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New and Little-Known Bees from Washington State

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BY T. D. A. COCKERELL.

♀.—Length 10 mm., black, with ochreous pubescence, inclining to fulvous in very fresh examples, whitish in very faded ones; second, third and fourth segments of abdomen with *interrupted basal bands, ochreous in color*, of dense appressed hair, broad laterally, tapering to a point mesad; in very worn examples these bands are practically obliterated. Head ordinary, *cheeks unarmed*, antennæ wholly dark, tegulæ reddish-piceous; wings with more or less of a yellowish tint, faintly dusky toward the apex; subcostal nervure black, *other nervures, and stigma, honey color; enclosure of meta-thorax semilunar, strongly radiately wrinkled, bounded by a tolerably distinct rim*; legs black, small joints of tarsi ferruginous; abdomen with numerous very minute punctures, hair bands interrupted, apex with pale fuscous hair.

♂.—Differs in the usual manner from the ♀. Apical portion of clypeus yellow. Antennæ long, flagellum, except the last two joints, ferruginous beneath. Pubescence paler; nervures darker; anterior tibiæ in front, middle tibiæ at apex, hind tibiæ at both ends, and all the tarsi, yellow.

Hab.—Olympia, Wash., March 23 to July 9, numerous specimens. (T. Kincaid). Also taken by Mr. Kincaid at Seattle, May 14th, on *Rubus ursinus*.

The following table separates the females of various large *Halicti* allied to *pacificus*:

- [illegible]

The above four were all taken at Olympia. Three other species are allied to *coriaceus*:

1. *H. bardus* Cr., known by the clear wings and fuscous nervures.
2. *H. politus* Sm., from Mexico, with the face broader above, wings strongly yellowish.

3. *H. forbesii* Rob., having the clypeus less produced. I have examined a great number of *coriaceus* from Wash., and various specimens from New Mexico and Illinois, considered to be *forbesii*; also an Illinois *coriaceus* from Mr. Robertson. The result of this study is that I believe all belong to one somewhat variable species. The characters given by Robertson to separate the females seem not to be constant, but I have not been able to compare the males. It is to be remarked, however, that Robertson's description of the metathoracic enclosure of *forbesii*, "bearing irregular radiating rugæ, which reach the posterior margin," will hardly apply to what I have (Tr. Am. Ent. Soc., 1897, p. 163) regarded as that species, so it may be that the real *forbesii* is a valid species near *pacificus*, which I have not seen. In that case it will be separated from *pacificus* by the continuous abdominal bands, which are whitish instead of ochraceous.

The following table separates some males which are more or less similar to *pacificus*:

- similar to *pacificus*.
A. Clypeus wholly dark *sisymbrii*.
B. Clypeus partly yellow.
a. Legs all dark, size small *angustior*.
b. Legs partly yellow.
i. Hind tibiae black except ends, enclosure of metathorax plicate *pacificus*.
ii. Hind tibiae yellow with only a suffused dark patch.
a. Size large, flagellum all dark, enclosure of metathorax irregularly wrinkled *lerouxii*.
b. Size smaller, flagellum ferruginous beneath.
1. Size larger, head and thorax black *ligatus*.
2. Size smaller, head and thorax greenish *fasciatus*.

Colletes pascoensis n. sp.

♂.—Length 10 mm. or slightly over, black, with dull white pubescence having only a faint yellow or ochreous tinge. Face and thorax densely covered with long hair, *cheeks with black hair*, vertex shining but well punctured; clypeus shining, with large close sublancoolate punctures; *distance between eye and base of mandible short, the space twice as broad as long*; mandibles dark; antennæ wholly dark, reaching to tegulæ; mesothorax and scutellum shin-

ing, with large well-separated punctures; postscutellum rough and dull; base of metathorax pitted, shining, lateral faces tolerably shiny; tegulae piceous; wings dull hyaline, noticeably pubescent, nervures and stigma piceous; stigma small, marginal cell appendiculate; legs black, first two joints of hind tarsus rather broad; pubescence of femora yellowish-white, of tibiae black, of tarsi black without and pale reddish-brown within; abdomen shining, *strongly but not very closely punctured*, the hind-margins of the segments with rather thin yellowish-white hair-bands, the surface of the first two segments with long erect thin yellowish-white pubescence, *that of the remaining segments with shorter black pubescence*.

♀.—Much like that of *armata* in general appearance, but the pubescence of the head, pleura and legs is entirely black, contrasting with that of the thoracic dorsum, which is yellowish-white, not at all mixed with black. The abdomen has no bands, but is thinly clothed with rather short and inconspicuous hair, yellowish-white on the first segment, black on all the rest. The first segment has its lateral hind margins narrowly fringed with short dense white hair; the punctures on the second segment are of two sizes, large and small. Antennae dark, the flagellum with only the faintest chocolate tinge beneath, first joint of flagellum not quite as long as the second and third together. The second recurrent nervure is less bent than usual in the genus.

