Zootaxa 239: 1-43 (2003)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

239

A revision of the Nearctic species of the genus *Stethusa* Casey, 1910 (Coleoptera: Staphylinidae: Aleocharinae)

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Abstract

The Nearctic and Neotropical genus *Stethusa* Casey, 1910 is redescribed. Descriptions and a key to the three valid Nearctic species of *Stethusa* (*S. dichroa* (Gravenhorst, 1802), *S. klimschi* (Bernhauer,

Accepted: 9 July 2003; published: 16 July 2003

1909), and *S. spuriella* (Casey, 1910)) are provided. *Atheta affluens* Casey, 1910, *At. irvingi* Casey, 1910, *At. galvestonica* Casey, 1910, *At. canonica* Casey, 1910, *At. sagax* Casey, 1910, *At. sororella* Casey, 1910, *At. clarescans* Casey, 1911a, *At. videns* Casey, 1911a, *At. cynica* Casey, 1911a, *At. cernens* Casey, 1911a, *At. officiosa* Casey, 1911a, *At. tuta* Casey, 1911a, *Dimetrota novella* Casey, 1910 and *D. sentiens* Casey, 1910 are placed in synonymy with *Stethusa dichroa*. *Atheta unigranosa* Bernhauer, 1909 (*nec* 1908), *At. subdebilis* Casey, 1910, *At. duplicata* Fenyes, 1920 and *At. macrops* Notman, 1920 are synonymized with *S. spuriella* (Casey, 1910). Neotropical *At. lurida* (Erichson, 1839) and *At. luederwaldti* Bernhauer, 1908 are transferred to *Stethusa*. *Atheta texana* Casey, 1910, *At. crenuliventris* Bernhauer, 1907 and *At. iheringi* Bernhauer, 1908 do not belong to *Stethusa*. *Atheta mendosa* Casey, 1910 is placed in synonymy with *At. texana* Casey, 1910. *Dimetrota bradorensis* Lohse, 1990 is synonymized with *At. crenuliventris* Bernhauer, 1907. Lectotypes are designated for *Aleochara dichroa* Gravenhorst, 1802, *Atheta crenuliventris* Bernhauer, 1907, *At. luederwaldti* Bernhauer, 1908, *At. iheringi* Bernhauer, 1908, *At. unigranosa* Bernhauer, 1909, *At. affluens* Casey, 1910, *At. irvingi* Casey, 1910, *At. galvestonica* Casey, 1910, *At. canonica* Casey, 1910, *At. sagax* Casey, 1910, *At. sororella* Casey, 1910, *At. spuriella* Casey, 1910, *At. subdebilis* Casey, 1910, *At. texana* Casey, 1910, *At. clarescans* Casey, 1911a, *At. cynica* Casey, 1911a, *At. cernens* Casey, 1911a, *At. officiosa* Casey, 1911a, *Dimetrota novella* Casey, 1910 and *D. sentiens* Casey, 1910.

Key words: Coleoptera, Staphylinidae, Aleocharinae, *Stethusa*, Nearctic, taxonomy, nomenclature, synonymy, identification key

Introduction

Casey (1910) described the subgenus *Stethusa* of the genus *Atheta* Thomson, 1858 and included eleven species. Casey noted that compared to "the true *Atheta*", the mesocoxae in *Stethusa* are more widely separated.

Fenyes (1918) fixed *Atheta irvingi* Casey, 1910 as the type species of *Stethusa*. Fenyes (1920) included *At. irvingi* in the subgenus *Hypatheta* Fenyes, 1918 and placed the name *Stethusa* in synonymy with *Hypatheta* despite the fact that the name *Stethusa* has priority.

Later, Seevers (1978) raised *Stethusa* to generic rank and illustrated the oval pale areas near the base of the terminal antennal segment, which he interpreted as a diagnostic character of the genus. Despite the fact that *S. klimschi* (Bernhauer, 1909) lacks this feature, Seevers retained it in *Stethusa*.

In this paper I redescribe *Stethusa* and three valid Nearctic species of that genus. I synonymize 14 species described by Casey (1910, 1911a) with *S. dichroa* (Gravenhorst, 1802).

I follow the terminology accepted in the taxonomy of Aleocharinae (Sawada 1970, 1972; Newton *et al.* 2000). Additional terms used to refer to some setae and pores of the epipharynx are introduced below. A discussion of the terms applied to the parts of the internal sac of the aedeagus can be found in Gusarov (2002a). To avoid the controversy on

what side of the aedeagus should be called ventral (Gusarov 2002a), I refer to the side of aedeagus bearing the basal orifice as parameral. The spermathecal gland is shown on the drawings solely to illustrate the gland position in relation to other parts of spermatheca.

The Fourth edition of the International Code of Zoological Nomenclature (ICZN 1999) requires (Article 74.7.3) a lectotype designation to "contain an express statement of the taxonomic purpose of the designation". The purpose of lectotype designations in this paper is to assure correct and consistent application of the names in the future. There is no reason to repeat this statement for each lectotype designation. All specimens designated as lectotypes were supplied with red lectotype labels.

Depositories

AMNH – American Museum of Natural History, New York (Dr. L.H. Herman)
CASC – California Academy of Sciences, San Francisco (Dr. D.H. Kavanaugh)
CNCI – Canadian National Collection, Ottawa (Mr. A. Davies)
FMNH – Field Museum of Natural History, Chicago (Dr. A.F. Newton)
KSEM – Snow Entomological Collection, University of Kansas, Lawrence (Dr. J.S. Ashe)
NMNH – National Museum of Natural History, Washington, DC (Dr. T.L. Erwin)
PURC – Purdue University, West Lafayette, Indiana (Dr. A. Provonsha)
SPSU – Department of Entomology, St. Petersburg State University, St. Petersburg, Russia (Dr. V.I. Gusarov)
ZMHB – Museum für Naturkunde der Humbodt-Universität, Berlin (Dr. M. Uhlig)

New terms used for the morphology of the epipharynx

Sawada (1970, 1972) was the first to introduce terms describing the setae of the labrum and the sensilla of the anterior margin of the epipharynx in aleocharine staphylinids. He referred to the setose sensilla in the middle of the anterior margin of the epipharynx as *a*-, *b*-, and *c*-sensilla (Fig. 6). He noted that in some aleocharines (*e.g.*, in *Geostiba* Thomson, 1858) the *a*-sensilla are reduced in that their setae are lacking.

Some characters of the epipharynx were used by Ashe (2000) in his analysis of phylogenetic relationships of the genus *Stylogymnusa* Hammond, 1975 and its relatives. Ashe distinguished the mesolateral, basal, middle basal and medial regions of the epipharynx and used the presence, distribution and number of certain pores and spinules in these regions of the epipharynx in his analysis. Ashe named only two groups of pores: the transverse row of pores in the basal region and the medial pore field. Both structures are present in the athetines examined for this study and these terms are adopted here. While describing details of the epipharynx in the tribe Hoplandriini Casey, 1910, Hanley (2002b) followed Ashe (2000) and recognized the medial pore field, the basal and mesolateral

areas, and the transverse row of sensory pores. These are the only terms used to describe the details of the epipharynx in published works on aleocharine staphylinids. Certain distinct groups of pores with stable positions across a broad group of taxa have no names, making it difficult to use them in descriptions and analyses. Many recent papers (*e.g.*, Ahn & Ashe 1992; Hanley 1999) provide detailed illustrations of these setae, pores and other features of the epipharynx but due to the lack of terminology, these details are often not mentioned in the descriptions (*e.g.*, Ahn & Ashe 1992; Hanley 1999; Gusarov 2002b).

Many epipharyngeal sensilla are difficult to observe, even at magnifications as high as 400x. In a situation where no accepted names exist for particular setae and pores, it is easy to miss some features or illustrate them inconsistently. This problem is especially apparent in the papers where the drawings were produced by scientific illustrators and not by the systematists who wrote the papers (*e.g.*, Hanley 2002a, b). In Fig. 3 in Hanley (2002a), the transverse row of pores is incorrectly shown with five pores when in fact there are six. On the same figure the sensilla *c* are shown as pores, without spinose processes. In fact, in *Heliconandria* Hanley, 2002a, sensilla *c* are similar to sensilla *b* (shown in Fig. 2: Hanley 2002a) and have a short but distinct spinose process. Fig. 1, C of *Hoplandria lateralis* (Melsheimer, 1844) (Hanley 2002b) is another example of five pores being illustrated in the transverse row when there are actually six. Also, only one pair of the small marginal setae is shown on the labrum of *H. lateralis* (Fig. 1, A: Hanley 2002b) when in fact there are three. Further, the marginal setae are shown on the dorsal surface of the labrum when in fact all three pairs are located on the ventral (epipharyngeal) surface and should have appeared in Fig. 1, C (Hanley 2002b). Assigning pores and setae to the correct surface of the thin mouthparts is particularly challenging. In some of my earlier papers on Nearctic athetines I also incorrectly illustrated the small marginal setae of the epipharynx as belonging to the dorsal side of the labrum (*e.g.*, Gusarov 2002b, Figs. 1-2).

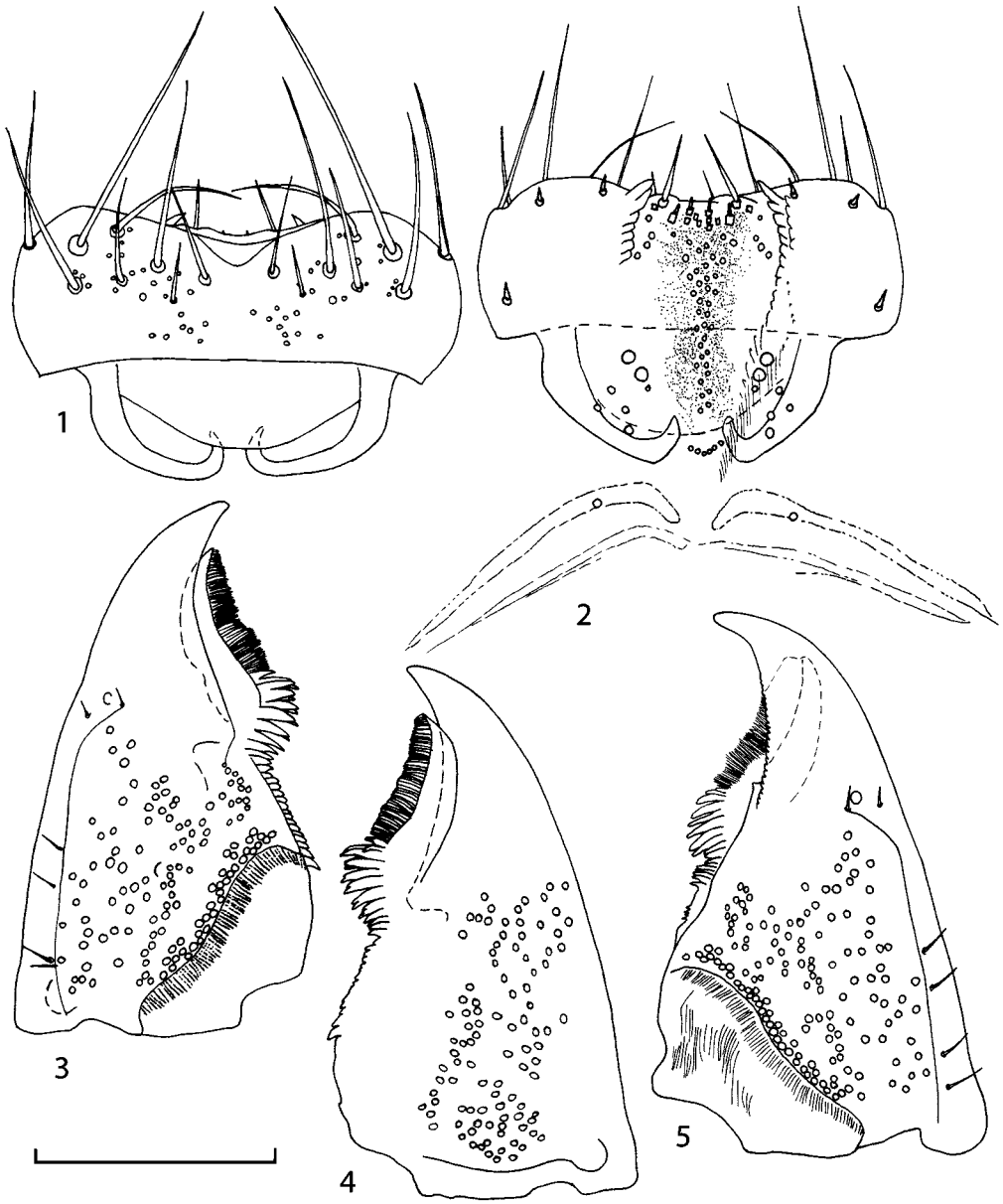
To be able to describe and use in analyses the particular groups of pores and other features in question I use the epipharynx of *Stethusa dichroa* as a model applicable to other athetines and distinguish the following characters (Fig. 6). In the middle of the anterior margin of the epipharynx there are three pairs of setose sensilla (*sensilla a*, *b* and *c*). There is one pore near the base of each sensillum *a* and three pores near the base of each sensillum *b*. *The medial pore field* in *Stethusa* consists of 36-38 pores. In some athetines the pores of the medial field approach the three pores at the base of sensilla *b*, but because of the stable number and position, as well as the different shape and size of these three pores, I do not include them in the medial field. A pair of *lateral rows* include three pores each while a pair of *anterolateral groups* include four pores each. In some athetines the anterior pore of the anterolateral group approaches the single pore at the base of sensilla *a*, but because of the stable position and different shape and size of that single pore I do not include it in the anterolateral group. The pores of the anterolateral group are usually arranged in a row and larger than those of the median field. However, in some genera the pores of the anterolateral group are difficult to separate from the pores of the medial field.

The transverse row consists of six pores. The pores of *the posterolateral group* are usually hard to observe because of the underlying sclerotized portions of the labrum (in *Stethusa* there are four pores on each side). In many athetines the proximal area of the epipharynx has isolated pores arranged in two pairs of groups, *the medial proximal groups* and *the lateral proximal groups*. In *S. dichroa* there is one medial proximal pore on each side and no lateral proximal pores, but in many genera of athetines there are two lateral proximal pores on each side. In the athetines examined for this study there are three to four small *marginal setae* on each side of the epipharynx. In most of my earlier papers (*e.g.*, Gusarov 2002b) these setae are incorrectly shown on the dorsal side of the labrum. They are much shorter than the setae of the dorsal side. The epipharynx of *S. dichroa* has three marginal setae on each side. In *S. dichroa*, the medial area of epipharynx (including the medial pore field, the anterolateral group of pores and sensilla *a*, *b* and *c*) is bordered by a pair of *longitudinal rows of denticles.*

***Stethusa* Casey, 1910**
(Figs. 1-109)

Atheta (*Stethusa* Casey, 1910): 4 (type species: *Atheta irvingi* Casey, 1910, designated by Fenyes (1918)).
Atheta (*Stethusa*): Casey, 1911a: 77 (as valid subgenus).
Atheta (*Stethusa*): Fenyes, 1918: 25.
Atheta (*Stethusa*): Fenyes, 1920: 206 (as synonym of *Atheta* (*Hypatheta* Fenyes, 1918)).
Atheta (*Stethusa*): Bernhauer & Scheerpeltz, 1926: 652 (as synonym of *Atheta* (*Hypatheta*)).
Atheta (*Stethusa*): Moore & Legner, 1975: 353 (as valid subgenus).
Stethusa: Seevers, 1978: 125 (as valid genus in subtribe Xenotae Seevers, 1978 (*nomen nudum*)).
Stethusa: Ashe *in* Newton, Thayer, Ashe & Chandler, 2000: 369 (as valid genus in subtribe Athetina Casey, 1910).

Diagnosis. *Stethusa* is distinguished from other athetine genera by the combination of the following characters: body parallel-sided; anterior margin of labrum concave; sensilla *a* of epipharynx long; antennal article 2 slightly longer than article 3, articles 4-10 slightly elongate or subquadrate; ligula with narrow base and split apically (Fig. 8); labial palpus with setae α, β and γ present (Fig. 8); pronotum slightly transverse, 1.2 times as wide as long, with microsetae directed anteriorly along the midline; in lateral portions of the disc microsetae directed laterally (Type I, Benick & Lohse 1974) (Fig. 18); pronotal macrosetae long; pronotal hypomera fully visible in lateral view; medial macroseta of mesotibia thick and long, twice as long as tibial width (Fig. 14); mesothoracic process broad (Fig. 19-21); tarsal formula 4-5-5; metatarsal segment 1 as long as segment 2; one long empodial seta; abdominal terga 3-5 with transverse basal impression; medial lamellae of internal sac absent; copulatory piece with pointed apex (Figs. 34, 36, 56) and sclerotized suspensoria (Figs. 36, 56); medial lamellae absent; internal sac with two sclerotized bands (Figs. 34, 38, 54) which change their orientation when the sac everts; spermatheca short (Figs. 41-42, 57).



FIGURES 1-5. Mouthparts of *Stethusa dichroa* (Gravenhorst) (female (1, 5) and male (3-4), Eddyville, Illinois; female, 18 km SSE Lawrence, Kansas (2)). 1 – labrum; 2 – epipharynx; 3 – left mandible, dorsal view; 4 – left mandible, ventral view; 5 – right mandible, dorsal view. Scale bar 0.1 mm.

Stethusa is distinguished from *Atheta* (including *Dimetrota auct.*) by a broader mesothoracic process (Figs. 19-21); the lack of the median lamellae of the internal sac; the distinct shape of the copulatory piece (Figs. 36, 39, 55-56); and a short spermatheca (Figs. 41-42, 57).

Stethusa differs from *Earota* Mulsant & Rey, 1874 in having sensilla *a* of the epipharynx long; pronotal setation of type I; slightly narrower mesothoracic process; by the lack of the median lamellae of the internal sac; and the distinct shape of the copulatory piece (Figs. 36, 39, 55-56).

