

Fore femora all black except the distal tips which are orange; middle and hind femora black except the orange-colored distal tips and inner surface. Rostrum black, orange at base; head black beneath, except the small orange spots about each antenna.

The type is in the collection of the Brooklyn Museum of Arts and Sciences and is the only one I have seen. It was collected in 1904 by Messrs. Doll and Engelhardt on sage brush. *Okanagana fratercula* seems to be a "little brother" to *O. Schaefferi*, and perhaps bears about the same relationship to it as does *Tibicina cassinii* to *T. septemdecim* in the eastern states.

EXPLANATION OF PLATE 3.

- Fig. 1. *Okanagana rubrovenosa*.
- Fig. 2. *Okanagana mariposa*.
- Fig. 3. *Okanagana hirsuta*.
- Fig. 4. *Okanagana schaefferi*.
- Fig. 5. *Okanagana fratercula*.
- Fig. 6. *Okanagana minuta*.
- Fig. 7. *Okanagana triangulata*.
- Fig. 8. *Okanagana mercedita*.

A PRELIMINARY REVIEW OF THE WEST COAST CICADIDÆ.

BY E. P. VAN DUZEE,

BERKELEY, CALIF.

The following key and the appended notes include all of the species of the Cicadidæ known to me to occur in California, Oregon and Washington. Thirty-four species or named varieties are recorded from these states and two from farther east are included to complete the review of the distinctively western genera, *Okanagana* and *Cacama*. Structural characters are very few in some of the genera, notably *Okanagana*, and I have been obliged to fall back upon color characters in the preparation of the key. The color and markings while variable in extent are quite constant in their general facies for each species. So far as I have collected them I have found that most

of these forms are well distinguished by their songs and habitats. It is hoped that material may be available later for a more complete monograph of our west coast cicadas to which figures and full locality records may be appended.

In the preparation of this paper I have used my own material, taken mostly in San Diego Co., the fine series in the collection of Dr. Frank E. Blaisdell, those in the collection of the California Academy of Sciences, mostly taken by Dr. E. C. Van Dyke, and a few in the collection of the University of California, largely gathered by Prof. C. W. Woodworth. Other material has been received from Mr. E. O. Essig, Mr. C. L. Fox, and Dr. H. F. Wilson, the latter mostly from Oregon. Mr. Wm. T. Davis of Staten Island, New York, has sent me for comparison a very interesting series including the types of his new species described in a paper preceding this. I give first Prof. Woodworth's key for distinguishing the west coast genera by characters common to the two sexes.

Mesonotum completely covering the middle of the metanotum.

Prothorax widest behind.

Abdomen tapering behind *Tibicen*.

Abdomen rounded behind *Cacama*.

Prothorax widest at the middle *Zammara*.

Metanotum conspicuous behind the mesonotum.

Node in outer third of elytra *Platypedia*.

Node in middle third of elytra.

Posterior crossvein thickened *Clidophleps*.

Posterior crossvein not thickened.

Median transverse suture of elytra not very evident across the cells *Okanagana*.

Median transverse suture of elytra marked by a bend of the cell membranes and by pigment lines *Tibicinoides*.

In the above table the characters given opposite each name distinguishes that genus from all others in our fauna except *Tibicen* and *Okanagana* which are distinguished negatively and from each other by the mesonotal character given above. The former has the head nearly as wide as the thorax, an infuscated W-shaped mark near the apex of the elytra, a pentagonal basal cell in the elytra, and in the males covered tympana, in all of which characters it differs from *Okanagana*.

In the following keys I have employed so far as possible the characters used by Dr. Distant. The long areole lying along the costa beyond the node I have called the "marginal areole." It is the "first ulnar areole" of Dr. Uhler. The form of the uncus of the male is frequently distinctive and has been used in separating a number of the close species. This uncus is an ovate or oblong piece lying above and partly within the valve. Its main characters have been illustrated by Smith and Grossbeck in the April, 1907, number of Entomological News.

Tympanal coverings present in the male.....1

Tympanal coverings absent in the male.....Subfam. 3. *Tibiciniina*.

1. Tympanal coverings entirely concealing the orifices..Subfamily 1. *Tibicina*.

Tympanal coverings imperfect leaving the orifices more or less exposed.

Subfamily 2. *Cicadina*.

Subfamily 1. TIBICINÆ (CICADINÆ of Distant).

Head including the eyes as wide as or wider than the mesonotum.

Tibicen Latr.

Head including the eyes little more than two thirds the width of the mesonotum *Cacama* Dist.

Genus 1. TIBICEN Latr.

Latreille, Fam. Nat. Regne Anim., p. 426, 1825.

Type *Cicada plebeja* Linn.

Opercules triangular, reaching to near the middle of the abdomen.

1. *cinctifera* Uhl.

Opercules broad, rounded at apex, reaching to the base of the first ventral segment 2. *montezuma* Dist.

Genus 2. CACAMA Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 7, XIV, p. 429, 1904.

Type *Proarna maura* Dist.

Larger (28 mm. to tip of abdomen), elytral venation mostly pale; two exterior transverse veins scarcely touched with fuscous; basal and apical segments of tergum pale, Colo. to Ariz. Not found in California.

valvata Uhler.

Smaller (22 mm. to tip of abdomen); elytral venation mostly black, two exterior transverse veins broadly black; basal and apical segments of tergum concolorous black except at outer margins..3. *crepitans* Van D.

Subfamily 2. CICADINÆ (GÆANINÆ of Distant).

Tribe ZAMMARINI Dist.

Pronotal margins amplified and usually angulated.

Genus 3. ZAMMARA Am. & Serv.

Amyot & Serville, Hemipteres, p. 468, 1843.

Type *Tettigonia tympanum* Fabr.

Green varied with black, pronotal margins angulated; elytra with four costal and two commissural fuscous spots.....4. *smaragdina* Walk.

Subfamily 3. TIBICINIINÆ (TIBICINÆ of Distant).

Tympanal cavities and opercules of male rudimentary....4. *Platypedia* Uhl.

Tympanal cavities and opercules of male well developed.....1

1. Elytra hyaline, without a series of distinct supplementary transverse veins at the node.....2

Elytra smoky on basal one half, with a series of distinct supplementary transverse veins at the node.....7. *Tibicinooides* Dist.

2. Elytra distinctly bullate, the costa bent near the node; transverse vein at apex of the clavus much thickened, nodose.....5. *Clidophleps* n. gen.

