

BULLETIN OF THE UNIVERSITY OF UTAH

Volume 38

October 12, 1947

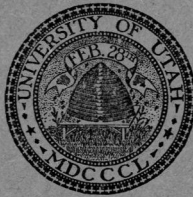
No. 8

A SUMMARY OF THE KNOWN
NORTH AMERICAN AMAUROBIIDAE

BY

RALPH V. CHAMBERLIN

BIOLOGICAL SERIES, Vol. X, No. 5



PUBLISHED BY
THE UNIVERSITY OF UTAH
SALT LAKE CITY

Table of Contents

	Page
Key to the Genera.....	5
Genus AMAUROBIUS C. Koch.....	5
<i>fenestralis</i> (Stroem)	5
<i>ferox</i> (Walckenaer)	6
Genus CALLOBIUS Chamberlin.....	6
<i>bennetti</i> (Blackwall)	6
<i>alaskanus</i> (Chamberlin and Ivie).....	6
<i>angelus</i> (Chamberlin and Ivie).....	6
<i>arizonicus</i> (Chamberlin and Ivie).....	6
<i>canada</i> (Chamberlin and Ivie).....	7
<i>catalinus</i> (Chamberlin and Ivie).....	7
<i>deces</i> (Chamberlin and Ivie).....	7
<i>enus</i> (Chamberlin and Ivie).....	7
<i>kamelus</i> (Chamberlin and Ivie).....	8
<i>nomeus</i> (Chamberlin and Ivie).....	8
<i>olympus</i> (Chamberlin and Ivie).....	8
<i>pallescens</i> (Chamberlin)	8
<i>pictus</i> (Simon)	9
<i>severinus</i> (Chamberlin and Ivie).....	9
<i>severus</i> (Simon)	9
<i>shastus</i> (Chamberlin and Ivie).....	9
<i>subnomeus</i> (Chamberlin and Ivie).....	9
<i>tamarus</i> (Chamberlin and Ivie).....	9
Genus WALMUS Chamberlin.....	10
Key to species	10
<i>agastus</i> (Chamberlin)	11
<i>barbarus</i> (Chamberlin)	10, 11
<i>borealis</i> (Emerton)	12
<i>dorotheae</i> (Chamberlin)	13
<i>hagiellus</i> (Chamberlin)	13
<i>heathi</i> (Chamberlin)	13
<i>hermosus</i> (Chamberlin)	14
<i>lataescens</i> (Chamberlin)	14
<i>mathetes</i> (Chamberlin)	15
<i>mephisto</i> (Chamberlin)	15
<i>oblitus</i> (Chamberlin)	16
<i>varus</i> (Chamberlin)	16
Genus CALLIOPLUS Bishop and Crosby.....	17
<i>armipotens</i> (Bishop and Crosby).....	17
<i>euophus</i> (Bishop and Crosby).....	17
<i>hoplites</i> (Bishop and Crosby).....	17
<i>hoplomachus</i> (Bishop and Crosby).....	17
<i>macarius</i> (Chamberlin)	17
<i>pantoplus</i> (Bishop and Crosby).....	18
<i>tibialis</i> (Emerton)	18

	Page
Genus HESPERAUXIMUS Gertsch	18
<i>agelenoides</i> (Emerton)	18
<i>sternitzkii</i> (Gertsch)	18
Genus PIMUS Chamberlin	19
Key to species	19
<i>fractus</i> (Chamberlin)	19
<i>hesperellus</i> (Chamberlin)	19
<i>leucus</i> (Chamberlin)	20
<i>pitus</i> (Chamberlin)	20
Genus TITANOECA Thorell	21
<i>americana</i> (Emerton)	21
<i>americana anopla</i> (Chamberlin)	21
<i>brunnea</i> (Emerton)	21
<i>obscura</i> (Walckenaer)	21
<i>silvicola</i> (Chamberlin and Ivie)	22
Explanation of Figures	23

Summary of the Known North American Amaurobiidae

By RALPH V. CHAMBERLIN

A recent survey of the spiders of the family Amaurobiidae, sens. str., in the collection of the University of Utah made it evident that a number of species and also generic groups occurring more especially in the western states had heretofore escaped detection and naming. It also seemed evident that a satisfactory monographic treatment of the group must await more thorough collecting in most areas of the West. The present paper is therefore meant merely to catalogue the species at present known from America north of Mexico and to give preliminary diagnoses of such new species and genera as are detected in our collection.

KEY TO THE GENERA

1. Calamistrum single 2
Calamistrum double 5
2. Anterior median eyes as large or larger than the anterior laterals.....
.....*Hesperauximus* Gertsch
Anterior median eyes smaller than the laterals..... 3
3. Eyes of the median quadrangle subequal.....*Titanoeca* Thorell
Anterior median eyes much smaller than the anterior laterals..... 4
4. Epigynum of female with a median area or lobe embraced by 2 large lobes
which meet behind much as in *Callobius*; tibial apophysis of male palpus
complex.....*Callioptus* Bishop and Crosby
Epigynum open behind, of general form shown in figs. 31 and 32; tibial apo-
physis of male palpus consisting of 2 simple prongs on ectal side.....
.....*Pimus*, new genus
5. Epigynum presenting a small ovoid median lobe embraced by 2 large lateral
lobes which meet posteriorly; tibial apophysis of male palpus presenting
three well developed prongs.....*Callobius*, new genus
Not so 6
6. Epigynum with principal plate in the form of a transverse bar which may
be more or less overlapped by a lobe from in front on each side; spiders
of medium or small size (length 4.5 to 9 mm.).....*Walmus*, new genus
Epigynum with median lobe more or less cordate or spade-shaped and lying
in an area widely open behind; spiders of large size, in most 10 mm. or
more in length.....*Amaurobius* C. Koch

Genus AMAUROBIUS C. Koch 1837

GENEROTYPE.—*Amaurobius fenestralis* (Stroem)

As here restricted this genus embraces but one known species in America north of Mexico, this being the European *A. ferox*.

¹The author is using *generotype* instead of the more usual form *genotype* as being etymologically the correct form, the stem of genus being *gener-* and not *gen-*. There is also the advantage of distinctness from *genotype* as used by the geneticists.

Amaurobius ferox (Walckenaer)

Figures 1 and 2

- Clubiona ferox* Walckenaer, 1825, Fn. Fr. Ar., 150; *7:7.
Amaurobius ferox C. Koch, 1868, Abhandl. Nat. Hist. Ges. Nurnberg, p. 11.
A. ferox Emerton, 1888, Trans. Conn. Acad., 7:451; *10:3.
A. ferox Emerton, 1902, Common Spiders, 215; *492.
A. ferox Petrunkevitch, 1911, Cat. Am. Spiders, 104.
A. ferox Comstock, 1913, The Spider Book, 278; *258, 259.
A. ferox Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta., 101:1034.
A. ferox Kaston, 1938, Bull. State Geol. and Nat. Hist. Survey, 60:181.

TYPE LOCALITY: Europe.

NORTH AMERICAN LOCALITIES: Massachusetts; Connecticut; Rhode Island; New York; New Jersey. Canada: Ontario, Swansea.

This domestic spider, found in our country chiefly in cellars and out-buildings, was probably introduced from Europe.

Genus CALLOBIUS, new

GENEROTYPE.—*Callobius bennetti* (Blackwall)

This group, recently treated in detail by Chamberlin and Ivie,² is a compact group confined as far as at present known to North America. Among American forms its members are readily distinguished in the female sex by the structure of the epigynum which presents iniformly two large lateral lobes embracing a small ovoid median lobe, and in the male by the form of the three processes on the tibia of the palpus. Other characters are given in detail in the paper mentioned. The known species are listed below.

Callobius alaskanus (Chamberlin and Ivie)

Amaurobius alaskanus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:33; *31.

TYPE LOCALITY: Alaska. Only the ♂ holotype known.

Callobius angelus (Chamberlin and Ivie)

Amaurobius angelus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:33; *29.

TYPE LOCALITY: California; Los Angeles. Only the ♂ holotype known.

Callobius arizonicus (Chamberlin and Ivie)

Amaurobius arizonicus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:34; *33.

TYPE LOCALITY: Arizona: 17 mi. N. E. Whiteriver, White Mts. (W. 109°: N. 33°).

