Structurally resembling *multidubiata* except for shorter and more rounded forewing and the remarkable short radial-sector making the forewing very similar to *Trioza 4-punctata* Crawf.

Female *holotype,* male *allotype,* and *paratypes* taken from *Shepherdia canadensis,* V-31-38, Edmonton, Alberta.

Psyllia stricklandi n. sp.

Length to tip of forewing 4.—4.2 mm.; forewing 3.—3.7 mm.

Color: Head yellow; antennae yellow with joints and terminal segments blackish; eyes black; thorax yellowish-brown; forewing yellowish with yellow veins; abdomen greenish overcast with brown.

Antennae about one and a half times as long as width of head. Genal cones divergent, bluntly rounded at apices, as long as vertex. Forewings twice as long as broad; pterostigma long, very narrow; Cu 1 not highly arched.

Genitalia: Female segment longer than rest of abdomen. Dorsal valve much longer than ventral; styliform for caudal half; apex gently elevated, sharply pointed; styliform portion minutely but extremely roughened. Ventral valve evenly contoured ventrally; dorsal margins narrowed for apical third, minutely roughened. Lateral plates very long, narrowly elliptical.

Forceps in male appearing evenly arched and of even width in caudal aspect; in lateral aspect appearing straight and parallel margined.

Holotype female, *allotype* male, and *paratypes* taken VII-22-38, Columbia Ice Field (6700), Alta., on *Shepherdia canadensis,* also *paratypes* from Edmonton and Evansburg 1937-38.

The writer takes pleasure in naming this species in honor of Mr. E. H. Strickland.

Psyllia virida n. sp.

Length to tip of forewing 3.—3.5 mm.; forewing 2.7—3.3 mm.

Color: Appearing yellow-green throughout; antennae black at joints and distally; forewings yellowish; genital segment brownish.

Genal cones longer, more divergent, and more slender than in *stricklandi* Forewings with Cu 1 rather arched, similar to *carpinicola* Crawford.

Genitalia: Female segment longer than rest of abdomen. Dorsal valve styliform for caudal third, this portion minutely roughened; caudal half of styliform portion abruptly turned up; apex blunt. Ventral valve almost as long as dorsal; very strongly hooked dorsad in lateral aspect. Lateral plates no longer than ventral valve.

Forceps of male attenuate in apical third in caudal aspect; in lateral aspect appearing very slender and gradually narrowed to apex.

Female *holotype,* male *allotype,* and *paratypes* taken VIII-7-38. Medicine Hat, Alta., on Bullberry.

FURTHER NOTES ON PSYLLIDAE TAKEN IN ALBERTA. (HOMOPTERA)

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In 1938 (1) we recorded twenty-eight species of Psyllidae which had been captured in Alberta. Of these, twenty-one were taken, for the first time on record, during the summer of 1937. Although psyllids were far less numerous in 1938 than they had been in 1937, it is now possible to add eleven additional records to the list of species which occur in this province. These include three previously undescribed forms all of which are described by Caldwell in an accompanying article. We are indebted to Mr. Caldwell, also, for the determination of the other species here recorded.

A few additional data were obtained on one or two of the species listed in 1938. The names of these appear in brackets when reference is made to them.

Although attempts were made to observe abnormalities in the growth of the plants on which the various species were taken in the largest numbers, we have nothing specific to record. Neither were we able to gain much information regarding immature stages. This, probably, was due in part to the relatively small numbers of adults which were found in sweeping vegetation. Any nymphs which may have been present in small numbers would not be very easily found.

During the winter of 1938-39, a representative collection, consisting of about a hundred specimens which had been taken during intensive sweeping in alfalfa by Dr. R. W. Salt, of the Dominion Entomological Laboratory at Lethbridge, was submitted for determination. Since the bulk of these had been taken in the vicinty of Lethbridge where very little previous collecting in this family had been accomplished, it was anticipated that a number of new records for the province might be forthcoming. With one exception, however, all proved to be species which had already been taken from various weeds or trees in the vicinity of Edmonton. *P. cockerelli* was represented by very few specimens. The newly recorded species was determined by Caldwell as *Arytaina ribesiae* Cwfd. Since, as its name implies, this species is associated with currants, it would appear that none of the species taken have any direct relationship with alfalfa.

