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THE DIPTERA OF BRITISH COLUMBIA.

Second Part.—The Syrphidæ.

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In Part I. of this paper Professor Jas. S. Hine has given a list of the Diptera of British Columbia in all the families except the Syrphidæ. While connected with the Minnesota University Seaside Station at Port Renfrew, on Vancouver Island, during the summers of 1901 and '02, the present writer paid especial attention, as far as time permitted, to the collection of Syrphids, hence the list of species in this family is much more complete than in other families which were picked up incidentally.

Port Renfrew is situated on the south-west corner of Vancouver Island, across the Strait of Fuca from Cape Flattery. The forest is unbroken, and the thick, sunless evergreen woods cover everything to the edge of the cliffs and rocks that form the shore, leaving only the merest fringe at the extreme border, where flowering plants may grow to attract Syrphids. A few small sphagnum swamps and streams let a little light into the forest, and on the flowers growing in such places Syrphids were common. A few species, such as *Sericomyia chalcopyga*, were found about stagnant pools in woodland. Practically all of the 35 species taken here were found along the shore within a mile of the Station.

Two days were spent about Victoria with favourable results. There are some fine collecting grounds near the city. At Vancouver a couple of hours between the arrival of our boat and the departure of our train yielded a number of species. At Agassiz, 70 miles from the coast, six species were taken in a few moments' rapid work while the train stopped at the station. A portion of two days was spent at Glacier in July, 1901, and again in August, 1902, and here 16 species were taken, mostly on the flowers of a small mountain meadow about 6,000 feet up on the side of Eagle Mt. Glacier is near the summit of the pass over the Selkirk Mts. A number of species were taken also at Field, a short distance west of the Great Divide. On account of their interest in comparison 12 species taken at Seattle, Washington; 14 taken at Laggan, Alberta, most of them

about Lake Agnes, over 7,000 feet high, and 17 taken at Banff, Alberta, are given mention in the following list.

Besides the foregoing taken by myself, Professor R. V. Harvey, of Queen's School, Vancouver, the energetic secretary of the British Columbia Entomological Society, has aided materially in increasing the list. He has very generously turned over to me all his Syrphids for study, and I take great pleasure in acknowledging him as a "silent partner" in the work on which this paper is based. Most of the records from Vancouver and all from Mt. Cheam, Grouse Mt., Vernon and Goldstream are from his material. My thanks are due also to Mr. Ernest Anderson, of the Provincial Museum at Victoria, for certain specimens.

The work of the present paper seems to bridge over a considerable gap in our knowledge of the distribution of this family in the west. Osten Sacken, Bigot, Loew, Williston, Snow, Hunter and Coquillett have studied the Syrphids of the Western United States, and Hunter, Johnson and Coquillett have recorded about 50 species from Alaska, but in all the literature at my command I have failed to find reference to more than a paltry half dozen species from British Columbia. The only papers, to my knowledge, that make any reference to British Columbia species are Hunter's "Contribution to the Knowledge of North American Syrphidae. —II." (CANADIAN ENTOMOLOGIST, June, 1897), in which two species are described from British Columbia, and Coquillett's Diptera of the Harriman Expedition to Alaska, in which three species are mentioned from Lowe Inlet. The present paper includes 78 species. It is hardly worth saying that the collecting is only just fairly begun, and the work done only serves to indicate the richness of the Syrphid fauna in that region. Careful collecting at different seasons of the year and in different parts of that vast and varied territory should almost, if not quite, double the present list.

Most of the species recorded for Alaska will be found recorded for British Columbia in this paper, many of the mountain species of Colorado and other western States are also found in the mountain regions of British Columbia, and the coast species of California and Oregon are taken in the warm inland sound region about Victoria and Vancouver. The fauna of the open coast at Port Renfrew is distinctly more northern than that of Vancouver, though the latter place is farther north. One thing noteworthy in the present list is the large number of Old World species. This observation falls in line with what Williston has already noted for

western Syrphids in general, and what is well known in regard to both animals and plants, viz., the agreement of Pacific species with those of Europe. If, as Williston has suggested, the course of the distribution in this family has been from west to east, British Columbia would seem to be in the path of distribution. In this connection it is worthy of note that there is found a much larger number of eastern species in British Columbia than in California or elsewhere on the west coast. However, in the present state of our knowledge, this latter fact may bear another interpretation. The mountain passes are much lower to the northward and the region of high altitude is much narrower. There is also distinctly more vegetation, and these conditions would make the passage of eastern species westward easier toward the north, and this might account for the greater number of eastern species than is found farther southward. The number of species of the genus *Syrphus* (17) in this list is somewhat remarkable; 13 are known from Alaska. The west is far richer in this genus than the east. For instance, New Jersey, which has been carefully worked, has 8 species. The same thing is noticeable in the genera *Platychirus*, *Chilosia*, *Sphaerophoria* and *Melanostoma*. On the other hand, the common eastern genera, *Pipiza*, *Xanthogramma*, *Spilomyia* and *Temnostoma*, have not thus far been noted in British Columbia.

In the preparation of this paper the writer has had the opportunity of comparing with types and identified material in the National Museum at Washington, in the Museum of Comparative Zoology at Cambridge, Mass., and in the American Museum of Natural History at New York, thanks to Curators Coquillett, Henshaw and Beutenmuller.

A number of species still remain undetermined, and some of these are apparently new. These will not be listed here, but will await publication until such time as a careful comparison with the literature of European species can be made in order to avoid needless duplication of specific names in a family already too rich in synonyms. In the following list all material not otherwise indicated has been taken by the writer:

1. *Microdon tristis*, Loew.—A single female specimen in my collection, bearing the data "Br. Col., June 16, 1898," seems to belong here, although it is larger than the eastern *tristis*, the fourth segment of the abdomen is nearly bare, the pile of the front and vertex is black, and the tibiae and tarsi are brownish-red instead of reddish-yellow. It approaches most nearly to the variety *cothurnatus*, Bigot, which has been recorded from Oregon.

2. *Chrysotoxum derivatum*, Walker.—One male was taken at Glacier, July 20, 1901. Harvey has taken the female at Mt. Cheam, Aug. 10, 1903. The species has been previously recorded from Alaska and Oregon.

3. *Paragus bicolor* (Fabricius).—One male specimen taken by E. A. Anderson and bearing the data "Br. Col., July 13, 1900," presumably taken at Victoria. The writer has taken the species at Banff, Alberta.

4. *Paragus tibialis* (Fallen).—One specimen taken at Agassiz, July 18, 1902. In the west the species has been previously recorded from California and Colorado.

5. *Chilosia lasiophthalma*, Williston.—A number of specimens from R. V. Harvey, bearing the data Vancouver, April 12, 1902; April 15, 1903, and April 10, 1904. Recorded from Alaska (Coquillett, 1900).

6. *Chilosia Willistoni*, Snow.—A specimen from Port Renfrew, July 5, 1901, and one from Glacier, July 20, 1901. A specimen was also taken at Seattle, Wash., July 15, 1901.

7. *Chilosia plutonia*, Hunter.—A pair taken at Port Renfrew, July 5, 1901. Recorded commonly from Alaska.

8. *Chilosia pulchripes*, Loew.—A single specimen at Field, July 19, 1901. Taken also at Banff, Alberta, July 19, 1902. A European species, previously recorded from N. A. only from Alaska (Coquillett, 1900).

[Several other species of this genus from Br. Col. are in my possession, but as I have not been able to assign them definitely to described species either by study or by comparison with types, I forego further mention of them for the present.]

9. *Melanostoma mellinum* (Linné).—Common at Port Renfrew from June 22 to Aug. 10. Victoria, July 17, 1901, and Agassiz, July 18, 1902. Taken by Harvey at Vancouver, April 4 to Aug. 19; at Vernon, April 22, 1902, and Wellington, April 15, 1903.

10. *Melanostoma angustatum*, Williston.—In all over 50 specimens. Mostly taken at Port Renfrew on dates varying from June 29 to Aug. 16. Agassiz, July 18, 1902; Victoria, July 17, 1902; Field, July 19, 1901, and Glacier, July 20, 1901. The species has been sent me by Harvey from Vancouver, April 12, 1902, and April 10, 1904; Wellington, April 15, 1903. The writer has also taken the species at Seattle, Wash., and at Laggan and Banff, Alberta.

11. *Melanostoma stegnum* (Say). (= *tigrinum* O. S.).—Taken by Harvey at Vernon, April 22, 1903, and at Vancouver, May 1, 1903. Several specimens. It has been previously recorded from Washington.
12. *Pyrophaena ocymi* (Fabricius).—Two males of this singular species were taken at Port Renfrew, July 6, 1901.
13. *Platychirus quadratus* (Say).—A single specimen taken by Harvey at Vancouver, June 2, 1902. The writer has taken the species at Seattle, Wash.
14. *Platychirus hyperboreus* (Stæger).—One male in my collection from Vancouver, April 15, 1898. The female from Wellington, April 16, 1903, taken by Harvey. Taken also at Banff, Alberta.
15. *Platychirus chaetopodus*, Williston.—Taken at Victoria, July 7, 1901. Also at Banff, Alberta, June 17, 1901.
16. *Platychirus peltatus* (Meigen).—Glacier, July 20, 1901. Harvey has taken it at Vancouver, May 9 to Aug. 18; Vernon, June 22, 1903; and Mt. Cheam, Aug. 5, 1903. Kincaid took it at Lowe Inlet, June 3, 1900, on the Harriman Expedition (Coquillett, 1900). Taken also at Banff, Alberta.
17. *Platychirus tenebrosus*, Coquillett.—Several specimens taken at Port Renfrew, July 5, 1901, and Aug. 16, 1902. The species was described from Alaska in 1900 in the results of the Harriman Expedition (Coquillett, 1900).
18. *Platychirus albimanus*, Fabricius.—Port Renfrew, July 5, 1901. Several specimens of both sexes. A single specimen at Field, July 18, 1902, also at Banff, Alberta, June 17, 1901. This European species has heretofore been recorded only for Alaska in N. A. (Coquillett, 1900). It seems to be pretty generally distributed in the Northwest.
19. *Leucosona leucorum* (Linné).—A single specimen, male, taken at Mt. Cheam, Aug. 5, 1903, by R. V. Harvey. This species has been recorded from Alaska and Washington.
20. *Catabomba pyrastris* (Linné).—Port Renfrew, Aug. 16, 1902; Glacier, Aug. 20, 1901. Taken by Harvey at Vancouver, May 1, 1903. Taken also at Seattle, Wash., July 15, 1901; Laggan, Alberta, Aug. 24, 1902; and at Banff, Alberta, June 17, 1901, and July 17, 1902.
21. *Eupeodes volucris*, Osten Sacken.—Victoria, July 17, 1901, and Agassiz, July 18, 1902. Taken by Harvey at Goldstream, July 20, 1902.