OTHER LOCALITY: Arizona: Graham Mt. (W. 109°: N. 32°).

²North American Dictynid Spiders: The Bennetti Group of Amaurobius, Am. Ent. Soc. America, vol. 40, no. 1, pp. 29-55, Mar., 1947.

Callobius bennetti (Blackwall)

Ciniflo bennetti Blackwall, 1846, Ann. and Mag. Nat. Hist., 17:41.

Amaurobius sylvestris Emerton, 1888, Trans. Conn. Acad. Sci., 7:451; *10:1.

A. bennetti Banks, 1895, Jour. N. Y. Ent. Soc., 3:82.

A. sylvestris Emerton, 1902, Common Spiders, 213; *489-490.

A. sylvestris Simon, 1903, Bull. Mus. Paris, 9:386.

A. bennetti Banks, 1910, Bull. U. S. Nat. Mus., 72:18.

A. bennetti Comstock, 1912, Spider Book, 277; *255-257.

A. bennetti Emerton, 1919, Trans. Royal Canad. Inst., 12:324.

A. bennetti Crosby and Bishop, 1928, Mem. Cornell Univ. Agr. Exp. Sta., 101:1034.

A. bennetti Kaston, 1938, Conn. Geol. and Nat. Hist. Surv., Bull. 60:181.

A. bennetti Truman, Proc. Penn Acad. Sci., 16:27.

A. bennetti Chamberlin and Ivie, Am. Ent. Soc. Am., 40:35; *13, 22.

TYPE LOCALITY: Canada: Ontario, near Toronto.

OTHER LOCALITIES: Newfoundland. Island Anticosti. Nova Scotia: Truro. Nova Scotia. Main: N. W. Wells; New Hampshire: White Mts. Massachusetts: Blue Hills. Connecticut: Norwalk; New York: Ithaca. New York: Wallace. Pennsylvania: presque Temagami; Ohio: Put-in-Bay, Lake Erie; Ohio Cantwell Cliffs; Tennessee: Erwin; Tennessee: Little Pigeon Cr.; Indiana: Smith Woods, N. E. Springville; Indiana: Annapolis; Im., Wisconsin: Kimball; Iowa: Mongonia to Boone; Ontario: Minaki. Manitoba: Lake Winnipeg.

Callobius canada (Chamberlin and Ivie)

Amaurobius canada Chamberlin and Ivie, 1947, Ann. Ent. oc. Am., 40:36; *28, 34.

TYPE LOCALITY: British Columbia: Salmon Arms (W. 119° N. 50°).

OTHER LOCALITIES: Oregon: Multnomah Falls; Warm Springs.

Callobius catalinus (Chamberlin and Ivie)

Amaurobius catalinus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:38; *35.

TYPE LOCALITY: Arizona: Soldier's Camp, Bear Wallow Station, Catalina Mts. (W. 110°: N. 32°).

Callobius deces (Chamberlin and Ivie)

Amaurobius deces Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:40; *24, 30.

TYPE LOCALITY: Oregon: Coburg Hills, 3 miles N. E. Coburg (W. 123° 2': N. 44° 10').

OTHER LOCALITIES: Oregon 5 mi. So. Forest Grove; Salem; Spencer's Butte, Eugene.

Callobius enus (Chamberlin and Ivie)

Amaurobius enus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:42; *14, 23.

TYPE LOCALITY: Idaho: 3 mi. N. E. of McCall. (W. 116° 2': N. 44° 56').

OTHER LOCALITIES: Idaho: Last Lake; upper Weiser River, etc. (W. 116°: N. 44°).

Callobius kamelus (Chamberlin and Ivie)

Amaurobius kamelus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:44; *21.

TYPE LOCALITY: Oregon: Meacham Lake, Blue Mts. (W. 118° 28': N. 45° 28').

Callobius melanus (Chamberlin and Ivie)

Amaurobius melanus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Am., 40:46.

TYPE LOCALITY: California: Pacific Grove.

Callobius nevadensis (Simon)

Amaurobius nevadensis Simon, 1884, Bull. Soc. Zool. France, 9:318; *1.

A. nevadensis Banks, 1904, Pros. Calif. Acad. Sci., (3)3:341.

A. nevadensis Petrunkevitch, 1911, Cat. Spid. Amer., 104.

Amaurobius utahensis Chamberlin, 1919, Ann. Ent. Soc. Amer., 12:239.

A. nevadensis Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:46; *16, 26.

TYPE LOCALITY: Nevada.

OTHER LOCALITIES: Utah: Ogden Canyon Hughes Canyon, near Holladay; many localities in Wasatch Mts.; Fillmore, (type of *A. utahensis*); Nevada: Reno; California: Pine Ridge; Aspen Valley, Yosemite Park; Mammoth Lakes; Sierra Co.; Emigrant Gap; near Riverton; Pacific Grove; Weed; Marin County Oregon: Pinehurst.

Callobius nomeus (Chamberlin)

Amaurobius nomeus Chamberlin, 1919, Ann. Ent. Soc. Amer., 12:240; *14:1, 2.

Amaurobius nomeus Gertsch and Jellison, 1939, Amer. Mus. Novitates, 1032:2.

Amaurobius nomeus Chamberlin and Ivie, 1947, Am. Ent. Soc. Amer., 40:48; *11, 18.

TYPE LOCALITY: Utah: Chalk Creek, Uinta Mts., 10,000 ft. elevation (about W. 111° 3': N. 40° 45').

OTHER LOCALITIES: Colorado: Ouray. Wyoming: Bridge Bay, Yellowstone Park. Utah: Mirror Lake, Uinta Mts. Upper Provo River; Ferron Reservoir, Wasatch Plateau; Cedar Mts. Montana: Gallatin Gateway; La Salle; Moose Lake, Ravalli Co.; Skalkaho Divide; Girds Cr., Ravalli Co.

Callobius olympus (Chamberlin and Ivie)

Amaurobius olympus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:49; *15, 25, 37.

TYPE LOCALITY: California: King's Mt., near Palo Alto (W. 122°: N. 37°).

OTHER LOCALITIES: California: Los Angeles; Bartle Dickson Flat, N. E. Shasta Co.; Stevens Cr., Santa Clara Co.; Pacific Grove; Ingleside; Felton. Oregon: Grant's Pass. Washington: Olympia.

Callobius pallescens (Chamberlin)

Auximus pallescens Chamberlin, 1920, Pomona Coll. J. Ent. and Zool., 12:3; *1:3.

Amaurobius pallescens Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:49.

TYPE LOCALITY: California: Claremont.

Callobius pictus (Simon)

- Amaurobius pictus* Simon, 1884, Proc. Soc. Zool. France, 9:320; *3.
A. pictus Banks, 1900, Proc. Wash. Acad. Sci., 2:482.
A. pictus Banks, 1910, Bull. U. S. Nat. Mus., No. 72:19.
A. pictus Petrunkevitch, 1911, Cat. Amer. Spid., 105.
A. pictus Emerton, 1919, Trans. Royal Can. Inst., 12:325.
A. pictus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:50; *19, 20.

TYPE LOCALITY: Washington State.

KNOWN LOCALITIES: Washington: Snoqualmie Pass; Chehallis; Olympus; Tacoma. Oregon: Portland; Perham Cr., Columbia Gorge; N. E. Mohler; 8 mi. So. Solem; Comstock. British Columbia: Sidney, Vancouver Id.; Port Alberni; Lake Cameron; Florence Lake; Departure Bay, Vancouver Id. Alaska: Fox Point; Juneau; Haines; Cook Inlet.

Callobius severinus (Chamberlin and Ivie)

- Amaurobius severinus* Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:51; *26.

TYPE LOCALITY: California: Cambria (W. 121° 5': N. 35° 28').

Callobius severus (Simon)

- Amaurobius severus* Simon, 1884, Bull. Soc. Zool. France, 9:319; *2.
A. severus Petrunkevitch, 1911, Cat. Spid. Amer., 105.
A. severus Emerton, 1919, Trans. Royal Canadian Inst., 12:325.
A. severus Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:51; *17, 27.

TYPE LOCALITY: Washington State.

OTHER LOCALITIES: California: Aspen Valley, Yosemite Park; Goleta; Pacific Grove; Marin Co.; Atherton; San Francisco; Berkeley. Washington: Chehallis; Olympia, Sequim. Oregon: Corvallis. British Columbia: Lake Cameron; Departure Bay, Vancouver Id.; Sidney; Nanaimo.

