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L. O. HOWARD, Entomologist and Chief of Bureau.

TECHNICAL PAPERS ON MISCELLANEOUS FOREST INSECTS.

IV. STUDIES IN THE SAWFLY GENUS HOPLOCAMPA.

BY

S. A. ROHWER,
Agent and Expert.

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TECHNICAL PAPERS ON MISCELLANEOUS FOREST INSECTS.

IV. STUDIES IN THE SAWFLY GENUS HOPLOCAMPA.

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INTRODUCTORY NOTE.

[By A. D. Hopkins.]

This second contribution by Mr. Rohwer to technical information on the sawflies, while not treating of species of known economic importance in their relation to forest growth, conforms to our plan of giving in one series of publications the results of the necessary general studies, by a specialist, of the entire group represented by species and genera which are of special economic importance. This not only gives the economic entomologist a comprehensive view of the whole group, but makes available information on species which may prove to be injurious to indigenous or cultivated plants.

INTRODUCTION.

In the Canadian Entomologist[a] the author has a paper treating the sawfly genus *Hoplocampa* Hartig through the subgenus *Macgillivrayella* Ashmead. The present paper treats the Nearctic species of the subgenus *Hoplocampa,* including also a description of a new species belonging to the subgenus *Macgillivrayella.*

The accompanying map (fig. 10) gives, in general, the distribution of the genus. *Macgillivrayella* apparently does not occur in the Palæarctic region. In America the species of the genus will probably be found to occur from the Lower Austral Zone to the lower border of the Boreal Zone.

The species of this genus are small, closely related, and without striking specific characters. The characters used in the following table were found to be reliable, but the saw of the female should be examined when possible. Lacking a large number of males, the male genitalia were not studied, but, judging from the genitalia in other genera of sawflies, they may be expected to possess good specific

[a] Can. Ent., vol. 42, pp. 242–244, July, 1910.

FIG. 10.—Map of the world, showing the distribution of the genus Hoplocampa. (Original.)

characters. The color, in details, is not constant, although a normally black or brownish species was never found to be uniformly pale, or vice versa. The venation, as in many genera, is constant to the typical form. The length of the upper and lower discal cells of the hind wing apparently varies within a species (as in *Hoplocampa marlatti*).

The descriptions were drawn up under a Carl Zeiss binocular with a magnification of 35 diameters, although a Zeiss hand lens, magnifying 27 and 16 diameters, was used for the color description and checking up.

The generic description given in the Canadian Entomologist[a] should be corrected and elaborated as follows:

Proepimerum (Epm_1) present.

Mesoprepectus ($Ppct_2$) present.

Pleural suture of metathorax (PS_3) straight from the coxal process (CxP_3) to the wing process ($W P_3$), not curved as in Nematinæ.

Metascutellum (Scl_3) rather large.

Metapostnotum ($P N_3$) as in Nematinæ.

Hoplocampa (Macgillivrayella) pallida n. sp.

Runs in the table in the Canadian Entomologist[b] to *lacteipennis* Rohwer, but may be separated from that species by the large depressions between the ocelli and orbits, higher, narrower occiput, paler color, etc.

Female.—Length 5.5 mm. Head distinctly higher than broad, broadest just above the antennæ; labrum rather broadly rounded; clypeus with a deep, obtusely V-shaped emargination, lobes obtusely triangular; supraclypeal area more convex near the clypeus; eyes diverging toward the clypeus; lateral foveæ close to the antennæ, small, punctiform; antennal furrows not continuous; crest rather well developed; frontal area raised; ocellar basin and middle fovea wanting; postocellar area not defined; vertex depressed on each side of ocelli, so that the occiput is much narrowed; antennæ slender, third and fourth joints subequal; shining, practically impunctate, cerci tapering; sheath straight above, gently rounded below; stigma broad, slightly broader basad of middle; transverse radius received in middle of cell, nearly at right angles with the radius; upper discal cell of hind wings slightly exceeding lower on the outer margin. Pallid; legs, antennæ, front, and dorsulum pale yellowish; wings strongly milky-hyaline; venation pallid-hyaline, except stigma, which is yellowish.

Type locality.—Michigan. One female from C. F. Baker collection.
Type.—Cat. No. 13469, U. S. National Museum.

Hoplocampa (Hoplocampa) orbitalis n. sp.

(Plate XXIII, fig. 3; Plate XXIV, fig. 10.)

Female.—Length 4 mm. Labrum broadly rounded apically; clypeus rather deeply emarginate, lobes obtusely triangular; supraclypeal area convex, polished; antennal furrows and postocellar area as in *koebelei;* middle fovea elongate; ocellar

[a] Can. Ent., vol. 42, p. 242, July, 1910. [b] Can. Ent., vol. 42, p. 243, July, 1910.

basin V-shaped, open below; crest poorly defined; head with small, scattered punctures; antennæ rather robust, third and fourth joints equal; stigma broadest at base, tapering to apex; transverse radius normal; sheath and saw as in Plate XXIV, figure 10, and Plate XXIII, figure 3. Black; antennæ brownish; head (except between antennal furrows above antennæ), tegulæ, spot on lower angle of pronotum, apex of venter, sheath, and legs below coxæ reddish-yellow; posterior tibiæ pallid, posterior tarsi dusky; wings hyaline, iridescent; venation pale brown, stigma and costa yellowish.

