1967

A Check-list and Keys to the Primitive Sub-families of Cerambycidae of Illinois

Michael Jon Corn
Eastern Illinois University

A CHECK-LIST AND KEYS TO THE PRIMITIVE SUBFAMILIES OF CERAMBYCIDAE OF ILLINOIS

(TITLE)

BY

MICHAEL JON CORN

B.S. in Ed., Eastern Illinois University, 1966

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

Master of Science

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1967
YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

27 June 1967
DATE

ADVISER

27 June 1967
DATE

DEPARTMENT HEAD

ACKNOWLEDGEMENTS

The author would like to thank Dr. Michael A. Goodrich for his advice and guidance during the research and writing of this paper. The author is also indebted to the following curators of the various museums and private individuals from whom material was borrowed: Mr. John K. Bouseman; Dr. Rupert Wenzel and Dr. Henry Dybas, Field Museum of Natural History; Dr. M. W. Sanderson, Illinois Natural History Survey; Dr. John C. Downey, Southern Illinois University; and Dr. G. B. Vogt and Mr. O. L. Cartwright, United States National Museum. Special thanks are due also to Dr. Richard Andrews and Mr. Bert Landes for aid with photographing and printing plates.

A CHECK-LIST AND KEYS TO THE PRIMITIVE SUBFAMILIES OF CERAMBYCIDAE OF ILLINOIS

The long-horned beetles, family Cerambycidae, form a large, colorful, often-collected and well-known group. However, the drab, more primitive subfamilies, Parandrinae, Prioninae, Aseminae, and Spondylinae, are much less well-known although they often appear in collections.

In this paper, the author has attempted to list those species of primitive cerambycids which occur or are likely to occur within the State of Illinois. Keys, illustrations, descriptions, and distribution maps have been developed to aid in identification. The list and keys should be applicable to any midwestern state with the addition or deletion of a few species.

Historical Background

No lists of Cerambycidae, and more particularly the primitive subfamilies, are available for Illinois. W. S. Blatchley (1910) did, however, include many of the species discussed here in his historic Coleopters of Indiana, which included keys and illustrations.

The family in North America was studied as a whole by Casey in 1912 and 1913 and the Prioninae in particular in 1924. Casey erected numerous new taxa of which few are recognized today. As an example, Linsley (1962a) lists 29 of Casey's new taxa in synonomy with one species of Prionus. Because of its excessive splitting of taxa and confusing keys, Casey's work can rarely be used for accurate identification.

J. N. Knull (1946) includes many of the Illinois species in The

Long-horned Beetles of Ohio. He does not list two species thought to occur in Illinois, and he does include one species which the present author considers absent from the Illinois fauna. Knull's work includes keys, descriptions for each species and illustrations of representatives of each genus.

Keys to the subfamilies, tribes and genera of Cerambycidae are available in Dillon and Dillon (1961) and Arnett (1963). Dillon and Dillon, however, present only the most common species and their classification does not agree with more recent work. Arnett, in contrast, uses Linsley's arrangement and keys. These works do not, of course, include any separation of Illinois species.

The Cerambycidae of North America north of Mexico are presently being monographed by Dr. E. G. Linsley (1961, 1962a, 1962b, 1963, 1964). The section including the primitive Cerambycids has been completed (Linsley, 1962a), but the scope of the work makes identification of specimens difficult for anyone but an experienced coleopterist.

In a few instances, single species of primitive Cerambycids have been discussed in older Illinois publications. These will be referred to in the discussion of the appropriate species.

Methods and Materials

A total of 509 specimens (146 Parandrinae, 304 Prioninae, and 59 Aseminae) were examined and identified during the study. Specimens were borrowed from the following collections: John K. Bouseman personal collection (JKB); Spooner Collection, Eastern Illinois University, Charleston (EIU); Field Museum of Natural History,

Chicago (FMNH); Michael A. Goodrich personal collection (MAG); Illinois Natural History Survey, Urbana (INHS); Southern Illinois University, Carbondale (SIU); United National Museum (USNM); and the author's personal collection (A). (Abbreviations in parentheses are used in the text to identify the source of material.)

All specimens were examined with a Bausch and Lomb binocular dissecting microscope under magnification of 7x-30x. A micrometer in one ocular was used to make the necessary measurements.

Photographs of specimens were made with a Yashica J-5 camera with an extension tube and Kodak Plus-X film. Illinois and Mid-west collection localities of each species were plotted on map backgrounds obtained from the Illinois Natural History Survey. Solid circles indicate specimens seen by the author, hollow circles represent localities from Linsley (1962a) or Blatchley (1910). United States distributions are adapted from Linsley (1962a).

Terminology used here agrees with the definitions of Torre-Bueno (1962).

Sizes, ranges, host plants, and flight periods are from data on Illinois specimens examined by the author, unless the number was too small. In the latter case, data were then taken from Linsley (1962a) and other sources. In order to make this paper compatible with the most recently accepted taxonomic arrangement of the Cerambycidae, the author has used the arrangement of higher taxa of Linsley (1962a).

Results and Conclusions

The following paragraphs are a summary of the occurrence of the primitive subfamilies of Cerambycidae in Illinois.

The Parandrinae are represented by two species, one of which is distributed across the northeastern U.S. and one which is a southeastern species.

Illinois specimens representing three tribes of Prioninae have been seen by the author and a fourth, occurring in the eastern U.S. as far west as western Indiana, may occur in Illinois. These include a total of five genera and nine species.

The Spondylinae are probably not represented in Illinois. Two species occur in the United States, Scaphinus muticus (Fabricius) of the southeastern U.S. and Spondylis upiformis Mannerheim of the western U.S. A specimen of Spondylis from Eagle Harbor, Michigan, is reported by LeConte (Linsley, 1962a). This record, also listed by Hubbard and Schwarz (1878), is the basis for Spondylis laticeps LeConte, synonomized by Linsley (1962a) with Spondylis upiformis. Although this species may have incidentally occurred in our general region, it is extremely unlikely that it occurs in Illinois.

Illinois specimens of five species of Aseminae have been seen by the author. None, however, is common and some or all may represent imported individuals or populations.

The primitive Cerambycidae known to occur or likely to occur in Illinois are as follows:

PARANDRINAE Blanchard

Parandra (Archandra) polita Say

Parandra (Neandra) brunnea (Fabricius)

PRIONINAE Latreille

Macrotomini Lacordaire

Stenodontes (Orthomallodon) dasytomus (Say)

Prionini Fairmaire

Orthosoma brunneum (Forster)

Prionus (*Prionus*) *laticollis* (Drury)

Prionus (*Prionus*) *pocularis* Dalman

Prionus (*Neopolyarthron*) *imbricornis* (Linnaeus)

Prionus (*Neopolyarthron*) *debilis* Casey

Prionus (*Antennalia*) *fissicornis* Haldeman

Tragosomini Thomson

Tragosoma depsarius (Linnaeus)

Mallaspini Thomson

Derancistrus (*Sphenostethus*) *taslei* (Buquet)

ASEMINAE Thomson

Asemini Thomson

Arhopalus foveicollis (Haldeman)

Arhopalus rusticus (Linnaeus)

Asemum striatum (Linnaeus)

Tetropium cinnamopterum Kirby

Atimini LeConte

Atimia confusa (Say)

Family CERAMBYCIDAE Leach

Key to the Subfamilies of Cerambycidae[1,2]

1. Tarsi distinctly pentamerous, without pubescent ventral pads; antennae short, rarely surpassing base of pronotum.....2

---

[1]Adapted from Linsley (1962).

