

The genus *Scelolyperus* Crotch in North America (Coleoptera: Chrysomelidae: Galerucinae)

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Abstract: A key and diagnoses are provided for the North American species of *Scelolyperus* Crotch. Descriptions are given for *Scelolyperus pasadenae*, new species from California and *Scelolyperus tetonensis*, new species from Wyoming. *Luperus morrisoni* Jacoby is treated as a junior synonym of *Luperus varipes* LeConte, *Luperodes nigrovirescens* Fall is treated as a junior synonym of *Luperus nigrocyaneus* LeConte, and *Scelolyperus chautauquus* Wilcox is treated as a junior synonym of *Scelolyperus liriophilus* Wilcox, new synonymies. *Luperus leontii* Crotch is transferred to *Scelolyperus*, new combination. Distributional and biological data are provided for each species.

Introduction

In 1874, Crotch proposed the monotypic genus *Scelolyperus* to accommodate his new species *S. tejonicus*. He did not recognize that several other species already known at that time were congeneric. Since then, several workers have added information to this group, but it was not until 1965 that Wilcox provided the critical interpretation that is the basis of the current understanding of the group. Since his admirable treatment, two additional species were described by Hatch (1971). My investigations have discovered two additional new species, as well as several other taxonomic changes discussed in the treatment below.

In an effort to reduce the length of this paper, detailed descriptions have not been included, except for new species. Likewise, data from material examined (at least from localities in the United States where specimens are often abundant) are usually reduced to county level distribution, months collected, and hosts mentioned. Previously published locality records are usually mentioned only if they are considered authentic and if they extend distributions beyond those indicated by material that I have personally examined. Most of the information in this paper has been condensed from portions of an unpublished Ph.D. dissertation permanently preserved at the Ohio State University (Clark, 1987), and detailed information is therefore not entirely inaccessible to future researchers.

I have given a great deal of emphasis to the form of the aedeagi (a preliminary study indicated that the spermathecae were not very diagnostic). Aedeagal preparations were made following tech-

niques similar to those described by Smith (1979) and Reid (1992).

Genus *Scelolyperus* Crotch

Scelolyperus Crotch, 1874:79 (Type: *Scelolyperus tejonicus* Crotch, 1874, by monotypy); Horn, 1893:102; Arnett, 1962:912, 934; Wilcox, 1965:18, 19, 126.

Eugalera Brancsik, 1899:103 (Type: *Eugalera Reitteri* Brancsik, 1899, by monotypy); Ogloblin, 1936:273; Wilcox, 1973:461 (= *Scelolyperus* Crotch, 1874).

Diagnosis. *Scelolyperus* belongs to the section Scelidites, a group of closely related genera in the subtribe Luperina of the tribe Luperini. This section is usually recognizable by the presence of a rectangular lobe at the apex of the male abdomen. In North America, only three other groups of Galerucinae have similar lobes. The first of these, *Phyllobrotica* (section Phyllobroticites) is unlike Scelidites in having an extremely narrow epipleuron. The second, section Monoleptites, is unlike Scelidites in having a sclerotized operculum to the aedeagal orifice and usually in having a very long basitarsus on the hind leg. The third, *Pteleon* (section Exosomites which may well be synonymous with Scelidites), is represented in America by species with rather short antennae that reach only slightly beyond the humerus, antennomeres 2, 3, and 4 being about equal in length.

Scelolyperus has a basal bead on the pronotum but lacks obvious antennal or elytral modifications in male. The elytra lack a conspicuous transverse impression at the basal third. The rectangular lobe at the apex of the male abdomen is less than half as long as broad. The longitudinal interantennal carina is well developed, and the antennal fossae are

separated by no more than twice the diameter of each fossa. The eyes of most species are somewhat distant from the oral fossa, the genae being about as long as the terminal palpomere of the maxilla. This combination of characters will distinguish this from other New World genera of Scelidites. All known species of *Scelolyperus* have entirely dark (either black or metallic) elytra. Additional discussion and a key to genera will be provided in forthcoming papers in which two new genera are described from Mexico.

Non-metallic species of *Scelolyperus* from the western U.S.A. are frequently confused with *Pseudoluperus longulus* (LeConte), but that species has genae that are only about half as long as the terminal article of the maxillary palp. Metallic species from western states are sometimes confused with various species of *Phyllobrotica*, but that genus lacks a well-developed epipleuron. In southeastern areas of the U.S.A., *Scelolyperus* is often confused with *Lysathia ludoviciana* (Fall), a flea beetle that has comparatively widely separated front coxae.

Comments. In spite of the difficulty in characterizing this genus, the species that are included are rather homogeneous in form and fit well together.

This is the only genus of Scelidites that has representatives in the Old World (Asia) as well as in the Western Hemisphere. Having examined Asian specimens of *S. altaicus* (Mannerheim), I concur with Wilcox (1965) that this species does belong in *Scelolyperus*. Only one other Old World species, *S. sericeus* (Jacobson), is currently classified in the genus (Wilcox, 1973), but I have not examined specimens. Perhaps several of the Old World species now included in *Luperus* or similar genera properly belong in *Scelolyperus* also, but I have not fully investigated this possibility. My treatment of this genus is restricted to those species occurring in the Western Hemisphere. They are found in Canada and the U.S.A., and in nearby areas of northern Mexico.

The following key is a modification of that provided by Wilcox (1965). Most species are best recognized by male characters, and the key will therefore not enable identification of many females. However, females of a few species are recognizable and may be identified by consulting the diagnoses of the various species.

Key to New World Species of *Scelolyperus*

1. Pronotum pale 2
— Pronotum black, dark brown, metallic green, metallic blue, or metallic purple 16
- 2(1). Length 4.7-7.0 mm 3
— Length 3.0-4.7 mm 9
- 3(2). Aedeagus pointed or rounded at apex, asymmetrical (figs. 4c-d); hind tibia of male straight..... 4
— Aedeagus broadly truncate at apex, symmetrical (figs. 3b, 4i-m); hind tibia of male curved or straight 5
- 4(3). Tibiae of male with terminal spurs; length 2.9-4.7 mm; British Columbia, California, and Arizona *torquatus* (LeConte)
— Tibiae of male lacking terminal spurs; length 5.9-7.0 mm; California *flavicollis* (LeConte)
- 5(3). Posterior tibia of male strongly curved, with a prominent tooth on inner side at basal 1/3 (fig. 3d); terminal abdominal tergite not produced; terminal spurs present on middle tibiae, absent from front and hind tibiae; length 5.0 mm; California *tejonicus* Crotch
— Posterior tibia without tooth 6
- 6(5). Terminal abdominal tergite of male strongly produced (fig. 3g); hind tibia of male arcuate; length 4.5-6.0 mm; California *megalurus* Wilcox
— Terminal abdominal tergite of male not produced ... 7
- 7(6). Hind tibiae with apical spurs; inner side of hind tibia of male evenly pubescent, without glabrous area 8
— Hind tibiae of male lacking apical spurs; inner side of hind tibia of most males with a broad, glabrous, margined channel; elytra dark blue, bluish green, or purple; pronotum black; apical and basal margins of pronotum may be dark brown (variation in color indicates that specimens may occur with pale pronotum); length 5.5-6.0 mm; California *curvipes* Wilcox
- 8(7). Hind tibia arcuate in male (fig. 3e); ventral side of apex of aedeagus with two long longitudinal carinae and two short longitudinal carinae (fig. 4j); length 5.3-5.9 mm; California *loripes* Horn
— Hind tibia of male nearly straight; ventral side of apex of aedeagus with 4 long longitudinal carinae (fig. 4k); length 5.0 mm; California *ratulus* Wilcox

- 9(2). Elytral punctation moderate to rather coarse; elytral punctures separated by a distance equal to twice their diameter or less 10
 — Elytral punctures fine, separated by a distance equal to three or four times their diameter 12
- 10(9). Male with hind tibiae straight and last dorsal abdominal segment normal 11
 — Male with hind tibiae strongly curved and with terminal abdominal tergite greatly produced (figs. 3f-g); elytra usually green, rarely blue-green; length 4.5-6.0 mm; California *megalurus* Wilcox
- 11(10). Aedeagus nearly straight in lateral view, with sides gradually narrowing to apex in dorsal view, with tip lateral (fig. 4d); elytra blue or green; length 2.9-4.7 mm; Arizona, California, and possibly British Columbia
 *torquatus* (LeConte)
 — Aedeagus distinctly sinuate in lateral view, somewhat spatulate in dorsal view, with tip nearly central (fig. 4f); elytra dark metallic blue, a little longer and more nearly parallel than in *S. torquatus* (fig. 3j); length 3.4-4.2 mm; California
 *phoxus* Wilcox
- 12(9). Each elytron with a strong, lateral, submarginal carina; aedeagus symmetrical, with distal portion gradually narrowed to acute tip; length 3.3-4.7 mm; California, Oregon
 *carinatus* Wilcox
 — Elytra lacking distinct carinae 13
- 13(12). Aedeagus slender, nearly symmetrical, not spatulate at apex (figs. 2, 4h) 14
 — Aedeagus broader, distinctly asymmetrical or spatulate at apex (figs. 4a, 4g) 15
- 14(13). Aedeagus strongly sinuate in lateral view (fig. 4h); length 3.4-3.9 mm; California
 *phenacus* Wilcox
 — Aedeagus only slightly sinuate, nearly straight in lateral view (fig. 2); length 3.0-3.7 mm; Wyoming *tetonensis*, new species
- 15(13). Aedeagus spatulate, without acute or rectangular tip (fig. 4a); length 3.2-4.2 mm; California
 *transitus* (Horn)
 — Aedeagus strongly sinuate in lateral view, not spatulate in dorsal view; acute or rectangular tip of aedeagus far to the right (fig. 4g); length 3.0-4.7 mm; California, Idaho *laticeps* (Horn)
- 16(1). Western species found west of the Great Plains (100° west longitude) 17
 — Eastern species found east of the Great Plains (100° west longitude) 28
- 17(16). Elytra distinctly metallic blue, green, or purple. 18
 — Elytra black or dark brown, without distinct blue, green, or purple luster 26
- 18(17). Hind tibia of male distinctly curved 19
 — Hind tibia of male straight or nearly so 21
- 19(18). Pronotum distinctly green or blue, metallic; glabrous inner area of hind tibia of male reduced or absent, not carinate or explanate at margins; apical portion of aedeagus not widened; apex of aedeagus pointed or emarginate 20
 — Pronotum without distinct blue, green, or purple luster; hind tibia of male usually with a very broad, shallow, glabrous channel on inner side; margins of channel usually distinct, explanate on ventral 1/2; apical portion of aedeagus widened; apex of aedeagus truncate, not strongly emarginate or pointed (fig. 3b); length 5.5-6.0 mm; California *curvipes* Wilcox
- 20(19). Hind tibia of male strongly curved; aedeagus emarginate at apex (fig. 4e); length 4.0-6.0 mm; British Columbia to Montana to Wyoming to California *schwarzii* Horn
 — Hind tibia of male weakly curved; aedeagus pointed at apex; length 4.4-5.7 mm; Oregon
 *wilcoxi* Hatch
- 21(18). All femora and tibiae entirely dark 22
 — At least some legs with femora and tibiae at least partly pale 24
- 22(21). Aedeagus with acute tip at apex (figs. 1, 4b); terminal spurs present on all tibiae of male ...
 23
 — Aedeagus with rounded apex (fig. 5c); all tibiae of male lacking terminal spurs; length 6.6-7.0 mm; California *graptoderoides* (Crotch)
- 23(22). Aedeagus nearly straight in lateral view; distal 1/4 of aedeagus with an acute, very well-developed, ventrolateral carina; length 5.3-6.7 mm; California *smaragdinus* (LeConte)
 — Aedeagus sinuate in lateral view; ventrolateral carinae on distal portion of aedeagus either weak or absent (fig. 1); length 5.5-7.1 mm; California
 *pasadenae*, new species
- 24(21). Pronotum with distinct metallic luster; aedeagus straight or weakly sinuate in lateral view; elytral punctures larger 25
 — Pronotum lacking metallic luster; aedeagus, in lateral view, appearing bent near distal third; elytral punctures very fine, sometimes obscured by alutaceous microsculpture; length 3.8-5.8 mm; British Columbia to South Dakota to New Mexico to California *leontii* (Crotch)