Callobius shastus (Chamberlin and Ivie)

- Amaurobius shastus* Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:53.

TYPE LOCALITY: California: Weed.

Callobius subnomeus (Chamberlin and Ivie)

- Amaurobius subnomeus* Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:53.

TYPE LOCALITY: California: Pacific Grove.

Callobius tamarus (Chamberlin and Ivie)

- Amaurobius tamarus* Chamberlin and Ivie, 1947, Ann. Ent. Soc. Amer., 40:54; *6-10, 19.

TYPE LOCALITY: Idaho: Lost Valley Reservoir (W. 116° 28': N. 44° 57').

OTHER LOCALITY: Washington: Wawawai.

Genus WALMUS, new

GENEROTYPE.—*Walmus barbarus* new species

This well defined group belongs with *Amaurobius*, sens. str. in having the calamistrum double, although in some species the anterior series is not always distinct. The dorsal surface of the metatarsus in front of the calamistrum flattened and bearing a coat of hairs limited on the posterior edge by the second series of hairs of the calamistrum. The epigynum is characterized by presenting in all cases a more or less conspicuous transverse bar over which two lobes may more or less project from a preceding fold. The tibia of the palpus of the male typically with two processes as shown by figures given hereafter for several species. The eye rows are typically slightly procurved but may vary to slightly recurved in some species; rows more or less well separated from each other, the lateral eyes on each side being mostly a diameter or nearly so apart. The eyes in order of size are a.s., p.s., p.m. and a.m., the anterior medians commonly much smaller than the posterior medians. The ventral spines on tibiae I and metatarsus 1 are normally three pairs with an additional median one at distal end of metatarsus.

KEY TO SPECIES OF WALMUS

- | | |
|--|---------------------------|
| 1. Females | 2 |
| Males | 12 |
| 2. P.m.e. not over 1.5 diameter apart..... | 3 |
| P.m.e. 1.7 to 2.5 their diameter apart..... | 5 |
| 3. P.m.e. about 1 diameter apart chelicerae with 4 teeth on anterior margin
of furrow, 3 on posterior; tib. III and IV w. 2 median dorsal spines..... | 4 |
| <i>W. oblitus</i> , n. sp. | |
| P.m.e. from 1.25 to 1.5 diam. apart; 5 teeth on anterior margin of furrow
of chelicera, 4 on posterior margin; tib. III and IV with no med. dorsal
spines | 4 |
| 4. Cross bar of epigynum caudally very obtusely exercised. (Fig. 7)..... | |
| <i>barbarus</i> , n. sp. | |
| Cross bar of epigynum with caudal margin mesally convex..... | |
| <i>dorotheae</i> , n. sp. | |
| 5. Tibia III with one or two median dorsal spines..... | 6 |
| Tibia III with no median dorsal spine..... | 9 |
| 6. Tibia I with but 2 spines on anterior face and 2 on posterior..... | <i>hagiellus</i> |
| Tibia I with 3 spines on anterior face and 1 or 2 on posterior..... | 7 |
| 7. One spine on anterior face of tibia I, its ventral spines 1-2-2..... | <i>mephisto</i> , n. sp. |
| Two spines on anterior face of tibia I, with 3 pairs of ventral spines..... | 8 |
| 8. No spines on posterior face of tibia I; epigynum as shown in fig. 21..... | |
| <i>mathetes</i> , n. sp. | |
| Tibia I with 2 spines on posterior face; epigynum as shown in fig. 17..... | |
| <i>lutescens</i> (Chamberlin) | |
| 9. Spines of legs much reduced and more or less variable; ventral pines of tib. I
from 0, 0, 1, 1 to 1, 1, 2, 2, with 1 on anterior face and none on posterior
..... | <i>borealis</i> (Emerton) |
| Spines not so | 10 |
| 10. Femora I and II with 2 distal spines on anterior face; p.m.e. twice their
diameter apart; length of cephalothorax 4 mm..... | <i>hermosus</i> , n. sp. |
| Femora I and II with a single distal spine on anterior face; p.m.e. 1.7 times
diameter or less apart; cephalothorax typically 3.25 mm. or less long..... | 11 |
| 11. Tibia I with but 1 spine on posterior face; epigynum as in fig. 12..... | |
| <i>agastus</i> , n. sp. | |
| Tibia I with 2 spines on posterior face; epigynum as in fig. 14..... | |
| <i>heathi</i> , n. sp. | |

- | | | |
|-----|---|---------------------------|
| 12. | Tibia III with no median dorsal spine..... | 13 |
| | Tibia III with a median dorsal spine..... | 14 |
| 13. | Tibia I with no spine on posterior face, 1 on anterior..... | <i>borealis</i> (Emerton) |
| | Tibia I with 2 spines on posterior face, 3 on anterior..... | <i>heathi</i> , n. sp. |
| 14. | P.m.e. scarcely their diameter apart..... | <i>varus</i> , n. sp. |
| | P.m.e. 1.3 or more times their diameter apart..... | 15 |
| 15. | Metatarsus III with a median dorsal spine toward base..... | <i>hagiellus</i> , n. sp. |
| | Metatarsus III with no median dorsal spine..... | 16 |
| 16. | Both prongs of tibial process of palpus relatively stout and distally rounded.
(Fig. 20) | <i>mathetes</i> , n. sp. |
| | Prongs of tibial process more slender, distally subacute in dorsal view..... | <i>barbarus</i> , n. sp. |

Walmus agastus new species

Figure 12

♀. Carapace light reddish brown. Chelicerae reddish brown. Endites dull orange. Labium light dusky brown. Sternum dusky yellow, lighter in center. Legs and palpi light yellowish brown. Abdomen mottled dark and light gray, with a series of paired light spots on posterior half above. Spinnerets dull light yellowish.

Height of clypeus about equal to the diameter of an a.s. eye. Eyes not much differing in size, the order of size being a.s., p.s., p.m. and a.m., from largest to smallest. Anterior row of eyes straight; a.m. eyes a little more than a radius apart, about 1.5 times a diameter from the laterals. Posterior row slightly procurved; p.m. 1.7 diameter apart, nearly 3 diameters from the laterals. Quadrangle of median eyes wider behind than in front, wider behind than long. Lateral eyes on each side about their radius apart. Chelicerae with 3 teeth on anterior margin of furrow and 4 on posterior. Femora I, II and II with a single anterodistal spine, IV with 1 posterodistal spine. Patella III with both anterior and posterior spine, the other patellae without spines. Spines of tibia I: ventral, 2, 2, 2, with 3 on anterior face and 1 distally on posterior face. Ventral spines of metatarsus I, 2-2-3.

Epigynum as figured (Fig. 12).

Length, 6.8 mm. Length of cephalothorax, 3 mm. (width 2 mm.); of tibia-patella k, 2.75 mm.; of tibia-patella IV, 2.6 mm.

TYPE LOCALITY: California: Laguna Beach. Female holotype taken July 25, 1931.

Walmus barbarus new species

Figures 5-8

♀ Carapace brown. Chelicerae dark brown. Endites reddish brown, with tips whitish. Labium dusky brown, with whitish tip. Sternum light brown. Legs and palpi orange brown, darker distally. Abdomen grey, with usual dorsal pattern moderately distinct.

Height of clypeus about equal to the diameter of an anterior side eye. Eyes unequal, the order of sizes being a.s., p.s., p.m. and a.m. Anterior eye row faintly procurved; a.m. eyes about a diameter apart, twice as far from the side eyes. Posterior row of eyes faintly procurved; p.m. about 1.25 diameter apart, about 2.5 times a diameter from the laterals. Quadrangle of

median eyes slightly wider than long, wider behind than in front. Groove of chelicerae with 5 teeth in front; of which the fourth from the fang is largest as usual, and 4 behind. Spines of tibia I: ventral, 2, 2, 2; anterior face, 3; posterior face, 2. Spines of metatarsus I: ventral, 2, 2, 2, anterior 2; posterior 2. Tibia III with a median dorsal spine (on one side in type); Tibia IV and metatarsus III and IV with no median dorsal spines.

Epigynum as drawn (Fig. 7).