[2]The subfamilies Lamiinae, Cerambycinae, and Lepturinae are not treated in this paper.

Tarsi pseudotetramerous, padded beneath; antennae surpassing base of pronotum, usually very long.....3

2. Pronotum with an elevated lateral margin; labrum fused with epistoma.....Parandrinae

Pronotum without lateral margin; labrum free.....Spondylinae

3. Head obliquely inclined anteriorly or subvertically, genal margin never directed posteriorly.....4

Head vertical, genal margin always directed posteriorly..... .....Lamiinae

4. Pronotum without an elevated lateral margin; labrum free.....5

Pronotum with an elevated lateral margin; labrum fused with epistoma.....Prioninae

5. Stridulatory plate of mesonotum divided by a median vitta.....6

Stridulatory plate of mesonotum undivided.....Cerambycinae

6. Head short, not narrowed behind eyes; anterior coxae subglobular .....Aseminae

Head elongate, narrowed behind eyes; anterior coxae conical..... .....Lepturinae

Subfamily PARANDRINAE Blanchard

Key to the Parandrinae of Illinois

(A single genus, Parandra Latreille, occurs in Illinois)

1. Tarsus with paronychium distinct and bearing two setae on each side of apex; eyes entire; pronotum less than 1.32 times as wide (at widest part) as long (at center)...Parandra (Archandra) polita

Tarsus with paronychium almost invisible, lacking setae; eyes emarginate internally; pronotum more than 1.32 times as wide

(at widest part) as long (at center)..Parandra (Neandra) brunnea

Parandra (Archandra) polita Say

Plates 1 and 4

Diagnostic description: Elongate, flattened; yellow-brown, head and pronotum often darker than elytra. Head finely, sparsely punctate above; eyes entire. Pronotum less than 1.32 times as wide (at widest point) as long (at center). Elytra finely punctate; almost twice as long as wide. Intercoxal process of prosternum straight, extending beyond coxae. Tarsus with paronychium distinct and bearing two setae, one on each side of the apex. Males with mandibles elongate, curved; females with mandibles short. Length, exclusive of mandibles: ♂♂, 11-21 mm; ♀♀, 15-19 mm (Linsley, 1962a).

Flight period: June and July (Linsley, 1962a).

Host plants: Fagus, Carya, Liriodendron (Linsley, 1962a)

The best character for separating Parandra polita from P. brunnea is the presence of the paronychium. This, however, is a small, fragile structure at the end of the tarsus and is easily broken and often missing. It has been noted by other authors (Linsley, 1962a) that there is a difference in the proportions of the pronotum of the two. During this study, the pronotums of a number of specimens of brunnea and all available specimens of polita were measured and these measurements were plotted on a scatter diagram (Fig. 1).

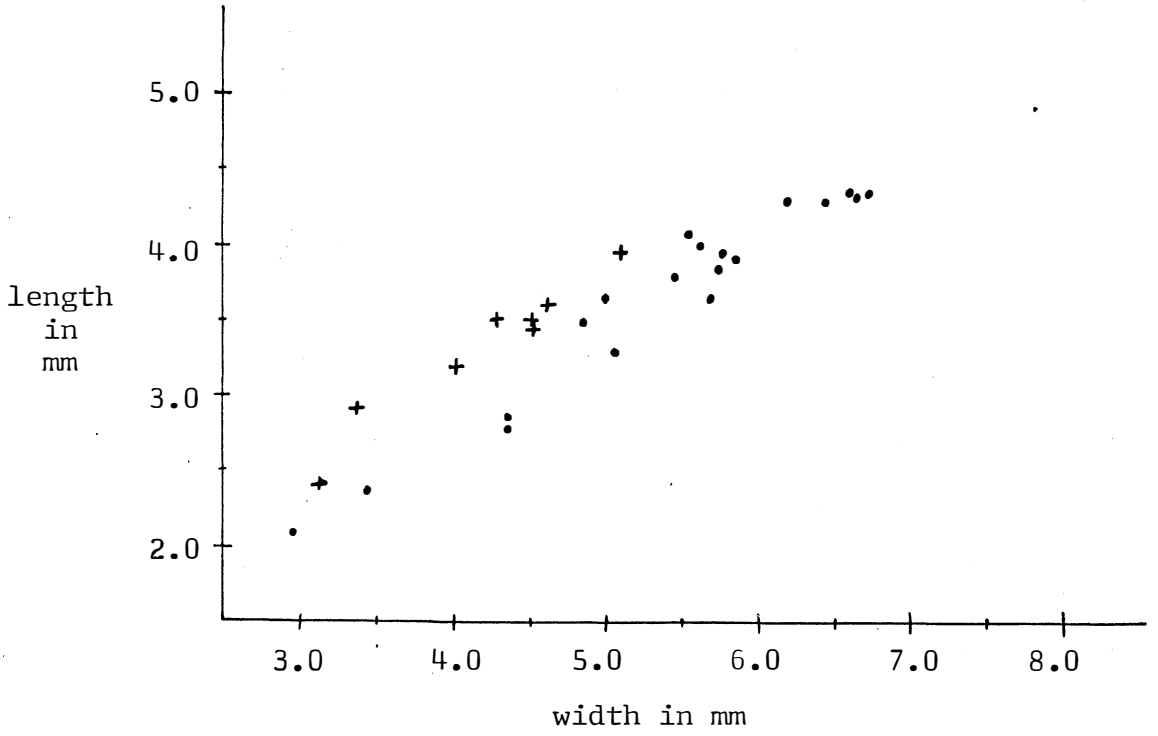


Fig. 1. Scatter diagram of the relationship of the pronotum length to the width of Parandra brunnea (.) and Parandra polita (+).

No Illinois specimens of this species were available to the author. Linsley (1962a) records one collection record in north-central Illinois. Say describes the species from Indiana, probably Posey Co. (Blatchley, 1910) across the Wabash River from White Co., Illinois. Because of this, the author assumes that it could occur, though rarely, in southern Illinois. This beetle is rare in collections possibly because it spends most of its life boring. Knull (1946) states that adults were chopped from the heartwood of a dead beech at Cincinnati, Ohio.

Parandra (Neandra) brunnea (Fabricius)

Plates 1 and 4

Diagnostic description: Robust, convex; dark brown to yellow-brown, usually medium brown, concolorus. Head densely punctate above; eyes emarginate internally. Pronotum more than 1.32 times as wide (at widest point) as long (at center). Elytra densely punctate, less than twice as long as wide. Intercoxal process of prosternum convex, not extending beyond coxae. Tarsus with paronychium almost invisible, lacking setae. Males with mandibles elongate, slender, curved, inner margin usually armed with three teeth. Females with short, broad mandibles, inner margin scarcely curved, teeth poorly developed. Length, exclusive of mandibles: ♂♂, 13-20 mm; ♀♀, 9-21 mm.

Flight period: Late July-September. One specimen from southern Illinois labeled "6-27-1963" (SIU).

Host plants: Craighead (1915) reports it from "nearly all eastern coniferous and hardwood trees." Linsley (1962a) examined specimens reared from Quercus, Populus, Castanea, Acer, Tilia, Liriodendron, Pyrus, Ulmus, and Paulownia. The author has also seen Illinois specimens reared from Chamaecyparis (USNM).

Parandra brunnea appears with regularity in most Illinois collections. One hundred and fifteen Illinois Parandra brunnea were examined by the author. This species is frequently taken at light.