- 25(24). Distal portion of aedeagus distinctly asymmetrical (figs. 5b, 5d); length 3.4-5.3 mm; British Columbia to Alberta to New Mexico to California *varipes* (LeConte)
 — Distal portion of aedeagus symmetrical; length 4.4-5.7 mm; Oregon..... *wilcoxi* Hatch
- 26(17). Middle and hind tibiae largely or entirely dark brown; surface between elytral punctures usually alutaceous 27
 — All tibiae testaceous; surface between elytral punctures not alutaceous; apex of aedeagus strongly produced, asymmetrical (fig. 5h); 3.7-4.9 mm; Washington to California *hatchi* Wilcox
- 27(26). Basal 3/4 of aedeagus nearly straight in lateral view; apex of aedeagus only slightly asymmetrical; length 3.5 mm; Idaho..... *lemhi* Hatch
 — Aedeagus, including basal 3/4, sinuate in lateral view; apex of aedeagus distinctly asymmetrical in dorsal view (figs. 5e-g); length 3.0-4.3 mm; British Columbia to Alberta to New Mexico....
 *nigrocyanus* (LeConte)
- 28(16). Elytra of female without distinct, acute, submarginal carina 29
 — Elytra of female with an acute, submarginal carina; aedeagus with basal 1/2 sinuate and distal 1/2 straight in lateral view, lacking spatulate distal portion in dorsal view (fig. 5i); length 4.0-5.4 mm; West Virginia to North Carolina to Tennessee *bimarginatus* (Blake)
- 29(28). Apical 1/2 of aedeagus not, or little, wider than basal half (figs. 5j-l); hind tibia usually with an apical, lamellate lobe in male 30
 — Apical 1/2 of aedeagus nearly twice as wide as basal half (fig. 5a); hind tibia of male without apical lamellate lobe; length 3.8-5.0 mm; Illinois to Pennsylvania to North Carolina
 *cyanellus* (LeConte)
- 30(29). Aedeagus sinuate in lateral view (fig. 5j); femora usually dark; length 3.8-5.2 mm; New Brunswick to Tennessee to Georgia
 *meracus* (Say)
 — Aedeagus straight in lateral view (figs. 5k-l); front and middle femora usually testaceous; length 3.0-4.7 mm; Missouri to Maine to Georgia
 *liriophilus* Wilcox

***Scelolyperus bimarginatus* (Blake)**
 (Figure 5i)

Luperodes bimarginata Blake, 1928:183.

Scelolyperus bimarginatus: Wilcox, 1965:128, 133, 153.

Diagnosis. In females of this species, each elytron has a well-developed, acute, submarginal carina. Also, the aedeagus in lateral view is sinuate in the basal 1/2 and straight in the distal 1/2; in dorsal view, it is not spatulate in the distal 1/2. These characters distinguish this species (either sex) from all other species of *Scelolyperus* occurring in the eastern half of North America. Specimens measure 4.0-5.4 mm long.

Type locality. "Mt. Mitchell, North Carolina, 6,000 ft."

Distribution. West Virginia to North Carolina and Tennessee. I have examined specimens from Buncombe and Yancey Counties in North Carolina and from Greenbrier County in West Virginia. Beyond material that I have seen, Wilcox (1965) reported this species from Tennessee.

Comments. Specimens have been collected from May to August. One of them was taken on *Helleborus viridis* L. (Ranunculaceae) and another on *Phlox subulata* L. (Polemoniaceae). I have examined the male holotype (NMNH), ten other males, and 24 females.

***Scelolyperus carinatus* Wilcox**
 (Figure 3i)

Scelolyperus carinatus Wilcox, 1965:128, 131, 144.

Diagnosis. In this species, each elytron has a prominent, acute carina extending posteriorly from the humerus. This, in combination with the pale pronotum, will distinguish *S. carinatus* from all other species of the genus as well as of the entire section Scelidites. Specimens measure 3.3-4.7 mm long.

Type locality. "Humboldt Co., California, 13.6, Bair's Rch., Redwd. Crk."

Distribution. California and Oregon. I have seen specimens from the following counties. California: Humboldt Co., Madera Co. Oregon: Lane Co.

Comments. Specimens have been collected in May and June. I have examined the female holotype (NMNH) and seven other females.

***Scelolyperus curvipes* Wilcox**
 (Figures 3b, 3c)

Scelolyperus curvipes Wilcox, 1965:128, 131, 132, 147.

Diagnosis. The strongly curved hind tibia of the male, together with the pronotum that is dark

but lacks metallic luster, will distinguish this from other species of *Scelolyperus*. Specimens measure 5.5-6.0 mm long.

Type locality. Boulder Creek, Fresno Co., California.

Distribution. California. I have seen specimens from Fresno and Mariposa Counties, both in California.

Comments. Specimens have been collected in May. Some have been associated with *Artemisia* sp. (Asteraceae) and others with flowers of *Madia elegans* Don (Asteraceae). I have examined the male holotype (CASC), 25 other males, and 15 females.

***Scelolyperus cyanellus* (LeConte)**
(Figure 5a)

Luperus cyanellus LeConte, 1865:209.

Luperus (Luperus) cyanellus: Weise, 1924:118.

Luperodes cyanellus: Horn, 1893:116; Wilcox, 1954:434.

Scelolyperus cyanellus: Wilcox, 1965:128, 133, 151; (not Horn, 1895:251).

Diagnosis. The distal 1/2 of the aedeagus is about 2X as wide as the basal 1/2. This character will distinguish *S. cyanellus* from the other species of *Scelolyperus* found in the eastern half of North America. Specimens measure 3.8-5.0 mm long.

Type locality. "Western States; Michigan, Illinois."

Distribution. Illinois to Pennsylvania to North Carolina. I have seen specimens from the following counties. Kentucky: Menifee Co. Ohio: Clinton Co., Delaware Co., Franklin Co., Pike Co., Warren Co. North Carolina: Buncombe Co. Pennsylvania: Allegheny Co., Lawrence Co., Washington Co. West Virginia: Pocahontas Co.

Earlier records, such as those of Fattig (1948) for Georgia, may refer to species other than *S. cyanellus*.

Comments. I have seen specimens collected in May, June, and September and have personally associated this species with *Phlox paniculata* L. (Polemoniaceae).

The preceding treatment is based on the male holotype (MCZC), 30 other males, 49 females, and one specimen of unknown sex.

***Scelolyperus flavicollis* (LeConte)**
(Figure 4c)

Phyllobrotica flavicollis LeConte, 1859b:81.

Luperus flavicollis: LeConte, 1865:209.

Scelolyperus flavicollis: Horn, 1893:103, 104; Wilcox, 1965:128, 130, 137.

Diagnosis. The pronotum of this species is pale, the apex of the aedeagus is pointed and asymmetrical, and the overall size is quite large (5.9-7.0 mm long). These characters distinguish this from other species of *Scelolyperus*.

Type locality. Tejon, California.

Distribution. California. I have examined specimens from Kern, Monterey, and San Diego Counties in California. All of the localities that were erroneously listed by Wilcox (1965) as being in Arizona are actually in California.

Comments. Specimens have been collected in April and May. Some were found on *Erysimum argillosum* (Greene) Rydb. (Brassicaceae). The preceding treatment is based on the female holotype (MCZC), on 40 other females, and on 17 males.

***Scelolyperus graptoderoides* (Crotch)**
(Figure 5c)

Luperus graptoderoides Crotch, 1874:80.

Scelolyperus graptoderoides: Horn, 1893:105; Wilcox, 1965:128, 132, 149.

