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GENUS LEXIPHANES
OF AMERICA NORTH OF MEXICO
(COLEOPTERA: CHRYSOMELIDAE)¹

By EDWARD U. BALSBAUGH, Jr.²

Introduction

The taxonomic history of this group began with the generic establishment of *Monachus* Chevrolat (1837) in Dejean's "Catalogue." Chevrolat created the genus by separating species from large genera such as *Clytra* Laicharting and *Cryptocephalus* Geoffroy. He did not describe the genus, but it did possess nomenclatorial validity because of the inclusion of valid specific names. Although Suffrian (1852) published the first generic description, he was erroneously cited as generic author by Gemminger and von Harold (1874), Clavareau (1913), and Leng (1920).

Gistel (1848) proposed the current valid name *Lexiphanes* after he saw that *Monachus* Chevrolat was preoccupied: *Monachus* Fleming, 1822 and *Monachus* Kaup, 1829. *Lexiphanes* did not obtain recognition until Blackwelder (1946) published his neotropical catalog.

¹ Modified from a master's thesis submitted to Pennsylvania State University and completed in the employ of the Pennsylvania Department of Agriculture.

² Department of Zoology-Entomology, Auburn University, Auburn, Ala.

Leng (1918) further introduced *Monachulus* (now in synonymy) also to replace preoccupied *Monachus* Chevrolat.

The first known North American species, *Cryptocephalus saponatus*, was described by Fabricius in 1801. Nearly forty years later Perbosc (1839) described *Cryptocephalus guerini*. *Monachus ater*, *M. affinis*, and *M. auritus* were described by Haldeman (1849). *Monachus seminulum* was described by Suffrian (1858) and *Monachus thoracica* by Crotch (1873). The remaining species, described in the twentieth century, are: *Monachus mexicanus* Jacoby (1908); *Monachulus viridanus* Fall (1927); and *Monachulus opacicollis* Schaeffer (1933). A key to the species then known for the genus in America north of Mexico was published in 1880 by LeConte. Wickham (1895) used part of this key in his paper on the tribe Cryptocephalini in his series on Canadian Coleoptera. Blatchley (1910) also presented a key, but only to the species occurring in Indiana. In the present study, five distinct species are recognized in Nearctic America north of Mexico. Four of the above specific names are here synonymized and two junior synonyms re-established as senior.

Origin and distribution: The genus *Lexiphanes* occurs only in the Western Hemisphere. Comparatively speaking, North America is poorly represented in the genus. Blackwelder (1946) lists twenty-three species from Central America, whereas ninety-three were recorded for South America. Assuming no reduction of range, northern South America appears to be the center of distribution and the probable center of generic origin. Two faunal regions include the five North American species: the eastern United States as far west as the plains, and the southwestern United States, including parts of Texas, Colorado, New Mexico, and Arizona. The western species represent the northernmost distributions of a Central American group. The three eastern species are possibly completely disjunct from their Central American relatives.

Methods and terminology: The abdomen was removed and cleared overnight in 10 percent solution of sodium hydroxide. The genitalia were removed from the abdomen, washed in distilled water, examined, and stored in glycerine in micro-vials attached to the insect pin. The empty abdomen was washed and mounted on a paper point beneath the insect. The aedeagi were measured from the apical tip to the anterior end of the internal sac. The total length of the beetle was taken from the front of the pronotum to the apex of the elytra, while the width was measured at the widest part (slightly behind the humeral calli).

A study of this kind requires assemblage of a large amount of material. The author has been fortunate enough to examine large series of specimens through loans from various institutions. For the

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Systematic Treatment

North American *Lexiphanes* display several colors and considerable variability: piceous, brownish black, blue green, dark bronzed green, and yellowish red. Their general shape can best be described as being kegl-like; the body length averaged 1.4 times the width. The compact form, along with its colors and patterns, usually permits easy recognition of these beetles without close scrutiny of diagnostic characters.

The head is hypognathous, nearly circular, and fits tightly in the prothorax. From directly above, the head is most often invisible. The eyes are strongly emarginate and those of the male more closely contiguous than those of the female. The subserrate, 11-segmented antennae arise in the emargination of the eyes and extend the length

of the pronotum. The first five segments are narrow while the apical six become wider, more triangular in shape. Antennal segmental coloration varies within species by the number of basal segments, which are of lighter hues. The mouth parts are difficult to observe due to the hypognathous head. The rounded labrum often is lighter, as are the basal antennal segments. The terminal segments of the labial and maxillary palpi are gradually acuminate. The mentum is not visible.

Pronotal convexity greatly contributes to a compact shape. The rapidity of taper of the pronotum as it narrows anteriorly yields varying degrees of robustness. (Some species have the lateral edges of the pronotum more nearly parallel than others.) Since the pronotal lateral margins lie beneath the curvature of the body, they are invisible from above. Slightly below the middle these form right angles where they meet the anterior pronotal margin. Pronotal markings are of some specific distinctive value, but punctation and sculpture are also quite variable. Setae can be seen at the four pronotal angles on clean specimens. No diagnostic value was placed on the long and narrowly triangular scutellum.

Elytral striae become obscure near the posterior end. Interstitial punctures are much finer than the strial. In some species the submarginal striae are more deeply impressed than the remainder, and the epipleura are well developed along the thorax but narrow quickly along the abdomen.

The transversely subrectangular prosternum extends between the two anterior coxal cavities, which are closed behind. The middle coxal cavities are open behind. Mesopleural and metapleural sclerites are distinct. The mesosternum is subrectangular, approximately twice as broad as long, and the metasternum is likewise wider than long. Median sutures and sternal coxal lines can also be seen on some species, and various degrees of punctation are noticeable on the thoracic sternites and pleurites.

The abdomen is composed of five sternites, the first being the widest. This basal sternite has a broad (often $\frac{1}{2}$ the width), truncate intercoxal process. The length of all five abdominal sternites together does not equal the width of the abdomen. Punctation and rugosities on the abdominal sternites sometimes allow specific distinctions. Sexual differences are visible on the fifth abdominal sternite.

The legs are always widely separated. The anterior and middle coxae are globular; those of the hindlegs are transverse. The trochanters are shaped like right triangles with their "hypotenuses" bounding the femoral base. The femora are slightly swollen—the anterior the most and the hind the least. A shallow groove is notice-

able along the distal ventral edge for reception of the tibia. The lateral and dorsal surfaces are evenly rounded. The tibiae have the dorsal side subcarinate, especially the hindtibiae, while the corbels of all legs are setose in a single, lateral row. The tarsi are cryptopentamerous with the fourth segment strongly reduced. The strongly biramous third segment is padded beneath, along with the first and second segments. The ungues are appendiculate; however, the claws of some *L. saponatus*, collected in the vicinity of Lake Marion, Florida, were less appendiculate and more slender (figs. 7, 8).

The wings are fully formed (fig. 9), but no diagnostic use is here made of these structures. Since the wings of *Lexiphanes* show no closed cells, the beetles are a primitive chrysomelid type (Crowson, 1960).

Beetles of this genus show little pubescence. Setae are generally absent dorsally. Ventrally they are short and sparse. Sometimes the first and fifth abdominal segments are hirsute. Some species have the terminal antennal segments more heavily pubescent than the basal ones. Sparse setae occur on the tibiae of some species. Pronotal setae and tarsal pads have been noted previously.

The sexes can be distinguished by the presence of a fovea on the fifth abdominal sternite (present in the female, absent in the male), the degree of approximation of the eyes (the males' being closer together), and the usually smaller size of the male; however, the relativity of these latter two criteria makes them less valuable. When the pygidium is raised, paired sclerites in the genital opening indicate a female, and the apical tip of the aedeagus, the male.

Male genitalia of *Lexiphanes* were investigated by Powell (1941), primarily to show generic and interfamily relationships; however, the present study found them to also have specific diagnostic value (fig. 6 shows a fully labeled aedeagus). One part of the female reproductive structure, the spermatheca, was also found to be useful taxonomically.

Little is known concerning life habits of this genus. The earliest and latest dates of collection for each species are shown by state or province. Plants upon which beetles have been collected are listed under biology for each species. Only one specimen of the material examined was indicated as having been collected at light.

Beetles of this genus have not been reported to be of economic importance. One report showed *Lexiphanes saponatus* (Fabricius) to have been feeding on cotton on the upper epidermis and parenchyma, occasionally making holes through the leaves (Folsom, 1936).

