

*relativus*, but is very distinct from that species in size and other characters.

**Agallia bigeloviae**, n. sp.—Form and color, nearly, of a small, pale *A. sanguinolenta*. The female differs only as follows.

More robust. Sculpturing on posterior three-fourths of pronotum not nearly so coarse. Veins in elytra more prominently brown. Two medial brown dashes on pronotum and vertex. Black spots on vertex larger. Elytra barely equalling abdomen. Hind margin of last ventral segment thrice strongly notched, the middle notch very deep

and much more obtuse at apex than the lateral, the two lobes thus formed obtusely rounded at tips and much shorter than the hind angles of the segment. Length little more than 2 mm.

Described from a single female taken on Bigelovia at Albuquerque (Ckll., 4616). This species is very nearly related to *A. sanguinolenta*, but easily separated by the above mentioned characters, especially the form of the last ventral segment. A larger series of this insect is much needed for study.

### XIII. NEW SPECIES OF PROSAPIS.

BY T. D. A. COCKERELL.

The name *Prosopis* is preoccupied for a genus of plants, on the flowers of which the bees of the genus *Prosopis* are sometimes found. I have therefore ventured to write the bee-genus *Prosapis* ( $\pi\rho\sigma\alpha\pi\iota\varsigma$ ), a name which accords with the assumed fact that it is one of the most primitive among bees.

**Prosapis bakeri**, n. sp.—♂, length 5 mm., black, with creamy markings, punctures of head and thorax fine and close. Head rather broad; face not much narrowed below, white below level of antennae, the white extending as a pointed projection upwards in median line, and on each side as a club-shaped process, curved over the antennal socket, and remote from the orbital margin. The two sides of the median pointed process meet at an angle of almost 45°. Flagellum very dark brown, paler beneath. Scape swollen, truncate, its anterior side white and posterior side black. Prothorax all dark, except the usual creamy-white spot on tubercles, which presents no dark dot. Tegulae with a yellow spot. Pubescence all pale. Pleura rather hairy, closely and rather coarsely but not very deeply punctured. Dorsal wrinkles of metathorax rather feeble. Wings grayish-

hyaline, nervures and stigma piceous. Second submarginal narrowed one-half to marginal. Femora black; tarsi yellowish-white with the ends darkened; anterior tibiae yellowish-white in front; middle tibiae with the basal fourth, and hind tibiae with the basal two-fifths yellowish-white. Abdomen moderately shining, very minutely punctured, slightly pubescent at sides, but without any conspicuous hair-bands or patches.

*Hab.*—Colorado; seven miles W. of Livermore, Larimer Co., July 1, 1894, 7000 feet (C. F. Baker).

Allied to *rudbeckiae*, but differs by the white face, the half white scape, and the white frontal process curving over the antennae, etc.

**Prosapis wootoni**, n. sp.—♂ about 5½ mm. long, black with pale dull yellow markings, head and thorax closely punctured. Pubescence pale, including that of dorsum of mesothorax. Head rather large and broad, face moderately narrowed below. Antennae entirely piceous, scape only moderately swollen. Face below antennae pale yellow, the yellow forming only a rounded projection in the median line, but at the sides produced upwards

along the orbital margins more than half as far as the length of the scape, gradually narrowing from the base to a rounded termination which recedes a little from the orbit. Clypeus with a small black spot on each lateral margin. Prothorax with the usual yellow on tubercles, not showing any dark dot; and on the hind margin two very small and narrow, hardly noticeable, yellow lines. Tegulae wholly dark. Pleura densely and subconfluently punctured; base of metathorax rugose, with very large shining punctures. Wings hyaline, second submarginal cell not narrowed one-half to marginal. Femora black; tibiae black, anterior tibiae yellow in front, middle tibiae yellow at extreme base, hind tibiae with the basal two-fifths yellow. Tarsi with the first joint yellowish-white, the rest dark brown, except the anterior tarsi which are wholly dark brown. Abdomen shining, first segment finely punctured.

*Hab.*—New Mexico; Ruidoso Creek, 7500 feet on *Scrophularia*, July 6, 1895 (E. O. Wooton, 78).

