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Some Rocky Mountain Andrenid Bees

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GEOMETRID NOTES.

NEW SPECIES AND ABERRATIONS.

BY L. W. SWETT, WEST SOMERVILLE, MASS.

Hydriomena californiata Pack. ab. **niveifascia** nov.

Expanse 30-35 mm.

Wings pale gray, the red and smoky bands being replaced by silvery white bands. The markings are as in normal *californiata*, except that the watery line of the mesial band of the fore wings is replaced with white. Where the basal and extra-discal reddish shadings usually occur is also white. The marginal, smoky band is replaced with white and the margin of the wings pale gray. The hind wings are smoky brown, with two curved bands, as in the normal form. The extradiscal dots on the fore wings are minute and black. Beneath them is a trace of the white lines above, showing through on the fore wings; otherwise, as in normal *californiata*.

This is a most striking form, and would require some time and study to place it correctly, if it were not for the date of capture and the character of the palpi. I do not believe in describing aberrations of the species of *Hydriomena* where they are slight, but this albinic, banded form seems very unusual, and I recall no previous case of this variation in North America form.

Holotype—♂, Goldstream, B. C., April 19, 1908, from Mr. E. H. Blackmore, in my collection.

Allotype—♀, Victoria, B. C., June 6, 1908, returned to Mr. E. H. Blackmore.

Nomenia obsoleta, n. sp.

Expanse 20-23 mm.

Fore wings white, with a very slight fuscous tinge, the costa with nine or ten irregular brown lines, which, if produced, would cross the wings. The first line curves outwardly to the median vein, then stops and appears as a spot on the inner margin. The other lines, continued to the intradiscal, show only as minute brown dots on the median vein and inner margin. The intradiscal line is very irregular and shows only very faintly, appearing as heavy dots on the median vein and inner margin. The discal dot is small and black, with the median space pure glistening white. The extra-

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discal double line is the most prominent marking on the wings. It starts as a geminate line at the costa, just beneath which it is outwardly sharply angled. It curves backward from costa toward discal spot, opposite which it is again outwardly angled; then runs a straight course for a short distance and, making a curve inwardly runs straight to inner margin. At the costa there is a large brown spot joining these geminate extradiscal lines, another at the median vein and a smaller one on the inner margin. Beyond, the marginal lines run almost straight across the wings with no inward curve as in *duodecemlineata* Pack., the only angle being at the costa. Fringe pure white, with black dashes at ends of veins. The wings are not gray as in *12-lineata* Pack., but glistening white with brown spots, and the extradiscal is the only line crossing the wing except the two marginal pale lines. Hind wings pure glistening white, with trace of extradiscal line running straight across the wing. It appears as a dot on the inner margin, then on each vein to the cell, where it is elongated and heavy; then in small dots on veins to the outer margin. There is an apparent marginal line, but the dots are so small and faint that it is difficult to see. I can see no discal spot except perhaps a slight darkening of the scales.

Beneath: Fore wings darker than above, with fuscous tinge, extradiscal and marginal lines showing through. Discal spots black and prominent on all the wings. Hind wings white, as above, extradiscal line running straight across the wing, appearing as dots on the veins, no curve visible. Beyond this there are traces of two marginal faint dotted lines. On the abdomen above at base are two twin dots which sometimes join, forming a black band. Geminate spots are also present on each segment almost to the tip. This species differs from *duodecemlineata* Pack. in its larger size, pure white colour and brown spots and course of lines.

Holotype—♂, Goldstream, B. C., April 19, 1908, from Harvey collection.

Paratype—♂, Victoria, B. C., April 19, 1908, in Provincial Museum Collection.

Allotype—♀, Goldstream, B. C., April 19, 1908, from Harvey collection.

Paratype—♀, Victoria, B. C., April 26, 1908, from Harvey collection.

All these were received through Mr. Blackmore. I am not sure that the ♂ paratype is exactly like the others. It has a fuscous tinge and more nearly approaches the *12-lineata* Pack., but it is best referable here, I think. *Obsoleta* Swett looks a trifle like small *Venusia cambrica* Curtis, if pure white, though the antennæ would show the difference at once.