As I have been unable to find that a type species had ever been designated for this genus, I subsequently designate *Lexiphanes saponatus* (Fabricius). Preference is given this species because it is

the best known. (It probably was also well known to Chevrolat prior to his publishing the generic name.) This species has a wide distribution, and is typical by size and form of the genus, both Nearctic and Neotropical.

Genus *Lexiphanes* Gistel

Monachus Chevrolat, 1837, p. 425. [Preoccupied by *Monachus* Fleming, 1822, and *Monachus* Kaup, 1829.]

Lexiphanes Gistel, 1848, p. 123. [Type species, by present designation: *Cryptocephalus saponatus* Fabricius, *Lexiphanes saponatus* (Fabricius), 1801, vol. 2, p. 55.]

Monachulus Leng, 1918, p. 208.

Key to the Nearctic Species of *Lexiphanes*

1. Elytra black on bluish black with pale median spot or transverse fascia (except some forms of *mexicanus* found only in Mexico); southwestern species 2
Elytra entirely black or bluish black without pale median spot or transverse fascia; eastern species 3
2. Pronotum shining, distinctly punctate, the punctures fine and generally evenly distributed over entire surface; 2.08–3.00 mm. long.
guerini (Perbosc)
Pronotum dull, not distinctly punctate; some medial basal punctures occasionally present; 2.16–2.60 mm. long *mexicanus* (Jacoby)
3. Interstitial space between marginal and submarginal striae convex along entire length of elytra; small species; 1.58–2.25 mm. long 4
Interstitial space between marginal and submarginal striae not convex for entire length of elytra; large species; 2.16–3.08 mm. long.
saponatus (Fabricius)
4. Last ventral abdominal segment uniformly convex with a fovea 5
Last ventral abdominal segment uniformly convex without a fovea 6
5. Last ventral abdominal segment with a callus on either side of the fovea; pronotum with no or very obscure punctures along basal line; 2.08–2.23 mm. long female *affinis* (Haldeman)
Last ventral abdominal segment without a callus on either side of the fovea; pronotum with a basal line of punctures; 1.91–2.25 mm. long.
female *seminulum* (Suffrian)
6. Last ventral abdominal segment and abdominal intercoxal process with punctures; pronotum with no, or very obscure punctures along basal line; 1.75–2.08 mm. long male *affinis* (Haldeman)
Last ventral abdominal segment without punctures; abdominal intercoxal process rugose; pronotum with a basal line of punctures; 1.58–2.00 mm. long male *seminulum* (Suffrian)

Lexiphanes guerini (Perbosc, 1839)

FIGURES 1, 10, 15

Cryptocephalus guerini Perbosc, 1839, p. 264.

Monachus guerini (Perbosc).—Suffrian, 1852, p. 216.

Monachulus guerini (Perbosc).—Leng, 1920, p. 290 (checklist).

Lexiphanes guerini (Perbosc).—Blackwelder, 1946, p. 643 (checklist).

Diagnostic description: Frons red, dorsum when visible usually black, with punctules; several distinct setae on clypeus; antennae subequal to length of head and pronotum combined, basal segments tawny becoming darker distally, segments six through eleven broader, flattened, and more setose. Pronotum yellowish red with black discal spots; punctation fine and generally scattered over entire pronotum, the punctures not as broad as elytral punctures. Prosternum yellowish red, rugulose; pronotal epipleura smooth. Elytra black with transverse yellowish-red fascia; deeply impressed marginal and submarginal



FIGURE 1.—Geographic distribution of *Lexiphanes guerini* (Perbosc). S=state locality.

striae, other striae becoming effaced medially and posteriorly, their punctation on the fascia showing small, dark, "water soaked" spots. Venter black, at times iridescent green or deep purple, with distinct punctures. Legs dark with lighter variations in the forelegs.

Variation: The observed size range in millimeters is 2.08 long by 1.50 wide to 3.00 long by 2.08 wide. The average size is 2.48 long by 1.75 wide. A variational effect, which appears to be clinal in nature, runs in a general north-south direction. Those specimens collected in the northernmost range of the species have the two pronotal discoidal spots smaller or absent, while collections farther south show these spots progressively enlarging, finally meeting or completely fusing into

one spot. The coloration of the dark areas of the more northern specimens tends to be black (ventrally showing more brownish) with less or little of the bluish purple or greenish iridescence shown by specimens from Mexico. The population from the area of Bill Williams Fork, Ariz., which show no pronotal discal spots were not named as a subspecies because of the paucity of specimens. Future collections from the northern areas of Mexico and into Arizona may show that subspecies do exist.

Male genitalia: The average length of the aedeagus is 1.12 mm. The ventral apical lobe is short, not extending far beyond the dorsal plate. The outline of the ventral apical lobe is straight when viewed laterally and not convex as is *L. saponatus* (fig. 17). The length of the aedeagi showed no overlap in size with those of *L. mexicanus* (fig. 16), which are of a similar appearance but smaller. Five specimens were dissected.

Female genitalia: The spermatheca is similar in appearance to that of *L. mexicanus* (fig. 11). Specimens of *L. guerini* have the bulbous basal portion less globular, showing a bulge only on the proximal side. The distal section has a slight bend and lacks the apical hook of *L. mexicanus*. Two specimens were dissected.

Biology: The following information was observed on specimen pins: "Maiz, Alamos, Sonora, Dec. 6;" "Hosp. Anis, Cotaxtla, Veracruz, Feb. 10."

Type: This specimen could not be located by this author and if it still exists is probably in some European museum. Perbosc (1839) gave its measurements as 3 mm. long and 2 mm. wide.

Type locality: "Environs de la Vera-Cruz. (Mexico)" (Perbosc, 1839).

Paratype: A female, 3.00 mm. long and 2.00 mm. wide, in the British Museum (Natural History) was examined. "Baly Coll." "*Monachus guerini* Perbosc rev. zool. Mexico 1839 sp. 5."

Distribution: In the United States this primarily Mexican species is found in Colorado, Arizona, and Texas; populations in the United States are pioneers invading through the "Sonoran tension zone." Further collections may show that the species occurs in southern California, New Mexico, and possibly Nevada, and Utah.

The material examined included 208 specimens from the following localities:

GUATEMALA: El Rancho, Guatemala City, Los Ametes.

MEXICO: BAJA CALIFORNIA: Cape San Lucas; Comondú, July 2; Puríssima, October; San José del Cabo. CHIAPAS: Tuxtla Gutiérrez, Sept. 25. COLIMA: Colima, July 21. GUERRERO: Acapulco, Aug. 18. JALISCO: La Resolana, Nov. 20. MORÉLOS: Cuautla, May 28, Aug. 21; Cuernavaca, 2600 ft. NAYARIT: 994.5 km., May 24; Río de las Canyonas, Matamoros, May. SAN LUIS POTOSÍ: El Salto, 1700 ft.; Llera, May 21; Tamezunchale; Valles, Jan. 28. SINALOA: Rosario, Mar. 17. SONORA: Alamos, Dec. 6; Sonoyta,

1500 ft., Apr. 4. VERACRUZ: Cosamaloapán, July 20; Cotaxtla, Feb. 10; Santa Lucrecia; "Tephambres"; Veraeruz, July. UNKNOWN LOCALITIES: Real de Arriba, Temescaltepec, July 19.

UNITED STATES: ARIZONA: COCHISE CO.: Palmerlee. GILA CO.: Globe; Phoenix; Salt River, Aug. 23; San Carlos, Mar. 10; Wheatfields (near Globe); Winkleman. PIMA CO.: TUCSON. SANTA CRUZ CO.: Nogales. YUMA CO.: Bill Williams Fork.

COLORADO: no further data.

"D.C.": locality questionable.

TEXAS: no further data.

Lexiphanes mexicanus (Jacoby, 1908)

FIGURES 2, 11, 16

Monachus mexicanus Jacoby, 1908, p. 830.

Monachus opacicollis Schaeffer, 1933, p. 321. [New synonymy.]

Lexiphanes mexicanus (Jacoby).—Blackwelder, 1946, p. 643 (checklist).

