

THE GENUS *SANCTANUS* IN NORTH AMERICA INCLUDING THE MEXICAN SPECIES

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The Genus *Sanctanus* was erected by Ball² in 1932 to include a small group of species formerly placed in *Scaphoideus*. He cited *Scaphoideus sanctus* Say as the genotype. In addition he placed *fasciatus* Osb., *cruciatus* Osb., *orbiculatus* Ball, *aestuarium* DeL. & S., *limnicolus* Osb., *eburneus* DeL. and *fusconotatus* Osb. in the Genus *Sanctanus*. Later Oman,³ 1934, made a key to the species of the genus in which he included *tectus* which he described at that time. In 1938 Beamer⁴ described *balli* as closely related to *sanctus*. This previous work included largely North American species. Recently the writers have been studying a large amount of material belonging to this genus, which was collected in Mexico. As a result it has been found that five new species, *similarus*, *pallidens*, *galbus*, *apicalis* and *elongatus* are closely related to *sanctus* and *balli*. One other, *elegans*, is more closely related to *orbiculatus*. In the *fasciatus* group there are apparently five species occurring in Mexico, four of which, *virgatus*, *marginellus*, *sonorus* and *dampfi*, are apparently new and closely related to *fasciatus* and *cruciatus*. In color pattern many of these species could scarcely be distinguished from closely related forms unless the male genital characters are used. In the *sanctus* group the aedeagus is quite similar in type in several of the species but the character of the style will distinguish them very easily. In the *fasciatus* group the aedeagus and styles are similar in type but the characters of the plates will separate these into species and the color patterns are of assistance in a few cases. The male genitalia of *fusconotatus* and *aestuarium* are very similar and unique. The color pattern of the head will distinguish these species and the vertex in *fusconotatus* is apparently more produced than in *aestuarium*.

During this study most of the types have been examined and the genital structures studied. The types of *cruciatus*, *fasciatus*, *neglectus*, *fusconotatus*, *limnicolus* and *picturatus* in the Osborn collection and the types of *aestuarium* and *eburneus* in the senior author's collection have been available at the Ohio State University. The type of *orbiculatus* Ball and *tectus* Oman have been examined at the National Museum. The authors desire to express their appreciation for the courtesies extended by Prof. J. N. Knull and Dr. J. S. Caldwell for the examination of types in the collections of these two institutions.

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²Jour. Wash Acad. of Sci. 22: 10. 1932.

³Proc. Ent. Soc. of Wash. 36: 75-76. 1934.

⁴Can. Ent. 70: 244. 1938.

Genus *Sanctanus*

The genus is characterized by having a somewhat flat vertex which is acutely angled with the front. The elytra have a second cross nervure between the sectors and the second anteapical cell is constricted and divided. The first anteapical cell is usually quite short, narrowed at both ends with one or more reflexed veinlets to the costa. Most of the species of the genus have a dark saddle-like marking or a dark cruciate spot on the elytra which usually obscures the venation.

The genus seems to contain two allied groups of species which differ somewhat in structure and appearance. Two subgenus names are therefore proposed. The forms with a produced pointed head are placed in the subgenus *Sanctanus* with *sanctus* Say as the type. The broad blunt-headed species are placed in the subgenus *Cruciatanus* with *cruciatulus* Osborn as the type.

The subgenus *Cruciatanus* is characterized by a broad blunt head and with a zigzag broad dark band which does not reach the costal margin. The male styles in this group are not notched on the outer margin before the apex but are curved and abruptly narrowed at about the middle to form long slender processes on the apical half. The aedeagus has a shallow excavation on the dorsal surface near the middle on the basal half. The six species, *cruciatulus*, *fasciatus*, *marginellus*, *dampfi*, *sonorus* and *virgatus* belong to this subgenus.

KEY TO SPECIES

1. Elytra white with a median brown cruciate mark across posterior two-thirds of clavus extending to costa and forming a broad white marginal band along scutellum across base of elytra and another white oblique band from apex of clavus to costa across base of anteapical cells—(*sanctus* group).....2
- 1'. Elytra without a brown median "saddle" reaching to costa and forming a white marginal band along scutellum and across anteapical cells....8
2. (1). Vertex and above definitely tinted with yellow, face and beneath bright orange yellow; male aedeagus decidedly broadened or inflated at middle.....*gelbus*
- 2'. Vertex milky white or pale yellow, face and beneath pale, not orange. Male aedeagus not strongly inflated at middle.....3
3. (2'). A marginal row of spots just above margin of vertex larger and appearing more connected in a broken line.....*pallidus*
- 3'. Spots above margin of vertex minute and rounded if present, not appearing elongated or connected.....4
4. (3'). Apical portion of male styles beyond constricted portion as long or longer than basal half. Aedeagus in ventral view with a pair of separated broadened processes produced beyond apex.....*sanctus*
- 4'. Apical portion of styles beyond constriction less than half the length of basal portion. Aedeagus in ventral view with apical processes pointed.....5
5. (4'). Apical portions of styles slender, elongate, fingerlike.....6
- 5'. Apical portions of styles broadened beyond constriction to width of style before constriction.....7
6. (5). Style abruptly notched on outer margin to form fingerlike apex. Aedeagus enlarged just before apex, broadened on ventral side... *balli*
- 6'. Style only faintly notched to form fingerlike apex. Aedeagus with a dorsally produced process just before apex.....*similaris*
7. (5'). Style indented at middle on broad apex forming a pair of "cat ear" processes. Aedeagus slightly broadened at middle and tapered to a pair of sharp pointed processes.....*elongatus*