***Diastictis andersoni*, n. sp.**

Expanse 27 mm.

Fore wings smoky gray or bluish gray, with three prominent costal brown patches. The first is a basal patch, from which a faint line curves outwardly to inner margin. The second line runs almost straight across wing to margin; the third line is most prominent and runs with an outward curve to about two-thirds of the wing, and then runs straight to inner margin. There is a trace of a fourth costal patch, and beyond the extradiscal line is a heavy fuscous shade running from median vein to inner margin. Hind wings are of the same colour as fore wings, and extradiscal band curves outwardly across wing. No discal spots apparent in any of the wings above. Fringe grayish, with a slight darkening near apex of fore wings. Beneath, the fore wings are a smoky gray in colour; the extradiscal line showing through; beyond which they are somewhat striated. Hind wings: Discal dot large, extradiscal line heavy, and all the wings somewhat striated, giving them a mottled appearance. This form looks somewhat like *occiduaria* Pack, if smoky gray, but the extradiscal lines on both wings are more curved, and it lacks any yellow shade.

This form is possibly an aberration of some known species, but I hardly think so, as it was taken by Mr. Anderson at Atlin, B. C., which is pretty far north. I take pleasure in naming this form after Mr. Anderson, who has proved to be an indefatigable collector, and who has done much to further our knowledge of the Geometrids of Northern British Columbia.

Holotype—♂, Atlin, B. C., July 13, 1914, in my collection through the kindness of the collector, Mr. E. M. Anderson.

Paratypes—from same locality and date in Provincial Museum collection at Victoria, B. C., also in that of Mr. E. H. Blackmore.

This form must be allied to *inceptaria* Walk., which is, in my opinion, distinct from *argillacearia* Pack. Dyar's reference is also incorrect. It was described as *Numeria inceptaria* in the Canadian Naturalist and Geologist, Vol. 5, pp. 241-266, Aug. 1860. *Argillacearia* Pack. seems to lack definite lines, while, according to the description, *inceptaria* has two on the hind wings and three on the fore wings. I rather think it is nearer *evagaria* Hulst and *inceptaria* than *argillacearia*.

SOME ROCKY MOUNTAIN ANDRENID BEES.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

Andrena cyanura, sp. n.

♀.—Length about 12 mm.; black, with the abdomen shining dark blue; hair of head and thorax abundant, mainly very pale ochreous or white, with an ochreous tint, but black at sides of face, on lower part of clypeus, on front, vertex anteriorly, cheeks, posterior part of mesothorax and pleura except upper part; sides of metathorax with copious entirely pale hair; facial quadrangle much broader than long; process of labrum very broadly rounded; clypeus strongly and closely punctured, with a median raised line; facial foveæ dark chocolate, broad, ending a little below level of top of clypeus; antennæ dark, third joint a little longer than next two together; mesothorax entirely dull, with small punctures; area of metathorax granular, defined by absence of hair; tegulæ black; wings strongly brownish; stigma rather small, ferruginous, with a dark fuscous margin; nervures fuscous; second s. m. very broad, receiving first r. n. at or near middle; legs with black or sooty hair, floccus on hind trochanters white; hind femora with long white hair on upper side; tibial scopa with stiff, nearly straight hair; abdomen without bands, dorsally almost without hair, shining, without distinct punctures; dense hair at apex black; second segment depressed about a third.

Hab.—Troublesome, Colorado, 2 ♀'s at flowers of *Salix*, June 8, 1908 (*S. A. Rohwer*). A remarkable species, superficially like *A. vicina*, but easily known by the blue impunctate abdomen. From *A. lawrencei* V. & C., it is known by the larger size and black thorax. Also at Troublesome, on the same day, Mr. Rohwer took *A. vierecki* Ckll. at flowers of *Amelanchier*.