Diagnostic description: Frons black, surface alutaceous; clypeus black and short; antennae a little longer than pronotum, basal segments narrow and fulvous, the apical six segments broader, flattened, darker, with setae more uniformly distributed and shorter than those of basal segments. Pronotum black, dull, alutaceous, with a few medial basal punctures, impunctate in some cases. Prosternum black, broader than long, finely alutaceous. Pronotal eipleura, black, alutaceous. Mesosternum black, finely alutaceous, with posterior marginal line. Elytra feebly shining, in some cases with faint metallic sheen; ground color black, in some cases with a hint of blue, with yellowish-red median fasciae which do not surround the humeri; striate-punctate, submarginal striae deeply impressed. Scutellum small and with straight edges. Venter black; fifth ventral abdominal segment of female with median fovea. Hindlegs black, middle and forelegs variable.

Variation: The observed size range, in millimeters, is 2.16 long by 1.50 wide to 2.60 long by 1.90 wide. The average size is 2.52 long by 1.75 wide. Some of the dark colors show a bit of blue or purple. The coloration of the prothorax was observed to vary from completely black to yellowish-red with black pronotal spots. The latter is the form of the here synonymized *L. opacicollis* Schaeffer. This form was found to predominate in the northern extremes of the species' range in much the same manner that specimens of *L. guerini* exhibited geographical variation. Size varied in the pronotal spots as well as in the width of elytral fasciae.

Discussion: The synonymization of *L. opacicollis* with *L. mexicanus* was made after genitalic comparisons proved the conspecificity of these two forms. In addition to having examined the holotype of *L. mexicanus* (British Museum, Natural History), Schaeffer's holo-

type of *L. opacicollis*, a male (USNM type 64989), was also seen. "S. Bernadino Reh. Cochise Co. VIII. Ariz."

Specimens from the Mexican states of Jalisco, México, and Colima were observed with much reduced or completely obliterated elytral fasciae. Beetles with this pattern may later be found to constitute a valid subspecies.



FIGURE 2.—Geographic distribution of *Lexiphanes mexicanus* (Jacoby).

Syntypes of *Lexiphanes sculptilis* (Jacoby, 1880) (British Museum, Natural History), were also seen. This species too may be a non-fasciate form of *L. mexicanus*. Genitalic comparisons of *L. mexicanus* and *L. sculptilis* indicated strong relationships between these two species, as no distinguishable difference was seen. Since no intergrade specimens between *L. mexicanus* and *L. sculptilis* were observed, these two names were not synonymized.

Male genitalia: The aedeagi of *L. mexicanus*, *L. opacicollis*, and *L. sculptilis* were found to be indistinguishable. Fourteen specimens were dissected.

Female genitalia: The spermatheca is similar in appearance to that of *L. guerini* (fig. 10). The basal portion of this structure in *L. mexicanus* is, however, more bulbous. Further, this structure in *L.*

sculptilis was found to be indistinguishable from that of *L. mexicanus*. Eight specimens were dissected, including two *L. sculptilis*.

Biology: One specimen was accompanied by associated plant data: "Mesquite-catel., Juchitlan, Jalisco, Mexico. 4300 ft., July 25."

Type: Female, in British Museum (Natural History), "Yautepec, 15.175 Mexico, Jacoby Coll. 1909-28a."

Type locality: Yautepec (Morélos), Mexico.

Distribution: This species occurs from southern Arizona south through Mexico's Sierra Madre Occidental to about central Mexico, where its distribution extends eastward and southward through Mexico's southernmost state, Chiapas.

The material examined included 182 specimens from the following localities:

MEXICO: CHIAPAS: Carretera Panamericana, 970 km., Sept. 29; Chiapa de Corzo, Sept. 25; Tuxtla Gutiérrez. COLIMA: Colima City; Vulcano. GUERRERO: Acapulco; Cañon del Zopilota, 28 km. N. Chilpancingo, July 30; Chilpancingo, 20 mi. S., 3700 ft.; Iguala, 20 mi. N.; Taxco, 4 mi. S., 4900 ft.; Taxco, 23 mi. N., 4700 ft.; Taxco, 8 mi. NE., 5450 ft.; Teloloapan; "Gurrero" (no locality data), Sept. 13. HILDAGO: Ixmiquilpán, 19 mi. W., 1700 ft., July 29. JALISCO: Jalostotilán, 6 mi. NE., 6200 ft., Aug. 20; Juchitán, 4300 ft., July 25. MÉXICO: Amecameca; Ixtapan, La Sal, 5500 ft.; 105 km. Carretera Toluca-Ixtapan de La Sal, Aug. 13; México; Tonatico; Valle de Bravo, July 1. MORELOS: Campo Experimental Tepalcingo, Sept. 3; Cuernavaca; Cuernavaca-Acapulco Rd.; Cuernavaca, 12 mi. E., 4300 ft.; Cuernavaca, 16 mi. S.; Puerta de Ixtla, July 31; YMCA Camp, Tepoztlan. OAXACA: El Camaron, 672 km., Sept. 29; Oaxaca, 5000 ft., July 8, Ruinas de Monte Alban. SINALOA: La Concha, Aug. 13. TAMAULIPAS: Victoria, 6 mi. N., Nov. 17. UNITED STATES: ARIZONA: COCHISE CO.: Douglas, Aug. 9; Dragon Mts., Sept. 10; San Bernardino Ranch, 3750 ft.; Tombstone.

Lexiphanes saponatus (Fabricius, 1801), new combination

FIGURES 3, 6-9, 12, 17

Cryptocephalus saponatus Fabricius, 1801, vol. 2., p. 55.

Monachus saponatus (Fabricius).—Chevrolat, 1837, p. 425.

Monachus ater Haldeman, 1849, p. 264. [New synonymy.]

Monachulus saponatus (Fabricius).—Leng, 1920, p. 290 (checklist).

Monachulus ater (Haldeman).—Leng, 1920, p. 290 (checklist).

Monachulus viridanus Fall, 1927, p. 139. [New synonymy.]

Diagnostic description: Piceous black, brownish black, blue, violet, bronzed green, and various other intergrade colors of these basic combinations. Head: Frons of same dark color as rest of body, generally flat, smooth, rugose, or rugulose and with punctures at times; the eyes deeply emarginate and not contiguous; the labrum tawny or also dark; antennae with basal segments more tawny than apical ones, anteroventral sides of basal antennal segments lighter at times. Segments one to five nearly uniformly round; segments six through

eleven, flatter and darker. Mouth parts tawny or dark. Pronotum dull or shiny, impunctate or punctate to varying degrees, the punctures and punctules originating medially and posteriorly. Posteromedial rugosities occasionally present. Prosternum broader than long; punctate or impunctate, the size of the punctures variable. Pronotal epipleura smooth, dull, with recessed areas for reception of forefemora. Elytra equal in gloss to, or more shiny than pronotum; with ten rows of stria punctures (excluding marginal striae); first striae terminating along suture; seventh, eighth, and ninth striae beginning from humeral calli; striae becoming effaced medially and posteriorly. Intervals occasionally rugulose and with punctules. Strial punctures of variable size and impression. Venter also of dark colors; varying degrees of punctation. Metepisterna with the most distinct punctures of undersides. Legs dark as rest of body. Tarsal claws generally stout and appendiculate, or more slender and less noticeably appendiculate.

Variation: The observed size range, in millimeters, is 2.16 long by 1.50 wide to 3.08 long by 2.00 wide. The average size of males (based on 89 specimens) was 2.40 long by 1.67 wide; for females, (based on 87 specimens) 2.83 long by 1.83 wide. Specimens of this species are quite variable and indicate that a cline exists. Color gradations are among its features. The northern members are more piceous while southern material more blue. The synonym, *L. ater*, was applied to a northern member. Distinctness of impression and size of punctures also appeared to become more prominent in the southern specimens. A clinal effect was further noticed in the increasing incidence of a smoother, more shining surface and distinct, but not large, punctures among specimens collected in northern Illinois and northward into Wisconsin, Michigan, and Minnesota. Variation was found to occur also in the tarsal claws. Specimens from the vicinity of Lake Marion, Fla., showed these structures to be less appendiculate.