Length, 8 mm. Length of cephalothorax, 3.4 mm. (width 2.25 mm.) of tibia-patella I, 3.08.

♂ Carapace light brown. Chelicerae reddish brown. Endites orange and Labium dusky orange, the tips of all whitish. Sternum yellowish brown. Legs and palpi anber orange, the palpal organs darker. Abdomen mottled gray, with the dorsal pattern of light gray, the two spots of each pair more or less joined to form wavy cross bands on the posterior part; venter with a pale gray band along each side and a pair of parallel indistinct bands near middle. Spinnerets light orange.

Tibial apophysis as drawn (Figures 5, 6).

Length of holotype, 4.8 mm. Length of cephalothorax, 2.5 mm. (width 1.67 mm.); tibia-patella I, 2.8 mm.; of tibia-patella IV, 2.6 mm.

TYPE LOCALITY: California: Santa Barbara. Types taken in March, 1913, by R. V. Chamberlin.

Walmus borealis (Emerton)

Figures 9, 10

Amaurobis borealis Emerton, 1909, Trans. Conn. Acad. Sci., 14:214; *8:3.

Amaurobius borealis Kurata, 1937, Canad. Field Nat., 51:14.

Carapace light dusky brown, lighter on top of head. Chelicerae reddish brown (lighter in the male). Endites dull orange. Labium and sternum dusky brown. Legs and palpi light yellowish. Abdomen dark gray with a series of light spots on dorsum. Spinnerets yellowish.

♀ Both rows of eyes slightly procurved. A.s. eyes largest, the a.m. eyes a scant radius apart, a little more than a diameter from the side eyes. P.m. eyes about 1.5 diameter apart, a little less than 2 diameters from the side eyes. Median ocular quadrangle about as wide behind as long. Spines of legs reduced in number and development, with a tendency to inequality. Spines of tibia I: ventral 1, 1, 2, 2 to 0, 0, 2, 2 and 0, 0, 1, 1; 0 on posterior face, 1 on anterior. Spines of metatarsus I: ventral mostly 2, 2, 2 or 2, 1, 2, with 1 or 2 on anterior side and 1 on posterior. No median dorsal spine on tibiae and metatarsi III and IV. Teeth of chelicerae normal.

Epigynum as figured.

Length, 5 mm. Length of cephalothorax, 2.15 mm. (width 1.6 mm); of tibia-patella I, 2.25 mm.; of tibia-patella IV, 2 mm.

TYPE LOCALITY: New Hampshire: Fitzwilliam.

OTHER LOCALITIES: Maine: Portland; Presque Id. New York: Essex Co.; McLean. Vermont: Jamaica (July 11, 1913, R. V. Chamberlin). Ottawa: Mer Bleue, New Foundland, Quebec, Montreal, Minaki, and Lake Winnipeg (Emerton).

Walmus dorotheae, n. sp.

Figure 11

♀ Light markings on abdomen extensive in form of basal sagittate mark, chevrons and oblique lines on sides, the dark areas also appearing punctate with light dots seen under microscope. Carapace and sternum dusky yellow.

Posterior median eyes nearly once and a half their diameter apart, about three times their diameter from the laterals. Anterior median eyes their diameter apart. Quadrangle of median eyes much narrower in front as usual. Lateral eyes their radius apart. Ventral spines of tibia I, 2-2-2; 3 on anterior side, 2 on posterior. Ventral spines of metatarsus I, 2-2-2, 2 on anterior side, 2 on posterior; no median distal spine below. No median dorsal spine on tibiae or metatarsi of legs III and IV.

Teeth of chelicerae normal.

Length, 6.2 mm. Length of cephalothorax, 3 mm. of tibia-patella I and IV, 2.8 mm.

LOCALITY: California: 2 mi. N. E. of Hammond. 1 ♀ March 23, 1941, Dorothea Mulaik Coll.

Walmus hagiellus new species

Figure 13

♀ Carapace light brown. Chelicerae reddish brown. Endites orange brown with whitish tips. Legs and palpi yellowish brown. Abdomen mottled light and dark gray, with a fairly distinct pattern on dorsum. Spinnerets yellowish brown. Epigynum reddish brown.

Eyes small, subequal, the order of size as usual. Anterior row straight. A.m.e. about a diameter apart and about 2 diameters from the side eyes. Posterior row very slightly procurved. P.m.e. about 1.7 diameter apart and about 3 diameters from the side eyes. Median ocular quadrangle about as wide behind as long, and wider behind than in front. Chelicerae with teeth as usual, 5 on front margin of groove and 4 on posterior.

Femur 1 with 2 distal anterior spines. Spines of tibia I: ventral, 2, 2, 2; on anterior face, 3; on posterior 2. Spines of metatarsus I; ventral, 2, 2, 2; anterior face 2; posterior, 2. Tibia III with 1 median dorsal spine. Tibia IV and metatarsi III and IV with no median dorsal spine.

Epigynum as in fig. 13.

Length, 7mm. Length of cephalothorax, 7 mm. (width, 2.2 mm.); of tibia-patella I, 3.15 mm.; of tibia-patella IV, 3.1 mm.

TYPE LOCALITY: California; exact locality not given.

Walmus heathi, new species

Figures 14, 15

♀ Carapace brownish yellow, the pars cephalica clearer yellow. Sternum and legs yellow. Chelicerae chestnut. Abdomen above black with a broad light basal area followed by light chevrons of which the first two are mesally interrupted.

Anterior row of eyes straight or a little recurved; a.m.e. much smaller than the laterals, their diameter apart, nearly three times their diameter from the laterals. Posterior row of eyes also a little recurved; p.m.e. about 2.25

times their diameter apart, twice as far from the laterals. Quadrangle of median eyes much narrower in front than behind. Lateral eyes on each side separated by their diameter. Teeth of furrow of chelicerae 5 anteriorly and 4 posteriorly, proportioned as usual.

Ventral spines of tibia I 3 pairs; 3 on ant. face and 2 on posterior. Ventral spines of met. 1, 2-2-3, with 2 on anterior face and 2 on posterior. Femora I to 111 w. single distal spine on anterior side, IV with distal spine on posterior side. Legs 111 and IV with no median dorsal spine on tibiae or metatarsi.

Epigynum as shown in fig. 14.

Length, 6 mm; cephalothorax, 3.5 mm.; tibia-patella I, 3 mm; tibia-patella IV, 2.8 mm.

♂ P.m.e. scarcely more than diam. apart, 2.5 times as far from laterals. Separation of lateral eyes as in ♀.

Spines of tibia 1 as in ♀. Tib. III w. a median dorsal spine, IV without such spine. Met. III and IV also without med. dorsal spine.

Tibial process of palpus as drawn (Fig. 15).

Length, 5 mm. Length of cephalothorax, 3 mm; of tibia-patella I, 3.5 mm; of tibia-patella IV, 3 mm.

TYPE LOCALITY: California: Pacific Grove, Aug. 15, 1931. Several males and females.

Walmus hermosus new species

Figure 16

♀ Color of carapace, sternum and legs typical. Abdomen above dark gray or nearly black, the lines of light chevrons thick and widely interrupted at middle.

A.m.e. their diameter apart, three times as far from the laterals. P.m.e. twice their diameter apart, about twice as far from the laterals. Femora I and II with 2 distal spines on anterior face, III with 1 anterior and 1 posterior, and IV with 1 posterior. Spines of tibia I: ventral, 2, 2, 2; anterior 3; posterior, 2. Spines of metatarsus I: ventral, 2, 2, 3; anterior face, 3; posterior, 2.

Epigynum as in fig. 16.

Length, 9 mm. Length of cephalothorax, 4 mm.; of tibia-patella III and IV, 3.2 mm.

TYPE LOCALITY: California: Hermosa Beach. Female holotype taken March 18, 1941.

Walmus latescens (Chamberlin)

Figures 17, 18

Auximus latescens Chamberlin, 1919, Jour. Ent. and Zool., 12 (1): 2; *4, 5.

Carapace light reddish brown, with margins dusky and with faint radial streaks. Chelicerae dark chestnut brown in the female, reddish brown in the male. Labium and endites reddish brown in the female, orange in the male, the tips of the endites whitish and the labium shaded with dusky. Sternum brownish yellow, shaded with dusky except at the center. Legs and palpi yellowish brown, without distinct markings. Abdomen dark gray; with a pattern of pale gray spots above and four gray longitudinal lines on the venter. Spinnerets dusky brown.