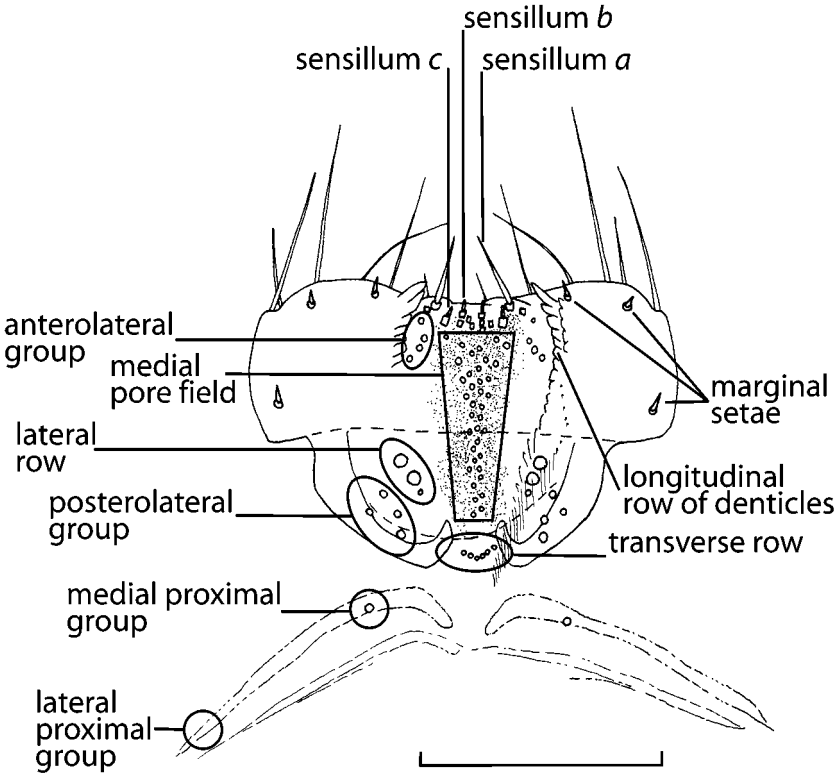


FIGURE 6. Nomenclature of setae and pores in epipharynx of *Stethusa dichroa* (Gravenhorst) (female, 18 km SSE Lawrence, Kansas). Scale bar 0.1 mm.

Description. Length 2.0-3.5 mm, pronotal width 0.46-0.77 mm. Body parallel-sided. Body brown to dark brown, with brownish yellow elytra and yellow legs.

Head transverse; eyes very large, eye length to temple length ratio 2.5-5; infraorbital carina complete. Antennal article 2 slightly longer than article 3, articles 4-10 slightly elongate, subquadrate or transverse, apical article without coeloconic sensilla (not to be mixed with subbasal impression densely covered with microsetae, present in *S. dichroa* and *S. luederwaldti*), as long as or longer than articles 9 and 10 combined. Labrum (Fig. 1) transverse, with concave anterior margin. Epipharynx (Figs. 2, 6) with long sensilla *a*, with three pairs of small marginal setae, medial field with 36-38 pores, lateral rows with three pores each, anterolateral groups with three to four pores each, transverse row with six pores, posterolateral groups with four pores each, with one medial proximal pore on

each side and no lateral proximal pores. Mandibles (Figs. 3-5) broad, right mandible with a small medial tooth; dorsal molar area with velvety patch consisting of very small denticles (poorly visible at 400x). Maxilla (Figs. 9-12) with galea projecting slightly beyond apex of lacinia; apical lobe of galea covered with numerous fine and short setae; internal margin of galea with long subapical setae (Fig. 12); distal comb of lacinia is divided into isolated groups of 6 and 2 closely placed spines (Figs. 10-11), middle portion produced medially and covered with numerous fine setae (Figs. 10-11), ventral surface of lacinia with a medial group of 4 strong setae and marginal group of 5 strong setae (Fig. 10), dorsal surface of lacinia with a row of 13 strong setae (Fig. 11). Labium as in Figs. 7-8, 13; ligula with narrow base and split apically (Fig. 8); medial area of prementum with 2 pores and with 8-20 pseudopores, lateral areas each with two asetose pores, single setose pore and 8-12 pseudopores (Fig. 8). Hypopharyngeal lobes as in Fig. 7. Labial palpus with setae α, β, and γ present (Fig. 8). Mentum (Fig. 13) with concave anterior margin.

Pronotum (Fig. 18) slightly transverse, 1.2 times as wide as long, with microsetae directed anteriorly in midline; in lateral portions of disc microsetae directed laterally (Type I, Benick & Lohse 1974); macrosetae short; hypomera fully visible in lateral view. Meso- and metasternum as in Figs. 19-21, mesosternal process moderately wide, extending about ½ length of mesocoxal cavities, metasternal process short, mesosternum and mesosternal process not carinate medially or (in *S. dichroa*) mesosternum with very short carina (Fig. 19); relative lengths of mesosternal process: isthmus: metasternal process in ratio of about 3:1:2 or 4:1:2; mesocoxal cavities margined posteriorly; mesocoxae moderately widely separated. Medial macroseta of mesotibia long and thick, twice as long as tibial width. Tarsal segmentation 4-5-5, metatarsal segment 1 as long as segment 2. One empodial seta, shorter than claws. Posterior margin of elytra straight. Wings fully developed.

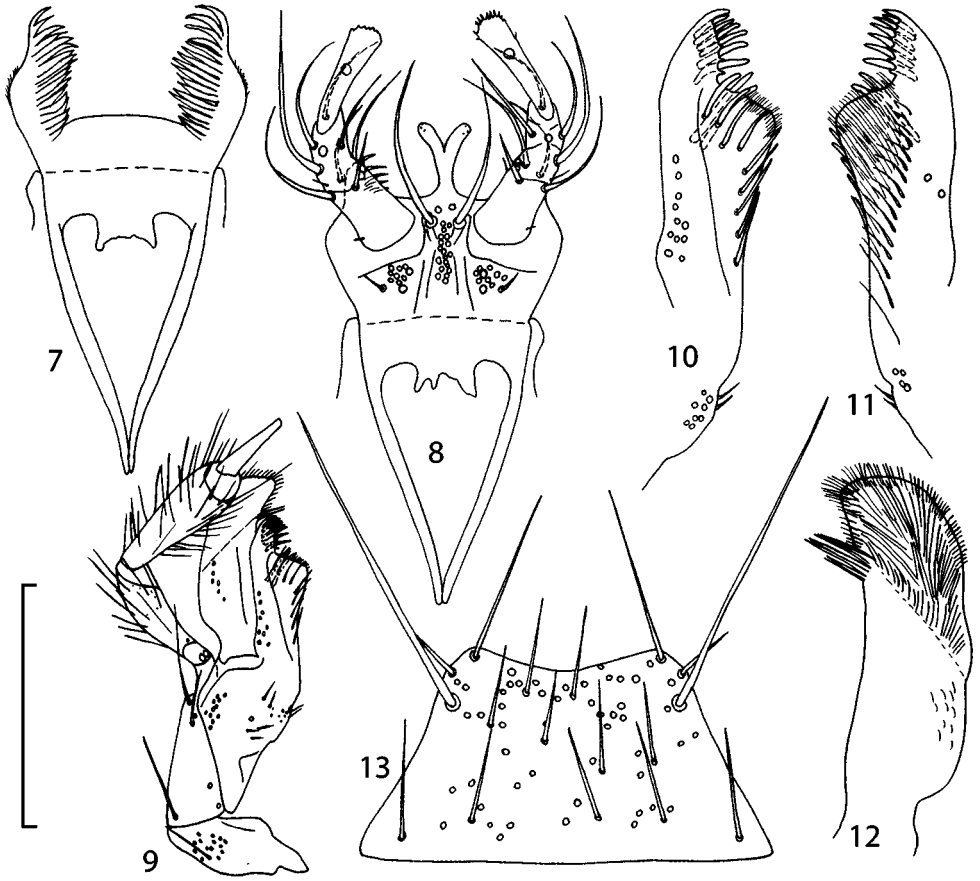
Abdominal terga 3-5 with moderate basal impressions. Tergum 7 is 1.1 times as long as tergum 6. Punctation on terga 6-7 sparser than on terga 3-5. Tergum 7 with wide white palisade fringe.

Internal sac of aedeagus without medial lamellae; with two sclerotized bands (which may be homologous to medial lamellae; however, unlike the medial lamellae the distal end of the bands is oriented towards the base of median lobe in retracted internal sac); copulatory piece with pointed apex (Figs. 34, 36, 56) and sclerotized suspensoria (Figs. 36, 56), in lateral view curved (Figs. 37, 39); spermatheca short (Figs. 41-42, 57).

Type species. *Atheta irvingi* Casey, 1910, by subsequent designation (Fenyes, 1918).

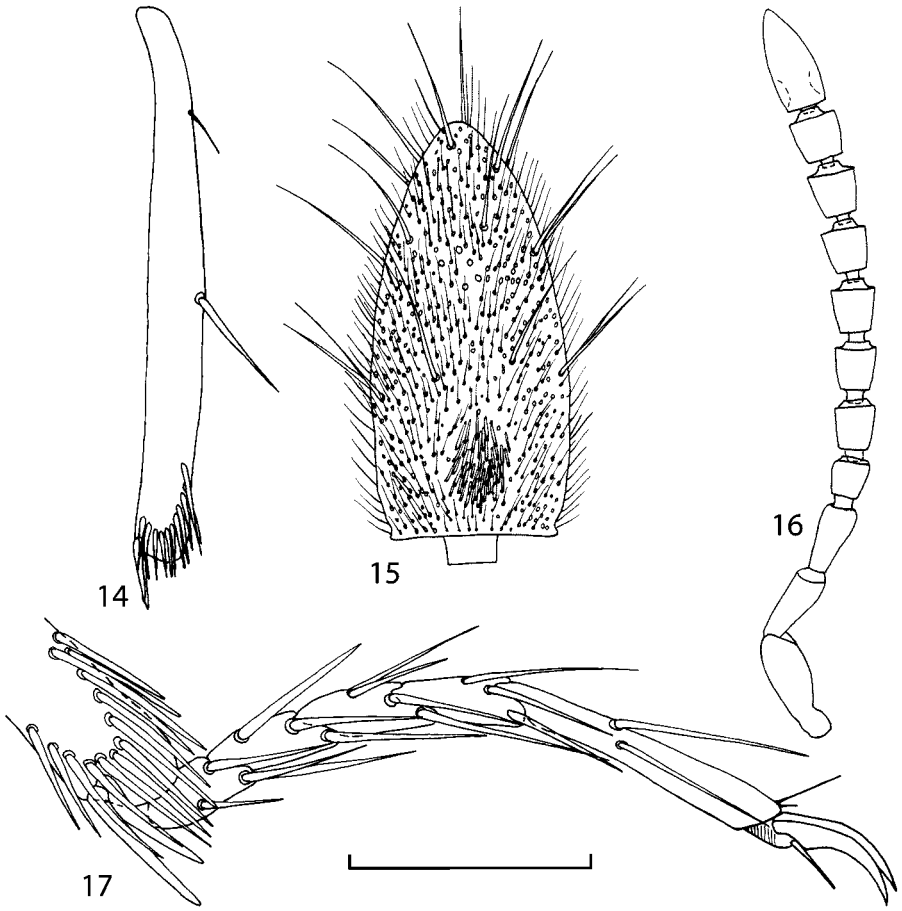
Discussion. When describing *Stethusa*, Casey (1910) did not explicitly fix the type species of the subgenus. While designating the type species of *Noverota* Casey, 1910 in the same paper, Casey stated (1910, p. 90): "The first species may be regarded as the type, as in all other cases where the type is not specifically named". Unfortunately it is not clear how to apply this recommendation to *Stethusa*. The first species described by Casey in *Stethusa* is *At. affluens* Casey, 1910. However, before Casey proceeds to describing the new species he mentions that *Stethusa* includes many allies of *At. klimschi* Bernhauer,

1909; therefore, *At. klimschi* was also a species originally included in *Stethusa*. Because it is not clear which of the two species, *At. klimschi* or *At. affluens* qualifies as the type species under Casey's first species rule, I maintain that Casey has not validly fixed the type species of *Stethusa*.



FIGURES 7-13. Mouthparts of *Stethusa dichroa* (Gravenhorst) (female, 18 km SSE Lawrence, Kansas). 7 – hypopharynx; 8 – prementum; 9 – right maxilla, ventral view; 10 – right galea, ventral view; 11 – right galea, dorsal view; 12 – right lacinia, dorsal view; 13 – mentum. Scale bar 0.1 mm (7-8, 10-13), 0.2 mm (9).

Fenyes (1920) listed the subgenus *Stethusa* as a synonym of the subgenus *Hypatheta* Fenyes, 1918 and included the type species of *Stethusa* in *Hypatheta*. The type species of *Hypatheta* is *Atheta castanoptera* (Mannerheim, 1830), currently placed in *Atheta s. str. Atheta castanoptera* and other related species of the subgenus *Atheta s. str.* differ from *Stethusa* in having a narrow mesosternal process, a long spermatheca of distinct shape with a thick distal portion and a thin proximal portion and by the presence of medial lamellae of the internal sac.



FIGURES 14-17. Details of *Stethusa dichroa* (Gravenhorst) (male (14-16) and female (17), Eddyville, Illinois). 14 – right mesotibia; 15 – antennal article 11; 16 – right antenna; 17 – right metatarsus. Scale bar 0.1 mm (15, 17), 0.2 mm (14), 0.4 mm (16).

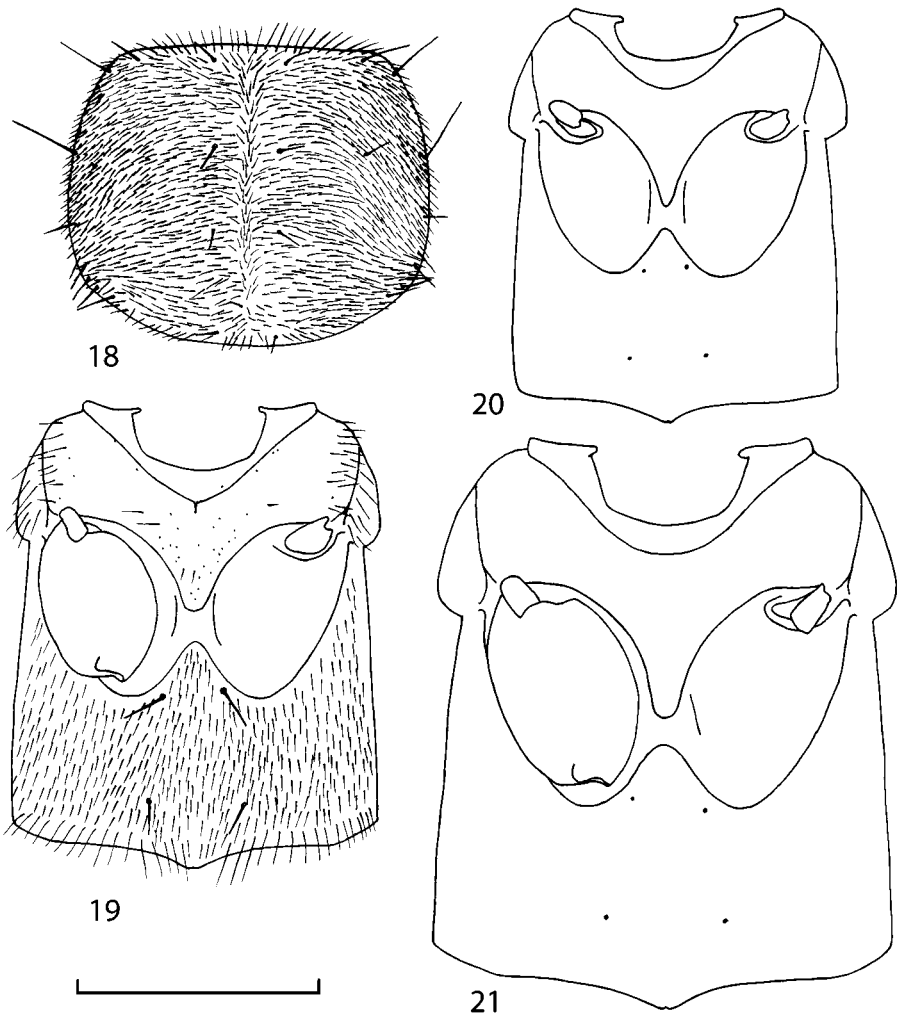
Seevers (1978) raised *Stethusa* to generic rank. The only character listed in the diagnosis of the genus (p. 125) is the oval pale areas near the base of the terminal antennal segment. Seevers noted that *S. klimschi* (Bernhauer, 1909) lacks this feature but retained it in *Stethusa*. In the key to genera (p. 51) another diagnostic character of *Stethusa* is mentioned, the broad mesosternal process.

Ashe (Newton *et al.* 2000) followed Seevers (1978) and mentioned that thirteen species belong to *Stethusa*. In the key to genera (pp. 317, 319) "a subbasal "spongy" sensory patch on each side" of the terminal antennal segment is the only mentioned diagnostic character of the genus.

My examination of the antennae of *S. dichroa* at high magnification (400x) demonstrated that in this species the terminal antennal article has two subbasal impressions (Fig. 16). The microsetae in these impressions are denser and wider, somewhat scale-like, com-

pared to microsetae covering the rest of the article (Fig. 15). All species of *Stethusa* described by Casey (1910, 1911a) that possessed this modification of the terminal antennal article turned out to be synonyms of *S. dichroa* (see below). Two other valid Nearctic species of *Stethusa*, *S. klimschi* and *S. spuriella*, lack the basal impressions of the last antennal segment. Therefore, this feature is not considered here a diagnostic character of the genus *Stethusa*.

Based on the differences between *Stethusa* and *Atheta* listed in the Diagnosis, both are considered here as valid genera, pending a revision of the genera of Athetini.



FIGURES 18-21. Details of *Stethusa dichroa* (Gravenhorst) (male (18) and female (19), Eddyville, Illinois), *S. spuriella* (Casey) (male, 18 km SSE Lawrence, Kansas (20)), and *S. klimschi* (Bernhauer) (male, Opelousas, Louisiana (21)). 18 – pronotum; 19-21 – meso- and metathorax, ventral view. Scale bar 0.4 mm.