The biology of Parandra brunnea has been described in detail by Brooks (1915), and Hart (1911) has recorded economic damage of the species in Illinois. In 1929, the genus Parandra in North America was revised by Shaeffer.

Linsley (1962a) recognizes two subspecies of Parandra brunnea, a western form Parandra brunnea coloradensis Linsley, and the type subspecies, Parandra b. brunnea (Fab.), which occurs throughout the eastern and central U.S., including Illinois.

Subfamily PRIONINAE Latreille

Key to the Prioninae of Illinois

1. Pronotum smooth, dentate or spinose at sides.....2
   Pronotum serrate at side...(Macrotomini)...Stenodontes dasytomus
2. Pronotum unispinose or tridentate at sides, without a deep notch at the basal angle.....3
   Pronotum rounded, smooth or with a single blunt tooth at sides, with a deep notch at the basal angle.....
   .....(Mallaspinini)...Derancistrus taslei
3. Pronotum tridentate at sides; episterna of metathorax parallel-sided.....(Prionini)..4
   Pronotum with a single sharp spine at sides; episterna of metathorax narrowed posteriorly..(Tragosomini)...Tragosoma depsarius
4. Antennae 11-segmented, filiform.....Orthosoma brunneum
   Antennae 12- to 30-segmented, imbricate.....(Prionus)...5
5. Antennae 12- or 13-segmented.....(subgenus Prionus)...7
   Antennae 15- to 30-segmented.....6
6. Antennae 15- to 20-segmented.....(subgenus Neopolyarthron)...8
   Antennae 25- to 30-segmented.....
   .....(subgenus Antennalia)...P. fissicornis
7. Elytra rugose.....P. laticollis
   Elytra punctate.....P. pocul[illegible]is

8. Metasternum densely pubescent; length, exclusive of mandibles, 20-39 mm.....(P. imbricornus or debilis, male)...9
Metasternum glabrous; length, exclusive of mandibles, 32-50 mm.. .....(P. imbricornis or debilis, female)..10

9. First three antennal segments sparsely punctate, all distal segments densely punctate above; color brown, rarely yellow-brown; length, exclusive of mandibles, 24-39 mm.....P. imbricornis
All antennal segments sparsely punctate above; color yellow-brown; length, exclusive of mandibles, 20-28 mm.....P. debilis

10. Elytra strongly punctate, rugose; color dark brown to piceous; length, exclusive of mandibles, 32-50 mm.....P. imbricornis
Elytra with disk finely punctate, scarcely rugose; color reddish-brown; length, exclusive of mandibles, 34-36 mm.....P. debilis[3]

Tribe MACROTOMINI Lacordaire

Stenodontes (Orthomallodon) dasytomus (Say)

Plates 1 and 4

Diagnostic description: A large robust beetle; red-brown to almost black. Antennae filiform, not surpassing middle of elytra. Pronotum with sides serrate. Elytra not quite twice as long as wide. Males with pronotum as wide or wider than base of elytra, sides diverging slightly from basal to apical angle. Females with pronotum narrower than base of elytra, sides curved, narrowing anteriorly. Length, exclusive of mandibles: ♂♂, 23-47 mm; ♀♀, 29-44 mm (Linsley, 1962a).

[3]Key characters from Linsley (1962a); no females of P. debilis have been seen by the author.

Flight period: May-September (Linsley, 1962a).

Host plants: Platanus spp., Celtis spp., Quercus spp., Salix spp., Liquidambar styraciflua, Elaphrium simarubra, Acer negundo, A. pseudo-platanus (Linsley, 1962a).

Stendontes dasytomus (Say) is previously unreported from Illinois. Linsley's (1962a) nearest record is north-central Tennessee. The only two Illinois specimens seen by the author were one ♀, labeled "Cairo, June 27, '05, at light" (INHS), and one, sex undetermined, labeled "Carterville, 30-VI-57, J. C. Downey" (JKB).

Linsley (1962a) recognizes two subspecies, Stenodontes dasytomus masticator (Thomson) of Arizona, and Stendontes d. dasytomus (Say), ranging throughout the southern U.S., here extended to include southern Illinois.

The larvae of this species spend up to four years mining in the heartwood of living trees, railroad crossties, and similar material. Craighead (1950) summarizes its habits.

Tribe PRIONINI Fairmaire

Orthosoma brunneum (Forster)

Plates 1 and 4

Diagnostic description: Elongate, sides parallel; yellow-brown, apices of elytra usually lighter than head. Antennae filiform, 11-segmented. Pronotum twice as wide as long, margin armed with three spines. Elytra almost three times as long as wide, with 3 or more distinct costae. Males with fifth abdominal sternite broadly truncate or shallowly emarginate at apex; usually with sutural spine at apices of elytra. Females with fifth abdominal sternite longer than fourth,

rounded at apex; lacking sutural spine on elytra. Length, exclusive of mandibles: ♂♂, 27-38 mm; ♀♀, 30-43 mm.

Flight period: Late June-September.

Host plants: Juglans, Carya, Castanea, Quercus, Acer, Pinus, Tsuga (Linsley, 1962a).

Orthosoma brunneum is the most common prionine in Illinois collections. Specimens are commonly taken at light.

Craighead (1950) gives a larval period of two or three years. The larvae damage coniferous and hardwood trees that have been dead several years, as well as crossties, telephone poles and other dead wood in contact with the ground.

Prionus (Prionus) laticollis (Drury)

Plates 1 and 5

Diagnostic description: Robust; usually black, may be brown to dark brown. Antennae 12-segmented. Pronotum broad, armed with three obtuse teeth. Elytra strongly rugose. Males with antennae stout; strongly imbricate, reaching apical third of elytra. Females with antennae slender, short, filiform, slightly imbricate distally. Length, exclusive of mandibles: ♂♂, 23-32 mm; ♀♀, 31-44 mm (Linsley, 1962a).

Flight period: July and August (Linsley, 1962a).

Host plants: Fruit trees and shrubs, including Populus spp., Castanea, Quercus spp., Tilia, Malus, Rubus, Vitis, and Pinus (Linsley, 1962a).

Forbes (1894, 1896) includes Prionus laticollis as a destructive insect in Illinois. This author has been unable to find specimens; yet, it seems quite likely that it occurs. All of the host plants

listed by Linsley are present in number, and his distribution maps indicate its occurrence in all neighboring states except Iowa. Blatchley (1910) lists it for the southern half of Indiana, but terms it "scarce."

Larvae of Prionus laticollis are primarily root borers in living trees. They also damage structural wood, crossties, poles and subterranean lead cables.

Prionus (Prionus) pocularis Dalman

Plates 2 and 5

Diagnostic description: Robust; brown. Antennae 12-segmented. Lateral margins of pronotum with three obtuse, infrequently acute, teeth. Elytra punctate, rarely slightly rugose. Males with antennae stout, imbricate, reaching apical third of elytra. Females with antennae short, slender, less imbricate than males. Length, exclusive of mandibles: ♂♂, 25-38 mm; ♀♀, 28-45 mm (Linsley, 1962a).

Flight period: July.

Host plants: Pinus spp.

This species is known to Illinois from two specimens seen by the author: one ♂ labeled "Chicago, 1936, Reutdorf" (INHS) and one ♀, labeled "Brighton, 1887" (INHS).

Larvae of Prionus pocularis bore in decaying pine logs and stumps (Linsley, 1962a; Knull, 1946) and railroad ties (Craighead, 1950). They apparently do not damage living trees.

