forms of several other species and subspecies are also characterized by more and longer hairs on the same body structures (McPherson, 1979a). Because T. p. setosa differs from the nominate subspecies in no other significant manner, T. p. setosa is placed as a junior synonym of T. pallidovirens.

No reliable morphological character will consistently separate T. pallidovirens from T. custator accerrua, as discussed in detail under the comments section of T. c. accerrua. Basically, in the southwestern U.S. the two usually can be separated by the shape of the humeral angles, which are rounded in T. pallidovirens and angulate to spinose in T. c. accerrua. In the northwestern U.S., the two species seem to be geographically isolated (Maps 3, 4). Here, separation often can be made based on the presence (in T. c. accerrua) or absence (in T. pallidovirens) of postspiracular black spots.

Thyanta (Thyanta) perdior (Fabricius)
Figs. 63–77, Map 5

Cimex perdior Fabricius, 1794:102; Fabricius, 1803:163.
Pentatoma fascifera Palisot de Beauvois, 1817:150, fig. 8 (syn. by Dallas, 1851:206).
Pentatoma collaris Westwood, 1837:40 (syn. by Dallas, 1851:206).
Cimex transversalis Herrich-Schäffer, 1841:66 (syn. by Dallas, 1851:206).
Cimex dimidiatus Herrich-Schäffer, 1841:fig. 629 (syn. by Dallas, 1851:206).
Pentatoma dimidiatum: Herrich-Schäffer, 1844:94 (syn. by Dallas, 1851:206).
Euschistus perdior: Dallas, 1851:206; Walker, 1867:247.
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, 1900:432; Van Duzeu, 1904:52–53 (part); Van Duzeu, 1907:9; Kirkaldy, 1909:95; Banks, 1910:90; Zimmer, 1912:14 (part); Barber, 1914:523; Van Duzeu, 1917:51–52; Barber, 1923:12; Blatchley, 1926:113, 114–115 (part); Barber, 1939:292–293; Torre-Bueno, 1939:230; Ruckes, 1957a:1, 20; Froeschner, 1988:593.

Euschistus aedilis Walker, 1867:249 (syn. by Stål, 1872:34).

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

Lateral jugal margins sinuous, not parallel (Fig. 64). Humeral angles spinose, each spine directed anterolateral; anterolateral pronotal margins not piceous, concave in dorsal view (Fig. 63). Mesial corner of each pronotal cicatrice black. Each abdominal sternite with postspiracular black spot on each side, both anterolateral and posterolateral angles usually piceous.

Basal plates with mesial margins straight to slightly convex in caudoventral view; posterior margins sinuous (Fig. 75). 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. 72, 73), concave in lateral view (Fig. 74).

Types. Fabricius (1794) described Cimex perditor from 2♂♂ and 2♀♀ specimens without designating a holotype or paratypes. Rider and Chapin (1991) made lectotype and paralectotype designations. All four specimens, which are housed in the Universitets Zoologiske Museum (Copenhagen, Denmark), were examined.

Rider and Chapin (1991) confirmed the status of Pentatoma fascifera Palisot de Beauvois, P. collaris Westwood, Cimex transversalis Herrich-Schäffer, Euschistus fasciatus Walker, and E. aedilis Walker as junior synonyms. They also designated lectotypes for the latter two species. At one time Euschistus rubiginosus Dallas was considered a synonym of T. perditor. Rider (1986b), however, examined the holotype of E. rubiginosus and determined that it was a junior synonym of Euschistus incus Rolston.

Distribution. This is the most widely distributed species in the genus, occurring from southern Florida, Texas, and Arizona south through Central America, West Indies, and South America to northern Argentina (Map 5).