22. *Syrphus arcuatus* (Fallen).—Common and widely distributed. Taken at Port Renfrew, July 25, 1902; Victoria, July 17, 1901; and Field, July 15, 1902. Harvey has taken it at Wellington, April 15, 1903, and at Mt. Cheam, Aug. 5, 1903, and the writer has it also from Laggan and Banff, in Alberta. The variety *lapponicus* occurs along with the typical form.
23. *Syrphus amalopsis*, Osten Sacken.—Two specimens, male and female, from E. M. Anderson, are in my collection marked "Br. Col.," but with no other data. They are presumably from Victoria. This supposedly eastern species has been recorded commonly from Alaska (Coquillett, 1900).
24. *Syrphus intrudens*, Osten Sacken. Common at Port Renfrew, June 22 to July 5. A specimen taken at Victoria was sent me by E. M. Anderson, and Harvey has taken it at Vancouver, May 16, and at Mt. Cheam, Aug. 9, 1903. Also taken at Laggan, Alberta. Considerable variation is shown in size, and in shape and size of abdominal markings, but they seem to intergrade completely.
25. *Syrphus contumax*, Osten Sacken.—A single specimen taken by R. V. Harvey at Grouse Mt., July 19, 1903. Kincaid found the species common at a number of places in Alaska (Coquillett, 1900).
26. *Syrphus mentalis*, Williston.—Port Renfrew, June 30, 1901; Glacier, July 20, 1901. Taken by Harvey at Vancouver, April 10, and at Wellington, April 15, 1903. Taken also at Laggan, Alberta, July 22, 1901. Has been taken in Washington and Alaska.
27. *Syrphus disjunctus*, Williston.—Taken by R. V. Harvey, at Vancouver, July 26, 1902. A single specimen.
28. *Syrphus velutinus*, Williston.—A single specimen of this interesting species was taken at Mt. Cheam, Aug. 9, 1903, by Harvey. The type locality is Oregon. Kincaid took a single specimen in Alaska (Coquillett, 1900).
29. *Syrphus paucillus*, Williston.—This species was described by Williston in his Synopsis of N. A. Syrphidæ, 1886, from a single female specimen taken in New Mexico. Since that time I have not been able to find any reference to it in the literature of western Syrphidæ. Three specimens in my collection without doubt belong here. One of these, a female, was taken by the writer at Banff, June 17, 1901. Another female

taken at Grouse Mt., Br. Columbia, July 19, 1903, was sent me by Harvey, and a male that seems without question to belong to this species was given me by E. A. Anderson. It bears the data, "Br. Col., April 15, 1898," and is presumably from Victoria. These specimens agree with Williston's description in practically every detail. For the female I can add the description of the hind legs, which were lacking in the type specimen. They are similar to the others, except that on the femora the black of the base has a greater extent, there is a dark ring on the tibia, and the last four tarsal joints are somewhat infuscated (in one specimen this is true of the front and middle tarsi as well). In the specimen from Grouse Mt. the yellow spots of the third and fourth abdominal segments are very slightly connected by narrow bands across the middle of the segments. The male is very similar to the female, differing only in the following points: The pile of the thorax is longer and mixed with black, the abdomen is a trifle less broadly oval, and the yellow spots are lacking on the front angles of segment 5, though both segments 4 and 5 are margined with yellow behind as in the female. The legs are rather red than yellow in ground colour, but the black has the distribution as in the female. The pile of the face is black, and that of the eyes yellowish in both sexes. The front and vertex are greenish black, with black pile.

The species seems to have a wide though rare distribution through the west, but perhaps its apparent rarity can to some extent be accounted for by its small size and obscure coloration.

30. *Syrphus diversipes*, Macquart.—One at Port Renfrew, June 29, 1901, the only specimen taken in two seasons' collecting at that point. Harvey has taken it more commonly at Vancouver, July 26 to Aug. 20, 1903, and at Mt. Cheam, Aug. 5, 1903. The species has been taken in Washington and Alaska, and Kincaid found it common in Alaska (Coquillett, 1900).

31. *Syrphus protritius*, Osten Sacken.—A single specimen from Mt. Cheam, taken Aug. 5, 1903, by R. V. Harvey, seems best to belong here, though with some question. The species was described from California, and it has been taken in Alaska (Hunter, 1897).

32. *Syrphus ribesii* (Linné).—Port Renfrew, Aug. 16, 1902; Victoria, July 17, 1901, and Glacier, Aug. 20, 1902. Harvey took one specimen at Mt. Cheam, Aug. 5, 1903. Taken also at Laggan and Banff, Alberta.

33. *Syrphus torvus*, Osten Sacken.—Common at Glacier, July 20, 1901, and Aug. 21, 1902. Taken by Harvey at Vancouver, May 16, 1903; at Wellington, April 17th, 1903, and at Mt. Cheam, Aug. 9, 1903. Taken also at Laggan, Alberta.

34. *Syrphus Lesuerii*, Macquart.—Victoria, July 17, 1901. Harvey has taken the species also at Vancouver, Aug. 25, 1902, and July 14, 1903.

35. *Syrphus Americanus*, Wiedmann.—Very common at Port Renfrew early in July. Taken by Harvey at Vancouver, Aug. 18, 1902, and April 13, 1903, and at Wellington, April 15, 1903. Taken by the writer at Seattle, Wash., July 15, 1901.

36. *Syrphus opinator*, Osten Sacken.—Port Renfrew, July 6, 1901, and Field, July 17, 1901. Taken by Mr. E. A. Anderson at Victoria, and by Mr. R. V. Harvey at Vancouver and Victoria, at dates ranging from May 23 to Oct. 22.

37. *Syrphus umbellatarum*, Schiner.—A number of specimens taken at Glacier, Aug. 21, 1902. The species was also taken at Laggan, Alberta, July 22, 1901, and at Banff, Alberta, July 17, 1902.

(*Syrphus glacialis* (Johnson), Laggan, Alberta, July 22, 1901).

38. *Syrphus macularis* (Zetterstedt).—A single specimen taken at Port Renfrew, June 29, 1901.

39. *Didea laxa*, Osten Sacken.—Three specimens have been sent me by Mr. Harvey, one taken at Victoria, Aug. 14, 1902; one at Vancouver, Aug. 10, 1902, and one at Mt. Cheam, Aug. 6, 1903.

40. *Mesogramma marginata* (Say).—Port Renfrew, Aug. 16, 1902. Agrees almost exactly with specimens from New York, Ohio and North Dakota.

41. *Mesogramma geminata* (Say).—Port Renfrew, Aug. 16, 1902; Victoria, Aug. 17, 1901. Taken also at Seattle, Wash., July 15, 1901. The western specimens agree well with the common eastern form.

42. *Sphærophoria cylindrica* (Say).—Very common. Port Renfrew, July 6, 1901; Aug. 16, 1902; Field, July 19, 1901; Glacier, July 20, 1901; Agassiz, July 18, 1902. Mr. Harvey has also taken the species at Vancouver, May 30, 1902; Vernon, June 27, 1902; and Victoria, Aug. 1, 1902. The writer has taken the species also at Seattle, Wash.; Banff, Alberta; Swift Current and Moose Jaw, Assiniboia. There seems to be no appreciable differences between western and eastern forms in a series of over 50 specimens.

(To be continued.)

SYNOPSIS OF BEES OF OREGON, WASHINGTON, BRITISH COLUMBIA AND VANCOUVER.—III.

BY H. L. VIERECK, ASSISTED BY T. D. A. COCKERELL, E. S. G. TITUS,
J. C. CRAWFORD, JR., AND M. H. SWENK.

(Continued from page 196.)

Andrena trachandrenoides, n. sp.

♀ and ♂ 10 mm. Presumably from British Columbia. A very remarkable species, with ochreous pubescence and legs partly pale. If it were not for the character of the antennæ, this would have to be placed in *Trachandrena*.

Andrena Kincaidii, Ckll., Proc. Nat. Sci., Phila., 1897, p. 35.

♀, Pullman, Wash. (C. V. Piper); ♂, 2nd, 10th June, 1895, Olympia, Wash. (T. Kincaid); 7th June, 1895, Seattle, Wash.; 20th May, 1896, Livingston, Vanc.; ♀, 6th April, 5th July, 1898; ♂, 2nd June, 1898; 5th June, 1897; 26th Sept., 1899, Corvallis, Or. (Cordley).

Andrena Kincaidii, Ckll., var. *Pascoensis*, Ckll., Ent., Lond., 1897, p. 305,

♀, 25th May, 1896, Pasco, Wash. (T. Kincaid), Oregon.

Andrena Vernoni, n. sp.

♀ 13.5 mm., ♂ 12 mm. Very like *Kincaidii*, but the dull sculpture separates this at a glance.

Type locality: Vernon, British Columbia. Type Acad. Nat. Sci., Phila.

Andrena Cressoni, Robt., Tr. Am. Ent. Soc., XVIII., p. 56.

♀, 27th May, 1897; 8th June; 4th, 5th, 8th, 11th June, 1898; 4th, 27th April; 12th May, 7th, 10th, 14th June, 1899, Corvallis, Or. (Cordley); ♂, 11th, 12th, 31st May, 1903, Vernon, B. C.; 29th May, 5th July, 1896, Livingston, Vanc.