Diagnosis. In this species, the prothorax and legs are entirely dark, the hind tibia of the male is nearly straight, and all of the tibiae of the male lack terminal spurs. These characters together distinguish this from other species of *Scelolyperus* that occur in the western half of North America. Specimens measure 6.6-7.0 mm long.

Type locality. Specimens in the type series came from "Santa Barbara" and "Santa Buenaventura" in California. However, it is not clear which of these is the actual type locality.

Distribution. California. I have seen specimens from Ventura County, California. Also, part of the type series is from Santa Barbara County, California, and Horn (1893) recorded this species from Los Angeles County, California.

Comments. Specimens have been collected in May. The preceding treatment is based on the male holotype (MCZC), on two other males, and on one female.

***Scelolyperus hatchi* Wilcox**
(Figures 3h, 5h)

Scelolyperus hatchi Wilcox, 1965:128, 133, 157; Hatch, 1971:205.

Diagnosis. The elytra of this species are black, without metallic luster, the elytral interspaces are not alutaceous, and all of the tibiae are testaceous. These characters will together distinguish this from all other species of *Scelolyperus*. Specimens measure 3.7-4.9 mm long.

Type locality. Boyer, Oregon.

Distribution. Washington to California. I have seen specimens from the following counties. California: Del Norte Co., Humboldt Co., Mendocino Co. Oregon: Coos Co., Tillamook Co., Yamhill Co. Washington King Co.

Beyond specimens that I have seen, Wilcox (1965) reported this species from Skamania County, Washington.

Comments. I have examined the male holotype (CASC), 12 other males, and 29 females. Specimens have been collected from April to July.

Scelolyperus laticeps (Horn)

(Figure 4g)

Luperodes laticeps Horn, 1893:114.

Luperus (Luperus) laticeps: Weise, 1924:119.

Scelolyperus laticeps: Wilcox, 1965:128, 132, 141; Hatch, 1971:203.

Diagnosis. The pronotum of this species is pale, the elytral punctures are separated by a distance three to four times the diameter of a puncture, and the distal portion of the aedeagus is distinctly asymmetrical, with the acute or rectangular tip located far to the right. This combination of characters distinguishes *S. laticeps* from other species of *Scelolyperus*. Specimens measure 3.0-4.7 mm long.

Type locality. "California, region unknown."

Distribution. California, Oregon, and Idaho.

I have seen specimens from the following counties: California: Alameda Co., Contra Costa Co., Lake Co., Mendocino Co., Santa Clara Co., Siskiyou Co., Trinity Co. Idaho: Boise Co., Canyon Co., Twin Falls Co. Oregon: Baker Co., Malheur Co. Beyond specimens that I have seen, Wilcox (1965) recorded this species from San Francisco, California [San Francisco County].

Comments. I have examined the male lectotype (designated by Wilcox, 1965; MCZC), 67 other males, and 75 females. Specimens have been collected from April to July. Some were found on *Ribes* sp. (Saxifragaceae) and others on *Solanum* sp. (Solanaceae).

Scelolyperus lecontii (Crotch), new combination

Luperus rufipes LeConte, 1859a:27; LeConte, 1865:209; Crotch, 1873:54 (= *Luperus Lecontii* Crotch, 1873); (not Scopoli, 1763:73; not Goeze, 1777:322; not Fabricius, 1787:89; not Gyllenhal, 1813:513; not Ratzeburg, 1837:254).

Luperus Lecontii Crotch, 1873:54 (replacement name for *Luperus rufipes* LeConte, 1859a).

Luperus lecontii: Jacoby, 1888:596.

Luperodes Lecontii: Horn, 1893:115.

Pseudoluperus lecontii: Wilcox, 1965:101, 102, 107; Hatch, 1971:203.

Luperus Lecontei: Crotch, 1880:98.

Luperodes Lecontei: Henshaw, 1895:27.

Luperus (Luperus) Lecontei: Weise, 1924:119.

Luperodes lecontei asclepiadis Schaeffer, 1932:238; Wilcox, 1965:101 (= *lecontii* Crotch, 1873).

Luperus pallipes Beller & Hatch, 1932:113; Wilcox, 1965:101 (= *lecontii* Crotch, 1873).

Diagnosis. The hind tibiae of the male are nearly straight. Also, the elytra are distinctly metallic, and the pronotum is dark but lacks metallic luster. These characters distinguish *S. lecontii* from other species of *Scelolyperus* that occur in the western half of North America. Specimens measure 3.8-5.8 mm long.

Type localities. *Luperus rufipes*: Santa Fe, New Mexico. *Luperodes lecontei asclepiadis*: Copper Mt., British Columbia. *Luperus pallipes*: Shelton, Washington.

Distribution. British Columbia to South Dakota to New Mexico to California. I have examined specimens from the following localities in British Columbia, Canada: Copper Mtn.; Hedley; Ladner; Littoet; Midday Val., Merritt; Nine Mile, Princeton; Shingle Cr. Road, Keremeos; Terrace.

I have also examined specimens from the following counties in the United States. Arizona: Apache Co., Cochise Co., Coconino Co., Gila Co. California: Del Norte Co., Modoc Co., Napa Co., Nevada Co., Plumas Co., Shasta Co., Siskiyou Co., Trinity Co. Colorado: Arapahoe Co., Boulder Co., Clear Creek Co., El Paso Co., Garfield Co., Larimer Co., Mesa Co., Mineral Co., Ouray Co., Routt Co., San Miguel Co. Idaho: Bannock Co., Bonneville Co., Franklin Co., Twin Falls Co., Washington Co. Montana: Gallatin Co., Powell Co. New Mexico: Colfax Co., San Miguel Co., Santa Fe Co. [I have also seen specimens from the Jemez Mts. (Rio Arriba or Sandoval Co.)]. Oregon: Jackson Co., Josephine Co., Klamath Co., Lincoln Co., Umatilla Co., Wallowa Co., Wasco Co. South Dakota:

Lawrence Co. Utah: Cache Co., Grand Co., Salt Lake Co., San Juan Co., Utah Co., Wasatch Co., Weber Co. Washington: Kittitas Co., Mason Co., Skamania Co., Walla Walla Co., Yakima Co. Wyoming: Albany Co., Fremont Co., Sheridan Co.

Comments. *Apocynum androsaemifolium* L. (Apocynaceae) and *Psoralea physodes* Dougl. (Fabaceae) have been reported as hosts. *Asclepias speciosa* Torr. (Asclepiadaceae) has also been reported as a possible host, but, as pointed out by Wilcox (1965), this is probably not correct. Specimens have been collected from April to August.

I have examined the holotype of *Luperus rufipes* (sex unknown, MCZC), the female holotype of *Luperus pallipes* (NMNH), the male holotype of *Luperodes lecontei asclepiadis* (NMNH), 279 other males, 303 other females, and two specimens of unknown sex.

Scelolyperus lemhi Hatch

Scelolyperus lemhi Hatch, 1971:205.

Diagnosis. In this species, the middle tibia, hind tibia, and entire dorsal surface are black or dark brown, without metallic luster. Within *Scelolyperus*, only *S. nigrocyaneus* is similar in these characters. However, unlike *S. nigrocyaneus*, the apical portion of the aedeagus is only weakly asymmetrical, and the basal three-fourths of the aedeagus are nearly straight in lateral view. The single specimen examined is 3.5 mm long.

Type locality. "8 mi. e Tendoy, Ida., Lemhi Co."

Distribution. This species is known only from the type locality.

Comments. This species has been collected in July. It is very similar to *S. nigrocyaneus* but differs in the form of the aedeagus. The preceding treatment is based on examination of the male holotype (CASC). I have not discovered any other specimens of this species.

Scelolyperus liriophilus Wilcox

(Figures 3a, 5k, 5l)

Scelolyperus liriophilus Wilcox, 1965:128, 133, 155; Riley & Enns, 1979:70; Riley & Enns, 1982:34.

Scelolyperus chautauquus Wilcox, 1965:128, 133, 156, New synonymy.

Diagnosis. In most specimens of this species, the legs are largely or entirely pale. This will often distinguish *S. liriophilus* from the other species of *Scelolyperus* occurring in the eastern half of North

America. However, for confident identification aedeagal examination is necessary. The aedeagus is about as broad in the basal ½ as in the distal ½, and it is nearly straight in lateral view (figs. 5k-l). Specimens measure 3.0-4.7 mm long.

Type localities. *Scelolyperus liriophilus*: Haines Falls, New York. *Scelolyperus chautauquus*: Ashland Co., Ohio.

Distribution. Missouri to Arkansas to Georgia to Maine. I have seen specimens from the following counties. Alabama: Shelby Co. Georgia: Dade Co., Jackson Co., Union Co. Illinois: Johnson Co., Pope Co., Pulaski Co., Putnam Co. Kentucky: Elliot Co., Rowan Co. Maine: [I have seen a specimen from "Wissataquoik R." which is in Penobscot and Piscataquis Counties]. Missouri: Barry Co., Gasconade Co., Jefferson Co., Taney Co. New Jersey: [The label included no specific locality]. New York: Albany Co., Greene Co., Ulster Co. North Carolina: Avery Co., Jackson Co., Macon Co. Ohio: Athens Co., Delaware Co., Franklin Co., Greene Co., Hocking Co., Lake Co., Vinton Co., Warren Co. Pennsylvania: Allegheny Co., Butler Co., Northampton Co., Westmoreland Co. West Virginia: Barbour Co., Fayette Co., Grant Co., Greenbrier Co., Hardy Co., Harrison Co., Jackson Co., Kanawha Co., Mineral Co., Monongalia Co., Pendleton Co., Pocahontas Co., Preston Co., Raleigh Co., Randolph Co., Roane Co., Taylor Co., Tucker Co., Wirt Co.

Beyond material that I have seen, Wilcox (1965) reported this species from Hale County in Alabama, Logan County in Arkansas, and Hamilton County in Tennessee. Riley and Enns (1979, 1982) reported it from Washington County in Arkansas and from Benton and Marion Counties in Missouri.