Type locality.—Montana.

Type.—Cat. No. 13472, U. S. National Museum.

Hoplocampa (Hoplocampa) koebelei n. sp.

(Plate XXIII, fig. 6; Plate XXIV, fig. 3.)

Female.—Length 3.5 mm. Labrum broad, obtusely triangular; clypeus broadly, triangularly emarginate, lobes broad, sharply triangular; supraclypeal area convex, polished; antennal foveæ not sharply defined; antennal furrows nearly continuous; middle fovea transversely oval; crest poorly defined; ocellar basin reduced to a pit below the ocellus; postocellar area well defined, the furrows punctiform laterally; antennæ wanting; head with small, distinct, separate punctures; stigma gently rounded below, broadest a little basad of middle; transverse radius normal; upper discal cell of hind wings slightly longer than lower; sheath and saw as in Plate XXIV, figure 3, and Plate XXIII, figure 6. Black; head (except inside antennal furrows to postocellar furrow), pronotum, tegulæ, venter, apex of tergum, and legs below trochanters reddish-yellow; posterior tarsi dusky; wings hyaline, iridescent, venation pale brown, stigma pallid.

Type locality.—Oregon. One female collected by Mr. Albert Koebele.

Type.—Cat. No. 13473, U. S. National Museum.

Hoplocampa (Hoplocampa) alpestris n. sp.

(Plate XXIII, fig. 5; Plate XXIV, fig. 5; Plate XXV, fig. 1.)

Female.—Length 4.5 mm. Labrum obtusely angulate; clypeus with a shallow, narrow, arcuate emargination, lobes broad, obtuse; supraclypeal area convex, polished; antennal foveæ poorly defined; antennal furrows nearly wanting; middle fovea broad, shallow, better defined below; ocellar basin reduced to a circular depression in front of the anterior ocellus; postocellar very poorly defined; head polished, nearly impunctate, punctures very small and scattered; antennæ slender, the third and fourth joints subequal; mesothorax shining, polished; stigma broadest at base, tapering to apex; transverse radius normal; sheath and saw as in Plate XXIV, figure 5, and Plate XXIII, figure 5. Black; orbits (except at upper middle), clypeus, labrum, mandibles, supraclypeal area, tegulæ, a small spot on pronotum, ventral part of tergal segments 6–9, and legs below coxæ reddish-yellow; wings hyaline; venation rather dark brown, stigma and costa yellowish.

Male.—Length 3.5 mm. Structurally not differing in any important characters from the female; hypopygidium broadly rounded to an obtusely angulate middle. Reddish-yellow; antennæ brownish; spot around the ocelli, anterior part of mesoprescutum, metanotum, and most of tergum black; wings as in female.

Type locality.—Veta Pass, Colo. Two females and one male collected June 6, by Mr. E. A. Schwarz.

Type.—Cat. No. 13474, U. S. National Museum.

Hoplocampa (Hoplocampa) californica n. sp.

Allied to *bioculata* Rohwer, but may be separated by the table (p. 147).

Female.—Length 3.5 mm. Clypeus broadly, shallowly, angulately emarginate, lobes broad, obtusely triangular; supraclypeal area convex, finely granular; antennal furrows wanting, antennal foveæ small; middle fovea elongate, shallow, not well defined; ocellar depression small, distinct, not sharply defined; postocellar area well defined on all sides; head and mesoscutum with small, separate, well-defined punctures; antennæ rather slender, third and fourth joints equal; sheath slightly concave above, slender, convex below from apex; cerci short, stout; stigma broadest near base, strongly tapering to apex; transverse radius strongly oblique, in apical third of cell; third cubital cell longer than the first and second combined. Black; clypeus, labrum, mandibles (except piceous apices), orbits, occiput (except postocellar area), tegulæ, anterior legs (except coxæ), intermediate femora, and part of posterior femora reddish-yellow; posterior femora in part, most of four hind tibiæ, and tarsi black or brownish; wings hyaline, iridescent; venation pale brown, stigma in part pallid.

Paratopotypes show that the four hind legs may be mostly black, the posterior orbits pale and the pale spots on the occiput reduced in size.

Male.—Length 3 mm. Clypeus more obtusely emarginate than in female; third joint shorter than fourth; stigma not strongly tapering; hypopygidium narrowly rounded at apex. Black; antennæ, head (except interocellar area), margin of mesoprescutum, lati, pectus, legs, and venter reddish-yellow; wings as in female.