Andrena pulverulenta, n. sp.

♀ 10 mm. The dull fine sculpture, the gray and sericeous pubescence, make of this a sharply defined species.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila., 25th Sept., 1898; ♂, 15th May, 1897 (Cordley).

Andrena seminigra, n. sp.

♀ 12 mm. A species with gray pubescence, the abdomen nearly bare and with a steel-blue reflection.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila., ♀, 4th May, 1899; 12th, 18th May, 1898; 7th, 9th June, 1898; 3rd, 10th June, 1899, Corvallis, Or. (Cordley).

Andrena subaustralis, Ckll., CAN. ENT., XXX., 1898, p. 146.

♀, 7th May, 1898, Corvallis, Or. (Cordley); 20th April, 7th, 24th May, Livingston, Vanc.

♂, 2nd June, 1899, Corvallis, Or. (Cordley); 4th May, 1897, Pullman, Wash. (C. V. Piper); 17th, 20th, 24th April, 8th May, 1896, Livingston, Vanc.

Andrena indotata, n. sp.

♀ 10 mm. Easily distinguished by the characters given in the key to species.

Type locality: Washington. Type Am. Ent. Soc., Phila.

Andrena Halli, Dunn, CAN. ENT., XXX., 1898, p. 268.

♀, Pullman, Wash. (C. V. Piper).

Andrena solidula, n. sp.

13 mm. Fovea and thorax with brown hair.

Type locality: Pullman, Washington. Type Univ. Nebraska.

♀, Pullman, Wash. (C. V. Piper).

Andrena junonia, n. sp.

This may be *solidula* altered by *Stylops*.

Type locality: Pullman, Wash. Type Univ., Nebraska.

♀, May, 1895, Pullman, Wash. (C. V. Piper).

Andrena compactiscopea, n. sp.

Size of *solidula*.

Type locality: Pullman, Washington. Type Univ. Nebraska. Pullman, Wash. (C. V. Piper).

Andrena vicina, Sm. Brit. Mus. Cat. Hym., I., 112.

♀, 14th June, 1902, Vancouver, B. C. (Harvey); ♀, 4th June, 1895, Seattle, Wash.

♀ ♀, 4th May, 1898; 18th May, 6th June, 1897, Corvallis, Or. (Cordley); ♂, 5th June, 1895, Olympia, Wash. (Kincaid); 15th April, 1894, Seattle, Wash.

Andrena Carlini, Ckll., CAN. ENT., XXXIII., 1901, p. 150.

♀, 12th June, 1903, Vernon, B. C.; 3rd, 4th June, 1899, Corvallis, Or. (Cordley).

♂, 2nd April, 1895, on gooseberry, Seattle, Wash. (T. Kincaid).

Andrena neurona, n. sp.

♀ 12 mm.

Type locality: Seattle, Washington. Type Am. Ent. Soc., Phila.

♀, 17th April, 1896, Seattle, Wash. (T. Kincaid); 2nd May, 1903, Vernon, B. C. (Venables).

Andrena pluvialis, Ckll., CAN. ENT., XXXIII, 1901, p. 154.

♀, 1st May, 1894, Olympia, Wash. (T. Kincaid); Victoria, B. C. (G. W. Taylor); 29th May, 14th June, 1896, Livingston, Vanc.

Andrena transnigra, n. sp.

♀ 11 mm.

Type locality: Seattle, Washington. Type Am. Ent. Soc., Phila.

♀, 17th April, 1896, the type.

Andrena Seattlensis, n. sp.

♀ 10 mm.

Type locality: Seattle, Washington. Type Am. Ent. Soc., Phila.

♀, Seattle, Wash. (T. Kincaid); 13th June, 1902, Vancouver, B. C. (Harvey); 17th May, 16th June, 1896, Livingston, Vancouver, Victoria, B. C. (G. W. Taylor); 20th May, 1895, Almota, Wash. (C. V. Piper).

Andrena Chapmanæ, n. sp.

♀ 12 mm. Pubescence black. This species is included to show the relation between it and the form from Oregon, which may be a distinct race.

Type locality: Yosemite, California. Type Acad. Nat. Sci., Phila.

24th June, 1902 (B. Chapman).

Andrena Chapmanæ race.

1st June, 1897, Corvallis, Oregon (Cordley).

Andrena Pullmani, n. sp.

♀ 10 mm. Face with black dorsulum with white pubescence.

Type locality: Pullman, Washington. Type Univ. Nebraska.

♀, 14th April, 1897; 6th May, 1898 (C. V. Piper); ♂, 25th April, Livingston, Vanc.; 3rd May, 1896, Elkton, Or.

Andrena longihirtiscopea, n. sp.

♀ 10 mm.

Type locality: Vancouver Island. Type Acad. Nat. Sci., Phila.

♀, Vancouver Is. (G. W. Taylor).

Andrena vicinoides, n. sp.

♀ 12 mm.

Type locality: Victoria, B. C. Type Acad. Nat. Sci., Phila.

♀, Victoria, B. C. (G. W. Taylor); 2nd June, 1897, Olympia, Wash. (Kincaid).

Andrena saccata, n. sp.

♀ 13 mm. Face with black pubescence, dorsulum with pale pubescence, abdomen with erect, black pubescence.

Type locality: Corvallis, Or. Type Acad. Nat. Sci., Phila.

♀, 3rd May, 1899; 15th May, 1897; 8th June, 1898, Corvallis, Or.; 17th April, 1896, Seattle, Wash. (T. Kincaid). ♂, no data.

Andrena hemileuca, n. sp.

♀ 10 mm.

Type locality: Washington. Type Am. Ent. Soc., Phila.

♀, Seattle, Washington; Mt. Hood, Or.; ♂, Washington.

Andrena clypeoporaria, n. sp.

♀ 11 mm.

Type locality: Olympia, Wash. Type Acad. Nat. Sci., Phila.

♀, 12th June, 1895, Olympia, Wash.; Mt. Hood, Or.

Andrena advarians, n. sp.

♀ 13 mm.

Type locality: Vancouver, British Columbia. Type Acad. Nat. Sci., Phila.

♀, 5th April, 1902 (Harvey); ♂, 2nd March, 1902 (Harvey).

Andrena Washingtoni, Ckll., Psyche, IX., 1901, p. 284.

♀, 2nd June, 1895, Olympia, Wash. (Kincaid); 20th May, 1896, Seattle, Wash.

♂, 4th April, 1896, Seattle, Wash.

Andrena moesta, Sm. New Spec. Hym. Brit. Mus., p. 54.

♀, 6th May, Corvallis, Or. (Cordley).

Andrena albihirta, Ashm., ♀ = *perarmata*, Ckll., ♂. Bull. Col. Ass., I., p. 5.

♀, 13th, 17th March, 1896, Seattle, Wash. (T. Kincaid); Pullman, Wash. (C. V. Piper); 20th April, 1896, Livingston, Vanc.; 9th June, 1903, Vancouver, B. C. (Harvey).

♂, 16th, 18th February, 13th March, 1896; 15th March, 1897, Seattle, Wash. (T. Kincaid).

Andrena Harveyi, n. sp.

♀ 9 mm. Related to *A. mandibularis*, Rob.

Type locality: Grouse Mt., Vancouver, B. C.

Type Acad. Nat. Sci., Phila.

♀, 19th July, 1903, Grouse Mt. (Harvey); 6th, 8th, 14th, 24th, 25th May, 1898; 1st, 5th June, 1897; 6th, 8th, 9th, 10th June, 1898, Corvallis, Or. (Córdley); ♂, 28th, 29th March, 1902, Vancouver, B. C. (Harvey); 31st March, 1902, Capilano Canon, Vancouver, B. C. (Harvey); 5th May, 1902, Greer's Beach, Vancouver, B. C.; 22nd March, 1st, 4th May, 1903, Vancouver, B. C. (Harvey).

Andrena asmi, n. sp.

♀ 12 mm.

Type locality: Pullman, Washington. Type Univ. Nebraska, Pullman, Wash. (C. V. Piper).

Andrena medionitens, Ckll., Ann. and Mag. Nat. Hist., 9 (7), p. 101.
♀, 25th May, 1896, Pasco, Wash.

Andrena semipolita, n. sp.

♀ 11 mm. Superficially this looks much like *medionitens*.

Type locality: Washington. Type Am. Ent. Soc., Phila.

Andrena xanthostigma, n. sp.

♀ 8 mm.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♀, 28th May, 9th June, 1898; 7th June, 1899, Corvallis, Or. (Cordley).

Andrena candida, Sm. New Spec. Hym. Brit. Mus., p. 55.

♀, 8th June, 1898; 27th April, 1898, Corvallis, Or. (Cordley); "Vancouver" (Sm.).

Andrena subcandida, n. sp.

♀ 9 mm.

Type locality: Seattle, Wash. Type Am. Ent. Soc., Phila.

♀, 14th March, 1896, Seattle, Wash. (T. Kincaid); Vancouver Is. (G. W. Taylor).

Andrena decussata, n. sp.

♀ 9 mm.

Type locality: Pullman, Washington. Type Univ. Nebraska.

♀, no date; ♂, 4th May, 1897, Pullman, Wash. (C. V. Piper).

Andrena decussatula, n. sp.

♀ 9 mm.

Type locality: Vancouver, British Columbia. Type Acad. Nat. Sci., Phila.

♀, 22nd June, 1902, Vancouver, B. C. (Harvey).

Andrena subdistans, n. sp.

♀ 9 mm.

Type locality, Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♀, 14th May, 1899, Corvallis, Or. (Cordley); Wash.

Andrena plana, n. sp.♀ 9 mm. A very remarkable species that looks like a *Halictus* with brown velvet on the dorsum of thorax.

♀, 7th April, 6th May, 20th May, 1899; 2nd June, 1898; 5th June, 1897; 6th June, Corvallis, Oregon (Cordley).

Type locality: Corvallis, Or. Type Acad. Nat. Sci., Phila.

Andrena auricoma, Sm. New Spec. Hym. Brit. Mus., p. 56.