Differs from *affinis* by the clear wings, more produced lateral face-marks, etc.; from *rugosulus* by the lateral face-marks terminating more narrowly, and not notched within; from *citrinifrons* also by the shape of the face-marks.

*Prosapis citrinifrons*, n. sp.—♂ about 5 mm. long, shiny, black with bright lemon yellow markings, head and thorax densely punctured. Pubescence of pleura pale, that of dorsum of mesothorax blackish. Head of ordinary size, face very little narrowed below, antennae black, scape little dilated; face below antennae bright yellow, the yellow in the median line forming a short broad narrowly truncate prominence, that at the sides extending upwards along the orbital margin rather more than half the length of the scape, broadly rounded-excavated within by the antennal socket, terminating narrowly and obtusely, at the tip slightly receding from the orbital margin.

Prothorax dark, except the yellow on tubercles, which shows a hyaline spot. Tegulae entirely dark. Base of metathorax strongly rugose. Wings smoky. Femora black; tibiae black, anterior tibiae orange in front, middle tibiae yellow at extreme base, hind tibiae with the basal two-fifths yellow. Tarsi dark brown, first joint of mid and hind tarsi yellowish-white. Abdomen shining, with sparse pubescence; first segment with minute scattered punctures.

*Hab.*—Colorado; Forrester's Ranch on Laramie River, Larimer Co., July 19, 1895, at 8500 feet (C. F. Baker).

Differs from *affinis* by the dark hind border of prothorax, and the shape of the face-marks; from *rugosulus* by the shape of the face-marks, etc.

*Prosapis tridentulus*, n. sp.—♂ about 5 mm. long, black with orange markings, head and thorax closely punctured, scutellum with the punctures deep but sparse. Head of ordinary size, face tolerably narrowed below, vertex closely but hardly confluent punctured, antennae wholly dark, scape stout. Face below antennae reddish-orange (perhaps yellow, altered by cyanide). Supraclypeal pale patch conical, elongated, truncate, about two-thirds as long as the clypeus; lateral upward pale extensions narrow, rapidly receding from orbital margins, so as to be convex outwardly and concave inwardly, extending upwards very little further than the median mark.

Prothorax wholly black except the usual light patch on tubercles, which presents a black dot. Tegulae with a light spot. Punctures on pleura rather sparse. Base of metathorax rugose-tuberculate. Wings clear with a slight smoky tinge; second submarginal cell very broad, little narrowed above. Femora black with a light spot at extreme tip; tibiae black, anterior tibiae orange in front, middle tibiae orange at apex and base, hind tibiae with basal two-fifths and extreme tip orange.

Abdomen distinctly punctured, but first segment shining, with the punctures sparse, lateral hind margin of first segment with a narrow hair-band.

*Hab.*—Colorado; Chamber's Lake, Larimer Co., July 18, 1895, 9500 feet (C. F. Baker). Also from New Mexico; Ruidoso Creek, 7500 feet, July 6, 1895, on *Scrophularia* (E. O. Wooton, 75). Differs from *tridens* by its smaller size, clearer wings, second submarginal cell broader in proportion to its length, tubercles with a black dot, and less deeply punctured first segment of abdomen; from *verticalis* by the first recurrent nervure entering the second submarginal cell, and the shorter antennae; from *mesillae* by its larger size, longer and narrowed lateral face-marks, etc.; from *pygmaea* by its larger size, the face-marks, etc.; from *digitatus* by the clearer wings, and the curved, instead of straight, lateral face-marks.

*Prosapis rugosulus*, n. sp.—♂ about 6 mm. long, black with orange markings, head and thorax strongly punctured, scutellum with the punctures larger and sparser than those of the mesothorax. Head of ordinary size, face only moderately narrowed below, vertex confluent punctured, antennae wholly dark, scape stout. Face below antennae reddish-orange (perhaps yellow, altered by cyanide), median projection short, broad, truncate; lateral extensions of the pale color rather broad, somewhat excavated by the antennal sockets, ending, about on a level with the middle of the scape in a broad truncation.