Key to Nearctic species of *Stethusa*

1 Antennal article 11 with two subbasal impressions densely covered with microsetae (Figs. 15-16). Internal sac of aedeagus with two strong distal spines (Figs. 34-35, 37-38). Female with accessory sclerite (Fig. 40). Distal end of spermatheca bent towards spermathecal gland (Figs. 41-42). Body length 2.0-3.0 mm, pronotal length 0.41-0.53 mm. Widely distributed in the eastern United States (Fig. 110). Also known from Bolivia, Paraguay, the Galápagos Islands and the Antilles.. 1. *S. dichroa* (Gravenhorst)

– Antennal article 11 without subbasal impressions, microsetae evenly distributed. Internal sac of aedeagus without strong distal spines (Figs. 53-54, 67-68). Female without accessory sclerite. Distal end of spermatheca bent away from spermathecal gland (Figs. 57, 70) 2

2 Body larger, length 3.2-3.5 mm, pronotal length 0.54-0.61 mm. Apex of median lobe in lateral view straight (Figs. 50-51). Spermatheca longer (Fig. 57). Known from Louisiana, Mississippi and southern Indiana (Fig. 111)..... 2. *S. klimschi* (Bernhauer)

– Body smaller, length 2.1-2.5 mm, pronotal length 0.36-0.44 mm. Apex of median lobe in lateral view bent paramerally (Figs. 65-66). Spermatheca shorter (Fig. 70). Widely distributed in the eastern United States (Fig. 111)..... 3. *S. spuriella* (Casey)

***Stethusa dichroa* (Gravenhorst, 1802)**
(Figs. 1-19, 22-42)

Aleochara dichroa Gravenhorst, 1802: 186.
Homalota dichroa: Erichson, 1839: 107 (as valid species).
Atheta (*Metaxya*) *dichroa*: Bernhauer, 1907: 385 (as valid species).
Atheta dichroa: Blatchley, 1910: 353 (as valid species).
Atheta (*Stethusa*) *affluens* Casey, 1910: 5, **syn. nov.**
Atheta (*Stethusa*) *irvingi* Casey, 1910: 5, **syn. nov.**
Atheta (*Stethusa*) *galvestonica* Casey, 1910: 6, **syn. nov.**
Atheta (*Stethusa*) *canonica* Casey, 1910: 6, **syn. nov.**
Atheta (*Stethusa*) *sagax* Casey, 1910: 7, **syn. nov.**
Atheta (*Stethusa*) *sororella* Casey, 1910: 7, **syn. nov.**
Dimetrota (*s. str.*) *novella* Casey, 1910: 105, **syn. nov.**
Dimetrota (*s. str.*) *sentiens* Casey, 1910: 105, **syn. nov.**
Atheta (*Stethusa*) *clarescans* Casey, 1911a: 77, **syn. nov.**
Atheta (*Stethusa*) *irvingi*: Casey, 1911a: 78 (as valid species).
Atheta (*Stethusa*) *irvingi affluens*: Casey, 1911a: 78 (as subspecies or variety of *At. irvingi*).
Atheta (*Stethusa*) *videns* Casey, 1911a: 78, **syn. nov.**
Atheta (*Stethusa*) *cynica* Casey, 1911a: 78, **syn. nov.**
Atheta (*Stethusa*) *cernens* Casey, 1911a: 79, **syn. nov.**
Atheta (*Stethusa*) *officiosa* Casey, 1911a: 79, **syn. nov.**
Atheta (*Stethusa*) *tuta* Casey, 1911a: 80, **syn. nov.**
Atheta (*Stethusa*) *sororella*: Casey, 1911a: 80 (as valid species).
Atheta (*Stethusa*) *irvingi*: Casey, 1911b: 251 (as valid species).

Atheta (*Stethusa*) *affluens*: Casey, 1911b: 251 (as "a variety or perhaps less" of *At. irvingi*).
Atheta (*Metaxya*) *dichroa*: Fenyes, 1920: 199 (as valid species).
Atheta (*Hypatheta*) *irvingi*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *affluens*: Fenyes, 1920: 207 (as synonym of *At. irvingi*).
Atheta (*Hypatheta*) *galvestonica*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *canonica*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *sagax*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *sororella*: Fenyes, 1920: 207 (as valid species).
Atheta (*Dimetrota*) *novella*: Fenyes, 1920: 205 (as valid species).
Atheta (*Dimetrota*) *sentiens*: Fenyes, 1920: 205 (as valid species).
Atheta (*Hypatheta*) *clarescans*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *videns*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *cynica*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *cernens*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *officiosa*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *tuta*: Fenyes, 1920: 208 (as valid species).
Atheta (*Metaxya*) *dichroa*: Bernhauer & Scheerpeltz, 1926: 613 (as valid species).
Atheta (*Hypatheta*) *irvingi*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*Hypatheta*) *affluens*: Bernhauer & Scheerpeltz, 1926: 653 (as synonym of *At. irvingi*).
Atheta (*Hypatheta*) *galvestonica*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*Hypatheta*) *canonica*: Bernhauer & Scheerpeltz, 1926: 652 (as valid species).
Atheta (*Hypatheta*) *sagax*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Hypatheta*) *sororella*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Dimetrota*) *novella*: Bernhauer & Scheerpeltz, 1926: 664 (as valid species).
Atheta (*Dimetrota*) *sentiens*: Bernhauer & Scheerpeltz, 1926: 665 (as valid species).
Atheta (*Hypatheta*) *clarescans*: Bernhauer & Scheerpeltz, 1926: 653 (misspelled as *At. clarescens*; as valid species).
Atheta (*Hypatheta*) *videns*: Bernhauer & Scheerpeltz, 1926: 655 (as valid species).
Atheta (*Hypatheta*) *cynica*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*Hypatheta*) *cernens*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*Hypatheta*) *officiosa*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Hypatheta*) *tuta*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta dichroa: Blackwelder, 1943: 552 (as valid species).
Atheta dichroa: Blackwelder, 1944: 160 (as valid species).
Atheta (*Brundinia*) *dichroa*: Moore & Legner, 1975: 359.
Atheta (*Stethusa*) *irvingi*: Moore & Legner, 1975: 364 (as valid species).
Atheta (*Stethusa*) *affluens*: Moore & Legner, 1975: 364 (as synonym of *At. irvingi*).
Atheta (*Stethusa*) *galvestonica*: Moore & Legner, 1975: 362 (as valid species).
Atheta (*Stethusa*) *canonica*: Moore & Legner, 1975: 356 (as valid species).
Atheta (*Stethusa*) *sagax*: Moore & Legner, 1975: 373 (as valid species).
Atheta (*Stethusa*) *sororella*: Moore & Legner, 1975: 374 (as valid species).
Atheta (*Dimetrota*) *novella*: Moore & Legner, 1975: 367 (as valid species).
Atheta (*Dimetrota*) *sentiens*: Moore & Legner, 1975: 373 (as valid species).
Atheta (*Stethusa*) *clarescans*: Moore & Legner, 1975: 357 (misspelled as *At. clarescens*; as valid species).
Atheta (*Stethusa*) *videns*: Moore & Legner, 1975: 377 (as valid species).
Atheta (*Stethusa*) *cynica*: Moore & Legner, 1975: 358 (as valid species).
Atheta (*Stethusa*) *cernens*: Moore & Legner, 1975: 356 (as valid species).
Atheta (*Stethusa*) *officiosa*: Moore & Legner, 1975: 368 (as valid species).
Atheta (*Stethusa*) *tuta*: Moore & Legner, 1975: 376 (as valid species).

Dimetrota novella: Seevers, 1978: 259 (as valid species).
Dimetrota sentiens: Seevers, 1978: 259 (as valid species).
Philhygra dichroa: Seevers, 1978: 266 (as valid species).
Stethusa irvingi: Seevers, 1978: 267 (as valid species).
Stethusa affluens: Seevers, 1978: 267 (as synonym of *S. irvingi*).
Stethusa galvestonica: Seevers, 1978: 267 (as valid species).
Stethusa canonica: Seevers, 1978: 267 (as valid species).
Stethusa sagax: Seevers, 1978: 267 (as valid species).
Stethusa sororella: Seevers, 1978: 267 (as valid species).
Stethusa clarescans: Seevers, 1978: 267 (as valid species).
Stethusa videns: Seevers, 1978: 267 (as valid species).
Stethusa cynica: Seevers, 1978: 267 (as valid species).
Stethusa cernens: Seevers, 1978: 267 (as valid species).
Stethusa officiosa: Seevers, 1978: 267 (as valid species).
Stethusa tuta: Seevers, 1978: 267 (as valid species).
Atheta dichroa: Pace, 1985: 454 (as valid species).
Atheta dichroa: Klimaszewski & Peck, 1998: 241 (as valid species).

Type material. Lectotype of *Aleochara dichroa* (here designated): ♂, "Americ.[a] Sept.[entrionalis] Zimmermann Nr. 5423" (green label), "Typus" (red label), "Zool. Mus. Berlin", "*Aleochara dichroa* Grav. Lectotypus Lohse fix. 1983" (Lohse did not publish this lectotype designation), "*Atheta dichroa* (Gr.) det. R. Pace 1983" (ZMHB); Paralectotypes: ♂, "5423", "*dichroa* Gr. Am.[erica] Spt.[Septentrionalis] Zimm.[ermann]" (green label), "Typus" (red label), "Zool. Mus. Berlin"; ♂, "Americ.[a] sept.[entrionalis] Zimmermann Nr. 5423" (green label), "Typus" (red label), "Zool. Mus. Berlin"; ♀, "*dichroa* Er. Typ.", "Americ.[a] sept.[entrionalis] Zimmermann Nr. 5423" (green label), "Typus" (red label), "Zool. Mus. Berlin" (ZMHB).

Lectotype of *Atheta affluens* (here designated): ♂, "R. I. [Rhode Island, Boston Neck]", "*affluens* Csy.", "TYPE USNM 39440" (red label), "CASEY bequest 1925" (NMNH). Paralectotypes: ♂, 3♀♀, "R. I. [Rhode Island, Boston Neck]", "? *affluens* PARATYPE USNM 39440" (red label), "CASEY bequest 1925"; ♂, "L.[ong] I.[sland]", "? *affluens* PARATYPE USNM 39440" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta irvingi* (here designated): ♂, "N.Y. [New York, Catskill Mts.]", "*irvingi* Csy.", "TYPE USNM 39438" (red label), "CASEY bequest 1925" (NMNH). Paralectotypes: 8♂♂, 7♀♀, "N.Y. [New York, Catskill Mts.]", "CASEY determ. *irvingi*", "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta galvestonica* (here designated): ♀, "Tex. [Texas, Galveston]", "*galvestonica* Csy.", "TYPE USNM 39443" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "Tex. [Texas, Galveston]", "*galvestonica* PARATYPE USNM 39443" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta canonica* (here designated): ♂, "R. I. [Rhode Island, Boston Neck]", "*canonica* Csy.", "TYPE USNM 39445" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "R. I. [Rhode Island, Boston Neck]", "*canonica* PARATYPE USNM 39445" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta sagax* (here designated): ♂, "Va. [Virginia, Norfolk]", "*sagax* Csy.", "TYPE USNM 39447" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta sororella* (here designated): ♂, "N.Y. [New York, Catskill Mts.]", "*sororella* Csy.", "TYPE USNM 39452" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "N.Y. [New York, Catskill Mts.]", "*sororella* PARATYPE USNM 39452" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Dimetrota novella* (here designated): ♀, "L. I. [Long Island, Willets Point]"; "*novella* Csy.", "TYPE USNM 39124" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Dimetrota sentiens* (here designated): ♀, "Onaga, 8/13/03 [13.viii.1903; Kansas (Warren Knaus)]", "*sentiens* Csy.", "TYPE USNM 39125" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta clarescans* (here designated): ♂, "N.Y. [New York, Catskill Mts.]", "*clarescans* Csy.", "TYPE USNM 39441" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "N.Y. [New York, Catskill Mts.]", "*clarescans* PARATYPE USNM 39441" (red label), "CASEY bequest 1925" (NMNH).

Holotype of *Atheta videns*: ♀, "R. I. [Rhode Island, Boston Neck]", "*videns* Csy.", "TYPE USNM 39448" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta cynica* (here designated): ♀, "R. I. [Rhode Island, Boston Neck]", "*cynica* Csy.", "TYPE USNM 39449" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta cernens* (here designated): ♂, "Miss.[issippi; Pass Christian]", "*cernens* Csy.", "TYPE USNM 39442" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "Miss.[issippi; Pass Christian]", "*cernens* PARATYPE USNM 39442" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta officiosa* (here designated): ♂, "N.Y. [New York, Catskill Mts.]", "*officiosa* Csy.", "TYPE USNM 39450" (red label), "CASEY bequest 1925" (NMNH).

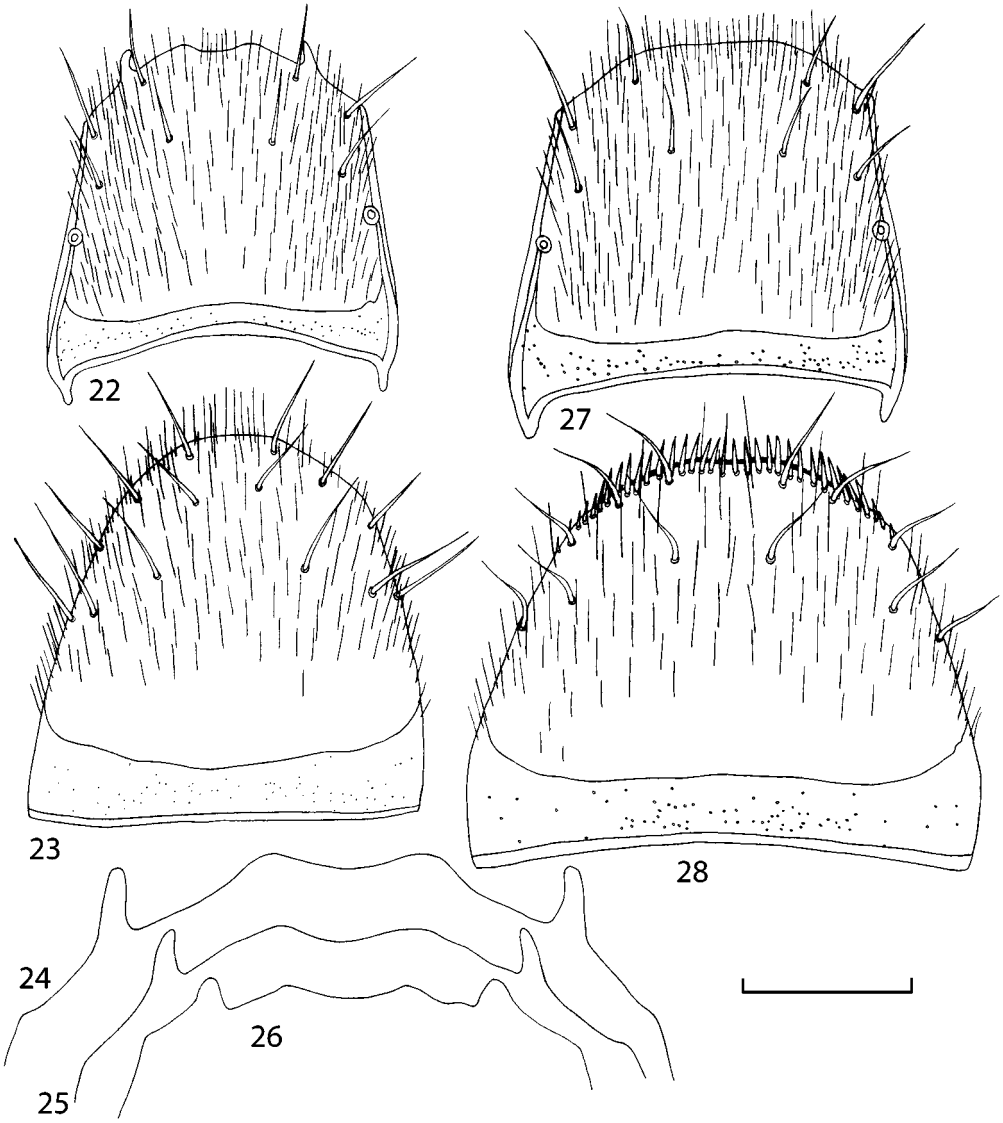
Holotype of *Atheta tuta*: ♂, "N.Y. [New York, Ithaca]"; "*tuta* Csy.", "TYPE USNM 39451" (red label), "CASEY bequest 1925" (NMNH).

Additional material. **UNITED STATES:** ♂, without locality data (FMNH); **Maine:** 2♂♂, 13♀♀, without locality data (Frost) (CASC, FMNH); **Vermont:** 2 specimens, without locality data (FMNH); **Massachusetts:** Norfolk Co.: ♀, Dover, v (CASC); ♂, Milton (Wickham), 2.vi.1901 (CASC); Suffolk Co.: ♂, Dorchester (Wickham), 11.vi.1905 (CASC); Middlesex Co.: 5♂♂, 4♀♀, Framingham (Frost) (CASC, FMNH); Bristol Co.: ♂, Somerset (N.S.Easton) (CASC); **Connecticut:** Tolland Co.: ♀, Stafford, 24.viii.1905 (W.E.Britton) (NMNH (Casey Collection)); **New York:** Ulster Co.: ♂, "N.Y. [Catskill Mountains, Shokan (according to Casey locality Code (FitzGerald 1962)]"; Tompkins Co.: ♂, 3♀♀, "N.Y." (with three black dots under the letters) [Ithaca]; Queens: 2♀♀, "L.I." [Willets Point] (NMNH (Casey Collection)); **New Jersey:** ♀, without locality data (Luetgens), 13.ix.1891 (CASC); Cape May Co.: ♂, Anglesea (NMNH (Casey Collection)); Middlesex Co.: ♀, Avenel (FMNH); **Pennsylvania:** Westmoreland Co.: 1 specimen,

2♂♂, 4♀♀, Jeannette (H.G.Klages) (CASC, FMNH); ♂, 2♀♀, ditto but vii (CASC); 4♂♂, 8♀♀, 1 specimen, ditto but viii (CASC, FMNH); **Ohio:** Hamilton Co.: ♂, Cincinnati (Dury) (CASC); **Illinois:** McHenry Co.: ♀, Algonquin (W.A.Nason) (CASC); Pope Co.: 7 specimens, 2 km N Eddyville, Shawnee National Forest, 37º33.58'N 88º34.95'W, 200m, in horse dung, 29.viii.1999 (V.I.Gusarov) (KSEM, SPSU); **Maryland:** ♂, ♀, Baltimore (FMNH); ♂, ♀, ditto but (F.E.Blaisdell), 10.vi.1909 (CASC); **Virginia:** Page Co./ Madison Co.: 2♂♂, 4♀♀, Shenandoah National Park, Stony Man Mt. (S.Peck), 10.iv.1967 (FMNH); **West Virginia:** Greenbrier Co.: 3♂♂, 2♀♀, White Sulphur Springs, vii (CASC, FMNH); **North Carolina:** Buncombe Co.: 2♂♂, "·N.C." [Asheville] (NMNH (Casey Collection)); **South Carolina:** Pickens Co.: ♀, Table Rock State Park, 11.vii.1988 (J.K.Moulton) (KSEM); **Missouri:** 8 specimens, no locality data (ZMHB, FMNH); **Iowa:** Johnson Co.: ♂, Iowa City (Wickham) (FMNH); **Kansas:** Jefferson Co.: 8 specimens, 12 km NNE Lawrence, 39º04.57'N 95º11.88'W, in cow dung, 250m, 8.vi.1999 (V.I.Gusarov) (KSEM, SPSU); Douglas Co.: ♂, 3♀♀, 1.5 km N Lawrence, right bank of the Kansas River, 38º58.96'N 95º14.62'W, in heaps of rotting wood chips, 200m, 1.v.1999 (V.I.Gusarov); 5 specimens, 18 km SSE Lawrence, Breidenthal Preserve, 38º48.50'N 95º11.52'W, on rotting fruits of *Asimina triloba*, 250m, 3.x.2000 (V.I.Gusarov); 2 specimens, ditto but flight intercept traps baited with beer, 15-18.iv.2002 (all - SPSU); **Arkansas:** Pulaski Co.: ♂, Little Rock (Wickham) (NMNH (Casey Collection)); Searcy Co.: 4♂♂, ♀, Ozark National Forest, Forest Road 1205, Richland Creek, ex cow dung (J.M.Campbell), 15.v.1986 (CNCI; SPSU); **Louisiana:** St. Landry Parish: ♂, Opelousas, v (Klages) (FMNH); 2♂♂, ditto but vi (CASC); East Baton Rouge Co.: ♂, 2♀♀, Baton Rouge, Louisiana State University campus, light traps, 7-17.v.1998 (A.Tishechkin) (SPSU); **Alabama:** Mobile Co.: 5♀♀, Mobile (Loding) (CASC); **Florida:** Osceola Co.: 5♂♂, ♀, 3 mi. SW Lake Marian, caracara nest (Howden & Howell), 15.iii.1956 (CNCI; SPSU); Brevard Co.: ♂, Cocoa (H.F.Howden), 12.iii.1956 (CNCI); **FRANCE: Guadeloupe:** 2♂♂, no locality data (FMNH); **GRENADA:** ♂, St. John's Riv. (Leeward side), [18]86 [?] (H.H.Smith) (FMNH); **PARAGUAY:** ♀, no locality data (Drake) (FMNH); **ECUADOR: Galápagos Islands:** 13 specimens, Isla San Cristóbal, 1 km E El Junco, Miconia ravine litter, 550 m, 14.ii.1989 (S.Peck) (FMNH).