♀, 3rd, 7th June, 1899, Corvallis, Or. (Cordley); ♂, Washington; "Vancouver" (Sm.).

Andrena scurra, n. sp.

♀ 10 mm.

Type locality: Corvallis, Or. Type Acad. Nat. Sci., Phila.

♀, 2nd May, 1897; 2nd, 7th, 9th May, 1899; 12th, 24th, 25th, 26th, 30th May, 1898; 15th, 20th, 27th May, 1899; 15th, 22nd, 29th May, 1897; 23rd May, 2nd June, 1896; 4th, 6th June, 1898; 4th, 5th June, 1897; 8th, 9th, 14th June, 1899, Corvallis, Or. (Cordley); ♂, 17th April, 1896, Livingston, Vanc.; Mt. Hood, Or.

Andrena Macguillivrayi, Ckll. Ent. Lond., 1897, p. 308.

♀, 1st May, 1899; 6th May, 1897; 8th, 24th May, 1898, Corvallis, Or. (Cordley); 29th May, 17th June, 1896, Livingston, Vanc.; Seattle, Wash.; 12th June, 1895, Olympia, Wash. (T. Kincaid); Vancouver, B. C.; Mt. Hood, Or.; ♂, 30th April, 1898, Corvallis, Or. (Cordley); 17th April, 1896, Seattle, Wash. (T. Kincaid).

Andrena nubilipennis, n. sp.♀ 13 mm. Superficially like *A. Kincaidii*.

Type locality: Oregon. Type Acad. Nat. Sci., Phila.

Andrena w-scripta, n. sp.

♀ 8 mm.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♀, 7th June, 1899, Corvallis, Or. (Cordley); Wash.; 26th April, 1902, Vancouver, B. C. (Harvey).

Andrena errans, Sm. New Spec. Hym. Brit. Mus., p. 55, "Vanc." (Sm.). Not determined.*Andrena cœrulea*, Sm. New Spec. Hym. Brit. Mus., p. 55, "Vanc." (Sm.). Not determined.

PTERANDRENA, Robt.

- Joint 3 of the antennæ shorter than 4 + 5 or as long 1.
 Joint 3 longer than 4 + 5 7.
1. Joint 3 = 4 + 5.
 Fovea very broad, extending nearly to the lateral ocellus 2.
 Fovea narrow, not much wider than one-half the distance between lateral ocellus and eye 3.
 Fovea very narrow, its width about equal to one-half the distance between the lateral ocellus and eye 6.
2. Clypeus densely indistinctly punctured; pubescence on dorsulum not abundant, the surface nearly bare *oniscicolor*.
 Clypeus sparsely indistinctly punctured; pubescence on dorsulum abundant, the sculpture hidden *albuginosa*.
3. Dorsulum distinctly tessellate punctate *pallidiscopa*.
 Dorsulum not distinctly tessellate punctate 4.
4. Abdomen distinctly fasciate.
 Scopa thin, the hairs straight *nudiscopa*.
 Scopa dense, the hairs curved 5.
5. Fovea with pale pubescence; dorsulum black *pallidifovea*.
 6. Process emarginate, abdomen purplish *complexa*.
7. Fovea long, extending below the insertion of the antennæ, usually the lower end is distinctly outlined; middle metatarsus about as wide as the posterior metatarsus.
 Abdomen black.
 Abdomen not fasciate; scopa compact *erigenoides*.
 Abdomen fasciate 9.
 Abdomen bluish or greenish 8.
8. Scopa pale, whitish or brownish.
 Scopa whitish.
 Abdomen greenish; clypeus almost impunctate, dull, almost hidden by pubescence *crypta*.
 Abdomen bluish, clypeus not strongly punctured, dull, nearly bare *territa*.
 Scopa brownish; clypeus not hidden by pubescence *acrypta*.
 Scopa black.
 Clypeus distinctly punctured; black; dorsulum and basal segment of abdomen with pale pubescence *nigrocærulea*.
9. Dorsulum punctured; enclosure not closely rugose, nearly smooth *nudimediacornis*.

Pterandrena oniscicolor, n. sp.

♀ 8 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
7th June, 1899 (Cordley).*Pterandrena albuginosa*, n. sp.

♀ 11 mm.

• Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
8th June (Cordley).*Pterandrena pallidiscopa*, n. sp.

♀ 10 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
1st June, 1896 (Cordley).*Pterandrena nudiscopa*, n. sp.

♀ 9 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
2nd April, 1899 ; 23rd May, 1899 ; 3rd June, 1898 ; 7th June, 1899
(Cordley).*Pterandrena pallidifovea*, n. sp.

♀ 11.5 mm., ♂ 10 mm.

♀ type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
4th June, 1898, Corvallis, Or. (Cordley) ; 29th May, 1903, Vernon,
B. C. (Venables) ; Pullman, Wash. (C. V. Piper) ; ♂, 17th April, 1896 (T.
Kincaid).*Pterandrena complexa*, n. sp.

♀ 8 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
23rd April, 1898 (Cordley).*Pterandrena erigenoides*, n. sp.

♀ 7 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
17th April, 1897 (Cordley). Washington.*Pterandrena crypta*, n. sp.

♀ 7 mm.

Type locality : Corvallis, Oregon. Type Acad. Nat. Sci., Phila.
20th May, 1899 (Cordley). Vancouver.*Pterandrena territa*, Ckll., Ent. Lond., 1898, p. 89.

♀, 23rd May, 1894, Olympia, Wash. (T. Kincaid).

Pterandrena acrypta, n. sp.

♀ 8 mm.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♂, 7th, 20th May, 1899; 8th June, 3rd July, 1899; 7th, 26th May, 1898, Corvallis, Or. (Cordley), Washington.

Pterandrena nigrocarulea, Ckll. Ent. Lond., 1897, p. 309.

♀, 23rd May, 1899, Olympia, Wash. (T. Kincaid); 19th May, 1896, Seattle, Wash. (T. Kincaid); 22nd April, 1899; 2nd May, 1897; 7th May, 1898; 12th, 15th, 18th, 20th, 21st May, 1899, Corvallis, Or. (Cordley); 2nd, 3rd, 6th June, 1899 (Corvallis, Or. (Cordley)).

Pterandrena nudimediocornis, n. sp.

♀ 9 mm.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♂, 27th May, 3rd, 7th June, 1899, Corvallis, Or. (Cordley).

PARANDRENA, Robt.

Females.

Scopa dense: fovea extending below antennæ.

Process of labrum deeply emarginate *chalybioides*.Process of labrum pointed *andrenoides*.

Males.

Face without pale marks; abdomen blue *chalybioides*.Face with pale marks; abdomen black *andrenoides*.*Parandrena chalybioides*, n. sp.

♀ 11 mm., ♂ 9 mm.

Type locality: Corvallis, Oregon. Type Acad. Nat. Sci., Phila.

♀, 20th March, 14th, 21st May, 1899; 24th, 26th May, 1898; 3rd June, 1899; ♂, 23rd April, 1898, Corvallis, Or. (Cordley).

Parandrena andrenoides, Cress., Tr. Am. Ent., VII., p. 62 (Panurgus).

♀, 2nd May, 1899, Olympia, Wash. (T. Kincaid).

SPHECODES, Latr.

By T. D. A. Cockerell.

Of the genus *Sphecodes* in the broad sense, sixteen species are known from the Eastern and Middle States, nine from the Rocky Mountain region, seven from Mexico, three from the West Indies, and only three have been recorded from the States bordering on the Pacific. The Pacific species are probably numerous, but mostly unknown; in the present article six are reported from Olympia, Washington State,* where they were collected by Professor Trevor Kincaid.

*It would save much confusion if the State of Washington could be known as Washingtonia, with the abbreviation Washa. or Wa.

Females.

- Length 12 mm.; abdomen quite elongated, with approximately parallel sides, entirely bright ferruginous.....*Kincaidii*.
 Length less than 11 mm.; abdomen ordinary1.
 1. Mandibles simple.....2.
 Mandibles dentate.....3.
 2. Length about $9\frac{1}{2}$ mm.; labrum very large*Olympicus*.
 Length barely 7 mm.; labrum small.....*Washingtoni*.
 3. Abdomen scarcely punctured; size smaller*minor*.
 Abdomen with distinct but minute punctures, at least on second and following segments; size larger4.
 4. About $8\frac{1}{2}$ mm. long; enclosure of metathorax semilunar, distinct*hesperellus*.
 Larger; enclosure of metathorax not defined*arvensiformis*.

Males.

- Abdomen practically impunctate; segments 2 and 3 red, the others nearly all black; tarsi light yellowish.....*minor*.
 Abdomen strongly punctured; segments 2 and 3 with large median black cloud; 1 with apical margin red, the rest nearly all black; tarsi brownish*hesperellus*.

Sphecodes Kincaidii, Ckll., Proc. Acad. Nat. Sci., Phila., 1898, p. 56.

19th June, 1895, Olympia, Wash. (Kincaid).

Sphecodes (Drepanium) Olympicus, n. sp.

One ♂, Olympia, May 10th, 1896 (Kincaid).

Length about $9\frac{1}{2}$ mm.; head, thorax and legs black; flagellum brownish beneath apically; mandibles dark reddish, black at base; wings only slightly grayish; stigma dark reddish brown; abdomen bright chestnut red, the fifth segment black, apical plate chestnut red, broad and truncate, faintly emarginate. Mandibles simple, long and falciform; labrum very large and long, smooth, densely punctured at extreme base, emarginate at apex; clypeus very densely punctured; flagellum densely and minutely rugoso-punctate; 3rd joint of antennæ distinctly longer than 4, 4 equal to 5; mesothorax rather closely punctured, with a strong anterior median sulcus; base of metathorax reticulate; abdomen scarcely punctured.

The three species of *Drepanium*, *falcifer*, *fortior* and *Olympicus*, are very closely allied, but may be readily separated by the following characters:

S. falcifer: wings brownish; abdomen broader, yellowish red; mesothorax more coarsely punctured. E. States.

S. fortior: wings practically clear; abdomen narrow, deep chestnut red; mesothorax less coarsely punctured. Middle Sonoran Zone in New Mexico.