Prionus (Neopolyarthron) imbricornis (Linnaeus)

Plates 2 and 5

Diagnostic description: Robust, convex; dark brown to black, rarely

light brown. Antennae usually 17- to 18-segmented, rarely 15- or 16-segmented. Pronotum armed with three obtuse teeth on lateral margin, center tooth usually recurved, rarely straight. Elytra punctate, rugose; costae present (may be indistinct). Males with antennae reaching apical half of elytra, with first three segments sparsely punctate and all distal segments very punctate above; metasternum pubescent. Females with antennae rarely surpassing basal third of elytra; elytra strongly punctate; metasternum glabrous. Length, exclusive of mandibles: ♂♂, 25-38 mm; ♀♀, 32-50 mm.

Flight period: July-August; late June in southern Illinois. One specimen from Urbana labeled "June 3, 1894" (INHS).

Host plants: Quercus, Castanea, Pyrus and other hardwoods, Vitis, maize (Linsley, 1962a).

The larvae of Prionus imbricornis are quite destructive, boring in the roots of living plants for at least three years prior to pupation (Craighead, 1915). Forbes (1894, 1896) reported the larvae of this species ruining Indian corn in Illinois. Riley (1870) reported damage to herbaceous prairie plants.

This large "tile-horned Prionus" is commonly taken at light, especially in southern Illinois.

Prionus (Neopolyarthron) debilis Casey

Plates 2 and 5

Diagnostic description: Smaller than P. imbricornis, convex; yellow-brown, rarely brown. Antennae usually 18-segmented. Lateral margin of pronotum with three obtuse teeth, usually straight, rarely with center tooth recurved. Elytra punctate, rugose, costae indistinct.

Males with metasternum pubescent; with all antennal segments sparsely punctate above. Females with metasternum glabrous; elytra finely punctate, scarcely rugose. Length, exclusive of mandibles: ♂♂, 22-28 mm; ♀♀, 34-36 mm (Linsley, 1962a).

Flight period: Late June-September.

Host plants: Not reported.

This species seems to be a small yellow-brown imbricornis. One specimen from Peoria is chocolate brown. The habits are assumed to be similar to imbricornis, but judging from the collection localities, this may be the prairie counterpart of that beetle. The older reports of imbricornis damaging prairie plants (Riley, 1870; Forbes, 1894, 1896) may be attributable to debilis which was not described by Casey until 1891.

Several Illinois specimens were taken at lights. All 28 specimens seen by the author were males. Females may not be positively phototropic and, therefore, not taken at lights.

Prionus (Antennalia) fissicornis Haldeman

Plates 2 and 6

Diagnostic description: Robust, convex; brown to dark brown. Antennae 25- to 30-segmented. Pronotum with three blunt, obtuse teeth. Elytra slightly rugose, punctate, costate. Males with antennae very imbricate, reaching beyond middle of elytra; metasternum densely pubescent. Females with antennae slender, reaching only to middle of elytra; metasternum glabrous. Length, exclusive of mandibles: ♂♂, 27-36 mm; ♀♀, 32-40 mm (Linsley, 1962a).

Flight period: May-July.

Host plants: Grasses, including maize.

The author has seen no Illinois specimens of Prionus fissicornis. He assumes, however, that it does occur in Illinois, because Forbes (1896) reported Illinois field corn ruined by the larvae injuring the roots and boring up into the base and heart of the stalk. As map 10, plate 6 shows, Prionus fissicornis occurs throughout the plains states to the west, including Iowa, North Dakota, South Dakota, Nebraska, and Kansas.

Tribe TRAGOSOMINI Thomson

Tragosoma depsarius (Linnaeus)

Plates 2 and 6

Diagnostic description: Elongate, parallel-sided; yellow-brown. Antennae 11-segmented, slender, filiform. Pronotum pubescent above, armed with a single spine laterally. Elytra rugosely punctate, 2½ to 3 times as long as wide, costae and sutural spine present. Males with fifth abdominal sternite short, emarginate; antennae reaching apical fourth of elytra. Females with fifth abdominal sternite elongate, apex entire or feebly emarginate; antennae reaching to about the middle of elytra. Length, exclusive of mandibles: ♂♂, 18-30 mm, ♀♀, 24-39 mm.

Flight period: June-September.

Host plants: Pinus spp., including P. contorta, P. ponderosa, and P. strobus (Linsley, 1962a).

The two Illinois specimens seen by the author, one ♂ labeled "Ill." (INHS) and one ♂ labeled "Ill." (USNM), may be imports in wood from northern states. However, since Tragosoma depsarius has

been collected frequently in Wisconsin and lower Michigan, the author considers its occurrence in northern Illinois possible, where some suitable host occurs.

Knull (1946) notes that the larvae work in the sapwood of decayed coniferous logs.

Tribe MALLASPINI Thomson

Derancistrus (Sphenostethus) taslei (Buquet)

Plates 3 and 6

Diagnostic description: Slender, convex; black to dark brown, rarely with elytra light brown. Antennae slender, filiform. Pronotum rounded, widening posteriorly, with a deep notch at the basal angle, with or without a single blunt tooth anterior to notch. Elytra finely punctate. Males with antennae surpassing middle of elytra. Females with antennae not reaching middle of elytra. Length, exclusive of mandibles: ♂♂, 20-26 mm; ♀♀, 23-29 mm (Linsley, 1962a).

Flight period: July-August.

Host plants: Quercus, Castanea, Fagus, Cercis (Linsley, 1962a); Tsuga (Blatchley, 1910).

This species is not recorded from Illinois. It occurs throughout the east-central states, including Indiana. Blatchley terms it "rare" and records it from Bloomingdale Glens, Montgomery Co., Indiana. Although adults are rare in collections, Craighead (1915) reports the larvae are common. He also reports that the species breed in the dry tops of dead hardwoods. The absence of Illinois records may be explained by the inaccessability of the preferred habitat.

Subfamily ASEMINAE Thomson

Key to the Aseminae of Illinois

1. Anterior coxal cavities closed behind, intercoxal process dilated at apex; intermediate coxal cavities closed; almost entirely covered with short pubescence.....(Atimiini)...Atimia confusa
   Anterior coxal cavities open behind, intercoxal process not dilated at apex; intermediate coxal cavities open to epimeron; glabrous to slightly pubescent.....(Asemini)...2
2. Anterior tibiae with 1 spur; eyes entire or shallowly emarginate. .....(Arhopalus)...4
   Anterior tibiae with 2 spurs; eyes variable, entire to completely divided.....3
3. Eyes entire or shallowly emarginate.....Asemum striatum
   Eyes completely divided.....Tetropium sp.
4. Hind tarsi with third segment cleft nearly to base, apex of fourth segment falling far short of apices of lobes...A. rusticus
   Hind tarsi with third segment cleft for about half its length, apex of fourth segment about even with apices of lobes..... .....A. foveicollis

Tribe ASEMINI Thomson

Arhopalus foveicollis (Haldeman)

Plates 3 and 6

Diagnostic description: Elongate; dark brown, seldom light brown. Head with deep median impression. Antennae long, slender, filiform. Pronotum rounded, punctate, with deep median impressions. Elytra two or more times as long as broad; costae usually distinct. Hind tarsi

with third segment cleft for about half its length, apex of fourth segment about even with apices of lobes. Males with fifth abdominal sternite truncate or emarginate. Females with fifth abdominal sternite rounded. Length: ♂♂, 14-28 mm; ♀♀, 16-30 mm (Linsley, 1962a).

Flight period: Late June-July.