Type locality.—Suisun, Cal., March 10, 1910 (R. W. Braucher); eight females and one male.

Type.—Cat. No. 13471, U. S. National Museum.

Hoplocampa (Hoplocampa) marlatti n. sp.

(Plate XXIV, fig. 7.)

Female.—Length 3 mm. Labrum short, broadly rounded; clypeus shallowly emarginate, lobes broad, obtuse; supraclypeal area shining, convex; middle fovea broad, not sharply defined, spreading over the antennæ; antennal furrows interrupted by the rather well-defined crest; ocellar basin represented by a small fovea in front of the anterior ocellus; postocellar area scarcely narrowing apically; postocellar furrow strongly arcuate; front shining, with separate, well defined, small punctures; antennæ slender, third joint distinctly longer than fourth; venation very like *montanicola* (Plate XXVI, fig. 3); upper discal cell much exceeding the lower on the outer margin; sheath as in Plate XXIV, figure 7; saw concealed. Color reddish-yellow; antennæ brownish; spots on mesoscutum, the metanotum, and the tergum (except apex) black; tarsi dusky; wings hyaline, iridescent; venation pale brown, stigma yellowish pallid.

Male.—Length 2.5 mm. Very like the female. Hypopygidium broadly rounded.

Type locality.—Riley County, Kans. Four specimens collected by Mr. C. L. Marlatt in April.

Paratype locality.—Baldwin, Kans. Two females collected by Mr. J. C. Bridwell.

Type.—Cat. No. 13477, U. S. National Museum.

Hoplocampa (Hoplocampa) nevadensis n. sp.

(Plate XXIII, fig. 10; Plate XXIV, fig. 4; Plate XXV, fig. 4.)

Female.—Length 4.5 mm. Labrum short, broadly rounded apically; clypeus shallowly, arcuately emarginate, lobes short, broad, obtusely rounded apically; supraclypeal area shining, not strongly convex; middle foveæ poorly defined; antennal

furrows not well defined; ocellar basin practically wanting; postocellar area well defined, the postocellar furrow curved; head with small, distinct, rather close punctures; antennæ rather slender, third joint distinctly longer than fourth; venation nearly as in *montanicola* (Plate XXVI, fig. 3); sheath and saw as in Plate XXIV, figure 4, and Plate XXIII, figure 10. Color reddish-yellow; antennæ above, interocellar area with two prongs before, posterior face of mesoscutum, metathorax (except scutellum), and tergum (except apex and sides) black; wings hyaline, iridescent; venation yellowish pallid.

Type locality.—Nevada. One female.

Type.—Cat. No. 13475, U. S. National Museum.

Hoplocampa (Hoplocampa) xantha n. sp.

(Plate XXIII, fig. 9; Plate XXIV, fig. 1.)

Female.—Length 4 mm. Labrum rather narrow, broadly rounded; clypeus somewhat squarely emarginate, lobes broad, subtruncate; supraclypeal area shining, rather strongly convex; middle fovea deep, well defined, rather small; antennal furrows interrupted by the rather distinct crest; ocellar basin very shallow, practically wanting; postocellar area somewhat convex, narrowing slightly posteriorly; postocellar furrow somewhat arcuate; front shining, with small, separate, well-defined punctures; antennæ rather robust, third and fourth joints equal; venation of fore wing about as in *montanicola* (Plate XXVI, fig. 3), but the stigma is broader, the second and third cubital cells subequal in length; upper discal cell much exceeding the lower on the outer margin; sheath and saw as in Plate XXIV, figure 1, and Plate XXIII, figure 9. Color reddish-yellow; antennæ and basal part of tergum brownish; wings hyaline, iridescent; venation yellowish-pallid.

Paratopotypes indicate that the tergum, except apex and sides, is normally black; venation normally as in *halcyon* (Plate XXVI, fig. 2), with a narrower stigma. The interocellar area may be black; the middle fovea smaller than in type.

Type locality.—Ottawa, Canada. Four females from the Ashmead collection.

Type.—Cat. No. 13478, U. S. National Museum.

Hoplocampa (Hoplocampa) occidentalis n. sp.

(Plate XXIV, fig. 8; Plate XXV, fig. 5.)

Female.—Length 4 mm. Labrum narrowly rounded apically; clypeus angulately marginate, lobes triangular, narrowly obtuse; supraclypeal area convex dorsally, shining; middle fovea spreading over the antennæ, shallow; antennal furrows interrupted by the broad rounded crest; ocellar basin large, well defined, rectangular in outline; postocellar area scarcely narrowed posteriorly, flat; postocellar furrow nearly straight; front with rather close small punctures; antennæ rather robust, the third and fourth joints equal; venation nearly as in *montanicola* (Pl. XXVI, fig. 3); sheath as in Plate XXIV, figure 8; saw not exserted. Color reddish-yellow; antennæ brownish above; interocellar area, large spot on mesoprescutum, small spots on mesoscutum, the metanotum, and the tergum (except sides and apex) black; wings hyaline, iridescent; venation very pale brown, stigma and costa pallid.

