

**The *Sternidius* of America North of Mexico
(Coleoptera: Cerambycidae)**

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The genus *Sternidius* has presented a difficult taxonomic problem because of the extreme intraspecific variability exhibited by so many of its members. This has resulted in numerous synonymies and recombinations at different times. The following revision represents my conclusions based on the examination of approximately 2500 specimens, and the necessary types including those of John L. LeConte, and T. L. Casey. Descriptions, range, and host data, where known, are presented for sixteen species. (Much of the host data included in this paper was taken directly from label information on individual specimens.)

Study of the available types necessitates the following changes in present nomenclature: *Sternidius alpha vicinus* (Haldeman), *S. alpha coloradensis* Dillon, and *S. suturalis* Dillon have been synonymized with *S. alpha* (Say). *S. alpha nigricans* Dillon with *S. fascicularis* (Harris); *S. fascicularis maculipennis* (Blatchley) with *S. punctatus* (Haldeman); *S. rusticus* (LeConte), *S. punctatus* (Haldeman), and *S. texanus* (Casey) have been resurrected, and *S. alpha misellus* (LeConte) has been raised to full species designation. Two species previously included with *Sternidius* were found to belong in other genera and represent new synonymies. *Leiopus setipes* Casey is *Trichastylopsis albidus* (LeConte), and *Leiopus crinicornis* Casey is *Ceratographus biguttata* (LeConte).

***Sternidius* LeConte**

Amniscus Haldeman, 1847, Trans. Amer. Phil. Soc. (2), 10:27-66 (part).

Liopus; LeConte, 1852, Jour. Acad. Nat. Sci. Philadelphia, 2:170 (part); Horn, 1880, Trans. Amer. Entomol. Soc., 8:123; Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:121; Blatchley, 1910, The Coleoptera of Indiana, p. 1073 (misdet.).

Sternidius LeConte, 1873, Smithsonian Misc. Coll., 265:234; Dillon, 1956, Ann. Entomol. Soc. Amer., 49(3):208; Arnett, 1960, Beetles of the United States, pp. 872, 891; Dillon and Dillon, 1961, A manual of common beetles of eastern North America, p. 640; Lewis, 1977, Pan-Pacific Entomol., 53:195.

Leiopus; Casey, 1913, Mem. Coleoptera, 4:310; Knull, 1946, Ohio Biol. Surv. Bull., 39:248 (misdet.).

Form usually small (less than ten millimeters), moderately robust, oblong, covered with short pubescence which is usually cinereous to tawny; elytra usually containing small spots or callosities and separate discal and epipleural maculae. Head impunctate except for a few setigerous punctures, especially near eyes; frons usually subconvex; eyes strongly emarginate with lower lobes larger than upper; antennae linear, cylindrical, annulate, distinctly longer than body, and subequal in both sexes. Pronotum usually wider than long with acute lateral tubercles at

basal third, basal transverse sulcus complete beneath; disk usually minutely punctate with punctures much smaller than those of elytra, frequently obscured by pubescence, three small callosities in the form of an inverted triangle usually present. Elytra about twice as long as broad, densely punctate, becoming less so apically, sides subparallel to about apical third, then convergent to sutural margin; costae four in number (not including sutural margin or ventrum of epipleura), variable in prominence within each species, each usually containing a variable number of minute callosities (larger callosities usually present at or behind middle, commonly associated with a macula which is variable in position and extent between species, and at times within species); epipleural maculae present or not; disk lacking distinct tubercles, apices obliquely truncate, or rounded to suture. Scutellum small, rounded to triangular, pubescent. Ventral surface densely punctate, pubescent, mottled or not; prosternal process between one-tenth and one-fourth as wide as procoxal cavity, mesosternal process usually one-half to three-fourths as wide as mesocoxal cavity. Legs with posterior tibiae usually dark at distal one-third; posterior tarsi dark, with first segment about as long as two following. Abdominal sternites with fifth segment at least twice as long as fourth in females, less than twice as long in males, apex notched to emarginate.

This genus is characterized by its small size, lack of distinct tubercles on the pronotal and elytral disks, placement of the acute lateral pronotal tubercles at the basal third and the uninterrupted basal transverse sulcus. It may be separated from other small acanthocine genera inhabiting the geographical area covered in this paper as follows: *Amniscus*, by the nontuberculate disk of the pronotum and the shape and position of the lateral tubercles; *Styloleptus*, by the absence of acute lateral pronotal tubercles; *Astyleiopus*, by the uninterrupted basal transverse sulcus; *Ceratographis* by the absence of long flying hairs on the elytral disk; and from *Lepturges* and *Urgleptes* by the lateral pronotal tubercles which are placed behind the basal third and project strongly backward, and the absence of the three discal callosities.

LeConte separated *Sternidius* from its Old World counterpart *Leiopus* because of differences in the shape of the mesosternum.

Type species.—*Lamia alpha* Say (Dillon desig., 1956).

Many members of this genus have been and are difficult to define because of the structural variation which may be constant in one species and variable in others. The placement of the maculae appears to be the most reliable character for species diagnosis. In forms where the integument is especially dark, preventing macular contrast, determination is much more difficult. This is also true for many worn, faded and rubbed specimens, since the placement of epipleural pubescence is important in the differentiation of some species. In these specimens, mottling, antennal segment ratios, width of the procoxal process, and other characteristics will have to be employed for diagnosis. Some individuals cannot be placed with certainty.

KEY TO THE SPECIES OF *STERNIDIUS* OF AMERICA NORTH OF MEXICO

1. Pronotum not distinctly mottled; elytral disk with less than three distinct maculae, usually less than 8 mm in length 2
- Pronotum distinctly pale and dark mottled; elytra with three dis-

- cal maculae, usually more than 8 mm in length. Southern Texas *wiltii*
- 2(1). Antennae with fourth segment subequal to or shorter than scape or if fourth segment slightly longer, form robust with top of humeri dark or black 3
- Antennae with fourth segment usually distinctly longer than scape .. 5
- 3(2). Elytra with post median dark maculae elongate, extending obliquely backward, usually attaining lateral margin; top of humeri black or very dark 4
- Elytra with discal maculae short, not extending laterally beyond middle of elytral disk; tops of humeri rarely distinctly dark. Southern Arizona to Texas *centralis*
- 4(3). Epipleural maculae distinct, usually well demarcated and extending onto elytral disk; elytra with post median maculae distinctly interrupted. Texas *mimeticus*
- Epipleural maculae absent or vague, usually not extending onto elytral disk; elytra with post median maculae not interrupted. Eastern United States to eastern Texas *schwarzi*
- 5(2). Epipleura without distinct maculae 6
- Epipleura with dark maculae 9
- 6(5). Elytral apices obliquely truncate to emarginate 7
- Elytral apices acutely rounded; disk usually with a paler area behind basal gibbosities. Montane southern Arizona *chemsaki*
- 7(6). Antennae not or scarcely mottled; elytra with or without post median maculae, post median callosities larger than costal callosities 8
- Antennae distinctly mottled; elytra without post median maculae, post median callosities small, usually about the size of the costal callosities; punctures distinct. Eastern United States to Texas ...
- *punctatus*
- 8(7). Elytra with post median maculae usually absent; integument light brown to piceous. Eastern United States to Texas *misellus*
- Elytra with distinct post median maculae which may ascend along sutural margin to attain scutellum, usually with a less distinct parallel macula behind; integument usually light reddish brown. South-eastern United States *vittatus*
- 9(5). Epipleural maculae poorly delineated, or if more or less well defined, triangular or irregular in outline, not primarily linear or semilunar 10
- Epipleural maculae usually distinct, well demarcated, linear or commonly semilunar 11
- 10(9). Epipleural maculae arising at or behind humeri at about basal fifth, then continuing obliquely to include lateral third of disk stopping diffusely at approximately mid-elytra. See Figure 8; fourth antennal segment usually subequal to or shorter than scape. Southern Texas *texanus*
- Epipleural maculae indistinct, diffuse, usually enveloping superior portion of epipleura, the humeri and basal gibbosities, and may connect posteriorly with lateral margin of discal macula; fourth

- antennal segment longer than scape. Southeastern United States to Texas *floridanus*
- 11(9). Epipleural maculae extending forward to include tops of humeri .. 12
Epipleural maculae not attaining humeri 14
- 12(11). Epipleural maculae distinctly vittiform, not or rarely extending onto disk 13
Epipleural maculae not vittiform, a portion extending dorsally to include part of disk. Eastern United States *rusticus*
- 13(12). Elytra with apices rounded to suture, costae and post median macula without callosities; antennae with fifth segment longer than scape. Montane southern Arizona *incognitus*
Elytral apices obliquely truncate (rarely rounded to sutural margin), costae and post median macula containing callosities; fifth segment usually subequal to scape. Eastern United States to California *alpha*
- 14(11). Elytral apices rounded to suture, or if rarely slightly truncate, pubescence generally uniformly grey. Species of western United States .. 15
Elytral apices emarginate to obliquely truncate; pubescence primarily tan or shades of brown. Eastern United States to New Mexico ..
..... *fascicularis*
- 15(14). Elytra with lateral boundaries of post median macula obscure, attaining lateral margins or not; epipleural maculae with bases arising from ventrum of epipleura. Arizona *decorus*
Elytra with epipleural maculae small, well demarcated, with bases arising from about dorsal half of epipleura and surrounded by condensed white pubescence; discal maculae well defined, not attaining lateral margin, surrounded by white condensed pubescence. Arizona to western Texas *imitans*

Sternidius wiltii (Horn)

- Liopus wiltii* Horn, 1880, Trans. Amer. Entomol. Soc., 8:124; Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:123.
Leiopus wiltii; Casey, 1913, Mem. Coleoptera, 4:310; Linsley and Martin, 1933, Entomol. News, 44:182; Vogt, 1949, Pan-Pacific Entomol., 25(4):181.
Sternidius wiltii; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:209; Turnbow and Wappes, 1978, Coleop. Bull., 32(44):370.

Male. — Form large, generally robust; integument dark reddish brown, covered predominantly with greyish white or tan pubescence; elytra usually with three distinct macular areas on disk. Head densely pubescent; eyes with lower lobes about one and one-half times height of genae; antennae annulate and distinctly mottled with hoary pubescence, fourth segment variable in length relationship to first and shorter than third; third segment subequal to or longer than first (fifth segment shorter than first, third, or fourth); remaining segments gradually decreasing in length. Pronotum about one and one-half times wider than long, basal margin subequal or wider than anterior margin; discal callosities usually absent or reduced; punctures distinct, obscured by pubescence which is dense, usually hoary and distinctly mottled (tan influence may be present on each side of middle

of disk). Elytral apices rounded or obliquely truncate, costae indistinct, bearing a variable number of well defined distinct black tufted callosities, larger posterior median callosities absent; basal gibbosities black, prominent; punctures decreasing in depth, size and proximity apically; macular pattern quite constant, consisting of black epipleural maculae at basal third arising from about mid portion of epipleura extending dorsally to include about one-third of elytral disk, a dark area over basal gibbosities, and two slightly undulating discal maculae, one placed at or behind middle extending to lateral margin, and the other parallel posteriorly (Fig. 1); pubescence primarily hoary, mottled and demarcated by the three dark discal fasciae; tawny pubescence when present, usually on basal third and along inferior border of the maculae. Ventral surface distinctly pubescent with abdominal and thoracic sternites mottled; prosternal process narrow, one-eighth to one-fifth as wide as anterior coxal cavity; mesosternal process broader than one-half mesocoxal cavity. Legs with femora mottled, posterior tibiae with distal one-fourth dark. Abdomen with fifth sternite a little shorter than twice length of fourth.