Elytra normal, the costa gently arcuated to the node....6. *Okanagana* Dist.

Genus 4. PLATYPEDIA Uhler.

Uhler, Entomologia Americana, IV, p. 23, 1888.

Type *Cicada areolata* Uhler.

Costal vein strongly expanded and bent beyond the middle of the costal areole, this areole unusually broad (2 x 9½ mm.), marginal areole very narrow and linear, shorter than the first ulnar areole, apical areoles seven7. *ampliata* n. sp.

Costal vein simple, not at all angulated; marginal areole wider apically; apical areoles eight1

1. Second ulnar areole (at apex of large costal areole) distinctly longer than broad; its inner margin straight or but feebly angled; the first transverse vein distinctly oblique; anterior margin of pronotum normally pale; length 17-22 mm.2

Second ulnar areole nearly as long as broad, its inner margin distinctly angled at the second transverse vein; first transverse vein vertical; anterior margin of pronotum concolorous, black; length about 14 mm..3

2. Length 20-22 mm.; pale markings usually tinged with orange; base of vertex with a distinct pale point; first antennal joint pale at base; last ventral segment of male broad and almost truncated at apex; elytral nervures black from near their base.....10. *putnami* Uhler.

Length 17-20 mm.; pale markings usually tinged with greenish; no distinct

pale point at base of vertex; face and vertex long-hairy; last ventral segment of male long and almost conically narrowed at apex; elytral nervures pale almost to the transverse veins.....9. *areolata* Uhler.

3. Elytra proportionately broader (8-9 x 18 mm.); inhabits north of the Tehachapi8. *intermedia* n. sp.

Elytra proportionately narrow (6-7 x 15 mm.); inhabits south of the Tehachapi4

4. Last ventral segment of female narrowly, deeply incised; valve of male long and tapering to its apex; elytral nervures pale brownish nearly to the transverse veins; inner margin of second ulnar areole obviously angled at second transverse vein.....5. *minor* Uhler.

Last ventral segment of female broadly deeply excavated; valve of male somewhat dilated toward its rounded apex; elytral nervures infuscated to their base; inner margin of second areole but slightly angled at the second transverse vein6. *aperta* n. sp.

Genus 5. CLIDOPHLEPS new genus.

Type *Okanagana distantii* Van D.

Proportionately narrow (length 19 mm., width of mesonotum 7 mm.); elytra narrower (8 x 23 mm.); costa but little angled at the node; nervures black, unusually strong; claval areole very narrow, acute at apex; last ventral segment of male narrower.....11. *blaisdelli* Uhler.

Proportionately broader (length 25 mm., width of mesonotum 9 mm.); elytra wider (10 x 26 mm.); costa more strongly angled at node; claval areole broader, obtuse at apex; last ventral segment of male broader (*distantii*)1

1. Large (25 mm.); outer nervure of clavus and inner of corium pale to the node12. *distantii* Van D.

Smaller (22-23 mm.); elytral nervures pale to the apical areoles, the commissural only brown2

2. Pale markings about as in typical *distantii*; last ventral segment of male truncated and more or less sinuated at apex..13. var. *truncata* Van D.

Pale markings more extended, the pronotum largely pale; last ventral segment of male narrower and scarcely emarginate at apex, about as in typical *distantii*.....14. var. *pallida* Van D.

Genus 6. OKANAGANA Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 7, XVI, p. 23, 1905.

Type *Cicada rimosa* Say.

Larger, length (to tip of abdomen) 30-32 mm.; black, without dorsal pale markings; costa orange to tip of marginal areole..15. *cruentifera* Uhl.

Smaller; length not over 28 mm.....1

1. Small, length about 16 mm.; form elliptical; elytra short; front very prominent, scarcely longer than broad, rounding over and striate to its base, its sides regularly arcuated.....14

- Larger, 18-28 mm.; front longer, its sides nearly straight and its base with a nearly horizontal superior area on which the transverse ribs become obsolete; costa more feebly arcuate.....2
2. Color rufo-ferruginous with a few marks on the vertex and a dorsal vitta on the tergum black17. *arctostaphylæ* n. sp.
Color black, more or less marked with pale or rufous.....3
3. Wing venation dark sanguineous; surface of body clothed with short scale-like hairs18. *rubrovenosa* Davis.
Wing venation black or pale, the costa and base orange or pale; vestiture of body if present pale4
4. Pronotum and disk of the mesonotum dull black, immaculate; costal edge of the corium and commissure of the clavus bright reddish-orange; wing venation basally, legs and ventral segments in part orange; length 23 mm.16. *ornata* n. sp.
Hind edge of pronotum pale; disk of mesonotum with six pale marks, two on the calloused center of the X, two on its anterior points and two before these on the apex of the loops; all of these marks may be extended or reduced but are rarely absent.....5
5. Pronotum mostly black, when pale with the disk largely black but sometimes bisected by a pale median line.....6
Pronotum mostly pale with a black median vitta, geminate anteriorly, the lateral oblique grooves more or less broadly black; four anterior marks on the mesonotum coalescing; elytral venation greenish toward the base; length 25-27 mm.26. *vandykei* n. sp.
6. Somber black above with the pale marks much reduced; venter fulvous or reddish-orange, immaculate except at base; elytra long; length of body 25-27 mm.19. *tristis* n. sp.
More broadly marked with pale or if mostly black the venter black or banded with black7
7. Larger, 20 mm. or over8
Smaller, under 20 mm.; mostly pale beneath; elytral venation pale, at least at base; pronotum pale-margined13
8. Mostly black, the pale markings greatly reduced and greenish; the black body conspicuously clothed with whitish pubescence; costa narrowly greenish; venter greenish, banded with black22. *canescens* n. sp.
Body when black not conspicuously whitish-pubescent9
9. Mostly black above with black elytral venation; pronotum without pale lateral areas10
Pale markings much extended with elytral venation mostly pale; lateral areas of pronotum largely pale12
10. Length about 28 mm.; surface dull black, closely minutely grey-pubescent; valve of male long (5 mm.) as in *rimosa*; uncus oblong, parallel-sided, not narrowed toward the truncated apex20. *mariposa* Davis.
Length about 24 mm.; uncus of male more ovate, broadest near the base and narrowing toward the obtuse apex11