Diagnosis. *Stethusa dichroa* is distinguished from two other Nearctic species of the genus by the terminal antennal article with two subbasal impressions covered with dense microsetae; the distinct shape of the male tergum 8 (Figs. 22, 24-26); the shape of aedeagus (Figs. 29-39), particularly the presence of two distal spines of the internal sac (Figs. 34, 37-38); the shape of the spermatheca (Figs. 41-42); and the presence of a quadrangular female accessory sclerite (Fig. 40).

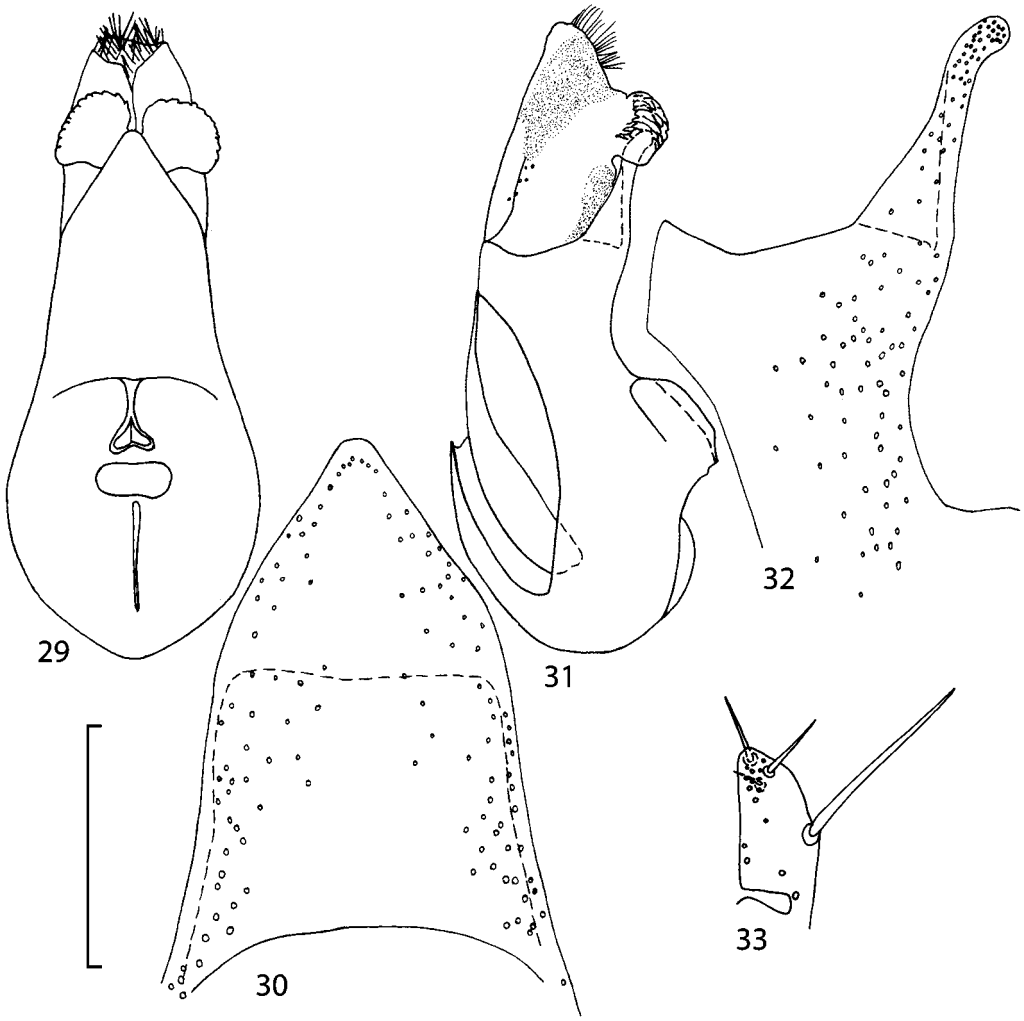
Stethusa dichroa differs from the Neotropical *S. luederwaldti* by a larger body size; the shape of the aedeagus (Figs. 29-39; 76-82); the presence of two distal spines of the internal sac (Figs. 34, 37-38; 80-81); the shape of the spermatheca (Figs. 41-42; 83); and the presence of a female accessory sclerite (Fig. 40).



FIGURES 22-28. Abdominal segment 8 of *Stethusa dichroa* (Gravenhorst) (18 km SSE Lawrence, Kansas (22-23, 25); 12 km NNE Lawrence (24, 27); 2 km N Eddyville, Illinois (26, 28)). 22 – male tergum 8; 23 – male sternum 8; 24-26 – apex of male tergum 8; 27 – female tergum 8; 28 – female sternum 8. Scale bar 0.2 mm (22-23, 27-28), 0.1 mm (24-26).

Stethusa dichroa is distinguished from the Neotropical *S. lurida* by the shape of the spermatheca (Figs. 41-42: this paper; Fig. 46: Klimaszewski & Peck 1998).

Description. Length 2.0-3.0 mm. Head and abdomen dark brown to black, pronotum brown, elytra brownish yellow with darker area around scutellum, legs yellow, mouthparts and antennae brown, first and often second antennal segments yellowish.



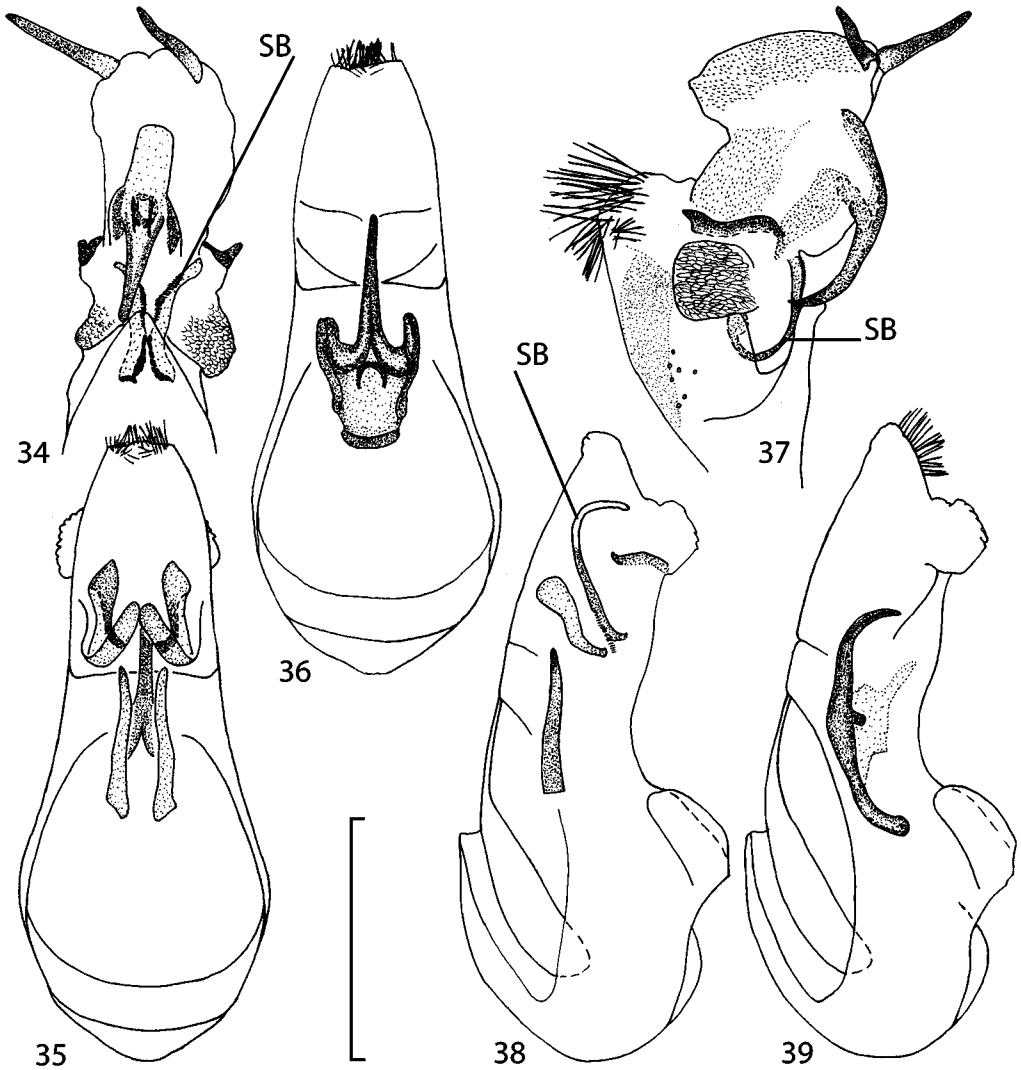
FIGURES 29-33. Aedeagus of *Stethusa dichroa* (Gravenhorst) (males, 12 km NNE Lawrence, Kansas (29-32); 18 km SSE Lawrence (33)). 29 – median lobe, parameral view; 30 – apex of median lobe, parameral view; 31 – median lobe, lateral view; 32 – apex of median lobe, lateral view; 33 – apex of left paramere. Scale bar 0.1 mm (30, 32-33), 0.2 mm (29, 31).

Head surface glossy, with weak isodiametric microsculpture, with fine punctation, distance between punctures equals 2 times their diameter. Eyes very large, 3.5-4.5 times as long as temples. Antennal article 2 is 1.1 times as long as article 3, article 4 subquadrate, 5-9 slightly elongate, 10 subquadrate, article 11 as long as articles 9 and 10 combined (Fig. 16). The terminal antennal article with two subbasal impressions covered with dense microsetae.

Pronotum transverse, 1.3 times as wide as head, width 0.54-0.69 mm, length 0.41-0.53 mm, width to length ratio 1.3; glossy, with very weak isodiametric microsculpture (hardly visible at 70x); punctation as fine as on head but denser, distance between punctures equal

to 1-2 times their diameter. Elytra much wider (0.67-0.84 mm) and longer (0.50-0.61 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.2), 1.4 times wider than long, surface glossy, without visible (at 70x) microsculpture; punctation as on pronotum, slightly asperate.

Abdominal terga glossy, with weak microsculpture consisting of transverse waves; with fine punctation, distance between punctures equals 1-3 times their diameter on terga 3-5 and 2-5 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

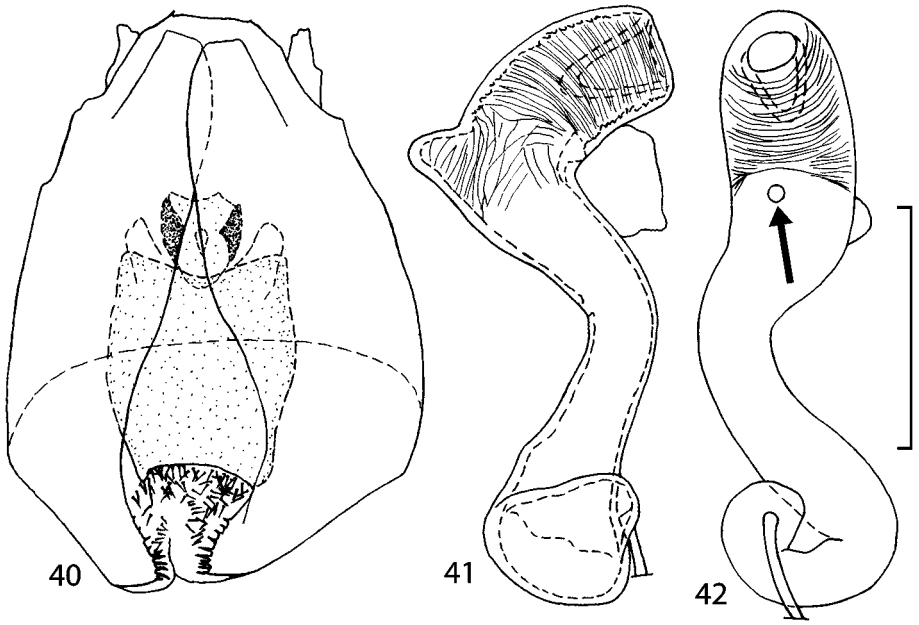


FIGURES 34-39. Aedeagus of *Stethusa dichroa* (Gravenhorst) (males, 12 km NNE Lawrence, Kansas (35-36, 38-39); 18 km SSE Lawrence (34, 37)). 34 – everted internal sac, parameral view; 35-36 – details of retracted internal sac, abparameral view; 37 – everted internal sac, lateral view; 38-39 – details of retracted internal sac, lateral view. SB - sclerotized band. Scale bar 0.2 mm.

Male tergum 7 without medial tubercle in front of posterior margin. Posterior margin of male tergum 8 with two blunt medial projections and two lateral denticles (Figs. 22, 24-26).

Aedeagus as in Figs. 29-39, internal sac with two distal spines (Figs. 34, 37-38).

Females with quadrangular accessory sclerite (Fig. 40). Spermatheca as in Figs. 41-42, the distal portion is bent towards the side bearing the spermathecal gland.



FIGURES 40-42. Details of *Stethusa dichroa* (Gravenhorst) (female, 12 km NNE Lawrence, Kansas). 40 – female abdominal segments 9-10, ventral view; 41-42 – spermatheca of the same specimen illustrated at different angles. The arrow indicates the point where the spermathecal gland is attached. Scale bar 0.2 mm (40), 0.1 mm (41-42).

Discussion. *Stethusa dichroa* varies in body size, but the shape of the aedeagus and the spermatheca are the same in small and large specimens. As in many other aleocharine genera the denticles at the posterior margin of male tergum 8 are longer in larger males (Figs. 24-26). Casey (1910, 1911a) failed to recognize the variability of this character and some of his *Stethusa* species were based entirely on the different size of these denticles. The types of all species synonymized here with *S. dichroa* fall within the range of variability of that species.

Distribution. Widely distributed in the eastern United States (Fig. 110). The record from Pasadena, California (Bernhauer 1907) is a misidentification (♂, "Pasadena Cal. Dr. A.Fenyes", "*dichroa* Er.? det. Bernhauer", "Chicago NHMus. M.Bernhauer Collection" (FMNH; examined). *Stethusa dichroa* is also known from Bolivia (Pace 1985), Brasil

(Blackwelder 1943), Paraguay, the Galápagos Islands and the Antilles (St. Thomas (Pace 1985), Tortola, St. Vincent (Blackwelder 1943), Grenada and Guadeloupe).

Considering the wide distribution of this species it might be interesting to discuss the possibility that *S. dichroa* was introduced to some parts of its current range. The fact that *S. dichroa* is not known from the western United States is significant in that this species is common in dung and would not have been overlooked by collectors working on the West Coast. If *S. dichroa* was introduced from South America, it is difficult to imagine it was established in North America as early as 1802 (Gravenhorst 1802) and as far North as Maine but that it failed to spread to the West Coast. An alternative hypothesis of *S. dichroa* being introduced to South America seems more plausible. To test this hypothesis, it would be important to determine whether *S. dichroa* occurs in natural habitats in South America or restricted to human settlements.

