

## A REPORT ON SOME HEMIPTERA FROM BRITISH COLUMBIA\*

By H. M. Parshley, Smith College

The entomological fauna of British Columbia is rapidly becoming better known, chiefly through the assiduous collecting and study of the enthusiastic resident entomologists, and in due time we may look forward to the publication of a full list of the insects of the region, a work which will be of the greatest value in the study of geographical distribution if it is based on data sufficiently extensive to make the enumeration truly representative. A great deal remains to be done, however, before the knowledge of some of the orders can be considered adequate, as is well illustrated in the case of the Hemiptera. In an earlier report<sup>1</sup> I recorded 90 species in addition to the 86 given in Van Duzee's "Catalogue," making a total of 176 known to occur in British Columbia, surely far less than half the number which actually inhabit the region. Stoner<sup>2</sup> has recently published the record of one more (*Podisus serieventris*), and the present list adds 30, bringing the total number of species to 207. If we contrast this figure with the 450 of New England, it is clear that there is still a good opportunity for the collector; in fact, every field trip should yield unrecorded species, especially in the aquatic and semiaquatic groups.

It is worthy of remark that about half of the species recorded in the former list occur also in New England, illustrating the extraordinarily extended range of many Hemiptera, but the fauna of British Columbia is in reality much more distinctive than such incomplete data would seem to indicate. As further collecting is done in the more remote parts of the Province, the proportion of characteristic, western species will rise, and we note a tendency in this direction in the present enumeration, for of the thirty-two additional species (excluding those occurring also in the Palaearctic region) here recorded, only 11 are to be met with in New England.

Most of the material on which this report is based was sent to me for study by Mr. W. Downes, who collected much of it himself and greatly enhanced its value, as is his custom, with notes, of which he has permitted me to make free use. Through the kindness of Mr. C. A. Frost, of Framingham, Mass., I am enabled to include records of some specimens from Terrace, on the Skeena River, collected by Mrs. W. W. Hippisley.

Additional data are given for some of the species of my former list, indicated here by an asterisk (\*), and certain corrections must be made, which are summarized herewith:

\*Contributions from the Department of Zoology, Smith College, No. 79.

<sup>1</sup>On some Hemiptera from Western Canada, Occas. Papers Mus. Zool. Univ. Michigan, No. 71, 1919, 35 pp.

<sup>2</sup>Notes on Scutelleroidea from Vancouver Island, Can. Ent., LII:12-13, 1920.

- p. 7. Add to list of collectors, A. W. A. Phair.  
 p. 13. **Aradus inornatus** should read **Aradus blaisdelli** Van Duzee.  
**A. cinnamomeus** is represented by subsp. **antennalis** Parshley.  
 p. 18. **Corythucha canadensis**=**C. salicis** Osborn and Drake.  
 p. 23. **C. hesperia**=**C. hewitti** Drake.  
 p. 24. **C. pura**=**C. immaculata** Osborn and Drake.  
 p. 30. **Phytocoris eximius** should read **P. neglectus** Knight.  
 p. 31. Delete **Orectoderus** spp. with data.  
 p. 35. **Bolteria** should read **Phyllopidea**.

**Collectors:** E. R. Buckell, W. Downes, A. W. Hanham, Mrs. W. W. Hippisley, M. H. Ruhmann, R. C. Treherne, E. P. Venables.

#### LIST OF SPECIES

##### Family SCUTELLERIDAE

- Homaemus bijugis** Uhler.\* Fairview, 21-VIII-'19 (E.R.B.).  
**Phimodera torpida** Walker. Chilcotin, 15-VII-'20 (E.R.B.). Determination confirmed by Van Duzee, who suggests the probability that this species is identical with **P. binotata** Say.  
**Vanduzeeina balli** Van Duzee. Chilcotin, 16, 18-VI-'20 (E.R.B.). Determined by Van Duzee.