11. Surface more polished, blue-black with orange-fulvous markings; the pronotum usually bordered all around with orange; male valve more elongated (4-5 mm.); narrow apex of its last ventral segment rounded; uncus without an apical hook21. *rimosa* Say.
Surface less polished, the pale markings reduced; pronotum with hind margin only pale; male valve shorter (3 mm.); apex of last ventral segment of male broader and sinuated; uncus hooked at apex.
23. *vanduzeei* Dist.
12. Head narrower (6 mm.); venter banded with black, at least on the connexivum; last ventral segment of male narrow and rounded at apex; uncus narrowed at apex, without a hook; inhabits eastern states.
25. *noveboracensis* Emm.
Head wider (7 mm.); venter pale, immaculate except at base and on apical segment of the female; last ventral segment of male shorter, truncate and sinuated at apex; inhabits California.
24. *vanduzeei* var. *consobrina* Dist.
13. Pale markings of the mesonotum extended, confluent, at least the anterior; head wider, 6½ mm.27. *californicus* Dist.
Four anterior pale marks of the mesonotum wanting or nearly so; head narrower, 5 mm.28. *striatipes* Hald.
14. Supra-antennal plates elliptical, its anterior edge transverse.....15
Supra-antennal plates oblique.....16
15. Basal areole of the elytra narrowed to a rounded apex.
29. *triangulata* Davis.
Basal areole of elytra parallel-sided, its apex rectangular.
30. *mercedita* Davis.
16. Length 15 to 17 mm.; anterior edge of the pronotum with a narrow linear callouse; male uncus with a rather long pointed hook.
33. *minuta* Davis.
Length 18 mm.; male uncus with an obtuse hook or without a hook....17
17. Anterior margin of pronotum broadly depressed, without a distinctly calloused linear edge; median apical area of pronotum rather acutely triangular31. *synodica* Say.
Anterior margin of pronotum with a linear calloused pale edge; median apical area of pronotum more broadly and obtusely triangular; male uncus with a short broad hook at apex.....32. *uncinata* n. sp.
- Genus 7. **TIBICINOIDES** Dist.
Distant, Ann. Mag. Nat. Hist., Ser. 8, XIV, p. 166, 1914.
Type *Tibicen cupreo-sparsa* Uhler.
Larger (20 mm.); lateral areas of pronotum with their grooves pale or rufous; mesonotum with pale marks at the anterior points of the X; venter pale, the basal segment only marked with black.
35. *hesperius* Uhler.

Smaller (15 mm.); pronotum black, the slender anterior and posterior edges only pale; mesonotum without pale marks at the anterior points of the X; venter black, the segments edged with pale.

34. *cupreo-sparsus* Uhler.

1. *Tibicen cinctifera* Uhler.

Uhler, Trans. Md. Acad. Sci., I, p. 156 1892 (*Cicada*).

This is recorded from New Mexico and northern California and Mr. Davis has sent me specimens from Arizona.

2. *Tibicen montezuma* Dist.

Distant Biol. Centr. Am., Homop., I, p. 8, pl. 2, fig. 2, 1881 (*Cicada*).

This species is unknown to me. It ranges from Mexico northward into New Mexico, Arizona and California as far as San Diego.

3. *Cacama crepitans* Van D.

Van Duzee, Trans. San Diego Soc. Nat. Hist., II, p. 45, 1914 (*Proarna*).

I know this species only from its type locality at San Diego. I have included the Rocky Mountain *valvata* in the key as it is likely to be found in the mountainous portions of this state.

4. *Zammara smaragdina* Walk.

Walker, List Homop., I, p. 33, 1850.

This species is included on the authority of Prof. C. W. Woodworth who reports a specimen labeled "San Diego." In the Museum of Comparative Zoology at Cambridge.

5. *Platypedia minor* Uhler.

Uhler, Entomologica Americana, IV, p. 81, 1881.

This distinct little species seems to be confined to the southern portion of the state where it is very abundant at times. It is found on grassy hillsides from the last of March to about the first of July where it may generally be found resting on the stems of the sage brush. It has a short peeping note which is difficult to locate. Dr. Uhler's measurements were taken from a large specimen and may refer to the form described below. In this species the front and lower surface is conspicuously clothed with long pale hairs, the anterior edge of the pronotum is concolorous and the elytral nervures are largely pale brownish to the cross veins. The male uncus is

broadly lanecolate and subacute at apex, its width about half the length.

6. *Platypedia aperta* new species.

A little larger than *minor* (about 16 mm. to tip of abdomen), with the elytral venation black and the inner margin of the second ulnar areole more rectilinear, scarcely more angled than in *areolata*. Here the last ventral segment is broadly triangularly excavated in the female and in the male broad at the slightly sinuated apex, the male valve is distinctly widened to its rounded apex, and the uncus is broad ovate, nearly as broad as long, with its apex subacute.

Described from seven males and two females taken by me at Alpine, June 8, 1913, and June 6, 1914, and one male from San Diego city, taken May 20, 1913.

7. *Platypedia ampliata* new species.

A little larger and less hairy than *minor* with much wider elytra, their costa obviously angled beyond the middle of the costal areole. Black, clothed with long blackish hairs which become grey beneath and on either side of the mesonotal X. Length 16 mm., expanse 38 mm.

Front strongly produced, the median sulcus deep; supra-antennal plates large and well rounded, when viewed from before expanded and depressed against the front. Humeral angles large and subquadrate, the pronotal sides anteriorly much depressed and nearly straight, a very little expanded behind the eye. Meracanthi long and pointed, reaching just behind the hind coxæ. Last ventral segment of the male narrow and rounded at apex; valve moderately long and expanded at base; uncus lanceolate with the slender point upturned and attaining the apex of the valve. Last ventral segment of the female with a narrow subacute incision reaching nearly to its base. Elytra remarkably broad (9 by 18 mm.); basal areole small, narrow, scarcely angled at apex; costal areole broad (2 by 9½ mm.); marginal very narrow, scarcely wider than the bounding nervures; second ulnar little longer than broad (2½ by 3 mm.), the inner (posterior) side angled close to the apex; apical areoles seven, the first and second as usually found in this genus, being united in one. Wing appendix rounded at apex.

Color black; supra antennal plates, a small dot at the base of the vertex continued as a median line on the pronotum which does not reach the hind margin, narrow hind edge of the pronotum; sides of the mesonotal X posteriorly, elytral nervures except close to their base, depressed sides of the pronotum and legs in part, pale.