Host plants: Pinus spp., Picea (Linsley, 1962a; Knull, 1946).

Arhopalus foveicollis is rare in Illinois collections and may be an import. The author has seen only eight specimens from Illinois, three ♂♂, labeled "Algonquin, Nason" (INHS); one ♂, labeled "Ravinia, VII-21-07" (INHS); two ♂♂, labeled "Cook Co., E. B. Chope" (FMNH); and two ♂♂, labeled, "N. Ill." (INHS). It does occur, however, in lower Michigan, Wisconsin, central Iowa, and northern Indiana, so it may occur where the right host tree is present, in Illinois.

Knull (1946) reports the larvae in bases of dead pine and spruce. Adults, usually males, have been taken at light.

Arhopalus rusticus (Linnaeus)

Plates 3 and 7

Diagnostic description: Elongate; dark brown. Head with deep median impression. Antennae long, slender, filiform. Pronotum rounded, punctate; median impressions shallow. Elytra two or more times as long as wide; costae usually distinct. Hind tarsi with third segment cleft nearly to base, apex of fourth segment falling far short of apices of lobes. Males with fifth abdominal sternite transverse, shallowly emarginate. Females with fifth abdominal sternite elongate, apex rounded. Length: ♂♀, 16-28 mm.

Flight period: June and July.

Host plants: Pinus spp. (Linsley, 1962a; Knull, 1946).

Arhopalus rusticus occurs sparsely throughout the eastern U. S., so, while the few specimens listed below could be imported, the author believes it could be taken in any Illinois locality where Pinus is abundant. The author has seen only four Illinois specimens, one ♂, labeled "Cairo, elec. light, Jun. 10, '07" (INHS); one ♀, labeled "Chicago, VII-4-04, W. J. Gerhard, at light" (FMNH); one ♀, labeled "Chicago, Westcott" (INHS); and one ♀, labeled "N. Ill." (INHS).

Knull (1946) says it breeds in bases and roots of dead pine trees. Adults are taken frequently at lights.

Four subspecies of Arhopalus rusticus are found in coniferous forests in Europe and the U. S. according to Linsley (1962a). He recognizes the northeastern U. S. population, including these Illinois specimens, as the subspecies Arhopalus rusticus obsoletus (Randall).

Asemum striatum (Linnaeus)

Plates 3 and 7

Diagnostic description: Like a short Arhopalus, black to light brown, or dark with lighter elytra; Illinois specimens uniform dark brown. Antennae short, barely reaching basal third of elytra in males, still shorter in females. Pronotum rounded, punctate, median impression variable. Elytra 2½ times as long as broad; longitudinal striae present, may be indistinct. Males with exposed part of fifth abdominal sternite shorter than fourth, broadly rounded at apex. Females with fifth abdominal sternite longer than fourth, narrowly rounded at apex. Length: ♂♂, 10-16 mm; ♀♀, 12-17 mm (Linsley, 1962a).

Flight period: May-July (Linsley, 1962a). One southern Illinois

specimen is labeled "Apr. 22, '14."

Host plants: Picea spp., Larix spp., Abies spp., including A. sachalinensis, Pinus spp., Pseudotsuga taxifolia (Linsley, 1962a).

Asemum striatum is probably found throughout Illinois, where some hosts are abundant, although only four specimens, one ♂, labeled "Algonquin, Nason" (INHS), one ♀, labeled "Algonquin, 6-8-94" (INHS); one ♀, labeled "Grand Tower, Apr. 22, '14" (INHS), and one ♀, labeled "Startford, May 12, 1911, W. S. Abbott" (INHS), have been seen. Knull (1946) states that it feeds on dead, decaying wood.

The author has seen two specimens of Asemum striatum from St. Louis, Missouri, across the Mississippi from Madison and St. Clair Cos., Illinois (USNM). These two specimens are the only Missouri records of the beetle.

Five specimens of Asemum striatum have been seen from Wisconsin, two from Bayfield (USNM), one from Trout Lake (FMNH), and two, collected by the author from White Sand Lake, Vilas Co. (EIU: A). This species is not represented on Linsley's (1962a) maps as occurring in Wisconsin, although it occurs in all surrounding states.

Tetropium Kirby

Plates 3 and 7

Diagnostic description: Elongate, small; light brown to black, elytra may be lighter than head and pronotum. Antennae seldom longer than body. Pronotum rounded. Elytra moderately elongate, parallel-sided. Males with fifth abdominal sternite shorter than fourth, truncate. Females with fifth sternite longer than fourth, rounded; with elytra exposing fifth tergite. Length: ♂♂, 8-14 mm; ♀♀, 9-20 mm.

(Linsley, 1962a).

Flight period: May-August (Linsley, 1962a).

Host plants: Coniferous trees.

Various keys to the species of this genus are available, yet none will key a specimen to species without much guess work, as the keys are unclear and contradictory.

The only Illinois specimens seen were one ♂, labeled, "Hines Lumber Co., Chicago VII-57" (FMNH) and one ♂, labeled "Hines Lumber Co., Chicago, VII-57, in western white spruce lumber from Slave Lake, Alberta" (FMNH). While no specimens, other than these imports, are available from Illinois, Tetropium cinnamopterum Kirby may occur. Blatchley (1910) records two specimens of T. cinnamopterum taken from beneath the bark of a pine tree in LaPorte Co., Indiana, and Casey described Tetropium parvulum (later reduced to Tetropium cinnamopterum parvulum) from "Indiana."

If the right habitat, beneath the bark of dead or dying conifers, were investigated, perhaps native Illinois specimens could be found.

Tribe ATIMIINI LeConte

Atimia confusa (Say)

Plates 3 and 7

Diagnostic description: Short, robust; brown to red-brown, elytra often lighter than head and thorax; clothed with gray to yellow appressed hairs, forming an irregular pattern on the elytra. Eyes almost divided. Antennae slender, filiform. Pronotum wider than long, rounded. Elytra narrowing from base, about 2 times as long as wide. Males with antennae reaching apical third of elytra; fifth

abdominal sternite emarginate. Females with antennae shorter; fifth abdominal sternite rounded. Length: ♂♂, 6-7 mm; ♀♀, 7-9 mm (Linsley, 1962a).

Flight period: Two broods, spring and fall (Linsley, 1962a). One specimen from Iowa City, Iowa, is dated "Nov. 2, '09."

Host plants: Juniperus spp., Cupressus spp., Taxodium distichum, Thuja spp., Chamaecyparis spp.

Illinois specimens of Atimia confusa have not been seen by the author and have not been recorded in the literature. Two subspecies of Atimia confusa occur on the west coast and one, Atimia c. confusa, occurs in Michigan, Iowa, and Indiana. This subspecies may occur in Illinois. Blatchley (1910) lists a May 16 record from Crawford Co., Indiana, on red cedar, Juniperus virginiana Linnaeus.

Linsley (1962a) states that the larvae feed beneath the bark of junipers and cedars and frequently attack rustic work of that material.

Literature Cited

Arnett, R. H. 1963. The beetles of the United States. The Catholic University of America Press, Washington, D. C., pp. 851-898.

Blatchley, W. S. 1910. The Coleoptera or beetles of Indiana. Bull. Indiana Dept. Geol. Nat. Res., I: 1-1386.

Brooks, F. E. 1915. The parandra borer as an orchard enemy. United States Dept. Agr., Bull. 262: 1-7.

Casey, T. L. 1912. Studies in the Cerambycidae of North America. Mem. Coleop., 3: 215-386.

