

mitted him to collect there for the museums of Messrs. Lund and Sehestedt.

### *Schematiza lateralis* Jacoby

Jacoby, 1887 (Biol. Centr.-Amer., Coleopt., 6 (pt. 1): 498), adopts *Schematiza* (Chevrolat) Blanchard, 1845, with comments on included forms so similar to *Galerucella* as to suggest assignment there. Among his eight new species *S. lateralis* is described (p. 499) from "Mexico, Oaxaca (Salle), and Panama, Volcán de Chiriquí, Bugaba (Champion)," mentioning many specimens but designating no type locality or holotype. Four of the specimens collected by Champion on the Volcán de Chiriquí were presented to the United States National Museum. One of these specimens does not agree with Jacoby's description and is obviously specifically distinct from the other three. Lest the Oaxaca cotype be also found specifically distinct, the type locality of *lateralis* is now designated as the Volcán de Chiriquí. In these three cotypes a rather strong costa, prominent enough above the submarginal sulcus to obscure the marginal costa in direct dorsal aspect, runs almost straight from humerus to apical fifth of elytra where it curves strongly inward ending near middle of apex. This costa, the pale submarginal elytral vitta, the shape of the pronotum, the black median pronotal vitta and the narrower, more parallel form are peculiarities of *lateralis* not found in

the species from Trinidad which has been misidentified as *lateralis* but which may be known as follows:

### *Schematiza cordiae*, n. sp.

Opaque, fuscous, depressed, elongate oval, sides arcuate, length 6–7.5 mm, width 3–3.6 mm.

Pronotum twice as wide as long, sides expanded and strongly arcuate, surface broadly impressed at lateral fourths and narrowly over occiput. Elytra smooth, evenly convex from within the prominent marginal costa to the elevated sutural costa, showing no vestige of submarginal costa characteristic of *lateralis*; sculpture and vestiture fine and dense. Antennae slightly thickened near middle, tapering apically, not flattened. Sexes extremely similar.

Described from '16 specimens labeled "on black sage, St. Augustine, Trinidad, B. W. I. May 2, 1944. A. M. Adamson, collector, 4070."

*Host plant*.—*Cordia macrostachya*.

Holotype male and 12 paratypes, U.S.N.M. no. 58362.

Three paratypes returned to F. J. Simmonds in Trinidad. A similar sample now referred to this species consists of 31 specimens labeled "on *Cordia cylindrostachya*, Caracas, D. F., Venezuela, Oct. 4, 1939, C. H. Ballou, No. 934." Eight specimens from St. Vincent seem to represent a very closely related species.

ENTOMOLOGY.—*New North American species and new assignments in the genus Chionodes (Lepidoptera: Gelechiidae).*<sup>1</sup> J. F. GATES CLARKE, Bureau of Entomology and Plant Quarantine.

The purpose of this paper is to assign certain species of North American gelechiids, the generic position of which was not determined by Busck, and to describe some of a large number of hitherto unnamed species in this family that have been accumulating at the United States National Museum. In Busck's paper<sup>2</sup> he did not recognize some of Annette F. Braun's and E. Meyrick's species and therefore did not assign them to their proper genera. I have examined some of these and will assign

them to the appropriate genera in this and subsequent papers.

### Genus *Chionodes* Hübner

#### *Chionodes nigrobarbata* (Braun), n. comb.

*Gelechia nigrobarbata* Braun, Can. Ent. 57: 125. 1925.

#### *Chionodes occlusa* (Braun), n. comb.

*Gelechia occlusa* Braun, Can. Ent. 57: 126. 1925.

#### *Chionodes permacta* (Braun), n. comb.

*Gelechia permacta* Braun, Can. Ent. 57: 126. 1925.

#### *Chionodes asema*, n. sp.

Figs. 6–6c, 15

Labial palpus with second segment ocherous

<sup>1</sup> Received February 4, 1947.

<sup>2</sup> BUSCK, A., *Restriction of the genus Gelechia (Lepidoptera: Gelechiidae), with descriptions of new species*. Proc. U. S. Nat. Mus. 86: 574. 1939.



white inwardly, blackish fuscous exteriorly and in the brush; third segment mixed blackish fuscous and ocherous-white; tip ocherous-white. Antenna blackish fuscous annulated with pale ocherous. Head and thorax pale yellowish brown, mixed with a few scattered black and fuscous scales; base of tegula blackish fuscous. Forewing ground color sordid white, so heavily overlaid with pale yellow-brown and blackish-fuscous markings as to be obscured except in some specimens in which the ground color is pronounced along costa; at basal fourth an outwardly oblique, blackish-fuscous fascia extends almost to dorsum at basal third; a spur of this fascia branches off and extends almost to middle of cell; from the end of cell to tornus is another outwardly oblique, blackish-fuscous fascia; from costa, at apical third a narrow, S-shaped, pale line extends completely across wing; preceding the pale line is a fuscous spot on costa; beyond this line is a blackish-fuscous shading; cilia pale yellowish brown. Hind wing light gray basally shading to blackish fuscous at apex; cilia fuscous, first and second legs ocherous white inwardly, banded with blackish fuscous outwardly. Abdomen fuscous above, buff beneath, shaded with fuscous.

*Male genitalia*.—Harpes asymmetrical. Right harpe slender and, with its terminal setae, nearly attaining apex of uncus; at base is a strong angulate process and near distal end is a small, sharp ventrolateral tooth; left harpe long, slender, curved, terminating in a sharp point. Gnathos strong, angulate. Aedeagus slightly more than twice as long as right harpe, the stalk half as long as the stout distal portion; from side, near terminal end, a strong sclerotized process divided at its outer end.

*Female genitalia*.—Ostium wide. Ductus bursae broad, sclerotized for nearly its entire length. Inception of ductus seminalis at posterior end of bursa copulatrix; in posterior part of bursa are numerous small scobinations; signum a subquadrate plate with several sharp teeth at the anterior and posterior ends.

Alar expanse, 12–16 mm.

*Type*.—U.S.N.M. no. 58234.

*Type locality*.—Putnam County, Ill.

*Remarks*.—Described from the ♂ type and five ♂ and two ♀ paratypes as follows: ♂ type, and 1 ♂ paratype, Putnam County, Ill. (29-VI and 15-VII-1941, Murray O. Glenn); 2 ♂ ♂, 2 ♀ ♀, Oak Station, Allegheny County,

Pa. (29-VII-1911, 4-VII-1909, 5-VII-1908, Fred Marloff); 3 ♂ ♂, Pittsburgh, Pa. (2-30-VII-1906, Henry Engel).