S. Olympicus: wings practically clear; abdomen broad, chestnut red, segment 5 black; mesothorax more finely punctured. Washington State. In *S. falcifer* the second abdominal segment is distinctly the broadest; in *S. fortior* and *S. Olympicus* it is not or hardly broader than the apex of the first. The apical plate of abdomen is much narrower in *fortior* than in *Olympicus*.

Sphecodes (Machæris) Washingtoni, n. sp.

One ♀, 24th June, 1895, Olympia, Washington (Kincaid).

Length hardly 7 mm.; head, thorax and legs black; mandibles simple, yellowish-red, black at base and dark at extreme tip, stout and short; ridge of labrum low, very broadly truncate; flagellum very faintly brownish beneath, scape punctured, joints 3, 4, 5 subequal, antennæ placed rather low down; front extremely closely punctured; head somewhat broader than thorax; mesothorax shining, with sparse punctures, not obviously sulcate; tegulæ large, dark at base, otherwise pallid; wings pale brownish, nervures and stigma very dark; enclosure of metathorax semilunar with a distinct rim, irregularly wrinkled; abdomen yellowish-red, apex of fourth segment, and all of fifth, blackish, practically impunctate; apical plate narrow. The head seen from above is thicker in proportion to its width than in *S. Olympicus*.

Allied to *S. stygius*, Rob., but larger, and differing in several small details.

Sphecodes (Sphecodes) minor, Robt., Tr. Ac., St. Louis, VIII., p. 45.

One ♀, June 30, 1896, one ♂, no date, Olympia (Kincaid). Actual comparisons may prove this different from the Illinois *S. minor*, but the ♀ agrees with Robertson's description, and the ♂ is unknown to him. The ♂ has not only pale tarsi, but the anterior tibiæ are light reddish, with a blackish cloud behind, and the middle and hind legs have the knees reddish, and the tibiæ pale reddish apically. The apical margin of the first abdominal segment is red.

♀, 24th, 25th May, 1898; 6th June, 1898; 9th June, 1899, Corvallis, Or. (Cordley).

Sphecodes (Sphecodes) hesperellus, n. sp.

One ♀, June 5th, 1895, two ♂'s, no date, Olympia (Kincaid). This was formerly recorded as *S. dichrous*, or (*arvensis*), but it is distinct, having a narrower thorax, less punctured abdomen, etc.

♀.—About $8\frac{1}{3}$ mm. long; head, thorax and legs black; mandibles with only the faintest red shade towards the apex; inner tooth of mandibles strong; ridge of labrum broad and low; antennal joints 3, 4 and 5 subequal; flagellum faintly brownish beneath; face broad, front strongly punctured, no tubercle on vertex; mesothorax shining, with a median impressed line, but no sulcus, punctures distinct but widely separated; enclosure of metathorax distinct, semilunar, very coarsely reticulated; tegulae pale brown; wings rather light fuliginous, stigma and nervures piceous; abdomen broad, shining, chestnut red, delicately punctured, the punctures almost obsolete on middle of first segment; first segment with basal and median blackish clouds, connected so as to have the form of an hourglass, fifth segment suffused with blackish.

In *S. arvensis* the first abdominal segment is uniformly punctured all over the disc, and the mesothorax is more closely punctured. ♂ characters as given in the table. The seventh dorsal segment is broadly rounded, and the fourth is broadly red at the apex laterally. The face is covered with white hair. The ♂ is more like that of *S. clematidis* than that of *S. arvensis*.

Sphecodes (Sphecodes) arvensiformis, n. sp.

One ♀, no date, another June 30, 1896, Olympia (Kincaid).

♀.—About 10 mm. long, with the colours and appearance of *S. arvensis*, but differing as follows: punctures of mesothorax more widely separated; enclosure of metathorax less defined, with the reticulations smaller; first recurrent nervure joining second submarginal cell at the beginning of its last third; abdomen less distinctly punctured, middle of first segment practically impunctate. As in *arvensis*, the abdomen is all red; the apical plate is dark and very narrow. The wings are strongly darkened. Ridge of labrum low and broad, its anterior margin straight. Mandibles black, with a dark red spot just before apex.

The *S. arvensis* used for comparison is an Illinois specimen from Mr. Robertson.

♀'s, 7th June, 1899, Corvallis, Oregon (Cordley).

MOSQUITO NOTES.

BY C. S. LUDLOW, M. SC.,

Laboratory of the Office of the Surgeon-General U. S. Army, Washington.

From one of the smaller of the Philippine Islands comes a new *Megarhinus*, which is noticeable for its dark caudal tuft and banded tarsi, and with it a specimen of *Stegomyia fasciata*, Fabr., accurately marked in all points except the hind tarsi, which lack all the white bands except those on the metatarsi, while from Jolo is sent a new variety of *Desvoidea*.

The *Megarhinus*, and an apparently new *Grabhamia* from California, are described, and the differences for the *Desvoidea* are given below :

Megarhinus Le Waldii, n. sp.—Male.—Head dark brown, covered with flat iridescent scales, probably brown, but appear blue and green, with a light bluish, almost white, rim around the eyes, a few brown bristles projecting forward; antennæ dark brown, almost black; plumes heavy and very dark, the basal joint densely covered with fine white hair-like tomentum, the first joint long and densely scaled, the iridescence showing as purple and white; proboscis dark; palpi dark, a few light scales (or showing light iridescence) on the first joint, the last joint twice as long as the penultimate, and pointed; clypeus brown, covered with fine white tomentum; eyes blue.

Thorax dark brown, densely covered with scales (probably brown) which show "peacock blues and greens" all over the dorsum, a little lighter to almost bluish white laterally, a few bristles at the wing joint; scutellum like mesothorax, lateral lobes apparently lighter, and a few brown bristles on each lobe; prothoracic lobes heavily scaled like mesothorax; pleura dark brown, very densely covered with white scales; metanotum dark brown.

Abdomen dark, heavily scaled, showing blue-green iridescence. First segment has a brown median spot, light blue submedian and white lateral spots. Apical hairs on most of the segments very short or lacking; the sides, however, are densely white-haired, and these white hairs connect with the caudal tuft, so that the cephalic part of this has some white in it, the main body of it being dark brown, almost black. There are also suggestions of small white lateral spots on some of the segments. Venter dark.

Legs : coxæ and trochanters all heavily white scaled. Hind femora dark blue dorsally, ventrally white, especially at the base; tibiæ dark blue; metatarsi dark; first tarsal joint basally white-banded, otherwise the tarsi are dark, sometimes a brilliant purple; ungues simple, equal, and rather straight. Mid legs all dark except a light band at the base of metatarsal and first tarsal joints. These bands are conspicuous in some lights and hardly suggested in others. Fore legs dark. Ungues on fore and mid legs large, unequal, and the larger one uniserrate. The legs show, as a whole, blue on femora and tibiæ, while the tarsal joints are brown or purple, the metatarsi between the two.

Wings clear and sparsely scaled; scales on the costa showing the blue iridescence strongly. Fork cells short. First submarginal cell about one-half the length and one-half the width of the second posterior, the stems very long, in the former nearly three times the length of the cell. Supernumerary cross-vein nearly the length of the mid and more than four times its length exterior to it; the posterior cross-vein nearly twice as long as the mid, which it meets. The fork of the fifth long vein is very far interior. Halteres light. The median scales are usually broad at the apical end, and remind one of the "inflated" scales on the body.

Length : 11 mm. Habitat : Salog, Guimaras Island, P. I. Taken April 10th.

Described from one very perfect specimen raised by Dr. L. T. Le Wald, 1st Lt. Assistant Surgeon, U. S. Army, in the laboratory. (Base Hospital) at Iloilo, Panay, from larvæ brought from Salog on April 1st. No data as to length of larval and pupal stages were sent. A dried larva accompanied the adult, but as it is much shrivelled no description is undertaken.

Grahamia de Niedmannii, n. sp.—Female.—Head dark brown, covered with ochraceous curved scales, ochraceous forked scales on the occiput, flat ochraceous, with a few brown scales on the sides, a line of light scales around the eyes, and a few light hairs projecting forward between the eyes; antennæ brown, verticles brown, pubescence light, basal cell sparsely white scaled, first joint heavily white-scaled on the inner side; proboscis mostly light-scaled, a few scattered brown scales, and the very base and tip dark; palpi dark, with white tips and a white band about two-thirds the way down, probably at the apex of the second joint, a few white scales at the base; eyes brown; clypeus brown.

Thorax dark brown, the median portion (about one-third the width of the mesothorax) heavily covered with golden-brown slender curved scales; just exterior to this on either side is a very narrow white line extending to the scutellum. There are also two submedian very narrow white lines extending the whole length of the mesothorax and curving around the "bare spot." Laterad the mesothorax is densely covered with broader ochraceous scales, becoming white just over the wing joint, and directly dorsad of this white spot is a large dark brown spot, suggesting an "eye spot"; pleura dark brown, heavily scaled with broad curved light ochraceous to white scales; scutellum dark brown, with ochraceous slender curved scales and numerous brown bristles; metanotum dark brown.

Abdomen dark scaled, with a few light scales scattered irregularly through the brown, and a heavy basal white spot very much deepened on the median line, so that it curves down in the middle, and on some of the segments covers nearly one-half the segment. There are also heavy basal lateral spots, but not always continuous with the dorsal spot, which in most instances hardly creates a band. The last few segments are much less heavily marked, but may have very narrow apical light bands, which, however, do not usually extend all the way across; light apical hairs on all segments. Venter mostly light scaled.

Legs: coxæ and trochanters all mostly light scaled. Femora all ventrally light, but speckled, dark and light scales nearly equally mixed on the dorsal side, the brown scales preponderating towards the apex, so that the femora are quite dark near the distal end, but the apex itself has a ring of white scales, which, with a few at the base of the tibiæ, make distinct knee spots; tibiæ somewhat darker than the femora, the dark scales in excess, and growing more so towards the apex; metatarsi dark, like tibiæ, and all basally light-banded, the bands on the last joint of not very distinct. All the tarsal joints basally light-banded, the bands on mid and fore legs narrow, sometimes minute, and that on the last joint of the fore legs sometimes missing; on the hind legs the bands are much broader and conspicuous. All the ungues large, equal and uniserrate.