- 7'. Style with apical margin straight, sloping to outer margin. Apical portions of aedeagus slender not broadened at middle. **apicalis**
8. (1'). Elytra white with a small brown spot on middle of clavus and a brown band across inner anteapical, apical portion of central anteapical and the first apical cells. Corium white, unmarked. **eburneus**
- 8'. Elytra with dark markings on costa or corium in the form of spots or stripes. 9
9. (8'). Elytra salmon colored with dark markings. 10
- 9'. Elytra not salmon colored; with dark bars or stripes. 11
10. (9). Vertex with two apical black spots, pronotum unmarked, corium of elytra without longitudinal white stripes. **orbiculatus**
- 10'. Vertex unmarked, pronotum with two large black spots on humeral angles, corium of elytra with a broad white longitudinal stripe. **elegans**
11. (9'). Vertex white with two transverse brown bands between the eyes. Elytra dark brown with white veins, appearing longitudinally striped. **virgatus**
- 11'. Elytra with dark spots or zigzag bands, not appearing longitudinally striped. 12
12. (11'). Elytra with numerous supernumerary veinlets on the anteapical cells. **limicolus**
- 12'. Without supernumerary veinlets on anteapical cells of elytra. 13
13. (12'). Dorsal color pattern consisting of brown or yellowish brown and ivory. Brownish area on disc of corium not broken by broad white or pale veins—(*fasciatus* group). 14
- 13'. Dorsal color pattern lacking in distinct brown and ivory contrasts. Markings on corium consisting mostly of brownish intra-cellular infuscations which are darker around the margins. Veins on disc of corium broad and pale. 18
14. (13). Entire upper surface embrowned with a row of elongated brown spots forming a broken marginal line just above margin of vertex. **marginellus**
- 14'. Dorsal surface with contrasted areas of milky white and brown. 15
15. (14'). Pronotum white with a broad broken brown band across middle. Scutellum white with three dark brown spots, one at apex and one in each basal angle. Male plates tapered to form blunt rounded apices. **cruciatus**
- 15'. Pronotum and scutellum brownish with faint markings. Male plates broadly rounded, not narrowed to blunt rounded apices. 16
16. (15'). Male plates decidedly longer than styles. 17
- 16'. Male plates about the same length as styles. **fasciatus**
17. (16). Vertex distinctly produced and bluntly angled; male plates broadly convexly rounded to straight inner margins. **sonorus**
- 17'. Vertex short, blunt, broadly rounded; male plates narrow, convexly rounded from both inner and outer margins to form a broadly rounded apical margin which is almost as broad as basal width of plate. **dampfi**
18. (13'). Upper half of face uniformly black. Vertex without heavy dark markings on disc. 19
- 18'. Black marks on upper portion of face consisting of broken transverse band with white transverse bars. A pair of large round black spots between anterior portion of eyes on disc. **tectus**
19. (18). With dark fuscous marks above margin on anterior portion of vertex next each eye. **fuscotatus**
- 19'. Vertex with pale orange markings on disc; no dark markings above margin. **aestuarium**

Sanctanus sanctus (Say)

Jassus sanctus Say. Jl. Acad. Nat. Sci. Phila. VI, p. 307, 1831, Compl. writ. II, p. 383.

A white species with a brown cruciate mark across middle of elytra. Length 5 mm.

Vertex rather sharply angled, almost as long at middle as basal width between eyes.

Color: White, often gray in appearance and tinted with yellow or tawny. Vertex with a pair of minute spots at apex. Elytra white with a brown cruciate mark at middle and another dark band across the cross veins and apex.

Genitalia: Female last ventral segment almost truncate with a slight median notch. Male plates gradually narrowed on outer margins to form sharp-pointed apices. Style elongate, notched on outer margin before middle, the apical half narrow, finger-like and blunt at apex. The aedeagus in ventral view is broadened at apex with a rounded excavation at middle, forming a pair of blunt, truncate apical processes.

This is the common species of this genus throughout the eastern United States.

***Sanctanus balli* Beamer**

Sanctanus balli Beamer. Can. Ent. 70: 224, 1938.

In general appearance and coloration resembling *sanctus*, but with distinct genitalia. Length 5–5.75 mm.

Vertex produced and angled, but wider between eyes at base than median length.

Color: Milky white, tinted with yellow, vertex with a pair of minute darker spots near apex and the two larger irregular angled dashes near base. Pronotum and scutellum pale with dark mottling. Elytra white with the typical brown cruciate mark near middle and a narrow fuscous stripe on cross veins which is Y-shaped. Cruciate mark at middle, darker margined.

Genitalia: Female last ventral segment with lateral angles slightly curved to a posterior margin which is slightly sinuate, bearing a slight, narrow V-shaped notch at middle. Male plates with outer margins roundly produced to sharp apices. Male style rather short, a deep notch on outer margin about one-third the distance from apex, the apical finger process blunt at apex. Aedeagus in ventral view enlarged just before apex, then tapered to a pointed spear-like tip.

This species has been reported only from Arizona.

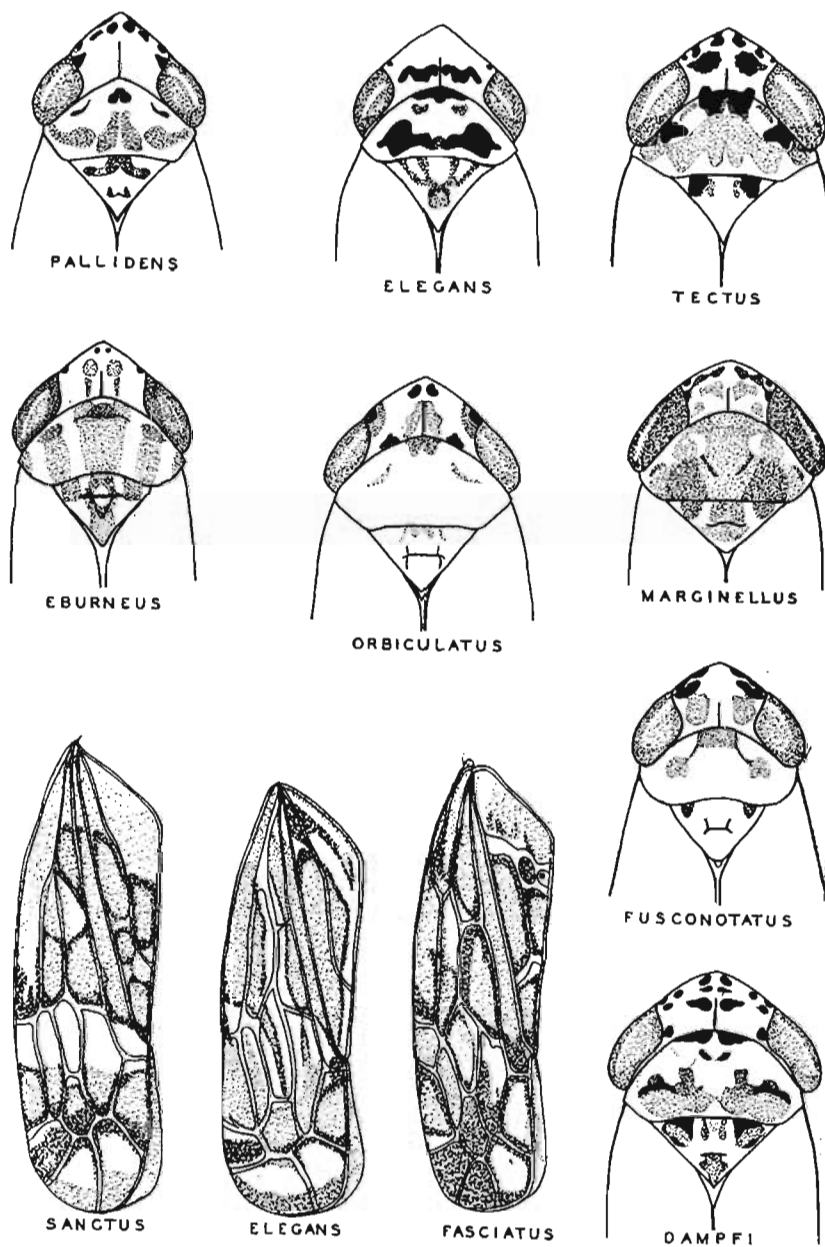
***Sanctanus similarius* n. sp.**

Resembling *sanctus* in form and general appearance but paler and with different male genitalia. Length 4–4.5 mm.