Paratypes in the United States National Museum, the British Museum, and the Murray O. Glenn collection.

This species is strikingly similar to *C. negundella* (Heinrich), but can be distinguished from it by the large basal process and small terminal spur of the right harpe, and by the signum, which is twice as large in *asema* and lacks the toothed edge of the signum of *negundella*.

### **Chionodes iridescens, n. sp.**

Figs. 1–1a, 12

Labial palpus with second segment ocherous-white shading to ocherous in the brush; the entire length of second segment overlaid with black scaling above; third segment black except base and a few scattered scales, which are pale ocherous. Antenna black, annulated with sordid whitish. Face buff. Head, thorax, and forewing black with a strong purple iridescence; at apical third of forewing is a conspicuous, but small, buff spot; cilia gray. Hind wing grayish fuscous, darker toward margins; cilia gray. Underside of fore and hind wings sooty. First and second legs black with a few scattered buff scales; tarsi annulated with buff; third leg black exteriorly, buff inwardly; tarsi buff and black. Abdomen shining fuscous above, iridescent black beneath.

*Male genitalia*.—Harpes nearly symmetrical, about as long as the uncus, slender, curved. Gnathos long, slender, curved. Uncus large, hood-shaped, as broad as long. Aedeagus as long as the uncus, tegumen, and vinculum combined; slender stalk of aedeagus slightly longer than the enlarged distal part; from side, near end of aedeagus, a large winglike, bifid structure.

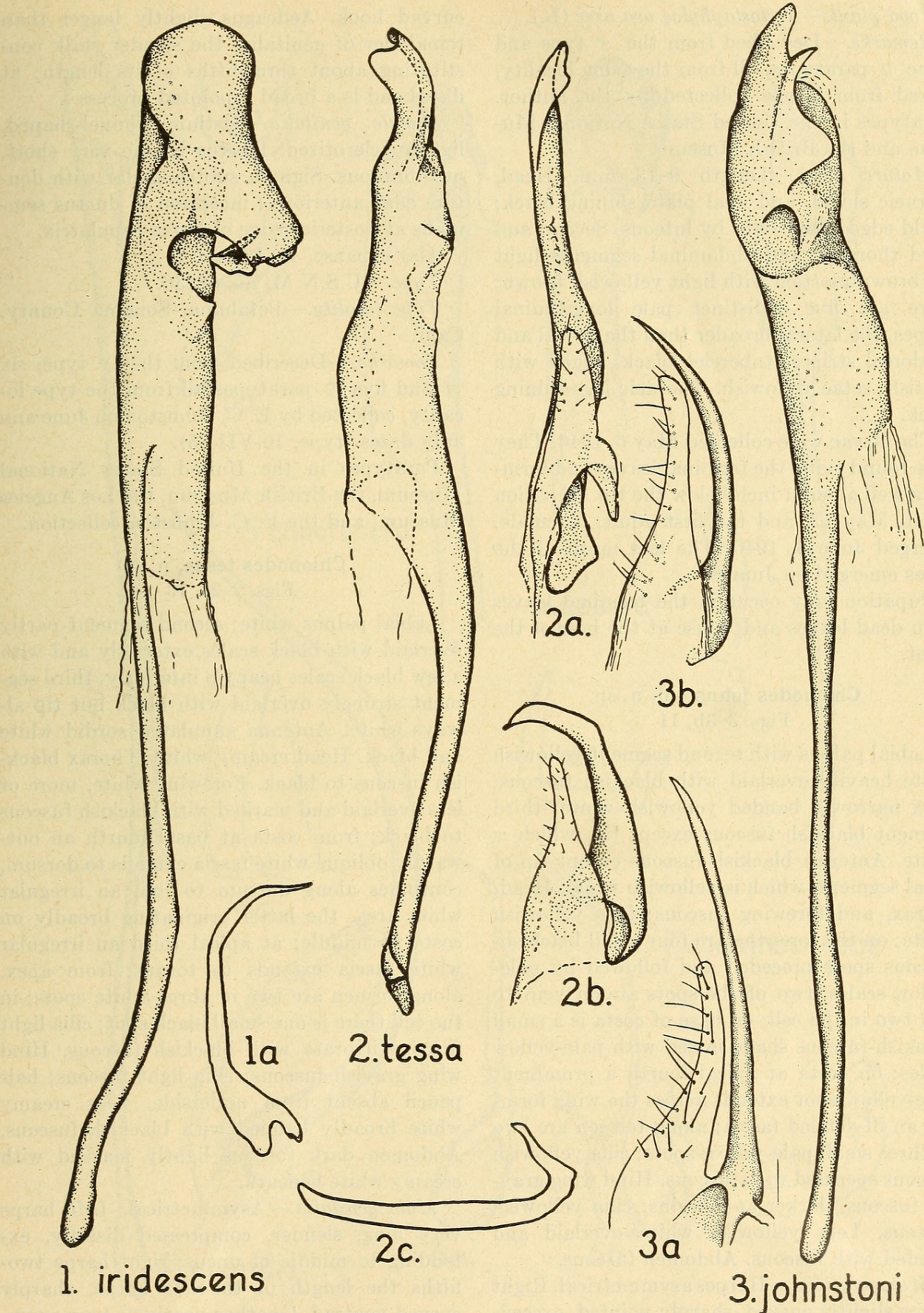
*Female genitalia*.—Ostium broad, opening into the broad, flattened sclerotized ductus bursae, which narrows as it joins the bursa copulatrix; inception of ductus seminalis from an evagination on the posterior left side of the bursa; signum a large irregular plate with two small thornlike processes from anterior and posterior ends.

Alar expanse, 16–17 mm.

*Type*.—U.S.N.M. no. 58235.

*Type locality*.—American Lake, Pierce County, Wash.





FIGS. 1-1a.—*Chionodes iridescens*, n. sp.: 1, Lateral view of aedeagus; 1a, left harpe, lateral aspect.  
FIGS. 2-2c.—*Chionodes tessa*, n. sp.: 2, Lateral view of aedeagus; 2a, left harpe; 2b, right harpe; 2c, gnathos.  
FIGS. 3-3b.—*Chionodes johnstoni*, n. sp.: 3, Lateral view of aedeagus; 3a, left harpe; 3b, right harpe.



*Food plant.*—*Arctostaphylos uva ursi* (L.).

*Remarks.*—Described from the ♂ type and three ♀ paratypes, all from the same locality, reared from larvae collected by the author. Paratypes in the United States National Museum and the British Museum.