##### Family CYDNIDAE

**Galgupha atra** Amyot & Serville. Enderby, 22-VIII-'20 (W.D.). Malloch<sup>3</sup> has recently proposed a generic rearrangement of the species placed under *Thyreocoris* in Van Duzee's "Catalogue." Much as we deplore any undue multiplication of genera, we must nevertheless accept a well founded partition of a group composed of generically discordant elements, as this seems to be. The matter cannot be considered as wholly settled, however, as Horvath has also turned his attention to the subdivision of *Thyreocoris*, in a work<sup>4</sup> which I have just received from the author, and some adjustments may be necessary in combining the two independent treatments.

**Corimelaena montana** Van Duzee. Enderby, 22-VIII-'20 (W.D.). Taken on mullein with the preceding.

##### Family PENTATOMIDAE

- Carpocoris remotus** Horvath.\* Walthachin, 23-VII-'18 (E.R.B.).  
**Neottiglossa sulcifrons** Stal. Victoria, 30-VIII-'20 (W.D.); Vernon (*vide* Downes).  
**Banasa dimidiata** Say.\* Terrace, VI-IX (W.W.H.).  
**Elasmostethus cruciatus** Say.\* Terrace, VI-IX (W.W.H.).  
**Perillus exaptus** Say.\* Terrace, VI-IX (W.W.H.).

<sup>3</sup>Hart (and Malloch), Pentatomoidea of Ill., Ill. Nat. Hist. Surv., Bull. XIII:207, 1919.

<sup>4</sup>Analecta ad cognitionem Cydnidarum, Ann. Mus. Nat. Hungarici, XVII: 205-273, 1919.

*Podisus modestus* Dallas.\* Terrace, VI-IX (W.W.H.).

*Zicrona caerulea* Linne. Duncan, VII-'18 (A.W.H.). Taken on alder. This is one of the most widely distributed of the Hemiptera.

Family COREIDAE

*Ceraleptus pacificus* Barber. Saanich Dist., 6-VI-'18 (W.D.). Determination confirmed by Barber.

*Coriomeris humilis* Uhler. Mara, V-'20 (R.C.T.); Saanich Dist., 7-V-'19 (W.D.). Downes' specimen was taken in sweeping blossoms of trefoil and other herbage on the slopes of Mt. Douglas, four miles north of Victoria. Barber writes me that in his opinion this cannot be distinguished by constant characters from *C. nigricornis* Stal, and if such proves to be the case, upon comparison of types, the latter name must be adopted.

Family ALYDIDAE

*Alydus scutellatus* Van Duzee. Mt. McLean, 20-VIII-'20.

*Tollius setosus* Van Duzee. Enderby, 22-VIII-'20 (W.D.).

Family CORIZIDAE

*Harmostes croceus* Gibson.\* Goldstream, VI-'18 (A.W.H.).

Family ARADIDAE

*Aradus persimilis* Van Duzee. Terrace, VI-IX (W.W.H.).

*Aradus blaisdelli* Van Duzee. Proc. California Ac. Sci., (4) IX:333, 1920. This is the *A. inornatus* of my former report.

*Aradus funestus* Bergroth.\* Vernon, 7-X-'18 (W.D.).

*Aradus cinnamomeus*\* subsp. *antennalis* Parshley. This was previously noted under the specific name. The terminology used here agrees with that adopted in my "essay" on *Aradus*.

*Mezira moesta* Stal. Duncan, VII-'17 (A.W.H.).

Family LYGAEIDAE

*Ortholomus longiceps* Stal. Kingmere, 19-VII-'19 (R. H. Crystal); Vernon, VII-'12.

*Ischnorhynchus franciscanus* Stal.\* Terrace, VI-IX (W.W.H.).

*Blissus occiduus* Barber. Bull. Brooklyn Ent. Soc., XIII:36, 1918. Shawnigan, 22-VI-'19 (W.D.). Taken in general sweeping. This species is distinguished from *B. leucopterus* by its small size and short hemelytra, which, in the brachypterous form, are scarcely twice as long as the scutellum. Determination confirmed by Barber.

*Crophius bohemani* Stal. Cowichan, 24-VIII-'18 (W.D.); Royal Oak, 13-IX-'19 (W.D.); Saanich Dist., 19-IV-'18 (W.D.). Taken in general sweeping. The colour is somewhat variable in this species, one specimen showing hardly a trace of the apical pale band of the pronotum.