Wings rather heavily covered with dark and light scales, both median and lateral scales very heavy and spatulate on most of the veins, but those on the under side of the wing are narrow. First submarginal cell longer and narrower than the second posterior, bases nearly on a line; the stem of the first submarginal about one-third the length of the cell. Super-numerary cross-vein a little longer than the mid, which it meets at a marked angle; posterior cross-vein also a little longer than mid and nearly twice its length distant. Halteres light with dark knobs.

Length: 7 mm. Habitat: Benicia, Cal. Taken March, April and May.

While this species lies near *vittata*, Theobald, and *dorsalis*, Meig., it differs from the first in abdominal markings, in white scales on the two veins, etc., and from the latter also in abdominal markings and in the tarsal banding, which in this species does not include both sides of the joints.

The specimens were sent in a series of collections by Dr. William F. de Niedmann, Post Surgeon, Benicia Barracks, Cal.

Desvoidea fusca, Theob., var. *Joloensis*, new var.

The *Desvoidea fusca* sent from Jolo differ from the type in two small points, but as this difference appears in every specimen of a collection of 23 (males and females) it seems advisable to note it.

On the mesothorax is a short median line of white, beginning at the scutellum, tapering as it runs cephalad, and ending just cephalad of a line drawn perpendicular to the wing joint. The middle lobe of the scutellum is also white.

Taken at Jolo, Jolo, P. I., probably in May, 1903, as it reached San Francisco in August, 1903, but no date nor name of collector accompanied it. By some accident the collection was not forwarded, so was not included in the list published last year.*

Culex teniorhyncus, Wied., has lately been sent in from Fort Caswell, N. C. So far as I know it has not hitherto been reported north of Florida.

*Journ. N. Y. Ent. Soc., Sept., 1903.

NEW SPECIES OF NORTH AMERICAN LEPIDOPTERA.

BY WILLIAM BARNES, S. B., M. D., DECATUR, ILL.

(Continued from page 204.)

Cucullia oribac, n. sp.—General type of maculation like *agua*, differing, however, in important particulars; moreover, it seems to be of a less stumpy, stocky build, the wings being longer in proportion to their width and the abdomen considerably longer. It is quite possible that it may be but a variety of *agua*, and were it not for the fact that the species of *Cucullia*, as a rule, run quite true to type I should hesitate to describe it.

♂ expanse: 47 mm.

Differs from *agua* in entirely lacking the brown patch and white dot at base of wing, in the absence of orbicular and reniform; in the presence of quite distinct white spots in fringe at end of veins, not reaching quite to edge, however. There are three well-marked, strongly outwardly oblique dark umber-brown dashes from costa in middle third of wing. The space between these reaching along median vein to outer border is pale brown, somewhat lighter along the vein. The outer of the three dashes is extended in a rigid line to outer border a little below apex, the apical region above it being somewhat gray, with an extra dark dash or two through it. The brown subapical area is differently shaped from that in *agua*, longer and more narrow, extending inward to first dash and outward to margin, limited below by median vein and above by outer dash. The space below median vein, except at inner angle, is gray, somewhat lighter outwardly, with the veins more darkened than in *agua*. In fact, the whole wing has a more strigate appearance, not so smooth and evenly shaded. The inner margin is not so heavily lined, the white mark at inner angle is more s-shaped and apparently somewhat farther from outer margin and more obliquely set. The dusky border of hind wings is broader and body parts more gray, less mixed with brown than its ally. The costa of fore wings beneath is quite distinctly gray, contrasting with rest of wing.

Type: 1 ♂, Huachuca Mts., Ariz.

Pseudoglaea lobato, n. sp.—Expanse: 44 mm.

General colour rather a light yellow, with a faint reddish tinge. Palpi reddish at sides, gray at tip. Head dark gray in front, vertex lighter. Thorax concolorous with wings. Abdomen yellow on sides, dorsally tinged with reddish. Fore wings have the ordinary spots and lines distinct, but faintly marked. Basal half line indicated by two

superimposed somewhat brownish blotches. T. a. line vertical, slightly waved, yellowish, somewhat paler than ground colour, owing to the absence of the reddish tinge, edged outwardly by a very faint darker shade, which is emphasized by three or four small brownish spots on the veins, the one on the submedian vein being quite well defined. T. p. line even, broadly curved outward over cell, thence with a slight inward curve to inner margin, its course in a general way following that of the external margin, like the t. a. line it is of a pale yellow colour and edged inwardly by a quite complete row of brownish dots on veins. S. t. line extremely faint, and only to be distinguished at all with the lens in certain lights, seems to be evenly lunulate and follows the course of the t. p. line. Orbicular concolorous, outlined with a pale yellow ring, which is lost in a somewhat paler shade along costa. Spot large, oval and erect. Reniform marked laterally by pale line, not defined below, large, upright, slightly constricted in centre. Boundary lines merge into the paler costa shades, the same as orbicular, so that both spots seem open above. Extreme edge of costa is darkened somewhat by blackish scales, which diffuse themselves somewhat over the wing at apex. Fringe with a faint wavy brownish line at base, followed by a band concolorous with ground colour, edge ochraceous. Hind wings white, pellucid, fringe pale yellowish. Inner margin of wing clothed with rather long yellow hair, tinged with red. Beneath, thorax and abdomen yellow, with the exception of the thorax at sides and below eyes, which is reddish. Legs whitish inwardly, reddish externally.

Type: 1 ♂, Chiricahua Mts., Ariz., from Mr. Poling.

Alaria diffusa, n. sp.—♀ expanse: 35 mm.

Head and palpi pink, antennae yellowish-brown, collar flushed with pink at base, yellow above. Thorax pale yellow, abdomen a little darker, more dusky-yellow than thorax. Primaries clear pale yellow, showing, however, under the lens a slight dusting with orange scales between the veins, barely discernible to the naked eye in some places as faint longitudinal streaks. The pink markings are arranged as follows: From middle of, but not quite reaching costa there is a well-marked blotch, quite well defined, which runs downward and outward across cell, here it makes a well-marked angle and is continued to middle of inner margin as a somewhat narrower band, parallel to outer margin. This median band is connected with a marginal band by a broad shade in the middle of the wing, which is sharply defined above, but gradually fades into the yellow below. The marginal band leaves the external margin just below apex,

and is narrow and sharply defined above the connecting shade, below it is not so sharply limited, and fades out as it reaches the inner angle. These bands divide the wing into three areas, a basal to the median shade, one above outer half of inner margin, and one below outer half of costa. The first two are not so sharply defined on the borders which are formed by the pink bands, as these are here more diffuse and shade into the yellow, the last, however, is clear cut at its outer and lower sides. The outer edge of the marginal band is regularly toothed, the points just reaching the basal fringe line. The filling between the teeth is yellowish, dusted with pink. The fringe is pink outwardly, somewhat lighter yellowish internally, basal line pink, not very distinct. Secondaries pale yellowish, quite thickly dusted with pink over outer half of wing, forming a broad pinkish band from costa, fading out shortly beyond middle of wing. Fringe concolorous.

Beneath primaries quite thickly dusted with pink, except along inner margin and a subapical patch, which are yellow. Secondaries have a pink blotch at middle of costa, from which a faint, broad and diffuse mesial band runs partly across wing, disappearing about the middle.

Type: 2 ♀'s, Arizona, Huachuca Mts., August; Santa Catalina Mts., August 24-30. The latter specimen from Mr. Poling.

Grotella blanca, n. sp.—Expanse: 26 mm.

White with a satiny lustre. Slightly dusky along median vein. Extreme edge of costa at inner third blackish. Eight black points arranged as follows: One at base of wing, just below median vein, three representing t. a. line, one on costa, one on inner margin and one just below median vein, slightly within a line connecting the other two, four representing t. p. line, one on costa, slightly beyond middle, one exerted beyond end of cell, one on inner margin, slightly beyond centre, and one slightly above and external to it. Fringe white. Secondaries dusky. Median band apparent, though not prominent. The wing beyond the line is a couple of shades darker than within it, and as the line lies almost through centre of wing it divides it about equally into an inner lighter and outer darker portion. This contrast is not very marked, and is best seen when wing is slightly shaded from direct light.

Beneath: primaries dusky-blackish, darker outwardly. Rather diffuse median shade, broad on costa and beyond cell, shading out towards inner margin. Fringe white, contrasting. Hind wings dusky along costa and a broad outer band, more marked at external angle, shading out towards inner angle, rest of wing whitish. Head and thorax

white above, abdomen fuscous. Head protuberant in front, with saucer-shaped depression in centre. Palpi brownish. Legs dusky externally, whitish within. Male as female, except hind wings above and below are paler and there is a second spot on costa at base. This species differs from *septempunctata* in the fuscous abdomen, darker secondaries, and especially in the wide exsertion of the second spot beyond cell.

Type: ♀, Wilgus, Cochise Co., Arizona. ♂, So. Arizona. The latter from Mr. Poling.

Grotella tricolor, n. sp.—Expanse: 20–23 mm.