*Mature larva.*—Length 9–13 mm. Head, thoracic shield, and anal plate shining black; shield edged anteriorly by luteous. Second and third thoracic, and abdominal segments light red brown mottled with light yellowish brown; there are five indistinct pale longitudinal stripes, the lateral broader than the dorsal and subdorsal stripes; tubercles black, edged with whitish; setae yellowish. Thoracic legs shining black.

The larvae were collected May 6, 1946. They were found tying the terminal leaves and forming a web about 1 inch below the tip. Pupation began May 12, and the first adult, a female, emerged June 3, 1946. The last moth of the series emerged on June 8.

Pupation may occur in the terminal leaves or in dead leaves and refuse at the base of the plant.

***Chionodes johnstoni*, n. sp.**

Figs. 3–3b, 11

Labial palpus with second segment yellowish white heavily overlaid with blackish fuscous; apex narrowly banded yellowish white; third segment blackish fuscous except tip, which is white. Antenna blackish fuscous except tip of basal segment, which is yellowish white. Head, thorax, and forewing fuscous; face yellowish white; on the forewing are four small blackish-fuscous spots preceded and followed by pale-yellow scales; two of the spots are on vein 1b and two in the cell; on base of costa is a small blackish-fuscous shade mixed with pale-yellow scales; on costa at apical fourth a prominent pale-yellow spot extends across the wing forming an ill-defined fascia; along termen are two or three small pale-yellow spots; cilia yellowish fuscous speckled with fuscous. Hind wing grayish fuscous, darker at margins; cilia yellowish fuscous. Legs yellowish white overlaid and banded with fuscous. Abdomen fuscous.

*Male genitalia.*—Harpes asymmetrical. Right harpe slightly curved, sharply pointed, exceeding tegumen; basal process slightly more than two-thirds the length of harpe; left harpe about one-third longer than right harpe, slightly curved, bluntly pointed. Gnathos a strong,

curved hook. Aedeagus slightly longer than remainder of genitalia, the slender stalk constituting about three-fifths of its length; at distal end is a broad 3-pointed process.

*Female genitalia.*—Ostium funnel-shaped, lightly sclerotized. Ductus bursae very short, membranous. Signum subtriangular with dentate edge anteriorly; inception of ductus seminalis at posterior edge of bursa copulatrix.

Alar expanse, 11–16 mm.

*Type.*—U.S.N.M. no. 58236.

*Type locality.*—Petaluma, Sonoma County, Calif.

*Remarks.*—Described from the ♂ type, six ♂ and five ♀ paratypes all from the type locality, collected by E. C. Johnston on June and July dates (type, 10-VII-35).

Paratypes in the United States National Museum, the British Museum, the Los Angeles Museum, and the E. C. Johnston collection.