Specimens examined. 844 specimens collected during each month of the year; deposited in AMNH, AUA, BMNH, CAS, CNC, CU, DAR, DBT, FSCA, INHS, ISU, LHR, LSU, MSU, MSUE, OSUC, PUL, SIUC, SMUK, TAMU, UAT, UCB, UCR, UCS, UGA, UMAA, UMC, UNAN, USNM, WSU. UNITED STATES: Arizona: Cochise: Southwest Research Station, 5 mi W Portal. Florida: Flamingo; Mahogany Hammock; Paradise Key; Pine Castle; Windly. Broward: Deerfield Beach. Collier: Immokalee; Royal Palm Park. Dade: Coral Gables; Everglades National Park; Florida City; 5 mi SW Florida City; Goulds; Grossman Hammock; Hialeah; Homestead; Kendall; Miami; Miami Springs; Princeton. Highlands: Avon Park; Lake Plac-

**MÉXICO**: Hocumilco; Lagos de Moreno; Paricutin. *Aguaclalientes*: Aguaclalientes. *Campeche*: km 71 Carr. Campeche- Mézina. *Chiapas*: Arriaga; 4.4 mi N Bochil; Bonampak Ruinas; Chicxulub; Chorroadero State Park; Cintalpa; 5 mi S Cintalpa; 13 mi W Cintalpa; Comité; 31.5 mi SE Comité; 15 dos Lagos; El Sumidero; 1.6 mi S Jiotol; 13 mi S La Trinitaria; 18 km S La Trinitaria; 12 mi W Ozocozautla; Palenque; Palenque Ruinas; 23 mi S Palenque; 4 mi NE Pichucalco; 1 mi S Rayón; 2 mi SE Revolución Mexicana; 3 mi W Rizo de Oro; Sánchez Ranch Las Rosas; San Cristóbal de las Casas; 8 mi SE San Cristóbal las Casas; 23 mi W San Cristóbal de las Casas; 39 mi E San Cristóbal las Casas; Simojovel; 10 km WNW Soyalo; 2 mi E Suchita; Sumidero Canyon; 9 mi SE Tapilula; Teopisca; 14 mi N Tuxtla Gutierrez; 3.5 km S Rio Tulija. *Colima*: Colima Volcano. *Durango*: 9 mi W La Ciudad; Peñas Pena. *Guanajuato*: León. *Guerrero*: Acaxiutla; Acapulco de Juárez; 5 mi S, 2.5 mi E Chilpancingo; km 8 Carr. Chilpancingo Omitlente; 17 mi N Mexcala; Mochitlán; 1.5 mi S Mochitlán; 13 mi W Tierra Colorada. *Hidalgo*: Hwy 45; 17 mi NE Huichapan. *Jalisco*: 16 km E Agua el Obispo; Ajijic; Guadalajara; 5 mi SE Plan de Barrancas. *México*: 4.3 mi NE Ixtapán; 1 mi de la Sal; Tejupilco; Temascaltepec; Real de Arriba; Teotihuacán; 11 mi W Texcoco; 1 mi NE Tlamacas, P. N. Popocatepetl; Valle de Bravo; 21 mi NW Valle de Bravo. *Michoacán*: Apatzingán; 11 mi E Apatzingán; Jiiquilpan; Palo Alto; Tancitaro. *Morelos*: Cuautla; Cuernavaca; Jojutla; Morelos; Pte de Ixtla; Xochicalco. *Nayarit*: 13 mi NW Ahuacatlán; Jesus Maria; Nayarit-Jalisco line, Hwy 15; 15 km E San Blas; Tecip. *Nuevo León*: 9 mi S Monterrey; 3 mi S Pacheco. *Oaxaca*: 7.7 mi S Ejutla; El Camaron; 20 mi E Oaxaca; 2.7 mi NW El Camaron; 10 mi S El Camaron; 27 mi E Juchitán; 3 km E La Ventosa; 3.4 mi SE Matatlán; 11 mi N Matías Romero; SE Nejapa; 30 mi NW Oaxaca; 45 mi SE Oaxaca; 53 mi NE Oaxaca; Tehuantepec; Temazcal; 23 mi W Tequisistán; Totolapan; 18 mi NW Totolapan; 23 km NW Totolapan; Tuxtepec. *Puebla*: 5.1 mi SW Tehuacán; 6 mi SW Tehuacán. *Querétaro*: 29 mi N Querétaro; 10 mi E San Juan del Río. *San Luis Potosí*: 5 mi E Ciudad del Maíz; 11 km N Ciudad Valles; 20 mi S Ciudad Valles; El Pujal; El Salto Falls; Micos; 31 mi S San Luis Potosí; Tamazunchale; 30 mi S Tamazunchale; Valle Hidalgo; 2 mi E Xilitla. *Sinaloa*: 22.6 mi S Culiacán; Los Mochis; Mazatlán; 15 mi N Mazatlán; Valle Unión; 5 mi E Valle Unión. *Tabasco*: 30 mi W Cardenas; Chontalpa; Pajelagatero; Pico do Oro; 5 km S Villahermosa; 14 mi NE Villa Hermosa. *Tamaulipas*: Bocatoma; 11 mi SW Ciudad Victoria; 6 mi W Rio Sabina, near Encino; 19 mi NE Tula. *Tlaxcala*: 2 mi W Tlaxcala. *Veracruz*: Alvarado; Catezaco; 7 mi SE Catezaco; Coatzacoalcos; Córdoba; 1 mi E Córdoba;