Described from one male, without locality, in the collection of the University of California, and two females from Mary's River,

Oregon, received from Dr. Wilson. In this very distinct species the costal nervure is broadly expanded, especially in the male, reaching a width of nearly one millimeter.

8. *Platypedia intermedia* new species.

Size and aspect of *ampliata* but with larger and narrower elytra; supra-antennal plates narrower and more oblique than in *ampliata*, not at all expanded or depressed against the front; humeral angles less produced and more rounded, the sides anteriorly regularly and feebly rounded. Last ventral segment of male short and broad, the apex sinuated; valve longer (4 mm.) and narrower; uncus rather slender, nearly straight below, arcuated above, its apex subacute but not at all unturned. Last ventral segment of female with a deep incision which is much broader posteriorly than in *ampliata*. Elytra 8 by 19 mm., costal nervure broad but of equal width to the apex of the costal areole, this areole about $2\frac{1}{2}$ by 11 mm.; marginal areole much widened apically (about $\frac{1}{2}$ mm.); second ulnar transverse, its inner margin nearly rectilinear, the feeble angle at about one third the distance from the apex; apical areoles eight. Length of insect 18 mm., expanse 23 mm.

Described from numerous examples of both sexes taken in Marin and Sonoma Counties, Calif., in April and May.

9. *Platypedia areolata* Uhler.

Uhler, Proc. Acad. Nat. Sci. Phila., XIII, p. 285, 1862 (*Cicada*).

Mr. W. T. Davis has kindly sent me a specimen compared with the type from east of Fort Colville which enables me to locate the name on our larger pale form which seems to be common from the Bay Region of San Francisco northward through Washington. It varies in length from 17 to 20 mm. with an expanse of about 52 mm. The color is more dull and obscure than in *putnami* with very little of the steel-blue tint, the pale markings are more yellowish, rarely tinted with orange. The last ventral segment of the male is narrower and almost triangularly produced at apex; the uncus is a little sinuated, nearly parallel-sided to the apical third, then narrowed to an obtuse tip; costal nervure broad but scarcely expanded; second ulnar areole transverse, the inner margin nearly straight as in *intermedia*; marginal areole a little widened in the male; supra-antennal plates transverse, scarcely oblique.

I have examined a good series of this form taken by Dr. F. E. Blaisdell in Marin and Sonoma Cos. and another series in the col-

lection of the California Academy of Sciences taken by Dr. E. C. Van Dyke in Marin Co. in April and May. Dr. Blaisdell has also taken this species in the Mokelumne Hills, Calaveras Co., Calif. Mr. Davis's specimen is a female from Utah and is larger than any I have seen from the coast.

10. *Platypedia putnami* Uhler.

Uhler, Bul. U. S. Geol. Geog. Surv., III, p. 455, 1877 (*Cicada*).

Under this name I have placed the larger species in which the ground color is more of a blue-black and the pale markings are of a deep or reddish orange. The elytra measure 8-9 by 23-24 mm.; the anterior edge of the pronotum is slenderly pale; the basal half of the first antennal joint is pale as are also the margins of the frontal sulcus, median carina of the clypeus and first joint of the rostrum. Here the sinus of the last ventral segment of the female is broader and this segment in the male is shorter and almost truncated at apex; the uncus is strongly arcuated below and slightly so above, with apex obtuse; the discal nervures of the elytra are piceous nearly to their base; the inner margin of the second ulnar areole is almost rectilinear and there is a distinct pale dot at the middle of the basal margin of the vertex. The eyes also are noticeably more prominent and the front less hairy. Length to tip of the abdomen 21-24 mm. I have before me material from Colorado, Utah, Nevada, Oregon and from Siskiyou and Trinity counties, Calif., the latter taken at Carrville in June by Dr. E. C. Van Dyke.

Normally all our species of *Platypedia* have the following pale markings: sides of the face, supra-antennal plates in part, median line and hind edge of the pronotum, hind margin of the metanotum including the posterior one half of the elevated X, the costal nervure as far as the node and the propleura superiorly.

Genus 5. **CLIDOPHLEPS** new genus.

Allied to *Okanagana* with the same form of head and pronotum, approaching *Platypedia* in its expanded elytra, and well distinguished from both by the greatly thickened and nodose transverse vein at the apex of the clavus. Costal nervure distinctly bent at the node giving the closed elytra a bullate aspect when viewed from above. Elytra

hyaline and when viewed from behind having a purplish iridescence. Marginal areole long, narrow and largely infuscated as in *Okanagana*. First, second and third ulnar areoles elongated and similar in form. Apical areoles eight in number as in *Okanagana* with which genus it agrees in most of its other characters.

Type *Okanagana distanti* Van D.

11. *Clidophleps blaisdelli* Uhler.

Uhler, Trans. Md. Acad. Sci., I, p. 163, 1892 (*Tibicen*).

In the Transactions of the San Diego Society of Natural History, Vol. II, p. 47, 1914, I have given my reasons for identifying this species with our smaller and more slender form. I have taken it only from San Diego Co. and have not seen it in other collections. It is not unlikely that it is a Mexican form with its northern limit of distribution near San Diego.

12. *Clidophleps distanti* Van D.

Van Duzee, Trans. San Diego Soc. Nat. Hist., II, p. 47, 1914 (*Okanagana*).

This is a larger and broader form than *blaisdelli* with a broader costal areole and with the costa more strongly bent at the node. It has the last ventral segment of the male narrower and truncated or feebly emarginate at apex; the pale spots at the anterior points of the mesonotal X are usually pyriform and enclose a black point; the hind margin of the pronotum, a conspicuous median vitta almost interrupted near the hind margin and the very narrow anterior margin are pale, and the lateral areas of the pronotum are obscurely paler. Length of body 25 mm., to tip of elytra 34 mm.

This interesting species is abundant on the chaparral on the higher pueblo lands about La Jolla, San Diego Co. during May and June. It has the habit of shrilling in unison at intervals of from ten to thirty minutes, apparently depending on the strength of the sunshine. They are strong flyers and have a loud rattling note. It is known only from San Diego Co., Calif.

13. *Clidophleps distanti* var. *truncata* Van D.

Van Duzee, Trans. San Diego Soc. Nat. Hist., II, p. 47, 1914 (*Okanagana*).

Differs from the typical form in being smaller (22 mm.) with the elytral nervures paler and the last ventral segment of the male shorter and more truncate at apex. From San Diego Co., Calif.