Prothorax with a couple of small orange spots on hind border; tubercles largely orange, with no black spot. Tegulae with a small light spot. Pleura rather closely punctured. Base of metathorax rugose. Wings grayish hyaline. Femora black. Tibiae black, anterior tibiae orange in front, middle tibiae with a little orange at apex and base, hind tibiae with the basal two-fifths orange. First segment of abdomen

distinctly and rather closely punctured, first three segments with narrow lateral apical hair bands.

*Hab.*—Colorado; Chamber's Lake, Larimer Co., July 18, 1895, 9500 feet (C. F. Baker).

Var. *fallax*, v. nov. ♂. Tegulae with no light spot; no light spots on hind border of prothorax; lateral face-marks at ends curved inwards, receding a little from the orbital margin.

*Hab.*—Colorado; same locality and date as type (Baker). Another form, perhaps a distinct species, differs by the pale markings being yellow, the puncturing of mesothorax finer, and the scutellum more closely punctured. It is from Steamboat Springs, Colo., 6000 feet (Baker).

*Prosapis tridens*, n. sp.—♂ 6 mm. long, black with reddish-yellow markings. Head, thorax and abdomen strongly punctured. Head of ordinary size, face only moderately narrowed below. Face below antennal sockets reddish-yellow, the clypeal sutures dark; the light color extends upwards in the median line as a conical projection, truncate about the level of the upper margin of the antennal sockets; at the sides it extends upwards as a narrow curved projection reaching the same level, receding from the orbital margin rather slowly, with its concave side following the margin of the antennal socket. Vertex closely and roughly punctured. Antennae wholly dark, their tips reaching only a little beyond the tegulae; scape moderately swollen. Prothorax all dark except the usual light spot on tubercles, which exhibits no dark dot. Tegulae with a light spot. Mesothorax moderately shining, very closely punctured, scutellum not so closely. Enclosed portion of metathorax coarsely rugose. Pleura closely punctured. Wings strongly tinged with fuliginous, nervures and stigma piceous. Second submarginal cell not narrowed one-half to marginal. Femora black, with a small yellow spot at extreme end; anterior tibiae light in front, middle tibiae

with basal two-fifths light, hind tibiae with basal half light. Tarsi with first joint light, the others fuscous. Abdomen shining, quite conspicuously punctured; the lateral hind margin of the first segment, and the following segments, with short pale pubescence. The punctures on the first segment, though rather sparse, are deep and conspicuous. Tip of abdomen with rather long brownish hairs.

*Hab.*—Colorado; Four-mile Hill, 8 miles S. of Steamboat Springs, July 19, 1894, 7000 feet (C. F. Baker).

Differs from *verticalis* by the punctured first abdominal segment and shorter antennae. It is a larger species than *mesillae*.

*Prosapis divergens*, n. sp.—♂ hardly 5 mm. long, black with creamy-white face, and lemon-yellow marks on body and legs, punctures of head and thorax moderately fine, but strong and close, first segment of abdomen rather sparsely but distinctly punctured. Head of ordinary size, face moderately narrowed below. Vertex and occiput roughly punctured; antennae all black, scape moderately swollen. Face below antennae creamy-white, the white color forming a rounded projection in the median line, hardly extending upwards, but at the sides extending along the orbital margin about two-thirds the length of the scape. From the broadest part at the base, this lateral white projection extends, nearly evenly narrowing, very little notched by the antennal socket, to the terminal very narrow truncation.

Prothorax with the usual yellow patch on tubercles, and two short yellow stripes on hind border. Yellow of tubercles without a dark spot. Tegulae with a yellow spot. Pleura with a moderate amount of white pubescence. Pubescence of mesothorax very short and sparse, dark in color. Base of metathorax strongly rugose.

Wings smoky hyaline, second submarginal cell not narrowed one-half to marginal. Femora black; tibiae black, anterior tibiae yellow in front, middle tibiae yellow at ex-

treme base, hind tibiae with the basal two-fifths yellow. Tarsi with the basal joint yellow, the others dark brown. First segment of abdomen rather sparsely but very distinctly punctured, remaining segments more finely punctured, more or less pubescent.

*Hab.*—Colorado; Four-mile Hill, 8 miles S. of Steamboat Springs, July 15, 1894, 7000 feet (C. F. Baker).