Vertex bluntly angled, about as long at middle as basal width between eyes.

Color: Face pale with traces of a few arcs on upper portion. Ocelli black. Vertex dirty white, unmarked. Pronotum and scutellum white, tinged with green. Elytra white with a pale brown cross extending from costal margin across clavus, forming a small round white spot on clavus next suture. A brownish spot bordering the cross veins between apical and anteapical cells.

Genitalia: Female last ventral segment roundedly produced from base with a portion of the underlying segment visible at each side. Male style with apical third distinctly narrowed and bent outwardly. The apex tapered to a bluntly pointed tip. Plates about the length of pygofer, elongate, triangular, acutely pointed. The aedeagus is a single



Dorsal views of head, pronotum and scutellum of species of *Sanctanus* as labeled. Lower left—view of left elytron of three species as labeled.

tubular process with apex bent downwardly, a pair of lateral processes at apex are turned upward.

Holotype male collected at Huetamo, Gro., August 22, 1933, (M. F. 3100), by Dr. Dampf. *Allotype* female taken at Tuxtla, Gutierrez, July 29, 1936 (M. F. 1055), by Dr. Dampf. Male and female *paratypes* from Huetamo and Iguala, Gro., Sept. 11, 1939, and Oct. 25, 1941, collected by Good, Plummer and DeLong.

***Sanctanus pallidens* n. sp.**

Resembling *sanctus* in general form, but with different color markings and male genitalia. Length 4–4.5 mm.

Vertex appearing sharply angled in female, blunter in male, a little wider between eyes at base than median length.

Color: Face washed with pale brown, traces of arcs on upper portion, usually a brown transverse band between antenna. Vertex yellowish in male with a pair of brown apical spots and a fainter spot next each eye. Eyes and ocelli red. Vertex in female sordid yellow, with the four spots somewhat coalescing to form a broken marginal line. Other irregular dull spots are on disc and base. Pronotum and scutellum dirty white, tinged with green. Elytra pale dirty white, tinged with green. The cross mark from costal margin extending across clavus is pale brown, often scarcely visible in males. There is a brown spot bordering the cross veins of the anteapical cells.

Genitalia: Female last ventral segment roundedly produced from base to form a slightly concave posterior margin which is embrowned at middle. The lateral portions of the underlying segment are exposed on either side. Male plates decidedly shorter than pygofer, triangular, with blunt apices. Style rather deeply narrowly notched just before apical fifth which is a fingerlike process. Aedeagus elongate in lateral view, slightly broadened at middle, tapered to a narrow apex which is slightly upturned. In ventral view it is bifid on apical half with the two straight portions proximal.

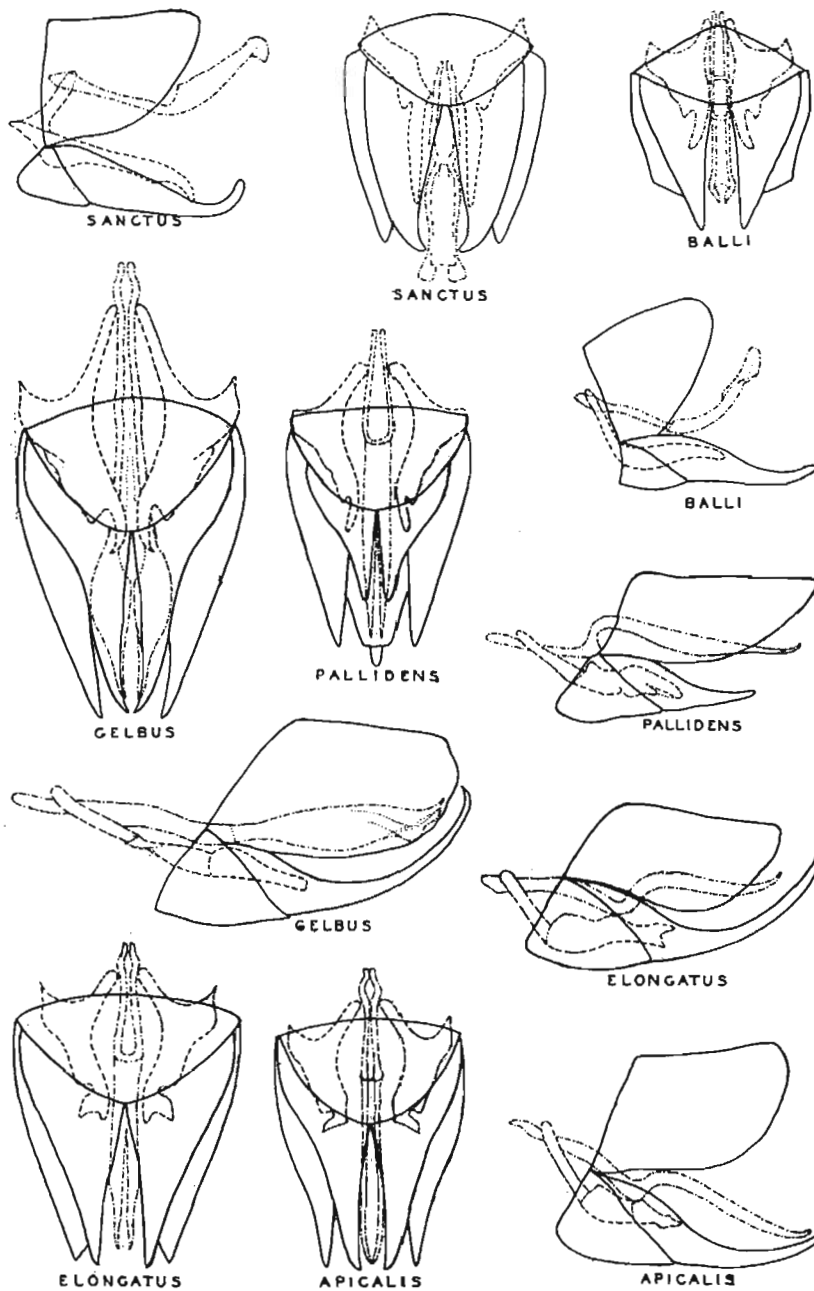
Holotype male, *allotype* female and male and female *paratypes* collected at Iguala, Gro., Sept. 11, 1939, by Plummer and DeLong and October 25, 1941, by Good and DeLong. Male and female *paratypes* collected at Huetamo, Gro., August 22, 1933 (M. F. 3100), and Yaqui Valley, Sonora, August 16, 1927 (M. F. 1295A), by Dr. Dampf.