_____. 1913. Further studies in the Cerambycidae of North America. Mem. Coleop., 4: 193-400.

_____. 1924. Cerambycidae of North America: Prioninae. Mem. Coleop., 11: 208-296.

Craighead, F. C. 1915. Larvae of the Prioninae. United States Dept. Agr., Off. Secr., Rept. 107: 1-24.

_____. 1950. Insect enemies of eastern forests. United States Dept. Agr., Bull., (n.s.) 27: 1-239.

Dillon, L. S. and E. S. Dillon. 1961. A manual of common beetles of eastern North America. Row, Peterson and Company, Evanston, Illinois and Elmsford, New York. pp. 574-657.

Forbes, S. A. 1894. 18th Rept. of Ill. State Ent., p. 146.

_____. 1896. Insects injurious to the seed and root of Indian corn. Illinois Agr. Sep. Sta. Bull. 44: 209-296.

Hart, C. A. 1911. Miscellaneous economic insects. 26th Rept. of Ill. State Ent., pp. 68-73.

Hubbard, H. G. and E. A. Schwarz. 1878. Coleoptera of Michigan, Lake Superior. Proc. Amer. Phil. Soc., 17: 627-643.

Knull, J. N. 1946. The long-horned beetles of Ohio. Ohio Biol. Surv. Bull. 42: 269-350.

Linsley, E. G. 1961. The Cerambycidae of North America, part I: Introduction. University of California Press. 97 pp.

_____. 1962a. The Cerambycidae of North America, part II: taxonomy and classification of the Parandrinae, Prioninae, Spondylinae, and Aseminae. Univ. California Press. 102 pp.

_____. 1962b. The Cerambycidae of North America, part III: taxonomy and classification of the subfamily Cerambycidae, tribes Opsimini through Megaderini. Univ. California Press. 108 pp.

_____. 1963. The Cerambycidae of North America, part IV: taxonomy and classification of the subfamily Cerambycidae, tribes Elaphidionini through Rhinotragini. Univ. California Press. 165 pp.

_____. 1964. The Cerambycidae of North America, part V: taxonomy and classification of the subfamily Cerambycidae, tribes Callichromini through Ancylocerini. Univ. of California Press. 197 pp.

Riley, C. V. 1870. Second annual report on the noxious, beneficial and other insects of the state of Missouri. Mo. State Bd. Agr. 5th Ann. Rept. 1869: 1-137.

Shaeffer, Chas. 1929. The North American species of Parandra. Bull. Brooklyn Ent. Soc. XXIV: 38-40.

Torre-Bueno, J. R. de la. 1962. A glossary of entomology and supplement A. Ed. G. S. Tullock. Brooklyn Ent. Soc., Brooklyn, N. Y. 372 pp.

Fig. 1. Parandra polita Say; ♂; no data; 2x (FMNH).

Fig. 2. Parandra brunnea (Fabricius); ♂; Peoria, Ill., Aug. 13, 1938, F. F. Hasbrouck; 2x (INHS).

Fig. 3. Parandra brunnea (Fabricius); ♀; Alton, Ill., Aug. 18, '12, feeding on oak; 2x (USNM).

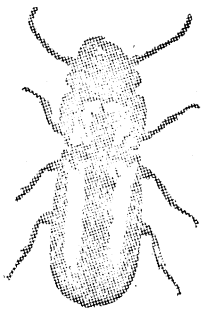
Fig. 4. Stenodontes dasytomus (Say); ♂; Hot Springs, Ark., 6-26-38, J. Jacobs; 1x (INHS).

Fig. 5. Orthosoma brunneum (Forster); ♂; Palos Park, Ill., VII-8-'11, W. J. Gerhard, at light; 1x (FMNH).

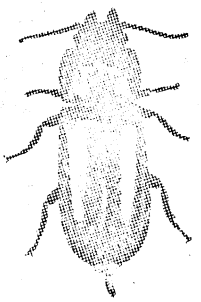
Fig. 6. Prionus laticollis (Drury); ♂; no data; 1x (INHS).

Plate I

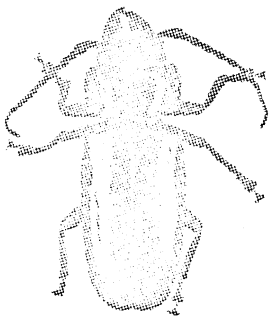
1



2

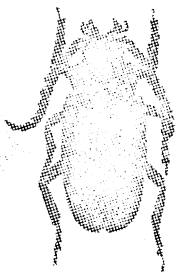


3



4

5



6

Fig. 7. Prionus pocularis Dalman; ♂; Beverly Sh., Ind., VII-15-1933; 1x (FMNH).

Fig. 8. Prionus imbricornis (Linnaeus); ♂; Murphysboro, Ill., VIII-9-'32, A. B. Wolcott, at light; 1x (FMNH).

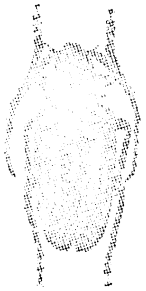
Fig. 9. Prionus imbricornis (Linnaeus); ♀; Jasper Co., Ill., 27 July 1965, Mrs. Birch; 1x (EIU).

Fig. 10. Prionus debilis Casey; ♂; Ill.; 1x (USNM).

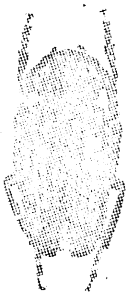
Fig. 11. Prionus fissicornis Haldeman; ♂; Belle Fourche, S. D., VI-28-'62, J. C. Downey; 1x (SIU).

Fig. 12. Tragosoma depsarius (Linnaeus); ♀; Pentwater, Mich., VII-17-'16; 1x (FMNH).

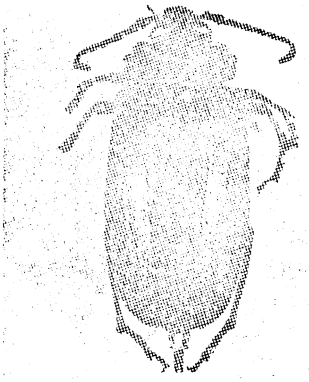
Plate II



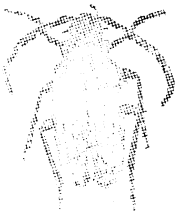
7



8

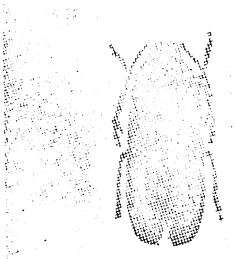


9



10

11



12

Fig. 13. Derancistrus taslei (Buquet); ♂; no data; 1x (FMNH).

Fig. 14. Arhopalus foveicollis (Haldeman); ♂; Cook Co., Ill., E. B. Chope; 2x (FMNH).

Fig. 15. Arhopalus rusticus (Linnaeus); ♀; Cairo, Ill., elec. light, Jun. 10, '07; 2x (INHS).

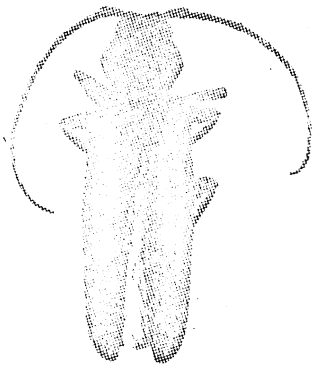
Fig. 16. Asemum striatum (Linnaeus); ♂; Algonquin, Ill., Nason; 2x; (INHS).