Female.—Fifth abdominal sternite more than twice as long as fourth, otherwise similar to male.

Length.—7.4–9.6 mm.

Type locality.—Texas.

Range.—Southern Texas.

Flight period.—May and June.

Host plants.—*Acacia farnesiana* (L.) Wild., and probably *Prosopis* (F. T. Hovore, pers. comm.).

Diagnosis and discussion.—This species is distinctive by its large size, mottled pronotal disk, and the trimaculate elytral disk. Although it appears somewhat out of place in this genus, its characters adhere to the generic definition, and it does not appear to have close affinities with other United States acanthocine genera.

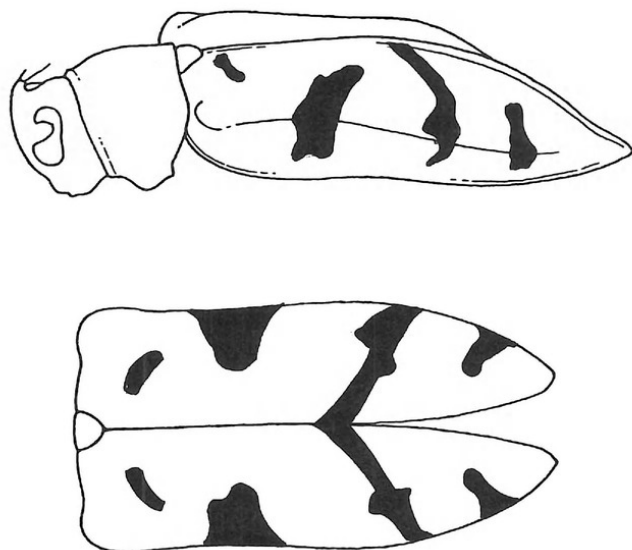
Sternidius centralis (LeConte)

Liopus centralis LeConte, 1884, Trans. Amer. Entomol. Soc., 12:24; Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:123.

Leiopus centralis; Casey, 1913, Mem. Coleoptera, 4:310.

Sternidius centralis; Dillon, 1956, Ann. Entomol. Soc. Amer., 49(3):218; Lewis, 1977, Pan-Pacific Entomol., 53:196.

Male.—Form small, moderately robust; integument reddish brown to piceous, densely clothed with a combination of hoary and tawny pubescence; elytra with black maculae and minute black tubercles. Head mottled with dense brownish and hoary pubescence; eyes with lower lobes variable in height relationship to genae; antennae annulate and distinctly mottled becoming less so distally; fourth segment subequal to first (rarely shorter than first), third segment longer than first or fourth, fifth segment shorter than first, third or fourth, combined fourth and fifth segments shorter than combined first and third. Pronotum transverse, basal margin subequal to or narrower than apical margin; disk usually with three callosities; punctation dense, shallow, minute, at least partially obscured by pubescence; pubescence variable, but predominately hoary on side margins and lateral disk, and mixed with fulvous in the middle, forming a more or less distinct vittate pattern. Elytra twice as long as wide; apices obliquely truncate to rounded with



Figures 1-17. Diagrammatic representations of elytral maculae of maculate species.

Figure 1. *S. wiltii* (Horn).

feeble truncations at sutural margin; costae variable, but usually distinct, partially obscured by pubescence and containing distinct, minute black tufted tubercles; discal post median callosities reduced in number; limited to an elongated callous on second costa; basal gibbosities moderate; integument brown with epipleural maculae placed just behind basal one-fourth, extending inferiorly to just behind middle, and dorsally to barely incorporate a small portion of the disk (Fig. 2), and a common discal, more or less triangular, black macula with the apex at mid elytra, the base at apical third, and lateral extension terminating before middle of disk; punctures subconfluent, partially obscured by pubescence, much larger than those on pronotal disk, largest behind humeri; pubescence made up of hoary and tawny, occasionally condensed over humeri, along suture at basal half and along costae at apical half. Ventral surface with thoracic sternites distinctly mottled, abdominal sternites uniformly hoary to cinereous pubescent; prosternal process one-fourth to one-third as wide as procoxal cavity; mesosternal process one-half to two-thirds as wide as mesocoxal cavity. Legs with femora mottled, distal portion of tibiae and tarsi black. Abdomen with fifth sternite less than twice as long as fourth.

Female.—Fifth sternite about twice as long as fourth, otherwise similar to male.

Length.—4.9–7.1 mm.

Type locality.—Arizona.

Range.—Southern Arizona to Culberson County, Texas.

Flight period.—July to September.

Host plant.—Reared from *Prosopis juliflora* (Schwartz), D.C., Sabino Canyon, Pima County, Arizona, July 1919 (G. Hofer).

Diagnosis and discussion.—This species has been confused with *S. decorus* (Fall). It differs from that species in having distinct costal callosities, a well circumscribed post median macula (which never reaches the lateral elytral border), and the relatively short fourth and fifth antennal segments. The host plant is also different. It does not appear to have any close relatives within the boundaries of

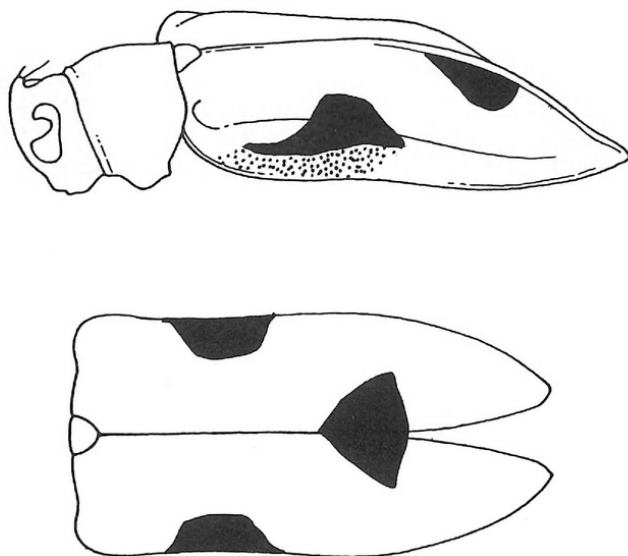


Figure 2. *S. centralis* (LeConte).

the United States. One specimen was examined from Van Horn, Texas, collected by W. F. Barr, July 4, 1941.

***Sternidius mimeticus* (Casey)**

Leiopus mimeticus Casey, 1891, Ann. New York Acad. Sci., 6:49; Casey, 1913, Mem. Coleoptera, 4:315 (part).

Leiopus houstoni Casey, 1913, Mem. Coleoptera, 4:315; Vogt, 1949, Pan-Pacific Entomol., 25(4):182.

Sternidius mimeticus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:210; Dillon, 1961, A manual of common beetles of North America, p. 640.

Male.—Form small, moderately robust; integument reddish brown, obscured by grey and tan pubescence; elytra with discal and lateral maculae. Head with face usually densely pubescent and mottled; eyes with lower lobes one and one-half to one and three-fourths genal height; antennae slender, distinctly mottled (mid portion of fourth segment may be dark), fourth segment usually shorter than first (occasionally subequal), fifth distinctly shorter than the first, third or fourth segments, third usually longer than fourth and subequal to or longer than first, remaining segments gradually decreasing in length. Pronotum about one and one-half times wider than long, sides diverging from anterior margin to lateral tubercles placed at basal third, then abruptly constricted to form basal transverse sulcus; basal margin usually as wide or slightly wider than apical margin; callosities usually inconspicuous, and frequently hidden by pubescence; punctures usually hidden beneath pubescence which is dense, recumbent, and quite uniformly composed of tan, brown, or cinereous and hoary; pubescence may be unicolorous or tinted with different proportions of tan and cinereous or with a lateral condensation of hoary. Elytra slightly more than twice as long as wide; apices obliquely truncate; costae usually prominent, containing a variable number of small callosities (numerous to essentially absent except along suture); costal callosities absent behind post median macular demarcation, larger posterior median callosities obscured

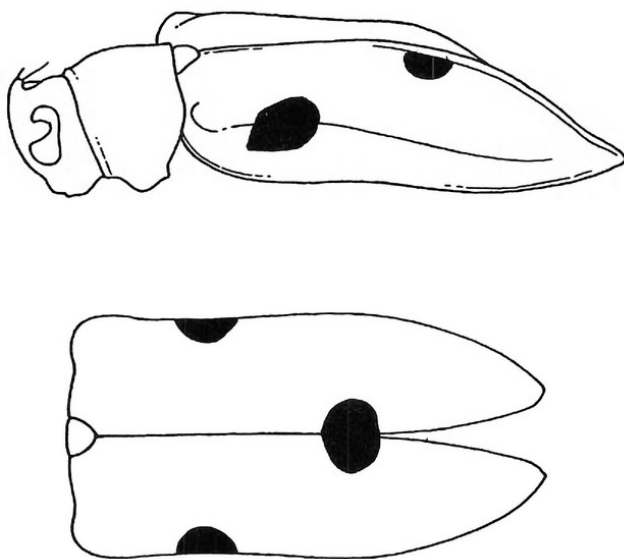


Figure 3. *S. imitans* (Knull).

and covered by pubescence (callosity on third costa inferior to fourth); basal gibbosities usually not prominent; punctures usually concealed by pubescence; elytral maculae represented by black or dark on top of humeri, epipleural maculae which are distinct, semilunar, and are placed behind humeri extending posteriorly to behind middle, and dorsally to include one-fourth to one-half of the disk, and a black discal oblique macula diverging from behind middle to third costae, undulating forward at that point then again diverging at about forty-five degrees to lateral margin (Fig. 7); pubescence dense, pattern variable, uniformly grey or tan, or composed of a mixture of tan, hoary and cinereous hairs (at times pubescence is hoary or grey in front of post median macula, and tan behind); hoary pubescence may coalesce along costae anteriorly, but posterior extension is rare; the pubescence extends laterally over humeri and behind middle demarcating epipleural maculae (a fine tan or black pubescence may be present over the macula partially obscuring its boundaries), discal macula and discal callosities are covered with black pubescence. Ventral surface densely pubescent with abdominal and thoracic sternites distinctly mottled; prosternal process one-seventh to one-third as wide as anterior coxal cavity, mesosternal process more than one-half as wide as coxal cavity. Legs with femora distinctly mottled, tibiae and tarsi dark distally.

Abdomen with tip of fifth sternite slightly concave, about one-half as long as fourth segment.

Female.—Fifth abdominal sternite approximately twice as long as fourth, otherwise similar to male.

Length.—4.2–8.2 mm.

Type locality.—Of *mimeticus*, Brownsville, Texas; *houstoni*, Brownsville, Texas.

Range.—Texas, from Jefferson Davis and Brewster Counties, east to Dallas and Bexar Counties, and south to Cameron County.

Flight period.—May to July.

Host plants.—*Celtis occidentalis* (L.), *Leucaenia pulverulenta* (Schlecht.) Benth. (F. T. Hovore, pers. comm.).

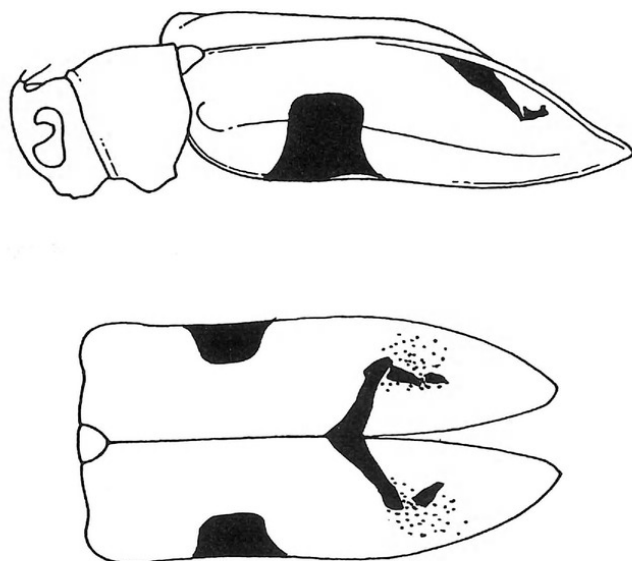


Figure 4. *S. decorus* (Fall).