*Sphaerobius insignis* Uhler. Chilcotin, 16-VI-'20 (R.C.T.); Lillooet, (W.D.). Abundant under stones and droppings at Chilcotin. This species is ant-like in appearance and was found associated with ants.

**Peritrechus fraternus** Uhler.\* Chilcotin, 30-IV-'20 (E.R.B.); Saanich Dist., 6-IV-'18 (W.D.).

**Sphragisticus nebulosus** Fallen.\* Gordon Head, 16-VI-'20 (W.D.); Penticton, 22-IX-'19 (W.D.).

**Eremocoris ferus** Say.\* Saanich Dist., 20-IV-'18 (W.D.).

**Eremocoris obscurus** Van Duzee.\* Royal Oak, 12-IX-'19 (W.D.), found under a log; Chilcotin, 24-IV-'20 (E.R.B.), under stones on open range.

**Gastrodes pacificus** Provancher. Kaleden, 14-IV-'19 (E.R.B.).

Family TINGIDAE

**Acalypta modesta** sp. nov.

*Brachypterous form.*—Very pale grayish brown, head, antennae, legs, and body beneath, somewhat darker brown.

Head (including eyes) somewhat broader than long (22-16); vertex impunctate, faintly shining; frontal spines rather short and stout, blunt, about as long as second antennal segment; antennae as long as pronotum and head to base of spines, the third segment about three times as long as the fourth (20-7), very slightly enlarged at base, the fourth fusiform. Pronotum tricarinate, the disc punctato-reticulate except for the transverse, shining region of the calli; paranota rather narrow, biseriate at middle, the sides almost straight and strongly convergent, gradually rounded anteriorly, suddenly rounded and slightly prominent posteriorly; hood small, transverse, projecting anteriorly very slightly beyond posterior margin of eyes; carinae rather low, with one distinct series of areoles, the median carina highest, the lateral extending to posterior margin of calli and slightly convergent anteriorly; angulate process obtuse, its areoles distinctly smaller than those of paranota. Hemelytra extending slightly beyond apex of abdomen, very moderately convex, the main veins but little raised; sutural margin nearly straight, the apices narrowly rounded; sutural area mostly biseriate, irregularly triseriate at anterior and posterior ends; discoidal area widest, with 5 or 6 rather irregular series of areoles for most of its length, acuminate at apex; subcostal area distinctly narrower than discoidal, mostly quadriseriate, triseriate toward apex; costal area (costal membrane) uniseriate, extremely narrow, the areoles not larger than those of subcostal area; viewed from the side the costal area and hypohemelytral lamina appear about equally broad. Length male 1.84 mm, female 2.04 mm; width male .94 mm, female 1.10 mm.

Holotype, female, Royal Oak, B. C., 14-V-'17 (R. C. Treherne), in the National Collection at Ottawa.

Allotype, male, and paratype, female same data, in my collection.

This species, of which the specimens at hand were found under moss on rocks, is related to **A. lilianis** Torre-Bueno. Its most striking characteristic is its very pale colour, which is similar in the three specimens of the type series and can hardly be due to immaturity as the

individuals appear from the data to have been in hibernation and other indications of teneral condition are lacking. Structurally it may be distinguished by the narrow paranota, relatively broad discoidal area, the very narrow costal area which is scarcely wider than the hypohemie-lytral lamina, and the impunctate vertex, as well as by various minor points. The dorsal aspect is distinctly less convex than in allied species. The macropterous form, if this species has it, is at present unknown.

**Corythucha salicis** Osborn and Drake. (= **C. canadensis** Parshley\*). Mission, 21-VIII-'19 (W.D.). Abundant on **Salix hookeriana**. I have recently called attention to the synonymy of this species<sup>5</sup>. It varies in length from 2.65 mm. to 3.57 mm., and the marginal spines are sometimes almost vestigial.

**Corythucha salicata** Gibson.\* Mission, 21, 22-VIII-'19 (W.D.). Downes has taken this species in large numbers on **Salix lasiandra**, and a few on apple.