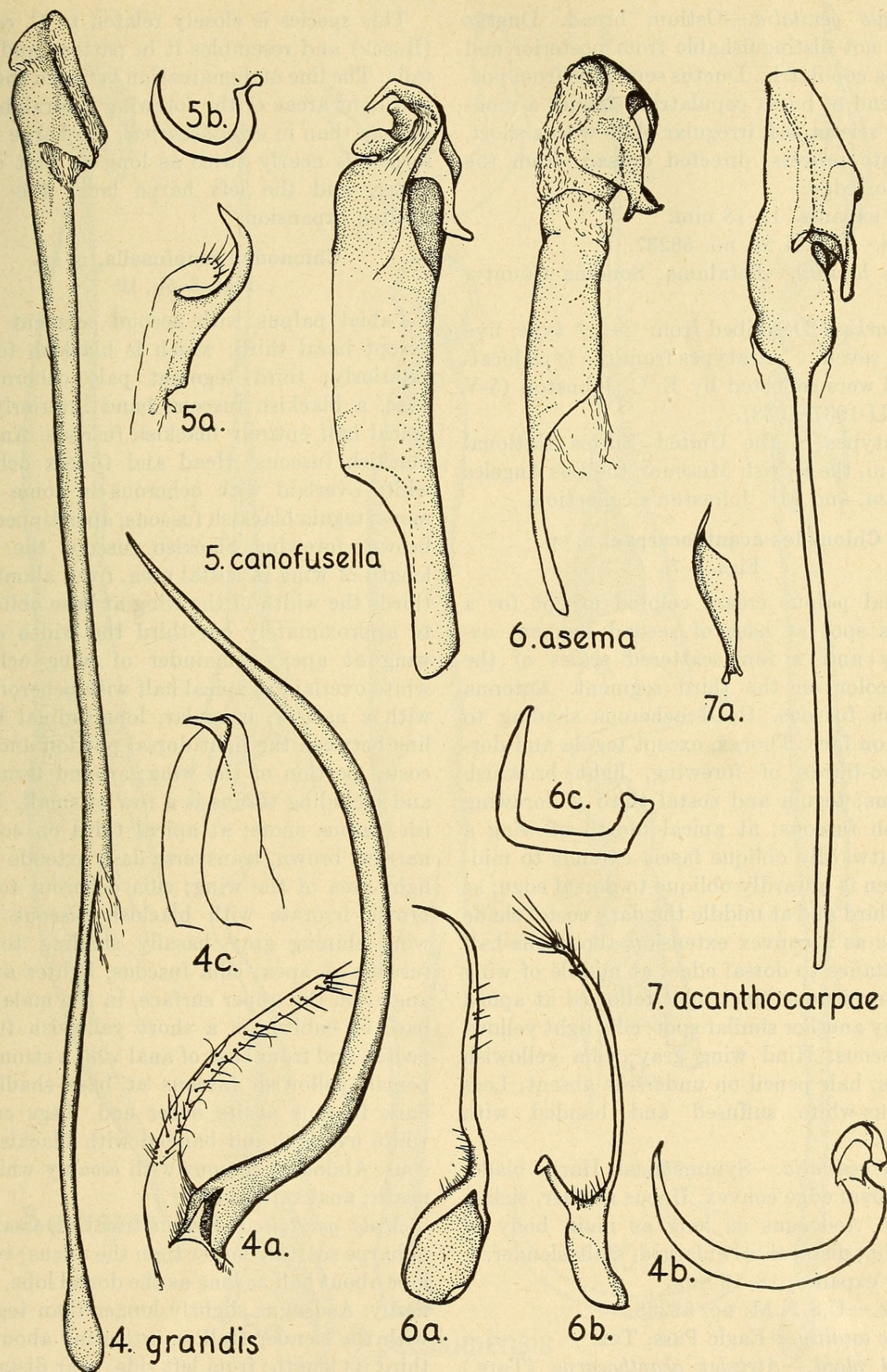
***Chionodes tessa*, n. sp.**

Figs. 2–2c, 13

Labial palpus white; second segment partly overlaid with black scales exteriorly and with a few black scales near tip interiorly; third segment strongly overlaid with black but tip always white. Antenna annulated sordid white and black. Head creamy white. Thorax blackish fuscous to black. Forewing white, more or less overlaid and marked with blackish fuscous to black; from costa at basal fourth an outwardly oblique white fascia extends to dorsum, continues along dorsum to join an irregular white area, the latter originating broadly on costa at middle; at apical third an irregular white fascia extends to tornus; from apex, along termen are two or three white spots; in the cell there is one small black spot; cilia light fuscous irrorate with blackish fuscous. Hind wing grayish fuscous; cilia light fuscous; hair pencil absent from underside. Legs creamy white broadly banded with blackish fuscous. Abdomen dark fuscous lightly marked with creamy white beneath.

*Male genitalia.*—Asymmetrical. Left harpe very long, slender, compressed distally, extending to middle of uncus; right harpe two-fifths the length of the left harpe, sharply curved ventrad. Gnathos nearly as long as uncus, sharply curved basally then nearly straight. Aedeagus as long as uncus and tegumen combined; proximal end bifid; distal end and a lateral extension, spoon-shaped.





FIGS. 4-4c.—*Chionodes grandis*, n. sp.: 4, Lateral view of aedeagus; 4a, right harpe; 4b, gnathos; 4c, ventrolateral aspect of uncus, in outline, to show caudal hook.

FIGS. 5-5b.—*Chionodes canofusella*, n. sp.: 5, Lateral view of aedeagus; 5a, left harpe; 5b, gnathos.

FIGS. 6-6c.—*Chionodes asema*, n. sp.: 6, Lateral view of aedeagus; 6a, left harpe; 6b, right harpe; 6c, gnathos.

FIGS. 7-7a.—*Chionodes acanthocarpae*, n. sp.: 7, Lateral view of aedeagus; 7a, left harpe.



*Female genitalia*.—Ostium broad. Ductus bursae not distinguishable from posterior end of bursa copulatrix. Ductus seminalis from posterior end of bursa copulatrix; signum a moderately sclerotized, irregular plate with a short, spatulate process, directed dorsad, from the posterior edge.

Alar expanse, 12–18 mm.

*Type*.—U.S.N.M. no. 58237.

*Type locality*.—Petaluma, Sonoma County, Calif.

*Remarks*.—Described from the ♂ type, five ♂ and seven ♀ paratypes from the type locality. All were collected by E. C. Johnston (5-V to 1-VII-1937–1938).

Paratypes in the United States National Museum, the British Museum, the Los Angeles Museum, and Mr. Johnston's collection.

***Chionodes acanthocarpae*, n. sp.**

Figs. 7–7a

Labial palpus cream colored except for a fuscous spot at base of second segment exteriorly and a few scattered scales of the same color on the third segment. Antenna blackish fuscous. Head ocherous shading to cream on face. Thorax, except tegula and dorsal two-thirds of forewing, light brownish ocherous; tegula and costal third of forewing blackish fuscous; at apical fourth of wing a buff outwardly oblique fascia extends to middle, then is inwardly oblique to dorsal edge; at basal third and at middle the dark costal shade extends as a convex extension about one-half the distance to dorsal edge; at middle of wing is a conspicuous black spot followed at apical third by another similar spot; cilia light yellowish fuscous. Hind wing gray; cilia yellowish fuscous; hair pencil on underside absent. Legs ocherous-white suffused and banded with fuscous.

*Male genitalia*.—Symmetrical. Harpe blade-like, dorsal edge convex. Uncus slender, sickle-shaped. Aedeagus as long as main body of genitalia; distal third enlarged, stalk slender.

Alar expanse, 18–19 mm.

*Type*.—U.S.N.M. no. 58238.

*Type locality*.—Eagle Pass, Tex.

*Food plant*.—*Atriplex acanthocarpa* (Torr.) Wats.

*Remarks*.—Described from the ♂ type (18-V-1938, L. F. Hitchcock) and one ♂ paratype from San Diego, Calif. (12-IX-1919, Karl R. Coolidge).

This species is closely related to *C. coticola* (Busck) and resembles it in pattern and genitalia. The line of demarcation between the dark and light areas of the forewing is straighter in *coticola* than in *acanthocarpae*, the harpe of the former is nearly twice as long as that of the latter, and the left harpe lacks the broad median expansion.