14. *Clidophleps distanti* var. *pallida* Van D.

Van Duzee, Trans. San Diego Soc. Nat. Hist., II, p. 47, 1914 (*Okanagana*).

Size of *truncata* or a little smaller but with the markings more extended and the last ventral segment more rounded at apex. I found this form along the sea shore at National City at San Diego. It did not seem to have the habit of sounding in unison as do the other forms of this species.

Genus 6. OKANAGANA Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 7, XVI, p. 23, 1905.

This genus is distinctively Californian. So far as I know but two species are found east of the Rocky Mountains and most of them seem to be confined to the Pacific Coast States. It may be distinguished from *Tibicina* by its narrower head which is not wider than the mesonotum. The genus is very poor in structural characters so the species are best separated by size and color markings. They are, however, well distinguished by their general facies, habitat and song and in field work there is little danger of confusing them.

15. *Okanagana cruentifera* Uhler.

Uhler, Trans. Md. Acad. Sci., I, p. 161, 1892 (*Tibicen*).

This species was described from Colorado and Nevada. I am doubtfully identifying it with a large black species with bright orange costa which has been taken near San Bernardino. I have seen but three specimens, all females. In this species the head is unusually narrow and pointed (7 by 4 mm.); pronotum 5 by 11 mm. Length 33 mm., expanse 83 mm. Color black, scarcely polished, well clothed with long pale hairs; pronotum immaculate or with the lateral areas obscurely pale; costa, base of wings, legs in part, margins of the apical segments of the tergum, ventral segments and genital pieces bright orange.

16. *Okanagana ornata* new species.

Allied to *rimosa* but a stouter and broader winged form. Black with the costa and commissure on basal one half and the wing veins bright orange. Length 23 mm.; to tip of elytra 36 mm.; elytra 10 by 30 mm. head 3½ by 7 mm., pronotum 4 by 9½ mm., width of mesonotum 8 mm. In this form the first apical areole is unusually long (8 mm.) and is equal to four fifths the

length of the broad costal areole, in *rimosa* this proportion is two thirds. Front strongly compressed, the median sulcus narrow. Last ventral segment of female with a deep, rather broad sinus which is distinctly notched near its fundus; the outer angles of this segment narrower than in any of the allied species. Valve of male long as in *rimosa*.

Color a uniform deep black, scarcely polished, the narrow basal angles and depressed latero-posterior margins of the mesonotum and the apical margin of the last two tergal segments orange. Elytral nervures black, the costal to beyond the node and the commissural to the apex of the clavus bright reddish-orange; hind edge of the ventral segments genital pieces except the oviduct, and the legs bright orange, the last ventral segment red with an oval black mark on either side; lower surface of the anterior femora, about three vittæ on the intermediate and hind femora, a mark on the base of the tibiæ exteriorly and the tips of the tarsi black.

Described from one female taken by Mr. C. L. Fox at Upper Soda Springs, Siskiyou Co., Calif., in July, 1914, and a male from Sonoma Co., received from Mr. Davis. This species may be recognized by its black, almost immaculate upper surface with bright orange venation. The hind edge of pronotum is sometimes very narrowly pale.

17. *Okanagana arctostaphylæ* new species.

Closely allied to *rimosa* but proportionately more slender. Reddish-ferruginous with almost a purplish cast, marked with black on the vertex, anterior margin of the mesonotum and dorsal line of the abdomen. Length 24 mm., to tip of the elytra 33-37 mm.; width of metanotum 9 mm.; width of head 7 mm.; elytra 9 by 28 mm. Head as wide as the anterior portion of the pronotum; front unusually prominent; surface of the head between the impressed areas quite smooth, not wrinkled as in *rimosa*. Front strongly convex, the median sulcus narrow above, transverse rugæ rounding. Pronotum 4 by 10 mm., the sides straight and parallel, or nearly so, anteriorly; humeral angles more produced and subangulate than in *rimosa*, and, with the broad posterior margin, transversely wrinkled. Opercula oblique, their apex feebly rounded and the sides a little sinuated, the meracanthi large. Last ventral segment of the female broadly notched with the sides of the sinus sinuated as in *rimosa*. In the male this segment is unusually long and narrow to the rounded apex. *Valve of the male a little shorter than in *rimosa* but longer than in *vanduzeei*. Elytral venation about as in *rimosa*, the basal cell a little narrower. This species is very uniform in its reddish-ferruginous color and is marked with black as follows: vertex excepting the base and sutures, sides of the face, frontal sulcus, rostrum except at base, lateral submargins of the pronotum and a pair of small spots on the middle of its anterior edge, base of the mesonotum (mostly covered by the pronotum), a mark on the sides of the mesonotum and a vitta on its depressed margin, a

dorsal vitta on the tergum, much widened at base, disk of the pleural pieces, at least in part, basal segment of the venter, mostly; sometimes a few small marks on the base of the apical segment, oviduct of the female, a small spot near the apex of the coxæ, femora and tibiæ and a cloud on the subcostal nervure at the node, sometimes absent. Elytra with a distinct purplish tinge.

Described from one female and four male examples taken by Dr. F. E. Blaisdell at Mokelumne Hills, Calaveras Co., at an altitude of 1,800 feet. These were found on the manzanita bushes on the red bark of which they were well concealed by their peculiar reddish coloring which is very remarkable in this genus.

18. *Okanagana rubrovenosa* Davis, ante.

This is a small black species with the head, pronotum and mesonotum clothed with minute dark rufous hairs giving the insect a dull reddish aspect. The wing venation is dark sanguineous becoming orange-red on the base of the hind wings; the costal nervure beyond the node and the commissural blackish. Uncus of male rather narrow and hooked about as in *vanduzeei*. This species recalls *arctostaphylæ* but is much smaller and darker. Mr. Davis has kindly sent me for study his male type from Mariposa Co., California.

19. *Okanagana tristis* new species.