♀ Eyes small, in order of decreasing size, a.s., p.s., p.m. and a.m. Anterior row scarcely procurved. A.m.e. about a diameter apart, nearly three diameters from the laterals. Posterior row straight or scarcely procurved. P.m.e. about 2 diameters apart, about 4 diameters from the lateral eyes. Median ocular quadrangle a little wider behind than long. Teeth of chelicerae normal. Spines of tibia I: ventral, the usual 3 pairs; anterior face, 3; posterior face, 2. Spines of metatarsus I: ventral, 3 pairs; anterior face, 3; posterior face, 2. Tibia III with a median dorsal spine, IV with none. Metatarsi I: no median dorsal spines.

Epigynum as drawn (Fig. 17).

♂ Spines of legs as in ♀; except that metatarsus III has a median dorsal spine and tibia IV may also have a median dorsal spine. Ventral spine of metatarsus I, 2-2-3.

Tibia of palpus as drawn (Fig. 18).

Length, 6.6 mm. Length of cephalothorax, 3.3 mm. (width, 2.46 mm.); of tibia-patella I, 3.75 mm.; of tibia-patella IV, 3.3 mm.

TYPE LOCALITY: California: Claremont; paratypes taken Dec. 25, 1932 by W. Ivie.

OTHER LOCALITIES: California: Santa Monica (♂ holotype, ♀ allotype, 1♂ and 3♀ paratypes); Irvine (2♀), R. V. Chamberlin coll. July 17, 1931; Eaton's Canyon, Los Angeles Co., 1♀ taken in Mar., 1913, by R. V. Chamberlin.

Walmus mathetes new species

Figures 19-21

♂ Abdomen light gray with pattern of basal median mark and posterior chevrons black.

A.m.e. their diameter apart. P.m.e. about 1.7 diameter apart, 2.5 times their diameter from side eyes. Teeth of chelicerae normal. Femora 1 and 2 with 1 anterior distal spine, III with both anterior and posterior and IV with 1 posterior. Spines of tibia I: ventral 2, 2, 2; anterior face, 3; posterior, 2. Spines of metatarsus I: ventral, 2, 2, 3; anterior face, 3; posterior face, 3. Tibia III with a median dorsal spine, metatarsus III with none.

Tibia of male palpus as shown in fig. 19 and 20.

Length, 5 mm.; of cephalothorax, 2.9 mm.

♀ A.m.e. their radius apart, 2.5 their diameter from laterals. P.m.e. 1.5 times their diameter apart, 2.5 times their diameter from the laterals.

Epigynum as drawn (Fig. 21).

Length, 5 mm. Length of cephalothorax, 2.5 mm; of tibia-patella I, 2.3 mm.; of tibia-patella IV 2.4 mm.

TYPE LOCALITY: California: Berkeley. ♂ holotype and ♀ allotype taken in October, 1919.

Walmus mephisto new species

Figure 22

♀ Carapace and chelicerae. Legs yellow. Abdomen dark gray or blackish with yellow basal mark and paired spots of same color, these elongate in posterior region but not meeting to form chevrons at the middle. Sides with oblique yellow streaks and venter with longitudinal light bands.

A.m.e. about their radius apart. P.m.e. about 1.7 their diameter apart, 3 diameters or more from the lateral eyes. Spines of tibia I: ventral, 2, 2, 2; on anterior face, 3; on posterior 1. Tibia III with a median dorsal spine, tibia IV and metatarsi III and IV without such spine. Teeth of chelicerae normal in number and relative sizes.

Epigynum as shown in fig. 22.

Length, 7 mm. Length of cephalothorax, 3 mm.; of tibia-patella I and IV, 2.8 mm.

TYPE LOCALITY: California: Mt. Diablo. One ♀.

Walmus oblitus, new species

Figure 23

Posterior median eyes smaller than the laterals, only about their diameter apart. Quadrangle of median eyes not much narrower in front than behind, as usual.

Leg III with tibia bearing two median dorsal spines, one at base and one a little distad of middle; metatarsus with a median dorsal spine toward base. Leg IV with tibia bearing 2 median dorsal spines and the metatarsus also with two.

Tibia I with 3 pairs of spines beneath, none on anterior side and one small one on posterior side toward distal end. Metatarsus I with 3 pairs beneath and a single median ventral one at distal end; two on anterior side and one or two on posterior side.

Chelicerae with 3 teeth on lower margin and 4 on upper margin.

Epigynum as drawn (Fig. 23).

Length, 6 mm.; of cephalothorax, about 2.9 mm.; of tibia-patella I, 2.9 mm.; of tibia-patella IV, 2.8 mm.

TYPE LOCALITY: California: Brookdale. One ♀ taken by R. V. Chamberlin, March, 1913.

Walmus varus, new species

Figure 24

Dorsum of abdomen black punctate with small light dots, the color pattern obscure, chevrons in narrow light lines interrupted at middle.

Posterior median eyes scarcely their diameter apart, nearly twice as far from the laterals. Anterior median eyes their radius apart. Lateral eyes less than their radius apart. Ventral spines of tibia I, 1-2-2-2, 2 on anterior face, none on posterior. Tibiae III and IV with dorsal median spines 1-1; metatarsi III and IV with no spines on mid-dorsal line.

Epigynum as shown in fig. 24.

Length, 6 mm. Length of cephalothorax 4 mm.; of tibia-patella I, 4.2 mm.; of tibia-patella IV, 4 mm.

LOCALITY: California: 2 mi. N. E. Hammond. 1 ♂, March 23, 1941, D. Mulaik.

Genus CALLIOPLUS Bishop and Crosby

GENEROTYPE.—*Callioplus hoplites* (Bishop and Crosby)

Like *Pimus* and differing from *Titanoeca* in having the anterior median eyes much smaller than the posterior median eyes. From *Pinus* it differs in the form of the epigynum, which is like that of *Callobius* in presenting two large lobes embracing a small median one, and in the form of the tibial apophysis of the palpus of the male, which in its complexity approaches that of *Titanoeca*.

Callioplus armipotens (Bishop and Crosby)

Amaurobius armipotens Bishop and Crosby, 1926, Jour. E. Mitchell Sci. Soc., 41:170; *9-11.

Callioplus armipotens Bishop and Crosby, Proc. Biol. Soc. Washington, 1935, 48:45.

TYPE LOCALITY: North Carolina: Grandfather Mountain.

OTHER LOCALITY: North Carolina: Blowing Rock.

Callioplus euoplus Bishop and Crosby

Callioplus euoplus Bishop and Crosby, Proc. Biol. Soc. Wash., 1935, 48:45; *1-3.

TYPE LOCALITY: Maine: Molunkus Pond, ♂ holotype and ♀ allotype taken August 25, 1925.

OTHER LOCALITIES: Maine: Preque Isle; Sebarticook Lake. Quebec: Ile d'Alma, Lac St. Jean; Bagot Ville.

Callioplus hoplites (Bishop and Crosby)

Amaurobius hoplites Bishop and Crosby, 1926, Jour. E. Mitchell Sci. Soc., 41:171; *12-14.

Callioplus hoplites Bishop and Crosby, 1935, Proc. Biol. Soc. Wash., 48-45.

TYPE LOCALITY: North Carolina: Montreal.

Callioplus hoplomachus (Bishop and Crosby)

Amaurobius hoplomachus Bishop and Crosby, Jour. E. Mitchell Sci. Soc., 41:172; *15-17.

Callioplus hoplomachus, 1935, Proc. Biol. Soc. Wash., 48:45.

TYPE LOCALITY: North Carolina: Mt. Pisgah.

Callioplus macarius new species

Figures 26, 27

A species larger in size than *hoplites*, *armipotens* and *hoplomachus* but much smaller than *tibialis*. From all of this distinct especially in the form of the tibial apophyses of the male palpus as shown in figs. 26 and 27. The epigynum also distinct (see fig. 25).

The carapace is dusky brown, with the pars cephalica clearer and lighter in color and the eyes edged with black. Legs yellow or dark yellow. Abdomen above with median area yellow, enclosing a sagittate dark mark in basal portion; sides of dorsum and sides nearly black, the black of dorsum with edges serrate or broken behind. Sternum and venter dusky or black, the black color often blotched with lighter color.