Discussion: *L. ater* (Haldeman, 1849) and *L. viridanus* (Fall, 1927), are synonymized and the types of both (Museum of Comparative Zoology) have been seen by the author. These two descriptions, it now appears, were applied to forms not exactly like the type *L. saponatus*, but are, nevertheless, conspecific. Wilcox (1956) and M. W. Sanderson (personal communication) also indicated possible new species which I believe are also variations. *Cryptocephalus saponatus* Fabricius is the oldest name to apply to this species. *L. ater* was described by Haldeman in 1849. After this name, Haldeman (1849) credited Knoch (1801) for its origin in the genus *Clytra*; however, Knoch's name was "uncharacterized." F. V. Melsheimer (1806) in the first separate publication in America referring to insects, also credits Knoch for the name. But Melsheimer's catalogue (1806)

neither describes nor "characterizes" its names. In it, *L. ater* is listed as a synonym of "*Indicus* Knoch" in the genus *Cryptocephalus*.

Male genitalia: Apparently the only published illustrations of this structure appear in Powell (1941). The length of the aedeagus is 0.70 mm. long; its width is 0.28 mm. It is larger than that of the other species and gives the impression of relative compactness. The portion of the ventral apical lobe beyond the dorsal plate is less than half the width of the aedeagus at the median orifice. Twenty specimens were dissected.



FIGURE 3.—Geographic distribution of *Lexiphanes saponatus* (Fabricius). S=state locality.

Female genitalia: No published illustrations of the spermatheca were found. This structure is much larger than that of any other Nearctic species. Twenty-one specimens were dissected.

Biology: The following data accompanied the specimens: From *Salix candida*, Onah, Man., Canada, July 12; *Solidago*, Sherborn, Mass., Aug. 10, Wilbraham, Mass., June 4; *Desmodium*, W. Springfield, Mass., July 15; sweeping knotweed, Litchfield, Conn., Aug. 21; on willow, Orient, L.I., N.Y., July 5; *Oenothera* species, Harrisburg (Wildwood Park), Pa., July 4, Aug. 14; on Queen Ann's Lace, Heckton Mills, Pa., Aug. 19; on *Eupatorium purpureum*, Heckton Mills,

Pa., July 20; on *Eupatorium purpureum*, Wildwood Pk., Harrisburg, Pa., Aug. 5, 27; Sumac, Dauphin, Pa., July 4; on elm, Westfield, N.J., June 18; sweeping *Solidago*, Solomon I[sland], Md., July 11; on *Oenothera*, Occoquan, Va., June 6; on *Veronica*, Dawson's Beach, Occoquan, Va., June 6; willow, Cherry Point, N.C., June 3; *Polygonum hydropiperoides*, Levy Co., Fla., Sept. 10, 13; St. John's, Wort (*Hypericum* species) 3 mi. SW. Lake Marion, Fla., Mar. 15; Rosemary species (*Rosmarinus officinalis* L.) 3 mi. SW. Lake Marion, Fla., Mar. 15; taken on *Sambucus canadensis*, Meadows Mill, Lee Co., Ala., June 14, and Tuskegee Nat. For., Macon Co., Ala., June 25; taken on *Cephalanthus occidentalis*, 3.5 mi. NW. of Chehaw, Macon Co., Ala.; taken on *Eupatorium purpureum*, Sand Springs., Macon Co., Ala., June 21; sedge, Oak Ridge, AEC area, Tenn., July 4; Bidens, Volo, Volo Bay, Ill., June 16; swept from *Melilotus*, Iowa, July 13; collected from Forest Floor, Washington Co., Wis.; light trap, Crookston, Minn., July 12.

Records in the literature recording possible hosts were found in Weiss and West (1921): "*Monachus ater* Hald. Monmouth Jc., N.J. July 14 on leaves of *Apocynum androsaemifolium* L." and in Blatchley (1910): "Occurs on foliage of milkweed and other herbs."

Attempts at rearing adults of this species in the laboratory on *Eupatorium purpureum* were not successful.

Type: This specimen was noted to be in the Bosc collection according to Fabricius when he described the species. Mrs. Doris H. Blake of the U.S. National Museum informed the author (pers. comm.) that this specimen was not there when she viewed two boxes of Bosc material in Paris in 1950 (see also Blake, 1952). This specimen was likewise not found among the Fabrician types in the Universitetes Zoologiske Museum, Copenhagen, Denmark (S. L. Tuxen, pers. comm.). Neither was the type distinguished from among Suffrian material loaned by J. O. Hüsing, Martin Luther Universität, Halle-Saale, East Germany. As Fabricius' type may one day be found, and no current dilemma results without it, a neotype was not designated.

Type locality: "Habitat in Carolina" (Fabricius, 1801). As the type was to have been in the Bosc collection it was most likely collected by him at or near the Michaux gardens at Charleston, S.C. (Blake, 1952).

Distribution: Collections of this species have been made in the eastern United States and Canada westward to about the 100th meridian. Specimens totaling 2174 were examined from the following localities:

CANADA: ALBERTA: Walsh, "Ont." [probably Alberta]. MANITOBA: Aveme; Delta; Douglas Lake, Aug. 30; Rennie, June 3. NEW BRUNSWICK: Bathurst, July 7; Sackville, July 6. NOVA SCOTIA: Castlereigh. ONTARIO:

Britania; Grand Bend; Leamington, May 11, Sept. 1; Pelee Island; Point Pelee; Prince Edward Co.; Scotia Jct.; Toronto; Turkey Pt. QUEBEC: Covey Hill; Forestville, "Out." [probably Quebec], June 16; Hull, Aug. 8; Knowlton; Montreal Isl.; Petton Springs; Rigaud; St. Johns.

UNITED STATES: ALABAMA: AUTAUGA CO.: 6.7 mi. W. of Prattville. BARBOUR CO.: Eufaula. CHOCTAW CO.: Bladon Spgs. St. Pk. CLAY CO.: Pyriton. COVINGTON CO.: Florala, May 23. DALLAS CO.: Blue Girth Creek. HOUSTON CO.: Chattahoochee St. Pk. LEE CO.: Auburn, Oct. 20; Meadows Mill; 1 mi. E. of U.S. 29, Chewacla Crk. LOWONES CO.: 1.3 mi. SW. of Hayneville. MACON CO.: 3.5 mi. NW. of Chehaw; Sand Springs; Tuskegee Nat. For. MARSHALL CO.: 1.5 mi. W. of Horton; 3.2 mi. S. of Martling. MOBILE CO.: Mobile. TALLADEGA CO.: Sylacauga. UNKNOWN LOCALITY: "Coleta."

ARKANSAS: HEMPSTEAD CO.: Hope, July 19.

COLORADO: LARIMER CO.: Ft. Collins [possibly mislabeled], June.

CONNECTICUT: FAIRFIELD CO.: Stanford. LITCHFIELD CO.: Georgetown C.

DISTRICT OF COLUMBIA: Bennings, Licking Banks, June 7; Oxon Run, Washington; Pimmit River; Rock Pile; Washington, Oct. 6.

GEORGIA: CHARLTON CO.: Okefenokee Swamp. CHATHAM CO.: Savannah, May 27, Oct. 18; Tybee Island. GLYNN CO.: Camp Stewart. TIFT CO.: Tifton. UNKNOWN LOCALITY: Bull Island.

ILLINOIS: BOND CO.: Greenville. CARROLL CO.: Champaign; Tolona; Urbana. CLINTON CO.: Carlyle. COOK CO.: Chicago, Melrose Pk. FORD CO.: 9-11 mi. N. Piper City. FULTON CO.: Forest City. IROQUOIS CO.: 3 mi. E. Watska. JACKSON CO.: Carbondale; Grand Tower. JO DAVIESS CO.: E. Dubuque. LAKE CO.: Beach, Wauconda, Waukegan, Zion. LA SALLE CO.: Ottawa. MCHENRY CO.: Algonquin, Fox Lake. MCKEAN CO.: Bloomington. MACON CO.: Warrensburg. MARION CO.: Kinmundy, Sandoval, SW. Kinmundy, Peoria. POPE CO.: Goleonda. PUTNAM CO.: no further data. ROCK ISLAND CO.: Rock Island. SANGAMON CO.: Springfield. VERMILION CO.: Jan. 27, no further data. LOCALITIES NOT PLACED TO COUNTY: Bell Smith Spgs.; Browns; Chestnut; DuBois; Equality; Farina, Gladstone; Giant City St. Pk.; Magnolia; Makauda; Muncie; NE. Beaverville; Olive Branch; Orland St. Pk.; Patoka (5 mi. S. on highway); Spring Bay Region; Sta. 42 Dupo, May 14; Sun Lake Bog; Utica; Villa Ridge; Vivay Park; Volo, Tamarack Bog; Volo, Volo Bay; White Heath; Wolf Lake.