Black, less distinctly polished than in *rimosa*; pronotum proportionately longer and the elytra longer and narrower. Pronotum 4 by 10 mm.; elytra 10½ to 11 mm. by 33 mm. Color deep black, opaque; supra-antennal plates marked with a small pale point; mesonotum with the usual six pale marks small and inconspicuous, and there are also two marks on the lateral angles close to the base of the elytra and one on the middle of the lower lateral margin; in some specimens the hind margin of the metanotum is also narrowly pale on either side; margins of the pectoral pieces and coxæ, lower surface of the femora and tibiæ, edges of the cheeks and front and the median line of the basal segment of the rostrum pale. In the female the sides of the front are concolorous. Venter and genital pieces except the female oviduct, pale, more or less fulvous; the basal segment with a transverse vitta and each segment of the connexivum with a median cloud, black; last ventral segment of the female with an oblique black mark on either side; slender apical margins of the tergal segments beyond the third pale; membrane of the costal nervure inconspicuously brownish grey. Upper surface sparsely covered with deciduous short white hairs with the usual group of longer whitish hairs in the lateral sinuses of the mesonotal X; black surfaces beneath clothed with short silvery pubescence and with longer hairs on the

sides of the face. Length of body 24 to 25 mm.; to tip of the elytra 35 to 37 mm.

Described from one male and two females taken by Dr. F. E. Blaisdell at Shasta Retreat, Siskiyou Co., Calif., at an altitude of 2,416 feet on July 11, 1905, one female taken by Dr. E. C. Van Dyke at Nash Mine, Trinity Co., Calif., at an altitude of 8,000 feet, June 28, 1913, and one female taken in April at Eldridge, Sonoma Co., received from Mr. Davis. The elongated form, somber black color and fulvous venter will distinguish this form.

20. *Okanagana mariposa* Davis, ante.

Closely allied to *rimosa* and *vanduzeei* but larger than either. It has the dull pubescent surface found in *vanduzeei* and the long male valve of *rimosa*. It can be best distinguished from either by its having the male uncus oblong and scarcely narrowed to the truncated apex. The only specimen I have seen was a male type kindly sent me for examination by Mr. W. T. Davis. It was taken in Mariposa Co. in June.

21. *Okanagana rimosa* Say.

Say, Complete Writings, II, p. 372, 1830 (*Cicada*)

This is a deep black, almost a bluish-black, species marked with bright or reddish-orange. In this species the hind margin of the pronotum and usually the lateral and anterior margins more narrowly, are bright fulvous, and there may be a pale line on the middle of the pronotum anteriorly extending a little on to the base of the vertex; the supra-antennal plates are broadly fulvous and the usual six pale marks on the mesonotum are well developed and I have considered them typical in this species (two on the crown of the X, two at the points of its anterior branches and two before these on the apex of the loops). Here the ventral segments are vittate with black, the head is $3\frac{1}{2}$ by 7 mm., measuring on the slope of the head and across the eyes; the pronotum is $3\frac{1}{2}$ by 9 mm.; the width of the mesonotum is 8 mm.; and the elytra measure 8 by 28 mm. Uncus of male without an apical hook. Length of the body 23 to 24 mm.; to the tip of the elytra 33 to 35 mm. This species occurs across the whole continent from Vancouver Island to Quebec and as far south on the west coast as Fresno Co., Calif.

22. *Okanagana canescens* new species.

Proportionately broader and shorter than *rimosa*; head more porrect; color black, less polished than in *rimosa*, the whole surface, especially beneath whitish or greyish pubescent. Head $3\frac{1}{2}$ by 7 mm.; width of mesonotum 8 mm.; length of body 23 mm.; to tip of the elytra 33 mm.; elytra 9 by 26 mm., its first apical areole 7 mm. long, the costal 9 mm.

Pale markings much reduced, soiled yellowish or greenish; pronotum with the hind edge very narrowly pale, the lateral areas scarcely paler; venter pale greenish, the basal one half of the segments black; plural pieces and legs pale or greenish, the femora more or less broadly vittate with black; tibiae and tarsi black externally. Last ventral segment $2\frac{1}{2}$ times the length of the penultimate, truncate at apex; valve unusually narrow and pointed, five millimeters in length. Last ventral segment of the female with a comparatively small incisure, hardly more than one third the width of the segment and reaching little more than half its length, distinctly sinuated near the fundus.

Described from one male taken by Dr. F. E. Blaisdell at Duncan Mills, Sonoma Co., Calif., July 14, 1908, and a female in the collection of Mr. C. L. Fox without locality but undoubtedly taken in the Bay region. The dull black color and hoary aspect of this species will readily distinguish it.

23. *Okanagana vanduzeei* Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 8, XIV, p. 165, 1914.

This species differs from *rimosa* in averaging a little smaller, in having the pale marks less extended and especially in having the last ventral segment of the male shorter and broader and truncated or somewhat emarginate at apex and the male valve obviously shorter, extending but about 3 mm. beyond the apex of the last ventral segment and the uncus is distinctly hooked at apex. The surface is more greyish from the presence of short deciduous scale-like hairs and has less of the polished blue-black tint seen in *rimosa*. The face also is more heavily clothed with long whitish hairs.

The type locality for this species is San Diego Co., Calif., but Dr. Van Dyke has taken it from as far north as Mt. Rainier, Wash., where he found it at an altitude of 6,000 feet. It seems to be the most generally distributed of our west coast Cicadas.

24. *Okanagana vanduzeei* var. *consobrina* Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 8, XIV, p. 165, 1914.

This form differs from typical *vanduzeei* in being a little larger and apparently if not actually a little broader, and in being more hairy, with the surface more closely clothed with appressed yellowish deciduous scale-like hairs. It also has the pale colors much more extended with the elytral nervures pale on their basal one half. The male uncus scarcely differs from that of *vanduzeei*. Its more hairy surface, paler colors and more compact oval form gives this species a much more distinct appearance than its structural characters will justify.

25. *Okanagana noveboracensis* Emm.

Emmons, Nat. Hist. N. Y., Agric., V, 152, pl. 9, fig. 6, 1852 (*Cicada*).

This is the only *Okanagana* I know that is peculiar to the east. It is included here to complete the record of our known forms of this genus. It is a little longer than *rimosa* with an obviously narrower head ($1\frac{1}{2}$ by 6 mm.), and has the pale markings much more extended and more tinged with greenish rather than with orange, the lateral areas of the pronotum being mostly pale. The male uncus is a little longer and more parallel than in *rimosa* and is without a hook at apex. I have seen specimens of this only from the vicinity of Niagara Falls.

26. *Okanagana vandykei* new species.