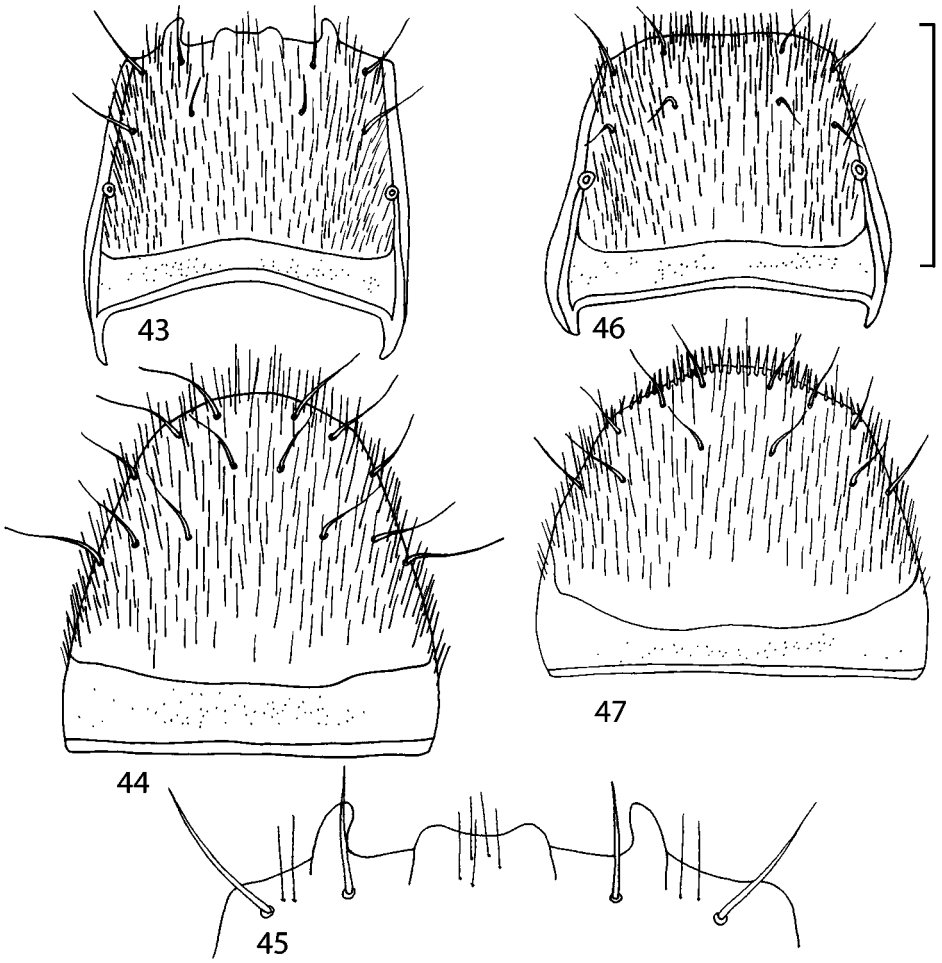
Based on an examination of extensive material obtained during 15 months of work on the Galápagos Islands, Klimaszewski and Peck (1998) concluded that *S. dichroa* was the most common aleocharine species on the islands. They incorrectly stated that the type series of *S. dichroa* came from South America and the island of St. Thomas in the West Indies (Klimaszewski & Peck 1998: 242). In fact, the species was described from North America (Gravenhorst 1802) without mention of the exact locality. Klimaszewski and Peck (1998) also judged *S. dichroa* to be native to the Galápagos Islands without explicitly stating why. Considering that the Galápagos specimens of *S. dichroa* are identical to the continental specimens in all characters, including the details of male and female genitalia, and the fact that the islands are isolated from the closest landmass by a gap of about 1000 km, recent introduction by humans seems to be a more likely explanation for the presence of *S. dichroa* on the islands.

Natural History. *Stethusa dichroa* is common in dung, and other kinds of decomposing organic matter.

***Stethusa klimschi* (Bernhauer, 1909)**

(Figs. 21, 43-57)

Atheta (*s. str.*) *klimschi* Bernhauer, 1909: 523.
Atheta (*Stethusa*) *klimschi*: Casey, 1910: 5 (as valid species).
Atheta sulcata Blatchley, 1910: 355.
Atheta (*Hypatheta*) *klimschi*: Fenyes, 1920: 207 (as valid species).
Atheta sulcata: Fenyes, 1920: 227 (as valid species of doubtful systematic position).
Atheta (*Hypatheta*) *klimschi*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*Earota*) *sulcata*: Bernhauer & Scheerpeltz, 1926: 655 (as valid species).
Atheta (*Stethusa*) *klimschi*: Moore & Legner, 1975: 364 (as valid species).
Atheta (*Earota*) *sulcata*: Moore & Legner, 1975: 375 (as valid species).
Stethusa klimschi: Seevers, 1978: 267 (as valid species).
Earota sulcata: Seevers, 1978: 271 (as valid species).
Atheta klimschi: Gusarov, 2002b: 14 (as valid species).
Atheta sulcata: Gusarov, 2002b: 14 (as synonym of *At. klimschi*).



FIGURES 43-47. Abdominal segment 8 of *Stethusa klimschi* (Bernhauer) (male (43-45) and female (46-47) from Vicksburg, Mississippi). 43 – male tergum 8; 44 – male sternum 8; 45 – apex of male tergum 8; 46 – female tergum 8; 47 – female sternum 8. Scale bar 0.4 mm (43-44, 46-47), 0.2 mm (45).

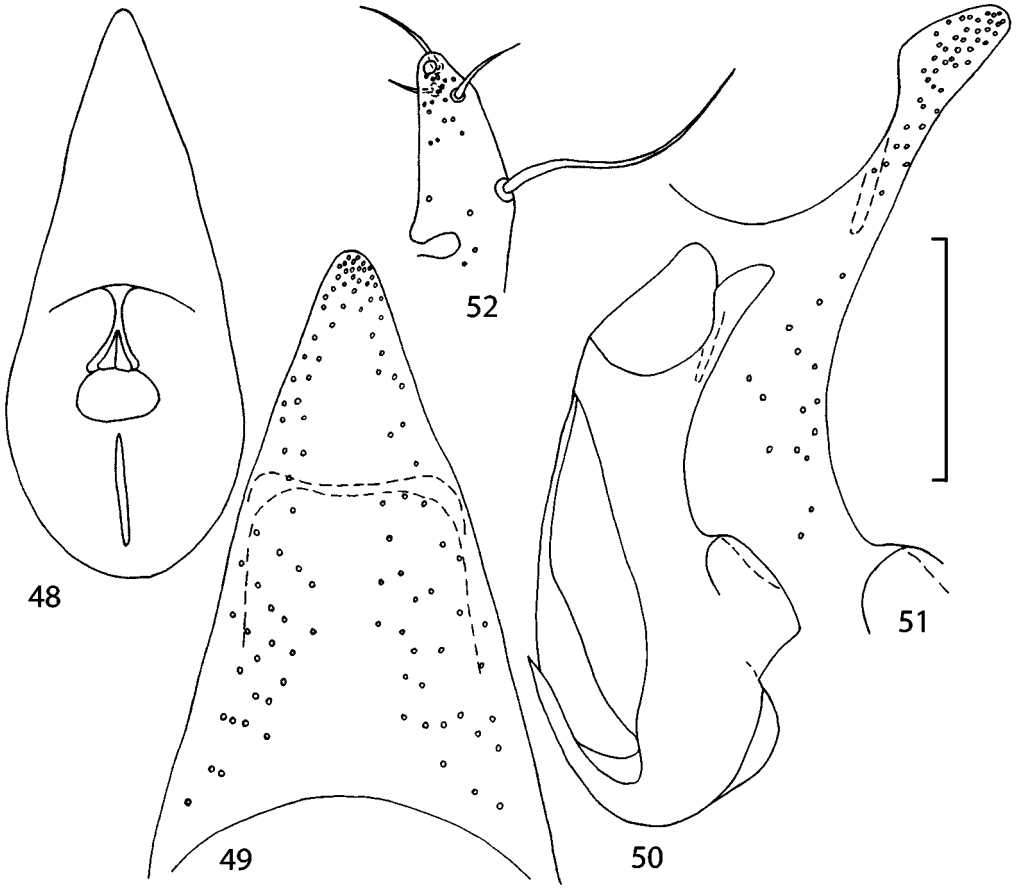
Type material. Lectotype of *Atheta klimschi* (designated by Gusarov (2002b)), **UNITED STATES: Louisiana:** St. Landry Parish: ♂, Opelousas, vi; paralectotype of *Atheta klimschi*, **UNITED STATES: Louisiana:** ♂, Opelousas, vi (FMNH).

Lectotype of *Atheta sulcata* (designated by Gusarov (2002b)), **UNITED STATES: Indiana:** Posey Co.: ♂, 22.iv.1909 (PURC).

Additional material. United States: Louisiana: St. Landry Parish: 2♂♂, Opelousas, v (Klimsch) (FMNH); **Mississippi:** Warren Co.: 2♂♂, 3♀♀, "·Miss." [Vicksburg (according to Casey locality Code (FitzGerald 1962))] (NMNH (Casey collection)).

Diagnosis. *Stethusa klimschi* differs from *S. dichroa* in the following characters: the lack of subbasal impressions of the terminal antennal article; the apex of median lobe is

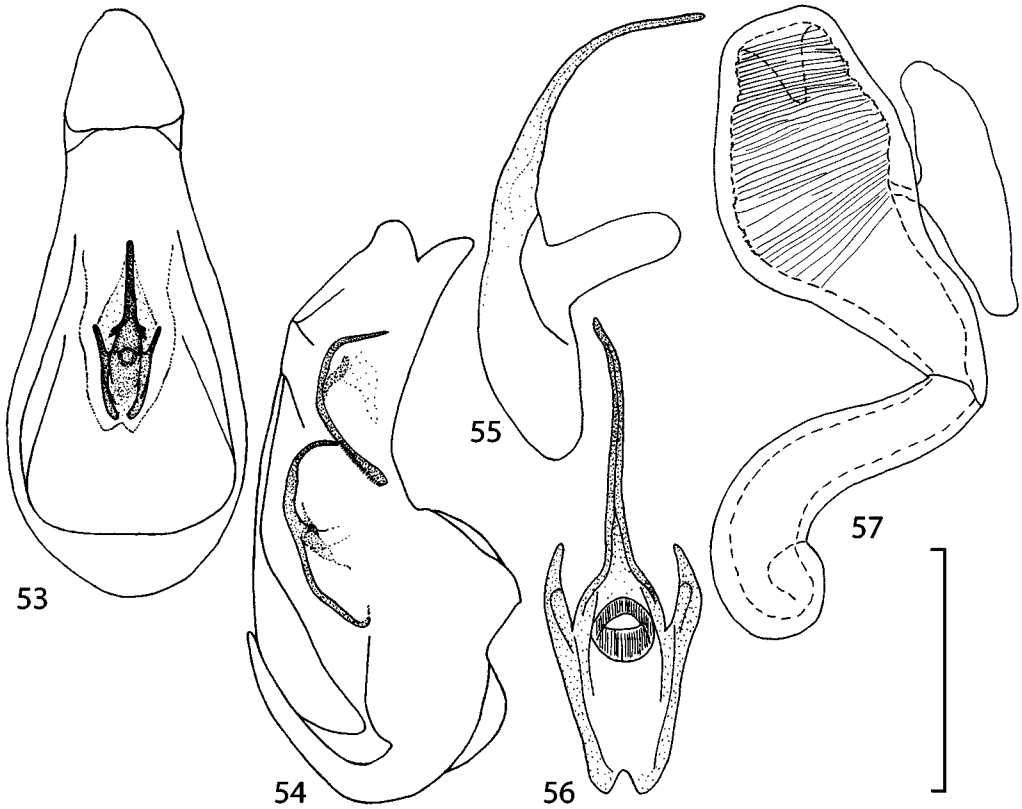
narrower in ventral view (Figs. 48-49; 29-30) and straight in lateral view (Figs. 50-51; 31-32); the lack of the distal spines of the internal sac (Figs. 54; 38-39); the shape of the spermatheca (Figs. 57; 41-42); and the lack of a female accessory sclerite.



FIGURES 48-52. Aedeagus of *Stethusa klimschi* (Bernhauer) (lectotype (48-51); and male from Vicksburg, Mississippi (52)). 48 – median lobe, parameral view; 49 – apex of median lobe, parameral view; 50 – median lobe, lateral view; 51 – apex of median lobe, lateral view; 52 – apex of left paramere. Scale bar 0.1 mm (49, 51-52), 0.2 mm (48, 50).

Stethusa klimschi differs from *S. spuriella* in having a larger body size; straight apex of the median lobe (in lateral view; Figs. 50-51; 65-66); and a longer spermatheca (Figs. 57; 70).

Description. Length 3.2-3.5 mm. Head dark brown, pronotum and abdomen reddish brown to brown, segments 5-6 darker than the rest of the abdomen; elytra brownish yellow with darker area around scutellum and epipleura, legs brownish yellow, mouthparts and antennae brown, two basal antennal segments yellowish.



FIGURES 53-57. Aedeagus and spermatheca of *Stethusa klimschi* (Bernhauer) (lectotype (53-54); male (55-56) and female (57) from Vicksburg, Mississippi). 53 – details of retracted internal sac, abparameral view; 54 – details of retracted internal sac, lateral view; 55 – copulatory piece, lateral view; 56 – copulatory piece, abparameral view; 57 – spermatheca. Scale bar 0.2 mm (53-54), 0.1 mm (55-57).

Head surface glossy, with weak isodiametric microsculpture, with fine punctation, distance between punctures equals 2 times their diameter. Eyes very large, 3.5-5 times as long as temples. Antennal article 2 is 1.1 times as long as article 3, articles 4-6 subquadrate, 7-10 slightly transverse, article 11 as long as articles 9 and 10 combined.

Pronotum transverse, 1.3 times as wide as head, width 0.69-0.77 mm, length 0.54-0.61 mm, width to length ratio 1.3; glossy, with weak isodiametric microsculpture; punctation as fine as on head but denser, distance between punctures equal to 1-2 times their diameter. Elytra much wider (0.86-0.96 mm) and longer (0.67-0.74 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.2), 1.3 times wider than long, surface glossy, with poorly visible microsculpture; punctation fine and slightly asperate, distance between punctures equals 1-2 times their diameter.

Abdominal terga glossy, with weak microsculpture consisting of transverse waves; with fine punctation, distance between punctures equals 1-3 times their diameter on terga 3-5 and 3-6 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

Male tergum 7 with elongate medial tubercle in front of posterior margin. Posterior margin of male tergum 8 with two blunt medial projections and two lateral denticles (Figs. 43, 45).

Aedeagus as in Figs. 48-56, internal sac without distal spines (Fig. 54).

Female without accessory sclerite. Spermatheca as in Fig. 57.

Discussion. In my earlier paper (Gusarov 2002b) I argued that *S. klimschi* did not belong to *Earota* because of the narrower mesosternal process, and tentatively placed this species in *Atheta*. Although in *S. klimschi* the mesosternal process is indeed narrower than in *Earota* it is still broader than in *Atheta*. *Stethusa klimschi* can be distinguished from *Atheta* based on additional characters listed in the diagnosis of *Stethusa*.

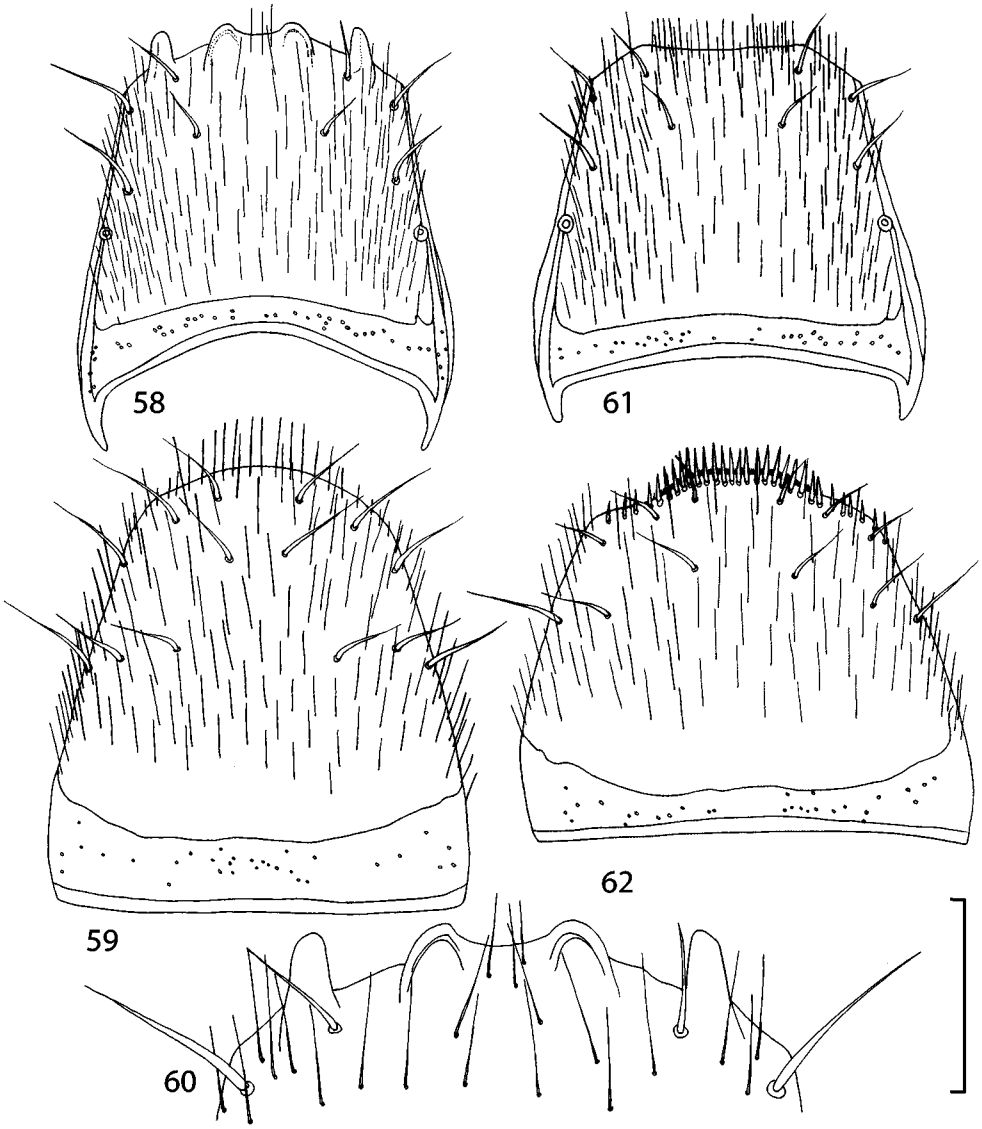
Distribution. *Stethusa klimschi* is known from Louisiana, Mississippi and southern Indiana (Fig. 111).

Natural History. No information is available.

***Stethusa spuriella* (Casey, 1910)**

(Figs. 58-70)

Atheta (*s. str.*) *unigranosa* Bernhauer, 1909: 521 (*nec* Bernhauer, 1908: 363), **syn. nov.**
Atheta (*Stethusa*) *spuriella* Casey, 1910: 8.
Atheta (*Stethusa*) *subdebilis* Casey, 1910: 7, **syn. nov.**
Atheta (*s. str.*) *duplicata* Fenyes, 1920: 213 (replacement name for *At. unigranosa* Bernhauer, 1909, nec 1908), **syn. nov.**
Atheta (*Hypatheta*) *spuriella*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *subdebilis*: Fenyes, 1920: 207 (as valid species).
Atheta macrops Notman, 1920: 725, **syn. nov.**
Atheta (*s. str.*) *unigranosa*: Bernhauer & Scheerpeltz, 1926: 642 (as synonym of *At. duplicata*).
Atheta (*Hypatheta*) *spuriella*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Hypatheta*) *subdebilis*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*s. str.*) *duplicata*: Bernhauer & Scheerpeltz, 1926: 642 (as valid species).
Atheta (*s. str.*) *macrops*: Bernhauer & Scheerpeltz, 1926: 645 (as valid species).
Atheta (*s. str.*) *duplicata*: Moore & Legner, 1975: 360 (as valid species).
Atheta (*s. str.*) *unigranosa*: Moore & Legner, 1975: 360 (as synonym of *At. duplicata*).
Atheta (*Stethusa*) *spuriella*: Moore & Legner, 1975: 374 (as valid species).
Atheta (*Stethusa*) *subdebilis*: Moore & Legner, 1975: 374 (as valid species).
Xenota unigranosa: Seevers, 1978: 269 (as valid species).
Xenota duplicata: Seevers, 1978: 269 (as synonym of *At. unigranosa*).
Xenota spuriella: Seevers, 1978: 269 (as valid species).
Xenota subdebilis: Seevers, 1978: 269 (as valid species).
Microdota macrops: Seevers, 1978: 265 (as valid species).