***Sanctanus gelbus* n. sp.**

Resembling pale specimens of *sanctus* in general appearance, but with distinct male genitalia. Length 4–4.75 mm.

Vertex strongly angularly produced, a little wider between eyes at base than median length.

Color: White, with pale brown markings on elytra. Vertex, pronotum and scutellum white, washed with yellow or orange. Face and beneath yellow to orange, the males are usually more darkly marked. Elytra milky white with a rather pale brownish cross extending from costal margin across clavus with a small enclosed white spot on clavus. A pale brownish spot across apices of elytra, veins white, rather heavily bordered with dark brown.



Lateral and ventral views of the caudal portion of the male abdomen showing the genitalia in position for species of *Sanctanus* as labeled.

Genitalia: Female last ventral segment more than three times the length of preceding segment. Strongly roundedly produced from base to form a broadly rounded posterior margin which is slightly broadly notched at middle. Male plates as long as pygofer, convexly rounded at apex, slightly concave on inner margins and acutely pointed. Style deeply, broadly notched on outer margin one-fifth the distance from apex, the apical process narrowed, curved outwardly at tip and acutely pointed. Aedeagus distinctly inflated at middle both in lateral and ventral views, rapidly narrowed to a sharp pointed apex.

Holotype male, *allotype* female and male and female *paratypes* collected at Puente de Ixtla, Mor., Mexico, October 21, 1941, by Good and DeLong. Male and female *paratypes* collected at Iguala, Guerrero, Mexico, September 11, 1939 by Plummer and DeLong; and at Taxco, Gro., K-155, October 6, 1945, elevation 5,500 feet, by Balock, Elliott, Hershberger and DeLong; Tierra Colorado, Gro., K-271, October 5, 1945, elevation 1,500 feet, collected by Balock, Elliott, Hershberger and DeLong; Cuernavaca, Mor., K-6-east, Sept. 25, 1945, elevation 4,800 feet, by Plummer, Shaw, Elliott, Hershberger and DeLong.

***Sanctanus apicalis* n. sp.**

Resembling *sanctus* in general form and appearance but with spots on the vertex and different male genitalia. Length 4-4.5 mm.

Vertex strongly produced, bluntly angled at apex, a little broader between eyes at base than median length.

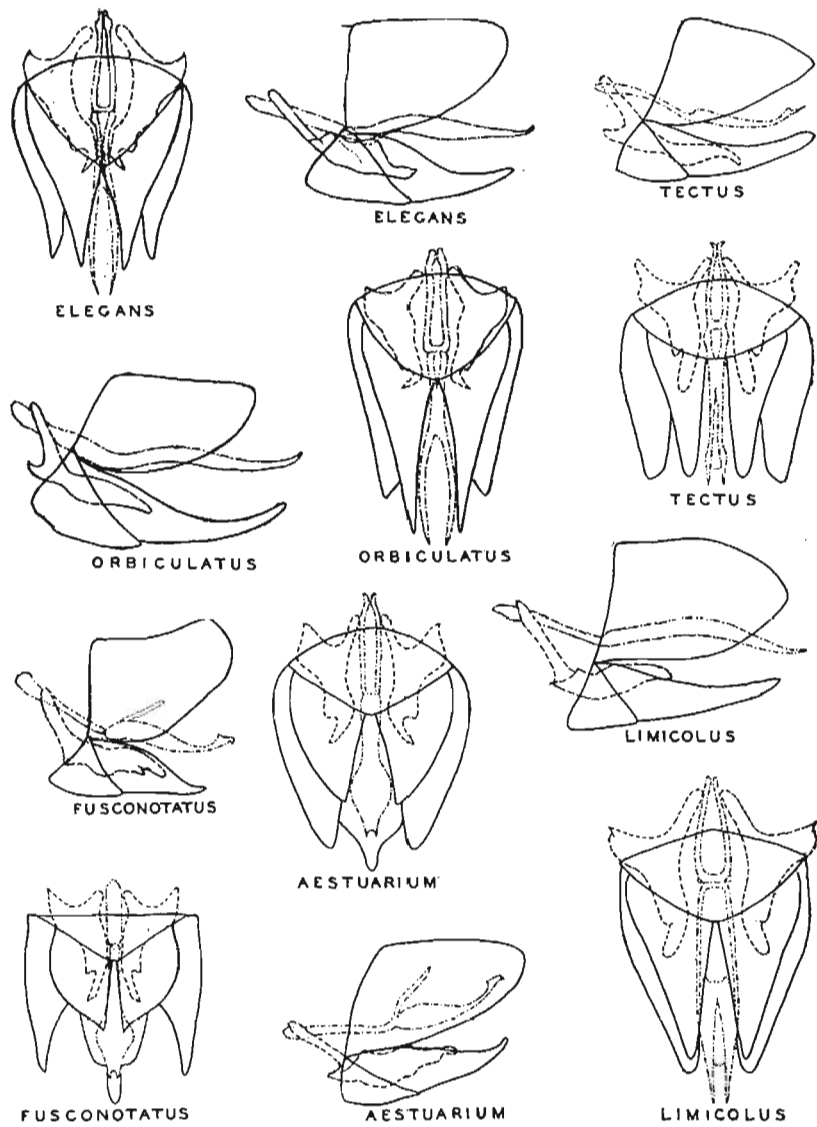
Color: Face yellow with a brown wavy line just beneath margin of vertex. Vertex, pronotum and scutellum dirty white washed with yellow or greenish yellow. Ocelli dark and a pair of minute separated spots just above apex. Elytra milky white marked as in *sanctus* with a brown cross extending from costa each side across clavus. The arms of the cross on each side are broad, pale brown and bordered with darker brown. They enclose a triangular white spot on costa and a small round white spot on clavus. A brown area also extends from apex of clavus to apical costal area enclosing the antecapical cross veins which are heavily margined with brown.