***Chionodes canofusella*, n. sp.**

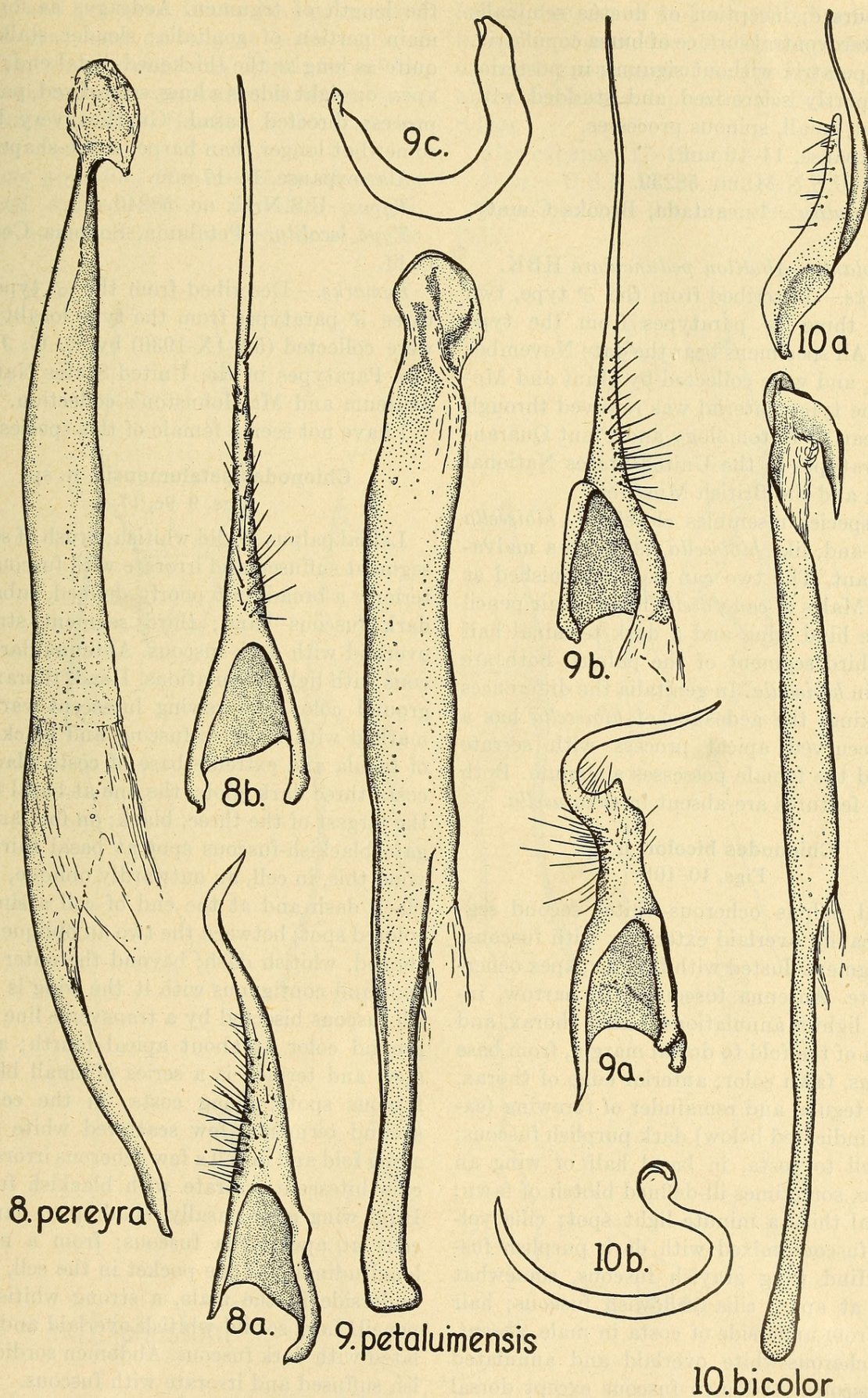
Figs. 5–5b, 16

Labial palpus with second segment white except basal third, which is blackish fuscous exteriorly; third segment pale ocherous at base, a blackish fuscous band interiorly and apical half entirely blackish fuscous. Antenna blackish fuscous. Head and thorax ocherous white overlaid with ocherous in some specimens; tegula blackish fuscous, apex tipped with brown; forewing blackish fuscous the whole length of wing in costal area, from about two-thirds the width of the wing at base obliquely, to approximately one-third the width of the wing at apex; remainder of wing ocherous white overlaid in apical half with ocherous and with a narrow, irregular, longitudinal brown line between the light dorsal portion and dark costal portion of the wing; around termen to and including tornus is a row of small, blackish-fuscous spots; at apical third on costa, a narrow, brown, transverse dash extends to the light area of the wing; cilia ocherous to light brown irrorate with blackish fuscous. Hind wing shining gray basally shading to dark fuscous at apex; cilia fuscous, lighter at anal angle; on the upper surface, in the male, from base of cubitus is a short yellowish fuscous pecten and from base of anal vein a strong hair pencil, yellowish fuscous at base shading to dark fuscous at its outer end. Legs creamy white overlaid and banded with blackish fuscous. Abdomen fuscous with creamy white beneath; anal tuft white.

*Male genitalia*.—Symmetrical. Dorsal lobe of harpe scarcely larger than the uncus; ventral lobe about half as long as the dorsal lobe, weak, fleshy. Aedeagus slightly longer than tegumen with the slender stalk constituting about one-third its length; from left side, near distal end, is a slender, reverse S-shaped process and from apex a short spur, curved cephalad. Uncus a strongly curved hook.

*Female genitalia*.—Ostium broad, funnel-shaped, narrowing to the short, membranous





FIGS. 8-8b.—*Chionodes pereyra*, n. sp.: 8, Lateral view of aedeagus; 8a, left harpe; 8b, right harpe.

FIGS. 9-9c.—*Chionodes petalumensis*, n. sp.: 9, Lateral view of aedeagus; 9a, left harpe; 9b, right harpe; 9c, gnathos.

FIGS. 10-10b.—*Chionodes bicolor*, n. sp.: 10, Lateral view of aedeagus; 10a, right harpe; 10b, gnathos.



ductus bursae; inception of ductus seminalis from posteroventral surface of bursa copulatrix. Bursa copulatrix without signum; in posterior portion partly sclerotized and studded with closely set, small, spinous processes.

Alar expanse, 14–16 mm.

*Type*.—U.S.N.M. no. 58239.

*Type locality*.—Encantada, Brooks County, Tex.

*Food plant*.—*Abutilon pedunculare* HBK.

*Remarks*.—Described from the ♂ type, two ♂, and three ♀ paratypes from the type locality. All specimens bear the date November 28, 1940, and were collected by Hunt and McGarr. The type material was received through the Bureau of Entomology and Plant Quarantine. Paratypes in the United States National Museum and the British Museum.

This species resembles closely *C. hibiscella* (Busck) and, like *hibiscella*, feeds on a malvaceous plant. The two can be distinguished as follows: Males of *canofusella* have a hair pencil from the hind wing and a dark terminal half of the third segment of the palpus; both are lacking in *hibiscella*. In genitalia the differences are striking; the aedeagus of *hibiscella* has a large, recurved apical process with serrate edge and the female possesses a signum. Both of these features are absent in *canofusella*.

***Chionodes bicolor*, n. sp.**

Figs. 10–10b

Labial palpus ochereous-white; second segment heavily overlaid exteriorly with fuscous; third segment dusted with fuscous; apex ochereous-white. Antenna fuscous with narrow, indistinct lighter annulations. Head, thorax, and the area of the fold to dorsal margin, from base to tornus, fawn color; anterior edge of thorax, base of tegula, and remainder of forewing (except as indicated below) dark purplish fuscous; from cell to costa, in basal half of wing an elongate, sometimes ill-defined blotch of fawn; at apical third a minute light spot; cilia yellowish fuscous mixed with dark purplish fuscous. Hind wing grayish fuscous, somewhat darker at apex; cilia yellowish fuscous; hair pencil from underside of costa in male, absent. Legs ochereous-white overlaid and annulated with fuscous. Abdomen fuscous except dorsal surface of first three segments, which is sordid yellow.