Palpi yellowish below, whitish on top. Head yellowish in front, white on top, vertex white. Antennæ white at base and on upper surface, beneath yellowish. Collar white. Thorax white, with dark spot at inception of costa. Abdomen dark yellowish-brown. Primaries white, marked with dark brownish black spots, in some of which yellowish-brown scales are mixed. There is a spot on costa, marking the position of the basal line. A row of spots representing the t. a. line; these are arranged in a slight curved line across the wing. In all the specimens before me these are four in number, one on costa, one close to inner margin, and one on each side of the median band; of these, the one on costa and the one below median vein are the largest. In two specimens the spot below median vein is elongated. Probably when more material turns up specimens will be found in which these spots are more or less fused. There is a spot on costa, over cell, which may be considered as the remains of a median shade; this is quite large in two specimens, but very much reduced in the third. A quite well marked discal spot at end of cell. The t. p. line is well marked, and consists of a series of blotches, irregular in size, which show a tendency to coalesce. The line as a whole is broadly exserted over cell, and incurved from thence to inner margin. It is followed by a yellowish shade, somewhat broken and irregular. Beyond the shade is another row of irregular-sized spots, parallel to the outer margin. These spots vary in size, and while irregularly round they are not clearly defined in outline. Taken as a whole the effect in this part of the wing is of a well-marked yellowish-brown band, bordered on both sides by dark spots. The fringe is long, black at base and at outer edge. It is cut by a mesial white line and white-lined veins into a double row of black patches, the inner row of which is remarkably distinct, the individual spots being very even in size and shape; the outer row only obtains as a slight dusky discoloration. Secondaries blackish in both

sexes, darker outwardly; in the male the wing is somewhat lighter towards base than in ♀; discal dot and mesial band apparent, though not prominent. Fringe white. Beneath primaries light yellowish-brown. Blackish blotch on middle of costa and two at outer end, the last two marking the beginning of obscure dusky bands across the wing. Discal dot indicated, though not prominent, fringes as above. Secondaries dusky along costa and external margin, otherwise whitish. Quite well marked median band and discal dot. Body parts beneath, whitish. Legs whitish, checkered and shaded with black.

Type: 2 ♂, 1 ♀, So. Arizona, Pinal and Pima Co. Mr. Poling.

Antapлага hatchita, n. sp.—Expanse: 23 mm.

The space between t. a. and t. p. lines creamy white, remainder of fore wings bright chrome yellow. Transverse lines black, distinct. T. a. almost transverse, with slight outward projections below costa, above inner margin and on median vein. T. p. slightly incurved below costa, moderately exerted beyond cell, thence only slightly oblique to inner margin. The t. a. and t. p. lines are in a general way parallel, and divide the wing quite accurately into thirds. A row of black spots runs through the middle of the terminal third, following line of outer margin, the second and third from costa subobsolete, the others gradually decreasing in size towards inner margin. Fringe pale yellowish. Hind wings slightly yellowish fuscous, darker outwardly, very faint trace of mesial band, especially at costa. Beneath, fore wings narrowly yellow along costa, more broadly along outer margin, the remainder blackish, with evident mesial band corresponding to t. p. line above. Hind wings pale yellowish-white. Head and collar chrome yellow, thorax rubbed, abdomen greased. Front of head with crater-like protuberance.

Type: 1 ♀, Santa Catalina Mts., Ariz., August. Mr. Poling.

Stibadium ochoa, n. sp.—Expanse: 30 mm.

Ground colour pale yellow, tinged with green of a light olivaceous tint. Lines and spots marked with a darker olivaceous green or castaneous shade, which shade also covers the lower part of the median space, as well as between the ordinary spots. The basal part of the wing, as well as along costa, is quite thickly sprinkled with violet scales, and less profusely over median and subterminal spaces. Palpi dark castaneous. Head dark iron-gray. Collar and thorax castaneous, concolorous with fore wing. Abdomen in both specimens greasy, but, as near as can be told, of a somewhat more yellowish tinge than thorax. Fore wing with

t. a. line quite well marked, strongly outwardly oblique to submedian vein, thence forming an acute angle, inwardly oblique to inner margin, dark olivaceous green. Median shade of same colour, accompanying, rather closely, t. p. line as far as lower edge of reniform. T. p. line well marked, dark olivaceous, strongly oblique, very slightly outcurved in upper portion and incurved in lower portion of wing, extends from junction of middle and outer third of inner margin nearly to apex, where it turns inward at an acute angle to costa. A branch from the line as a shade to apex, marks off the usual apical triangle. S. t. line indicated more by the contrast between the terminal and subterminal space than by any actual line. The subterminal space is darkest at inner margin, though somewhat lighter than median space, showing more of the violaceous tint, this shade gradually fading out and disappearing before reaching apex. The terminal space is of a very pale yellow colour, with a slight olivaceous greenish tinge, and is the only part of the wing free from either the violet or castaneous scales. Fringe at base same colour as terminal space, darker externally, slightly waved dark olivaceous terminal line. A spot on costa, blended with the dark filling between ordinary spots, seems to mark the origin of the median shade. Ordinary spots concolorous, not prominent, faintly outlined with dark olivaceous rings. Secondaries pale yellowish, with a very faint olivaceous tinge, very slightly dusted with fuscous as far as s. t. line. Faint though distinct dusky median and subterminal bands, dusky discal bar. Fringe concolorous with wing, with a slightly waved darker olivaceous line at base. Beneath, fore wings of male yellowish beyond mesial line, dusky in cell, whitish along inner margin, pale spot at end of cell, indicating position of reniform above, faint, obscure discal dot. Mesial band distinct in upper half of wing, fading out below. In certain lights a slight difference in shade suggests a s. t. line. Veins somewhat darkened. The female below, has wing less dusky, more uniform, yellowish. S. t. line is more marked. The mesial band extends to inner margin. Secondaries pale yellowish along costa and outer half of wing. Lighter towards base and inner margin. Distinct mesial band and discal bar.

Beneath, ♀ has the yellow more uniform of wing, only slightly paler at base.

Type: 1 ♂, 1 ♀, Wilgus, Arizona.

Stibadium manti, n. sp.—Expanse : 31 mm.

General colour walnut brown, quite dark over outer part of median space, and a triangular patch just before apex, paler basally and submarginally, though the contrast is not strongly pronounced. Under the lens there is seen to be a more or less evident sprinkling of white scales. Head, collar and thorax concolorous. Ordinary lines and spots not prominent, except t. a. and t. p. lines, and especially the latter, they are hard to make out except with lens. Basal half line not in evidence in any of the specimens. T. a. inwardly oblique, slightly waved or scalloped, subobsolete in some specimens, and more in evidence from the slight accumulation of pale scales along the outer side, than from the only slightly darker brown of the line itself. The t. p. line is better marked in most specimens, and in the proper light can be quite readily traced with the naked eye. Starting from costa, it makes a slightly downward curve to a point some little distance beyond cell, whence, after making a sharp, though rounded angle, it proceeds with a very slight inward curve in a strongly oblique direction to inner margin. The line itself is a trifle darker than the ground colour, but is emphasized by an outer border of white scales. In one quite fresh specimen the line can scarcely be traced, even with the lens, but the contrasting median and subterminal spaces mark its position. In one or two specimens very faint traces of a submarginal line, pale and irregular, can be made out with the lens. Orbicular very faint, concolorous or slightly darkened, round, outlined by white scales. Reniform subobsolete, the inner margin usually in evidence, the outer fragmentary or wanting. Claviform wanting. Fringe brown, paler opposite ends of veins. Secondaries quite uniformly dark fuscous brown, slightly darker along outer border, a very faint extra-mesial pale band can be made out in the proper light. Fringe fuscous, paler at base and slightly so at ends of veins. Beneath, pale grayish brown, more gray along costa and outer border, more brown centrally, faint extra-mesial band. Hind wings paler, quite gray, mesial band very faint.

Types : ♂ and ♀, Kerrville and San Antonio, Texas. From Mr. Lacey and Professor Attwater.

Ogdoconta altura, n. sp.—Expanse : 21 to 25 mm.

General colour of head, collar, thorax and fore wings a dark golden brown, thinly sprinkled with pale scales. Basal half line only apparent under lens, and then only as a few pale scales. T. a. line plainly visible but not prominent, pale, inwardly oblique, slightly outcurved. T. p. line the only contrasting feature of wing, pale, angled close to costa, then

strongly inwardly oblique to inner margin, parallel to direction of t. a., but not so much curved. Inner edge rigid, cleanly marked, outer shading gradually into ground colour. The s. t. line is only marked by a very slight difference in shade between terminal and subterminal spaces, the latter being slightly darker next the line. Fringe concolorous, slightly paler at base. No trace of ordinary spots. Secondaries fuscous, darker outwardly. Mesial band and discal dot evident, but very faint. Female as male, only hind wings somewhat darker. Beneath, fore wings fuscous, with extremely faint, if any, trace of mesial band and discal dot; hind wings paler, with band and dot only a trifle better defined.

None of the specimens before me are perfectly fresh, and it is probable that when better material is available there will be additional features of maculation to be added to the above description. For instance, a few white scales here and a few black ones there lead me to think that in fresh specimens there would be a marginal row of dark points preceded by white ones.

Types: ♂ and ♀, Kerrville, Texas. From Mr. Lacey.

(To be continued.)

THE SO-CALLED HUMAN FLEA, PULEX IRRITANS, INFESTING THE OPOSSUM, DIDELPHIS VIRGINIANA.

BY F. M. WEBSTER, URBANA, ILL.

While engaged in studying the still enigmatical insect, *Platypsilla castoris*, along Devil's River, Texas, in the spring of 1891, an opossum was treed by the dogs one evening, and shot. The following morning I found the animal, which was a female, and, though herself dead, the young were still alive and in the pouch of the mother. While examining these I observed that the pouch also contained numbers of fleas. Specimens were captured and sent to the Department of Agriculture at Washington, I being at the time employed by the Division of Entomology. It is these specimens, I presume, that were described by Mr. Baker, in CANADIAN ENTOMOLOGIST, Vol. XXVII, p. 67, as *Pulex simulans*. In Proceedings U. S. National Museum, Vol. XXVII, p. 379, Mr. Baker states that the occurrence of this flea, which he here considers a variety of *P. irritans*, is to be looked upon as accidental. This latter statement may, perhaps, be true, but it is well enough to place the circumstances surrounding the capture of the type specimens, and to call attention to the fact that the section of Devil's River where they were taken is not by any means a thickly settled one. While I know, from personal experience at the time, that not all of the fleas were infesting the opossums, their abundance on the individual from which they were taken, and the nature of the country inhabited by her, would lead me to look rather confidently for their recurrence on others of these animals, especially where opossums are, if anything, thicker than humans, and fleas *ad infinitum*.