Genitalia: Female last ventral segment produced from near base to form a roundedly produced posterior margin which is slightly notched at apex. The portion of the underlying segments are exposed and plainly visible at each side. Male plates as long as pygofer, narrowed to blunt apices. Style rather broad, deeply notched on outer margin, apex broad, truncate. Aedeagus in lateral view long and narrow, in ventral view bifid on apical two-thirds, forming a pair of slender processes which are separated and converge at apices.

Holotype male and *allotype* female collected at Tuxtla, Gutierrez, Chiapas, July 29, 1936, by Dr. Dampf (M. F. 1055). Male and female *paratypes* collected at Iguala, Gro., September 11, 1939, by Plummer and DeLong and at Mainari, Son., August 11, 1927, by Dr. Dampf (M. F. 1282A).

***Sanctanus elongatus* n. sp.**

Resembling dark specimens of *sanctus* in general appearance. With four marginal spots on vertex and with distinct male genitalia. Length 4-4.5 mm.



Lateral and ventral views of the caudal portion of the male abdomen showing the genitalia in position for species of *Sanctanus* as labeled.

Vertex angularly produced, about one-sixth wider between eyes than median length.

Color: Vertex pale yellow, a pair of minute brown spots just above apex and a spot above each ocellus. Pronotum pale anteriorly, dusky posteriorly. Scutellum with two small round spots just back of pronotum. Elytra milky white with the brown cross extending from the costal margin across clavus and forming the white spot on costal margin and the spot on clavus. The cross is dark brown to black. A brown spot covers the posterior portions of the anteapical cells and the cross veins. The veins are white, margined with dark brown. Face yellow below, dusky above. A transverse brownish band just beneath antennal sockets, brownish arcs above and a narrow sinuate line just beneath margin.

Genitalia: Female last ventral segment roundedly produced from base to form a broadly rounded posterior margin which is slightly notched at middle, with a black spot on either side. Portions of the underlying membrane are exposed at each side of the lateral margins. Male plates as long as pygofer tapered to pointed apices. Style deeply notched on outer margin near apex forming a broad apical portion which is concave apically. Aedeagus in lateral view long, narrow, and curved. In ventral view bifid on apical half, the apical portions of the two processes narrowed to slender tips.

Holotype male, *allotype* female and male and female *paratypes* collected at Uruapan, Mich., Mexico, October 1, 1941, by Plummer, Caldwell, Good and DeLong; Rio Tuxpan, Mich., K-185, September 29, 1945, elevation 6,000 feet, and at Morelia, Mich., September 30, 1945, elevation 6,500 feet, by Plummer, Hershberger, Elliott and DeLong.

***Sanctanus orbiculatus* Ball**

Sanctanus orbiculatus Ball. Jour. Wash. Acad. Sci. 22: 11, 1932.

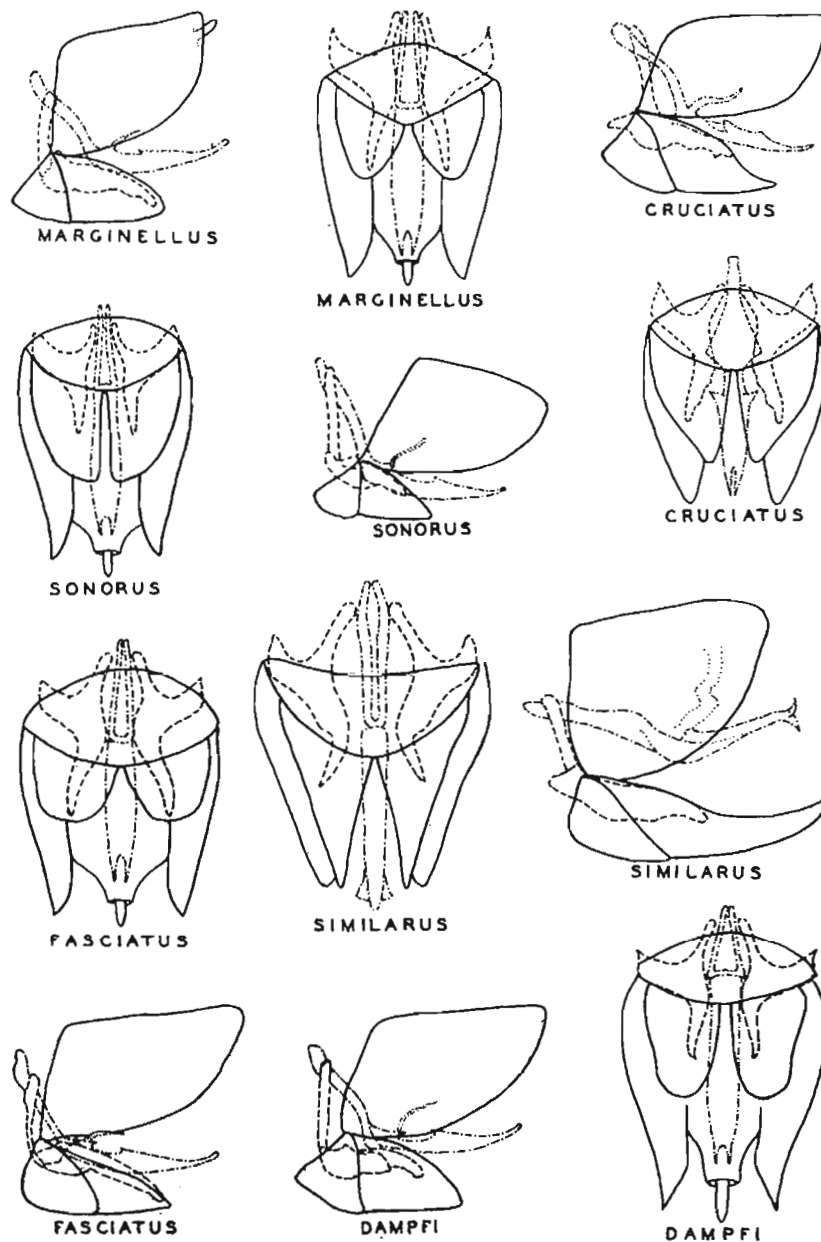
A distinctly marked species, salmon in color with white markings and four black spots on margin of vertex. Length 4-5 mm.

Vertex obtusely angled, broader than long and angled with front at apex.