**Corythucha hewitti** Drake. Can. Ent., LI:159, June-July, 1919. (= **C. hesperia** Parshley.\* *Op. cit.*, p. 23, August, 1919). Vernon, 28-IX-'19 (W.D.). Taken on hazel. Determination confirmed by Drake. This species varies considerably in darkness of markings and in the shape of the hood, which, as viewed from the side, may be almost angulate dorsally or evenly rounded.

**Corythucha immaculata** Osborn and Drake. (= **C. pura** Gibson\*). Chilcotin, 14-V-'20 (E.R.B.). Taken on **Balsamorhiza sagittaria**. In my previous paper this species was recorded under Gibson's name.

Family REDUVIIDAE

**Ploiariola canadensis** Parshley.\* This species, described in my previous report, has been found again by Downes in moderate numbers, "in company with **P. hirtipes**.\* The latter was numerous this year on the under side of a rail on the shady side of a close board fence which separates my garden from the adjoining lot. Here they were found in all stages living among the cobwebs and apparently getting their living from the insects caught in them, though I never actually found one feeding" (from Downes' notes). With additional material I am enabled to give some further details concerning **canadensis**. The scutellar spine is not constant in size; it may be almost obsolete or as long as that of the postscutellum. The third antennal segment is about one-third as long as the second; the fourth slightly more than one-third the length of the third.

**Pygolampis sericea** Stal. Vancouver, 3-V-'03.

**Zelus socius** Uhler. Vernon, 20-VI-'19 (E.P.V.).

Family NABIDAE

**Nabis subcoleoptratus** Kirby. Enderby, 22-VIII-'20 (W.D.).

**Nabis ferus** Linne.\* Terrace, VI-IX (W.W.H.).

Family MIRIDAE

**Trigonotylus ruficornis** Fallen. Chilcotin, 27-VII-'20 (E.R.B.).

<sup>5</sup>Hem. Notices. I, Ent. News. XXXI:273, 1920.

*Dacerla formicina* sp. nov.

Brownish black, faintly shining, with fine sparse pale pubescence; antennae, except enlarged apical portion of second segment, legs, rostrum, and hemielytra paler brown; abdomen beneath with a basal white spot and a smaller one at base of connexivum; posterior genital segment of female marked with white on each side at base; connexivum variably brownish. In one specimen the thorax and its appendages are red, probably a teneral coloration.

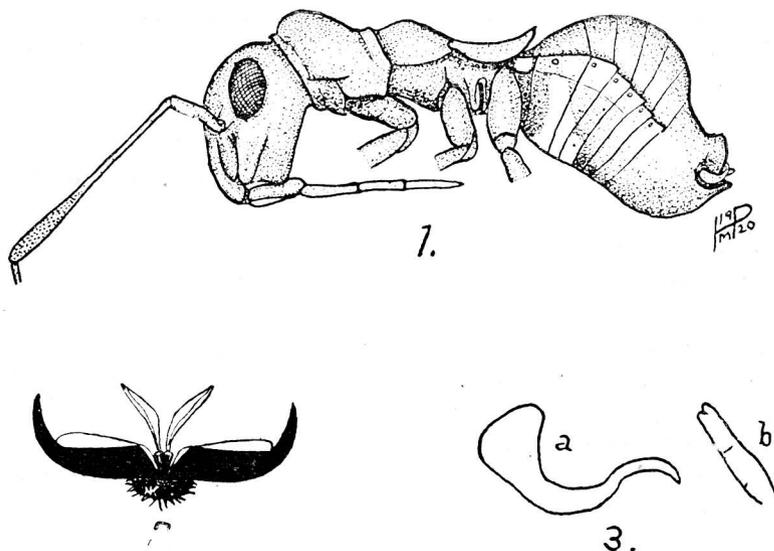
*Dacerla formicina* sp. nov.

Fig. 1. Lateral view of male.

Fig. 2. Apical tarsal structures, showing the large, divergent arolia and the pseudo-arolia, the latter forming the thin inner margin of the claws. (Drawn by Dr. H. H. Knight).

Fig. 3. Genital claspers of the male, drawn without removal from the abdomen. a, the left clasper; b, the right.