Comments. Wilcox (1965, 1979) indicated that hosts of this species are *Hemerocallis lilioasphodelus* L. and *H. fulva* L. (Liliaceae), and *Carpinus caroliniana* Walt. (Betulaceae). Also, Riley and Enns (1982) reported beetles feeding on flowers and leaves of *Cotinus obovatus* Raf. (Anacardiaceae) and *Staphylea trifolia* L. (Staphyleaceae). Beyond this, I have examined specimens that were collected while feeding on *Juglans nigra* L. (Juglandaceae) and on cultivated *Phlox* (Polemoniaceae). I have also seen specimens that were collected on *Sambucus* (Caprifoliaceae), *Quercus* (Fagaceae), and *Salix* (Salicaceae), but feeding was not specifically indicated. In my personal field work, I have observed the beetles on a wide variety of plants, but usually without evidence of feeding. Specimens have been collected from April to August.

Scelolyperus liriophilus and *S. chautauquus* were originally described in the same publication and were distinguished by differences in the shape of the aedeagus and in overall size. However, these characters are somewhat variable and not necessarily correlated with each other. I have seen several specimens that are quite intermediate in the form of the aedeagus. I conclude that the two taxa are synonymous.

As both names were proposed in the same publication, either could be chosen for this species. I am following tradition in selecting *S. liriophilus*, the name whose formal description appeared first in the publication.

I have been unable to locate the holotype of *S. chautauquus*. Contrary to the indication in the original description, this specimen is apparently not in the personal collection of John Wilcox.

The preceding treatment is based on the male holotype of *S. liriophilus* (NMNH), on two male paratypes of *S. chautauquus* (OSUC), on one female paratype of *S. chautauquus* (OSUC), on 212 other males, on 465 other females, and on one specimen of unknown sex.

***Scelolyperus loripes* Horn**
(Figures 3e, 4j)

Scelolyperus loripes Horn, 1893:104; Fall, 1901:156; Wilcox, 1965:128, 131, 136.

Diagnosis. The pronotum of this species is pale, the terminal abdominal tergite of the male is not unusually produced, and each hind tibia of the male is distinctly arcuate but lacks a prominent tooth on the inner side at the basal third. This combination of characters distinguishes *S. loripes* from other species of *Scelolyperus*. Specimens measure 5.3-5.9 mm long.

Type locality. "Occurs in California, probably northern."

Distribution. California. I have seen specimens from Madera County, California. Additionally, Fall (1901) reported this species from Tulare County, California.

Comments. The preceding treatment is based on the male lectotype (no. 3800, MCZC; designated by Wilcox, 1965), on four other males, and on three females. The biology of this species is unknown.

***Scelolyperus megalurus* Wilcox**
(Figures 3f, 3g, 4m)

Scelolyperus megalurus Wilcox, 1965:128, 130, 131, 134.

Diagnosis. In the male of this species, the terminal abdominal tergite is strongly, narrowly produced. This character is unique in the genus and in the entire section Scelidites. Specimens measure 4.5-6.0 mm long.

Type locality. "Kaweah, Tulare Co., California, 1,000 ft."

Distribution. This species is known only from Tulare County, California.

Comments. Specimens have been collected during May and July. Some were taken from the flowers of *Madia elegans* Don (Asteraceae). I have examined the male holotype (CASC), ten other males, and 38 females.

***Scelolyperus meracus* (Say)**
(Figure 5j)

Galleruca meraca Say, 1826:299.

Luperus meraca: LeConte, 1865:209.

Luperus (Luperus) meraca: Weise, 1924:120.

Luperodes meraca: Horn, 1893:115; Wilcox, 1954:433.

Scelolyperus meracus: Wilcox, 1965:129, 134, 154.

Diagnosis. The aedeagus of this species is about as broad in the basal 1/2 as in the distal 1/2; in lateral view, the basal 1/2 is straight and the apical 1/2 is sinuate. These characters distinguish this from other species of *Scelolyperus* occurring in the eastern half of North America. Specimens measure 3.8-5.2 mm long.

Type locality. United States.

Distribution. New Brunswick to Georgia to Kansas. I have examined a specimen from the following locality in Canada. New Brunswick: Queens Co., 2 mi. N. of Annis Lk.

I have also examined specimens from the following counties in the United States. Georgia: Rabun Co. Maine: [I have seen specimens from Mt. Bigelow which is in Franklin and Somerset Counties]. New Hampshire: Coos Co., Grafton Co. North Carolina: Buncombe Co., Haywood Co., Jackson Co., Macon Co., Swain Co., Yancey Co. Ohio: Ash-tabula Co., Ross Co. Pennsylvania: Allegheny Co., Columbia Co., Westmoreland Co. Tennessee: Sevier Co. Vermont: Bennington Co. Virginia: Page Co. West Virginia: Grant Co.

Beyond material that I have seen, Wilcox (1965) recorded this species from Essex and Rensselaer Counties in New York and from Kansas. Early records published before aedeagal examination was deemed critical are of doubtful reliability.

Comments. Wilcox (1965) reported that *Betula populifolia* Marsh. (Betulaceae) and *Hamamelis*

virginiana L. (Hamamelidaceae) are hosts of this species. Specimens have been collected from May to September.

The type specimen of this species has probably been destroyed. I have examined 73 males and 130 females.

***Scelolyperus nigrocyaneus* (LeConte)**
(Figures 5e, 5f, 5g)

Luperus nigrocyaneus LeConte, 1879:517; Horn, 1893:106 (= *Luperus longulus* LeConte, 1857).

Luperus (Luperus) nigrocyaneus: Weise, 1924:121.

Scelolyperus nigrocyaneus: Wilcox, 1965:129, 133, 158.

Luperodes nigrovirescens Fall, 1910:152, New Synonymy.

Scelolyperus nigrovirescens: Wilcox, 1965:129, 133, 159; Hatch, 1971:205.

Diagnosis. In this species, the prothorax, elytra, middle tibiae, and hind tibiae are all dark and lack metallic luster. Furthermore, the apex of the aedeagus is conspicuously asymmetrical, and, in lateral view, the aedeagus is sinuate along its entire length. This combination of characters distinguishes this from other species of *Scelolyperus*. Specimens measure 3.0-4.3 mm long.

Type localities. *Luperus nigrocyaneus*: Veta Pass, Colorado. *Luperodes nigrovirescens*: Florissant, Colorado.

Distribution. British Columbia to Alberta to New Mexico to California. I have examined specimens from the following localities in Canada. Alberta: Banff; Belly Riv. British Columbia: Fernie; Lizard Creek, Fernie.

I have also examined specimens from following counties in the United States. California: Alameda Co., Inyo Co., Mono Co. Colorado: Boulder Co., Chaffee Co., Delta Co., Denver Co., Jefferson Co., Mesa Co., Ouray Co., Routt Co., Teller Co. [I have also examined specimens from Veta Pass on the border of Costilla and Huerfano Counties]. Montana: Flathead Co., Gallatin Co., Glacier Co., Madison Co., Powell Co. Nebraska: [No specific locality was indicated]. New Mexico: [I have seen a specimen from the Sandia Mts. which are in Bernalillo and Sandoval Counties]. Utah: San Juan Co., Utah Co. Wyoming: Albany Co., Park Co.

Beyond specimens that I have seen, Wilcox (1965) reported this species from Larimer, Park, and Rio Blanco Counties in Colorado.

Comments. Specimens have been collected from June to September. One was found on *Rubus deliciosus* Torr. (Rosaceae). *Luperodes nigrovire-*

scens was originally described from specimens collected on the flowers of *Juncus* (Juncaceae).

The characters that have been used to separate *S. nigrocyaneus* from *S. nigrovirescens* are minor, insignificant, and somewhat variable. I am confident that the two species are synonymous.

I have examined the male holotype of *Luperus nigrocyaneus* (MCZC), the female holotype of *Luperodes nigrovirescens* (MCZC), 138 other males, 147 other females, and one specimen of unknown sex.

***Scelolyperus pasadenae* Clark, new species**
(Figure 1)

Diagnosis. This species is very similar to *Scelolyperus smaragdinus*. However, the aedeagus of *S. pasadenae* is more sinuate in lateral view, and the ventrolateral carinae in the distal fourth of the aedeagus are absent or very weakly developed (fig. 1). From the other species of the genus, *S. pasadenae* differs in that the pronotum and elytra are dark and distinctly metallic, the legs are entirely dark, the hind tibia of the male is nearly straight, and terminal spurs are present on all tibiae of the male.

Description. Form elongate; prothorax narrower than elytra. Color black or dark brown, with blue, green, or purple luster. Length of male 5.5-6.8 mm; length of female 5.5-7.1 mm.

Head metallic blue or green. Vertex weakly alutaceous, with a broad, mesal impression adjacent to frontal tubercles; punctures and pubescence largely absent. Interocular sulcus deep. Interocular distance equal to 0.6 times maximum width of head across eyes. Frontal tubercles separated from each other by deep sulcus, separated from longitudinal interantennal carina by distinct but rather shallow sulci, delimited laterally by broad impression. Antennal fossae separated by a distance slightly greater than width of antennomere I. Interantennal carina well-developed, forming a longitudinal angulate ridge. Genal length subequal to width of antennomere II. Antennae slender, extending to near middle of elytra, black or dark brown, with basal few antennomeres paler brown; antennomere III distinctly longer than II; IV slightly longer than I, about twice as long as II, distinctly longer than III, about as long as V.

Pronotum 1.3 times as wide as long, 0.7 times as wide as elytra across humeri; sides arcuate in dorsal view. Lateral beads well-developed; basal bead small. Surface finely punctate, often alutaceous near margins, polished elsewhere. Color black

or dark brown, with more or less distinct green or blue metallic luster.

Elytra 1.8 times as long as broad, with sides nearly parallel. Punctures distinct, separated by a distance slightly greater than diameter of a puncture. Interspaces alutaceous. Color black or dark brown, with distinct, metallic blue, green, or purple luster.