FIGURES 58-62. Abdominal segment 8 of *Stethusa spuriella* (Casey) (male, 18 km SSE Lawrence, Kansas (58-60); and female 9 km W Buffalo Gap, Virginia (61-62)). 58 – male tergum 8; 59 – male sternum 8; 60 – apex of male tergum 8; 61 – female tergum 8; 62 – female sternum 8. Scale bar 0.2 mm (58-59, 61-62), 0.1 mm (60).

Type material. Lectotype of *Atheta unigranosa* (here designated): ♂, "Newark, Del. [aware], 5-22.1905 [22.v.1905]", "7803", "Houghton", "*unigranosa* Bernh. Typus. Fenyes" (yellow label), "Chicago NHMus. M.Bernhauer Collection (FMNH).

Lectotype of *Atheta spuriella* (here designated): ♂, "N. Y. [New York, Catskill Mountains]", "*spuriella* Csy.", "TYPE USNM 39439" (red label), "CASEY bequest 1925" (NMNH).

Lectotype of *Atheta subdebilis* (here designated): ♂ (with missing aedeagus), "MO: [Missouri, St. Louis]", "*subdebilis* Csy.", "TYPE USNM 39446" (red label), "CASEY bequest 1925" (NMNH). Paralectotype: ♀, "MO: [Missouri, St.Louis]", "*subdebilis* PARATYPE USNM 39446" (red label), "CASEY bequest 1925" (NMNH).

Paratypes of *Atheta macrops*: **UNITED STATES: Florida:** 2♀♀, "Fla." (no locality data) (AMNH, FMNH); Jefferson Co.: ♀, Monticello, 4-8.x.1914 (AMNH).

Additional material. UNITED STATES: Pennsylvania: Westmoreland Co.: ♂, Jeannette (H.G.Klages) (FMNH); **Ohio:** ♂, without locality data (Frost) (CASC); **Indiana:** Lawrence Co.: 2♂♂ (W.S.Blatchley), 29.vii.1909 (CASC); **Georgia:** Rabun Co.: 2♂♂, Clayton, 2000-3700' (Leng) (CASC).

Diagnosis. *Stethusa spuriella* differs from *S. dichroa* in the following characters: a smaller body size; the lack of subbasal impressions of the terminal antennal article; the lack of the distal spines of the internal sac (Figs. 68; 38-39); the shape of the spermatheca (Figs. 70; 41-42); and the lack of a female accessory sclerite.

Stethusa spuriella differs from *S. klimschi* in having a smaller body size; the bent apex of the median lobe (in lateral view; Figs. 65-66; 50-51); and a shorter spermatheca (Figs. 70; 57).

Description. Length 2.1-2.5 mm. Head and abdomen dark brown, abdominal segments 3-4 and apical half of segment 7 lighter, pronotum brown, elytra brownish yellow, in some with darker area around scutellum, legs yellow, mouthparts and antennae brown, two basal antennal segments yellow.

Head surface glossy, with weak isodiametric microsculpture, with fine punctation, distance between punctures equals 3 times their diameter. Eyes very large, 3.5-4.5 times as long as temples. Antennal article 2 is 1.1 times as long as article 3, articles 4-10 transverse, article 11 slightly longer than articles 9 and 10 combined.

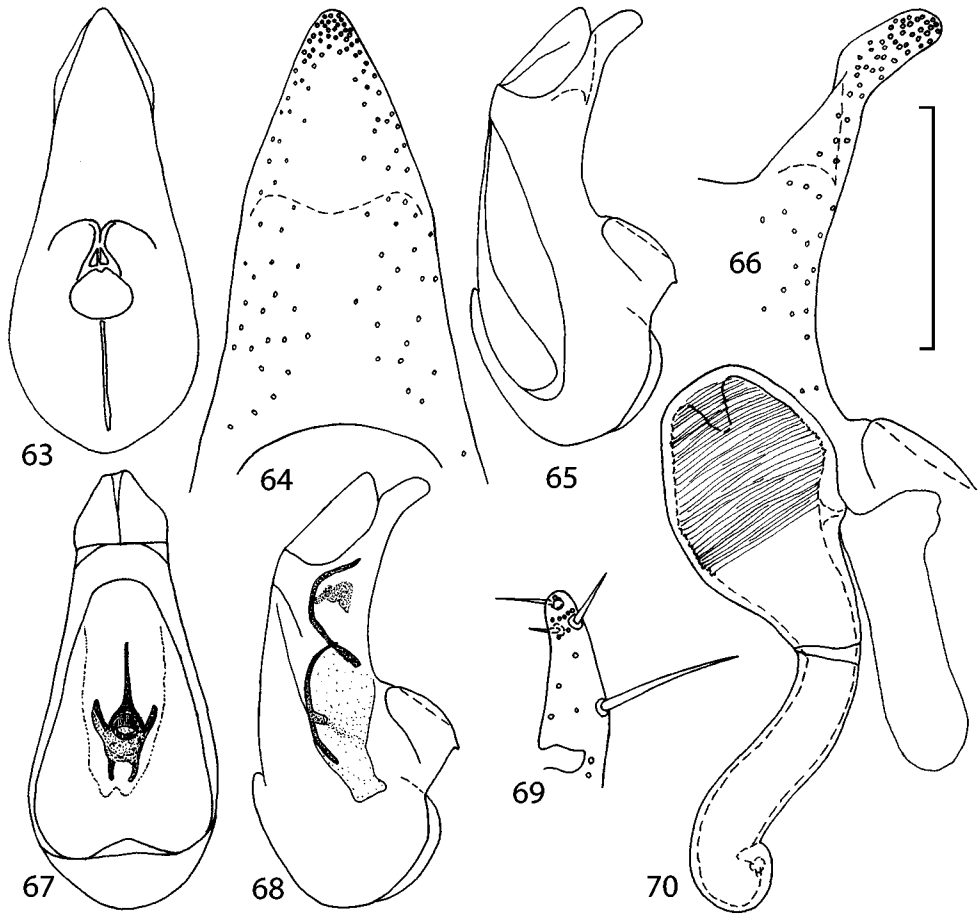
Pronotum transverse, 1.2 times as wide as head, width 0.46-0.57 mm, length 0.36-0.44 mm, width to length ratio 1.3; glossy, with very weak isodiametric microsculpture (hardly visible at 70x); punctation as fine as on head but denser, distance between punctures equal to 1-2 times their diameter. Elytra much wider (0.59-0.73 mm) and longer (0.43-0.57 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.2), 1.3 times wider than long, surface glossy, with poorly visible (at 70x) microsculpture; punctation as on pronotum, slightly asperate.

Abdominal terga glossy, with weak microsculpture consisting of transverse waves; with fine punctation, distance between punctures equals 2-4 times their diameter on terga 3-5 and 3-6 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

Male tergum 7 with weak elongate medial tubercle in front of posterior margin. Posterior margin of male tergum 8 with two blunt medial projections and two lateral denticles (Figs. 58, 60).

Aedeagus as in Figs. 63-69, internal sac without distal spines (Fig. 68).

Female without accessory sclerite. Spermatheca as in Fig. 70.



FIGURES 63-70. Aedeagus and spermatheca of *Stethusa spuriella* (Casey) (male, 18 km SSE Lawrence, Kansas (63-69); and female 9 km W Buffalo Gap, Virginia (70)). 63 – median lobe, parameral view; 64 – apex of median lobe, parameral view; 65 – median lobe, lateral view; 66 – apex of median lobe, lateral view; 67 – details of retracted internal sac, abparameral view; 68 – details of retracted internal sac, lateral view; 69 – apex of left paramere; 70 – spermatheca. Scale bar 0.1 mm (64, 66, 69-70), 0.2 mm (63, 65, 67-68).

Discussion. The three species synonymized here with *S. spuriella* are identical with the types of that species in external characters and the shape of the aedeagus.

Distribution. Apparently, *S. spuriella* is widely distributed in the eastern United States but its distribution is poorly documented (Fig. 111).

Natural History. No information is available.

Except for the widespread *S. dichroa*, all species considered by previous authors as members of *Stethusa* have been reported only from North America (Casey 1910, 1911a; Moore & Legner 1975; Seevers 1978). Fenyes (1920) and Bernhauer and Scheerpeltz (1926) did not recognize *Stethusa* as valid genus or subgenus. They placed in the subgenus *Hypatheta* of the genus *Atheta* most of the species considered in this paper as members of the genus *Stethusa*. Apart from the species of *Stethusa*, Fenyes (1920) and Bernhauer and Scheerpeltz (1926) included in *Hypatheta* many European species now considered members of *Atheta s. str.* (Benick & Lohse 1974) and some Neotropical species. The possibility that some of these Neotropical species belong to *Stethusa* cannot be ruled out. Although a revision of Neotropical *Stethusa* is outside the scope of the present paper, I had an opportunity to examine the types of two South American species placed by Bernhauer and Scheerpeltz (1926) in *Hypatheta*. One of them turned out to be a member of *Stethusa*. Additionally, my examination of published drawings and descriptions of the Neotropical *Atheta* species revealed yet another species that should be moved to *Stethusa*. These results are briefly discussed below.

***Stethusa lurida* (Erichson, 1839), new combination**
(Figs. 10, 37-38, 46, 53 in Klimaszewski & Peck, 1998)

Homalota lurida Erichson, 1839: 108.
Atheta (*Metaxya*) *lurida*: Fenyes, 1920: 199 (as valid species).
Atheta (*s. str.*) *lurida*: Bernhauer & Scheerpeltz, 1926: 645 (as valid species).
Atheta lurida: Blackwelder, 1944: 160 (as valid species).
Atheta lurida: Pace, 1985: 454 (as valid species).
Atheta lurida: Klimaszewski & Peck, 1998: 238 (as valid species).

Material. No specimens of *S. lurida* have been examined.

Diagnosis. See Klimaszewski & Peck, 1998.

Discussion. *Stethusa lurida* is similar to the Nearctic species of the genus in the shape of posterior margin of the male tergum 8 (Fig. 53: Klimaszewski & Peck 1998); the pronotal pubescence of type I (Fig. 10: Klimaszewski & Peck 1998); the long pronotal macrosetae (Fig. 10: Klimaszewski & Peck 1998); the shape of the aedeagus (Figs. 37-38: Klimaszewski & Peck 1998), particularly the shape of the copulatory piece of the internal sac (indicated by denser punctation in both lateral and abparameral views of the median lobe (Figs. 37-38: Klimaszewski & Peck 1998)); and the shape of the spermatheca (Fig. 46: Klimaszewski & Peck 1998)). Since I have not examined any specimens of *S. lurida*, I rely on the published diagnosis and illustrations provided by Klimaszewski and Peck (1998) who noted that they had examined a syntype of *Homalota lurida* from Brasil (ZMNB).

Distribution. *Stethusa lurida* is known from Brasil, Argentina and the Galápagos Islands.

***Stethusa luederwaldti* (Bernhauer, 1908), new combination**
(Figs. 71-83)

Atheta (*s. str.*) *Lüderwaldti* Bernhauer, 1908: 360.
Atheta (*Hypatheta*) *Luederwaldti*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *Luederwaldti*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta lüderwaldti: Blackwelder, 1944: 160 (as valid species).

Type material. Lectotype of *Atheta luederwaldti* (here designated): ♂, "Brasil. S. Paulo, Ypiranga, Dr. Ihering", "*Ypirangana* Bh. Typ.", "*Lüderwaldti* Bernh. Cotypus" (yellow label), "8521", "Chicago NHMus. M.Bernhauer Collection" (FMNH). Paralectotypes: ♂, "Brasil. S. Paulo, Ypiranga, Dr. Ihering", "*Lüderwaldti* Brh. Typus" (yellow label), "8459", "Chicago NHMus M.Bernhauer Collection"; ♀, "Brasil. S. Paulo, Ypiranga, Dr. Ihering", "*Lüderwaldti* Brh. Cotypus" (yellow label), "8521", "Chicago NHMus M.Bernhauer Collection" (FMNH).

Additional material. ARGENTINA: ♂, Prov. Buenos Aires (C.Bruch), 25.ii.1905 [or 25.xi.1905]; **URUGUAY:** ♀, Montevideo, Cerro (Fernandez), 1.x.1933; **VENEZUELA:** ♀, Caracas (all - FMNH).

Diagnosis. *Stethusa luederwaldti* is distinguished from the other species of *Stethusa* by the terminal antennal article with two subbasal impressions covered with dense microsetae; the lack of modifications in the male tergum 7; the distinct shape of the male tergum 8 (Figs. 71, 73); the distinct shape of the aedeagus (Figs. 76-82) and the spermatheca (Fig. 83); and the lack of a female accessory sclerite.

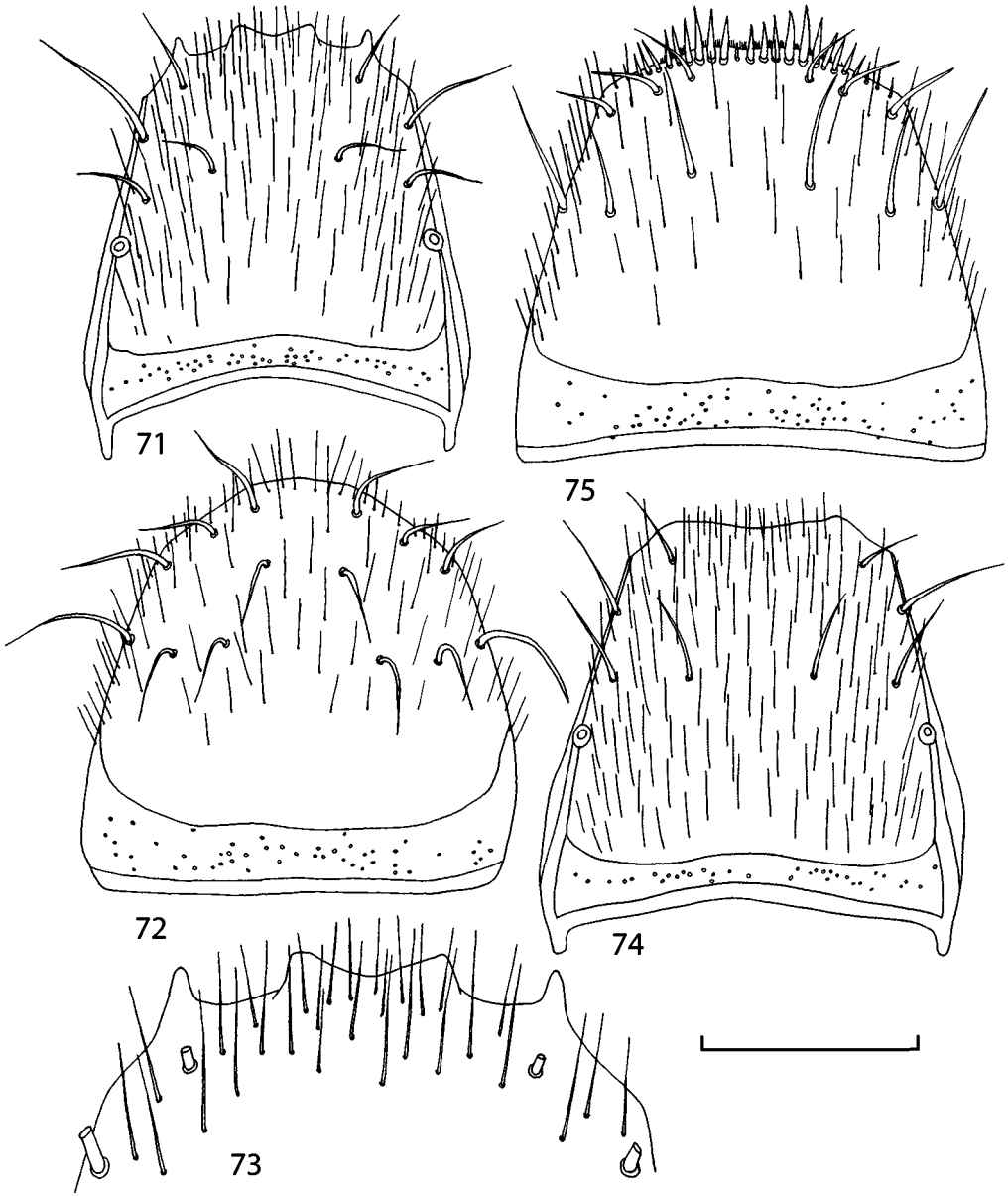
Stethusa luederwaldti differs from *S. dichroa* by a smaller body size; the shape of the aedeagus (Figs. 76-82); the lack of two distal spines of the internal sac (Figs. 80-81; 35, 38); the shape of the spermatheca (Figs. 83; 41-42); and the absence of a female accessory sclerite.

Stethusa luederwaldti is distinguished from *S. lurida* by the shape of the aedeagus (Figs. 76-82: this paper; Figs. 37-38: Klimaszewski & Peck 1998), particularly the straight apex of the median lobe (in lateral view); and the shape of the spermatheca (Fig. 83: this paper; Fig. 46: Klimaszewski & Peck 1998), particularly a larger umbilicus.