Allied to *rimosa* with the pale markings much extended and scarcely tinged with orange, sometimes distinctly greenish. Head $3\frac{1}{2}$ mm. by 7 mm.; pronotum 4 by 10 mm.; length 25 to 27 mm. to tip of elytra 33 to 37 mm.; expanse 70 mm. Front rather strongly compressed, the median carinæ unusually prominent and the sulcus well expanded below the middle.

Color black, less polished than in *rimosa*. Vertex black with a pale basal mark behind each lateral ocellus; supra-antennal plates and superior base of the front conjointly pale; a black cloud on the prominent apex sometimes extending to the basal suture. Pronotum pale with a median black vitta geminate anteriorly, and some black marks in the lateral depressions. Mesonotum with a lateral vitta, the edge of the expanded lower margin, the disk of the X and a large spot at the tip of its anterior branches including the apex of the loop, pale. Hind edge of the metanotum and basal segment of the abdomen slenderly pale. Tergum and superior genital pieces black, the sides of the apical segment marked with pale. Beneath and legs mostly pale,

the sides of the face, disk of the meso- and metapleura, base of the first ventral segment, a line on either side close to the base of the remaining segments, a cloud on each segment of the connexivum and a mark either side of last ventral segment and the oviduct of the female black. Front more or less ferruginous. Knees and apex of the tarsi above touched with black. Elytral nervures pale to beyond the node, infuscated at apex. The hyaline portion of the elytra slightly fuliginous, the basal areole subopaque, fuscous. Male uncus much like that of *noveboracensis* but a little broader and more convex below toward the apex.

Described from four examples taken by Dr. E. C. Van Dyke; one pair captured at Carrville, Trinity Co., Calif., June 29, 1913, two males from Nash Mine, Trinity Co., June 29, 1913, at an altitude of 8,000 feet, and one male taken by Mr. Nunenmacher in Plumas Co. in June and now in the collection of Mr. Davis.

It affords me pleasure to name this distinct species for its discoverer who has long been known as one of the most active and efficient entomologists on the coast, a close student of the Coleoptera and perhaps our best authority on the ecology and distribution of the west American insect fauna.

27. *Okanagana californicus* Dist.

Distant, Ann. Mag. Nat. Hist., Ser., 8, XIV, page 166, 1914.

This pretty species resembles *consobrina* but it is smaller with the surface more polished, the colors clearer, the pale markings more extended and the surface less densely clothed with pale scale-like hairs. The male genital characters scarcely differ from those of *vanduzeei* of which it may be but a variety. Thus far it has been taken only south of the Tehachapi.

28. *Okanagana striatipes* Hald.

Haldemann, Stansbury's Expedition, p. 369, pl. 9, fig. 2, 1852 (*Cicada*).

As I determine this species it is very close to *californicus* but is more strongly narrowed anteriorly, the head is narrower (3 by 5 mm.), the front is more produced above and mostly black, the pronotum is black margined all around with pale and sometimes with pale marks in the lateral depressed lines, the venter is pale and immaculate, the mesonotum wants the pale marks at the apex of the loop and sometimes those at the anterior angles of the X. The male

genital characters of these species scarcely differ. Dr. J. C. Bradley took this species in Humboldt Co., Calif., in June, the California Academy of Sciences has an example taken by U. C. Stevens in Coos Co., Oregon, in June, and Dr. Wilson sends me specimens from Oregon taken at Marysville and Corvallis in June and July. It was described from Utah.

29. *Okanagana triangulata* Davis, ante.

This is our largest species of the *synodica* group. It has prominent rounded supra-antennal plates; the basal areole of the elytra is decidedly narrowed to an obliquely rounded apex; the pale hind margin of the pronotum is rather broad, the disk of the mesonotum is black with the four pale spots small. The abdomen is pale with a large triangular black basal spot on the tergum reaching the sides at base and attaining the anteapical segment and there is a row of black marks along each side. The last ventral segment is rather narrow at apex and almost truncated; valve long; uncus oblong, parallel sided, its apex slightly curved above with an arcuated notch beneath.

Mr. Davis has kindly sent me for examination a male type taken by Mr. Nunenmacher in Mendocino Co. in May.

30. *Okanagana mercedita* Davis, ante.

This is a smaller species than the preceding with which it agrees in having rounded supra-antennal plates. The basal areole of the elytra is oblong and square at apex. The colors are clearer than in the preceding species with the pale areas inclined to fulvous in places and more extended. The abdomen is black above with the hind edge of the segments very narrowly paler; the venter is pale with the discal base of the segments blackish and there is a black spot on either side of the last ventral segment of the female; the hind margin of this segment is deeply narrowly excavated almost to its base.

I have seen but a single female specimen, taken in Merced Co., Calif., in June and sent to me for examination by Mr. Davis.

31. *Okanagana synodica* Say.

Say, Complete Writings, II, p. 253, 1825 (*Cicada*).

Form ovate and quite strongly narrowed before. Front prominent, roundedly angulate when viewed from the side; striæ con-

spicuous, continued well over on to the superior base but omitting a triangular basal area; median sulcus well defined and continued to the apex. Supra-antennal plates oblique when viewed from above; the carinate edge sharp, curved about the antennæ and produced well down on the side next the eyes. Pronotum 3 by 7 mm.; both anterior and posterior margins rather strongly arcuated, the former broadly flattened, without a linear smooth marginal carina; sides distinctly emarginate before the prominent rounded humeral angles; anterior to the sinus nearly straight and crenulated. Mesonotal X more transverse. Meracanthi rather broad, about equalling the opercula. Basal areole of elytra oblong, parallel, a little oblique at apex, its inner margin rectilinear. Last ventral segment of male broadly rounded; valve long, about 4 mm. (Uncus concealed in the specimen before me.)

Color black above, pale beneath. Median vitta and margins of the front, supra-antennal plates and median line of vertex and basal margins and lateral areas of pronotum pale, the latter interrupted by a black vitta at the humeri; the median line of pronotum mostly pale. Mesonotum with the lateral margins, the X, and two discal vittæ covering the loops and anterior arms of the X, pale; the transverse scrobe of the X brown. Narrow edges of the tergal segments and their broad sides pale, the apical segments mostly pale. Beneath the coxæ, femora, tarsi and basal segment of the venter are marked with black. Elytral nervures pale to the apical areoles; basal areole opaque, chestnut brown. Length to tip of abdomen 18 mm., to apex of the elytra 22 mm.