Ventral surface brown or black, usually with metallic luster. Prothorax largely glabrous; front coxae contiguous or nearly so; front coxal cavities open behind. Mesothorax alutaceous. Metathorax pubescent. Legs black or dark brown, usually with weak metallic luster on femora; terminal spurs present on all tibiae of male and of female; male with basitarsi, especially of front and middle legs, dilated; tarsal claws appendiculate. Abdomen pubescent; terminal segment of male impressed distally, with a broad, truncate, very short lobe at apex; terminal segment of female narrowly rounded at apex.

Aedeagus (dorsal view) narrowed near middle, with distal portion somewhat spatulate, with a central, asymmetrical, angulate tip; sinuate in lateral view. Distal fourth lacking strong ventrolateral carinae, sometimes with weak carinae. Basal spurs absent. Orifice lacking sclerotized covering.

Distribution. California.

Material examined. Holotype: San Gabriel Mts., near Pasadena, California (male, NMNH). Paratypes (all from California): Los Angeles Co.: Devils Can., 12 May 1941, C. Henne (1 male, AJGC); E. Fork San Gabriel Can., 21 Apr. 1956, R. L. Westcott (2 males, 1 female, AJGC); Glendale, March 1932 (1 male, OSUO); Glendale, May 1932 (1 male, OSUO); Hidden Springs, 16 mi. S. Palmdale, 27 Apr. 1980, N. J. Smith, A. J. Gilbert, collected from *Leptodactylon californicum* (8 males, 4 females, AJGC); Los Angeles (5 males, 2 females, MCZC); Mt. Wilson, 17 June 1939, G. P. Mackenzie (2 females, UCRV); Mt. Wilson, 7 May 1947, G. P. Mackenzie (1 male, 1 female; SEMC); Mt. Wilson, 10 May 1947, G. P. Mackenzie (1 male, UCRV); Mt. Wilson, 4 June 1947, G. P. Mackenzie (1 male, 1 female, SEMC); Pasadena, 14 May 1906 (1 male, CNCI); Pasadena, April (1 male, UMMZ); Pasadena, 2 July, Dr. A. Fenyès (3 males, ICCM); Pasadena (1 male, 5 females, NMNH); Pasadena, 3000 Ft., 10 June 1917 (1 female, CNCI); Pasadena, Sister Elsie Mt., 10 June 1917 (1 male, 1 female, CNCI); San Gabriel Mts., near Pasadena (2 males, NMNH, 1 male SMCI); [no specific locality], April (1 male, NMNH); [no specific locality], June (2 females,

NMNH). Santa Cruz Co.: Laurel, June 1893 (1 male, 1 female, UMRM); Laurel, 4 June (2 males, OSUC).

Comments. This species is similar to *S. smaragdinus* and has been confused with it in the past. The specific name, *pasadenae*, is a reminder that many of the specimens in the type series are from near Pasadena, California.

Scelolyperus phenacus Wilcox

(Figure 4h)

Scelolyperus phenacus Wilcox, 1965:129, 131, 145.

Diagnosis. The pronotum of this species is pale, and the elytra lack obvious carinae. Furthermore, the aedeagus is very slender and nearly symmetrical in dorsal view, and it is distinctly sinuate in lateral view. These characters will together distinguish this from all other species of *Scelolyperus*. Specimens measure 3.4-3.9 mm long.

Type locality. Chester, California.

Distribution. California. I have seen specimens from Alpine and Plumas Counties in California.

Comments. This species has been collected during July. Some specimens have been found on *Ribes inerme* Rydb. (Saxifragaceae). I have examined the male holotype (OSUC), eight other males, and two females.

Scelolyperus phoxus Wilcox

(Figures 3j, 4f)

Scelolyperus phoxus Wilcox, 1965:129, 131, 143.

Diagnosis. The pronotum of this species is pale, the hind tibiae of the male are straight or nearly so, and the overall length is 3.4 to 4.2 mm. Furthermore, the aedeagus is conspicuously sinuate in lateral view. In dorsal view, the apical portion of the aedeagus is distinctly asymmetrical although the acute tip is nearly central. These characters distinguish this from other species of *Scelolyperus*.

Type locality. Green River Camp, Lower Santa Ana Canyon, California.

Distribution. California. I have examined specimens from the type locality and from Los Angeles and Riverside Counties in California.

Comments. I have been unable to locate the holotype of this species. Contrary to the statement of Wilcox (1965), it is apparently not in the Califor-

nia Academy of Sciences. I have examined six male paratypes, two female paratypes, seven other males, and five other females. One series was collected from *Adenostoma fasciculatum* Hook. & Arn. (Rosaceae). Specimens have been taken from April to June.

***Scelolyperus ratulus* Wilcox**
(Figures 4i, 4k)

Scelolyperus ratulus Wilcox, 1965:129, 131, 136.

Diagnosis. The pronotum of this species is pale, the hind tibiae of the male are nearly straight, and the apex of the aedeagus is broadly truncate. These characters will together distinguish this from other species of *Scelolyperus*. Specimens measure 5.0 mm long.

Type locality. "Cal."

Distribution. All specimens examined are from California, but no specific locality was indicated.

Comments. I have examined only the male holotype (MCZC) and the female allotype (MCZC). The biology of this species is unknown.

***Scelolyperus schwarzii* Horn**
(Figure 4e)

Scelolyperus Schwarzii Horn, 1893:105.

Scelolyperus schwarzii: Wilcox, 1965:129, 132, 146.

Scelolyperus schwarzii: Fall, 1901:156; Hatch, 1971:204.

Luperus variipes: Beller & Hatch, 1932:114 (misidentification).

Diagnosis. The dorsal surface of this species is entirely metallic, the hind tibia of the male is strongly curved, and the aedeagus is symmetrical and emarginate at the apex. These characters enable recognition of this species. Specimens measure 4.0-6.0 mm long.

Type locality. Hood River Valley, Oregon.

Distribution. British Columbia to Montana to California. I have examined specimens from the following localities in Canada. British Columbia: Creighton V., Lumby; Creston, 1900 ft.; Kamloops; Kustkanook; Lavington; Mara; McCulloch Rd., Kelowna; Robson; Salmon Arm; Trinity Valley; Vernon; Westbank; Whitemans Cr., Vernon.

I have also examined specimens from the following counties in the United States. California: Modoc Co., Monterey Co., Nevada Co., Placer Co., Shasta Co., Siskiyou Co., Trinity Co. Idaho: Ada Co., Adams Co., Boise Co., Bonner Co., Canyon Co., Clearwater Co., Gem Co., Idaho Co., Kootenai Co.,

Latah Co., Lemhi Co., Lewis Co., Minidoka Co., Nez Perce Co., Shoshone Co., Valley Co. Montana: Flathead Co., Lake Co., Mineral Co., Ravalli Co. Oregon: Baker Co., Clatsop Co., Coos Co., Hood River Co., Lincoln Co., Morrow Co., Multnomah Co., Umatilla Co., Union Co., Wallowa Co., Wasco Co. Washington: Asotin Co., Chelan Co., Columbia Co., King Co., Kittitas Co., Klickitat Co., Lewis Co., Okanogan Co., Pierce Co., Spokane Co., Stevens Co., Walla Walla Co., Whitman Co., Yakima Co.

The record for Wyoming by Wilcox (1965) probably resulted from a misprinting of Washington. Also, the record for Baja California by Weise (1924) is likely in error.

Comments. I have examined specimens that were collected on "*Rosa montana*" (Rosaceae), and one other was doing damage to roses. Also, I have seen specimens collected on *Rubus parviflorus* Nutt. (Rosaceae) and on goatweed (*Hypericum perforatum* L., Hypericaceae), but it was unclear whether or not the beetles were feeding. Hatch (1971) reported this species from *Berberis* (Berberidaceae) and *Ceanothus* (Rhamnaceae). Specimens have been collected from March to September.

As noted by Wilcox (1965), many of the specimens identified as *Luperus variipes* by Beller & Hatch (1932) probably belong to this species.

I have examined the male holotype (MCZC), 531 other males, and 619 females.

***Scelolyperus smaragdinus* (LeConte)**
(Figure 4b)

Luperus smaragdinus LeConte, 1859c:286; LeConte, 1865:209.

Luperus (Luperus) smaragdinus: Weise, 1924:122.

Luperodes smaragdinus: Horn, 1893:116.

Scelolyperus smaragdinus: Wilcox, 1965:129, 132, 148.

Diagnosis. The pronotum and elytra of this species are dark and metallic. The legs are entirely dark also. Furthermore, the aedeagus is nearly straight in lateral view, and the apical portion has well-developed, ventrolateral carinae. The apex of the aedeagus is pointed and distinctly asymmetrical in dorsal view. This suite of characters will distinguish this from other species of the genus and of the entire section Scelidites. Specimens measure 5.3-6.7 mm long.

Type locality. Punto de los Reyes, California.

Distribution. California. I have examined specimens from the following counties in the U.S.A. California: Alameda Co., Colusa Co., Kings Co., Lake Co., Marin Co., Monterey Co., San Luis Obispo Co., Sonoma Co.

Beyond material that I have seen, LeConte (1865) reported this species from Mendocino County, California, and Wilcox (1965) reported it from Los Angeles and Nevada Counties in California. However, these records may be based on specimens of *S. pasadenae* or perhaps other species.

Comments. The preceding treatment is based on the male holotype (MCZC), 31 other males, and 14 females. Adults have been collected from March to May. Some were taken from mustard (Brassicaceae) and others from the flowers of *Ceanothus* sp. (Rhamnaceae).

***Scelolyperus tejonicus* Crotch**

(Figures 3d, 4l)

Scelolyperus tejonicus Crotch, 1874:79; Horn, 1893:104; Wilcox, 1965:129, 130, 134.

Diagnosis. The hind tibia of the male is strongly curved with a prominent tooth on the inner side at the basal third. Such tibiae are not found in any other species of *Scelolyperus* or of the entire section Scelidites. The single specimen examined measures 5.0 mm long.

Type locality. Fort Tejon, California.

Distribution. I am able to confirm the occurrence of this species only in Kern County, California. Weise (1924) listed it from Oregon and Lower California, but the basis for these records is unknown to me.