Paratypes show that the mesonotum may be entirely pale, or the mesoscutum may have two spots on each lobe. The black of the interocellar area is wanting in some specimens.

Male.—Length 3 mm. Very like the female. Hypopygidium subtruncate, with an angulate middle. The series shows the color to vary as follows: Mesoprescutum without black, or spotted; mesoscutum spotted or not; interocellar area pale or black. In the Oregon specimens the head and mesonotum are usually entirely pale.

Type locality.—Colorado. Two females and three males from the C. F. Baker collection.

Paratype locality.—Oregon. Males and females collected by Mr. A. Koebele. Also a male from Placer County, Cal., June, which seems to be the same species.

Type.—Cat. 13479, U. S. National Museum.

Hoplocampa (Hoplocampa) montanicola n. sp.

(Plate XXIII, fig. 4; Plate XXIV, fig. 6; Plate XXV, figs 3, 6; Plate XXVI, fig. 3.)

Female.—Length 4 mm. Labrum broadly rounded; clypeus rather deeply, subangulately emarginate, lobes triangular, obtusely rounded; supraclypeal area shining, somewhat convex; middle fovea small, well defined; antennal furrows interrupted by the rounded frontal crest; ocellar basin shallow, well defined, rectangular in outline; postocellar area narrowing posteriorly, well defined; postocellar furrow arcuate; front with sparse, small punctures; antennæ rather robust, third and fourth joints subequal; venation as in Plate XXVI, figure 3; upper discal cell exceeding the lower on the outer margin; sheath and saw as in Plate XXIV, figure 6, and Plate XXIII, figure 4. Color reddish yellow; antennæ beyond scape, posterior part of mesoscutum, the mesoscutellum, the metanotum, and the tergum except apex black; wings hyaline, iridescent; venation yellowish pallid.

Paratopotypes show that the scape and interocellar area may be black.

Male.—Length 3.5 mm. Sufficiently like the female to be easily associated with it. In the following color characters it differs from the female: Antennæ reddish yellow, interocellar area black, mesonotum black. Hypopygidium rounded apically to an obtuse angle.

Type locality.—Montana. Four females and two males.

Type.—Cat. No. 13476, U. S. National Museum.

Hoplocampa (Hoplocampa) halcyon (Norton).

(Plate XXIII, fig. 8; Plate XXIV, fig. 9; Plate XXV, fig. 2; Plate XXVI, fig 2.)

Selandria (Hoplocampa) halcyon Norton, Proc. Boston Soc. Nat. Hist., vol. 8, p. 222, 1861, no. 10, ♂ ♀; Norton, Trans. Amer. Ent. Soc., vol. 1, p. 252, 1867, no. 16, ♂ ♀.

In the collection of the American Entomological Society *Hoplocampa (Hoplocampa) halcyon* (Norton) was confused with *Hoplocampa (Macgillivrayella) lacteipennis* Rohwer. That which agreed with Norton's original description, and was from the type locality, has been considered the type. Agreeing with this type, specimens have been seen from the following localities: Ithaca, N. Y. (two females); Canada (one female); McLean, N. Y., May 8, 1891 (male and female); Washington, D. C., April 22, 1885 (one male); Clementon, N. J., April 25, 1909, Harbeck (one male which has the mesoscutum dark brown). Norton records this species from Maine, Massachusetts, Maryland, and Saskatchewan.

Konow[a] states that this species feeds on *Amelanchier canadensis.* The only statement which seems to indicate such a habit is by Nor-

[a] Zeitschr. syst. Hym. Dipt., vol. 1, p, 174, 1901; or Syst. Zusam. Chalastogastra, p. 46, 1901.

ton:[a] "Taken in April for successive years in Baltimore, by Mr. Uhler, on *Amelanchier canadensis.*" Konow's statement needs verification.

Hoplocampa (Hoplocampa) bioculata Rohwer.

Hoplocampa bioculata Rohwer, Can. Ent., vol. 40, p. 179, 1908, ♀.

In the collection of the U. S. National Museum there are many females of this species from Colorado, two females from Pullman, Wash. (C. V. Piper), and one female from Oregon (Koebele). There are also males from Colorado.

Male.—Length 3.5 mm. Structurally like the female. Hypopygidium truncate apically. Antennæ orange color; head with more reddish-yellow than the female, the postocellar area always black; legs below coxæ, venter, and apical tergal segments orange color; mesoprescutum sometimes margined with pale.

Hoplocampa (Hoplocampa) pallipes MacGillivray.

(Plate XXIII, fig. 7; Plate XXIV, fig. 2.)

Hoplocampa pallipes MacGillivray, Can. Ent., vol. 25, p. 239, 1893.

Two females which have been determined as this species are from Pullman, Wash. (C. V. Piper). MacGillivray's specimens came from Skokomish River, Wash.