THE GEOMETRIDÆ IN "THE MOTH BOOK."

BY REV. G. W. TAYLOR, WELLINGTON, B. C.

It seems a little ungracious to call attention to errors in so excellent a work as "The Moth Book," and presumptuous for a novice to criticise so eminent an authority as its author, but perhaps it is as well for the sake of the many amateur collectors who will name their captures from Dr. Holland's beautiful plates that the few mistakes that seem to have crept in should be pointed out.

There are four plates upon which species of Geometridæ are figured, and I think that in a few cases the names attached to the figures ought to be changed.

On Plate XLII., figure 25 represents *Alsophila pomataria*, not *Paleacrita vernata*. Figure 32 on the same plate is *Macaria infimata*, as pointed out by Dr. Dyar in the January number of this journal. I have on several occasions received specimens of *M. infimata* from eastern collectors as *Eupithecia absynthiata*. Figure 49 is *Petrophora fluctuata* not *Mesoleuca intermediata*.

On Plate XLIII., figures 10 and 11 represent *Hydriomena excurvata* = *Ceratotalia Gueneata*, Packard, not *Hydriomena custodiata*, which is the *Ochyria Gueneata*, Packard. Figure 36 seems to be *Deilinia erythremaria* rather than *D. variolaria*, and figure 39 represents the European form *Philobia notata*, and not the western American *P. enotata*.

On Plate XLIV., figure 2 is an excellent portrait of the *Caripeta seductaria* of Strecker, and is not the species figured by Packard in his monograph as *C. angustiorata*, Walker. I possess both species, and they are quite distinct. Figure 32 is, I think, *Plagodis alcolaria*, not *P. emargataria*.

I may also call attention to the fact that there are some evident misprints in the "Key to the Families," on page 24, which will, I fear, make the use of the key difficult for beginners.

Lastly, I may point out that Dr. Holland does Dr. Dyar an injustice, unintentional of course, when he says on page 344 that he has overlooked in his catalogue the *Cleora atrifasciata* of Hulst, for, as a matter of fact, Dr. Dyar has placed that form just where Dr. Hulst himself (see Ent. News, VI., 43) said it should go, namely, as a synonym of *Mesoleuca immanata*. I must admit that this appears a strange position for a moth described as a *Cleora*, and as Dr. Holland has the type it is interesting to know his opinion of its specific value.

THE GENUS PSILOPUS OF AUTHORS.

BY J. M. ALDRICH, MOSCOW, IDAHO.

In the Journal of the New York Entomological Society, X., 140, 1902, footnote, Mr. Coquillett called attention to a serious error of mine in my revision of what I called the *Psilopinæ* (Diptera, family Dolichopodidæ), by which I applied the new name *Gnamptopsilopus* to that portion of the old genus *Psilopus* containing the type species *platypterus*. But little investigation was needed to assure me that the criticism was just. This gave occasion for an overhauling of the literature of the group, and I undertook to ascertain what name ought to be used for *Psilopus*, which has been known for many years to be preoccupied. Some of the papers needed were hard to obtain, which delayed my task; but the main difficulty was the host of subsidiary questions, historical and critical, which rose up to confront me. I have never found anything like it in previous excursions into the realm of nomenclature. I doubt very much if any two zoologists could independently investigate the subject and come to the same conclusion; at least, there are a number of different names for which plausible arguments can be made. It would require a lengthy article to set forth all the queer questions connected with the case; I dare not attempt it, partly because it would not be worth the room, and partly because it would make subsequent change too easy. Instead of offering a choice of several names, I give my conclusions and a few notes, and particularly request that any future worker in the family who may wish to use other names for the genera will do as I have done—examine all the literature and then ponder the matter one year before making any change.

The two genera which I have formerly called *Gnamptopsilopus* and *Psilopus* should stand as follows:

AGONOSOMA.

Guérin-Méneville, Voyage . . . sur la Corvette; Zoologie, Tome II., partie 2me, p. 293. Paris, 1838 (title page gives date 1830).

On the plates the genus is called *Chrysosoma*.

Fallén, Dolichopodes, 23, 1823 (*Leptopus*, preoc.).

Meigen, Syst. Besch. Europ. Zw. Ins., IV., 35, 1824 (*Psilopus*, preoc.).

Zeller, Isis, 1842, 831 (changes *Psilopus* to *Sciapus*).

?Bigot, Annales Soc. Ent., France, 1859, 215 (*Margaritostylus*, in part).

Rondani, Dipt. Italicae Prodrusus, IV., 11, 1861 (changes *Psilopus* to *Psilopodius*).

- Schiner, Fauna Austriaca, Dipt., I., 180, 1862 (*Psilopus*, Meig.).
 Loew, Monogr. N. A. Diptera, II., 229, 1864 (id.).
 Aldrich, Kans. Univ. Quart., II., 47, 1893 (*Gnamptopsilopus*); *Biologia*
 Cent. Amer., Dipt., Suppl., 364, 1902, table of species (id.).
 Coquillett, Jour. N. Y. Ent. Soc., X., 140, 1902, synonymy of
Gnamptopsilopus.
 Bezzi, Zeitsch. f. Hym. u. Dipterologie, 1902, 191, adopts *Sciapus*.

PSILOPODINUS.

- Bigot, Annales Soc. Ent., France, 1890, 269.
 ?Bigot, Annales Soc. Ent., France, 1859, 215 (*Oariostylus*, *Megistostylus*,
Mesoblepharius, *Condylostylus*, *Eurostomerus*, *Dasypsilopus*, *Heteropsilopus*, *Aedipsilopus*).
 ?Bigot, Annales Soc. Ent., France, 1890, 261-269 (*Spathipsilopus*,
Eudasypus, *Amblypsilopus*, *Tylochaetus*, *Oariopherus*).
 Aldrich, Kans. Univ. Quart., II., 47, 1893 (*Psilopus* in restricted sense).

NOTES.—I have seen all the literature cited except Zeller. The Smithsonian Institution kindly loaned me Guérin-Méneville.

The genera of Bigot, published in 1859 and 1890, are very badly conceived, and not properly genera at all, nor even subgenera. The descriptions of the type species hardly allow a definite opinion as to their location in the two genera here adopted, but I incline to place most of them in the second genus, with tegular cilia black. I chose to retain Bigot's name *Psilopodinus* for this genus for several reasons. First, *sipho* is mentioned among the types; second, it is not based on purely sexual characters (nor on much of anything else, I must admit); third, it is an advantage to retain this name from its resemblance to *Psilopus*, as the group includes Loew's larger section of *Psilopus*, and all that I referred to that genus in my revision.

The genus *Agonosoma* was supposed by its describer to differ from *Psilopus* by a more elongated third antennal joint and a somewhat different structure of the face and front. Two East Indian species were described, *fasciata* and *maculipennis*. In these the antennæ are yellow or ferruginous, with tip of third joint infuscated. The figure of the wing of the first shows the third vein parallel at the tip with the fourth. These two characters are quite distinctive, and I think we may safely assume that the species also have pale tegular cilia, and are entirely congeneric with *Psilopus platypterus*, which should, therefore, be referred to *Agonosoma*.

The effect on nomenclature is as follows: In Loew's Monograph of N. A. Dolichopodidae, p. 244, his first section of *Psilopus*, comprising those with black cilia of the tegulæ, are now referred to *Psilopodinus*, excepting *Psilopus dimidiatus*; the other section, with pale cilia, are now referred to *Agonosoma*, together with *Ps. dimidiatus*. In Williston's Manual of N. A. Diptera, 1896, pp. 77, 78, substitute *Psilopodinus* for *Psilopus*, and *Agonosoma* for *Gnamptopsilopus*.

SOME ORTHOPTERA TAKEN AT MOOSE JAW, ASSINIBOIA.

BY A. N. CAUDELL, WASHINGTON, D. C.

Last summer, on August 24th, a few hours were spent at Moose Jaw collecting Orthoptera. But few species were taken, and they are here listed for the locality. They were all taken on the open prairie, out a short distance from the town.

Chortophaga viridifasciata, DeGeer. Nymphs only taken.

Phlibostroma quadrimaculatum, Thom. But a few specimens taken.

Gomphocerus clepsydra, Scudd. This species was moderately common.

Arphia pseudonietana, Thom. (*tenebrosa*, Scudd.). Rather common, but not numerous.

Mestobregma kiowa, Thom. A single male taken.

Encoptolophus parvus, Scudd. One female specimen only taken. This species does not appear to have been previously reported from Canada.

Melanoplus atlansis, Riley. Apparently not very common.

Melanoplus Dawsoni, Scudd. Only the short-winged variety, *tellustris*, was taken. It occurred quite abundantly in the prairie grass.

Melanoplus infantilis, Scudd. This was the most numerous of any species noted.

Gryllus Pennsylvanicus, var. *neglectus*, Scudd. Five specimens of this insect were taken under a stone in a draw, or small hollow, on the prairie. Scudder has referred this insect to the synonymy, placing it as a synonym of Burmeister's *G. Pennsylvanicus*, but the smaller size and shorter elytra certainly entitle it to varietal distinction.

Nemobius fasciatus, var. *abortivus*, n. var. Hopping actively about in the grass in and along the borders of the above-mentioned draw were numbers of a small *Nemobius*, which is very similar to *N. fasciatus*, but is uniformly darker, being nearly black, and decidedly smaller, as shown by the following measurements:

Length elytra, male 4.5 to 6 mm., female 3 to 4 mm.; posterior femora, male 4 to 5 mm., female 5 to 6 mm.; ovipositor, female 6 to 7 mm.

About three dozen specimens, a few more females than males, were taken, and they are very uniform in size and coloration. This is the small black species mentioned by Walker, on page 184 of the CANADIAN ENTOMOLOGIST for July. Specimens were submitted to Prof. Blatchley, who says they may eventually prove a good species. They certainly form a valid variety, which may be called *abortivus*. Like *vittatus*, it is short-winged. Except for the uniform black colour, it resembles the *N. Utahensis* of Scudder.