Comments. The preceding treatment is based on the male holotype (MCZC, type no. 5070). I have seen no other specimens. The biology of this species is unknown.

***Scelolyperus tetonensis* Clark, new species**

(Figure 2)

Diagnosis. The elytra of this species lack distinct carinae. Also, the aedeagus is slender and symmetrical in dorsal view, and it is nearly straight in lateral view (fig. 2). These characters distinguish this from other species of *Scelolyperus*.

Description. Form elongate; prothorax narrower than elytra. Length of male 3.2-3.7 mm; length of female 3.0-3.3 mm.

Head dark brown, shining; alutaceous microsculpture weak or absent. Vertex nearly glabrous. Interocular sulcus deep in male, shallow in female. Interocular distance equal to 0.6 times maximum width of head across eyes. Frontal tubercles nearly

confluent with orbits. Distance between antennal fossae slightly greater than width of antennomere I. Longitudinal interantennal carina narrow and well-developed in male, poorly developed in female. Genal length subequal to maximum diameter of distal article of maxillary palp. Antennae slender, extending to near middle of elytra, testaceous; antennomere I nearly twice as long as II; III slightly longer than II, slightly shorter than IV.

Pronotum 1.5 times as wide as long, 0.8 times as wide as elytra across humeri, widest near anterior third; sides strongly sinuate in dorsal view. Lateral beads well-developed; basal bead small. Surface impunctate, lacking pubescence, shining, not alutaceous. Color yellow.

Elytra 1.7-1.9 times as long as broad, parallel-sided or slightly broader near posterior fourth. Punctures separated on average by a distance subequal to three times diameter of a puncture. Interspaces alutaceous. Color dark brown with weak blue luster.

Ventral areas of prothorax testaceous, largely glabrous; front coxae nearly contiguous; front coxal cavities open behind. Metathorax brown, pubescent. Femora brown at base, testaceous at apex. Tibiae testaceous; terminal spurs present on all tibiae of male and female. Front and middle basitarsi of male slightly, rather inconspicuously dilated. Tarsal claws appendiculate. Abdomen brown, pubescent; terminal segment of male with a broad, truncate, very short lobe at apex; terminal segment of female rounded at apex.

Aedeagus (fig. 2) slender and nearly symmetrical in dorsal view, nearly straight in lateral view. Basal spurs absent. Orifice lacking sclerotized covering.

Distribution. Wyoming.

Material examined. Male holotype and female allotype: 23 mi. south Jackson, Teton Co., Wyoming, VII-4-53, W. F. Barr Collector (CASC). Paratypes: Lincoln Co., Wyo., July 20 1985, Fred A. Lawson (1 male, NMNH; 2 males, 9 females, OSUC); Sublette Co., Wyo., 24 July 1980, Fred A. Lawson (1 male, NMNH; 3 females, OSUC; 1 male, 1 female, SMCI).

***Scelolyperus torquatus* (LeConte)**

(Figure 4d)

Luperus torquatus LeConte, 1884:28.

Luperus (Luperus) torquatus: Weise, 1924:123.

Luperodes torquatus: Horn, 1893:115.

Scelolyperus torquatus: Wilcox, 1965:129, 130, 131, 138.

Diagnosis. In this species, the pronotum is pale. Also, the aedeagus is nearly straight in lateral view, and the apex is distinctly asymmetrical with the tip lateral. These characters distinguish this from other species of *Scelolyperus*. Specimens measure 2.9-4.7 mm long.

Type locality. Specimens in the type series were collected at San Mateo and Mariposa, California.

Distribution. California, Arizona, Baja California Norte, and possibly British Columbia. I have seen male specimens from La Rumorosa, Baja California Norte, Mexico. I have also seen male specimens labeled from Victoria, British Columbia, Canada, but these may be labeled in error.

I have also examined specimens from the following counties in the United States. Arizona: Yavapai Co. [this record is based on a female specimen and requires confirmation]. California: Alameda Co., Butte Co., Calaveras Co., Colusa Co., Contra Costa Co., Fresno Co., Imperial Co., Kern Co., Kings Co., Lake Co., Los Angeles Co., Madera Co., Marin Co., Mariposa Co., Monterey Co., Napa Co., Orange Co., Riverside Co., San Benito Co., San Bernardino Co., San Diego Co., San Luis Obispo Co., San Mateo Co., Santa Barbara Co., Santa Clara Co., Santa Cruz Co., Solano Co., Sonoma Co., Tehama Co., Tulare Co., Ventura Co.

Comments. I have examined specimens collected from *Sambucus glauca* Nutt. (Caprifoliaceae), *Arctostaphylos* sp. (Ericaceae), *Quercus* sp. (Fagaceae), "tree poppy *Dendromecon rigida*?" (Papaveraceae), *Ceanothus cuneatus* (Hock.) Nutt. (Rhamnaceae), *Ceanothus integerrimus* Hook. & Arn. (Rhamnaceae), and California slippery elm [*Fremontodendron californicum* (Torr.) Cov.] (Sterculiaceae). However, it is unclear whether or not any of these are the normal host plant. I have also seen specimens taken from the flowers of *Convolvulus* (Convolvulaceae). Adults have been collected from February to July.

Wilcox (1965) noted that there is some variability among specimens that have been assigned to this taxon. Continued study might prove that more than one species is involved.

I have examined the female holotype (MCZC), 435 other females, 248 males, and ten specimens of unknown sex.

Scelolyperus transitus (Horn)

(Figure 4a)

Luperodes transitus Horn, 1893:113.

Luperus (Luperus) transitus: Weise, 1924:123.

Scelolyperus transitus: Wilcox, 1965:130, 132, 140.

Diagnosis. The pronotum of this species is pale, and the hind tibiae of the male are nearly straight. Also, the apical portion of the aedeagus is asymmetrical, spatulate, and bent upward, but it lacks an acute or angulate tip (fig. 4a). Specimens measure 3.2-4.2 mm long. These characters enable recognition of this species.

Type locality. Santa Barbara, California.

Distribution. California. I have examined specimens from Kings, Monterey, and Santa Barbara Counties in California. Beyond material that I have seen, Wilcox (1965) reported this species from Butte, Contra Costa, Los Angeles, Marin, and San Diego Counties in California, and specimens in the type series were from San Mateo and Siskiyou Counties in California.

Comments. I have examined specimens taken on *Ribes divaricatum* Dougl. (Saxifragaceae), and Wilcox (1965) recorded specimens from *Ceanothus cuneatus* (Hock.) Nutt. (Rhamnaceae). Specimens have been collected from April to June.

The preceding treatment is based on the female lectotype (no. 3805, MCZC; designated by Wilcox, 1965), 15 other females, and 30 males.

Scelolyperus varipes (LeConte)

(Figures 5b, 5d)

Luperus varipes LeConte, 1857:69.

Luperus (Luperus) varipes: Weise, 1924:123.

Luperodes varipes: Horn, 1893:110, 118.

Scelolyperus varipes: Wilcox, 1965:130, 132, 150; Hatch, 1971:204.

Luperus morrisoni Jacoby, 1888:595, New Synonymy.

Luperus (Calomicrus) Morrisoni: Weise, 1924:115.

Luperodes Morrisoni: Horn, 1893:110, 117.

Scelolyperus morrisoni: Wilcox, 1965:129, 132, 151.

Luperus concavus Beller & Hatch, 1932:114; Wilcox, 1965:130 (= *Luperus varipes* LeConte, 1857).

Diagnosis. The dorsal surface of this species is entirely metallic, the front tibiae are pale, the hind tibiae of the male are nearly straight, and the distal portion of the aedeagus is distinctly asymmetrical. This combination of characters distinguishes this from all other species of *Scelolyperus* occurring in the western half of North America. Specimens measure 3.4-5.3 mm long.

Type localities. *Luperus varipes*: "San Francisco." *Luperus morrisoni*: "MEXICO, Northern Sonora" (Selander and Vaurie, 1962, indicated that

this locality is likely incorrect; the type probably comes from Arizona). *Luperus concavus*: "Mt. Rainier, Washington, Greenwater River."

Distribution. British Columbia to Montana to New Mexico to California. I have examined specimens from the following localities in Canada. Alberta: Waterton. British Columbia: Creston; Enderby; Fernie; Howser, Selkirk Mts.; Kaslo; Madden L., Oliver; Midday Val., Merritt; Mt. Revelstoke, 5400'; Salmon Arm; Summit Creek, Creston; Trail; Westbank; Wyndel.

I have also examined specimens from the following counties in the United States. Arizona: Cochise Co., Coconino Co., Graham Co., Maricopa Co., Mohave Co., Navajo Co., Yavapai Co. [I have also seen specimens from the Santa Catalina Mts., which are in Pima and Santa Cruz Counties]. California: Alameda Co., Butte Co., Calaveras Co., Contra Costa Co., El Dorado Co., Fresno Co., Humboldt Co., Kern Co., Kings Co., Lake Co., Lassen Co., Los Angeles Co., Madera Co., Marin Co., Mariposa Co., Mendocino Co., Monterey Co., Napa Co., Nevada Co., Placer Co., Plumas Co., Riverside Co., San Bernardino Co., San Diego Co., San Francisco Co., San Mateo Co., Santa Barbara Co., Santa Clara Co., Santa Cruz Co., Shasta Co., Siskiyou Co., Sonoma Co., Tehama Co., Trinity Co., Tulare Co., Tuolumne Co., Ventura Co. Colorado: Boulder Co., Denver Co., Douglas Co., Grand Co., Jefferson Co., Larimer Co. [I have also seen a specimen from Veta Pass which is on the border of Costilla and Huerfano Counties]. Idaho: Boise Co., Bonneville Co., Custer Co., Franklin Co., Idaho Co., Kootenai Co., Latah Co., Lewis Co., Shoshone Co., Valley Co. Montana: Flathead Co., Missoula Co., Ravalli Co., Sanders Co. Nevada: Elko Co., Washoe Co. New Mexico: Grant Co., San Miguel Co. Oregon: Baker Co., Benton Co., Coos Co., Curry Co., Douglas Co., Grant Co., Hood River Co., Jackson Co., Josephine Co., Klamath Co., Lake Co., Lane Co., Lincoln Co., Multnomah Co., Umatilla Co., Union Co., Wasco Co., Washington Co., Yamhill Co. Utah: Salt Lake Co., Sanpete Co., Utah Co., Wasatch Co. Washington: Chelan Co., Jefferson Co., King Co., Kittitas Co., Pierce Co., Spokane Co., Walla Walla Co., Whitman Co., Yakima Co. Wyoming: Carbon Co.