Head triangular before eyes, narrowed behind; antecocular portion slightly broader than long (24-21); width of vertex between eyes about one-half width of head just in front of eyes; second antennal segment as long as distance from anterior margin of pronotum to apex of hemielytra, about four times the length of the first (55-13), enlarged in apical third, third and fourth segments about equal, together slightly longer than second (60-55); rostrum extending barely to middle coxae, proportions of segments as in figure 1. Pronotum tumid, short, not covering mesonotum, wider at apex than at base; mesonotum (including scutellum) almost as long on median line as pronotum (21-25), narrowed to apex from bases of hemielytra. Hemielytra about as long as pronotum, slightly upturned at apex, meeting inwardly in a straight line which is nearly one-half as long as mesonotum, apices obtusely angulate; clavus indistinct; membrane wanting. Abdomen globuliform, the

pleural region forming a thick fold. Male genital claspers shown in figure 3. Legs long and slender; arolia and claws as in figure 2. Length male 5.5 mm; female 6.5 mm.

Holotype, female, Saanich Dist., B. C., 3-VIII-'18 (W. Downes), in the National Collection at Ottawa.

Allotype, male, Saanich Dist., 1-VII-'18 (W. Downes), in my collection.

Paratypes, same data and Shawnigan, B.C., 1-VII-'18 (W.D.), in Downes', H. H. Knight's, and in my collection.

Collected on *Rubus nutkanus*, the thimbleberry or salmonberry.

This remarkable myrmecoid species is assigned to the genus *Dacerla* because it agrees closely with *D. inflata* Uhler in all but the structure of the pronotum and hemielytra. These parts are especially liable to superficial modifications correlated with brachyptery and ant mimicry and hence their characteristics, while sometimes striking, may properly be considered of specific rather than of generic value. The male genital claspers (Fig. 3) are very similar to those of *D. inflata*, the right somewhat longer and more slender. The arolia (Fig. 2) are precisely similar, and their structure leads us to question Van Duzee's<sup>6</sup> course in placing *Dacerla* in the Hallodapini (Dicyphinae). They are not "minute or wanting," neither are they united with nor parallel with the claws. They are in fact such as are characteristic of the Capsini (Mirinae) and if we accept the fundamental principles of Reuter's system the genus must be placed in the Capsine tribe Myrmecoraria, where Reuter located it in 1909,<sup>7</sup> without examination of the arolia. According to Knight's key to the subfamilies of Miridae,<sup>8</sup> *Dacerla* runs directly to the Mirinae. The striking resemblance which *D. formicina* bears to the brachypterous female of *Orectoderus* is shown by the fact that two students well versed in the study of the Miridae determined specimens without hesitation as "*Orectoderus* sp." when I submitted them for examination. When I called the attention of my friend Dr. H. H. Knight to the neglected arolia he gave me his views, upon which I have freely drawn in the above discussion, and he was kind enough to send me the drawing of the arolia and a specimen of *D. inflata* for comparison. I am indebted also to Dr. W. B. Herms, of the University of California, for a series of this species accompanied by the ant with which it was found associated and which it closely resembles as a nymph. The ant has been determined for me by Dr. W. M. Wheeler as *Formica fusca* Linn.

*Phytocoris neglectus* Knight. Bull. Brooklyn Ent. Soc., XV:54, 1920. Victoria, 31-VII-'18 (W.D.). This is the species recorded in

<sup>6</sup>Synop. Keys Genera N. Am. Miridae, Univ. Calif. Pubs. Tech. Bulls., Entom., 1:210, 1916.

<sup>7</sup>Bemerk. neark. Capsiden, Acta. Soc. Sci. Fennicae, XXXVI, No. 2:8, 1909.

<sup>8</sup>Jour. New York Ent. Soc., XXVI:40-44.

my former paper as *P. eximius*. Specimens have been compared with the types by Knight. The species has been known hitherto from Michigan and Minnesota and eastward.

*Stenotus binotatus* Fabricius.\* Royal Oak, 7-VIII-'19 (W.D.). Good figures of this species are to be found in "Insect Life," V:90, 1892.

*Lygidea rubecula* var. *obscura* Reuter. Penticton, 16-VIII-'20 (W.D.).

*Lygus pratensis* Linne.\* Duncan, 4-VIII-'20 (W.D.); Terrace, VI-IX (W.W.H.). Several varietal forms which Knight has under investigation.