Fig. 17. Tetropium sp.; ♂; Macatawa B'h, Mich., VI-10-'06, under bark on pine, A. B. Wolcott; 2x (FMNH).

Fig. 18. Atimia confusa (Say); ♀; Alpena, Mich., Wm. A. Nason; 2x; (INHS).

Plate III

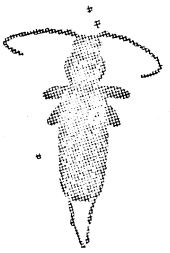
13



14

15

16



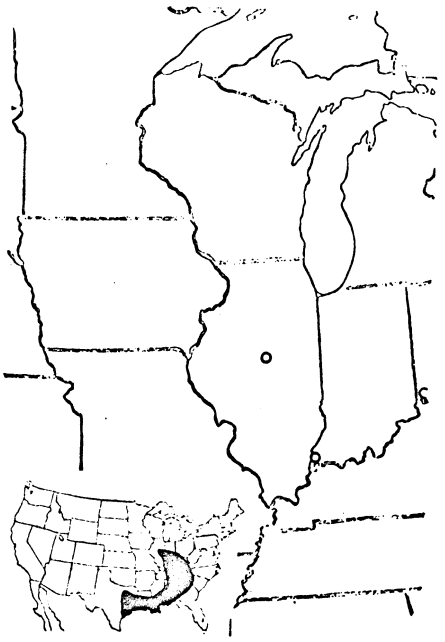
17

18

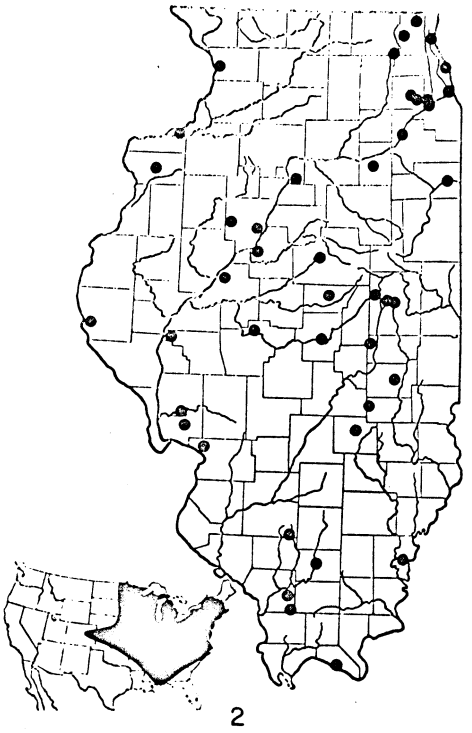
Figs. 1-4. Distribution maps of primitive cerambycids. 1. Parandra polita Say 2. Parandra brunnea (Fabricius) 3. Stenodontes dasytomus (Say) 4. Orthosoma brunneum (Forster).

Solid circles indicate localities of specimens examined by the author; hollow circles represent published records.

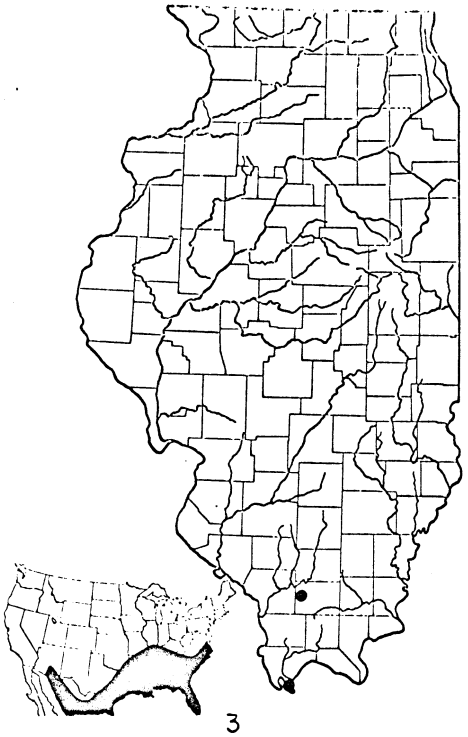
Plate IV



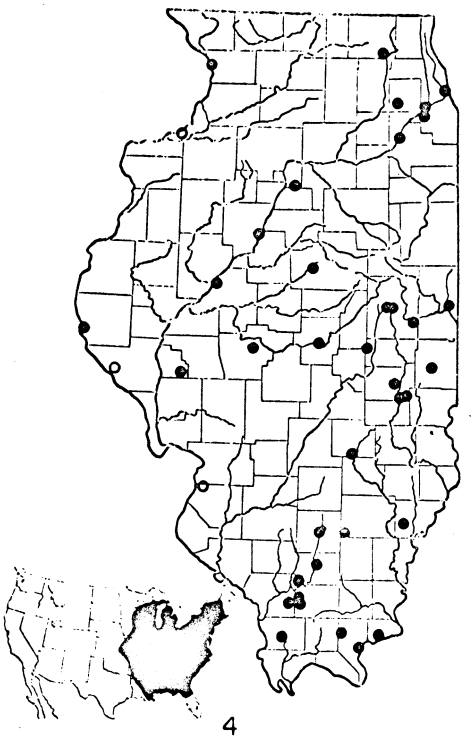
1



2



3

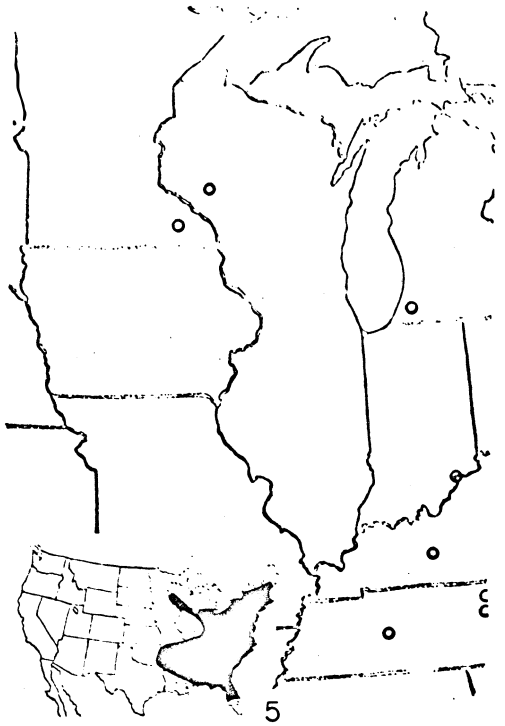


4

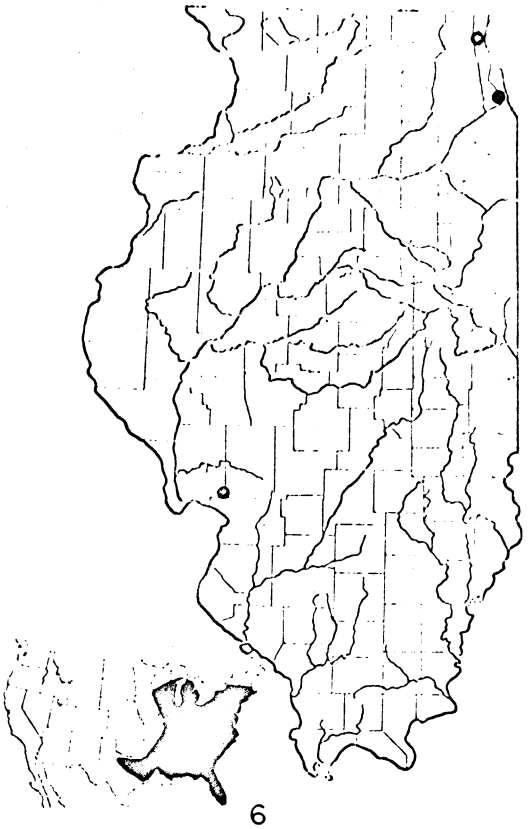
Figs. 5-8. Distribution maps of primitive cerambycids. 5. Prionus laticollis (Drury) 6. Prionus pocularis Dalman 7. Prionus imbricornis (Linnaeus) 8. Prionus debilis Casey.