Comments. Many of the beetles I have examined were collected from various species of *Ceanothus* (Rhamnaceae). *Ceanothus integerrimus* Hook. & Arn., *C. sanguineus* Pursh, *C. thyrsiflorus* Eschsch., and *C. velutinus* Dougl. have specifically been mentioned. However, it is unclear whether the beetles were in the flowers or actually feeding on

the leaves. Also, specimens have less commonly been collected on *Haplopappus linearifolius* HC. (Asteraceae), *Libocedrus decurrens* Torr. (Cupressaceae), *Arcostaphylos* (Ericaceae), *Syringa* (Oleaceae), pine (*Pinus* sp., Pinaceae), *Prunus* sp. (Rosaceae), *Ptelea crenulata* Greene (Rutaceae), and *Salix* (Salicaceae). It is not clear whether these are true hosts or purely incidental records. A small series of five specimens was collected "eating ripe strawberries in field." Adults have been collected from March to August.

Scelolyperus varipes varies slightly in size, color, punctuation, and form of the aedeagus. For instance, some specimens from California are larger than normal and have violaceous rather than the usual blue or green elytra. Nevertheless, I believe that all specimens I have seen belong to a single species. Furthermore, specimens formerly called *S. morrisoni* fit well within the variability of rather typical populations.

As pointed out by Wilcox (1965), most of the specimens identified as *Luperus varipes* by Beller and Hatch (1932) are probably *Scelolyperus schwarzii*.

During this study, I have examined several syntypes of *Luperus morrisoni* (BMNH, MCZC). One of the specimens from the British Museum (Natural History) bears Jacoby's "type" label and is hereby designated as lectotype. The original type series included specimens of *Eusattodera intermixtus* (Fall) and *E. pini* Schaeffer, as well as other specimens that are conspecific with the lectotype.

My concept of this species is based on the male holotype of *Luperus varipes* (MCZC), the male lectotype of *Luperus morrisoni* (BMNH), the female holotype of *Luperus concavus* (NMNH), 533 other males, 783 other females, and six specimens of unknown sex.

Scelolyperus wilcoxi Hatch

Scelolyperus wilcoxi Hatch, 1971:204.

Diagnosis. In this species, the pronotum and elytra are distinctly metallic, and the front tibiae are largely pale. Also, the apex of the aedeagus is bluntly pointed and nearly symmetrical. These characters will together distinguish this from other species of *Scelolyperus*. Specimens measure 4.4-5.7 mm long.

Type locality. "Oreg., Josephine Co., Rough and Ready Creek, 2 mi. n. O'Brien, 1400', R8W. T40S Sec. 18."

Distribution. Oregon. I have examined specimens from Benton, Jefferson, Josephine, and Klammath Counties in Oregon.

Comments. The treatment of this species is based on the male holotype (NMNH), on 14 other males, and on eight females. Specimens have been collected from May to July. Some have been taken from *Phacelia* (Hydrophyllaceae).

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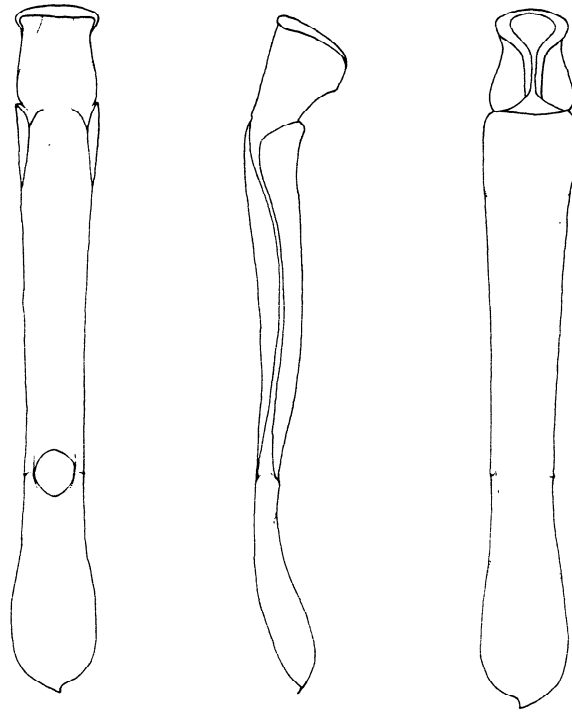


Figure 1. *Scelolyperus pasadenae* new species, median lobe of aedeagus, dorsal, lateral, and ventral views.

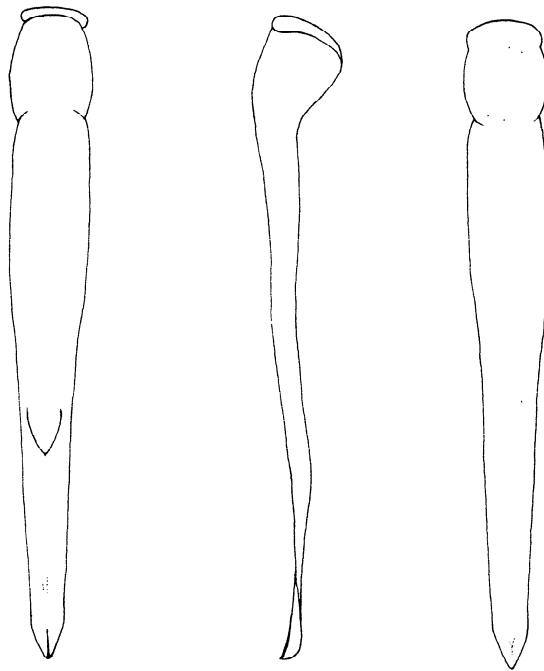


Figure 2. *Scelolyperus tetonensis* new species, median lobe of aedeagus, dorsal, lateral, and ventral views.

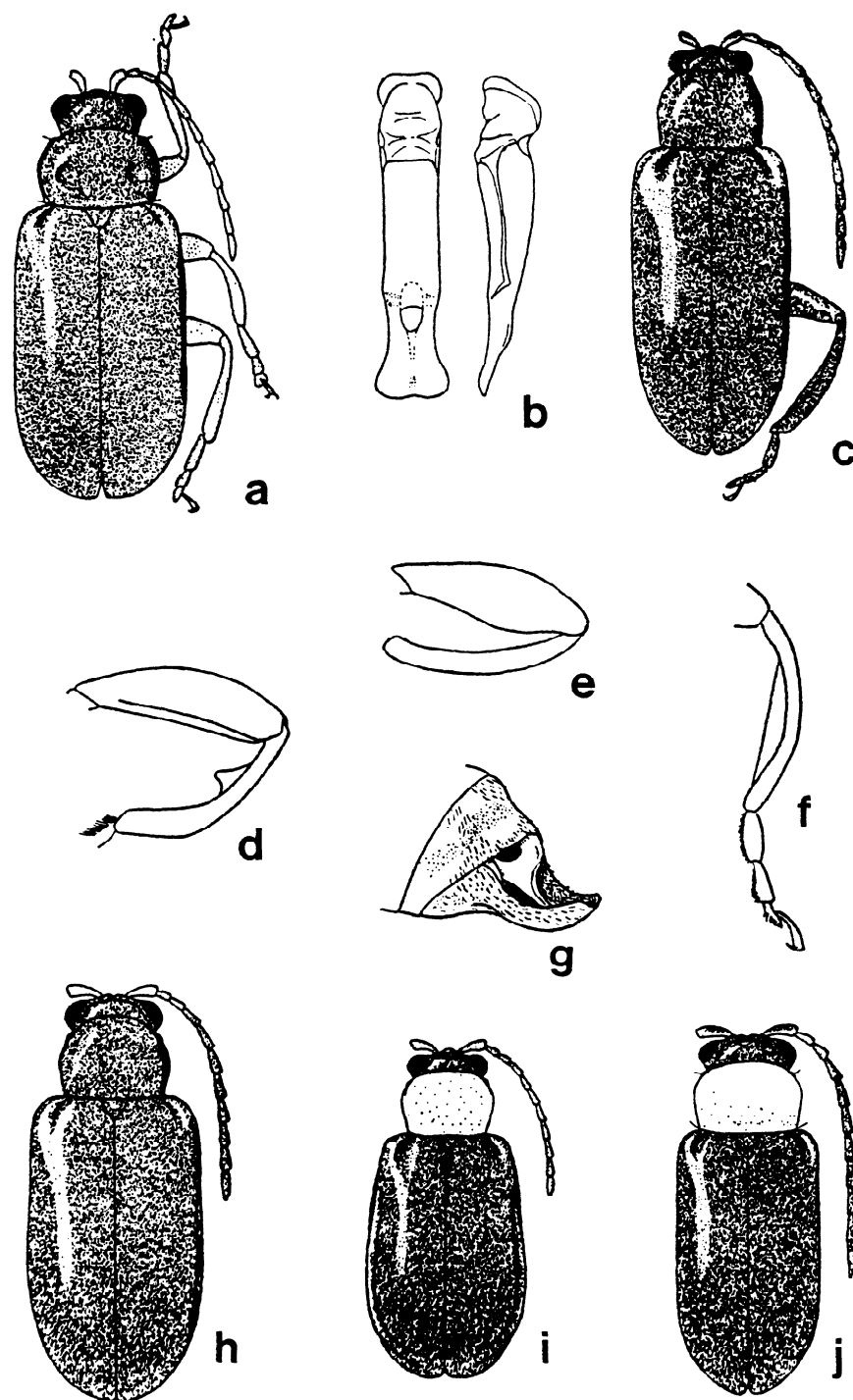


Figure 3. *Scelolyperus* spp. a) *S. liriophilus* Wilcox; b) *S. curvipes* Wilcox, dorsal and lateral views of aedeagus; c) *S. curvipes* Wilcox; d) *S. tejonicus* Crotch, posterior femur and tibia of male; e) *S. loripes* Horn, posterior femur and tibia of male; f) *S. megalurus* Wilcox, posterior tibia and tarsus of male; g) *S. megalurus* Wilcox, apical segments of male abdomen, ventrolateral view; h) *S. hatchi* Wilcox; i) *S. carinatus* Wilcox, female; j) *S. phoxus* Wilcox (all figures from Wilcox, 1965).