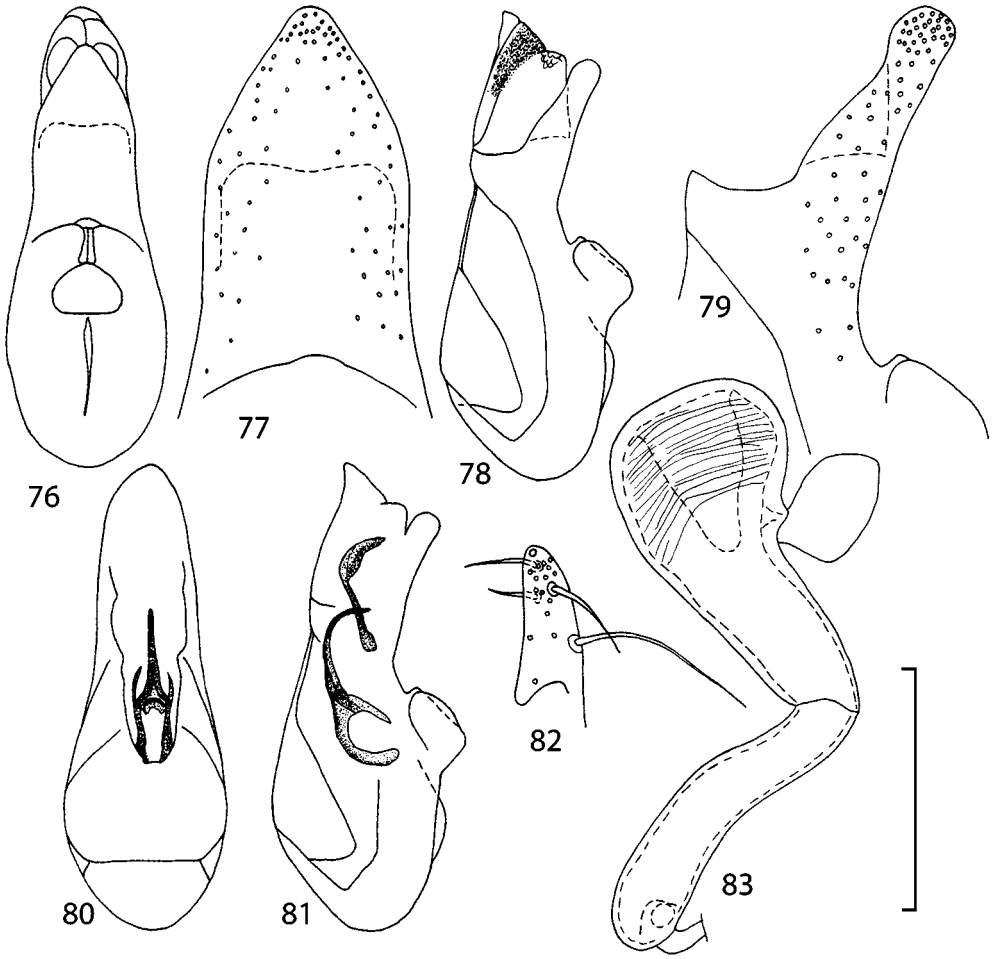
Description. Length 2.2-2.4 mm. Body brownish black, elytra brownish yellow with darker area around scutellum, legs yellow, antennae brown, with lighter first antennal segment.

Head surface glossy, with weak isodiametric microsculpture, with fine punctation, distance between punctures equals 1-2 times their diameter. Eyes very large, 2.5-3.5 times as long as temples. Antennal article 2 is slightly longer than article 3, article 4 subquadrate,

5-10 slightly transverse to transverse, article 11 as long as articles 9 and 10 combined. Article 11 with two subbasal impressions covered with dense microsetae.



FIGURES 71-75. Abdominal segment 8 of *Stethusa luederwaldti* (Bernhauer) (lectotype, male (71-73); and female paralectotype (74-75)). 71 – male tergum 8; 72 – male sternum 8; 73 – apex of male tergum 8; 74 – female tergum 8; 75 – female sternum 8. Scale bar 0.2 mm (71-72, 74-75), 0.1 mm (73).



FIGURES 76-83. Aedeagus and spermatheca of *Stethusa luederwaldti* (Bernhauer) (lectotype, male (76-82); and female paralectotype (83)). 76 – median lobe, parameral view; 77 – apex of median lobe, parameral view; 78 – median lobe, lateral view; 79 – apex of median lobe, lateral view; 80 – details of retracted internal sac, abparameral view; 81 – details of retracted internal sac, lateral view; 82 – apex of left paramere; 83 – spermatheca. Scale bar 0.1 mm (77, 79, 82-83), 0.2 mm (76, 78, 80-81).

Pronotum transverse, 1.2 times as wide as head, width 0.50-0.59 mm, length 0.39-0.46 mm, width to length ratio 1.3; glossy, with very weak isodiametric microsculpture (hardly visible at 70x); punctation as fine as on head but denser, distance between punctures equal to their diameter. Elytra much wider (0.60-0.76 mm) and longer (0.46-0.57 mm; measured from humeral angle) than pronotum (elytral length to pronotal length ratio 1.2), 1.3 times wider than long, surface glossy, with very weak and poorly visible (at 70x) microsculpture; punctation as on pronotum, slightly asperate.

Abdominal terga glossy, with weak microsculpture consisting of transverse waves; with fine punctation, distance between punctures equals 3-4 times their diameter on terga 3-5 and 4-7 times on terga 6-7. Apical margin of tergum 7 with white palisade fringe.

Male tergum 7 without modifications. Posterior margin of male tergum 8 with two blunt medial projections and two lateral denticles (Figs. 71, 73).

Aedeagus as in Figs. 76-82.

Female without accessory sclerite. Spermatheca as in Fig. 83, the distal portion is bent away from the side bearing the spermathecal gland.

Distribution. *Stethusa luederwaldti* is known from Brasil, Uruguay, Argentina and Venezuela.

Natural History. No information is available.

Species excluded from *Stethusa*

Two species originally included by Casey in *Stethusa* do not have the diagnostic characters of that genus and are excluded from *Stethusa*. Below they are synonymized with each other and are placed in *Atheta* pending further revision of that genus.

Atheta crenuliventris Bernhauer, 1907 was considered by Seevers (1978) to be a member of *Stethusa*. The taxonomic position of this species is briefly discussed below.

The status of *Atheta iheringi* Bernhauer, 1908 considered by Bernhauer and Scheerpeltz (1926) as a member of *Hypatheta* is also discussed.

Atheta texana Casey, 1910

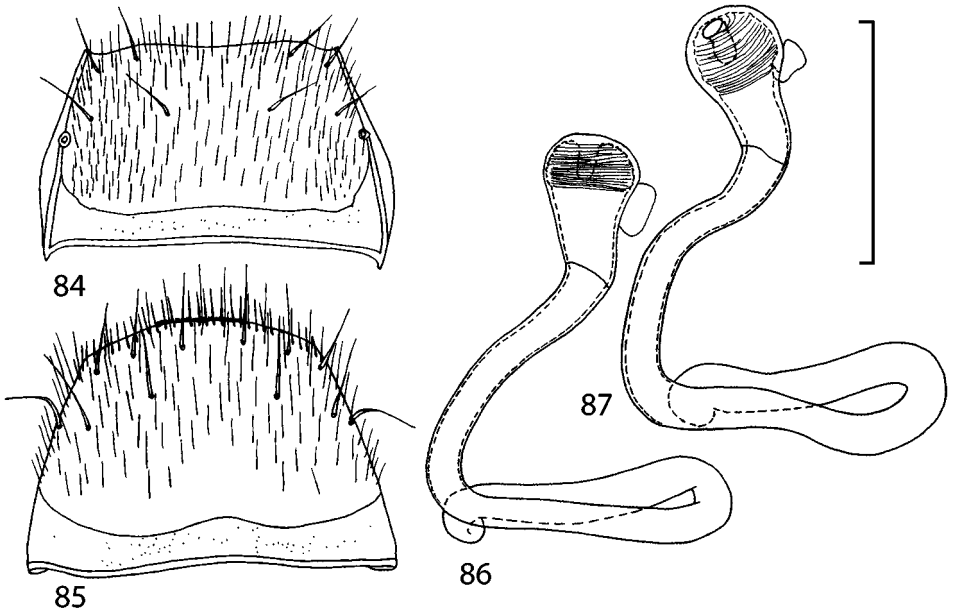
(Figs. 84-87)

Atheta (*Stethusa*) *texana* Casey, 1910: 6.
Atheta (*Stethusa*) *mendosa* Casey, 1910: 8, **syn. nov.**
Atheta (*Hypatheta*) *texana*: Fenyes, 1920: 207 (as valid species).
Atheta (*Hypatheta*) *mendosa*: Fenyes, 1920: 208 (as valid species).
Atheta (*Hypatheta*) *texana*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Hypatheta*) *mendosa*: Bernhauer & Scheerpeltz, 1926: 654 (as valid species).
Atheta (*Stethusa*) *texana*: Moore & Legner, 1975: 375 (as valid species).
Atheta (*Stethusa*) *mendosa*: Moore & Legner, 1975: 366 (as valid species).
Xenota texana: Seevers, 1978: 269 (as valid species).
Xenota mendosa: Seevers, 1978: 268 (as valid species).

Type material. Lectotype of *Atheta texana* (here designated): ♀, "Tex. [Texas, Austin]", "*texana* Csy.", "TYPE USNM 39444" (red label), "CASEY bequest 1925" (NMNH).

Holotype of *Atheta mendosa*: ♀, "Va. [Virginia, Fort Monroe]", "*mendosa* Csy.", "TYPE USNM 39453" (red label), "CASEY bequest 1925" (NMNH).

Diagnosis. *Atheta texana* can be recognized by the pronotal setation of type I, antennal articles 4-5 quadrate, articles 6-10 transverse, mesothoracic process narrow, tergum 7 with microsculpture consisting of transverse waves and very transverse cells; and the distinct shape of the spermatheca (Figs. 86-87). Body length 2.7-3.0 mm, pronotal width 0.69-0.70 mm.



FIGURES 84-87. Abdominal segment 8 and spermatheca of *Atheta texana* (Casey) (holotype of *At. mendosa* Casey (84-86), lectotype of *At. texana* (87)). 84 – female tergum 8; 85 – female sternum 8; 86-87 – spermatheca. Scale bar 0.2 mm (86-87), 0.4 mm (84-85).

Discussion. The types of *At. texana* and *At. mendosa* are very similar in external characters and the shape of the spermatheca. Based on this similarity, the second name is placed in synonymy with the first. The systematic position of this species is not clear until the males are discovered.

Distribution. *Atheta mendosa* is known from Virginia and Texas.

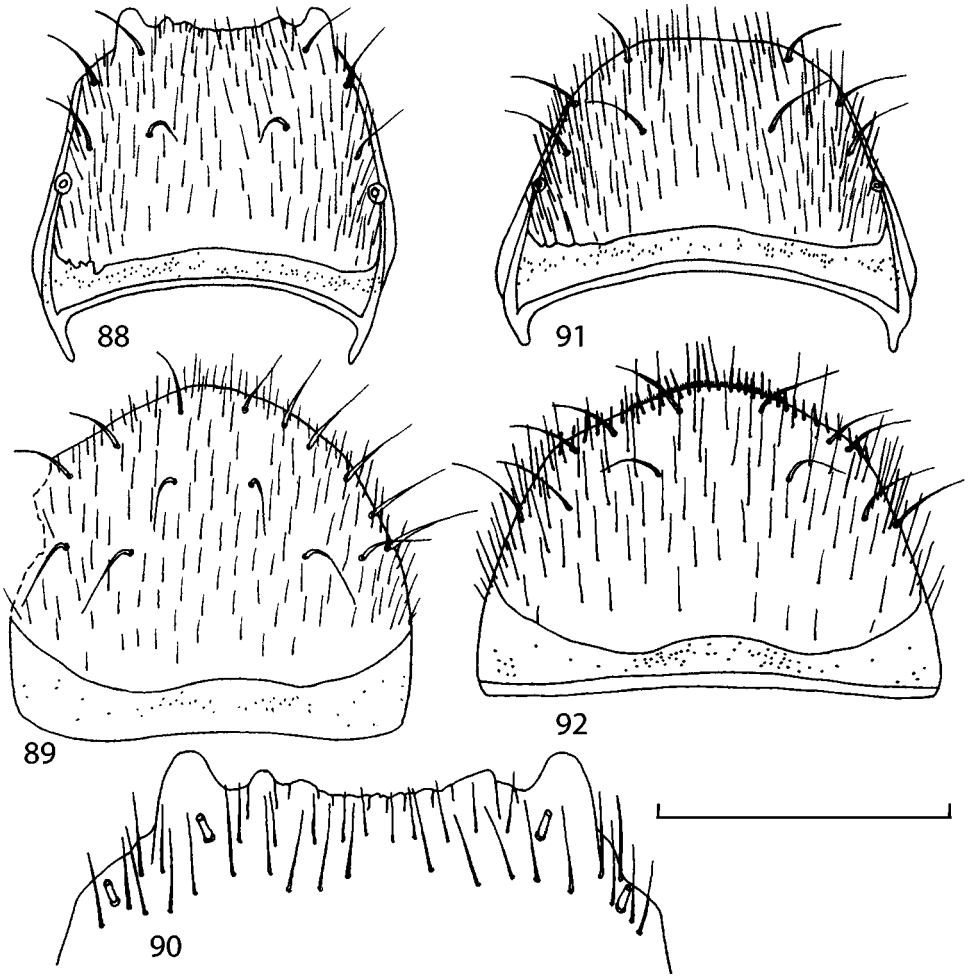
Natural History. No information is available.

***Atheta crenuliventris* Bernhauer, 1907**
(Figs. 88-100)

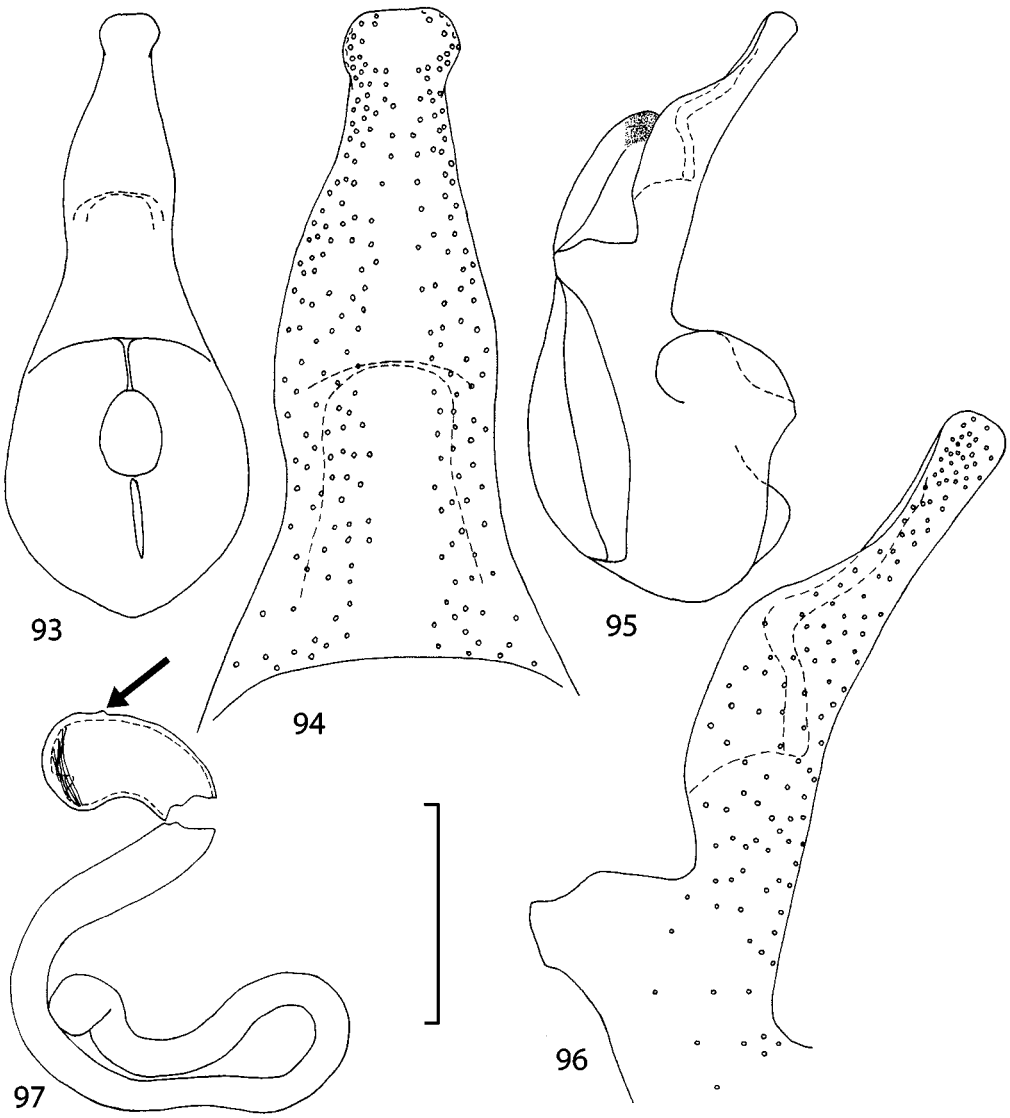
Atheta (*s. str.*) *crenuliventris* Bernhauer, 1907: 393.
Atheta (*Hypatheta*) *crenuliventris*: Fenyes, 1926: 207 (as valid species).

Atheta (*Hypatheta*) *crenuliventris*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta (*s. str.*) *crenuliventris*: Moore & Legner, 1975: 357 (as valid species).
Stethusa crenuliventris: Seevers, 1978: 267 (as valid species).
Dimetrota bradorensis Lohse *in* Lohse, Klimaszewski & Smetana, 1990: 179, **syn. nov.**

Type material. Lectotype of *Atheta crenuliventris* (here designated): ♂, "E. Machias, June, Me.[Maine]", "June", white circle, "*crenuliventris* Brh. Typus" (yellow label), "Chicago NHMus. M.Bernhauer Collection" (FMNH). Paralectotype: ♂, was mounted on the same card as the lectotype (FMNH). The female paralectotype of *Atheta crenuliventris* ("E. Machias, June, Me.[Maine]", "June", white circle, "*crenuliventris* Brh. Cotypus" (yellow label), "Chicago NHMus. M.Bernhauer Collection" (FMNH)) belongs to a different species (see Discussion).