Color: Vertex white, apex with a pair of spots above and a short angular line beneath. A larger pair of spots surround the ocelli and a large pair on posterior portion. Pronotum and scutellum pale in the female, salmon colored in the male. Elytra pale salmon tinted with smoky in the male, the scutellar margins broadly white in the female. There is a narrow white band across the basal portions of the anteapical cells, beyond which the nervures are white with smoky margins. The second apical cell contains a large round eye-like black spot.

Genitalia: Female last ventral segment slightly produced at middle of posterior margin, male plates long, rather slender, acutely triangular. Style rather short and broad, rather deeply notched on outer margin near apex with tip bent outwardly and sharply pointed. Aedeagus in lateral view appearing long and slender, in ventral view the apical half is bifid with the two portions curved and separated.

This species was described from the southwestern United States and is not known to occur in any other area.



Lateral and ventral views of the caudal portion of the male abdomen showing the genitalia in position for species of *Sanctanus* as labeled.

***Sanctanus elegans* n. sp.**

Somewhat resembling *orbiculatus* but with a different color pattern and different male genitalia. Length 3.5–4.5 mm.

Vertex produced and bluntly angled, a little wider between eyes at base than median length.

Color: Face pale yellow with a narrow black band just beneath margin. Vertex white with a narrow black transverse broken band between eyes near base, the outer ends of which are curved posteriorly. Pronotum white with a black mark at middle on anterior margin, a large black spot near posterior margin just back of each eye and a minute spot near each, between them and just before posterior marking. Scutellum milky white to creamy, basal angles often a little darker. Elytra orange yellow with distinct black and white markings. There is a large black spot just beyond base of each elytron. A brown bordered white stripe extends along margin of scutellum and along suture to apex of clavus. This encloses a small spot and black line on anal portion of wing. Another brown margined white band is just anterior to apical cross veins and extends about one-third the distance to base on outer claval vein. A third white stripe extends along the inner branch of the first sector its entire length, and a fourth arises on the costal margin at the anterior end of the first antecapical cell and follows both veins to its apex. Apical cross veins white, brown banded, and apex of elytra with a broad brown margin. Beneath yellowish.

Genitalia: Female last ventral segment roundedly produced from near base to slightly concavely rounded posterior margin. The lateral portions of underlying segment visible at each side. Male plates as long as pygofer, sharply pointed. Style abruptly narrowed just before apex, forming an outwardly directed sharply pointed apical process. Aedeagus in lateral view straight, tapered to a narrow tip. In ventral view bifid, about one-third the distance from base with the two processes long, tapered and distinctly separated.

Holotype male, *allotype* female and male and female *paratypes* collected at Tierra Colorado, Gro., K-271, October 5, 1945, by Balock, Elliott, Hershberger and DeLong. *Paratype* males and females from Cutzamala, Gro., August 20, 1930 (M. F. 1768); Pungarabato, Gro., August 22, 1930 (M. F. 1769), both collected by J. Parra. *Paratype* males and females also from Coyuca-Catalon, Gro., August 24, 1930 (M. F. 1771); Yetla, Gro., August 12, 1930, (M. F. 1756); San Miguel, Gro., (M. F. 1759); Balsas, Gro., August 15, 1930 (M. F. 1754); Vejucio, Gro., September 3, 1930 (M. F. 1790); Zirandera, Gro., August 29, 1930, (M. F. 1786); Pasade Vecas, Gro., September 3, 1930 (M. F. 1792), collected by J. Parra. *Paratypes* from El Mante, Tamaul., October 26, 1930, (M. F. 1775); Yaqui Valley, Sonora; Huetamo, Mich., August 22, 1933, (M. F. 3100) and Mexico (M. F. 1773) and (M. F. 1777), collected by Dr. Dampf. *Paratypes* from Iguala, Gro., September 11, 1930, and October 25, 1941, were collected by Plummer, Good and DeLong.

This is a common meadow species occurring on herbaceous plants.

***Sanctanus tectus* Oman.**

Sanctanus tectus Oman. Proc. Ent. Soc. Wash. 36: 75, 1934.

Resembling *Polyamia arundineus* in color pattern but apparently

related to *fasciatus* and *cruciatulus* with a more angled vertex. Length 4-4.5 mm.

Vertex rather strongly produced and angled, a little wider between eyes at base than median length.

Color: Vertex pale with a pair of small black spots at the apex and a large pair, irregular in shape, on the disc near the ocelli. The large spots fused with the black band on the front. A pair of small black spots on posterior portion of vertex. Pronotum with a rectangular black spot on the anterior margin medially and an irregular spot behind each eye. Disc brownish with pale margins. Elytra with basal portions white, a fuscous spot on disc of each clavus and three fuscous spots on each costal margin. Veins pale, margined with fuscous. Face pale with three transverse black bands, one across apex of clypeus, one below the antennae and one below the margin of the vertex.

Genitalia: Last ventral segment of female truncate with a broad, blunt median tooth. Male plates elongate, triangular, rather broad basally, tapering to narrow blunt tips. Style rather broad, notched on outer margin at about one-third the distance from the apex, the sides of apical third parallel, the apex blunt. Aedeagus long and narrow, the apex bent slightly dorsally, broadened just before apex and tapered to a sharp pointed tip.

This species occurs on cane, *Arundinaria tecta*, along the southern Atlantic coast from Virginia to South Carolina.

***Sanctanus limicolus* (Osborn)**

Deltocephalus limicolus Osborn. Fla. Ent. 6: 17, 1922.

A dark gray species with fuscous markings. Length 3.5-3.75 mm.

Vertex obtusely angled, about one-half longer at middle than next the eyes. The clavus with numerous reticulations and the anteapical cells broken by irregular cross veins.

Color: Vertex white with four fuscous dots on the anterior border, two lunate spots midway and two rounded ocellate spots on the hind border. Pronotum fuscous with five gray longitudinal stripes. Scutellum with ivory spots each side. Elytra with areoles mostly fuscous and veinlets mostly ivory white. The first apical areole black. Face pale fuscous with transverse whitish arcs.

Genitalia: Female last ventral segment with posterior margin almost truncate. Portions of the preceding segment conspicuous at the lateral margin. Male plates broad at base, rapidly narrowed to acutely upturned apices. Style rather short, slightly notched on outer margin about one-fifth the distance from apex, the apical fifth thick and blunt at tip. Aedeagus long and narrow in lateral view. In ventral view appearing bifid on apical third, the apical processes forming long, tapering, pointed apices.

This is a common tidal flat species of the Florida coast.

***Sanctanus eburneus* (DeLong)**

Deltocephalus eburneus DeLong. Jour. N. Y. Ent. Soc. 32: 63, 1924.

