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New American Bees - IX

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among the bases of the young leaves. When approaching maturity it is a trifle over half an inch in length, of a creamy colour, with pure white hairs of an equal length with the diameter of the body, and its head is slightly tinged with brown.

At this time, about the beginning of June, the larvæ were apparently feeding, or lying dormant, preparing for the pupal change, on the under side of the leaves, and in the heart of the plant. Each larva formed a wool-like nidus, wherein it ultimately pupated about the end of June. The imagines emerged about the end of July.

There was no difference in the appearance of these bred moths and the newly caught wild specimens.

Folkestone: February, 1910.

NEW AMERICAN BEES.—IX.

By T. D. A. COCKERELL.

Hoplitis mescalerium, sp. nov.

♀. Length about 9 mm., black, head and thorax with dull white hair, abdomen with conspicuous white marginal hair bands, failing more or less in the middle; ventral scopa white; clypeus very densely punctured, broadly truncate at apex, and with a median smooth line; punctures of vertex well separated; antennæ wholly dark; cheeks broad and rounded, densely punctured; under side of head with long curled hairs; mandibles tridentate, but the inner tooth very feebly developed, little more than a prominent rounded angle; maxillary palpi five jointed, joints measuring in μ (1) 68, (2) 153, (3) 136, (4) 102, (5) 76; blade of maxilla very long and slender, length about 2635 μ , but breadth near base only 100; tongue reaching to small joints of labial palpi; labial palpi with first joint about 1105 μ , second 1428, the second measured to beginning of third joint, not counting the hyaline process (170 μ) extending beyond; mesothorax shining, with the strong punctures well separated; scutellum not especially swollen; area of metathorax dull, minutely granular; pleura densely punctured; tegulae shining black; wings strongly infuscated; second r. n. reaching second s. m. very near its end; apical spine on anterior tibia long; hair on inner side of hind basitarsus pale yellow; tibial spurs light ferruginous (black in *H. sambuci*); abdomen with distinct but sparse punctures.

Hab. Mescalero, New Mexico, July 12, two females (C. M. Barber). Named after the Mescalero Apaches, in whose territory it is found. It is closely related to *H. truncata*, Cresson, and *H. sambuci*, Titus, but separated by the dark wings, the colour of the spurs, and the measurements of the palpi. *H. adunca* of Europe, the type of *Hoplitis*, has the tongue much longer, the first joint of labial palpi much shorter in proportion to second, and the blade of maxilla not so slender.

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the young leaves. When approaching over half an inch in length, of a creamy white hairs of an equal length with the diameter and its head is slightly tinged with brown. At the beginning of June, the larvæ were lying dormant, preparing for the pupal stage on the side of the leaves, and in the heart of the leaf formed a wool-like nidus, wherein it ultimately perished at the end of June. The imagines emerged

reference in the appearance of these bred from caught wild specimens.

1910.

AMERICAN BEES.—IX.

BY T. D. A. COCKERELL.

Hoplitis mescalericum, sp. nov.

9 mm., black, head and thorax with dull white conspicuous white marginal hair bands, failing in middle; ventral scopa white; clypeus very broadly truncate at apex, and with a median lobe of vertex well separated; antennæ wholly rounded, densely punctured; under side of head hairs; mandibles tridentate, but the inner developed, little more than a prominent rounded tip; five jointed, joints measuring in μ (1) 68, (2) 57, (3) 76; blade of maxilla very long and slender, but breadth near base only 100; tongue reaching beyond labial palpi; labial palpi with first joint about the second measured to beginning of third joint, long process (170 μ) extending beyond; mesothorax with strong punctures well separated; scutellum shining; area of metathorax dull, minutely granular; tegulae shining black; wings strongly veined; n. reaching second s. m. very near its end; anterior tibia long; hair on inner side of hind tibia; tibial spurs light ferruginous (black in *H. adunca*) with distinct but sparse punctures.

New Mexico, July 12, two females (*C. M.* near the Mescalero Apaches, in whose territory closely related to *H. truncata*, Cresson, and distinguished by the dark wings, the colour and measurements of the palpi. *H. adunca* of *Hoplitis*, has the tongue much longer, the labial palpi much shorter in proportion to second, and the maxilla not so slender.

Triepeolus denverensis, sp. nov.

δ . Length about 13 mm., black, with the legs entirely bright ferruginous, but the spurs of middle and hind legs black; light markings pale ochreous, as in allied species; wings only slightly darkened. Head broad; eyes (dry) pale reddish-grey; face with dense appressed white hair; labrum black; mandibles black except a little red about the middle; antennæ black; front and vertex coarsely and densely punctured; ocelli large, deep reddish; mesothorax rather thinly covered all over with ochreous hair, the usual two bands very faintly suggested by a greater density of the hair; pleura densely punctured, covered with hair, which becomes thinner below; scutellum very strongly bigibbous, lateral teeth strong, black, sharp, slightly curved inwards; tegulae light ferruginous; second s. m. much narrowed above, and receiving the first r. n. in the middle; abdomen with six broad entire ochreous apical bands; black band on first segment transverse, rounded laterally, shorter than in *T. occidentalis*, connected with base of segment by a narrow band; band on second segment with a large rounded anterior lobe on each side. Related to *T. helianthi*, Robertson, but easily separated by the characters italicised.