Selandria canadensis Provancher.

Selandria canadensis Provancher, Add. Fauna Ent. Canada, pt. 2, p. 7, 1895; l. c., p. 351.

This has been placed in *Hoplocampa,* but does not seem to belong in this genus. Provancher says: "La cellule lancéolée fermée au milieu; ailes inférieures avec une cellule discoïdale." *Hoplocampa* always has two discoidal cells. Nothing in the collection agrees with this. On page 351 (l. c.), after defining *Hoplocampa* on page 349 (l. c.) as follows: "Cellule lancéolée contractée au milieu; ailes inférieures à 2 cellules discoïdales," Provancher places *Selandria canadensis* in *Hoplocampa.*

Selandria flavicornis Provancher.

Selandria flavicornis Provancher, Nat. Can., vol. 10, p. 100, 1878.

Provancher[b] placed this as a synonym of *Hoplocampa halcyon* Norton. The original description says: "Cellule lancéolée pétiolée." The types of this and the above species may place these species in different genera.

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[a] Catalogue of the described Tenthredinidæ and Uroceridæ of North America. <Trans. Amer. Ent. Soc., vol. 1, p. 252, 1867 (catalogue, p. 119).

[b] Add. Fauna Ent. Can., pt. 2, p. 351, 1888.

Hoplocampa (?) atriceps Kirby.

Hoplocampa (?) *atriceps* Kirby, List Hym. Brit. Mus., vol. 1, p. 168, 1882, no. 19, ♀; pl. 8, fig. 18.

Examination of the type of this species proves that it is the same as *Strongylogaster uncus* Norton.

Hoplocampa lenis (Cresson).
Hoplocampa spissipes (Cresson).

These two species placed in Cresson's catalogue (1887) in *Hoplocampa* belong to *Lycaota* Konow.

Hoplocampa gentilis (Cresson).
Hoplocampa montana (Cresson).

These two species placed in *Hoplocampa* by Cresson (1887) belong to *Zaschizonyx* Ashmead.

Tenthredo (Allantus) obtusa Klug.

Tenthredo (*Allantus*) *obtusa* Klug, Mag. ges. Nat. Berlin, vol. 3, p. 55, 1814.

This species has been placed in *Hoplocampa* by Konow (1905). Klug's original description says: "Die zweite Kubitalzelle nimmt zwei zurücklaufende Nerven auf, von welchen der zweite dicht von dem Anfang der dritten Zelle sich einsenkt," which excludes it from *Hoplocampa*.

SYNOPTIC TABLE TO THE NEARCTIC SPECIES OF THE SUBGENUS HOPLOCAMPA.

Males ..... 1.
Females ..... 7.

1. Hypopygidium not regularly rounded apically, more or less angled at the sides and apical middle ..... 2.
   Hypopygidium regularly rounded apically [a] ..... 3.
2. Antennæ very slender; mesonotum almost entirely pale; hypopygidium obtusely angled apically ..... *occidentalis* Rohwer.
   Antennæ more robust; mesonotum black; hypopygidium more acutely angled apically ..... *montanicola* Rohwer.
3. Clypeus nearly truncate, broadly arcuately emarginate (ocellar basin almost wanting) ..... 4.
   Clypeus deeply emarginate, the emargination subangulate ..... 5.
4. Mesopleuræ and pectus black; hypopygidium truncate .... *bioculata* Rohwer.
   Mesopleuræ and pectus pale; hypopygidium rounded ..... *californica* Rohwer.
5. Third antennal joint distinctly longer than the fourth; stigma narrow, broadest basad of middle ..... *marlatti* Rohwer.
   Third antennal joint subequal in length with the fourth ..... 6.

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[a] To determine this the hypopygidium should be viewed at right angles. When the hypopygidium is not regularly rounded, the sides are subparallel and the apex slopes off obliquely to an angulate middle.