A white species with few and faint markings, apparently related to *sanctus*. Length ♀, 4.5 mm.

Vertex bluntly angled, almost one-fourth wider between eyes at base than length at middle. Disc flat, rather sharply angled with front. Pronotum almost twice as broad as long. Clavus of elytra reticulate, central anteapical cell long, constricted and divided at center.

Color: Vertex white with four small pale orange spots above margin and a pale blotch on disc either side of middle. Pronotum with a broad median brownish stripe and a narrower one either side. Scutellum pale yellow with basal angles and apex darker. Elytra milky white, a large spot on middle of outer clavus dark brown, posterior claval cells washed with yellow. Inner anteapical cell, anterior and posterior portions of middle anteapical cell and outer apical cell pale to dark brown. Face, clypeus and lorae heavily embrowned with traces of pale arcs on face.

Genitalia: Female last ventral segment with posterior margin shallowly, concavely rounded.

This species was described from Mississippi, and no other records have been published to date.

***Sanctanus fusconotatus* (Osborn)**

Deltocephalus fusconotatus Osborn. Fla. Ent. 6: 17, 1922.

White, marked with fuscous spots on pronotum, scutellum and base of elytra. Length, male, 3.5 mm.

Vertex bluntly angled, as long at middle as width between the eyes at base.

Color: White, vertex bordered anteriorly with black, except at apex, the outer part of the black line enclosing the ocelli. Pronotum with three diffuse spots, scutellum with two dots on the base. Each elytron has a small fuscous basal spot and a spot just before and just behind the merged veins. A dark spot on costa near base and another before the apical cells. Face densely black at base, clypeus and lower portion of face white.

Genitalia: Male plates small, triangular, about one-half the length of the pygofer. The styles are rather broad at the base, abruptly narrowed near the apex and produced in narrow fingerlike apices. The aedeagus in ventral view is inflated just before apex. In lateral view it appears narrow just before the apex and slightly broadened at the apex.

In type of genitalia it appears closely related to *aestuarium*.

The species is known from the type specimen only, collected at Cameron, Louisiana.

***Sanctanus aestuarium* (DeLong and Slesman)**

Polyamia aestuarium DeLong and Slesman. Anns. Ent. Soc. Amer. 22: 101, 1929.

Superficially resembling *P. arundineus* in general coloration. Apparently allied to *limicolus*. Length 4 mm.

Vertex rather broad, produced, slightly wider between eyes than length at middle, flat or slightly depressed on disc. Central anteapical cell constricted and divided.

Color: Pale yellow, a pair of oblique orange bands extending from the margin of the vertex to the central posterior portion of the disc.

Pronotum with a large orange spot along anterior margin extending between the eyes, and a large round spot on central portion of pronotum behind either eye. Basal angles of scutellum orange. Elytra orange yellow, veins milk-white and heavily infuscated at certain places. A large spot on the costal margin at about its middle, discal, central antepical and apical cells fuscous. Face black above, the coloration extending obliquely beneath the eyes.

Genitalia: Female last ventral segment rather short on lateral margins, then produced to form a broad trilobate posterior margin, only a slight notch occurs either side of central lobe, but the coloration causes it to appear decidedly trilobate. Lateral portions of underlying segment produced beyond last ventral segment at either side. Male plates short, strongly convexly rounded to pointed apices. Style elongate, rather deeply notched on outer margin near apex, the apical fifth narrow, finger-like, tip rather sharply angled. Aedeagus in lateral view bulbous at base, strongly narrowed then slightly enlarged at apex. In ventral view it is narrowed on basal half, the apical half convexly rounded and broadened, then narrowed to narrow blunt apex.

This species occurs in the tidal salt marsh of the lower Atlantic coastal area. It was originally described from North Carolina.

***Sanctanus fasciatus* (Osborn)**

Scaphoideus fasciatus Osborn. Jl. Cinc. Soc. Nat. Hist. 19: 190, 1900.

A broad-headed species with a blunt vertex. Length 4 mm.

Vertex about one-third wider between eyes at base than median length, anterior margin produced and rounded.

Color: Vertex pale with two dark points just above apex and two paler transverse spots between anterior margins of eyes. Face pale, two marginal bands just below margin, also two dark bands, one across face just beneath eyes and another across clypeus. Pronotum with a dark spot behind each eye on anterior margin. Scutellum pale with a dark spot in each basal angle. Elytra when closed in normal position with a brown cruciate band extending from anterior costal margin to and along commissure to apex. The outer margin is bordered with dark brown. The white base of the clavus parallels the edge of the scutellum, and a white bar crosses the clavus obliquely near the tip.

Genitalia: Female last ventral segment concavely excavated. Male plates broader than long, broadly rounded, reaching to about the same length as the apex of styles. The apical half of the style is narrowed, produced and tapered to a blunt apex. The aedeagus in lateral view is narrowed on the apical fourth to form a slender apex. There is a broad shallow excavation on the dorsal margin. In ventral view the aedeagus is deeply roundedly notched at the apex, forming a pair of separated apical teeth.

This species was originally described from specimens collected at Port au Prince, Haiti, and Frontera, Mexico. It is apparently a rather common species in Mexico and has been collected at Valles, S. L. P., September 25, 1941; Tehuantepec, Oax., October 13, 1941, and Iguala, Gro., September 11, 1939, by Plummer, Caldwell, Good and DeLong.

***Sanctanus marginellus* n. sp.**

A rather broad-headed species with blunt vertex resembling *fasciatus*, but elytra with a more general brownish color. Length 4 mm.

Vertex about one-third wider between eyes at base than median length; anterior margin produced and rounded.

Color: Creamy white, vertex with a brown spot above ocellus next each eye and two elongated dark brown spots almost contiguous extending from ocellus almost to apex just above margin. There is paler brown mottling either side of a median paler stripe. Pronotum pale brown with irregular white spots along anterior margin behind each eye. Scutellum dull brown. Elytra pale brown, subhyaline, with dark and pale areas similar to *fasciatus*. The markings are not intensified and blend more nearly with the coloration of the elytron. Face pale with the transverse band between the antennal pits and two conspicuous transverse bands beneath the margin of vertex.

Genitalia: Female last ventral segment rather shallowly concavely excavated between produced lateral angles and either side of a short blunt median tooth. Male plates broader than long, broadly rounded, about as long as apices of styles. Style with apical half narrowed, produced, tapered to a blunt apex. Aedeagus in lateral view narrowed to form a slender apex on apical fourth. There is a broad shallow excavation near base on dorsal margin with a short basal spur extending dorsally. In ventral view the aedeagus is deeply roundedly notched at apex forming a pair of separated apical teeth.