INDIANA: FOUNTAIN CO.: Sept. 1, no further data. GREEN CO.: Mineral Spgs. KOSCIUSKO CO.: Winona Lake. LAKE CO.: May 5, no further data; Gibson. MARION CO.: no further data. TIPPECANOE CO.: Lafayette. LOCALITIES NOT PLACED TO COUNTIES: Ind., no further data; L. George.

IOWA: ALLAMAKEE CO.: no further data. BOONE CO.: Boone. Dickinson Co. (Co. #3): no further data. FAYETTE CO.: Clermont. FREMONT CO.: Riverton. JOHNSON CO.: Iowa City, June 12; Solon, Aug. 22. LUCAS CO.: Charlton. SCOTT CO.: Pleasant Valley. TAYLOR CO.: Gravity. WAPELLO CO.: Eddyville. WOODBURG CO.: Sioux City.

KANSAS: DOUGLAS CO.: no further data. MONTGOMERY CO.: Elk City, May 23. POTTAWATOMIE CO.: Onaga. RILEY CO.: July. SHAWNEE CO.: Topeka.

KENTUCKY: no further data.

LOUISIANA: CADDO PAR.: Aug. 19. JEFFERSON PAR.: Harahan. MADISON PAR.: Tullulah. ORLEANS PAR.: New Orleans. ST. LANDRY PAR.: Opelousas. ST. MARY PAR.: Franklin, Morgan City. ST. TAMMANY PAR.: Pearl River, Apr. 6.

MAINE: FRANKLIN CO.: Weld. HANOCK CO.: Mount Dessert Isle, Aug. 14. LOCALITIES NOT PLACED TO COUNTY: Paris; Wales, June 23.

MARYLAND: BALTIMORE CO.: Sparrows Point. BALTIMORE CITY CO.: Baltimore. CALVERT CO.: Chesapeake Beach, Solomon Is. KENT CO.: Chestertown. MONTGOMERY CO.: Aug. 23; Cabin John; Cabin John Bridge; Glen Echo. PRINCE GEORGES CO.: Bladensburg, Riverdale. LOCALITIES NOT PLACED TO COUNTIES: Breton Bay, Potomac River; Hills Bridge, Patuxent River; Lakeland; Near Plummers Island; Opposite Plummers Island; Plummers Island, May 28.

MASSACHUSETTS: BRISTOL CO.: Tauton. HAMPTON CO.: Chicopee; Holyoke; Springfield; W. Springfield; Wilbraham. HAMPSHIRE CO.: S. Amhurst. MIDDLESEX CO.: Bedford; Framingham; Holliston; Lexington; Sherbon; Stoneham, Wayland. NORFOLK CO.: Canton; Franklin. WORCESTER CO.: Berlin, Sept. 9. LOCALITIES NOT PLACED TO COUNTIES: Blue Hill, Apr. 28; Montgomery; Mt. Wachusett.

MICHIGAN: Aug. 24. ALLEGAN CO.: Douglas Lake. BAY CO.: no further data. BERRIEN CO.: Sodus. CALHOUN CO.: Wise Lake. CHEBOYGAN CO.: no further data. CLARE CO.: no further data. EATON CO.: Gd. Ledge. KALAMAZOO CO.: Galesburg, Apr. 15. MISSAUKEE CO.: Lake City. VAN BUREN CO.: Gobles, Gr. Junction. WAYNE CO.: Detroit. LOCALITIES NOT PLACED TO COUNTIES: Block Lake, Toledo Beach.

MINNESOTA: ANOKA CO.: More's Lake. BIG STONE CO.: Barry. CHICAGO CO.: no further data. CLEARWATER CO.: no further data. CROW WING CO.: no further data. HENNEPIN CO.: Crystal Lake; Lake Calhoun; Minneapolis; St. Anthony Park, June 5; St. Louis Park. ITASCA CO.: Ball Club, Ball Club Rnep; Deer River; Itasca Park. KANDIZOHI CO.: Wilmar; Eagle Lake. LE SUEUR CO.: Waterville. MARSHALL CO.: Viking. MILE LACS CO.: Princeton. NICOLLET CO.: St. Peter Fish Hatchery, Aug. 18. OLMSTED CO.: No further data. OTTER TAIL CO.: Fergus Falls. PINE CO.: Willow River. PIPESTONE CO.: no further data. POLK CO.: Crookston. POPE CO.: Sedan. RAMSEY CO.: Lake Owasa; Mid Hills Golf Club; New Brighton; St. Paul; St. Paul U. Farm; White Bear. SCOTT CO.: Blakely, Savage; Shakopee. STEELE CO.: Owstonna. STEVENS CO.: Morris. TODD CO.: Eagle Bend. TRAVERSE CO.: no further data. WASHINGTON CO.: no further data. WINNONA CO.: Kings Bluff. WRIGHT CO.: Howard Lake. LOCALITIES NOT PLACED TO COUNTIES: Elk River; Ft. Snelling; Lake Minnetonka; Little Canada.

MISSISSIPPI: GREENE CO.: Leakesville, May 23. LAUDERDALE CO.: Meridian. LOCALITY NOT PLACED TO COUNTY: Van Cleave, June 24.

MISSOURI: CALLAWAY CO.: Fulton. CENTRAL MISSOURI; Aug., no further data. St. Louis (independent city). ST. LOUIS CO.: Creve Coeur Lake, June 10.

NEBRASKA: DOUGLAS CO.: Omaha, June 15, June 27.

NEW HAMPSHIRE: GRATON CO.: Franconia. LOCALITIES NOT PLACED TO COUNTIES: Mt. Plst. Hsc., July 5; Mt. Washington; Randolph, July 2.

NEW JERSEY: BERGEN CO.: Englewood, Fairlawn, Ramsey, Westwood. BURLINGTON CO.: Pemberton, Riverton. CAMDEN CO.: Camden, Clementon, Gloucester; Merchantville. CAPE MAY CO.: Cape May, Tuckahoe. GLOUCESTER CO.: Malaga, May 30; Westville; Woodbury. MIDDLESEX CO.: Jamesburg, Aug. 16; Milltown; N. Brunswick; S. River. MORRIS CO.: Boonton, Budds Lake; Chester. OCEAN CO.: Barnegat Bay. UNION CO.: Westfield. WARREN CO.: Phillipsburg.

NEW YORK: ALBANY CO.: Albany. CHEMUG CO.: Elmira, June 18. CHESTER CO.: no further data. CLINTON CO.: Redford. ERIE CO.: Hamburg. ESSEX CO.: Heart Lake, Aug. 25. GREENE CO.: Slide Mt., Catskill. KINGS CO.: Brooklyn. NEW YORK CO.: New York City. ONODAGO CO.: no further

data. ORANGE CO.: West Point. OSWEGO CO.: St. Mary's Pond. RICHMOND CO.: Statten Island. ROCKLAND CO.: no further data. SCHENECTADY CO.: Schenectady. SUFFOLK CO.: Montauk. TOMPKINS CO.: Ithaca. WARREN CO.: Avalanch Lake, Adirondaeks. LOCALITIES NOT PLACED TO COUNTIES: Aqueduct, Cedar River; Golden; Hastings; Ogdensburg; Orient; Potsdam; Underwood; Van Courtland Park.

NORTH CAROLINA: AVERY CO.: Linville, 3500 ft. BUNCOMB CO.: Blue Ridge Pkwy., 4000 ft.; Swannanoa Val.; Valley of Black Mts. CARTERET CO.: Beaufort. CHEROKEE CO.: Murphy. EDGECOMB CO.: Rocky Mount. MA-CON CO.: Franklin, 2000 ft. MITCHELL CO.: no further data. RANDOLPH CO.: Pisgah, Aug. 30. ROBESON CO.: Lumberton. WAKE CO.: no further data. LOCALITIES NOT PLACED TO COUNTIES: Auburn, Cherry Point, Morrow Mtn. State Park, Mulberry Gap.