6. Postocellar area well defined, twice as wide as the cephalo-caudal length, flat, stigma narrow; lanceolate cell of the fore-wings narrowly contracted (see figure) ..... *alpestris* Rohwer.
   Postocellar area convex, not so sharply defined; stigma broader; contraction of the lanceolate cell distinctly longer than the width of the cell (see figure), *halcyon* Norton.
7. Mesopleuræ and pectus black ..... 8.
   Mesopleuræ and pectus pale ..... 12.
8. Legs entirely fulvo-ferruginous; orbits continuously pale ..... 9.
   Legs more or less black or dusky, especially the posterior pair; orbits not continuously pale ..... 11.
9. Ocellar basin of the normal type, open below, poorly defined; saw with very long truncate teeth which are narrower at their bases; (clypeus deeply emarginate, lobes narrow) ..... *orbitalis* Rohwer.
   Ocellar basin small, punctiform present only just in front of the anterior ocellus; saw with narrow teeth ..... 10.
10. Clypeus broadly, angulately emarginate, lobes sharply triangular; head distinctly punctured; stigma gently rounded below ..... *koebelei* Rohwer.
    Clypeus arcuately emarginate, lobes broad, obtusely rounded; head shining, very sparsely punctured; stigma strongly tapering ..... *alpestris* Rohwer.
11. Supraclypeal area shiny, flattened, or but slightly convex; stigma rounded on the lower margin; clypeus very shallowly emarginate ..... *bioculata* Rohwer.
    Supraclypeal area roughened, strongly convex; stigma strongly tapering; clypeus rather deeply, angulately emarginate ..... *californica* Rohwer.
12. Third antennal joint distinctly longer than the fourth ..... 13.
    Third and fourth antennal joints subequal ..... 14.
13. A small circular fovea in front of the anterior ocellus; mesoscutum with black spots laterally ..... *marlatti* Rohwer.
    No small fovea in front of the anterior ocellus; mesoscutum immaculate, *nevadensis* Rohwer.
14. Ocellar basin practically wanting ..... 15.
    Ocellar basin large, distinct ..... 16.
15. Middle fovea wanting; sheath narrowly rounded apically .. *pallipes* MacGillivray.
    Middle fovea represented by a large shallow depression; sheath narrowly truncate apically ..... *xantha* Rohwer.
16. Sheath narrowly rounded apically; stigma broadest at base, tapering to apex, *halcyon* Norton.
    Sheath obtusely rounded or subtruncate apically: stigma narrower, gently rounded below ..... 17.
17. Scape black; sheath subtruncate apically; front of head closely punctured, *occidentalis* Rohwer.
    Scape pale; sheath obtusely rounded apically; front of head with separate, small, distinct punctures ..... *montanicola* Rohwer.

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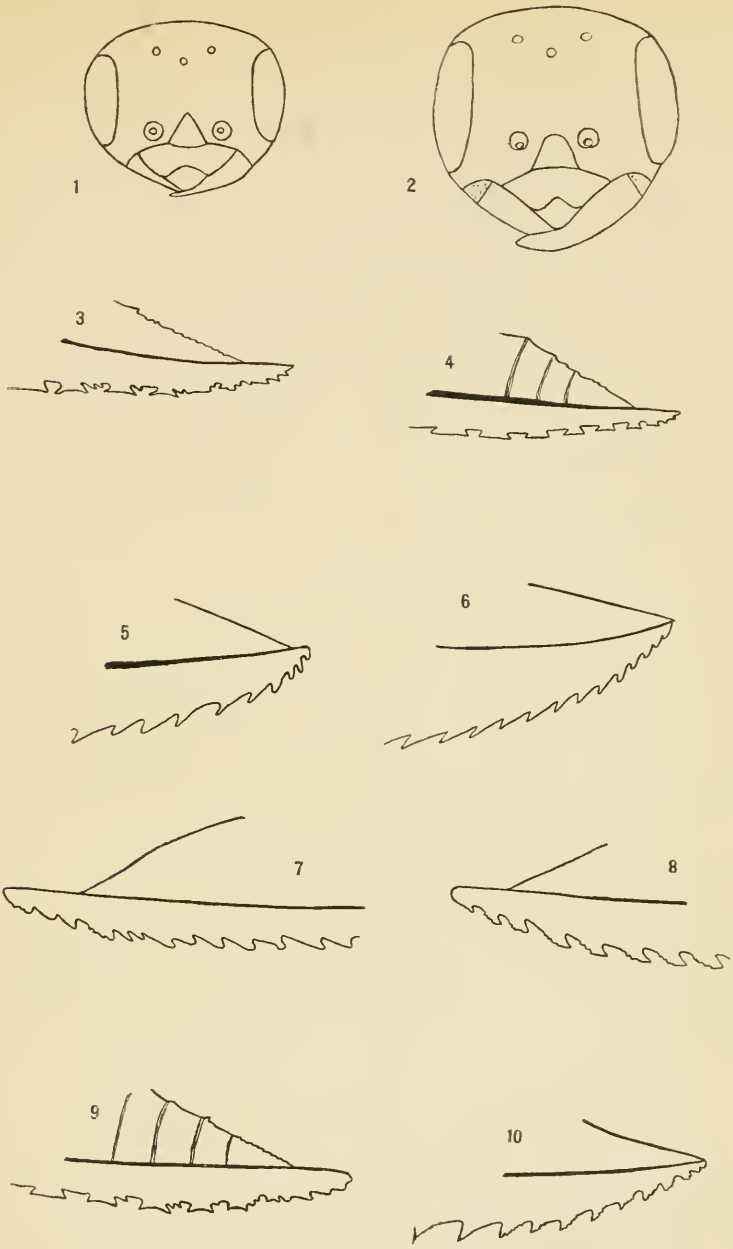

THE SAWFLY GENUS HOPLOCAMPA.