Diagnosis and discussion.—This species appears to be closely related to *S. schwarzi* (Hamilton), but is separable from that species by its distinctly interrupted post median discal macula and distinct epipleural maculae. It differs from light forms of *S. fascicularis* (Harris) by its shorter fourth and fifth antennal segments and its dark anterior humeral margins. Separation from *S. centralis* (LeConte) should present no problem as the discal macula does not extend to the lateral margin in that species. *S. mimeticus* is commonly attracted to light.

***Sternidius schwarzi* (Hamilton)**

Liopus schwarzi Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:124.

Leiopus schwarzi; Casey, 1913, Mem. Coleoptera, 4:316.

Sternidius schwarzi; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:212; Turnbow and Hovore, 1979, Entomol. News, 90(5):225.

Leiopus moderator Casey, 1913, Mem. Coleoptera, 4:314. New synonymy.

Sternidius moderator; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:212.

Male.—Form small, moderately robust; integument reddish brown, covered with tan and hoary pubescence; elytra with distinct maculae. Head with face pubescent; eyes with lower lobes variable in relation to genal height (generally one and one-half to two times as tall as genae); antennae distinctly mottled, fourth segment subequal to or shorter than first, third segment longer than fourth, subequal to or longer than first, fifth shorter than first, third or fourth. Pronotum about twice as wide as long; basal margin usually subequal in length to anterior margin; punctures, at least in part, obscured by vestiture which is dense and uniformly grey (rarely with increased density along sides). Elytra with apices obliquely truncate; costae variable in prominence but usually distinct and usually bearing uniform black callosities; larger post median callosities absent or hidden in discal macula; basal gibbosities variable in prominence; punctures obscured by pubescence; macular pattern includes black or dark anterior margins of humeri, indistinct epipleural maculae placed behind humeri, extending posteriorly to or slightly behind middle and rarely extending dorsally to include up to one-third

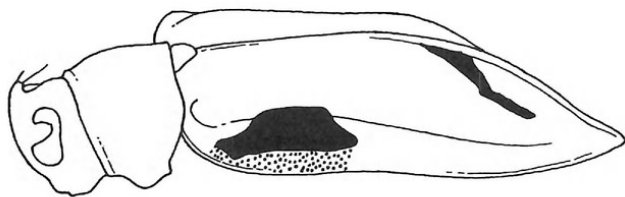


Figure 5. *S. fascicularis* (Harris).

of the elytral disk (the boundaries are poorly demarcated), and a distinct, linear oblique nonundulating discal post median macula placed well behind middle, composed of black pubescence extending backward from suture through callosities (forming an inferior sutural angle which is distinctly greater than forty-five degrees), attaining or not the lateral margin (Fig. 6), occasionally an indistinct parallel macula is present posteriorly composed of slightly darker tan pubescence; pubescence is commonly uniformly grey in front of post median macula (rarely with hoary coalescence along costae), and tan or rust colored behind it. Ventral surface with pubescence not obscuring surface; abdominal and thoracic sternites distinctly mottled; prosternal process about one-third as wide as procoxal cavity, mesosternal process more than one-half width of mesocoxal cavity. Legs with femora distinctly mottled; posterior tibiae with distal one-fourth to one-third usually dark. Abdomen with fifth sternite slightly concave at apex, less than twice as long as fourth.

Female.—Fifth abdominal sternite more than twice as long as fourth, otherwise similar to male.

Length.—5.5–7.8 mm.

Type locality.—Of *schwarzi*, Key West Florida; *moderator*, Washington, D.C.

Range.—This is primarily a southeastern species ranging from Washington D.C. to the Florida Keys, and west to Orange County, Texas.

Flight period.—April to June.

Host plants.—*Prunus serotina* Ehrh., *Morus*, *Diospyros virginiana* L., *Lysiloma* sp., *Metopium toxiferum* (L.) Krug and Urban, *Piscidia piscipuls* (L.) Sarg, and *Rhus*.

Diagnosis and discussion.—This species is closely related to *S. mimeticus* (Casey). It may be separated from that species by the nonundulating discal fascia which is placed further posteriorly at a less acute angle, and the poorly defined lateral maculae which rarely extend dorsally to include a portion of the disk. It may be differentiated from *S. texanus* (Casey) (another species with relatively short fourth and fifth antennal segments) by the presence of dark anterior humeral margins. Their ranges apparently are allopatric. *S. moderator* (Casey) is based on a specimen with relatively subobsolete costae, a variable character in many members of this genus.

Sternidius chemsaki Lewis

Sternidius chemsaki Lewis, 1977, Pan-Pacific Entomol., 53:196.

Male.—Form elongate; integument reddish brown to black, covered with cinereous pubescence; elytra with small linearly spaced black tufts and without black maculae. Head with frons covered with cinereous pubescence; antennae

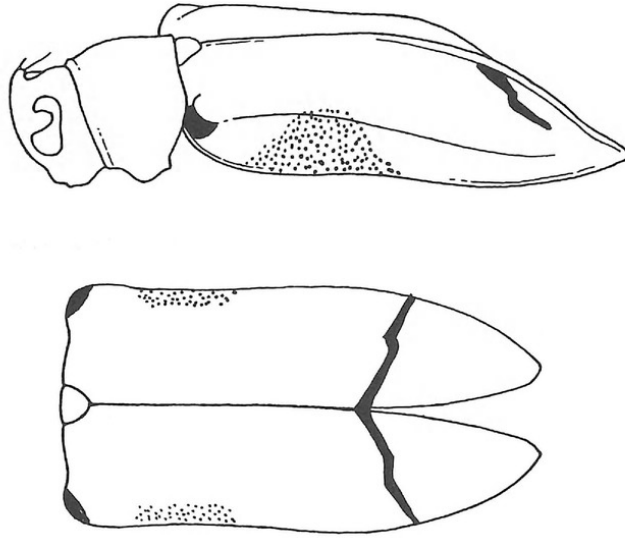


Figure 6. *S. schwarzi* (Hamilton).

scarcely mottled, fourth segment longer than first, subequal to or shorter than third which is longer than first, fifth segment subequal to or slightly longer than first, remaining segments gradually decreasing in length. Pronotum transverse, widest across lateral tubercles, apex wider than base; callosities present to obsolete; disk with punctures small, dense, noncontiguous, partially obscured by uniform cinereous pubescence. Elytra slightly more than twice as long as wide, apices prolonged and acutely rounded; disk with prominent piceous basal gibbosities, immediately behind which, on each elytron, is an obliquely placed more or less ferrugineous depression which contrasts with the darker integument behind; costae distinct, evanescent before apices and containing scattered black callosities in variable number with larger post median callosities on the second costae at about apical third; punctures dense, separate, partially obscured by pubescence; macular

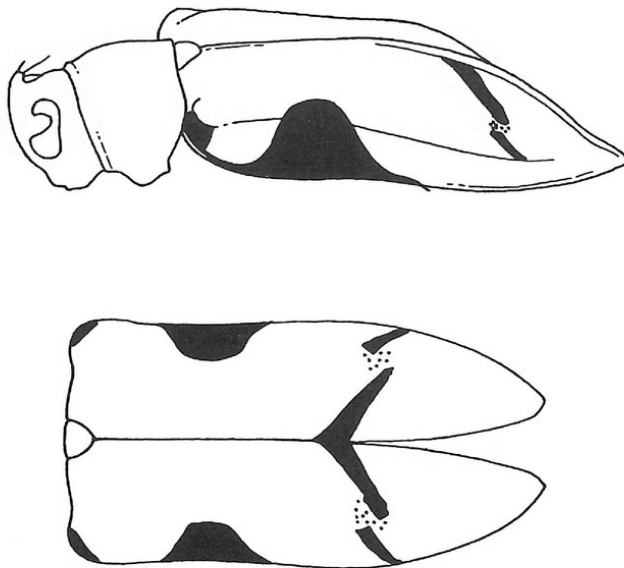


Figure 7. *S. mimeticus* (Casey).

areas absent; pubescence recumbent, cinereous (sometimes with tawny reflections) and with some condensation along costae, with black present on basal gibbosities, and on costal callosities. Ventral surface with pubescence scarcely mottled on thoracic sternites, uniform on abdominal sternites; prosternal process variable in size, usually one-sixth to one-fourth as wide as procoxal cavity; mesosternal process slightly more than one-half as wide as mesocoxal cavity. Legs with femora and tibiae indistinctly mottled, usually darker distally with cinereous to black pubescence. Abdomen with fifth sternite subequal to or slightly longer than fourth.

Female.—Fifth abdominal sternite at least twice as long as fourth, otherwise similar to male.

Length.—5.6–8.9 mm.

Type locality.—Madera Canyon, Santa Cruz County, Arizona.

Range.—Southern Arizona, Santa Rita, and Huachuca Mountains (Cochise and Santa Cruz Counties).

Flight period.—July to September.

Host plants.—*Quercus*?

Diagnosis and discussion.—This species resembles some larger specimens of *S. misellus* (LeConte). It differs from that species in having the elytra more than twice as long as wide with the apices acutely rounded. It is known only from Cochise and Santa Cruz Counties, Arizona.

***Sternidius punctatus* (Haldeman)**

Amniscus punctatus Haldeman, 1847, Trans. Amer. Phil. Soc., (2)10:49.

Sternidius punctatus; LeConte, 1873, Smithsonian Misc. Coll., 264:235.

Liopus punctatus; Horn, 1880, Trans. Amer. Entomol. Soc., 8:124; Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:125; Blatchley, 1910, The Coleoptera of Indiana, p. 1075.

Leiopus punctatus; Casey, 1913, Mem. Coleoptera, 4:311; Knull, 1946, Bull. Ohio Biol. Surv., 39:249; Craighead, 1923, Canada Dept. Agri. Tech. Bull., (n.s.) 27: 117.

Leiopus maculipennis Blatchley, 1922, Can. Entomol., 45:31. New synonymy.

Sternidius fascicularis fascicularis; Dillon, 1956, Ann. Entomol. Soc. Amer., 49: 213 (part).

Sternidius fascicularis maculipennis; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:213.

Male.—Form small; integument reddish brown to blackish brown, covered with tawny pubescence and with a transverse hoary fascia about mid elytra; elytra usually with prominent costal callosities; post median callosities, discal and lateral maculae obsolete. Head with face slightly mottled; eyes with lower lobes variable in height relationship to gena, but usually subequal; antennae mottled, fourth segment longer than first, usually shorter than third, fifth segment shorter than third and fourth and usually shorter than first, remaining segments gradually decreasing in length. Pronotum about twice as wide as long; basal margin usually shorter than apical; callosities generally reduced; punctures minute, only partially obscured by pubescence; pubescence tawny, interspersed with hoary, and occasionally with hoary condensation laterally; sides without maculae, suffused with hoary pubescence. Elytra slightly more than twice as long as broad; apices obliquely

truncate to emarginate; costae prominent or not, containing numerous uniformly spaced callosities, larger posterior median callosities linear or lacking; basal gibbositities usually not prominent punctation distinct with punctures only slightly finer and more shallow apically, not significantly obscured by pubescence; epipleural and discal maculae lacking; pubescence tawny with a hoary transverse slightly undulating fascia placed at or behind middle which usually extends to lateral margins and occasionally to ventrum of epipleura, the humeral portions of the disk may be suffused with hoary as well, with small scatterings over the remaining disk (when the humeral and median hoary fascia extend laterally to reach the epipleural ventrum, it makes the epipleura appear maculate). Ventral surface covered with greyish pubescence, thoracic sternites usually mottled; prosternal process about one-sixth to one-third as wide as anterior coxal cavity, mesosternal process two-thirds to three-fourths as wide as mesocoxal cavity. Legs with femora usually mottled, tibiae distally dark or not, frequently with a hoary annulation at apex and near base. Fifth abdominal sternite less than twice as long as fourth with apex usually slightly concave.