OHIO: BUTLER CO.: Oxford. ERIE CO.: Castalia. FRANKLIN CO.: no further data. FULTON CO.: Wauseon. HAMILTON CO.: Cincinnati. HOCKING CO.: no further data. LICKING CO.: Buckeye Lake. LORAIN CO.: no further data. MADISON CO.: London. SANDUSKY CO.: Cedar Pt., Sept. 8. SUMMIT CO.: Kent. WAYNE CO.: Wooster. WILLIAMS CO.: June 14, no further data. LOCALITIES NOT PLACED TO COUNTIES: Bay Point, Jersey.

PENNSYLVANIA: ALLEGHENY CO.: Glenn; Pittsburgh, June 6. BEAVER CO.: New Galilee; Rochester. BUCKS CO.: Mechanicsville; Uhlerstown. CENTER CO.: Philipsburg. CUMBERLAND CO.: 2 mi. SW. Mount Holy Springs, New Cumberland. DAUPHIN CO.: Dauphin; Fishing Creek Valley; Harrisburg; Harrisburg (Wildwood Park); Linglestown. DELAWARE CO.: Castel Rock; Glen Olden. ERIE CO.: Presque Isle; Waldemeer. FAYETTE CO.: Ohiopyle, Aug. 10. JEFFERSON CO.: Westville. LANCASTER CO.: Colemanville, Penryn. LEBANON CO.: Mount Gretna. LYCOMING CO.: Cedar Run. MONROE CO.: Pocono Lake, Water Gap. MONTGOMERY CO.: Abington, Glenside, Miquon. NORTHAMPTON CO.: Easton, Lehigh Gap, Wind Gap. PERRY CO.: Cove Mt., Drungold. PHILADELPHIA CO.: Angora, Mt. Airy Sta., Philadelphia Neck. WESTMORELAND CO.: Jeannette. YORK CO.: Hanover.

RHODE ISLAND: WASHINGTON CO.: Watch Hill, July 11.

SOUTH CAROLINA: BEAUFORT CO.: Hardeeville. DORCHESTER CO.: Pregnall. LEXINGTON CO.: Swansea, Aug. 11. OCONEE CO.: Mountain Rest, June 6. ORANGEBURG CO.: Holly Hill. "Carolina" (Suffrian material): 29560, 34433, 34434, 29559, 29557, 18713, 29556, 29558, 19506.

SOUTH DAKOTA: BROOKINGS CO.: Brookings, July 25; White. CLAY CO.: Vermillion, June 11. DAY CO.: Waubay. DEVEL CO.: Clear Lake. LAKE CO.: Chester. UNION CO.: Beresford, Elk Point.

TENNESSEE: ANDERSON CO.: Oak Ridge, AEC area. LAWRENCE CO.: Lawrenceburg, Aug. 4. SEVIER CO.: Great Smoky Mt. Nat. Pk., June 14. SMITH CO.: Elmwood. LOCALITY NOT PLACED TO COUNTY: Crabtree.

VERMONT: ORLEANS CO.: Lake Willoughby, 1200 ft., June 17. WINDSOR CO.: Norwich.

VIRGINIA: ALEX. CO. [sic, probably in vicinity of Alexandria]. ARLINGTON CO.: Arlington; Rosslyn; Great Falls, "Md."; Chain Bridge. FAIRFAX CO.: Clifton. LOUDOUN CO.: Sept. 22. NELSON CO.: no data. PRINCE WILLIAM CO.: Dawson's Beach, Occoquan; Occoquan. SPOTSYLVANIA CO.: Fredericksburg. LOCALITIES NOT PLACED TO COUNTIES: Black Pond; Four Mile Run, May 31; Great Falls.

WISCONSIN: DANE CO.: Madison. DODGE CO.: Beaver Dam. GRANT CO.: Boscobel, June 14. MILWAUKEE CO.: Milwaukee. POLK CO.: Amery, Aug. 13. SHAWANO CO.: Shawano. WASHINGTON CO.: West Bend.

Lexiphanes affinis (Haldeman, 1849), new combination

FIGURES 4, 13, 18

Monachus affinis Haldeman, 1849, p. 264. [Page precedence over *M. auritus* Haldeman.]

Monachus auritus Haldeman, 1849, p. 264.

Monachus thoracica [us] Crotch, 1873, p. 31. [New synonymy.]

Monachus auritus (Haldeman), Leng, 1920, p. 290 (checklist).

Monachus thoracicus (Crotch), Leng, 1920, p. 290 (checklist).

Diagnostic description: Color piceous or black, the following yellowish red: head, antennae, mouth parts, prothorax, and legs. Shape oval, similar to *L. seminulum*, but more robust, especially the pronotum. Elytra with deeply impressed submarginal striae and distinct punctations. Female with a callus on either side of the fovea on the last ventral abdominal segment. Male with punctures on the last ventral abdominal segment.

Variation: The observed size range, in millimeters, is 1.65 long by 1.25 wide to 2.23 long by 1.67 wide. Color variation is quite common in this species, the prothorax and legs ranging from completely yellowish red (this is the form most commonly collected) to completely dark. Along the basal line of the pronotum, at times a few punctuations can be noticed, but the species is primarily devoid of the punctures at this location.

Discussion: Haldeman (1849) designated as type an intergrade specimen with a bicolored pronotum. Crotch (1873) correctly synonymized Haldeman's two species (*L. auritus* with *L. affinis*) but believed the latter to be the sexually dimorphic female. He further described *L. thoracica* [us], a form with the pronotum largely yellowish red. In 1885, Henshaw reversed the order of Crotch's synonymy, making *L. affinis* a variety of *L. auritus*. Leng (1920) continued this synonymy. (Holotypes and syntypes of the above species were examined in the Museum of Comparative Zoology, Harvard College.) Chevrolat (1837) included *L. thoracicus* Dejean in his newly established genus, but it appears that the Dejean name was a nomen nudum.

Male genitalia: The length of the aedeagus is 0.67 mm. and its width is 0.24 mm. It is narrow in comparison to its length. The ventral apical lobe is broad and scoop shaped and the lateral lobes taper gradually in comparison to those of *L. seminulum*, which also rise much higher. Ten specimens were dissected.

Female genitalia: The spermatheca is of average size. It is nearly uniformly thick and almost forms a right angle. The free end is rounded and not pointed as in *L. seminulum*. One specimen was dissected.

Biology: The following data were observed on labels: beating wax myrtle, Deep Creek, Va., July 17; *Rhus copallina*, Morrow Mountain State Park, N.C.; Wild Plum, Saluda Co., S.C., Aug. 18; taken on *Sambucus canadensis*, Meadows' Mill, Lee Co., Ala., June 14, 1963; taken on *Onagra* with one *L. seminulum*, W. B. Bankhead Nat. For., Nat. Bridge Rec. Area, Winston Co., Ala., June 27, 1963.

Type: Female, "Type S399" (LeConte collection, Museum Comparative Zoology). The type specimen exhibited some punctations along the pronotal basal line.

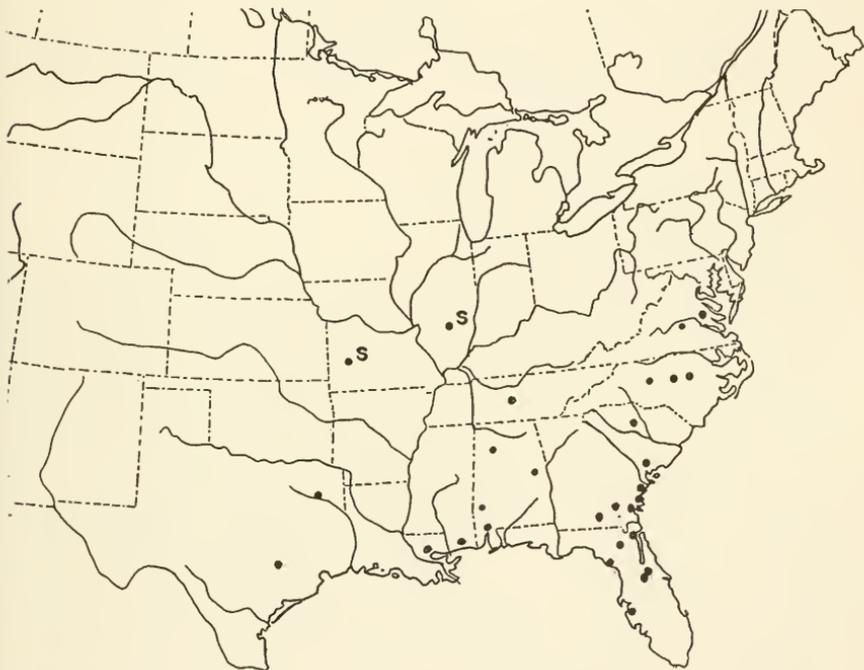


FIGURE 4.—Geographic distribution of *Lexiphanes affinis* (Haldeman). S=state locality.