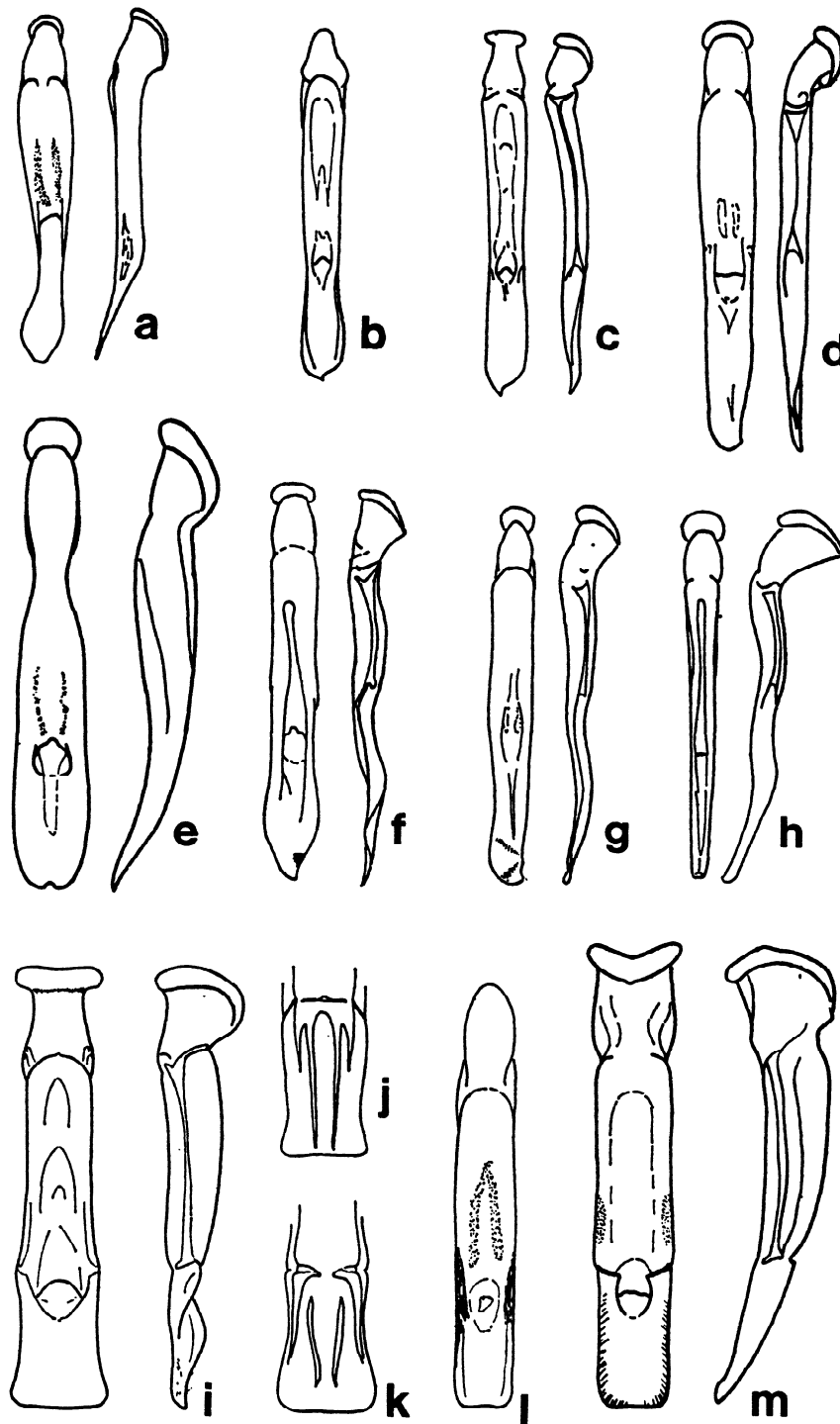


Figure 4. Aedeagi of *Scelolyperus* spp. a) *S. transitus* (Horn), dorsal and lateral views; b) *S. smaragdinus* (LeConte), dorsal view; c) *S. flavicollis* (LeConte), dorsal and lateral views; d) *S. torquatus* (LeConte), dorsal and lateral views; e) *S. schwarzi* Horn, dorsal and lateral views; f) *S. phoxus* Wilcox, dorsal and lateral views; g) *S. laticeps* (Horn), dorsal and lateral views; h) *S. phenacus* Wilcox, dorsal and lateral views; i) *S. ratulus* Wilcox, dorsal and lateral views; j) *S. loripes* Horn, ventral view of apex; k) *S. ratulus* Wilcox, ventral view of apex; l) *S. tejonicus* Crotch, dorsal view; m) *S. megalurus* Wilcox, dorsal and ventral views (all figures from Wilcox, 1965).

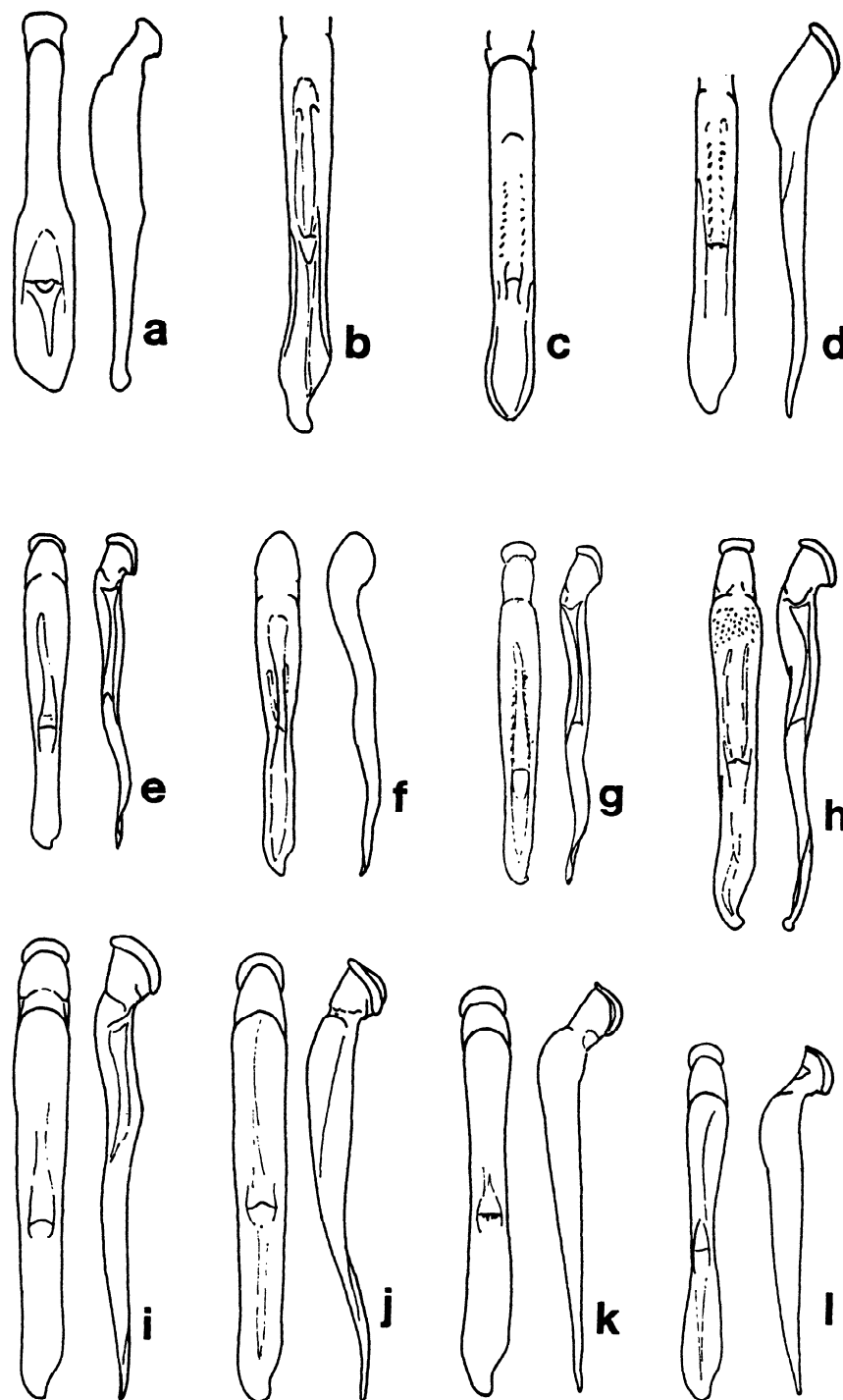


Figure 5. Aedeagi of *Scelolyperus* spp. a) *S. cyanellus* (LeConte), dorsal and lateral views; b) *S. varipes* (LeConte), dorsal view; c) *S. graptoderoides* (Crotch), dorsal view; d) *S. varipes* (LeConte), dorsal and lateral view; e-g) *S. nigrocyaneus* (LeConte), dorsal and lateral views; h) *S. hatchi* Wilcox, dorsal and lateral views; i) *S. bimarginatus* (Blake), dorsal and lateral views; j) *S. meracus* (Say), dorsal and lateral views; k-l) *S. liriophilus* Wilcox, dorsal and lateral views (all figures from Wilcox, 1965).