Female.—Fifth abdominal sternite at least twice as long as fourth, otherwise similar to male.

Length.—3.5–6.4 mm (usually 5.5–6 mm).

Type locality.—Of *punctatus*, not listed; *maculipennis*, Dunedin, Florida.

Range.—Eastern United States from New Jersey to Florida, west to Texas and Missouri.

Flight period.—May to July.

Host plants.—*Parthenocissus quinquefolia* (L.) Planch.; *Diospyros virginiana* L.; *Cornus florida* (L.); “*Prunus*” and plum.

Diagnosis and discussion.—This species is quite constant in form but when the humeral and discal hoary pubescence extends laterally to reach the ventrum of the epipleura, it makes the sides appear maculate, thus causing confusion with *S. fascicularis* (Harris). (The type of *S. fascicularis* has dark brown integument, with white pubescence over the humeri and behind the middle, but epipleural and discal maculae are present, although indistinct because of the dark integument. This, and the presence of well developed post median callosities make it distinct from *S. punctatus*.) The fourth antennal segment is usually shorter than the third and the fifth segment slightly shorter than the first in *S. punctatus*, whereas in *S. fascicularis* (Harris), the fourth and third, and fifth and first segments are subequal. It differs from *S. misellus* (LeConte) by having mottled antennae, subobsolete post median discal callosities, and generally uniform punctation which is rarely obscured by pubescence. From *S. floridanus* (Hamilton), it may be separated by the smaller lower lobe of the eye and absent discal maculae.

Sternidius misellus (LeConte)

Liopus misellus LeConte, 1852, Jour. Acad. Nat. Sci. Philadelphia, 2:173.

Leiopus misellus; Casey, 1913, Mem. Coleoptera, 4:313.

Sternidius alpha misellus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:216.

Male.—Form generally small; integument light brown to piceous; pubescence usually quite uniform, greyish brown to cinereous; elytra with small, usually linear post median callosities, epipleura without distinct maculae. Head with face con-

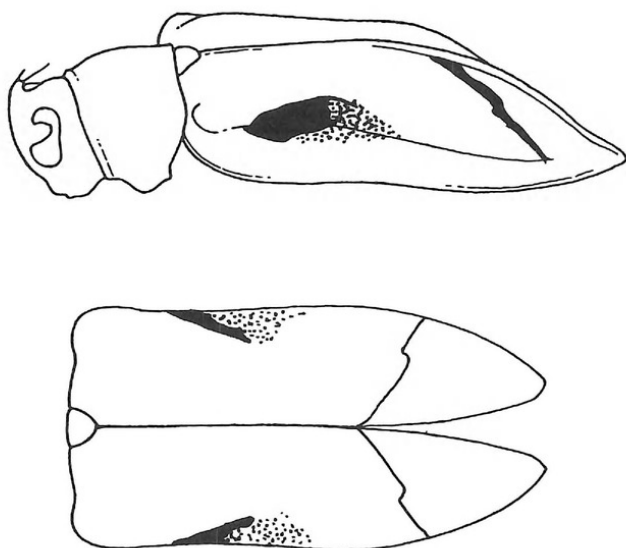


Figure 8. *S. texanus* (Casey).

taining sparse, recumbent, cinereous pubescence; eyes with lower lobes subequal to or slightly taller than genae; antennae not mottled except occasionally scape, fourth segment longer than first, subequal to third (rarely slightly shorter than third), fifth segment with length variable in relation to first, shorter than fourth, remaining segments decreasing in length. Pronotum not quite twice as wide as long; basal margin narrower than apical margin; discal callosities usually reduced; surface minutely, shallowly punctate, obscured by pubescence; pubescence cinereous to tawny, occasionally condensed laterally. Elytra about twice as long as wide, apices obliquely truncate, subtruncate, or emarginate; costae prominent or not, with or without a variable number of small, dark callosities; post median discal callosities usually linear and reduced, epipleural maculae absent or vague; discal maculae usually absent; basal gibbosities reduced; surface closely punctate, punctures largest at base, then gradually decreasing in size and density apically, partially obscured by pubescence; pubescence variable in color, tawny to cinereous, usually similar in hue to integument, occasionally condensed along anterior margin of median discal callosities, some white suffusion may be present but rarely does it extend behind middle of elytral disk. Ventral surface pubescent, rarely with slight mottling over thoracic sternites; abdominal sternites not mottled; prosternal process one-sixth or less as wide as procoxal cavity mesosternal process more than one-half as wide as mesocoxal cavity. Legs with femora not or indistinctly mottled, distal third of tibiae and tarsi darker. Fifth abdominal sternite with apex concave to notched, less than twice as long as fourth.

Female. — Fifth sternite at least twice as long as fourth, otherwise same as male.

Length. — 3.4–7.2 mm (usually 4–5 mm).

Type locality. — Illinois.

Range. — Eastern United States from Connecticut to Florida, and west to Kansas and Texas.

Flight period. — May to July.

Host plant. — *Quercus* sp., *Quercus velutina* Lam., *Castanea dentata* (Marsh.) Borkh, *Parthenocissus quinquefolia* (L.), *Diospyros virginiana* L.

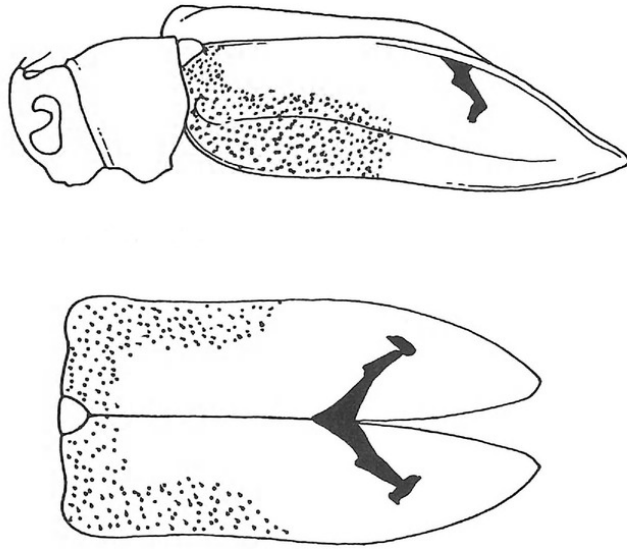


Figure 9. *S. floridanus* (Hamilton).

Diagnosis and discussion.—This species may be distinguished by its usually small form, the lower lobes of the eyes, which are usually subequal to or slightly taller than genae (very rarely twice as tall), relatively uniform pubescence of elytra, reduced or absent post median, and absent epipleural maculae. The pronotal discal callosities, which are usually reduced are more prominent in those forms with lighter pubescence. It can be separated from *S. alpha* (Say) by the absence of distinct epipleural maculae, and by the presence of uniform epipleural pubescence. The linear condensations of pubescence along the costae (frequently present in *S. alpha*) are not evident, and the two species utilize different host plants. *S. misellus* (LeConte) may be confused with *S. floridanus* (Hamilton), however it may be distinguished from that species by the nonmottled antennae, generally smaller lower lobe of the eye, and the (usually) subequal third and fourth antennal segments. From *S. vittatus* Dillon, it differs in lacking a distinct post median macula. From *S. punctatus* (Haldeman), it is readily separated by the lack of antennal mottling, the subequal third and fourth antennal segments, and the relatively narrow mesocoxal process. It appears to be related to *S. chemsaki* Lewis, but it lacks the prolonged elytra with rounded apices characteristic of that species.

Sternidius vittatus Dillon

Sternidius vittatus Dillon, 1956, Ann. Entomol. Soc. Amer., 49:219.

Male.—Form small; integument light reddish brown; elytra with discal maculae sometimes extending forward along suture to scutellum; epipleural maculae obsolete; costal callosities sparse. Head with pubescence recumbent; eyes with lower lobes one and one-third as tall as genae; antennae with scape sometimes lightly mottled, remainder of segments not significantly so, fourth segment longer than first, subequal to or slightly shorter than third, fifth segment shorter than first, third or fourth, remaining segments gradually decreasing in length. Pronotum less than twice as wide as long; basal and apical margins subequal; dorsal callosities present, varying only slightly in prominence; punctations minute; pubescence cinereous, only partially obscuring surface, denser over lateral portion of disk,

and uniform along sides. Elytra about twice as long as wide, apices obliquely truncate to emarginate; costae reduced, usually with only a few callosities; post median discal callosities prominent to vague (Fig. 10); basal gibbosities not prominent; punctures distinct, separated by their own diameter, decreasing in depth and density apically, partially or not obscured by pubescence; epipleural maculae absent, discal maculae extend obliquely backward through the post median callosities at an angle of about forty-five degrees, attaining or not the lateral elytral margin (a less distinct macula parallels this behind), and may extend forward along sutural margin to scutellum; pubescence tawny to white, not or only partially obscuring surface, with coalescence along anterior margin of discal macula, and the posterior half of the disk and epipleura (epipleura sparsely pubescent anteriorly). Ventral surface with thoracic sternites not or indistinctly mottled; prosternal process one-sixth to one-fourth as wide as procoxal cavity; mesosternal process about two-thirds as wide as mesocoxal cavity. Legs with femora not or indistinctly mottled, tibiae and tarsi dark distally. Fifth abdominal sternite with apex slightly concave, less than twice as long as fourth segment.

Female.—Fifth abdominal sternite twice as long as fourth, otherwise similar to male.

Length.—4.1–5.3 mm.

Type locality.—Lucedale, Mississippi.

Host plants.—Unknown.

Range.—Eastern United States from New Jersey to Mississippi.

Flight period.—April to June.

Diagnosis and discussion.—This species appears to be closely related to *S. rusticus* (LeConte) and may be synonymous with that species. It differs, however, by frequently exhibiting sutural extension of the discal maculae, and by the absence of distinct epipleural maculae.

Sternidius texanus (Casey)

Sternidius texanus Casey, 1913, Mem. Coleoptera, 4:315; Vogt, 1949, Pan-Pacific Entomol., 25(4):182.

Sternidius mimeticus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:210 (part).

Sternidius texanus; Hovore and Penrose, 1982, The S.W. Nat., 27:23–27.

