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1897

THE BEES OF THE GENUS *HALICTUS* FOUND
IN NEW MEXICO.

I.—SPECIES WITHOUT ANY GREEN OR BLUE.

BY T. D. A. COCKERELL.

(A.) Tolerably large black species with hair-bands on the abdomen.

(1.) Females with the cheeks armed beneath, males with the clypeus and legs partly yellow; stigma honey-yellow.

Halictus ligatus Say.

A common and rather variable species; collected as follows:

Las Cruces, New Mex., on *Sisymbrium canescens* April 12, 1895, ♀, several; on *Solidago canadensis* Nov. 15, 1895, ♀; on *Salix* May 3, 1896, ♀; on plum March 23, 1896, ♀; on *Sphaeralcea angustifolia* September 22, ♂; on garden *Cosmos* October 19, ♂; on *Bidens* October 19, ♀; on *Bigelovia wrightii* September 23, ♀; on *Aphanostephus ramosissimus* April 26, ♀, several.

Mesilla, New Mex., females flying in numbers about and settling on *Actinella richardsoni* by the river, May 10, 1896. They were loaded with the orange pollen.

Santa Fé, New Mex., July 6, three females. These are smaller than the average of those from the Mesilla Valley. Also one ♂, July 27, 1895, on *Rudbeckia laciniata*.

(2.) Females with the cheeks unarmed.

(a.) Stigma honey color, or at least not dark brown.

(a.) Tegulae dark piceous, larger species.

i. Wings tinged yellowish.

Halictus forbesii Rob.

Found by Prof. E. O. Wootton on Ruidoso Creek, 6400 feet, on *Pentstemon* July 8, two females; and at 6600 feet, on *Erysimum*, July 3, one female. I took one at Bernalillo, New Mex., at the beginning of July. I have never seen it in the Mesilla Valley.

ii. Wings not tinged yellowish.

Halictus bardus Cress.

One ♀, Little Mountain, Mesilla Valley, New Mex., on *Streptanthus carinatus*, March 26, 1895. It is very near to *forbesii*, but differs thus:

***forbesii*.**

Wings tinged yellowish.
Stigma without a dark margin.
Nervures honey color.
Hair bands of abdomen more or less tinged with ochraceous.

***bardus*.**

Wings clear, not at all yellowish.
Stigma darker, with a dark margin.
Nervures fuscous.
Hair bands of abdomen white.

Hymenoptera - Apoidea - Halictus

The characters assigned to *forbesii* are not very clearly indicated in Mr. Robertson's description, but I have an example of that species from Algonquin, Ill., collected by Dr. Nason and sent to me by Mr. Baker, which agrees with the specimens from New Mexico.

β. Tegulæ dark testaceous, smaller species.

Haliectus amicus n. sp. ♀.—Length about 8.5 mm. Black, with short, dirty white pubescence, which gives it the appearance of being dirty. Head rather large and broad, face and cheeks with sparse feathery pubescence, most conspicuous at sides of face and just behind the eyes, hairs on front margin of clypeus slightly tinged with golden; antennæ wholly black, flagellum minutely punctured, its first joint very short, even a little shorter than second; clypeus rather sparsely punctured; front so closely punctured as to be dull and granular in appearance. Thorax tolerably hairy at sides, on postscutellum and at sides of scutellum, and on metathorax, except the enclosure; postscutellum hoary; mesothorax shining, with large, moderately close punctures, parapsidal grooves distinct; scutellum very shining, the punctures more or less failing centrally; enclosure of metathorax semilunar not truncate, very minutely wrinkled, bounded by an obtuse ridge. Legs black, claws rufescent, first joint of hind tarsus with a curious little brush of bright rufous hairs at its tip; tegulæ testaceous. Wings hyaline, beautifully iridescent, nervures and stigma honey-yellow or pale ferruginous, costal nervure black, second submarginal cell not longer than broad. Abdomen shining, minutely punctured, margins of segments slightly testaceous; first three sutures with more or less distinct hair bands, the first mostly on the base of the second segment, the second somewhat failing in the middle, the third about equally on the adjoining segments, broad and entire; the bands are not dense like those of *forbesii*, nor have they any yellowish tinge; the segments after the second are pruinose with scattered hairs; hairs of apex whitish; the development of the hair-bands varies: the second may be continuous and broad. When the abdomen is much extended the shining articulating surfaces of the bases of the segments appear, dividing the bands into two, the strong basal and the more feeble apical.

Hab.—Mesilla Valley, New Mex., on the College Farm; two on *Sisymbrium* March 23 and 31, 1897; six on plum March 23, 25 and 26, 1896.

From *H. amicus*:

H. arcuatus Rob. differs at once by the much more strongly wrinkled enclosure of metathorax, but it is a very similar species.

H. farinosus Sm. differs by its larger size, the interrupted rim of the metathoracic enclosure, and the fulvous anal rima.