Hab.—Pasco, Wash., 3 ♀, 4 ♂, May 25, 1896 (T. Kincaid). The females might be mistaken for some *Andrena* allied to *vicina*. *C. pascoensis* approaches nearest to the descriptions of *C. californica* and *C. consors*. From *consors* Cress., it differs in the pallid pubescence and the black hair as described; this relates to the ♂, the ♀ of *consors* being unknown. From *californica* Prov., it differs by the entirely black hair of the head and legs in the ♀. It may be added, that *pascoensis* is also decidedly larger than *consors* or *californica*.

Colletes kincaidii n. sp.

♀.—Length about 13 mm., black, with clear fulvous pubescence on head and thorax, tolerably dense, *nowhere mixed with black*, becoming whitish on the ventral surface. Head rather broad, vertex with irregularly-placed punctures of various sizes, clypeus with the punctures running into striae, labrum with conspicuous grooves alternating with ridges, mandibles dark, space between eye and base of mandible broader than long, antennae very short, *wholly black*; prothoracic spire short, hidden by the pubescence; meso-

thorax with very large and close punctures, except a large area in the middle, which is shining and impunctate; scutellum with large punctures, except the anterior border, which is impunctate; postscutellum roughened; basal enclosure of metathorax bounded by a distinct rim, shining, with about sixteen strong ridges; lateral faces dullish, the triangle shining; tegulae dark brown; wings hyaline, nervures and stigma black, stigma small, marginal cell appendiculate, second recurrent nervure considerably bent; *second submarginal cell extremely broad, larger than the third*; legs black, with yellowish-white, almost silvery, pubescence; pubescence on inner side of hind tarsi yellowish-white, except that *the first-three joints are tipped with shining orange fulvous*; abdomen lanceolate, shining; *first two segments very strongly punctured, the punctures on the second smaller and closer than on the first*; remaining segments with minute inconspicuous punctures, and a more sericeous surface; hind margins of the segments with broad appressed white hair-bands, all very conspicuous, that on the first more or less interrupted in the middle; some inconspicuous short black hair on the dorsum of the third to fifth segments, and on the apex.

♂.—10½ mm. long. Similar to the ♀, but more slender. Face much more narrowed below; antennae long, *wholly black*; space between eye and base of mandible somewhat larger, but still broader than long; thoracic pubescence rather more highly colored; hair-band on first abdominal segment entire.

Hab.—Olympia, Wash., July 5, 1896, at flowers of *Potentilla palustris*; also June 30th, at flowers of lupine. A large and handsome species, but closely similar to several others.

C. inaequalis differs at once in the ♀, but the ♂ is quite like our insect, being however larger, with a longer stigma, and the face less narrowed below.

C. simulans (known only in the ♂) is smaller than *kincaidii*, and has the abdomen uniformly punctured.

C. gilensis has black hair on the thoracic dorsum. *C. compacta* has quite a different metathorax. *C. æstivalis* differs by the brown stigma, the much narrower second submarginal cell, the more parallel orbits, the much smaller punctures of the mesothorax, the very dark tegulae, the stronger punctuation of the third abdominal segment, and the pale fulvous hair on the apical segment. The *æstivalis* compared is an Illinois example from Mr. Robertson.

I am surprised to find, on re-examining the specimens, that the species found by Prof. Wootton on Ruidoso Creek in New Mexico, and recorded by me (An. Mag. Nat. Hist., Jan., 1897, p. 49) as *æstivalis*, is in reality *C. kincaidii*.

Habropoda floridana (Smith) var. n. *pascoensis*.

♀.—Length about 16 mm., differs from Smith's description in that the pubescence of the head is pale, mixed, however with black on the face and vertex, the wings are little darkened, and the pubescence at the sides of the end of the abdomen is shining white. The pubescence of the thorax and of the first abdominal segment is very bright orange-fulvous, not at all mixed with black. The short pubescence immediately surrounding the pygidial plate is black. Tegulae black. Pubescence of legs black; that on inner side of front tarsi orange-rufous, the brushes at the ends of the segments tipped with brilliant coppery-red. Hair on lower part of pleura black.

Hab.—Pasco, Wash., May 25, 1896, (T. Kincaid). It is just possible that this is the unknown ♀ of *H. morrisoni* Cresson. It has a superficial resemblance to *Podalirius ursinus*.

Podalirius crotchii (Cresson).

♂.—From Pasco, Wash., May 25, 1896 (T. Kincaid) agrees with Cresson's description. Hitherto the species has only been reported from California. The pubescence on the hind tarsi within is brilliant fulvous.

Podalirius syringæ n. sp.