*Lygus campestris* Linne.\* Chilcotin, 1-IX-'20 (E.R.B.); Saanich Dist., 6-VI-'18 (W.D.).

*Lygus nubilatus* Knight. Bull. Cornell Agr. Exp. Sta., No. 391, 1917, p. 584. Saanich Dist., 30-IV, 10-V-'18 (W.D.). Known hitherto only from California. Determined by Knight.

*Neoborus amoenus* Reuter. Victoria, 27-VIII-'20 (W.D.). Found on poplar and maple trees near the docks, not elsewhere on the Island. The coloration is unusually pale.

*Deraeocoris borealis* Van Duzee. Proc. California Ac. Sci., (4) IX:354, 1920. Victoria, 30-VIII-'20 (W.D.). Determined by Knight, who has revised the genus. This species was described from Eastern Canada, Maine, and New York, but its range undoubtedly extends across the continent, as is the case with so many northern species.

*Coquillettia insignis* Uhler. Okanagan Falls, 16-VI-'19 (R.C.T.).

*Labops hesperius* Uhler. Chilcotin, 23-VII-'20 (E.R.B.).

*Labops burmeisteri* Stal. Chilcotin, 15-VI-'20 (R.C.T.). On grasses on open range. The determination of this species must be considered provisional, as a comparison with the types is necessary to make the matter certain. This form may be distinguished from *L. hesperius* by its very small size (length, brach. 3 mm, macr. 3.5 mm), the much coarser and thicker scale-like pubescence of the dorsal surface, which almost covers the pronotum and scutellum, and the coloration of the femora, which are black except at apex and not annulate as in *hesperius*.

*Hadronema militaris* Uhler.\* Okanagan Falls, 16-VI-'19 (R.C.T.); Penticton, VI-'19 (R.C.T.).

*Hadronema princeps* Uhler. Vernon, 29-VII-'20 (M.H.R.).

*Orthotylus pacificus* Van Duzee.\* Royal Oak, 7-VII-'19 (W.D.). Several specimens of this species, of which the description was included in my former report, were collected on *Salix* in company with *Stenotus binotatus*, to which they bear some superficial resemblance. The extent of the black markings is sometimes greater than the original description would indicate. The anterior half of the pronotum may be entirely black, or with pale anterior margin; the scutellum may be wholly black except for a narrow median pale spot in the posterior half; and the head may be largely black or largely pale.

*Phylloidea picta* var. *hirta* Van Duzee.\* This form was previously recorded under the genus *Bolteria*. Knight has shown<sup>9</sup> that this assignment is incorrect, and he has kindly confirmed the determination of the British Columbia material.

Family GERRIDAE

*Gerris marginatus* Say. Beaver Lake, Saanich Dist., 9-VIII-'19 (W.D.). A brachypterous male having the hemielytra extending to the middle of the fourth abdominal segment.

*Gerris buenoi* Kirkaldy. Beaver Lake, Saanich Dist., 9-VIII-'19 (W.D.). A brachypterous female having the hemielytra extending to the level of the apex of the middle coxae. Short-winged forms are rare in this species but are of wide spread occurrence, as I have found them on Long Island, N.Y., and Hussey<sup>10</sup> has reported apterous individuals from Michigan.

Family SALDIDAE

*Saldula interstitialis* Say. Duncan, 17-IX-'19 (W.D.); Saanich Dist., 17-VI-'19 (W.D.); Shawnigan, 2-VIII-'19 (W.D.). These specimens from British Columbia cannot be distinguished from those occurring abundantly in the Eastern States, which at present are considered to represent the *interstitialis* of Say. In working out the Saldids reported on in this paper I have been favoured with the advice of my friend, Mr. J. R. de la Torre-Bueno, who is engaged upon a monograph of the North American species.

*Saldula comata* sp. nov.