Male.—Form small, moderately robust; integument dark brown to piceous; elytra with tan and hoary pubescence; epipleural maculae usually present. Head with face pubescent; eyes with height of lower lobes variable (from one to two times as tall as genae); antennae distinctly mottled, segmental relationships variable, fourth segment usually subequal to or smaller than first (occasionally slightly longer), shorter, subequal to or slightly longer than third, fifth segment shorter than first, third or fourth, remaining segments gradually decreasing in length. Pronotal width slightly more than twice the length, basal margin usually slightly narrower than apical margin, dorsal callosities not prominent; punctures partially obscured by pubescence, pubescence variably tan colored (an admixture of greyish or light tan may be present over lateral disk). Elytra about twice as long as wide with sides slightly rounded from humeri to basal third; apices broadly rounded to subtruncate; costae distinct to obsolete, small callosities present along the sutural margin and scattered, when present, on the remaining costae; posterior

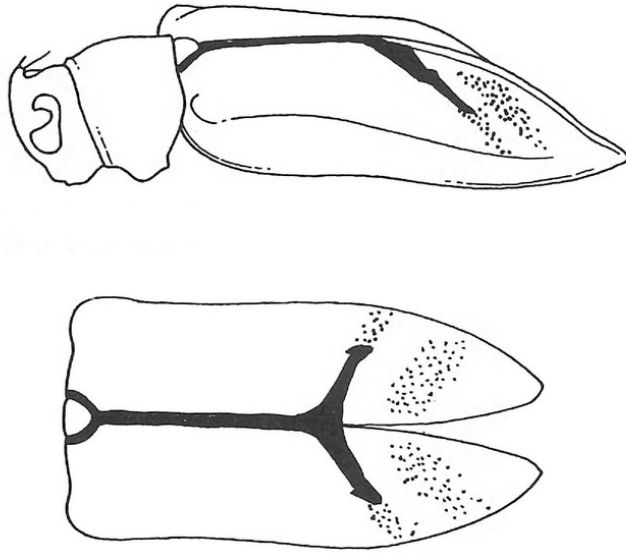


Figure 10. *S. vittatus* Dillon.

median callosities variably prominent, located behind middle, sometimes lacking on the third and fourth costae; basal gibbosities moderately developed to obsolete; punctures becoming finer and less dense apically, partially obscured by pubescence; epipleural maculae are located behind humeri at basal fourth on about dorsal fourth and extend dorsally and backward to include the lateral third of the disk, and inferiorly to or beyond mid elytra (Fig. 8) (they may be hidden by pubescence), discal maculae are commonly lacking, but when present, are formed by the coalescence of post median callosities; pubescence composed of varying shades of tan (which may be mottled), with whitish usually present along the anterior margins of post median callosities, and occasionally ascending along costae, a suffusion of white may be present over basal half of the disk in fully marked forms giving the appearance of a saddle, epipleural pubescence uniform, colored as apical portion of disk. Ventral surface pubescent, thoracic sternites mottled (sometimes indistinctly so), abdominal sternites uniformly pubescent; prosternal process narrow, from one-seventh to one-fifth as wide as procoxal cavity; mesosternal process more than one-half as wide as mesocoxal cavity. Legs with femora distinctly mottled; posterior tibiae usually not distinctly darker distally, posterior tibiae with first tarsal segment about as long as next two following. Fifth abdominal sternite with apex concave, less than one and one-half times as long as fourth.

Female.—Fifth abdominal sternite about twice as long as fourth, otherwise the same as in male.

Length.—4.5–6.6 mm.

Type locality.—Brownsville, Texas.

Range.—Southern Texas to southern Mexico.

Flight period.—May to July.

Host plants.—*Leucaenia pulverulenta* (Schlect.) Benth.

Diagnosis and discussion.—Fully marked specimens are very distinctive because of the placement of the epipleural maculae. This species is also characterized by its rounded form, relatively short fourth and fifth antennal segments, strongly

mottled antennae, and usual lack of a distinct dark annulus on the distal third of the posterior tibiae. This character will separate it from *S. mimeticus* (Casey) which is found in the same area. It differs from *S. alpha* (Say), by its short fourth and fifth antennal segments, and from *S. misellus* (LeConte) by the short antennal segments, mottled antennae, and characters given in the key. Examples have been taken on the host plant nocturnally, and are readily attracted to light. I believe that *S. texanus* (Casey) is synonymous with *S. naeviicornius* (Bates), representing the northern extension of that species, but since I have not seen the Bates' type, I have not implemented the synonymy.

***Sternidius alpha* (Say)**

Lamia alpha Say, 1826, Jour. Acad. Nat. Sci. Philadelphia, 5:270.

Amniscus alpha; Haldeman, 1847, Trans. Amer. Phil. Soc., (2)10:48.

Liopus alpha; LeConte, 1852, Jour. Acad. Nat. Sci. Phil., (2)2:172; Horn, 1880, Trans. Amer. Entomol. Soc., 8:124; Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:124; Blatchley, 1910, The Coleoptera of Indiana, p. 1074 (misdet.).

Leiopus alpha; Casey, 1913, Mem. Coleoptera, 4:314 (misdet.); Brimley, 1938, Insects of North Carolina, p. 218; Knull, 1946, Ohio Biol. Surv. Bull., 39:250.

Sternidius alpha alpha; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:214 (part); Dillon, 1961, A manual of common beetles of eastern North America, p. 640.

Amniscus alpha var. *divergens* Haldeman, 1847, Trans. Amer. Phil. Soc., 2(10):48; Leonard, 1926, Cornell Univ. Agr. Exp. Sta. Mem., 101:452.

Amniscus lateralis Haldeman, 1847, Trans. Amer. Phil. Soc., 2(10):48.

Liopus cinereus LeConte, 1852, Jour. Acad. Nat. Sci. Philadelphia, (2)2:173; Horn, 1880, Trans. Amer. Entomol. Soc., 8:124.

Leiopus cinereus; Casey, 1913, Mem. Coleoptera, 4:314 (misdet.); Leonard, 1926, Cornell Univ. Exp. Sta. Mem., 101:452; Brimley, 1938, Insects of North Carolina, p. 218; Knull, 1946, Ohio Biol. Sur. Bull., 39:250.

Amniscus vicinus Haldeman, 1847, Trans. Amer. Phil. Soc., 2(10):49.

Leiopus vicinus; Casey 1913, Mem. Coleoptera, 4:312; Leonard, 1926, Cornell Univ. Agr. Exp. Sta. Mem., 101:452.

Sternidius alpha vicinus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:214 (part); Kirk, 1969, South Carolina Agr. Exp. Sta. Tech. Bull., 1037:86.

Leiopus nelsonicus Casey, 1924, Mem. Coleoptera, 11:291.

Sternidius alpha misellus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:216 (part).

Sternidius alpha coloradensis Dillon, 1956, Ann. Entomol. Soc. Amer., 49:216. New synonymy.

Sternidius suturalis Dillon, 1956, Ann. Entomol. Soc. Amer., 49:218. New synonymy.

Male. — Form moderately small; integument reddish brown to piceous covered with variably colored pubescence; elytra with epipleural and discal maculae usually well defined. Head mottled or not; frons with recumbent pubescence; eyes with lower lobes usually one to one and one-half times (rarely twice) as high as genae; antennae annulate, mottled or not, fourth segment distinctly longer than first, third and fourth segments subequal, fifth segment subequal to first, shorter than third or fourth. Pronotum less than twice as wide as long, widest across lateral

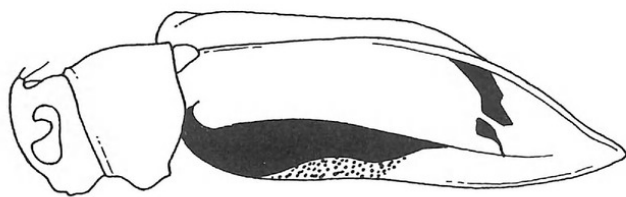


Figure 11. *S. alpha* (Say).

tubercles, basal and apical margins variable in relationship, callosities usually distinct; surface densely minutely punctate (punctures sometimes obsolete), partially obscured by pubescence; pubescence variable in color (usually tawny to cinereous), uniform or with coalescence over the lateral portion of the disk and between the callosities in varying degree, commonly sparse along middle of sides allowing the integument to show through and appear vittate. Elytra about twice as long as wide, apices obliquely truncate to emarginate (very rarely rounded); costae semiprominent to subobsolete, containing small callosities varying in prominence and number; post median callosities present behind middle on second, third, fourth, and occasionally fifth costae (lateral margin), most prominent on the second costae, third costal callosity usually inferior to second, and fourth adjacent to third (fourth callosity may be absent and the third reduced) (Fig. 14); basal gibbosities prominent to obsolete; punctures dense, closely, gradually decreasing in size, depth, and proximity apically, commonly obscured by pubescence especially in the greyish more uniformly pubescent forms; epipleural maculae linear, placed at about middle extending forward to top of humeri (the darkest portion placed along the dorsal half of each epipleuron); discal maculae, when present, variable, extending backward through the post median callosities and occasionally extending forward along the suture to the scutellum; pubescence usually dense, recumbent, varying from uniformly grey, whitish, tawny or cinereous, to a combination of these colors. Ventral surface pubescent, thoracic sternites usually mottled, abdominal sternites usually not mottled; prosternal process from one-tenth to one-fourth as wide as procoxal cavity (usually one-sixth to one-fourth); mesosternal process about one-half as wide as mesocoxal cavity. Legs with femora usually mottled, tibiae and tarsi dark. Fifth abdominal sternite subtruncate, slightly concave or shallowly notched, less than twice as wide as fourth.

Female.—Fifth abdominal segment at least twice as long as fourth, otherwise similar to male.

Length.—4.3–8.2 mm (usually 6–7 mm).

Type locality.—Of *alpha*, Pennsylvania; *nelsonicus*, Nelson Co., Virginia; *lateralis*, west New York; *divergens*, Pennsylvania; *vicinus*, not listed; *cinereus*, Georgia; *coloradensis*, Colorado Springs, Colorado; *suturalis*, Rockdale, Texas.

Range.—California, Arizona, Idaho, Colorado, to eastern seaboard, south to Florida.

Flight period.—April through July.

Host plants.—*Rhus glabra* (L.), *Rhus hytra* (L.), *Rhus copallina* (L.), *Rhus typhina* Torner, *Acer negundo* L., *Platanus*, *Carya*, “oak twigs”?, “*Salix*”?

Diagnosis and discussion.—This is a variable species with numerous color patterns. When whitish coalescence is present, it involves some or part of the following: the basal gibbosities, basal lateral margin, sutural margin and costae

anteriorly, anterior margin of the discal macula when present, and frequently bordering the costae posteriorly. Note: in those forms which exhibit variably colored pubescence, the epipleural vittae may be less distinct, however the antennae are usually distinctly mottled in these forms which will help distinguish them from *S. misellus* (LeConte). *S. alpha* differs from *S. fascicularis* (Harris) by the linear epipleural maculae which extend to the top of the humeri (not attenuated by pubescence extending laterally over shoulder), by the usually smaller lower lobe of the eye, and by commonly possessing white pubescence along the costae posterior to discal maculae. It also is separable from *S. rusticus* (LeConte) by its generally larger form, lack of discal extension of the epipleural maculae, and the subequal third and fourth, and fifth and first antennal segments. From *S. incognitus* Lewis, it differs in having subtruncate to emarginate apices, the fifth antennal segment not usually longer than the first, and distinct callosities along the elytral costae. It may be separated from *S. misellus* (LeConte) by its distinct vittae and mottled ventral surface. *S. suturalis* Dillon is based on a specimen which has the median discal dark area extending forward along the sutural margin. This is seen often in forms with unicolorous discal pubescence, however, this is not a predictable characteristic of these forms. (A series reared from *Acer* in South Dakota exhibits a sutural vittae in some specimens and not in others.) *S. alpha coloradensis* Dillon is a typical *S. alpha* with reduced discal maculae and a relatively uniform pubescent pattern. *S. nelsonicus* (Casey) is a uniformly dark, pubescent specimen which is structurally indistinguishable from, and intergrades with, the other forms of *S. alpha*.