Type locality: "Southern. (Southeastern United States)" (Haldeman, 1849). This is further indicated by the orange paper disc on the type pin, which means southern United States in LeConte's color key.

Distribution: The species occurs in southeastern United States, west to Texas and north to Virginia and Illinois. Ninety specimens were examined from the following localities:

ALABAMA: CHOCTAW CO.: Bladon Springs, Aug. 1. MOBILE CO.: Mobile, June 14. WINSTON CO.: W. B. Bankhead Nat. For., Nat. Bridge Rec. Area.

FLORIDA: ALACHUA CO.: Aug. 6, no further data. DUVAL CO.: Jacksonville. LEE CO.: Estero, June 12. LEVY CO.: Cedar Keys; Yankeetown. OSCEOLA CO.: Kissimmee. VOLUSIA CO.: Enterprise.

GEORGIA: CHATHAM CO.: Savannah, June 14; Tybee Island. GLYNN CO.: St. Simons Island. WARE CO.: Waycross, July 18.

ILLINOIS: no further data.

LOUISIANA: ST. TAMMANY PAR.: Pearl River, June 4.

MISSISSIPPI: GEORGE CO.: Lucedale, June 17. NORTH JACKSON CO.: Aug. 23.

MISSOURI: Western Missouri, no further data.

NORTH CAROLINA: EDGECOMB CO.: Rocky Mount, Aug. 27. LOCALITY NOT PLACED TO COUNTY: Morrow Mtn. State Park, July 21.

SOUTH CAROLINA: BEAUFORT CO.: Yemassee, June 14. SALUDA CO.: Aug. 18.

TENNESSEE: DAVIDSON CO.: Nashville, June 14.

TEXAS: COLORADO CO.: Columbus, Apr. 6.

VIRGINIA: AMELIA OR NOTTOWAY COS.: Deep Creek, July 17. PRINCESS ANNE CO.: Virginia Beach, July 17.

Lexiphanes seminulum (Suffrian, 1858)

FIGURES 5, 14, 19

Monachus seminulum Suffrian, 1858, p. 344.

Lexiphanes seminulum (Suffrian, 1858). [Resurrected here from synonymy with *Lexiphanes guerini* (Perbosc, 1839).]

Diagnostic description: Color piceous, the tarsi, first three antennal segments, clypeus, and labial palpi tawny. Shape oval, similar to *L. affinis*, but with the pronotum slightly less robust. Pronotum dull and rugulose, with sparse, fine, obsolescent punctules and a basal row of punctures in most cases. Elytra with deeply impressed submarginal striations and distinct punctures. Elytral epipleuron with one row of punctures. Body essentially glabrous and shining (not metallic). Scutellum triangular, with especially straight edges. Antennae with first segment broader and more than twice as long as second, the third and fourth segments shortest, segments five through eleven broader and more setose. Prosternum and mesosternum rugose. Metasternum finely rugulose and with punctures bearing short setae. First ventral abdominal segment of male rugose between the coxal cavities. Fifth ventral abdominal segment of female with a broad fovea and short setae on either side of it.

Variation: The observed size range, in millimeters, is 1.58 long by 1.17 wide to 2.25 long by 1.50 wide. The average size is 2.00 long by 1.33 wide. This species averages smaller than *L. affinis*, but size ranges overlap so that this distinction is not valid. The general body color in some specimens varies from brownish black to piceous with the slightest hint of deep blue. The last ventral abdominal segment of some specimens is slightly tawny. The appendages vary from light tawny to brown. The distal ends of some of the tibiae are also tawny. The elytral punctation is not quite so deeply impressed as in *L. affinis* and some of the striae become effaced medially.

Discussion: *L. seminulum* is not a synonym of *L. guerini* Perbose, as indicated in the catalogues of Clavareau (1913), Leng (1920), Leng and Mutehler (1933), Blackwelder (1939, 1946). Their synonymization with *L. guerini* occurred through misinterpretation of Henshaw's checklist (1885) in which *L. seminulum* is listed last, unnumbered, and spaced apart, under the genus *Monachus*. It appears that Henshaw



FIGURE 5.—Geographic distribution of *Lexiphanes seminulum* (Suffrian).

considered *L. seminulum* a species of uncertain value and position rather than a synonym of *L. guerini*. The distribution of *L. guerini*, being west of the Mississippi, (one specimen labeled "D.C.," is believed to be a labeling error) further substantiates that these two allopatric species are not synonyms.

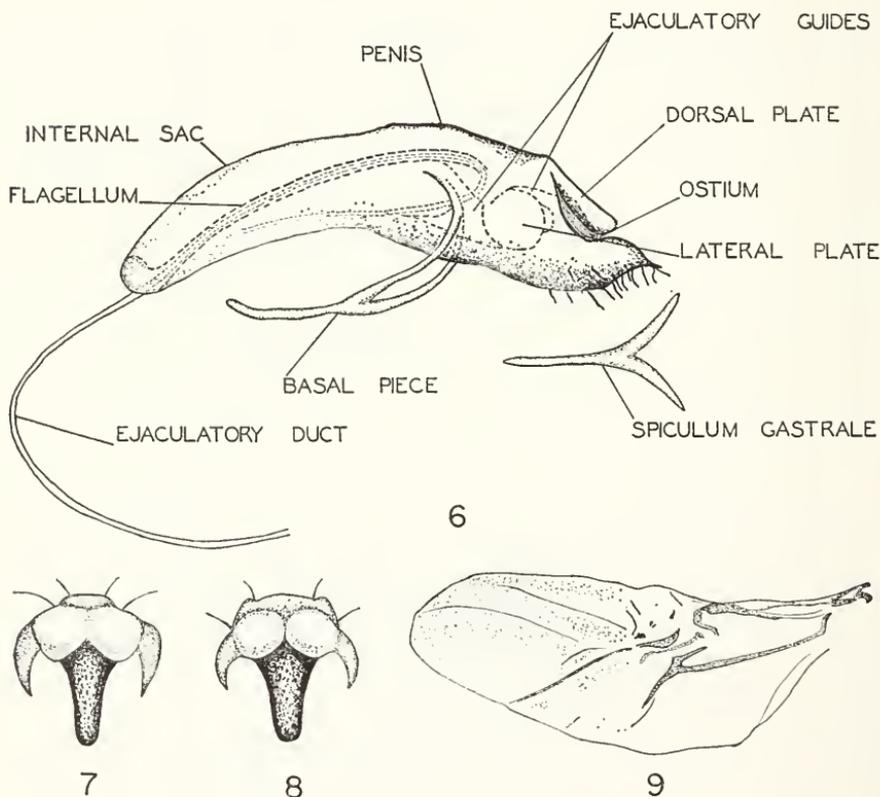
Male genitalia: The length of the aedeagus is 0.69 mm. and its width is 0.60 mm. The effect presented by the aedeagus is that of being long and slim. The dorsal edge of the lateral plates rises from the apex at an angle of about 35° . The ventral apical lobe tapers from its apex, where it is quite truncate. Ten specimens were dissected.

Female genitalia: The spermatheca is of average size. The free end tapers to a point. It also differs from *L. affinis* by being more acutely angled. Two specimens were dissected.

Biology: The following data were observed on specimen labels: on *Sassafras albidum*, Morrow Mountain State Park, N.C., July 20, 1959; in yellow pine area, Murrell's Inlet, S.C., May 10, 1948; oak, Interlachen, Fla., April 1951; taken on *Onagra* with one *L. affinis*, W. B. Bankhead Nat. For., Nat. Bridge Rec. Area, Winston Co., Ala., June 27, 1963.

Type: Male, "22469" (Suffrian collection, Martin Luther Universität, Halle-Saale, East Germany).

Type locality: "Aus Georgien" (Suffrian, 1858). The accompanying label, which is separate from the specimen pin, is of a green color and bears the following: "Seminulum m. Georgia." Dr. J. O. Hüsing of Martin Luther Universität informed the author that the labels which accompanied the Suffrian material were original with Suffrian.