Redescribed from one male taken at Denver, Colo., by Mr. Osler and received from Mr. Davis who writes me that this determination is in accordance with that in the Uhler collection, and it is as correct as can probably now be made. This species may not occur in California but the description is included here for comparison with our closely related forms. The male uncus is concealed in this specimen.

32. *Okanagana uncinata* new species.

Allied to *triangulata*, a little smaller with the supra-antennal plates oblique and the male uncus with a short broad hook at apex.

Front prominent as in *synodica*, the striæ nearly obsolete over the apex; superior basal area rounded before; median sulcus nearly obsolete above and

below but with prominent carinae at the middle; viewed from the side the front is rather strongly angled at the middle; supra-antennal plates oblique, their carinate edge distinct across the whole width but not carried down below the line of the antennae next the eye. Pronotum 3 by 8 mm.; anterior and posterior margins regularly feebly arcuated, the femora narrowly calloused as in the allied species; prominent humeral angles subquadrate, the sides anteriorly regularly feebly arcuated. Mesonotal X less transverse than in *triangulata* or *synodica*. Mercanths narrower and shorter than in *triangulata*, not quite as long as the opercula. Basal areole of the elytra oblong, parallel, the inner margin rectilinear and the apex cut off square. Last ventral segment of the male rather short and truncated at apex; valve long, $3\frac{1}{2}$ mm.; uncus with a broad truncated hook at apex.

Color fuscous or blackish; pale markings much extended; margins of the front and tumid apex of the head paler; vertex with three obscure paler basal spots. Pronotum with the median and lateral impressed lines pale; the pale margins much extended on the sides and humeri; narrow calloused anterior edge conspicuously pale; mesonotal X and loops mostly or entirely pale as are also the narrow margins of the abdominal segments; the connexivum broadly pale and marked with transverse black spots above. Valve pale, the genital pieces piceous; pleural pieces and legs mostly pale; elytral venation black toward the apex, the basal and base of the adjoining areoles opaque and brown. Length to tip of abdomen 18 mm., to tip of elytra 22 mm.

Described from two males taken by me on grass along the road five miles north of San Juan Capistrano, Calif., June 25, 1914.

33. *Okanagana minuta* Davis, ante.

This is the smallest *Okanagana* known to me. The front is unusually prominent and rounded before when viewed from the side, with the superior basal area broad-triangular and the sulcus conspicuous above but nearly obsolete below. Supra-antennal plates oblique with their carinate edge straight above when viewed from before becoming obsolete on the sides next the eyes. Pronotum broadly feebly arcuated before, more strongly so behind, the anterior slenderly carinate; sides obtusely emarginate before the rounded humeri. Basal areole of the elytra parallel, its apex slightly oblique. The last ventral segment of the male is narrower than usual and rounded at apex; uncus elongate-ovate, narrowed to the apex which is armed with rather long and narrow vertical hooks. The pale colors in this species are but little extended with the narrow margins of the abdominal segments and the genital pieces pale.

Of this species I have seen a series of 13 males kindly sent me for

study by Mr. C. H. Kennedy from the Stanford University collection. I also possess two very small males taken in Fresno Co., by Dr. J. C. Bradley in June, 1907, which seem to differ only in having the last ventral segment broader and sinuated at apex. I could find no difference in the form of the uncus or in other structural details.

Genus 7. *TIBICINOIDES* Dist.

Distant, Ann. Mag. Nat. Hist., Ser. 8, XIV, p. 166, 1914.

Peculiar in having the basal one half of the elytra infuscated and subcoriaceous and the transverse fold crossing the elytra at the node strongly developed, resembling a transverse nervure.

Type *Tibicen cupreo-sparsa* Uhler.

34. *Tibicinoides cupreo-sparsus* Uhler.

Uhler, Trans. Md. Acad. Sci., I, p. 43, 1889 (*Tibicen*).

This pretty little species is very distinct by its elliptical form, blackish-brown color and the scarlet base of the wings. It has been found in San Diego Co., and as far north as Los Angeles. It occurs close to the ground on a low fine grass and makes a feeble chirping sound that can be heard but a short distance and is easy to locate.

35. *Tibicinoides hesperius* Uhler.

Uhler, Bul. U. S. Geol. Geog. Surv., I, p. 342, 1876 (*Cicada*).

This larger species was described from Colorado but Dr. Uhler reports it from Nevada and from the vicinity of San Francisco and San Diego. I have not seen specimens from California.

Note.—After this paper had gone to the printer Mr. Davis kindly sent to me for examination examples of the following two species previously unknown to me. As indicated by the numbers *Okanagana hirsuta* should follow *mariposa* and *occidentalis* should follow *canescens*.

20a. *Okanagana hirsuta* Davis, ante.

A large species with the elytra broader than in *rimosa* that may at once be distinguished from all the allied forms by its having the lower surface and legs rather thickly clothed with long grey hairs. The basal areole of the elytra is entirely hyaline with its apical angle

a little more than a right angle; the pronotum is black with its hind edge narrowly pale; the mesonotum has the six discal fulvous spots smaller than in *rimosa*; and the tergal segments are very slenderly edged with fulvous on either side, more broadly so on the second segment.

Mr. Davis has kindly sent me for inspection a female type taken on Santa Rosa Island off the coast of Santa Barbara Co., Calif.

23a. *Okanagana occidentalis* Walk.

Walker, in Lord, Nat in Vanc. Isd. and Br. Columbia, ii, p. 339, 1866, *Cicada*.

Walker's description of this species applies almost equally well to *rimosa* but he distinctly mentions the fact that the first transverse vein is parted from the second by more than twice its length. The present species is the only one known to me of which this is true. It differs however from Walker's description in having the elytral nervures black to their base and in wanting the pale markings on the disk of the pronotum. This species differs from all its allies in having the first ulnar nervure forked very near its base; the wing appendix is also broader with its anal areole broader and more rounded at apex.

Of this form I have seen but a single female specimen which was kindly sent me for study by Mr. W. T. Davis. This individual was taken at Dilley, Oregon, in July.

A NEW MEMBRACID FROM NEW YORK (HOMOP.)

BY LEWIS B. WOODRUFF,

NEW YORK, N. Y.

Just north of the limits of New York City a species of *Cyrtolobus* flourishes which seems to be as yet undescribed. It falls in the subgenus *Atyma*, Stål. Although occurring in great abundance on its food plant, *Quercus bicolor*, in the locality where it has been found, the trees show no apparent injury from its presence. Both sexes