Fig. 1.—*Hoplocampa* (*Macgillivrayella*) *oregonensis:* Front view of head. Fig. 2.—*Hoplocampa* (*Hoplocampa*) *flava:* Front view of head. Fig. 3.—*Hoplocampa* (*Hoplocampa*) *orbitalis:* Saw. Fig. 4.—*Hoplocampa* (*Hoplocampa*) *montanicola:* Saw. Fig. 5.—*Hoplocampa* (*Hoplocampa*) *alpestris:* Saw. Fig. 6.—*Hoplocampa* (*Hoplocampa*) *koebeleí:* Saw. Fig. 7.—*Hoplocampa* (*Hoplocampa*) *pallipes:* Saw. Fig. 8.—*Hoplocampa* (*Hoplocampa*) *halcyon:* Saw. Fig. 9.—*Hoplocampa* (*Hoplocampa*) *xantha:* Saw. Fig. 10.—*Hoplocampa* (*Hoplocampa*) *nevadensis:* Saw. (Original.)

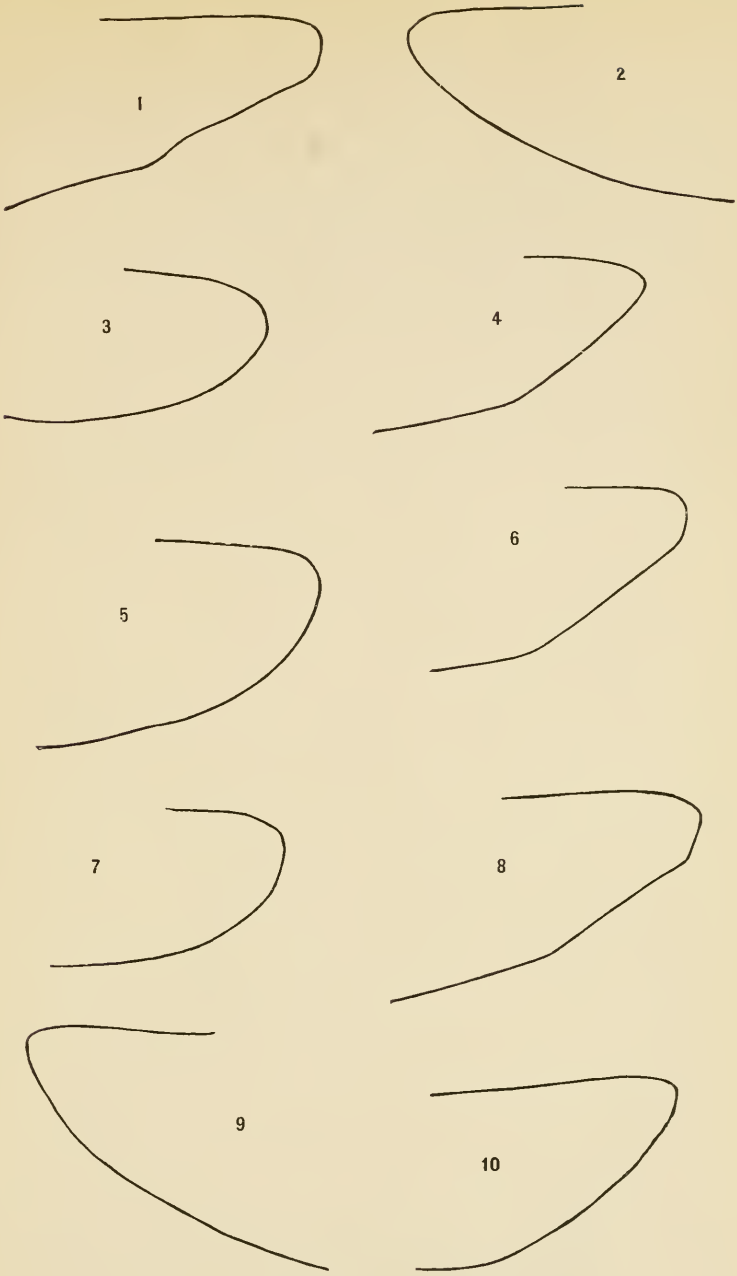

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Fig. 1.—*Hoplocampa* (*Hoplocampa*) *xantha:* Sheath. Fig. 2.—*Hoplocampa* (*Hoplocampa*) *pallipes:* Sheath. Fig. 3.—*Hoplocampa* (*Hoplocampa*) *kocbelei:* Sheath. Fig. 4.—*Hoplocampa* (*Hoplocampa*) *nevadensis:* Sheath. Fig. 5.—*Hoplocampa* (*Hoplocampa*) *alpestris:* Sheath. Fig. 6.—*Hoplocampa* (*Hoplocampa*) *montanicola:* Sheath. Fig. 7.—*Hoplocampa* (*Hoplocampa*) *marlatti:* Sheath. Fig. 8.—*Hoplocampa* (*Hoplocampa*) *occidentalis:* Sheath. Fig. 9.—*Hoplocampa* (*Hoplocampa*) *halcyon:* Sheath. Fig. 10.—*Hoplocampa* (*Hoplocampa*) *orbitalis:* Sheath. (Original.)