Sternidius fascicularis (Harris)

Lamia (*Mesosa*) *fascicularis* Harris, 1836, Trans. Hartford Nat. Hist. Soc., 1:68, pl. 1, fig. 9.

Amniscus fascicularis; Haldeman, 1847, Trans. Amer. Phil. Soc., 2(10):48.

Leptostylus fascicularis; LeConte, 1852, Jour. Acad. Nat. Sci. Philadelphia, (2)2:170.

Liopus fascicularis; Blatchley, 1910, The Coleoptera of Indiana, p. 1074 (misdet.).

Leiopus fascicularis; Leonard, 1926, Cornell Univ. Agr. Exp. Sta. Mem., 101:452; Knull, 1946, Ohio Biol. Surv. Bull., 39:250.

Sternidius fascicularis fascicularis; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:213 (part).

Sternidius fascicularis; Kirk, 1969, South Carolina Agr. Exp. Sta. Clemson Univ. Tech. Bull., 1033:86.

Liopus xanthoxyli Shimer, 1868, Trans. Amer. Entomol. Soc., 2:7.

Leiopus dentatus Casey, 1913, Mem. Coleoptera, 4:310.

Leiopus testaceus Casey, 1913, Mem. Coleoptera, 4:311.

Leiopus pleuralis Casey, 1913, Mem. Coleoptera, 4:312.

Leiopus timidus Casey, 1913, Mem. Coleoptera, 4:313.

Leiopus obscurellus Casey, 1913, Mem. Coleoptera, 4:313; Leonard, 1926, Cornell Univ. Agr. Exp. Sta. Mem., 101:452.

Leiopus scapalis Casey, 1913, Mem. Coleoptera, 4:312.

Sternidius alpha alpha; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:214 (part).

Sternidius alpha vicinus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:215 (part).

Sternidius alpha misellus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:216 (part).

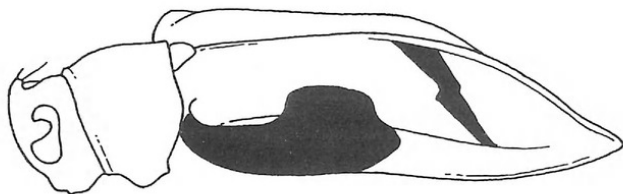


Figure 12. *S. rusticus* (LeConte).

Sternidius alpha nigricans Dillon, 1956, Ann. Entomol. Soc. Amer., 49:216. New synonymy.

Male.—Form small to medium sized; integument testaceous to reddish brown, usually densely pubescent; elytra with epipleural maculae well defined, discal maculae present or not. Head with face pubescent; eyes with lower lobe relatively large but variable in height relationship to genae, usually about one and one-half times as high; antennae annulate, scape sometimes slightly mottled, remaining segments usually not, fourth segment longer than scape, subequal to third, fifth segment subequal to first, subequal to or slightly shorter than third, remaining segments gradually decreasing in length. Pronotum less than twice as wide as long, basal margin usually slightly narrower than apical margin; callosities usually prominent; disk densely punctate with punctures small and at least partially obscured by brownish or tan pubescence (same hue as that of elytral disk); a lateral coalescence of lighter or hoary pubescence may be present on the disk. Elytra about twice as long as wide, obliquely truncate to emarginate; punctures gradually decreasing in size and depth apically, usually obscured by vestiture; costae semi-prominent, containing a variable number of small black callosities which are absent behind the post median discal maculae except along suture; post median discal callosities variable in size and placement (Fig. 15); basal gibbosities usually moderately prominent; pubescence primarily tawny with whitish bordering the anterior margin of the post median discal maculae and occasionally extending forward along suture (the vestiture covers the humeri and superior portion of the epipleura hiding the integument and limiting the superior extension of the epipleural maculae), epipleural maculae placed in front of middle extending forward to about basal fifth and dorsally to include at least a portion of the elytral disk; discal maculae, when present, linear, extending backward from suture, through the post median callosities, at an angle of about forty-five degrees, sometimes attaining the lateral elytral margin (indistinct parallel maculae are commonly present behind). Ventral surface with abdominal and thoracic sternites usually not distinctly mottled; prosternal process one-eighth to one-third as wide as procoxal cavity; mesosternal process three-fourths to nearly as wide as mesocoxal cavity. Legs with femora mottled, tarsi and tibiae distally usually darker. Fifth abdominal sternite with setae at apex obscuring margin which is shallowly excavated or subtruncate (occasionally shallowly notched), less than two times as long as fourth.

Female.—Fifth abdominal sternite twice the length of fourth, otherwise similar to male.

Length.—3.7–7.8 mm (usually 6–7 mm).

Type locality.—Of *fascicularis*, Illinois; *testaceus*, Washington D.C.; *pleuralis*,

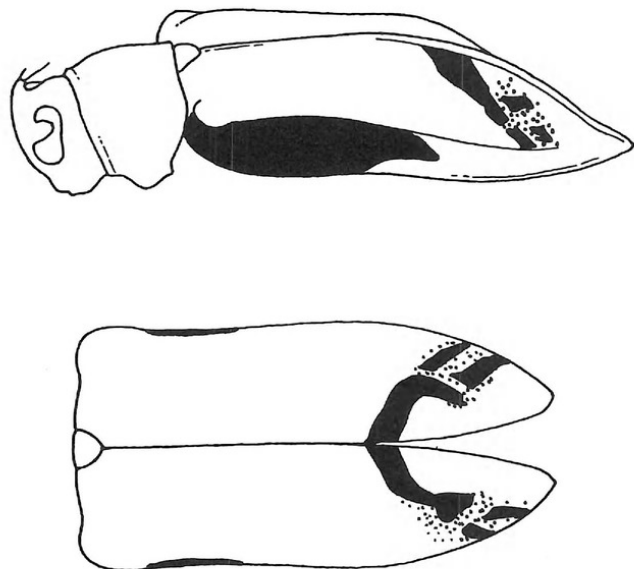


Figure 13. *S. incognitus* Lewis.

Washington D.C.; *timidus*, Pennsylvania; *scapalis*, Indiana; *dentatus*, Illinois; *obs curellus*, Bluff Point, Lake Champlain, New York; *nigricans*, Tajique, New Mexico; *xanthoxyli*, Mount Carrol, Illinois.

Range. — East coast of North America from Massachusetts to Florida and Michigan through Kansas and Nebraska south to Texas, and west to New Mexico.

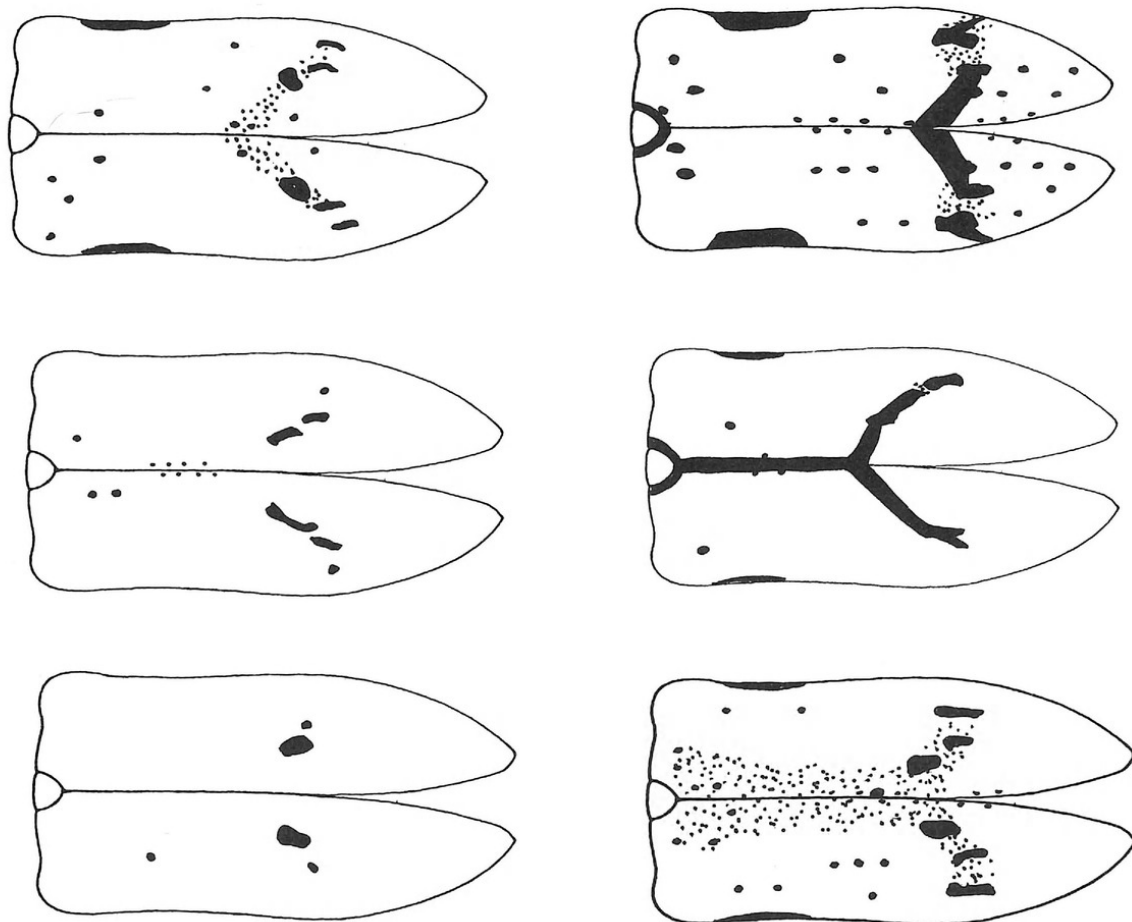
Flight period. — May to July.

Host plants. — *Robinia pseudeacacia* L.; *Zanthoxylum americanum* Mill.; *Celtis*; and “*Wisteria*”?

Diagnosis and discussion. — Within this species, the color of the pubescence and integument is variable and the epipleural vittae may be greatly expanded dorsally occasionally reaching the suture. The type of *S. fascicularis* (Harris) has dark integument (the vestiture is dark over the macular areas with hoary pubescence in between) and grossly appears similar to specimens of *punctatus* (Haldeman), this may account for the taxonomic confusion. The type of *S. scapalis* (Casey) has markedly expanded discal extension of the epipleural maculae and represents the full development of maculation within *S. fascicularis*. *S. fascicularis* (Harris) has been confused with *S. alpha* (Say) but is distinguished from that species by the presence of pubescence over the humeri and superior fifth of the epipleura limiting the superior extension of the maculae, by covering the integument. The mesosternal process is usually relatively wider, and the lower lobe of the eyes are usually larger in genal height relationship. This species appears to be related to *S. rusticus* (LeConte), but the generally larger form, semi-distinct costae, usually larger lower lobe of the eye, as well as the characters given in the key should separate the two. The relatively long fourth and fifth antennal segments and the absence of black anterior humeri should distinguish this species from *S. mimeticus* (Casey).

Sternidius floridanus (Hamilton)

Liopus alpha var. *floridanus* Leng and Hamilton, 1896, Trans. Amer. Entomol. Soc., 23:125.



Figures 14, 15. Elytral discal pattern variation.

Figure 14. *S. alpha* (Say).

Leiopus floridanus; Casey, 1913, Mem. Coleoptera, 4:316.

Sternidius floridanus; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:217.

Sternidius alpha floridanus; Kirk, 1969, So. Carolina Agr. Exp. Sta. Tech. Bull., 1033:1186.