Eyes of posterior row equal in size, equidistant, in a distinctly recurved row. Anterior eyes in a slightly recurved row, with the medians much smaller than the laterals and closer to each other than to the laterals.

Cribellum divided.

Characters of palpus as shown in figs. 26 and 27.

Length of male about 4 mm.; of female up to 5.2 mm.

LOCALITY: Washington: Snoqualmie Pass, on Dansey Creek. Twelve specimens, males and females taken Sept. 16, 1935 by R. V. Chamberlin and W. Ivie.

Callioplus pantoplus (Bishop and Crosby)

Callioplus pantoplus Bishop and Crosby, 1935, Proc. Biol. Soc. Wash., 48:46; *4-6.

TYPE LOCALITY: Tennessee: Sevier Co., Laurel Creek; ♂ holotype, ♀ allotype, and 2 ♂ and 2 ♀ paratypes taken Oct. 8, 1926. Tennessee: Mill Creek, below the falls, Mt. Leconte; 1 ♂ and 2 ♀, Oct. 10, 1926.

Callioplus tibialis (Emerton)

Amaurobius tibialis Emerton, 1888, Trans. Conn. Acad. Sci., 7:452; *10:3-3c.

A. tibialis Crosby and Bishop, 1928, Mem. Cornell Univ. Exp. Sta., 101:1034.

Callioplus tibialis Bishop and Crosby, 1935, Proc. Biol. Soc. Wash., 48:45.

TYPE LOCALITY: New Hampshire: Mt. Washington.

OTHER LOCALITIES: New York: Mt. Whiteface; Vermont: Mt. Mansfield (R. V. Chamberlin coll.).

Genus HESPERAUXIMUS Gertsch

GENEROTYPE.—*Hesperauximus sternitzkii* (Gertsch)

This genus, of which two species are now known, falls with the genera having the calamistrum uniseriate. Among this it is distinguished by the large size of the anterior median eyes and the structure of the copulatory organs. The epigynum presents posteriorly a cross bar opposite each end of which the lateral limiting fold presents a small chitinous tooth. The apophysis of the tibia of the male palpus is much simpler than in *Titanoeca*, consisting of 2 or 3 simple processes.

Hesperauximus sternitzkii (Gertsch)

Hesperauximus sternitzkii Gertsch, 1937, Amer. Mus. Novitates, 936:4; *1-4.

TYPE LOCALITY: California: San Francisco.

OTHER LOCALITY: California: San Mateo Co. Five ♂s and 4 ♀s taken in 1938.

Hesperauximus agelenoides (Emerton)

Figure 28

Amaurobius agelenoides Emerton, 1919, Canadian Ent. 51:106; *7:1a, c, d, 2b.

A. agelenoides Chamberlin and Ivie, 1947, Bull. Univ. of Utah, Biol. Series, 10n.3:7, 9.

TYPE LOCALITY: Canada: Jasper (♂ holotype); Banff (♀ allotype).

OTHER LOCALITY: Alaska: Matanuska (W. 149°; N. 61°). J. C. Chamberlin coll.

Genus PIMUS, new

GENEROTYPE.—*Pimus pitus* new species

Like *Titanoeca* in having the calamistrum single. It differs from *Titanoeca* in the relatively much smaller anterior median eyes. The eye rows are rather close together, the laterals on each side their radius or less apart. It differs also in the characteristic form of the epigynum, the much simpler tibial development of the male palpus, this consisting typically of two simple prongs on the outer side of distal end. The ventral spines of tibia 1 not evenly paired, the arrangement usually something like 1, 1, 2, 2 or 1, 2, 2, 2. Ventral spines of metatarsus I, normally 2, 2, 3, wholly lacking the numerous short spinules characteristic of *Titanoeca*. In the known species there are two spines at antero-distal corner of femur I.

Known at present only from the following four species.

KEY TO SPECIES OF PIMUS

1. Tibia I with 2 spines on anterior side and 1 on posterior; tibiae III and IV with 2 median dorsal spines.....*pitus*, n. sp.
Tibia I with 1 spine on anterior face and no spine on posterior side..... 2
2. Tibia III with no median dorsal spine, IV with 2 or 3.....*fractus* (Chamberlin)
Tibia III with one or two median dorsal spines..... 3
3. A.m.e. about their radius apart; 1 spine on anterior face of met. I; epigynum as in fig.*leucus*, n. sp.
A.m.e. fully their diameter apart; met. 1 w. 2 spines on anterior face; epigynum as in fig.*hesperellus*, n. sp.

***Pimus fractus* (Chamberlin)**

Figure 29

Amaurobius fractus Chamberlin, 1920, Ent. News, 31:293; *

♀ In this species the a.m.e. are fully their diameter apart and a little farther from the lateral. The p.m.e. are their diameter apart and more than twice as far from the laterals. Femur I has 2 distal spines on anterior side. Tibia 1 with ventral spines ordinarily 2, 1, 2, 2, with 1 spine on anterior face and 0 on posterior. Tibia III with no median dorsal spine but tibia IV may have 2 or 3.

Epigynum as drawn (Fig. 29).

TYPE LOCALITY: California: Claremont. (♀ holotype).

OTHER LOCALITIES: California: Stanford; Felton. (R. V. Chamberlin coll.).

***Pimus hesperellus*, new species**

Figure 30

♀ Carapace and chelicerae light chestnut yellow. Sternum and legs yellow. Abdomen appearing grey, under closer scrutiny showing above a series of large paired light marks over a black background, the marks more narrowly separated or in part wholly confluent into chevrons posteriorly.

P.m.e. their diam. apart, about twice as far from the laterals. A.m.e., small as usual, their diameter or a little more apart. Lateral eyes on each side less than their radius apart. Teeth of chelicerae normal in number but the most proximal one of lower margin in type but little largest.

Femur 1 with 2 anterior distal spines, II with 1; III with 3 distal spines, (one ant., 1 post, and 1 med.) and IV with 2. Tib. III with 2 median dorsal spines, met. III with 1. Tib. IV w. 1 med. spine, met IV w. 1 subbasal. Ventral spines of tib. I: 1, 1, 2, 2 or 1, 2, 2, 2; 1 spine on anterior face, 0 on posterior. Met. 1 with ventral spines 2-2-3, 2 spines on ant. face, 0 on posterior.

Epigynum as shown in fig. 30.

Length, 5 mm. Length of cephalothorax, 2.6 mm.; of tibia-patella I, 2 mm.; of tibia-patella IV, 2.25 mm.

***Pimus leucus* new species**

Figure 31

♀ Carapace pale chestnut, the chelicerae a darker chestnut. Legs yellow. Abdomen of type with markings obliterated, the pubescence have been largely rubbed off.

A.m.e. their radius apart, about 1.5 times their diameter from the laterals. Lateral eyes on each side somewhat less than their radius apart. Teeth of chelicerae normal. Femur 1 with 2 distal anterior spines. Tibia 1 with ventral spines 1, 2, 2, 2, and with 1 on anterior face and 0 on posterior. Metatarsus I with ventral spines 2, 2, 3; 2 spines on anterior face and 0 on posterior. Tibiae III and IV and metatarsi II and IV each with 1 median dorsal spine.

Epigynum as shown in fig. 31.

Total length, 6 mm. Length of cephalothorax, 3.25 mm.; of tibia-patella I, 3 mm.; of tibia-patella IV, 3 mm.

TYPE LOCALITY: Mt. Shasta. Female holotype and immature paratype taken August 25, 1931, by W. Ivie.

***Pimus pitus* new species**

Figures 32-34

♀ Carapace, sternum and legs yellow. Chelicerae light chestnut. Abdomen dorsally black, with pairs of white spots the anterior pair of which are circular while the others are linear and oblique as usual with the most posterior pairs more or less confluent at middle.

Eyes nearly as in *hesperellus*. Femur I with 2 subdistal spines on anterior side. Spines of tibia I: ventral 1, 2, 2, 2; anterior 2; posterior 1. Spines of metatarsus I: ventral, 2, 2, 3; anterior, 2; posterior, 1. Tibiae III and IV with 2 median dorsal spines. Metatarsi III and IV each with 1 median dorsal spine.