*Male genitalia*.—Symmetrical. Dorsal arm of harpe slender, sharply pointed, four-fifths

the length of tegumen. Aedeagus as long as main portion of genitalia; slender stalk not quite as long as the thickened distal end; from apex, on right side is a long, sclerotized, pointed process directed basad. Gnathos very large, somewhat longer than harpe, sickle-shaped.

Alar expanse, 16–17 mm.

*Type*.—U.S.N.M. no. 58240.

*Type locality*.—Petaluma, Sonoma County, Calif.

*Remarks*.—Described from the ♂ type and three ♂ paratypes from the type locality. All were collected (5-9-IX-1936) by E. C. Johnston. Paratypes in the United States National Museum and Mr. Johnston's collection.

I have not seen a female of this species.

***Chionodes petalumensis*, n. sp.**

Figs. 9–9c, 17

Labial palpus sordid whitish; brush of second segment suffused and irrorate with fuscous; exteriorly a broad, but poorly defined, subapical dark fuscous band; third segment strongly overlaid with dark fuscous. Antenna dark fuscous with light annulations. Head, thorax, and ground color of forewing lutescent variously marked with blackish fuscous and black; base of tegula and extreme base of costa black; on costa three dark spots, the one at basal fourth the largest of the three, black; on fold an elongate blackish-fuscous spot at basal third; beyond this, in cell, an outwardly oblique, short, black dash and at the end of cell a similarly colored spot; between the two an oblique, tear-shaped, whitish dash; beyond the outer discal spot and contiguous with it the wing is blackish fuscous bisected by a transverse line of the ground color at about apical fourth; around apex and termen is a series of small blackish fuscous spots; along costa, in the cell and around termen a few scattered white scales; along fold and in cell a few ochereous irrorations; cilia lutescent irrorate with blackish fuscous. Hind wing gray basally, shading to dark fuscous at apex; cilia fuscous; from a narrow, longitudinal, oblique pocket in the cell, on the underside in the male, a strong whitish hair pencil. Legs sordid whitish overlaid and annulated with dark fuscous. Abdomen sordid whitish suffused and irrorate with fuscous.

*Male genitalia*.—Asymmetrical. Left harpe broad with the ventrodistal corner produced into a long, slender process sharply curved dorsad; right harpe as long as tegumen, stout



basally, and produced into a long attenuated process. Aedeagus as long as main body of genitalia; stalk comprising basal two-fifths; near distal end a pronounced constriction forming a knoblike apex. Gnathos a thick, strong hook.

*Female genitalia*.—Ventral plate of ostium produced caudad into a spatulate process. Ductus bursae membranous for most of its

length, broadened and sclerotized posteriorly; inception of ductus seminalis near posterior end of membranous part of ductus bursae. Signum a small sclerotized plate with two transverse ridges.

Alar expanse, 17–19 mm.

*Type*.—U.S.N.M. no. 58241.

*Type locality*.—Petaluma, Sonoma County, Calif.

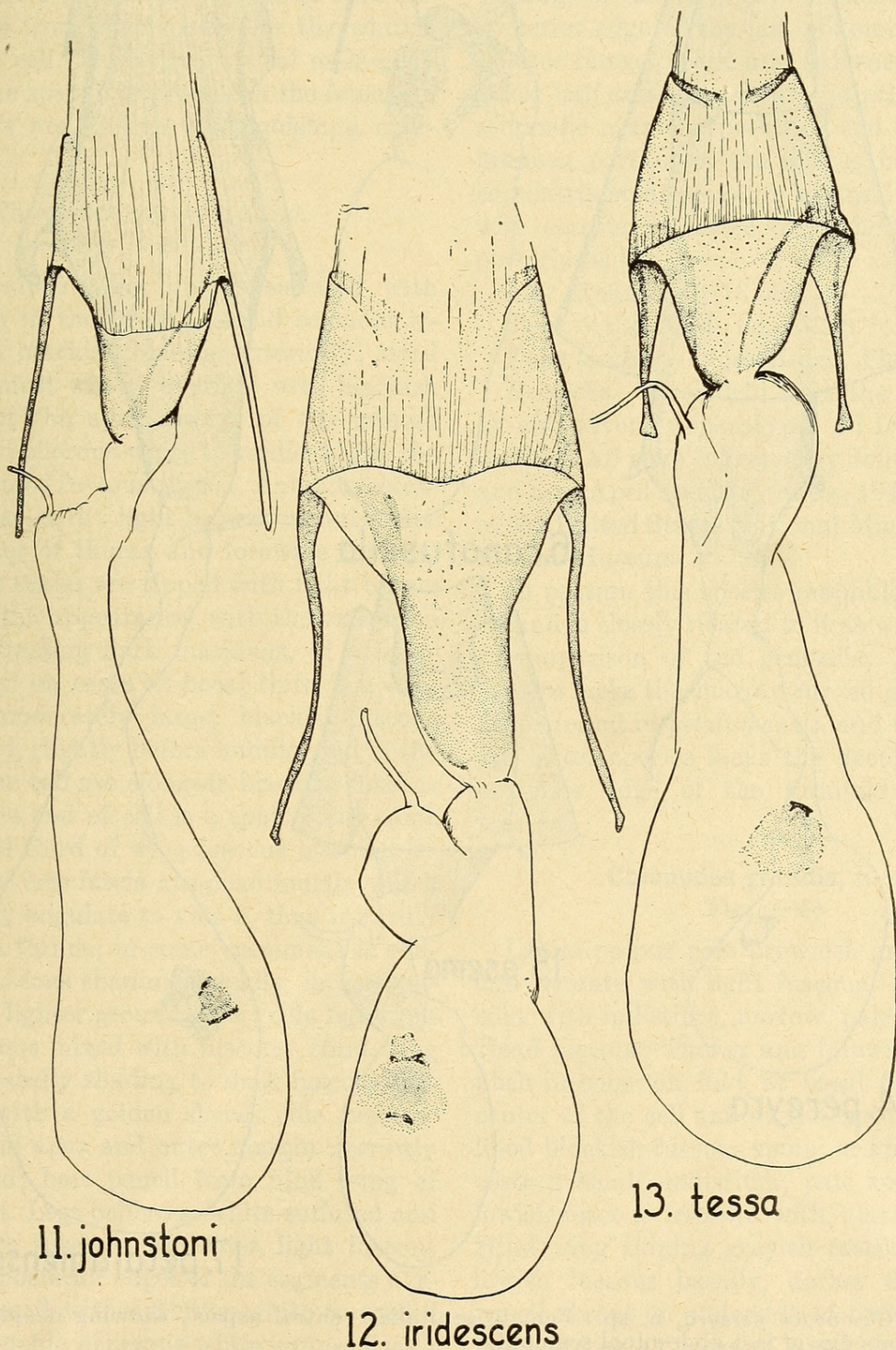


FIG. 11.—*Chionodes johnstoni*, n. sp.: Female genitalia, ventral aspect.