Hab. Denver, Colorado, at flowers of *Peritoma serrulatum*, Aug. 11, 1908 (Mrs. C. Bennett). At the same flowers, at the same time and place, Mrs. Bennett took *Andrena argemonis*, Ckll. (both sexes), *Megachile grindelium*, Ckll., one female; *M. perihirta*, Ckll., three males; *Melissodes obliqua*, Say, one male (a variety with green eyes, which has also been taken at Boulder by Mr. S. A. Rohwer); and *M. agilis*, Cresson, var. b., Ckll. (Univ. of Colorado Studies, 1907, p. 255).

Megachile perihirta has a large tubercle on the inner side of the middle basitarsus near base, overlooked in the original description. I am inclined to suspect that *perihirta* and *grindelium* are the sexes of one species.

Ashmeadiella aridula, sp. nov.

δ . Length about 5½ mm., black, including legs, with white (not in the least yellowish) pubescence, and perfectly clear, iridescent wings. Eyes green, black in front; white hair dense on sides of face; mandibles black; flagellum dull red beneath; tegulae rufo-testaceous; apical teeth of abdomen tipped with red, the median ones much longer than broad. Similar to *A. cactorum*, Ckll. (which occurs at Florissant, Colorado), but distinguished by the colour of the tegulae, antennæ, and apical teeth of abdomen. It is perhaps only sub-specifically distinct from *cactorum*.

Hab. Rifle, Colorado, July 3, 1908 (S. A. Rohwer).

I have referred to *A. prosopidis*, Ckll., two males from Boulder, Colorado (May 26, S. A. Rohwer), and one from Olympia, Washington State (July 1, Kincaid). They are not precisely typical, and the Olympia one especially is rather too large, with the wings not perfectly clear. It is probable that with more material another species might be defined, but at

present I cannot find any satisfactory grounds for dividing the series.

Osmia besseyæ, sp. nov.

♀. Length 7 mm.; similar to *O. copelandica*, Ckll., except as follows: head narrower, obscurely greenish; mesothorax and scutellum dark olive green (metathorax and pleura black); hair of head and thorax above pale yellow; hind margins of abdominal segments not at all reddened. Abdomen with white hair bands, failing in the middle; ventral scopa white; wings dusky; antennæ wholly black; eyes green, blackish in front; second joint of labial palpus longer than first; basin of first abdominal segment with a short but evident transverse ridge above.

♂. Head and thorax distinctly dark greenish; hair of head and thorax above distinctly yellowish; eyes pale sage green. In the Boulder County tables (Univ. of Colorado Studies, 1907, p. 252), it runs to *O. proxima*, from which it differs by its smaller size, black abdomen with distinct hair bands and non-metallic legs. The flagellum is wholly dark.

Hab. Female (type), Boulder, Colorado, at flowers of *Besseyæ plantaginea*, June 1, 1908 (*S. A. Rohwer*). Male, Boulder, May 26, 1908 (*S. A. Rohwer*).

A curious little species, rather resembling an *Ashmeadiella*. It is really very much like the European *Osmia submicans*, Mar., which I have from Brindisi (*Morice*), and also from Algeria and Teneriffe. It may perhaps be found to intergrade with *O. copelandica*, but at present they appear distinct. *O. copelandica*, so far as known, flies in September.

Boulder, Colorado: Dec. 1909.

SOME NEW BUTTERFLIES FROM FORMOSA AND JAPAN.

By A. E. WILEMAN, F.E.S.

Sephisa taiwana, sp. nov.

Male. Fore wings fulvous with three black spots of irregular shape on the costal area, the first extends to just below the middle of the cell, the second to the second median nervule, and the third to the third median nervule; a large black patch on the inner marginal area extends from the base to just beyond the middle of the wing; the black, wavy, submarginal line increases in width from the middle to the costa, and is separated from the black marginal line by a series of fulvous lunules; the space between the second costal spot and the submarginal band is broken up by the broadly black nervules into three small spots. Hind wings fulvous, rather paler on the discal area; a black bar about the middle of the costa and a round black spot below it; two small black spots in the cell, that nearest the base obscure; the black markings on the outer marginal area some-

what similar submarginal blackish spot the abdomen with black area divided dot; two the lunules costa. Hind above the middle there filled in with black spot if

One ma

Male.

purplish with outer marginal scales over each wing; outer end of beyond; all colour, and dusky band series of dark angle black

Hab.

Male specimens. This sp

Male.

same sex of costal white there are in marginal area wings is a median into it; the into of all the much as a is reduced marginal lunules, of 80 millim.

Hab.

Bungo, J Possib