Epigynum represented in fig. 32.

♂ Color as in female. Spines of tibia I: ventral, 1, 2, 2, 2; anterior 3; posterior 2. Spines of metatarsus I: ventral, 2, 2, 3; anterior 3, posterior 2. Tibiae III and IV with 2 median dorsal spines and the corresponding metatarsi with 1 as in the ♀.

Characters of palpus as shown in figs. 33 and 34.

Length, 7 mm. Length of cephalothorax, 3.25 mm.; of tibia-patella I, 3.5 mm.; of tibia-patella IV, 3.5 mm.

TYPE LOCALITY: California: Yosemite Park, Wawona Camp. Male holotype, female allotype, and 2 female paratypes taken September 17, 1941.

Genus TITANOECA Thorell, 1870

GENEROTYPE.—*Titanoeca obscura* (Walckenaer)

Distinguished by having the calamistrum single and the anterior median eyes large, subequal to the laterals. In the male palpus the tibial is characteristically complicated, one of the most intricate known. The epigynum presents a median septal piece which expands caudally in deltoid form.

The specific diversity in the North American members of the genus seems to be limited but there is need for study of the problem of possibly sub-specific variation.

Titanoeca americana (Emerton)

Titanoeca americana Emerton, 1888, Trans. Conn. Acad., 7:453; *10:4.

Titanoeca americana Emerton, 1902, Common Spiders, 215; *493.

Amaurobius americanus Petrunkevitch, 1911, Cat. Amer. Spiders, 103.

Amaurobius americanus Crosby and Bishop, 1928, Mem. Cornell Univ. Agr. Sta., 101:1034.

Titanoeca americana Karton, 1938, Bull. Conn. Geol. and Nat. Hist. Survey, 60:182.

TYPE LOCALITY: Connecticut: New Haven and Meriden.

OTHER LOCALITIES: New Hampshire: Mt. Monadnock. New York: Ithaca; Enfield Glen; Paradise; Bayville.

Titanoeca americana anopla new variety

Figure 35

In coloration and general structure agreeing in most points with *americana* but differing from typical specimen of the latter in the almost total absence of spines from the legs. Thus the anterior metatarsi have only a single pair of spines at the distal end in place of the commonly numerous irregularly viseriate spines in *americana*. Also the other legs in the three types specimens bear no spines excepting at the distal end of the metatarsi.

An epigynum is represented in fig. 35.

Length, 5 mm.

TYPE LOCALITY: Texas: 12 mi. N. of Alice, Jim Wells Co. Three females taken June 6, 1941 by S. and D. Mulaik.

The male, when discovered, should make possible a more adequate evaluation of this form.

Titanoeca brunnea (Emerton)

Titanoeca brunnea Emerton, 1888, Trans. Conn. Acad., 7:453; *10:5-5c.

Titanoeca brunnea Chamberlin and Ivie, 1944, Bull. Univ. of Utah, Biol. Series, 8, no. 5:

TYPE LOCALITY: Connecticut: New Haven.

OTHER LOCALITIES: Maryland. Georgia: N. of Sylvania, 3 mi. S. E. Savannah; S. E. Toccoa. Florida: West shore of Lake Newnan, 3 females; Interlachen taken June 13, 1935; Gainesville, February 10, 1942. Ohio: Sugar Grove, August 3 and 17, 1935, females and immature. Tennessee: Bristol (R. V. Chamberlin coll.)

Titanoeca silvicola (Chamberlin and Ivie)

Figure 36

Titanoeca silvicola Chamberlin and Ivie, 1947, Bull. Univ. of Utah, Biol. Series, 10 no. 3:15; *7, 8.

Amaurobius nigrellus Chamberlin, 1920, Jour. Pomona Coll. Jour. Ent. and Zool., 12:2.

TYPE LOCALITY: Utah: City Creek Canyon.

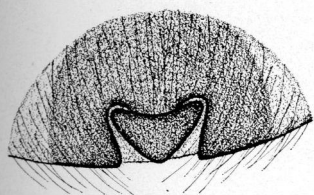
OTHER LOCALITIES: Various localities in Rocky Mountains. Alaska: College; Matanuska River at Hicks Creek; Matanuska. Kansas. Texas. New Mexico. Arizona. California.

This western form is very close to *T. americana* and is kept apart mainly on the basis of slight differences in the copulatory organs. While the species is represented by a considerable amount of material in our collection, most specimens are immature or of the female sex. Final evaluation of the variations noted in different areas must await larger series of both sexes.

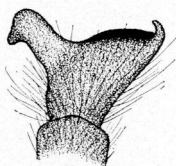
Explanation of Figures

PLATE I

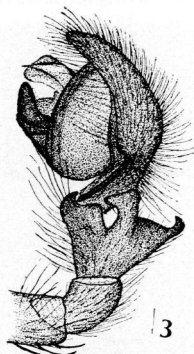
1. *Amaurobius ferox* (Walckenaer). Epigynum.
2. *Amaurobius ferox* (Walckenaer). Tibia of male palpus, dorsal view.
3. *Amaurobius peninsulanus* (Banks). Male palpus, lateral view.
4. *Amaurobius peninsulanus* (Banks). Tibia of male palpus.
5. *Walmus barbarus*, n. sp. Left male palpus, ectal view.
6. *Walmus barbarus*, n. sp. Tibia of left male palpus, dorsal view.
7. *Walmus barbarus*, n. sp. Epigynum.
8. *Walmus barbarus*, n. sp. Patella and tibia of fourth leg of male.
9. *Walmus borealis* (Emerton). Epigynum.
10. *Walmus borealis* (Emerton). Tibia of male palpus, dorsal view.
11. *Walmus dorotheae*, n. sp. Epigynum.



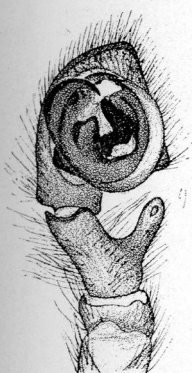
1



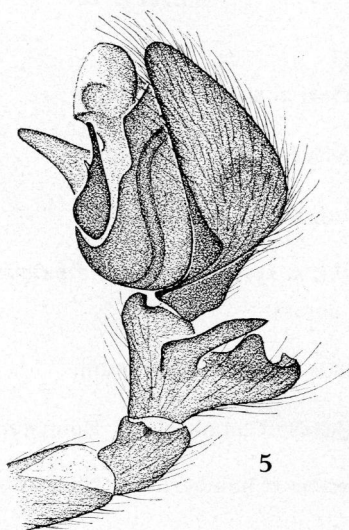
2



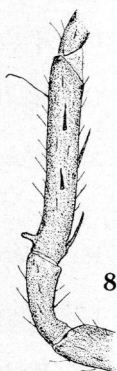
3



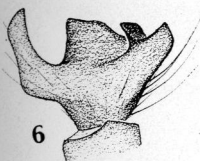
4



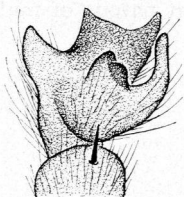
5



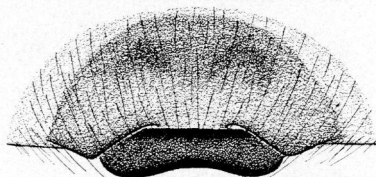
8



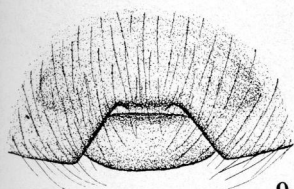
6



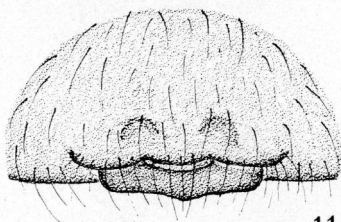
10



7



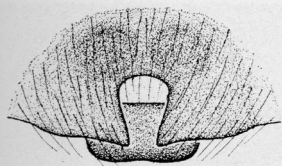
9



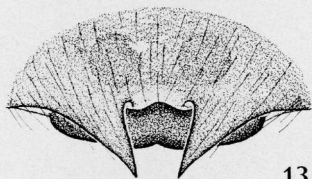
11

PLATE II

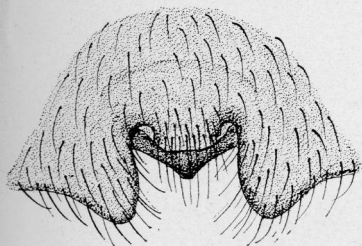
12. *Walmus agastus*, n. sp. Epigynum.
13. *Walmus hagiellus*, n. sp. Epigynum.
14. *Walmus heathi*, n. sp. Epigynum.
15. *Walmus heathi*, n. sp. Tibia of male palpus, view a little mesad of dorsal.
16. *Walmus hermosus*, n. sp. Epigynum.
17. *Walmus latescens* (Chamberlin). Epigynum.
18. *Walmus latescens* (Chamberlin). Tibia of ♂ palpus.
19. *Walmus mathetes*, n. sp. Tibia of ♂ palpus.
20. *Walmus mathetes*, n. sp. Right palpus of male, ectal view.