Differs from *wootoni* by its smaller size, white face, and spots of tegulae; from *rugosula* by the lateral face-marks very narrowly truncate and hardly notched within, the short median mark, etc.; from *citrinifrons* by the white face, spots on tegulae, partly yellow hind border of prothorax, etc.; from *affinis* by the smaller size, white face, spots on tegulae, etc.

*Prosapis episcopalis*, n. sp.—♂ slightly over 6 mm. long, black with creamy-white markings, head and thorax densely punctured. Head rather large, not very broad, face little narrowed below, the extreme base slightly widening. Vertex confluent punctured. Antennae entirely dark, scape stout but not dilated. Face below antennae yellowish-white, the upward extension in the median line rather short and pointed, the supraclypeal yellow piece as a whole resembling in shape a bishop's mitre; laterally the white extends along the orbital margins, not half the length of the scape, somewhat broadly, shallowly excavated inwardly by the antennal socket, ending obtusely.

Prothorax with a pair of short yellowish-white stripes on hind border; the tubercles also with the usual pale patch, lacking a dark spot, and extending inwards [upon the tubercles] further than usual. Tegulae with a large spot. Pleura strongly punctured. Scutellum less closely punctured than mesothorax. Base of metathorax rugose, with large, shining pits. Wings strongly tinged with fuliginous. Femora black; anterior tibiae yellowish-white in front, black behind; middle tibiae white at each end, black in

middle; hind tibiae with the basal half white, the terminal half black. Tarsi with the first joint yellowish-white, the others brown. First segment of abdomen sparsely but distinctly punctured, and with a narrow white hair band on hind margin at sides.

*Hab.*—Colorado (C. F. Baker, No. 1411) on Elk River, 10 miles north of Steamboat Springs, July 16, 1894.

Resembles a species from Florida of which I have only the ♀, but that differs at once by the smooth first segment of abdomen, immaculate tegulae, dark middle tibiae, etc.

Differs from *modesta* by the white face, the narrower and more pointed supraclypeal pale area, the darker wings, etc.; from *affinis* at once by the shape of the face-marks, spot on tegulae, etc.; from *rugosula* by the greater size, darker wings, and pointed supraclypeal area; from *coloradensis* by the darker wings, narrower lateral face-marks, etc.

*Prosapis coloradensis*, n. sp.—♂ about 5½ mm. long, stoutly built, head and thorax closely punctured, scutellum as closely as mesothorax, black with cream-colored markings. Head large, rather long, face moderately narrowed below, vertex confluent punctured, antennae all dark, flagellum brown, scape broad, dilated, with a conspicuous terminal hump on outer side. Face below antennae cream-color, supraclypeal projection short and truncate, lateral upward extensions of pale color very broad, slightly excavated inwardly at base by antennal sockets, terminating in a broad oblique truncation, a little higher up than the middle of the scape.

Hind border of prothorax with two very narrow yellow lines; tubercles with the usual pale yellow patch, convex and shining, without a dark spot. Tegulae with a light spot. Pleura closely punctured. Enclosed area of metathorax rugose, without the large shining pits of some species. Pubescence of dorsulum gray. Wings hyaline. Femora black; tibiae black, anterior tibiae white in front, middle tibiae with the basal and apical fifths

white, hind tibiae with the basal two-fifths white and a white dot at tip. Tarsi brown, first joint and spot on second joint of four hind tarsi white. First segment of abdomen minutely but distinctly and rather closely punctured, with no lateral hair band.

*Hab.*—Colorado; Chamber's Lake, Larimer Co., July 18, 1895, 9500 feet (C. F. Baker).

*Prosapis digitatus*, n. sp.—♂ about 4½ mm. long, black with very pale yellow markings, head and thorax closely punctured. Head of ordinary size, face moderately narrowed below, antennae dark brown, scape not dilated. Face below antennae very pale yellow, the yellow extending upwards in the median line as a rather narrow, conical, truncate projection; at the sides it extends in the form of narrow, straight, finger-like projections, pointing somewhat inwards, well away from the orbital margin. Prothorax, including the tubercles, wholly dark. Tegulae without a light spot. Punctuation of mesothorax hardly so close as in some species, that of scutellum slightly more sparse. Pleura with close, shallow punctures. Base of metathorax more or less radiately wrinkled. Wings smoky. Femora black, except a light spot at the extreme tip of the first four. Tibiae black, anterior tibiae yellowish in front, middle of extreme base, and hind tibiae for basal two-fifths. Tarsi brownish, more or less yellow basally. First abdominal segment shining, with very sparse, small punctures. Pubescence of abdomen very sparse.