Aphalara fumida Cald.

Edmonton, Evansburg, High Prairie, St. Paul. June. Adults of this species, which collect during June at the base of the buds and flowers of fleabane were found wherever this plant was examined. By the end of the month all were dead. Many had turned black and were attached to the stems. A single final nymphal exuvium, attached to a leaf, probably belonged to this species and suggests that fleabane is the true host plant. Though fleabane was examined periodically from the end of June until the beginning of October, there were no further indications of the presence of this species.

Host; *Erigeron philadelphicus* (Fleabane).

Aphalara gutierreziae Kly.

Medicine Hat. August. One specimen only was taken in sweeping gumweed (*Grindelia squarrosa*). Intensive sweeping of this plant in several localities failed to produce further specimens. Caldwell states that the single specimen submitted is certainly very close to this species but may not be identical.

(**Aphalara nebulosa kincaidi** Ashm.)

The discovery of nymphs of this species on Fireweed in June establishes this as the host plant of the American variety of *nebulosa* which is in conformity with that of the European form.

Aphalara manitobaensis Cald.

Wabamun. May. One specimen only has been taken. It is believed that it was taken from myrtle leaved willow.

Calophya triozomima Schw.

Medicine Hat. August. Adults of this pretty little green and black species were abundant on scattered sumach bushes which grew on a river bank. No nymphs were taken but Crawford (2) records the species exclusively from this host.

Host, *Rhus trilobata* Nutt. (Sumach).

(**Paratrioza cockerelli** Sulc.)

In August reports were received to the effect that several adjacent gardens in Edmonton were showing signs of potato yellows. A careful examination of the supposedly affected plants failed to reveal any psyllids with the exception of a few *Psyllia negundinis* adults which had evidently scattered from some nearby Manitoba maples. Two greenhouses in the vicinity, in which tomatoes were growing, showed no signs of infestation. Although the range of this insect is

increasing in southern Alberta, the infestation resulting from an importation into Edmonton in 1936 appears to have died out completely.

Trioza frontalis Cwfd.

Edmonton. May. On May 11 adults of this species were congregated in very large numbers on a few small spruce trees growing in a garden. At about sundown they were flying freely around the trees but appeared always to come to rest on them in preference to saskatoon bushes which grew a few yards away. The latter were not then in leaf. By May 26 all had apparently deserted the spruces and they were even more abundant on the neighboring saskatoon bushes which are considered to be their host plant. The suggestion is that they overwinter on the spruces.

Host, *Amelanchier alnifolia* (Saskatoon), taken on *Picea glauca* (Spruce).

(Trioza quadripunctata Cwfd.**)**

The presence of numerous green or green and yellow adults on nettles during the summer of 1937 has already been recorded. On May 24, 1938, nettles which were about three inches high were swept at Wabamun. Four unusually dark adults were captured. Crawford states that overwintering forms are much darker than those taken in the summer but these appeared to be exceptional in this respect. Two of the specimens were quite black with contrasting dull yellow areas at the base of the wings and along the sutures of the abdomen. The legs, a cloudy pattern on the mesonotum and the lateral margins of the vertex were also of a smoky yellow colour. Although later in the year a few typically light coloured adults were taken elsewhere on nettles, no nymphs could be found in repeated examinations.

(Trioza varians Cwfd.**)**

In May, 1937, a few practically black adults were found on willows around a small dry meadow near Edmonton. We were unable to see that these differed structurally from typical green *varians* which were found in large numbers, later in the season, only on willows which grew close to water. Caldwell wrote with regard to these dark forms that Oman, to whom he had submitted them, stated that they were larger than typical *varians* and he suggested that they might represent a new species.