Male. — Form moderately small, robust; integument usually dark reddish brown, covered with pubescence of variable color; elytra with epipleural maculae nebulous, lateral dark areas poorly demarcated, discal maculae distinct. Head with frons pubescent; eyes with lower lobes usually one and one-half to two times as high as genae; antennae usually distinctly mottled (especially scape), eleventh segment primarily dark, fourth segment longer than first, subequal to or shorter than third, fifth segment shorter than first, third or fourth, remaining segments gradually decreasing in length. Pronotum a little less than twice as wide as long; basal margin subequal to or wider than apical margins; callosities usually prominent; punctures fine, in part obscured by pubescence which is tawny to greyish white and occasionally condensed laterally over tubercles. Elytra about twice as long as wide; apices emarginate to obliquely truncate; punctures dense, separated by about their width, becoming finer apically, partially obscured by pubescence; costae subobsolete to distinct, bearing a variable number of small black callosities; post median callosities pronounced; basal gibbosities prominent, usually dark,

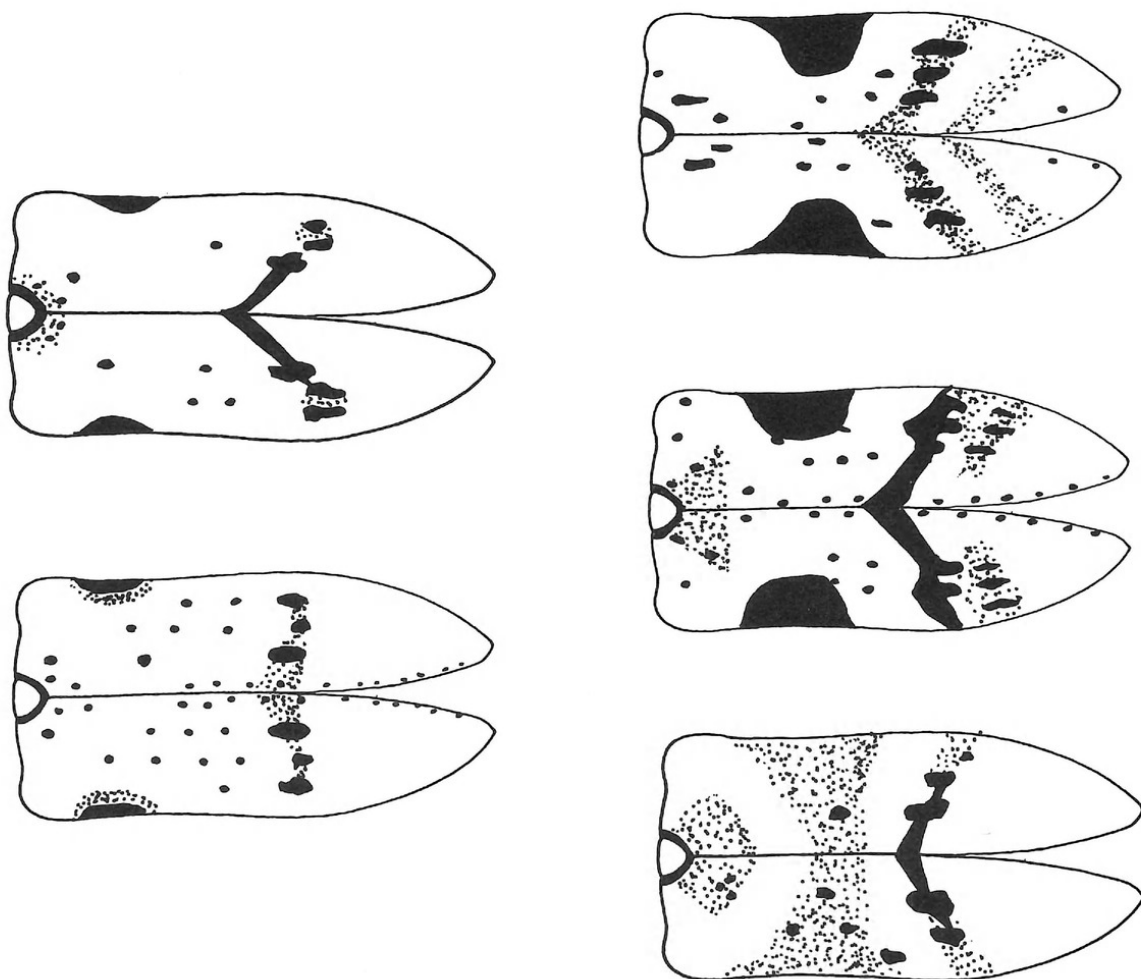


Figure 15. *S. fascicularis* (Harris).

integument lighter behind basal gibbosities and behind post median discal macula; epipleural maculae not well defined, extending forward to include humeri and usually in part dorsally onto disk (Fig. 9), posteriorly it may connect to the lateral extension of the median discal macula, discal macula placed at or behind middle, extending backward through the post median callosities (at times undulating) at an angle of about forty-five degrees, sometimes reaching the lateral elytral margin, with a parallel, less distinct macula commonly present behind; pubescence recumbent, made up of cinereous, dark tan, and whitish elements, whitish pubescence often bordering macula anteriorly and may extend along suture, black pubescence usually present over costal and post median callosities. Ventral surface with thoracic sternites mottled, prosternal process variable, from one-eighth or less to one-fourth width of procoxal cavity (usually about one-sixth); mesosternal process about two-thirds as wide as mesocoxal cavity. Legs with femora and tibiae mottled, tibiae and tarsi dark, distally. Last abdominal sternite with apex concave, less than twice as long as fourth.

Female.—Fifth sternite at least twice as long as fourth, otherwise similar to male.

Length.—4.2–7.4 mm (usually 6–7 mm).

Type locality.—Biscayne Bay, Florida.

Range.—Southeastern United States to Kansas and Texas. (One example seen from Pennsylvania.)

Flight period.—April through October.

Host plants.—Taken on *Satsuma* and “fig twigs.”

Diagnosis and discussion.—The basal gibbosities and post median callosities are quite prominent in this species which help to differentiate it from *S. rusticus* (LeConte). It may also be separated from that species by the relatively larger lower lobes of the eyes, more distinctly mottled antennae and thoracic sternites, and the generally larger form. It may be separated from *S. fascicularis* (Harris) by the poorly defined, diffuse epipleural maculae which extend to the top of the humeri, the relatively shorter fourth and fifth antennal segments, and the distinctly mottled antennae and ventral surface. From *S. alpha* (Say), it differs by the relatively small fourth and fifth antennal segments (fourth smaller than third, fifth smaller than scape), relatively larger lower lobes of the eyes, and the epipleural macular configuration. It may be confused with *S. misellus* (LeConte), but by possessing distinct post median macula and mottled antennae, it should be separable from that species.

Sternidius rusticus (LeConte)

Liopus rusticus LeConte, 1852, Jour. Acad. Nat. Sci. Philadelphia, (2)2:173.

Leiopus fascicularis; Casey, 1913, Mem. Coleoptera, 4:311 (part).

Sternidius fascicularis; Knull, 1946, Ohio Biol. Surv. Bull., 39:250 (part).

Sternidius alpha alpha; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:214 (part).

Male.—Form small, somewhat robust; integument testaceous to piceous, densely clothed with pubescence; elytra with epipleural and discal dark areas. Head with face bearing recumbent pubescence; eyes with lower lobes equal to, or one and one-half times as high as genae; antennae annulate, scape usually slightly mottled, remaining segments with mottling obsolete, fourth segment longer than first (rarely subequal), slightly shorter than third, fifth segment subequal to or slightly shorter than first and shorter than third or fourth, remaining segments gradually decreasing in length. Pronotum nearly twice as wide as long, with basal and apical margins subequal; callosities variable in prominence; disk with punctures dense, shallow and minute; pubescence partially obscuring surface, tan to hoary or mixed without a definite pattern of condensation (sides with middle portion slightly less pubescent). Elytra about twice as long as wide, apices obliquely truncate to emarginate; costae subobsolete, small dark callosities commonly obsolete, but sometimes present along costae and sutural margin in variable number; post median discal callosities usually poorly defined, hidden in discal macula; punctures much larger than those of pronotum, largest behind basal gibbosities, gradually diminishing in size and depth toward apex; epipleural maculae extend from about mid elytra to top of humeri and dorsally along lateral one-fourth of disk (Fig. 12); discal macula, when present, placed at about middle, and extends obliquely backward from suture through callosities at about forty-five degrees, sometimes reaching the lateral elytral margins, a vague parallel macula is usually present behind; pubescence made up of tan to cinereous, and whitish hairs, in part obscuring surface, whitish outlining the discal macula anteriorly, and rarely extending forward along costae. Ventral surface pubescent with mottling reduced

or obsolete, occasionally with slight mottling on thoracic sternites; prosternal process one-sixth to one-fourth as wide as procoxal cavity; mesosternal process between one-half to three-fourths as wide as mesocoxal cavity. Legs with femora sometimes indistinctly mottled, distal portion of posterior tibiae dark, tarsi dark. Fifth abdominal sternite with apex slightly concave, less than twice as long as fourth.

Female.—Fifth abdominal sternite about twice as long as fourth, otherwise similar to male.

Length.—4.0–5.4 mm (type, 4.6 mm), usually less than 5.0 mm.

Type locality.—Western New York.

Range.—Eastern North America from Canada to Louisiana, and west to Nebraska and Missouri.

Flight period.—May to July.

Diagnosis and discussion.—The individuals exhibit considerable variation in the color of the integument and prominence of the elytral maculae. This species has affinities with both *S. alpha* (Say) and *S. fascicularis* (Harris) and has previously been synonymized with both. It appears to be more closely related to *S. fascicularis* (Harris), differing from that species by the generally smaller size, smaller lower lobes of the eyes, extension of the epipleural maculae to top of the humeri, and the relative lengths of the first, third, fourth, and fifth antennal segments. It is separable from *S. alpha* (Say) by the generally smaller form, the dorsal extension of the epipleural maculae, the absence of its extension along the lateral pronotum, and the relatively shorter fourth and fifth antennal segments. From *S. vittatus* Dillon, it differs by the presence of distinct epipleural maculae.

Sternidius incognitus Lewis

Sternidius incognitus Lewis, 1977, Pan-Pacific Entomol., 53:201.

Male.—Form small, moderately robust; integumental color brown to piceous, covered with predominantly cinereous pubescence; sides of pronotum and elytra with black markings. Head with face covered with cinereous pubescence; eyes with lower lobes one and one-half times as long as genae; antennae with first segment mottled, third segment much less so, fourth segment longer than first, subequal to third, fifth segment slightly longer than first, shorter than third and fourth, remainder of segments gradually decreasing in length. Pronotum transverse, basal and apical margins subequal; disk with calli more or less coalescent; punctures small, dense, shallow, partially obscured by vestiture; pubescence uniformly cinereous on disk, lacking on ventral half of sides (the integument thus forms a fuscous vitta on each side extending the entire length of the pronotum). Elytra about twice as long as wide; apices rounded; costae evanescent, containing small black spots in variable number (they represent denudations of pubescence exposing the integument); very obsolete callosities may be present in some specimens; post median callosities obsolete; basal gibbosities not prominent; punctures of disk dense, subconfluent, partially obscured by pubescence; epipleural maculae distinct, vittate extending from behind middle to basal margin (dorsal extension includes less than one-tenth of the disk) (Fig. 13), disk with macula triangular with apex at mid elytra and sides diverging from suture at an angle of about forty-five degrees or greater, reaching or not the lateral elytral margins, sometimes

connecting to a parallel macula behind; pubescence cinereous with tawny components anterior to discal macula, darker behind, composed of black, cinereous, and tawny elements in variable combination. Ventral surface scarcely mottled; prosternal process narrow, about one-tenth as wide as procoxal cavity; mesosternal process about one-half as wide as mesocoxal cavity. Legs with tibiae distally black, annulate; tarsi black. Fifth abdominal sternite subequal in length to fourth.