FIGURES 6-9.—*Lexiphanes saponatus* (Fabricius): 6, labeled male genitalia, left lateral view (spiculum gastrale, dorsal view), Wildwood Park, Harrisburg, Pa.; 7, fifth tarsal segment and distinctly appendiculate unguis of right hindtarsus, ventro-apical view, Lexington, Mass.; 8, fifth tarsal segment and nondistinctly appendiculate unguis of right hindtarsus, ventro-apical view, 3 mi. S. of Lake Marion, Fla.; 9, wing, Lake Calhoun, Hennepin Co., Minn.

Distribution: The range for this species extends within the southeastern United States from North Carolina west to Mississippi. Sixty-seven specimens were examined from the following localities:

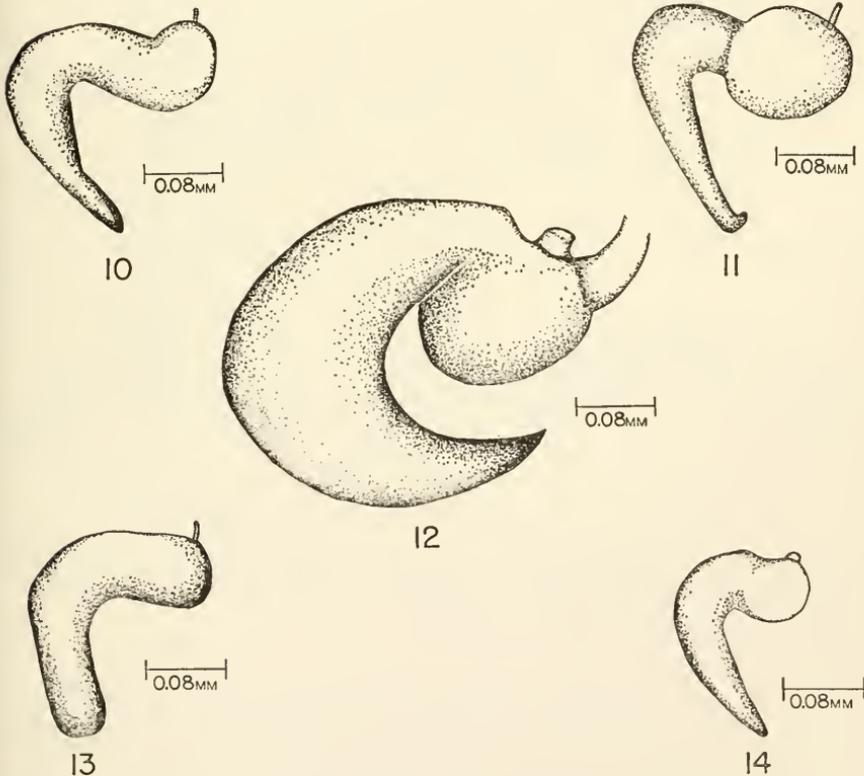
ALABAMA: LEE CO.: Meadows Mill. WINSTON CO.: W. B. Bankhead Nat. For., Nat. Bridge Rec. Area, June 27.

FLORIDA: ALUCHUA CO.: Gainesville, May 4. BREVARD CO.: Indian River. COLLIER CO.: Mar. 13. COLUMBIA CO.: O'Leno State Park, Aug. 29. DADE CO.: Biscayne, Oct. 5; Miami, Apr. 3. LAKE CO.: Nov. 1. MANATEE CO.: Bradenton, March. PINELLAS CO.: Bellair; Dunedin, May 14; Tarpon Springs, Mar. 2. PUTNAM CO.: Crescent City, May 23; Interlachen, Apr. 3. ST. JOHN'S CO.: St. Augustine, Apr. 2; Enterprise, May 19; Ormond; Sanford. LOCALITIES NOT PLACED TO COUNTY: Haulover, Mar. 17; Paradise Key, Feb. 21.

MISSISSIPPI: GEORGE CO.: Lucedale, Mar. 29–June 17.

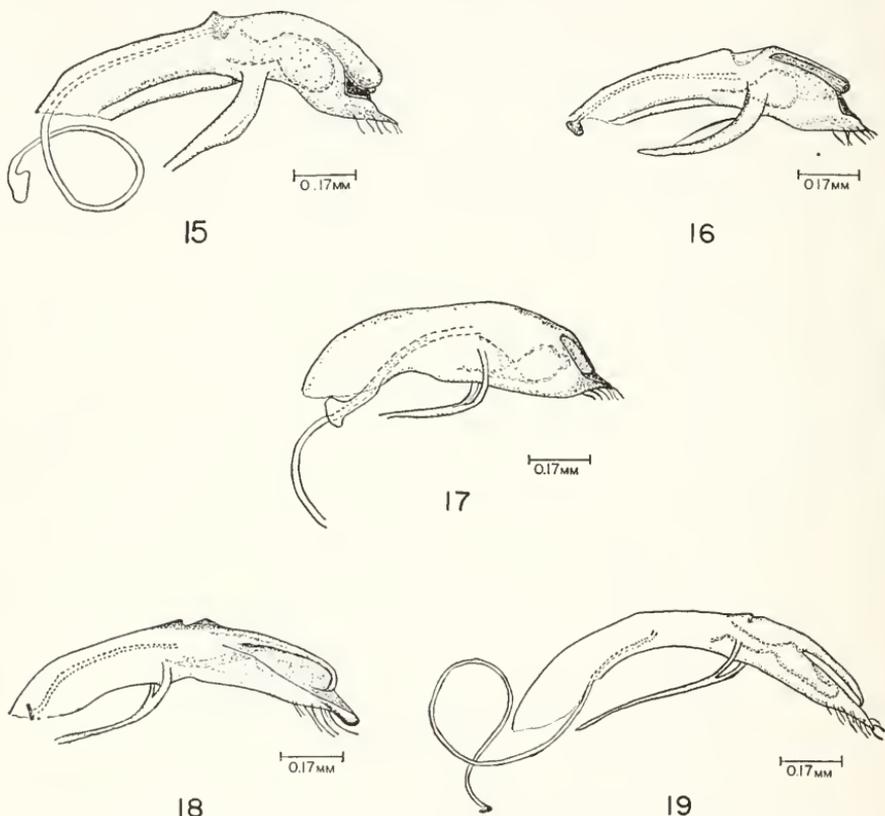
NORTH CAROLINA: WAKE CO.: Raleigh, June 15. LOCALITIES NOT PLACED TO COUNTY: Cherry Point, July 3; Morrow Mountain State Park, July 20.

SOUTH CAROLINA: GEORGETOWN CO.: Murrell's Inlet, May 10.



FIGURES 10–14.—Female spermatheca: 10, *Lexiphanes guerini* (Perbosc), Bill Williams Fork, Ariz.; 11, *L. mexicanus* (Jacoby), Dragoon Mts., Ariz.; 12, *L. saponatus* (Fabricius), La Salle Co., Ill.; 13, *L. affinis* (Haldeman), Tybee Island, Ga.; 14, *L. seminulum* (Suffrian), Enterprise, Fla.

Species removed from the genus: Three species that were included in this genus in catalogs are mentioned here for the sake of clarification. The first is *Monachus viridis* F. E. Melsheimer (1847). Melsheimer's type has not been studied but from his description, it seems to be synonymous with *Diachus auratus* (Fabricius, 1801). The first author of this synonymy is unknown to the writer, but this is shown in Leng (1920). The next two species were originally described under



FIGURES 15-19.—Male aedeagi: 15, *Lexiphanes guerini* (Perbosc) Bill Williams Fork, Ariz.; 16, *L. mexicanus* (Jacoby), C. Victoria, Tamaulipas, Mexico; 17, *L. saponatus* (Fabricius), Wildwood Park, Harrisburg, Pa.; 18, *L. affinis* (Haldeman), Saluda Co., S.C.; 19, *L. seminulum* (Suffrian), St. Augustine, Fla.

Clythra Fabricius: *nitidula* Fabricius (1801) and *punctulata* Fabricius (1801). These two species were listed under *Monachus* by Clavareau (1913). They also appeared in the Leng catalog (1920) as questionably occurring in the United States. Blackwelder (1946) lists them under *Clythra* Laicharting, a senior synonym of *Clythra* Fabricius, and reports them to occur only in South America. I have not seen specimens of these species; probably Blackwelder is correct in placing both in the genus *Clythra*.

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