

apical third is a white dash; tarsi all red; abdomen black at base, but the other dark parts largely reddish, though never bright; each segment has a broad creamy-white band, those on the first two interrupted by a red line in the middle; the first three bands have a dark notch sublaterally on the posterior edge; the fourth has a dark spot on each side; and the fifth has the notch deep and on the anterior edge; apical plate notched; venter ferruginous, banded with white.

Hab.—N. Yakima, Washington State, Sept. 26, 1903 (*Eldred Jenne*). The abdomen is marked and coloured much as in *N. Crotchii*, var. *nigrior*, but the sculpture is different. The closest affinity is probably with *N. Pascoensis*, which is quite differently coloured. Although the anterior coxæ are not spined, they have a minute red tubercle, only distinctly seen with the compound microscope, and I believe the insect is not without real affinity to *Micronomada*.

THREE NEW SPECIES OF BEES.

BY J. C. CRAWFORD, DALLAS, TEXAS.

Perdita Cockerelli, n. sp.—♂. Head and thorax green, finely roughened, metathorax sometimes more bluish; face up to antennæ, including labrum and mandibles, except tips, lateral face-marks running to a point about half way between point of insertion of antennæ and summit of eyes, narrow inferior orbits half way up, scape in front, large spot on tubercles, connected with a spot on prothorax and also with coxal cavity, spot on tegulæ, all of legs except black stripe on rear of anterior and intermediate femora and tibiæ and basal half of all coxæ, yellow; black stripes on front and rear of hind femora connected below, hind tibiæ black, with a yellow stripe in front, flagellum reddish testaceous below; wings milky hyaline, nervures pallid, costa, radius more or less and margin of stigma brownish; tegulæ pallid; pubescence of head and thorax long, white, abundant on pleura and cheeks, tarsi yellowish testaceous, hind tarsi dark; abdomen brownish black, segments 1–5 with yellow bands narrowly interrupted medially; that on 5 sometimes reduced to two spots; venter yellow, tip dark.

Length, $5\frac{1}{2}$ to 6 mm.

♀.—Similar to ♂ in colour, the markings cream coloured and confined to following: clypeus, except two dots and two longitudinal lines parenthesis shaped, not reaching base of clypeus or these connected with the dots or broken medially, supraclypeal mark two dots, or these

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connected or entirely absent, lateral face-marks as high as insertion of antennæ, mandibles basally, spots on prothorax and scape in front, knees, line on front of anterior and intermediate tibiæ; bands on segments 1-4 slightly yellowish, interrupted, sometimes widely, that on 5 reduced to two dots or absent; nervures somewhat darker than in ♂; pygidium red; abdomen black; legs black, tarsi dark.

Length, 8 to 8½ mm. Type locality, West Point, Nebr.

Seven females with supraclypeal marks; five females without; eight males; all on *Grindelia squarrosa*. Sexes taken in copula.

This is ♀ *Bruneri* "larger than usual" of Professor Cockerell in the Entom., XXXIV, 190, July, 1901. *Bruneri* ♀ is smaller, has the supraclypeal mark always present and square (*Cockerelli* usually has it, but only as two spots, or these partly connected, never entire); abdomen black, markings with no yellow tinge; *Bruneri* ♂ is easily distinguished by the face being yellow for some distance above antennæ; hind legs with no yellow. The female runs in Cockerell's Tables of New Mexico Bees to *verbesinæ* when without supraclypeal mark; with it to *affinis* ♀ var.; the male runs out of the table at 28 when counting nervures pallid, and when dark at 32.

Neopasites Robertsoni, n. sp.—♀. Black, dull, coarsely and closely punctured, face above antennæ, mesothorax, scutellum and post-scutellum above, appearing reddish-brown from short fine silky hairs; face below antennæ, line on prothorax, median and parapsidal grooves anteriorly, most of mesopleura, posterior angles of mesothorax, edges of scutellar lobes, edges of post-scutellum, sides of metathorax and coxæ with white appressed scale-like pubescence; clypeus anteriorly, mandibles, tibiæ and tarsi light reddish; antennæ beneath and tubercles slightly darker; tegulæ largely reddish; scutellum deeply bilobate; wings dusky, nervures and stigma dark; second submarginal narrowed fully two-thirds to marginal; femora dark; apical margins of abdominal segments reddish, inclining to golden; segment 1 with two large spots of appressed white pubescence on disc connected anteriorly with two small spots on the lateral margins; segments 2-5 with four small almost equidistant spots of similar hair, the outer ones being on the lateral margins of the segments; apical segment truncate; ventral segments with the apical margins reddish.

Length about 4½ mm. Lincoln, Nebr., Aug. 27, 1902; on *Solidago*.

♂.—Similar to ♀; legs more testaceous; first recurrent nervure received well before the base of the 2nd submarginal cell, not at base as

in the female ; median pair of spots on segment 1 smaller, apical dorsal segment narrow, rounded at tip.

Length slightly more than 4 mm. West Point, Nebr., Aug. 30, 1903; on *Solidago*.

Distinguished from *heliopsis* by being smaller, not so closely punctured, large spot of pubescence on pleura, reddish tinge of head and thorax above, spots on abdomen white, not tinged with yellowish, lighter coloured legs, etc.

Halictus pruinosiformis, n. sp.—♀. Entirely bright green, pubescence rather abundant, white ; facial quadrangle about square ; face closely, rather coarsely punctured ; antennæ dark ; mesothorax finely lineolate, coarsely, rather closely punctured ; metathorax with coarse, very irregular striæ not quite reaching apex, the apical part rather coarsely roughened ; truncation not surrounded by a salient rim ; wings hyaline, stigma honey colour, subcosta dark, nervures very light, those surrounding the marginal cell darker ; tegulæ dark brown ; legs dark, pubescence white ; hind inner spur light-coloured, with about four long teeth ; abdomen finely closely punctured, first segment more sparsely so, apical margins of segments testaceous ; abdomen, except discs of segments 1 and 2, covered with white sub-appressed pubescence ; very often this pubescence is worn almost entirely off.

Length about 6 mm.

♂.—Similar to ♀ ; facial quadrangle slightly longer than broad, only slightly narrowed below ; antennæ reddish testaceous beneath ; clypeus anteriorly dark ; nervures as in the female, but the darkened ones darker and more contrasting ; metathorax roughened at base, and with a median longitudinal line not reaching apex ; on each side of this there is a depression, so that it appears as if the line divided at rear and ran laterally and then to front, leaving a narrow smooth shiny border ; abdomen, including the first segment, more distinctly and coarsely punctured than in the female, and only sparsely pubescent.

Length about 6 mm. Types : Fedor, Texas, March 8, 1902 (♀) ; May 17, 1904 (♂). (Birkmann coll.)

Paratypes : Fedor, Texas ; Boulder, Colo. (W. P. Cockerell.)

This species is the colour of *pruinus*, but the wider facial quadrangle and coarse punctures of the mesothorax separate it in the female ; the male has a much wider face than *pruinus*, and has the metathorax much less rugose.