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T. perdior.

Cotaxtla; Extación Mieron das Fortín; 1 mi W Fortín de las Flores; Jalapa; 10 mi E Jalapa; Lake Catemaco; 5 mi N Lerdo de Tejada; Los Tuxtlas Biological Station; L. Rivera. Atzagan; 4 mi NE Minatitlán; Nanchital; Orizaba; Papantla; Plan del Río; 3 mi SW Sonoteocompapán; 15.8 mi S Tampico; Vega de Alatorre; Veracruz. Yucatán: 10 km N Pisté.


Comments. Thyanta perditior is one of a group of very closely related species, all of which have distinctly spinose humeral angles. The characters used to separate these species are sometimes subtle and hard to diagnose unless a series of specimens is available. Fortunately, most have very little overlap in their distributional ranges.

*Thyanta (Thyanta) spectabilis* Ruckes
Figs. 78–92, Map 6

*Thyanta perditior* (of authors, not Fabricius): Van Duzee, 1923: 127.

**Diagnosis.** Rubiginous transhumeral band usually present; often tyulus and vertex of head reddish.

Lateral jugal margins sinuous, not parallel (Fig. 79). Anterolateral pronotal margins concave, not piceous; humeral angles spinose, spines directed primarily laterad and only slightly cephalad (Fig. 78). Mesial corner of each pronotal cicatrice usually piceous. Each abdominal sternite with postspiracular black spot on each side, anterolateral and posterolateral angles piceous.

Basal plates in caudoventral view with mesial margins straight to slightly convex; separated basally; posterior margins sinuous (Fig. 80). Spermathecal bulb digitiform, but with numerous short protuberances (Fig. 82). Pygophoral opening subtended by semicircular impression; posterior margin of pygophore produced posteradorsad, in ventral and dorsal views convex medially with small, medial V-shaped emargination (Figs. 84, 85); slightly concave in lateral view (Fig. 86).

**Types.** Ruckes (1957c) described *Thyanta spectabilis* from 226 and 669 specimens, all from Baja California, Mexico. The ♂ holotype was examined and is presently conserved in the California Academy of Sciences (San Francisco).

**Distribution.** Baja California, Mexico (Map 6).

**Specimens examined.** 17 specimens collected during every month of the year except February, April, September, and October; deposited in CAS, DBT, UCB, UIM,

UNAM, USNM. MÉXICO: Lower California; 2 km W El Centenario. *Baja California Norte*: Bahía de los Angeles. *Baja California Sur*: Cabo San Lucas; 28 mi S El Arco Mine, Rancho Santa Marguerita; 2 mi E El Coyote, NE of La Paz; 6 mi S, 1 mi E El Pescadero; La Paz; 6 km S San Pedro; Santa Anita; 7 mi N Santa Anita; 2 km SE, 3.5 km NE Santa Rita; 21.6 mi N Todos Santos; Venancio.

Comments. *Thyanta spectabilis* is very closely related to *T. perditor*, and may actually be a subspecies of that species. The genitalia of the two species are virtually identical; the only difference is that the parameres in *T. spectabilis* are somewhat larger than those in *T. perditor*. This is expected, however, since specimens of *T.*