Black, shining, the hemielytra conspicuously marked with dull yellow as follows: a series of narrow spots within the costal margin, variably developed; a large ocellate spot occupying most of the middle areole before the middle; between this and the costal row, two or three large irregular blotches, and behind it two near the membranal suture, the outer long and narrow, the inner very small; a small oval spot at apex of clavus. Membrane translucent brown with one or two dark spots in each areole. Head black, with small yellow spots between ocelli and eyes and in front of the latter; tylus reddish yellow with a black spot at base; antennae black with a reddish yellow streak on the inner side of the first segment. Rostrum and ventral surface black. Legs largely dark reddish yellow, the femora with a black longitudinal stripe of variable width and black dots, the anterior and middle tibiae with a black stripe on the outer side, which is variably developed and does not reach the apex; second tarsal segment yellow, the third black or brown.

Entire dorsal surface, excepting membrane, with legs and antennae, thickly clothed with long, erect, black setae and provided also with a

<sup>9</sup>The genus *Bolteria*, Bull. Brooklyn Ent. Soc., XIV:126-128, 1919.

<sup>10</sup>Waterbugs Douglas Lake, Occas. Papers Mus. Zool. Univ. Mich., No. 75, p. 11, 1919.

very fine pale pubescence; the setae very conspicuous on vertex, lateral margins of pronotum, and legs; ventral surface similarly clothed, the setae less conspicuous.

Vertex very finely roughened, its least width about equal to the transverse diameter of an eye, provided with diverging grooves before the ocelli, the latter separated by a space slightly greater than the diameter of one of them, and three times as far from the eyes as from each other; the transverse carina between frons and tylus obsolete at middle; tylus elevated, moderately swollen at base; postocular portion of head very short. Antennae slender, as long as pronotum and scutellum; the first segment much the thickest and slightly shorter than least distance between eyes (9-10), almost as long as the third (9-10); second very slender, very slightly curved, a little enlarged toward apex, twice as long as the first; third almost cylindrical, slightly shorter than the fourth (9-11), which is slightly thicker than the third and cylindrical except at ends. Pronotum polished, transverse, more than three times wider than long (47-14); lateral margins slightly curved, convergent, anterior angles evenly rounded; the anterior margin a little narrower than head including eyes; posterior margin broadly emarginate, slightly and evenly curved across middle; callus prominent, convex, not reaching lateral margins, with three discal indentations of which the middle one is deepest, the lateral faint; transverse impression deep, curved, minutely punctate at bottom; posterior lobe about one-half as long as preceding on median line. Scutellum polished, as long as wide, the impression sinuate, situated slightly in front of middle, the posterior lobe longer than the anterior (20-13) on median line. Hemielytra moderately convex, the costal margin strongly curved, broadly flattened and slightly reflexed anteriorly; corium faintly shining, very obsoletely punctate; clavus opaque; veins distinct, the inner forked, with branches reaching membranal suture; membrane with four areoles, the inner longest, extending anteriorly about one-seventh of its length beyond base of the next, posteriorly almost as far as the next; outer margin of membrane thickened and pubescent. Second segment of hind tarsi about as long as the third. Last ventral segment of female more than twice as broad as long (38-14), somewhat produced and broadly rounded at middle. Form rather broadly oval. Length male and female 4.8-5.0 mm; width 2.5-2.7 mm.

Holotype, male, Beaver Lake, Saanich Dist., B. C., 17-VI-'19 (W.D.), in the National Collection at Ottawa.

Allotype, female, same data, in my collection.

Paratype, female, Vernon, B. C., 26-IX-'18 (W.D.), in Downes' collection.

This species is closely related to *interstitialis* Say, from which it is distinguished by the long pubescence, evenly rounded anterior angles of pronotum, shining surface, etc.

***Saldula nigrita* sp. nov.**

Black, moderately shining, the hemielytra almost opaque and ornamented with a few small and inconspicuous dull yellow markings as follows: a wedge-shaped spot near apex of clavus; some irregular ones just within costal margin near middle and near apex; three widely separated in middle areole of corium, of which the central one is most conspicuous; a rounded one between the branches of the inner corial vein near inner basal angle of membrane, and a narrow one occasionally at the fork of this vein. Membrane black, usually with a dull yellow spot near apex of outer corial vein. Head black, sometimes with small dull yellow spots between and in front of eyes and one on apex of tylus. Antennae black, the first segment sometimes faintly marked with dull yellow. Rostrum and ventral surface black. Legs black, the femora and tibiae more or less distinctly marked with yellow toward apex, but not annulate.