♂.—Length about 12 mm., black, pubescence long and erect, not very dense, mouse-color; strongly mixed with black on hind two-thirds of mesothorax, and anterior margin of scutellum; black also on vertex and upper part of cheeks, mixed with black on front and more or less on sides of face; pubescence of abdomen long, thin and pale at base of first and sides of first three segments, dorsally from the third segment onward scanty and black, some pale hairs at the extreme apex; no hair-bands. Clypeus except the black anterior edge, a supraclypeal band, irregularly v-shaped lateral marks, and labrum except the anterior margin and upper lateral corners, all lemon-yellow. Mandibles and the quite long antennæ wholly black. Mesothorax dull, with numerous shallow punctures, two small impunctate central areas. Metathorax shining. Legs slender, anterior and middle trochanters, and upper half of anterior femora be-

hind, with shining white hair; otherwise the pubescence of the femora, as of the tibiae, is black. Tarsi with partly black and partly pale hair, that on the inner side of the first four tarsi shining ferruginous; small joints of tarsi a lively ferruginous. Tegulae black or piceous. Wings dusky hyaline. Apex of abdomen bidentate.

Hab.—Olympia, Wash., July 3rd, at flowers of *Syringa*; also June 27th, (T. Kincaid). Nearest to *P. simillimus* (Cress.), but differs by the wholly black scape and the distribution of the pubescence.

Megachile calogaster n. sp.

♂.—Length 11–12½ mm., stoutly built, black, with pubescence varying from pale ochraceous to whitish, not dense enough on thorax to conceal the surface, some short black hair on cheeks just behind eyes, and a good deal on the middle of the mesothorax. Head ordinary; a conspicuous patch of white hair on lower part of cheek; face quite densely clothed with yellowish-white hair; vertex strongly punctured, as also the clypeus; antennæ wholly dark, last joint oval and flattened; mandibles black, elbowed without, tridentate; thorax strongly and closely punctured; anterior coxae with a large rather broad and blunt spire, above which is a transverse patch of the most brilliant orange-rufous pubescence; anterior femora stout, sub-trigonal, ferruginous with a black patch at base and apex within, the latter connecting with a broad black external stripe extending the whole length of the femur; under side of anterior femur with long snow-white pubescence; anterior tibia short and thick, black without, mostly ferruginous within, a large apical triangular patch without pale yellow, apex with a blunt pale yellowish tooth extending at right angles to the axis; anterior tarsi pale yellow, tinged with ferruginous toward the end; first joint hollowed, produced at the end, but not extending as far as tip of second joint; second and third joints broadened, and elongated at one side; anterior tarsi behind fringed with long white hair; middle and hind legs entirely black, their femora and tibiae with scanty whitish pubescence, partly black on hind legs, their tarsi with shining orange-fulvous hair; claws with the basal half ferruginous, the apical half black; tegulae black, punctured; wings tinged with fuliginous, nervures black, marginal cell quite long and narrow; abdomen short and convex, without any hair-bands, but having rather long thin pubescence, nowhere concealing the surface, grayish-white or pale ochreous on the first two

segments, nearly all black on the rest; apex with a broad semicircular emargination; three large subapical ventral teeth.

♀.—About 14 mm. long; similar to the ♂, except in the usual sexual characters. Legs black, with black pubescence; that on the inner side of the front and hind tarsi, and both sides of the middle tarsi, lively ferruginous; pubescence of cheeks all black; ventral scopa dense, black only to a slight extent at base, otherwise very brilliant orange-fulvous.

Hab.—Olympia, Wash., June 30th, at flowers of lupine; also June 19th to July 4th (T. Kincaid). A distinct and handsome species.

Sphecodes kincaidii n. sp.

♀.—Length 12 mm., the abdomen quite elongated with approximately parallel sides. Head and thorax black, abdomen entirely bright ferruginous; head transversely oval, front dull and very coarsely rugose, clypeus subcancellate with strong punctures; pubescence of face dirty whitish; antennæ wholly dark; first joint of flagellum very short, broader than long; mandibles dark, only rufescent at the extreme tip, inner tooth short and blunt; labrum not emarginate; mesothorax nearly bare, shining, with large strong punctures; base of metathorax coarsely cancellate, enclosed by a rim; tegulae brown; wings rather pale fuliginous, nervures and stigma piceous, stigma considerably larger than in *S. dichrous*, first recurrent nervure joining second submarginal cell before its end; legs black, hind tarsi entirely ferruginous; abdomen smooth and shining, with small sparse punctures, first two segments appearing nearly impunctate, with a very few large punctures and more numerous very minute ones. The third segment is much more punctate than the second. Apex with some dark hair.

Hab.—Olympia, Wash., June 19, 1895 (T. Kincaid). Easily known by the large size, and the narrow elongate sparsely punctured abdomen. It is not likely, I think, that it is the unknown ♀ of *S. davisii* Rob. *S. dichrous* Sm., also occurs at Olympia.

SYNOPSIS

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3. *Gobræus* vag
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4. *Gobræus* cin
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5. *Gobræus* max
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