Holotype male, *allotype* female and female *paratypes* collected at Cantetul, Guat., December 11, 1925, (M. F. 878), by Dr. Dampf.

***Sanctanus cruciatus* (Osborn)**

Scaphoideus cruciatus Osb. Ohio Nat. 11: 253, 1914.

Resembling *fasciatus* in general appearance but with the vertex a little more produced and male plates more triangular in shape. Length 4.5 mm.

Vertex broadly, bluntly produced, more than one-third wider between eyes at base than median length.

Color: White, tinted with yellow. The vertex has two transverse brown spots just in front of the middle, with two minute black spots close to the eyes at base. Face with a distinct bar from lower border of eyes crossing below the antennae and a broader black band across the clypeus, enclosing lower half of the lorae and apex of clypeus. Elytra bearing the usual cruciate brown mark which is distinctly dark margined. Anteapical cells brown, bordered with black, their veins white. First and second anteapical cells usually black, third usually light, veins white.

Genitalia: Female last ventral segment with posterior margin concavely roundedly produced to form a rather broad rounded median tooth. Margin narrowly embrowned. Male plates broad at base, convexly rounded to rather blunt apices. Style rather broad at base, abruptly narrowed at about middle to form a long slender finger-like apical portion which is narrowed and blunt at apex. Aedeagus in ventral view rather narrow at base then broadened to form a tooth on each outer

margin from which the aedeagus is tapered to a pointed apex either side of a rather deep median incision. In lateral view it bears a dorsal spur near base and a conspicuous notch on dorsal margin just before middle.

The species was described from a specimen collected at Cold Springs Harbor, Long Island, N. Y. It has since been collected farther south along the Atlantic coast.

***Sanctanus dampfi* n. sp.**

Resembling *fasciatus* in coloration and general appearance but with male plates more narrowed and elongated, apices greatly exceeding styles. Length 4.5 to 5 mm.

Vertex bluntly produced, rounded at apex, about one-third wider between eyes at base than median length.

Color: Vertex white, with two small brown proximal dots near apex and two transverse fuscous spots halfway between base and apex. Face pale with two brownish transverse bands just beneath vertex margin and a conspicuous band between the antennal pits. Pronotum pale with brownish mottling. Scutellum white, basal angles dark. Elytra with the fuscous cruciate mark across clavus, the posterior bars extend only to the middle of the disc. A fuscous band extends from this point to suture at apex of clavus. The cross is bordered with dark fuscous. A white band crosses the clavus obliquely near tip and the hyaline discal and apical spots are bordered with white.

Genitalia: Female last ventral segment concavely excavated with a slightly produced portion at apex. Male plates about one-fourth longer than basal width, broadly rounded at apex, decidedly longer than style. The style is broad basally, the apical half is narrow and sharp pointed apically. The aedeagus in lateral view is gradually narrowed to apical fourth which is slender. In ventral view the apex is rather deeply, roundedly notched forming a pair of separated, pointed, apical teeth.

Holotype male collected at Chiapa de Corza, Chiapas, July 26, 1926 (M. F. 1047). *Allotype* female taken at Reforma, Tab., June 21, 1938 (M. F. 6674). *Paratype* males from Pocviene, Tab., December 31, 1938 (M. F. 8215), and at Zapota, Tab., July, 1938 (M. F. 6859), all collected by Dr. Dampf.

***Sanctanus sonorus* n. sp.**

Resembling *cruciatus* in general appearance but with vertex more strongly produced and with male genitalia distinct. Length 4.5 mm.

Vertex strongly produced, about one-fifth wider between eyes than median length, bluntly angled at apex, tip rounded.

Color: Vertex white with faint markings consisting of a proximal pair of faint brown points at apex and two faint brown transverse spots between the anterior margins of the eyes. Pronotum white, the posterior discal portion darker. A small brown spot just back of each eye on anterior margin. Scutellum white with brown spots in basal angles. Elytra pale with a brown cruciate mark resembling that of *fasciatus*, the posterior brown bars extend only to the disc, and the brown band extends to the suture at apex of clavus. A parallel band of white extends

along scutellum on base of elytron. The anterior apical cells are dark brown, the posterior apical cells are white, bordered with brown.

Genitalia: Female last ventral segment broadly shallowly excavated with a slightly produced, blunt tooth at middle. Male plates a little longer than basal width, broadly convexly rounded on outer margins to inner margin which is straight. Styles broad basally, tapered to pointed apices. Aedeagus broadly shallowly excavated on dorsal margin with a basal dorsally directed spur, aedeagus gradually tapered to a narrow apex. In ventral view the apex is rather deeply roundedly notched, forming a pair of separated pointed apical teeth.

Holotype male, *allotype* female and male and female *paratypes* collected at Mainari, Son., August 11, 1927 (M. F. 1282A). *Paratype* males and females collected at Yaqui Valley, Sonora, August 16, 1927 (M. F. 1285), and at Cuautla, Mor., August 27, 1937 (M. F. 6247). All material was collected by Dr. Alphonse Dampf.

***Sanctanus virgatus* n. sp.**

In general form resembling *fasciatus* but with distinct coloration in the form of transverse bands on the vertex and pronotum and longitudinal stripes on the elytra. Length 4.5 mm.

Vertex broad, blunt at apex, scarcely angled, almost one-third wider between eyes than median length. Elytra long.

Color: Vertex with a pair of minute separated brown spots just back of apex, an oblique line just above each ocellus on margin, a broad transverse band on median half before anterior margins of eyes and a rather broad transverse band just before basal margin. Pronotum with two broad transverse brown bands, one just back of anterior margin and another just before posterior margin. A large brown triangular spot on each basal angle. Elytra dark brown to black with the veins rather broadly white, giving a striped appearance. There is a conspicuous white curved area on the corium and a curved oblique band extending from apex of clavus to costal margin. The posterior third of the elytron is pale brown to white with the veins rather heavily dark margined. Face with a broad black transverse band just beneath antennae and ventral margins of the eyes. A series of fused black arcs form a second transverse band between the eyes and a third narrow black band is just beneath the ocelli and beneath the margin of vertex.

Genitalia: Female last ventral segment produced from lateral margins to a truncate apex with a short median produced embrowned tooth. Portions of the underlying segment are visible at either side.

Holotype female collected at Tehuantepec, Oax., October 13, 1941, by Good, Plummer, Caldwell and DeLong. Female *paratypes* were collected at Piedras Negras, Vera Cruz, September 17, 1926, by Dr. Dampf (M. F. 1077).