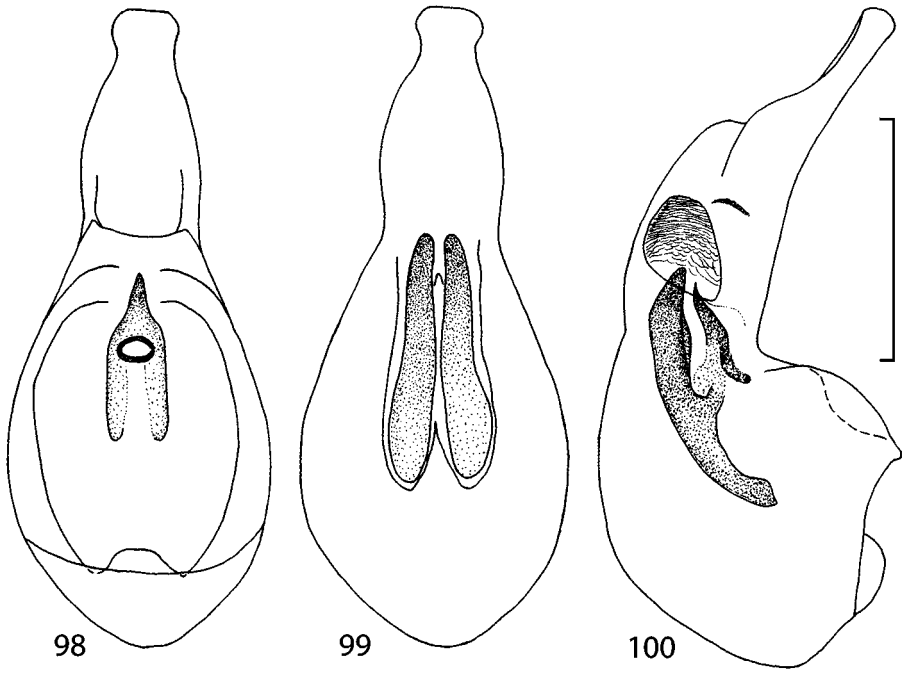
FIGURES 88-92. Abdominal segment 8 of *Atheta crenuliventris* Bernhauer (lectotype of *At. crenuliventris*, male (88-90); and female paratype of *Dimetrota bradorensis* Lohse (91-92)). 88 – male tergum 8; 89 – male sternum 8; 90 – apex of male tergum 8; 91 – female tergum 8; 92 – female sternum 8. Scale bar 0.4 mm (88-89, 91-92), 0.2 mm (90).



FIGURES 93-97. Aedeagus and spermatheca of *Atheta crenuliventris* Bernhauer (lectotype of *At. crenuliventris*, male (93-96); and female paratype of *Dimetrota bradorensis* Lohse (97)). 93 – median lobe, parameral view; 94 – apex of median lobe, parameral view; 95 – median lobe, lateral view; 96 – apex of median lobe, lateral view; 97 – spermatheca. The arrow indicates the point where the spermathecal gland is attached. Scale bar 0.1 mm (94, 96), 0.2 mm (93, 95, 97).

Holotype of *Dimetrota bradorensis*: **CANADA: Quebec:** ♂, Bradore Bay, 7.viii.1930 (W.J.Brown) (CNCI). Paratypes: ♂, ♀, as the holotype (CNCI). An additional examined female paratype (**CANADA: Quebec**: Indian House Lake, 19.viii.1954 (W.R.Richards)(CNCI)) is not conspecific with the lectotype of *D. bradorensis* (see Discussion).

Diagnosis. See Lohse *et al.* (1990) (*Dimetrota bradorensis*) and Figs. 88-100 in this paper.



FIGURES 98-100. Details of retracted internal sac of *Atheta crenuliventris* Bernhauer (lectotype). 98-99 – abparameral view; 100 – lateral view. Scale bar 0.2 mm.

Discussion. Although *At. crenuliventris* has relatively large eyes, it differs from *Stethusa* in having a narrow mesothoracic process, and a different shape of the aedeagus and the spermatheca. I place this species in *Atheta* pending further revision of that genus.

The holotype of *D. bradorensis* does not differ from the lectotype of *At. crenuliventris* in external characters and the shape of the aedeagus. I consider *D. bradorensis* to be a synonym of *At. crenuliventris*.

The female specimen included by Bernhauer in the type series of *At. crenuliventris* is similar in size to the two male types but differs in proportions of the antennal segments. In the males the antennal segment 4 is subquadrate while in the female specimen it is distinctly elongate. Besides, in the female paralectotype of *At. crenuliventris* the shape of the spermatheca is very different in comparison to the female paratype of *D. bradorensis* from the type locality of the latter species. Therefore, the female paralectotype of *At. crenuliventris* is not conspecific with the male types of that species, but belongs to the same group as the Palaearctic *At. boleticola* J.Sahlberg, 1876, and Nearctic *At. oregonensis* Bernhauer, 1909 (known from Oregon) and *At. districta* Casey, 1911a (known from British Columbia).

The female paratype of *D. bradorensis* from Indian House Lake differs from the female paratype from the type locality in having slightly transverse antennal segment 10 and a different shape of the spermatheca. The Indian House Lake female is not conspecific with the holotype of *D. bradorensis*.

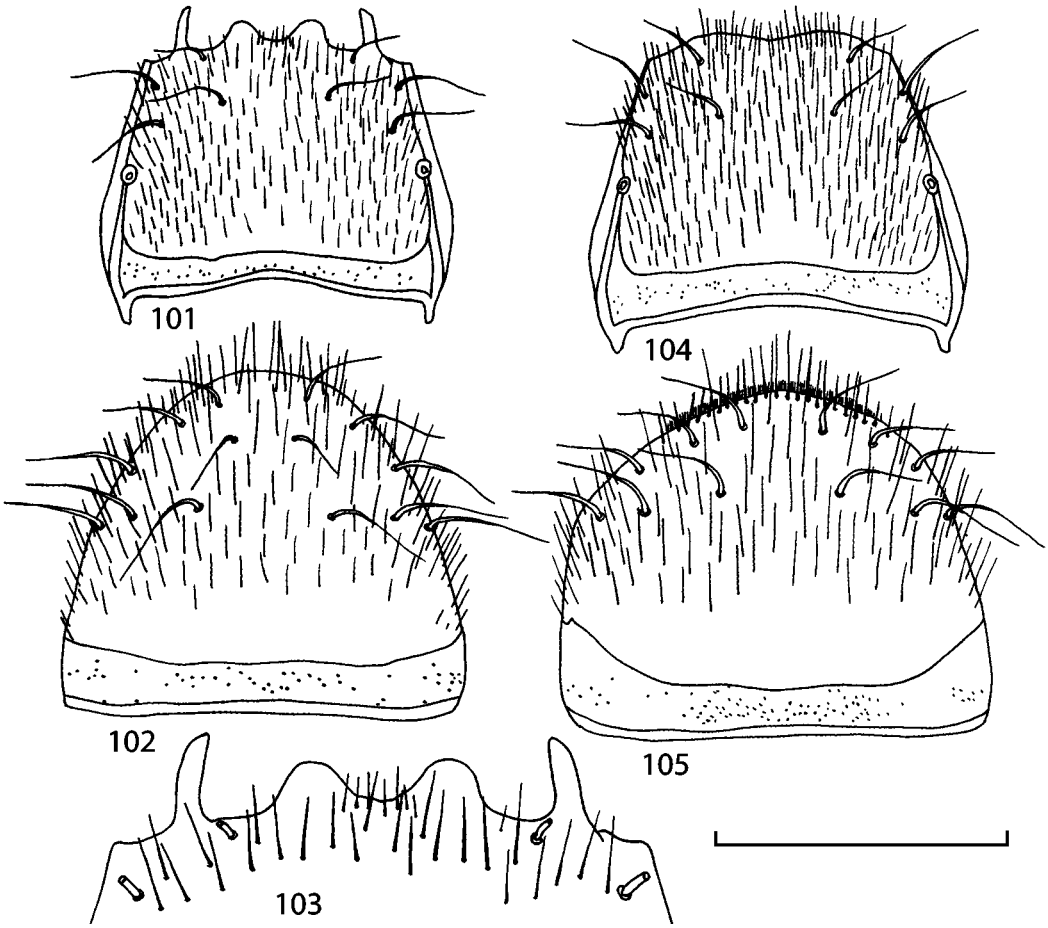
Distribution. *Atheta crenuliventris* is known from Maine and Quebec.

Natural History. No information is available.

Atheta iheringi Bernhauer, 1908

(Figs. 101-109)

Atheta (*s. str.*) *Iheringi* Bernhauer, 1908: 361.
Atheta (*Hypatheta*) *Iheringi*: Fenyes, 1920: 208 (as valid species).

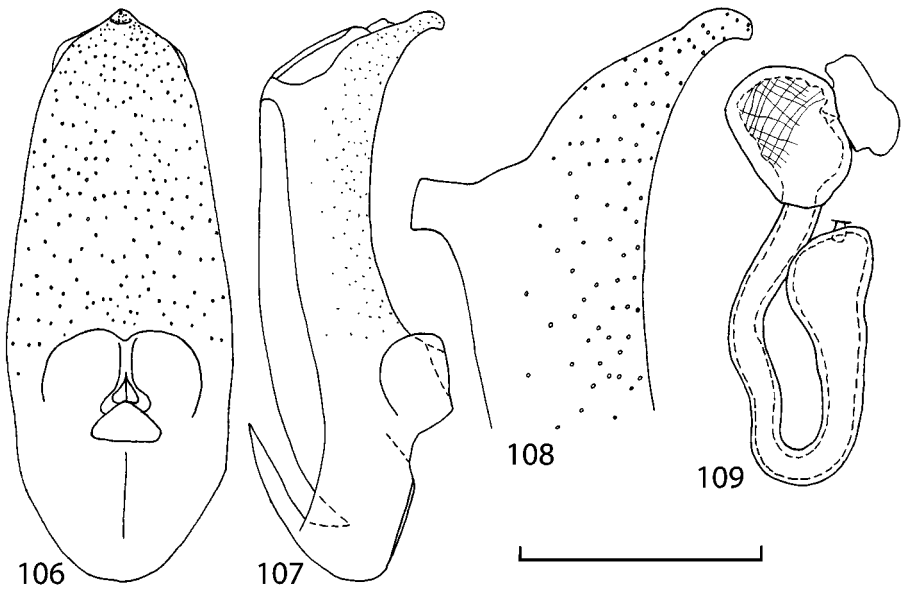


FIGURES 101-105. Abdominal segment 8 of *Atheta iheringi* Bernhauer (lectotype, male (101-103); and female paralectotype (104-105)). 101 – male tergum 8; 102 – male sternum 8; 103 – apex of male tergum 8; 104 – female tergum 8; 105 – female sternum 8. Scale bar 0.4 mm (101-102, 104-105), 0.2 mm (103).

Atheta (*Hypatheta*) *Iheringi*: Bernhauer & Scheerpeltz, 1926: 653 (as valid species).
Atheta iheringi: Blackwelder, 1944: 160 (as valid species).

Type material. Lectotype of *Atheta iheringi* (here designated): ♂, "Brasil. S. Paulo, Dr. Ihering", "*Iheringi* Brh. Typus" (yellow label), "8528", "Chicago NHMus. M.Bernhauer Collection" (FMNH). Paralectotype: ♀, "*Iheringi* Bh. Bras.[il] S. Paulo. Barbiellini lg. det. Bernh.", "*Iheringi* Brh. Cotypus" (yellow label), "Chicago NHMus M.Bernhauer Collection" (FMNH).

Diagnosis. *Atheta iheringi* can be recognized by the following combination of characters: brown body with brownish yellow elytra, legs and two basal antennal segments; antennal article 4 transverse, almost twice as short as article 5, articles 5-6 slightly elongate, 7-8 subquadrate, 9-10 slightly transverse, last article longer than 9 and 10 combined; infraorbital carina complete; eye length to temple length ratio 2.5-3.5; pronotum transverse, 1.3-1.4 times as wide as long; pronotal setation of type II (Benick & Lohse 1974); macrosetae on pronotum, elytra and mesotibia long; posterior margin of male tergum 8 with two blunt medial projections and two lateral denticles (101, 103); and by the distinct shape of the aedeagus (Figs. 106-108) and the spermatheca (Fig. 109). Body length 3.4 mm, pronotal width 0.66-0.70 mm.



FIGURES 106-109. Aedeagus and spermatheca of *Atheta iheringi* Bernhauer (lectotype, male (106-108); and female paralectotype (109)). 106 – median lobe, parameral view; 107 – median lobe, lateral view; 108 – apex of median lobe, lateral view; 109 – spermatheca. Scale bar 0.1 mm (108), 0.2 mm (106-107, 109).

Discussion. Because *Atheta iheringi* together with many species of *Stethusa* was considered to be a member of the subgenus *Hypatheta* by Fenyes (1920) and Bernhauer and Scheerpeltz (1926), I examined the types of *At. iheringi* to determine whether this species is in fact a member of *Stethusa*. In both examined types of *At. iheringi* pronotal pubescence is disturbed, but in the lectotype the pubescence seems to be preserved along the anterior 1/3 of the midline where it is directed posteriorly. Therefore, *At. iheringi* differs from *Stethusa* in the pronotal pubescence pattern, in the shape of the spermatheca and the aedeagus, including the structure of the internal sac. I place this species in *Atheta* pending further revision of that genus.

Distribution. *Atheta iheringi* is known from Brasil.

Natural History. No information is available.

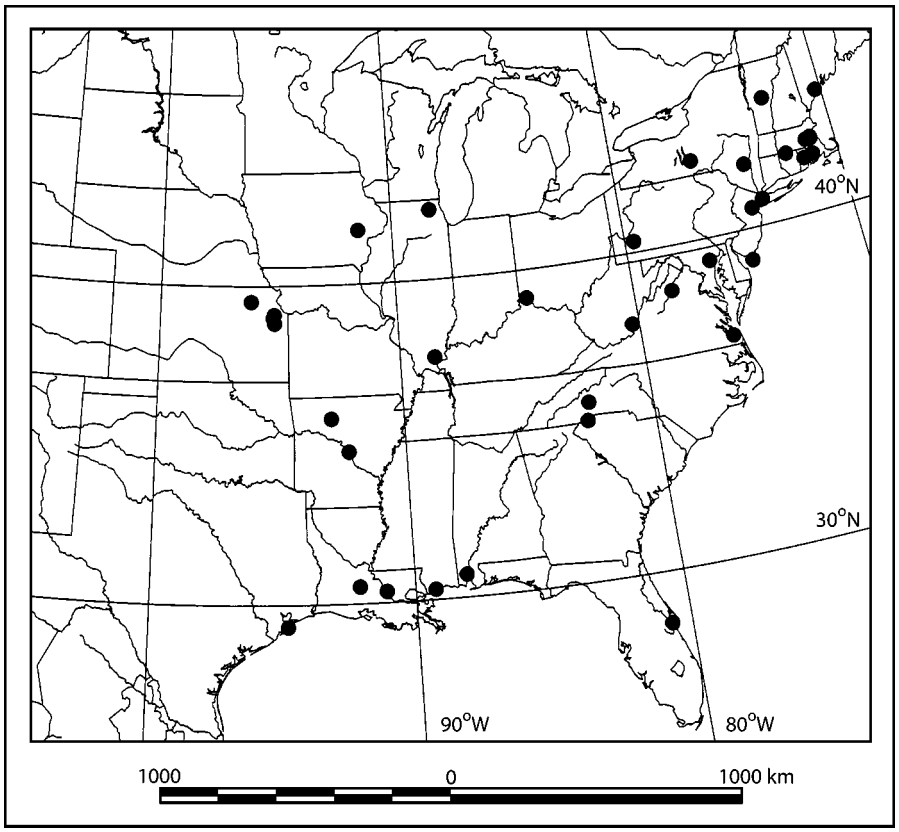


FIGURE 110. Geographical distribution of *Stethusa dichroa* (Gravenhorst) in North America. The exact localities in Vermont and Maine are unknown.

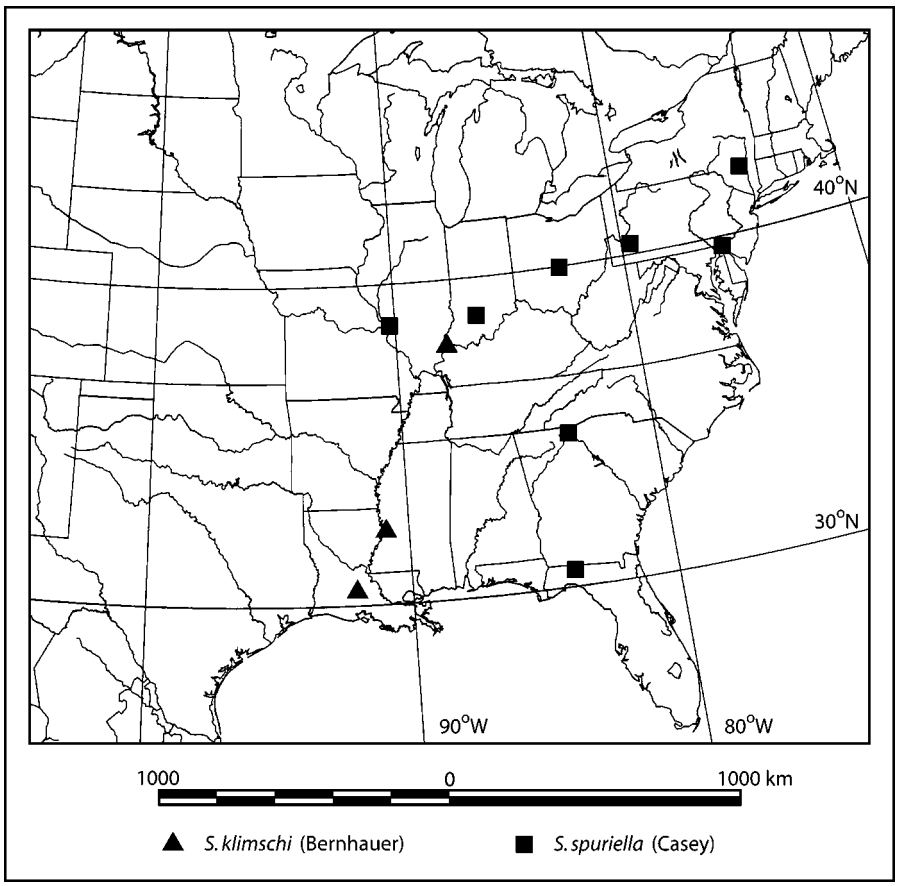


FIGURE 111. Geographical distribution of *Stethusa klimschi* (Bernhauer) and *S. spuriella* (Casey). The exact locality in Ohio is unknown.

Acknowledgements

I am grateful to Terry Erwin and Dave Furth, National Museum of Natural History, for the loan of the Casey Collection of Aleocharinae. I am greatly indebted to Lee Herman, Dave Kavanaugh, Roberta Brett, Aleš Smetana, Anthony Davies, Al Newton, Phil Parrillo, Arwin Provonsha and Manfred Uhlig for the loan of specimens deposited in their respective institutions. I thank two reviewers and Zack Falin for their comments which helped to improve my manuscript. Alexandria Digital Library Gazetteer Server (http://fatalbert.alexandria.ucsb.edu:8827/gazetteer/) was used to find coordinates for some localities. This work was supported by National Science Foundation PEET grants DEB-9521755 and DEB-9978110 to Steve Ashe and by the Russian Federal program "Russian Universities – Fundamental Sciences" (project 07.01.056).

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