FIG. 12.—*Chionodes iridescens*, n. sp.: Female genitalia, ventral aspect.

FIG. 13.—*Chionodes tessa*, n. sp.: Female genitalia, ventral aspect.



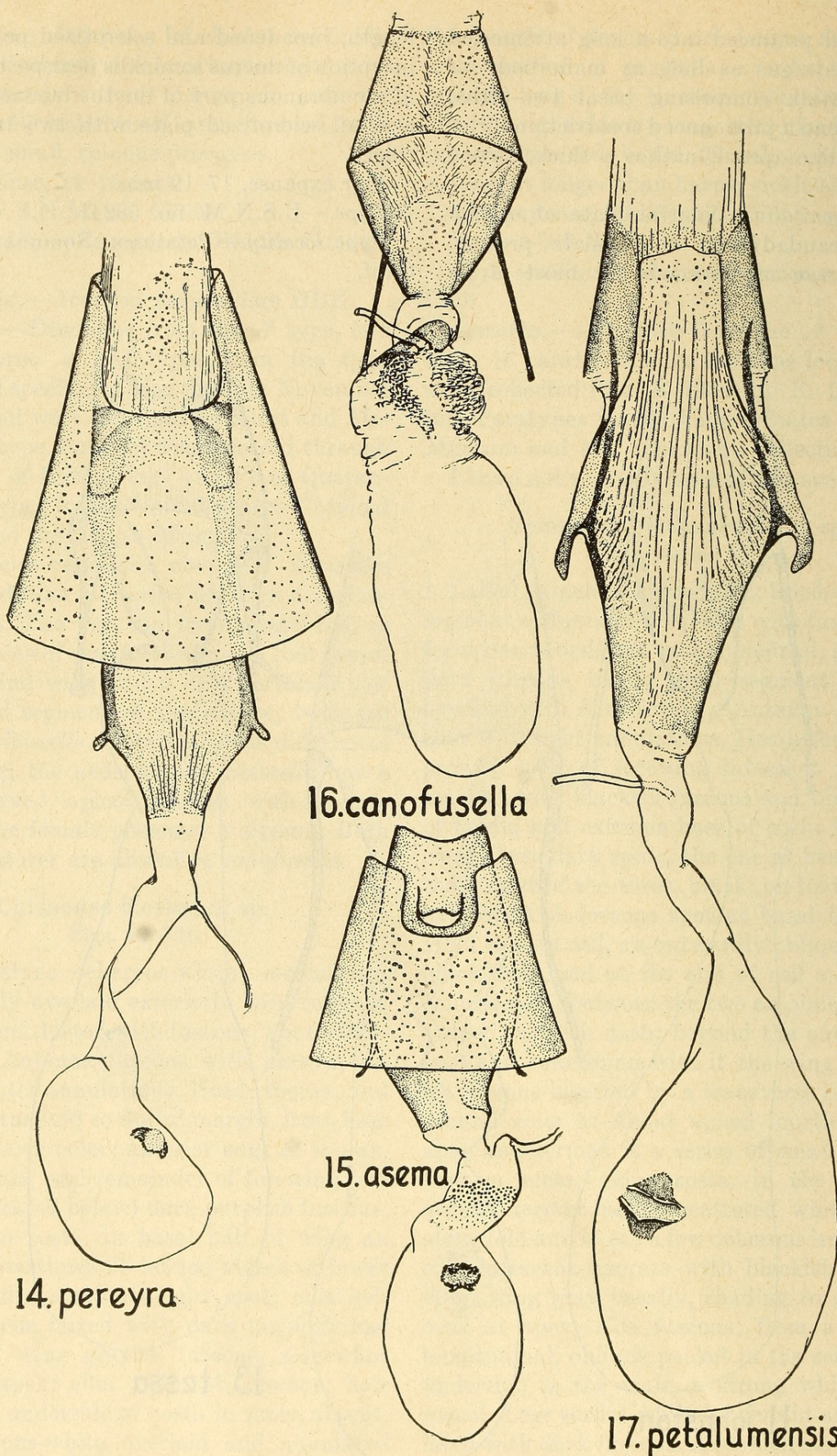


FIG. 14.—*Chionodes pereyra*, n. sp.: Female genitalia, ventral aspect, showing deeply excavated posteroventral edge of last abdominal segment.

FIG. 15.—*Chionodes asema*, n. sp.: Female genitalia, ventral aspect, showing deeply excavated posteroventral edge of last abdominal segment.

FIG. 16.—*Chionodes canofusella*, n. sp.: Female genitalia, ventral aspect.

FIG. 17.—*Chionodes petalumensis*, n. sp.: Female genitalia, ventral aspect.



*Remarks.*—Described from the ♂ type, eight ♂ and two ♀ paratypes as follows: Petaluma, 6 ♂ ♂, ♀ (29-VIII-1939, E. C. Johnston); Victoria, British Columbia, ♂, 2 ♀ ♀ (2-IV-21, E. H. Blackmore; 20-VII-21, 15-VII-22, W. R. Carter). Paratypes in the United States National Museum, the British Museum, and in Mr. Johnston's collection.

This species might be confused with *C. bicostomaculella* (Chambers) but is at once distinguishable from that species by the whitish dash in the cell. The asymmetrical male genitalia and the spatulate process in the female of *petalumensis* are further distinguishing characters.

***Chionodes pereyra*, n. sp.**

Figs. 8-8b, 14

Labial palpus pale luteous suffused with light brown in the brush; second segment irrorate with blackish fuscous exteriorly; third segment almost wholly overlaid with blackish fuscous, but the apex always of the ground color. Head ocherous-white to sordid white, the scales brown to fuscous-tipped. Antenna blackish fuscous with light-brown annulations. Ground color of thorax and forewing luteous; most of the scales are tipped with light brown presenting the appearance, with the exception of the contrasting dark markings, of a light-brown wing; on costa at basal third is a conspicuous, moderately large, blackish-fuscous spot; on fold, slightly before middle, and in the center of the cell are elongate blackish-fuscous spots; at the end of cell is a spot of the same color; apical third of wing fuscous bisected by a pale transverse fascia at apical fourth, which is outwardly angulate to vein 6, then inwardly angulate to tornus; in some specimens is considerable fuscous shading dorsally, largely obscuring the lighter ground color; cilia light yellowish fuscous mixed with fuscous. Hind wing pale gray basally shading to dark fuscous apically and with a golden sheen; cilia fuscous, those around apex and outer margin narrowly white-tipped; hair pencil from hind wing of male absent. Legs ocherous-white suffused and banded with fuscous. Abdomen light fuscous above, the posterior edges of the segments narrowly bordered with ocherous-white to sordid white; underside ocherous-white suffused with fuscous posteriorly.