The whole body, including the antennae, cones and legs is deep black with the exception of a slightly reddish area along the sides of the pleurae and a well defined red to yellow margin to the vertex. Similar specimens were taken in the same place in May, 1938, but they disappeared soon after the bushes were in full leaf.

Phyllopiecta multidubiata breviradia Cald.

Edmonton. May to June. Adults were taken scatteringly from a number of bushes of Buffalo berry.

Nominal host; *Shepherdia canadensis* (Buffalo berry).

Phyllopiecta multidubiata Cald.

Edmonton. May. At about sundown on May 11, a few adults of this species were flying around spruce trees in company with numerous *T. frontalis*. Two days later none could be obtained in the same locality.

Psyllia alni americanella new name.

The varietal name *americana*, applied to this form by Crawford (2, p. 156), is preoccupied by his *P. americana* on page 147 of the same publication. For this reason a modification of the former is herewith proposed.

Last year we recorded with some hesitation that we had taken this species in large numbers from swamp birch at Nordegg in 1936. Both Crawford and Klyver give alder as the host plant and, in 1937, we found them exclusively on alders at Athabasca even though swamp birch was abundant in the vicinity. This year they were abundant on swamp birch which grew at an elevation of 6,700 feet near the edge of the Athabasca glacier in Jasper Park.

Psyllia cerasi Patch.

Edmonton. September. Both sexes were taken in association on wild cherries which grew in a sandy area near Edmonton. The foliage of all of the bushes on which they were found had turned, and the highly pigmented psyllids blended perfectly with the red of the leaves. The females alone possessed the conspicuous black bands on the bright red and yellow abdomen which were given as a distinguishing character of this species by Patch (3) who had only this sex before her when she drew up her description. All of the males tended to assume a rosy tint, which was most pronounced on the thorax. The abdomen was unmarked. Many of these males were indistinguishable from those of *P. cerasi astigmata* Cwfd. which is discussed below.

Nominal host; *Prunus melanocarpus* (Choke cherry).

Psyllia cerasi astigmata Cwfd. (new combination).

Wabamun. July. A few adults were scatteringly present on the leaves of cherries in July. Although the prevailing colour was green, a few of the specimens had a rosy tint on the thorax. This was observed in both sexes. There was no sign of black marks on the abdomens of the females. Crawford (2), in his description of *astigmata,* refers to its structural similarity with *cerasi,* but distinguishes the two forms on colour. It is unfortunate that *cerasi* has priority over *astigmata* since the former is undoubtedly a colour variety of the latter and the peculiarities are apparently confined to one sex only. Our observations indicate that it is an overwintering form.

Nominal host; *Prunus melanocarpus* (Choke cherry).

(**Psyllia magnicauda** Cwfd.)

Wolf willows, growing near Wainwright, were extremely heavily infested with this species. Nymphs and adults crowded around the junction of the old and the new growth. It is possible that their presence somewhat stunted the new growth but no other symptom could be observed.

Psyllia stricklandi Cald.

Edmonton, Evansburg, Athabasca Glacier 6,700 feet. June to July. On June 20, 1937, numerous adults of this species were present on buffalo berry bushes at Edmonton. Two days later, and for the rest of the season, none could be found. Intensive sweeping in this locality during May and June, 1938, failed to reveal either nymphs or adults. The latter were, however, abundant on these bushes growing near the Pembina River at Evansburg early in July and later in the month were taken in large numbers on very stunted bushes growing near the Athabacsa Glacier in Jasper Park.

Nominal Host; *Shepherdia canadensis* (Buffalo berry).

Psyllia virida Cald.

Medicine Hat. August. Adults and a few nymphs were taken from bull berry bushes growing by a small stream at Medicine Hat. They so closely resembled *P. magnicauda,* which heavily infests the related wolf-willow, that they were believed to be the same species and no nymphs were preserved.

Host; *Shepherdia argentea* (Bull or Bear Berry).

(**Psyllia floccosa** Patch.)

Typical flocculent nymphs, agreeing with the description by Patch (4), were found freely on alders. The green nymph with a black abdomen which was taken in association with this species in 1937 was not again encountered.

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