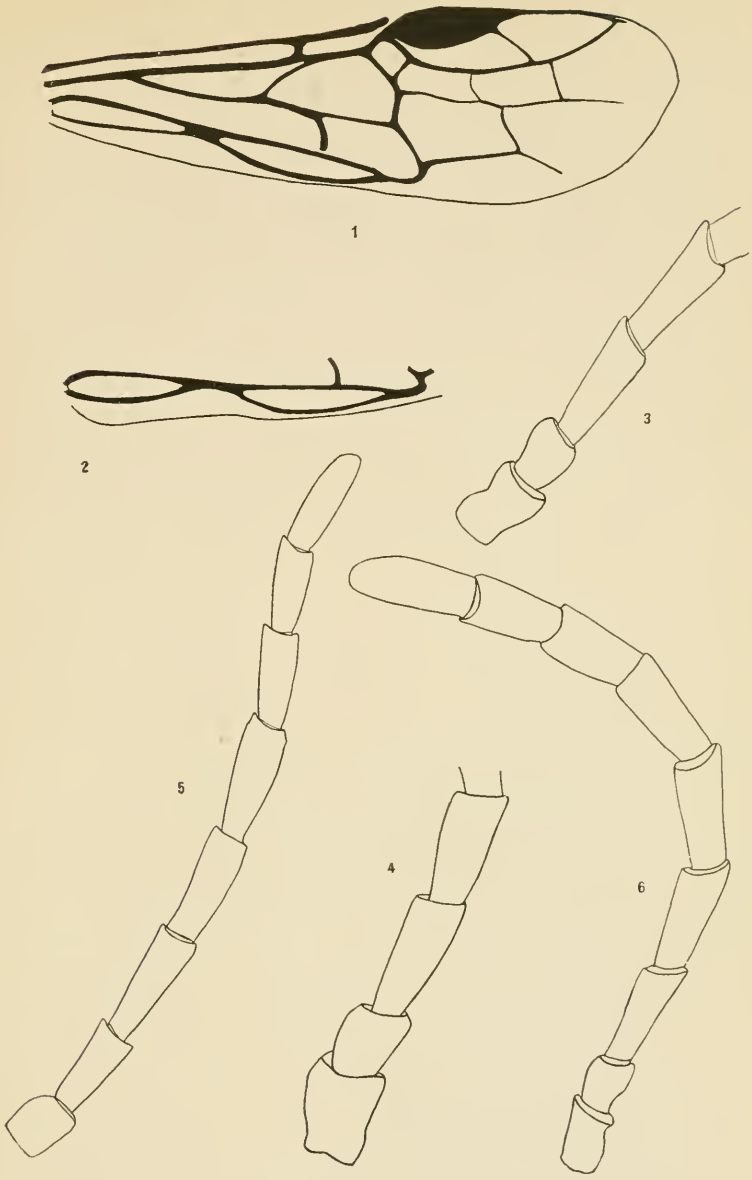

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Fig. 1.—*Hoplocampa* (*Hoplocampa*) *alpestris:* Male, anterior wing. Fig. 2.—*Hoplocampa* (*Hoplocampa*) *halcyon:* Male, anal cell of fore wing. Fig. 3.—*Hoplocampa* (*Hoplocampa*) *montanicola:* Female, four basal antennal joints. Fig. 4.—*Hoplocampa* (*Hoplocampa*) *nevadensis:* Female, four basal antennal joints. Fig. 5.—*Hoplocampa* (*Hoplocampa*) *occidentalis:* Male antenna. Fig. 6.—*Hoplocampa* (*Hoplocampa*) *montanicola:* Male antenna. (Original.)

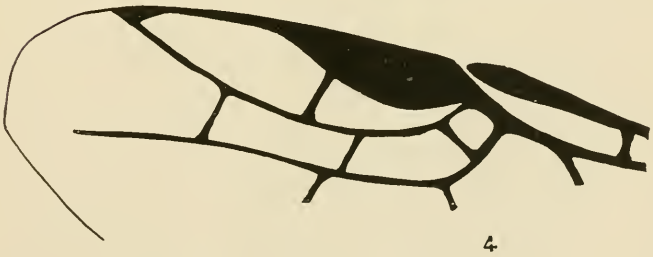

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Fig. 1.—*Hoplocampa* (*Hoplocampa*) *flava:* Female, radial area in fore wing. Fig. 2.—*Hoplocampa* (*Hoplocampa*) *halcyon:* Female, radial area in fore wing. Fig. 3.—*Hoplocampa* (*Hoplocampa*) *montanicola:* Female, radial area in fore wing. Fig. 4.—*Hoplocampa* (*Macgillivrayella*) *lacteipennis:* Female, radial area in fore wing. (Original.)