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***Andrena hirticincta surda*, Ckll.**

This was described from Colorado, the precise locality unknown. Mr. S. A. Rohwer took a male at flowers of *Polygonum*, along with a female *A. vierecki* Ckll., at Boulder, Colo., Aug. 24, 1908. The occurrence of *vierecki*, a spring species, on this date is surprising, and seems to indicate a second brood.

***Andrena pertarda*, Ckll.**

A female was taken at Meeker, Colorado, Aug. 7, 1909 (*Terry Duce*).

***Andrena apacheorum*, Ckll.**

This occurs in Colorado; Green Mountain Falls, August (*J. W. Frey*).

***Andrena tacitula grossulariæ*, V. & C.**

Only the male has been described. I took a female at flowers of *Prunus melanocarpa*, Florissant, Colo., June 24. It looks like *A. cyanophila*, but is quite distinct by the less broadly depressed second abdominal segment, the details of area of metathorax, and colour of hair on hind tarsi. It is also near to *A. salicifloris*, but the metathorax is different. Clypeus very densely and coarsely punctured, with a smooth median line; facial foveæ narrow, separated from eye only by a shining line, extending far below level of antennæ; third antennal joint about as long as the two following together; flagellum largely red beneath, broadly so apically; mesothorax and scutellum strongly and densely punctured, but disc of mesothorax posteriorly shining between the more widely separated punctures; area of metathorax with strong longitudinal rugæ; stigma dark reddish; hair of head and thorax above fox-red; abdomen shining, well punctured, second segment depressed a little more than half; second to fourth segments with yellowish white hair-bands at sides; hair at apex fawn colour; hair on inner side of tarsi light reddish.

***Andrena nigratarsis*, V. & C.**

Mr. S. A. Rohwer took both sexes at flowers of *Opulaster ramaleyi*; at Boulder, May 23; also a female, June 1. The species is close to *A. fragariana* Graen., but larger; it has the venational

and other characters of typical *Micrandrena*. The male has the tegument of the face entirely black, and the long flagellum is obscurely brownish beneath.

***Andrena candidiformis*, V. & C.**

The facial quadrangle is broader than long, not the reverse, as stated in the original description.

***Halictus cyaneiceps*, sp. n.**

♀ (Type).—Length 8.9 mm.; black, with the front and upper part of sides of face more or less distinctly bluish, contrasting with the pure black clypeus and supraclypeal area; pubescence dull white, forming broad bands at bases of abdominal segments; clypeus little produced; antennæ black; mesothorax shining and sparsely punctured on disc posteriorly; scutellum shining, with punctures of different sizes; area of metathorax dull, finely roughened, basally obscurely sublineolate, at apical middle there is a depression; posterior truncation not distinctly defined; tegulæ piceous; wings greyish hyaline, stigma and nervures dusky amber colour; punctures of abdomen excessively minuté; hind spur with short blunt teeth.

♂.—Length hardly 8 mm.; face broad; clypeus shining, with a broad creamy-white band; flagellum long, marked with ferruginous beneath; area of metathorax shining apically; tarsi dark brown.

Hab.—Rio Ruidoso, New Mexico (C. H. T. Townsend); the type taken at flowers of *Heliopsis scabra*, July 31, alt. prox. 6500 ft.; also found (both sexes) on flowers of *Potentilla thurberi*, July 31, and on July 20, at 6900 ft., at flowers of *Verbascum thapsus*. South Fork Eagle Creek, New Mexico, at flowers of *Sicyos parviflorus*, Aug. 18, at 8000 ft., and Aug. 19, at 8250 ft. (C. H. T. Townsend). I have had *H. cyaneiceps* a number of years, and have referred it with hesitation to *H. bardus* Cresson and to *H. forbesii* Rob. It is very closely related to *forbesii*, but distinguished by the bluish front of the female and dark tarsi of the male. I have not described the structure in detail, where it agreed with *H. forbesii*. The male is very like that of *H. trizonatus* Cress, but is readily distinguished by the broad, short head. Male *trizonatus* was taken on *Potentilla thurberi* at the same time and place as *cyaneiceps*.