*Hab.*—Colorado; Steamboat Springs, July 13, 1894 (C. F. Baker, No. 1329).

Easily known by the dark tubercles, and lateral face-marks, which free from the orbital margin, are straight and not enlarged at their ends.

*Prosapis asinina* Ckll. and Csd.—♂ Tr. Am. Ent. Soc., 1895, p. 299; n. syn. *P. bipes*, Ckll. and Csd. ♀, t. c., p. 300.

*Prosapis rudbeckiae*, race *ruidosensis*, n. race, ♂.—Larger, about 6 mm. long; up-

ward lateral extensions of pale color on face more conspicuously bulbous at ends, the base from which they arise oblique, being lower on the orbital margin than mesad: scape with only a small pale spot (this may be the case also in true *rudbeckiae*), flagellum below brownish. Tubercles with a yellow patch bearing a dark spot, tegulae wholly dark. Wings strongly tinged with brownish, decidedly larger. Enclosed space of metathorax distinctly longitudinally subreticulately wrinkled, one might perhaps say cancellate. Mesothorax pubescent.

*Hab.*—New Mexico; Ruidoso Creek, 7500 feet. July 6, 1895, on *Scrophularia* (E. O. Wooton, no. 74).

*Prosapis rudbeckiae*, race *subdigitata*, n. race, ♂.—Slightly smaller, about 4½ mm. long; pale markings apricot-color (probably reddened by cyanide), upward lateral extensions of pale color on face little swollen and rather short, the base from which they arise oblique, but higher on the orbital margin than mesad. Scape wholly dark. Tubercles and tegulae wholly dark. Wings dusky-hyaline, not yellowish or brownish. Mesothorax with greyish pubescence. Enclosed area of metathorax strongly rugoso-punctate.

*Hab.*—Colorado; C. F. Baker, 1658. Foothills west of Fort Collins, June 15, 1895.

The two above forms are probably valid species, but for the present it will be a convenience to place them under *rudbeckiae*. The form named *subdigitata* present characters intermediate between *rudbeckiae* and *digitata*; it differs from the latter by its pubescent mesothorax (that of *digitata* being virtually bare), its greyish wings (those of *digitata* being distinctly tinged brownish) its somewhat shorter second submarginal cell. Yet, on the whole, it must be confessed that it is as near to *digitata* as to *rudbeckiae*. The following table will separate the allies of of *rudbeckiae*.

A. Tubercles wholly dark.

1. Wings tinged greyish, mesothorax pubescent. . . . . *subdigitata*.

2. Wings tinged brownish, mesothorax bare. . . . . *digitata*.

B. Tubercles partly yellow.

1. Comparatively large, face white, scape wholly white in front. . . . . *bakeri*.

2. Face pale yellow, scape with at most a yellow mark.

a. Larger, wings tinged brownish.

*ruidosensis*.

b. Smaller, wings tinged greyish.

*rudbeckiae*.

*Prosapis triangularis*, n. sp., ♂.—Length 5½ mm., rather stout, black with deep yellow markings. Head fairly large, face little narrowed below; face-markings deep lemon-yellow, including clypeus, a large elongate-triangular or low-conical supraclypeal mark, the apex of which is obtuse, and the usual lateral marks, deeply notched by antennal sockets, extending thence narrowly upwards along orbital margin to a pointed termination. Scape wholly black, stout but not dilated; flagellum dark brown. Front and vertex very coarsely punctured. Mesothorax, scutellum and pleura with very large close punctures, anterior part of pleura becoming almost cancellate. Enclosed area of metathorax not well-defined, with large confluent pits. Hardly any pubescence on thorax, except a fringe of short white hairs at lateral ridges of metathorax. Hind border of prothorax interrupted in middle, a large patch on tubercles, and spot on tegulae, deep yellow. The dark (hyaline) spot on patch on tubercles is inconspicuous. Anterior femora beneath, middle and hind femora at extreme tips, anterior tibiae in front, basal third of middle tibiae, basal half of hind tibiae, and extreme tips of four hind tibiae, yellow more or less suffused with rufous. Tarsi pale rufescent, first joint of four hind tarsi pale yellow. Wings fuliginous, clear at base. Abdomen shiny, with no distinct hair-bands. Dorsum of first segment impunctate.