Solid circles indicate localities of specimens examined by the author; hollow circles represent published records.

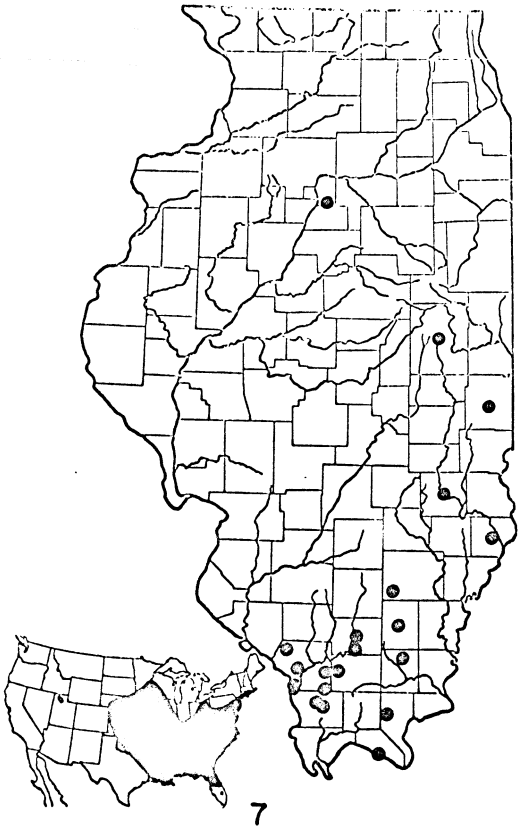
Plate V



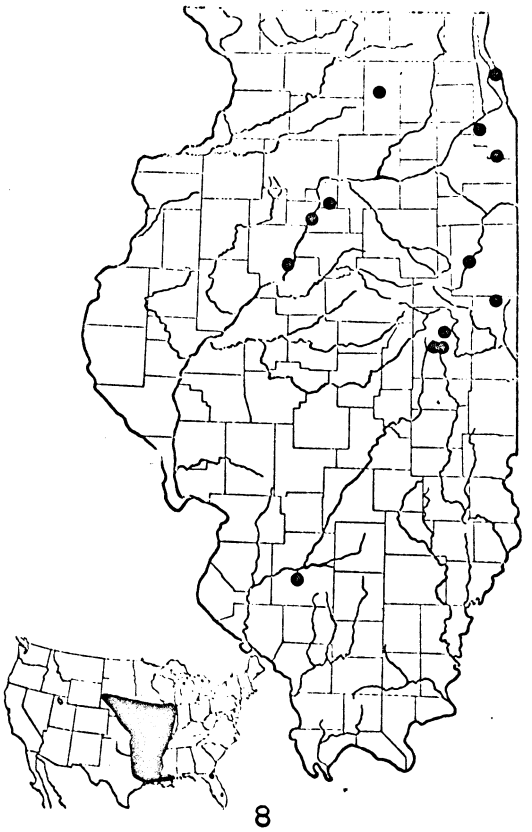
5



6



7

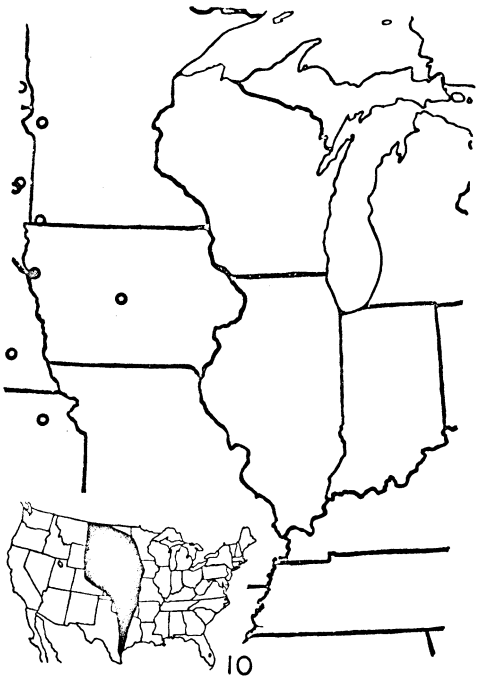


8

Figs. 9-12. Distribution maps of primitive cerambycids. 9. Derancistrus taslei (Buquet) 10. Prionus fissicornis Haldeman 11. Tragosoma depsarius (Linnaeus) 12. Arhopalus foveicollis (Haldeman).

Solid circles indicate localities of specimens examined by the author; hollow circles represent published records.

Plate VI

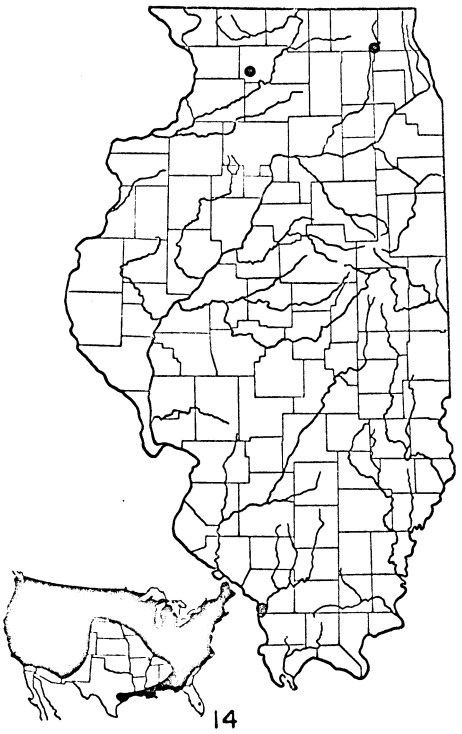


Figs. 13-16. Distribution maps of primitive cerambycids. 13. Arhopalus rusticus (Linnaeus) 14. Asemum striatum (Linnaeus) 15. Atimia confusa (Say) 16. Tetropium Kirby.

Solid circles indicate localities of specimens examined by the author; hollow circles represent published records.

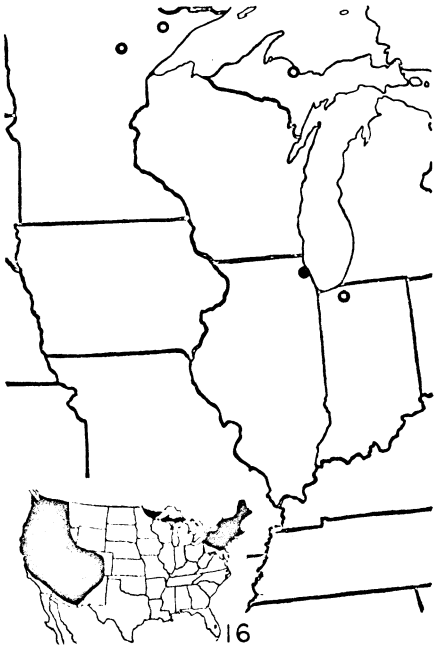
Plate VII

13



14

15



16