*Male genitalia.*—Asymmetrical. Left harpe

broad basally tapering to a sharply pointed curved tip; right harpe slender, slightly longer than tegumen and produced into a fine fleshy point. Aedeagus nearly twice as long as tegumen, slender, the stalk comprising about basal third. Distal end constricted just before apex, the latter dilated. Gnathos a moderately weak hook.

*Female genitalia.*—Ostium broad, opening at the edge of the deep median excavation on the posterior edge of the last abdominal segment. Ductus bursae broad and flattened in the posterior half and sclerotized, inception of ductus seminalis near the posterior end of the membranous portion of the ductus bursae. Bursa copulatrix small; signum a small round plate with serrate processes from the anterior and posterior sides.

Alar expanse, 16-18 mm.

*Type.*—U.S.N.M. no. 58243.

*Type locality.*—Vero Beach, Fla.

*Remarks.*—Described from the ♂ type, one ♂ and seven ♀ paratypes all from the type locality. All were collected by John R. Malloch and bear April and May dates, 1941. Paratypes in the United States National Museum and the British Museum.

In pattern this species resembles *petalumensis* and is closely related to it as will be seen by a comparison of the genitalia. The male of *pereyra* lacks the sharply curved process of the harpe found in *petalumensis*, and the female of the latter species lacks the deeply excavated posterior edge of the terminal segment of *pereyra*.

***Chionodes grandis*, n. sp.**

Figs. 4-4c

Labial palpus pale brownish gray, suffused, and irrorate with light fuscous. Antenna fuscous with indistinct, narrow, pale annulations. Head fuscous. Thorax and forewing dark purplish fuscous; on fold, at basal fourth, in the center of the cell and at the end of cell, ill-defined blackish-fuscous spots; at apical third on costa a small, indistinct, pale spot; cilia yellowish fuscous irrorate with blackish fuscous. Hind wing shining grayish fuscous; cilia yellowish fuscous basally, darker distally; hair pencil absent on underside of male. Legs shining fuscous; at bases of spurs and at ends of tarsal segments, small patches of ocherous-white. Abdomen shining fuscous with viola-



ceous cast; first three segments, dorsally, sordid yellow.

*Male genitalia*.—Symmetrical. Dorsal arm of harpe as long as tegumen and uncus combined, curved, slender, sharply pointed; ventral arm about one-third the length of the dorsal arm, filamentous. Aedeagus slender, about twice as long as dorsal arm of harpe; the slender stalk constituting about one-third the total length; apex enlarged and with two moderately sclerotized elongate plates directed away from apex. Gnathos a moderate sized hook.

Alar expanse, 25–28 mm.

*Type*.—U.S.N.M. no. 58242.

*Type locality*.—Silverton, Colo.

*Remarks*.—Described from the ♂ type and one ♂ paratype, both in the United States National Museum. The specimens were collected in July.

This is the largest species of the genus so far described. It resembles *C. permacta* (Braun) in wing shape and general appearance, but can be distinguished from that species by its larger size and the short, median, hooklike process of the uncus, which is about one-third the length of the median process of *permacta*.

ORNITHOLOGY.—*The races of the minivet* *Pericrocotus peregrinus* (Linnaeus) in southeastern Asia.<sup>1</sup> H. G. DEIGNAN, U. S. National Museum.

The extraordinary contradictions of Stuart Baker's successive treatments of this unfortunate minivet have been reviewed by Whistler and Kinnear (Journ. Bombay Nat. Hist. Soc. 36: 343. 1933), who have at the same place set forth a sensible arrangement of the Indian races. It is now necessary that a similar revision be made of the forms occurring farther east.

Baker described *vividus* (see below) on characters of the male only, and gave its range as "Assam, Eastern Bengal, Manipur, Burma, Andamans, Siam, Cochin China." A series of 77 adults, chiefly from Siam, lying before me indicate that several distinct races, some of them with characters most evident in the females, have been hitherto embraced under this name. Owing to my complete lack of material from eastern Bengal, Assam, and most parts of Burma, a thorough study of "*vividus*" can not yet be presented; since, however, the type locality for the name lies on the frontiers of Siam, Siamese specimens are the ones of critical importance, and these are available in some abundance.

For the loan of their series of these birds, my thanks are due the authorities of the American Museum of Natural History and of the Academy of Natural Sciences of Philadelphia.

<sup>1</sup> Published by permission of the Secretary of the Smithsonian Institution. Received March 20, 1947.

I now recognize the following southeastern Asiatic races:

#### 1. *Pericrocotus peregrinus thai*, n. subsp.

*Type*.—Adult female, U.S.N.M. no. 336383, collected at Amphoe Chom Thong = Ban Luang (lat. 18°25' N., long. 98°40' E.), Chiang Mai Province, northwestern Siam, on February 9, 1937, by H. G. Deignan (original number 2315).

*Diagnosis*.—The adult female differs from those of *peregrinus* and *vividus* (in the restricted sense of this paper) by having the flanks and abdomen strongly washed with rich yellow or orange, rather than lightly washed with a less vivid yellow.

Baker's original description of "*vividus*" covers the characters of the adult male of *thai*. This reads: "Darker above than typical *peregrinus*; the throat generally rather blacker; the crimson [= flame-orange] breast brighter and extending lower on to the flanks and often on to the abdomen, remainder of the lower parts bright yellow with no, or practically no, white on the abdomen. Red on tail distinctly darker and more crimson [= orange]."

*Range*.—Burma (Thayetmyo District); Southern Shan States; Siam (north and east, south along the Mae Khong to the province of Ubon Ratcha Thani).

#### 2. *Pericrocotus peregrinus vividus*

Stuart Baker

*Pericrocotus* [sic] *peregrinus vividus* Stuart Baker, Bull. Brit. Orn. Club 40: 114. Apr. 30, 1920





Clarke, J. F. Gates. 1947. "New North American species and new assignments in the genus *Chionodes* (Lepidoptera: Gelechiidae)." *Journal of the Washington Academy of Sciences* 37(7), 243–254.

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