Female.—Fifth abdominal sternite about twice the length of fourth, otherwise similar to male.

Length.—4.7–6.2 mm.

Type locality.—Madera Canyon, Santa Rita Mountains, Arizona.

Range.—Montane southern Arizona, Cochise and Santa Cruz Counties.

Flight period.—July and August.

Host plants.—*Quercus* sp.

Diagnosis and discussion.—This species has affinities with *S. alpha* (Say) but is readily separated from that species by the rounded elytral apices, lack of costal and post median callosities, the form of the discal macula which has an attached parallel extension behind, the narrow prosternal process (about one-tenth as wide as procoxal cavity), and the fifth antennal segment which is usually longer than the scape. It also resembles *S. decorus* (Fall), and *S. imitans* Knull, which agree in the grey pubescence, rounded elytral apices, a long fifth antennal segment, and are associated with oak. The differences of the epipleural and discal maculae will separate them. Examples of *incognitus* have been reared from dead twigs of *Quercus* sp. by D. G. Marqua (pers. comm.), and have also been taken by beating small branches of various species of oaks.

Sternidius decorus (Fall)

Liopus decorus Fall, 1907, Jour. New York Entomol. Soc., 15:84.

Sternidius decorus; Linsley, Knull, and Statham, 1961, Amer. Mus. Novit., 2050:29; Lewis, 1977, Pan-Pacific Entomol., 53:200; Lewis, 1979, Pan-Pacific Entomol., 55:24.

Sternidius centralis; Dillon, 1956, Ann. Entomol. Soc. Amer., 15:218 (part).

Sternidius alpha arizonensis Dillon, 1956, Ann. Entomol. Soc. Amer., 49:217; Linsley, Knull, and Statham, 1961, Amer. Mus. Novit., 2050:29. New synonymy.

Male.—Form small, moderately robust; integument reddish brown to piceous, covered with cinereous pubescence, often with black and tawny reflections; elytra with black maculae and minute scattered black spots. Head covered with cinereous pubescence; antennae annulate, pubescence cinereous, distinctly mottled on scape and third segment, becoming less so on distal segments, fourth segment longer than first, subequal to or shorter than third, fifth segment shorter than third or fourth, usually longer than first, remaining segments gradually decreasing in length. Pronotum about twice as wide as long, basal margin subequal to or shorter than apical margin; disk with punctures small, dense, partially obscured by vestiture; pubescence scarcely mottled, cinereous, commonly with a mixture of brownish in the central portion of the disk. Elytra moderately robust, nearly twice as long as wide, apices rounded (rarely obliquely truncate); costae subobsolete, obscured



Figures 16, 17. Recorded geographical distribution.

Figure 16. #1 *S. centralis* (LeConte). #2 *S. decorus* (Fall). #3 *S. imitans* (Knull). #4 *S. mimeticus* (Casey). #5 *S. schwarzi* (Hamilton).

by pubescence, containing small black denudations of vestiture in variable number; post median callosities shallow, elongate or ill-defined; basal gibbosities moderate; punctures dense, distinct, subconfluent, largest behind humeri then gradually becoming smaller and more shallow apically, all partially obscured by vestiture; epipleural maculae (formed by break in pubescence), placed well behind humeri at about basal fourth, extending dorsally to involve at least the lateral third of the disk, and posteriorly to about middle (the epipleural integument is dark piceous including humeri, and the maculae are formed by a break in the cinereous pubescence which covers the sides); discal macula form a common triangle with apex behind mid elytra, and sides diverging at about forty-five degrees to meet a poorly formed and irregular base which sometimes extends to the lateral elytral margin, and may be attached to a smaller parallel macula behind (Fig. 4); pubescence is uniformly cinereous occasionally with tawny anterior to discal macula; posteriorly the vestiture is variable but usually darker consisting of cinereous, tawny and black elements, cinereous pubescence is absent over middle of epipleura exposing the integument, and thus forming the maculae, minute dark barely visible vestiture present over the maculae. Ventral surface uniformly pubescent, prosternal process usually very narrow, from one-eighth to one-tenth as wide as procoxal cavity; mesosternal process about one-half as wide as mesocoxal cavity. Legs with femora mottled, tibiae and tarsi black distally. Abdomen with fifth sternite about as long as fourth.

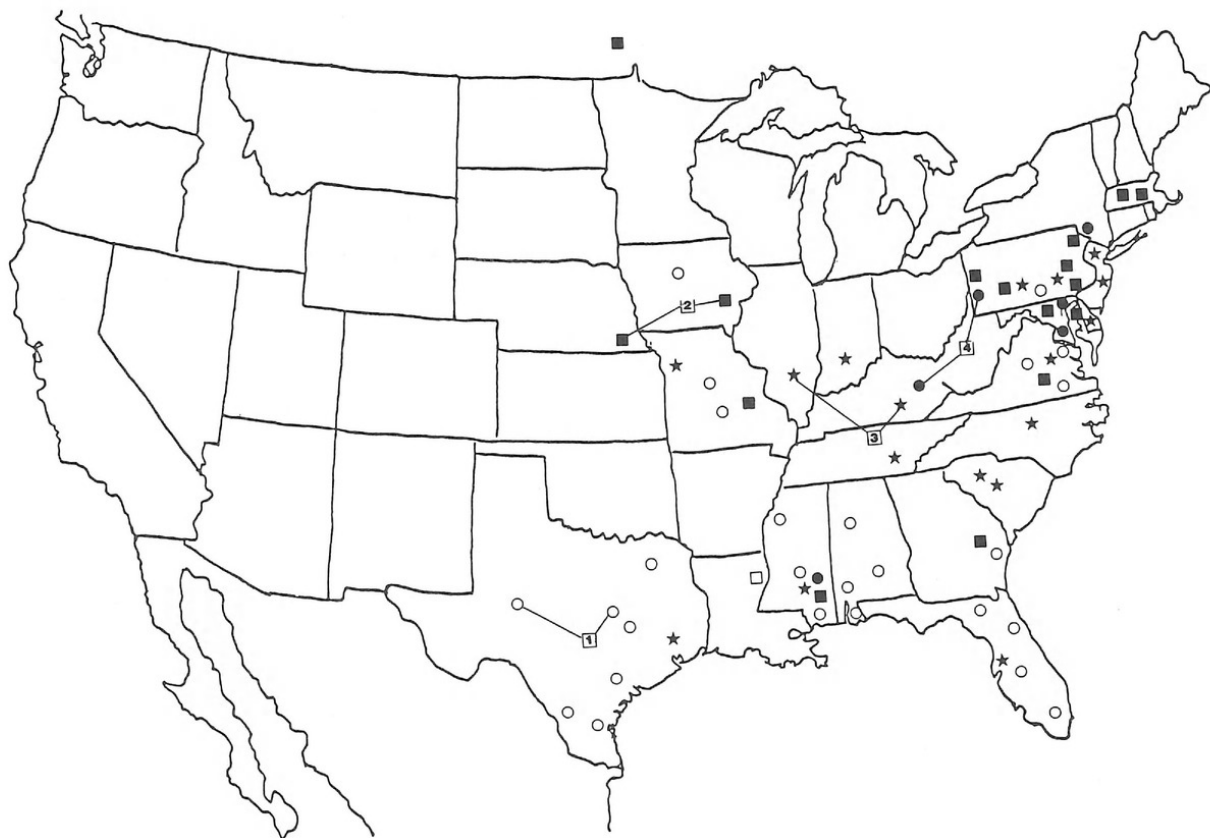


Figure 17. #1 *S. floridanus* (Hamilton). #2 *S. rusticus* (LeConte). #3 *S. punctatus* (Haldeman). #4 *S. vittatus* Dillon.

Female.—Fifth abdominal sternite twice as long as fourth, otherwise similar to male.

Length.—4.2–7.2 mm.

Type locality.—Of *decorus*, Williams, Arizona; *arizonensis*, Cave Creek, Chiricahua Mts., Arizona.

Range.—Montane areas of Arizona (Cochise and Santa Cruz Counties, to Mojave and Coconino Counties).

Flight period.—July and August.

Host plants.—*Quercus* sp.

Remarks.—This species is quite distinct by its grey vestiture and in the form of the elytral discal dark areas. It can be separated from *S. fascicularis* (Harris) by the grey pubescence, by having the elytral maculae and costal spots formed by breaks in the vestiture, and by the characters given in the key. Specimens are readily attracted to ultraviolet light, and have been reared from small branches of oak (*Quercus* sp.) by D. G. Marqua (pers. comm.).

Sternidius imitans (Knull)

Leiopus imitans Knull, 1936, Entomol. News, 107.

Sternidius imitans; Dillon, 1956, Ann. Entomol. Soc. Amer., 49:217, Linsley, Knull, and Statham, 1961, Amer. Mus. Novit., 2050:29; Lewis, 1977, Pan-Pacific Entomol., 53:198; Lewis, 1979, Pan-Pacific Entomol., 55:25.

Male.—Form small, moderately robust; integument dark brown to piceous,

densely clothed with recumbent cinereous pubescence; elytra with black maculae and small black tufts. Head with recumbent greyish pubescence; antennae distinctly mottled, fourth segment longer than fifth and first, slightly shorter than third, fifth segment longer than first, shorter than third and fourth, remaining segments gradually decreasing in length. Pronotum wider than long; basal margin shorter than apical margin; punctures fine, dense, obscured by pubescence; callosities may be reduced and represented by maculae only; pubescence grey recumbent, with a minute black vestiture over callosities. Elytra about twice as long as wide, apices usually rounded but may be subtruncate; costae obsolete, containing numerous dark spots resulting from breaks in the vestiture; post median callosities absent or obsolete; basal gibbosities not prominent; punctures distinct, dense, partially obscured by vestiture; epipleural maculae represented by a spot on each epipleuron at basal third arising on dorsal half and extending dorsally to involve one-third or one-fourth of disk, discal macula in the form of a rounded to triangular spot at about apical third which does not extend laterally beyond middle of each elytron (Fig. 3); pubescence recumbent, uniform, cinereous without an admixture of fulvous hairs, usually with a slight hoary condensation surrounding the black macular areas, a minute black vestiture covers the maculae. Ventral surface densely pubescent, with thoracic sternites, distinctly mottled; prosternal process one-sixth to one-fourth as wide as procoxal cavity; mesosternal process about one-half as wide as mesocoxal cavity. Legs with femora and tibiae distinctly mottled with cinereous pubescence, tibiae and tarsi dark distally. Fifth abdominal sternite less than twice as long as fourth.

Female. — Fifth abdominal sternite twice as long as fourth, otherwise similar to male.

Length. — 4.9–7.7 mm.

Type locality. — Davis Mountains, Texas.

Range. — Davis and Chisos Mountains, Texas, to mountains of Cochise, Santa Cruz, and Mojave Counties, Arizona.

Flight period. — June to September.

Host plants. — This species has been taken by beating foliage of various species of oak (*Quercus* spp.) and is attracted to ultraviolet light.

Diagnosis and discussion. — This species is distinct and quite constant in form and pubescent pattern. It appears to be related to *S. decorus* (Fall) and *S. incognitus* Lewis, each expressing grey or cinereous pubescence, rounded elytral apices, relatively long fifth antennal segment, obsolete discal costae, and by having costal black spots represented by breaks in the vestiture. The placement of the epipleural and discal maculae is diagnostic.

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