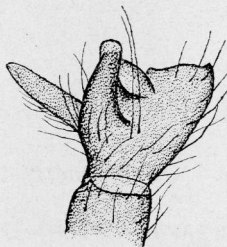
12



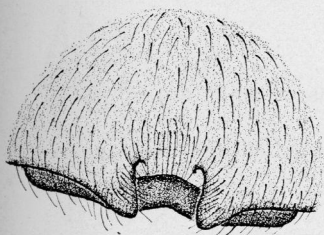
13



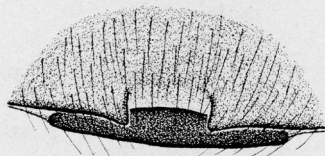
14



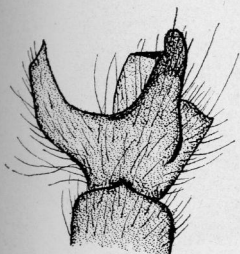
15



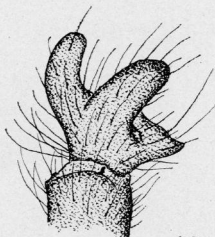
17



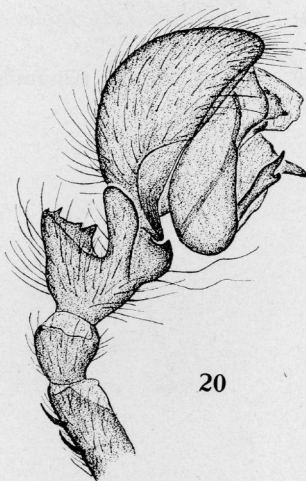
16



18



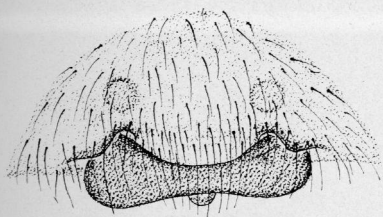
19



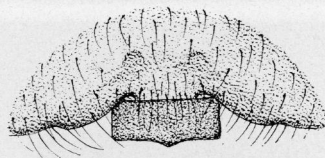
20

PLATE III

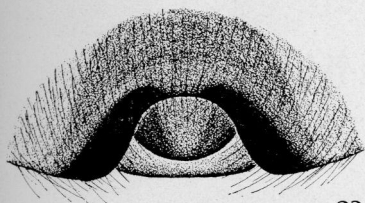
21. *Walmus mathetes*, n. sp. Epigynum.
22. *Walmus mephisto*, n. sp. Epigynum.
23. *Walmus oblitus*, n. sp. Epigynum.
24. *Walmus varus*, n. sp. Dorsal view of tibia and patella of left male palpus.
25. *Callioplus macarius*, n. sp. Epigynum.
26. *Callioplus macarius*, n. sp. Right palpus of male, dorsal view.
27. *Callioplus macarius*, n. sp. Patella and tibia of right male palpus, ectal view.
28. *Hesperauximus agelenoides* (Emerton). Epigynum.
29. *Pimus fractus* (Chamberlin). Epigynum.



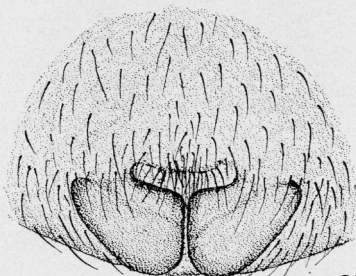
21



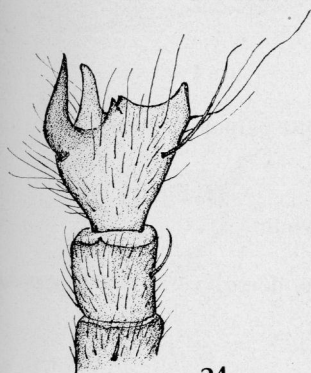
22



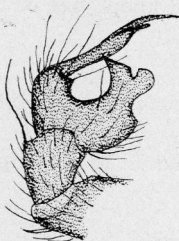
23



25



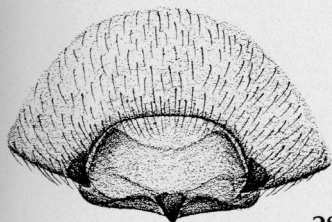
24



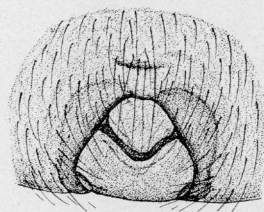
27



26



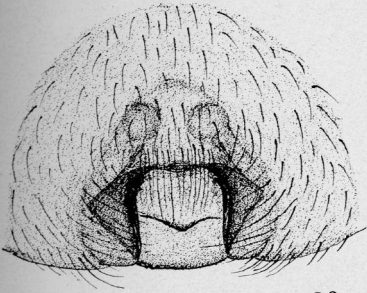
28



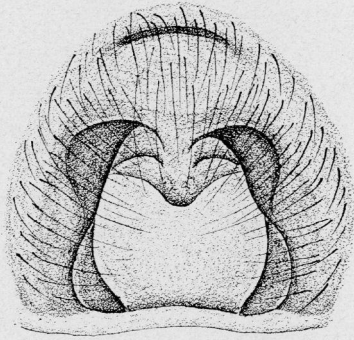
29

PLATE IV

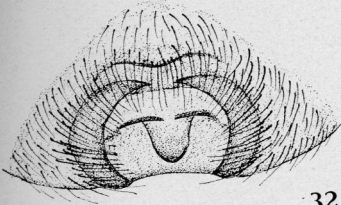
30. *Pimus hesperellus*, n. sp. Epigynum.
31. *Pimus leucus*, n. sp. Epigynum.
32. *Pimus pitus*, n. sp. Epigynum.
33. *Pimus pitus*, n. sp. Left palpus of male.
34. *Pimus pitus*, n. sp. Tibial apophyses of right palpus of male, dorsal view.
35. *Titanoeca americana anopla*, n. var. Epigynum.
36. *Titanoeca silvicola* C. and I. Male palpus, dorsal view (Utah specimen).



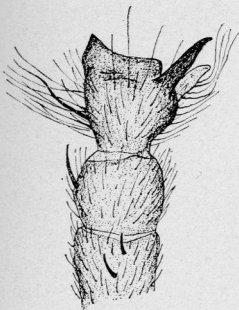
30



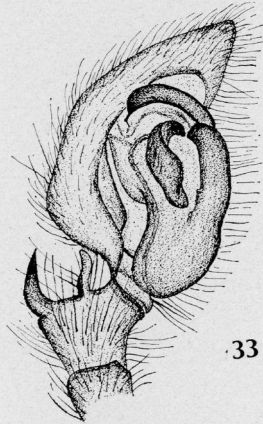
31



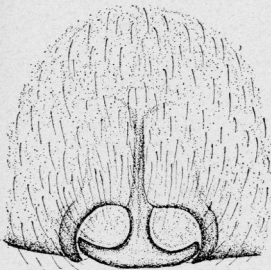
32



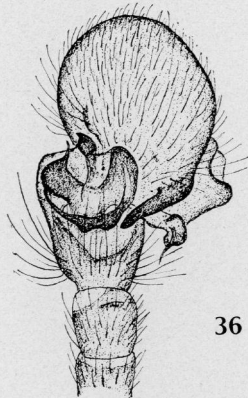
34



33



35



36