*Hab.*—Georgia, exact locality and collector unknown. Sent by Mr. Fox. In Coll.

Amer. Ent. Soc. It might be confounded with *affinis*, but it is larger, the supraclypeal mark is much longer, and the wings are darker.

*Prosapis suffusa*, n. sp., ♂.—Length about 6 mm., fairly stout, black with yellow markings. Face little narrowed below, dull lemon-yellow. Supraclypeal mark broad, rapidly narrowing to a bifid apex. Lateral marks roundly excavated by antennal sockets, produced only a short way along orbital margin to a blunt but narrow tip. Scape stout but not dilated, wholly dark; flagellum dark brown, last joint with a longitudinal groove or excavation. Front and vertex with rather small but very close punctures. Mesothorax, scutellum and pleura with very close distinct punctures. Enclosed space of metathorax deeply pitted. Prothorax wholly black except a narrow and inconspicuous yellow line on hind border of tubercles. Tegulae with a very small yellow spot. A spot at apex of anterior femora in front, anterior tibiae in front, a spot at base and one at apex of middle tibiae, and the basal third of hind tibiae in front, yellow. Tarsi brown, the first joint of the four hindmost whitish. Wings pale fuliginous; 2nd submarginal cell narrowing about one-half to marginal. Abdomen without distinct hair-bands; a sericeous pile on dorsum of first segment. First segment very distinctly punctured.

*Hab.*—Nevada, exact locality and collector unknown. Sent by Mr. Fox. In Coll. Amer. Ent. Soc. Distinguished from *citrinifrons* by its larger size, brown wings, etc.

*Prosapis nevadensis*, n. sp., ♂.—About 4½ mm. long, black with whitish markings. Head of ordinary size, face moderately narrowed below, clypeus and lateral marks brownish-white (very pale café-au-lait), the lateral marks broad, triangular, notched by the antennal sockets, terminating above at an angle of about 45° on the orbital margin; the inferior inner side of the triangle is about one-third longer than the superior. Supraclypeal area wholly dark. Scape hardly at all dilated, wholly dark; flagellum dark brown. Front and vertex coarsely punctured, punctures on front running into grooves. Mesothorax, scutellum and pleura strongly punctured. Enclosed area of metathorax strongly wrinkled. Pubescence on head and thorax excessively sparse and inconspicuous, metathorax not hoary. An interrupted band on prothorax, patch on tubercles (in which is a dark spot) and spot on tegulae pale yellow. Anterior tibiae in front, spot at base of middle tibiae, and basal third of hind tibiae, yellowish-white. Basal joint of four hind tarsi mostly yellowish-white, the tarsi otherwise dark brown. Wings uniformly tinged with fuliginous; second submarginal cell as high as long, not narrowed nearly one-half to marginal. First abdominal segment minutely but very closely and distinctly punctured. No distinct hair-patches or bands on abdomen, but a sericeous pile on basal half of first segment.

*Hab.*—Nevada, exact locality and collector unknown. Sent by Mr. Fox. In Coll. Amer. Ent. Soc. Easily known by the wholly dark supraclypeal area.

PROPOSED BIOLOGICAL STATION. The undersigned has it in view to establish in New Mexico a Biological Station, and health and holiday resort for scientific and literary persons, teachers and kindred spirits. (No loafers, no fools, no absolute invalids.)

It will be necessary to commence in a small way, as hardly any funds are available, but

it is hoped that by strict economy the running expenses may be met. I shall be very glad to hear at once from anyone interested in the matter, so as to see if anything can be done this year.

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