Dorsal surface, except membrane, and ventral surface clothed with very fine pale pubescence, the head with a few large black setae.

Vertex very finely roughened and pubescent, its least width somewhat less than the transverse diameter of an eye (8-10), provided with two oblique grooves extending from before the ocelli to the anterior inner margin of eyes; ocelli separated by a space scarcely equal to the diameter of one, three times as far from the eyes as from each other; a prominent transverse carina, recurved nearly to the eyes at each end, separates frons from base of tylus; tylus elevated, slightly swollen at base; postocular portion of head short, nearly cylindrical. Antennae slender, as long as head, pronotum, and scutellum; provided with very fine pale pubescence and, except second segment, with sparse, erect setae; first segment thickest, about as long as shortest distance between eyes, much shorter than third (7-13); second very slender, slightly curved, a little enlarged toward apex, about three times as long as first (23-8); third very slenderly fusiform, more than one-half as long as second (13-23); fourth very slightly broader than third, narrowly fusiform, somewhat shorter than third (12-13). Pronotum very finely rugulose, transverse, about three times wider than long (40-14); the lateral margins convergent, slightly curved especially anteriorly; anterior margin a little narrower than head with eyes; posterior margin broadly emarginate, nearly straight across middle; callus prominent, convex, not reaching lateral margins, with three discal indentations tending to form a transverse groove; transverse impression sharp, curved, finely punctate at bottom; posterior lobe a little shorter than preceding on median line. Scutellum slightly longer than wide, the basal lobe rugulose, the impression sinuate, situated a little in front of middle; posterior lobe almost smooth, faintly transversely rugulose along middle, nearly twice as long as anterior on median line. Hemielytra opaque, obsolete punctulate, moderately convex, the costal

margins gently curved, rather broadly flattened and a little reflexed anteriorly; veins feebly elevated, the interior forked, with branches reaching membranous suture. Membrane with four areoles, the inner longest, extending anteriorly about one-eighth of its length beyond base of the next and posteriorly almost as far as the next; outer margin thickened, pubescent. Second segment of hind tarsi about as long as the third. Last ventral segment of female more than twice as broad as long (40-15), somewhat produced and broadly rounded at middle. Form rather elongate oval. Length male and female, 5-5.5 mm; width 2.3-2.5 mm.

Holotype, female, Duncan, B. C., 17-IX-'19 (W.D.), in the National Collection at Ottawa.

Allotype, male, same data, in Downes' collection.

Paratypes, male and female, in my collection.

This species may be recognized by its narrow form and its dull black colour, with inconspicuous spotting; it is distinguished from *interstitialis* and allied species also by the strong transverse carina separating frons and tylus, which is very distinct at middle as well as at the sides. According to my interpretation of Reuter's essay<sup>11</sup> at the generic subdivision of *Salda* (or *Acanthia*), this form pertains to *Saldula* Van D. (*Acanthia* Reut.). I am not fully satisfied that many of the characters which Reuter employs are really of generic value, and some of them are certainly indefinite, e.g., the relative width of head and anterior margin of pronotum and the punctuation of the transverse pronotal impression. This latter character is mentioned in the above descriptions and it is present in allied species, although they belong to a group which, according to Reuter, lacks this feature. Probably the punctures are merely developed in varying degrees in the different sections. The characters used by Reuter in separating his genera are included in the present descriptions.

#### Family NOTONECTIDAE

*Notonecta undulata* Say.\* Vernon, 26-IX'19 (W.D.).

*Buenoa elegans* Fieber. Beaver Lake, Saanich Dist., 9-VIII'19 (W.D.). Study of a good series has revealed no differences between specimens taken in the west and in the east. The proper application of the names *elegans* and *platycnemis* of Fieber may be considered somewhat in doubt, but these specimens exhibit the characters ascribed to *elegans* by Hussey (*Op. cit.*, p. 18).

<sup>11</sup>Zur gen. Teilung pal. u. neark. Acanthiaden, Ofv. Finska Vet.-Soc. Forh., LIV, Afd. A, No. 12:1-24, 1912.