H. capitatus Sm. differs by the pale, fulvous, thoracic pubescence, fusco-hyaline wings, etc. This is now considered to be the same as *ligatus*.

H. desertus Sm. differs by the black tegulæ, etc.

(b.) Stigma dark brown or black.

- i. Tegulæ testaceous; metathoracic enclosure truncate behind, with a sharp rim.

Halictus sisimbrii Ckll.—Superficially this is very like *forbesii* and *bardus*, but it is at once distinguished from both, not only by the tegulæ, but by the much more coarsely sculptured metathoracic enclosure; the type specimen was not at all characteristic, being largely denuded of its pubescence; when in good condition the insect has four broad white hair-bands on the abdomen, one at the middle of the first segment, the others at the bases of segments 2-4. In one example (Ckll. 876) the dorsal pubescence of the thorax is quite dense and fulvous, while the abdominal bands are tinged with ochraceous and the second is more produced downward at the sides; possibly this may represent a distinct species, but the structural characters agree, and I believe we have to do with only one variable species.

Hab.—Mesilla Valley, New Mex., College Farm, on *Sisymbrium* April 16, ♀; Little Mountain, on *Streptanthus carinatus* March 26, 1895, ♀; Las Cruces, June 9, 1894, ♀ (Ckll. 876); College Farm, on *Melilotus indica* May 1, 1895, ♀. At Watrous, New Mex. (6200 feet altitude), on July 13, I took a ♂, which appears to belong to this species, differing only in the ordinary sexual characters.

- ii. Tegulæ black; metathoracic enclosure semilunar.

Halictus angustior n. sp. ♀.—Length 8.5 mm. Black, narrow in form, looking rather like a ♂; face narrow, clypeus produced, pubescence on face and cheeks whitish, merely enough to give them a dusty appearance; margin of clypeus with long, pale, rufous hairs, mandibles rufescent at tips; antennæ wholly black, rather long, reaching as far as tegulæ, first joint of flagellum longer than second; clypeus granular, with tolerably sparse punctures; face and front rough and dull, a group of shallow pits adjacent to orbit; pubescence of thorax tinged with ochraceous, very scanty, short, most noticeable on pleura and sides of metathorax; postscutellum conspicuously tomentose; mesothorax dullish from a microscopic sculpturing, closely punctured, median and parapsidal grooves distinct; the sculpturing, viewed with a compound microscope, is seen to consist of minute striæ; scutellum closely punctured, but tolerably shining; enclosure of metathorax semilunar, rather shiny, irregularly wrinkled or almost subcancellate all over; tegulæ dark piceous, appearing black. Wings smoky hyaline, grayish, not yellowish, iridescent; nervures and stigma piceous; inner spur of hind tibiæ simple, outer spur with five teeth, the last two very minute. Abdomen comparatively long and narrow, shining, punctures minute and sometimes hardly visible; the second and following segments with a basal grayish white hair-band, narrowed in the middle; the mandibles have a short denticle within; the tegulæ have a rufous spot.

Hab.—Las Cruces, New Mex., two on a plant supposed to be *Flaveria*, garden of my house, Aug. 25, 1895.

In the shape of the head this reminds one of *H. foxii* Rob., but that has testaceous tegulæ and a honey-colored stigma. *H. pectoraloides* has a shorter head, shiny mesothorax, and differently sculptured metathorax.

Another specimen of *angustior* was taken at Mesilla, New Mex., May 9, 1896, on *Malacothrix fendleri* Gray in the Woodlands orchard. This has the abdominal bands lacking, except for patches at the extreme sides, even these ill-developed, and thus looks very like *pectoraloides*, indeed, but it is at once separated by the duller mesothorax and first abdominal segment. The resemblance to *pectoraloides* is further increased by the abdominal segments being retracted, so that the abdomen loses its elongate form.

- (B.) Small, or moderately small black species, without continuous hair-bands on the abdomen, or only one band continuous.

(1.) Females.

- (a.) Abdomen black, the segments not margined with testaceous; first segment impunctate; lateral white hair-patches present; stigma piceous.

***Halictus pectoraloides* Ckll.**

A very abundant species, taken as follows:

(a.) Las Cruces, New Mex., on *Sisymbrium* April; on *Solanum* July; on *Aphanostephus ramosissimus* (formerly reported in error as *Erigeron strigosus*) April 26; thirteen on *Melilotus indica* College Farm, May 1; on white *Aster* June 16; two on *Salix* May 3, 1895, and others on *Salix* May 3, 1896; on *Biscutella wislizenii* March 9; on supposed *Flaveria* August 25.

(b.) Mesilla, New Mex., on *Actinella richardsonii* May 10, 1896.

(c.) Roswell, New Mex., one on plum April 14, 1896.

(d.) Santa Fé, New Mex., August 5, one only. It appears to be rare at Santa Fé.

For the supposed ♂ see below.

- (b.) Abdomen rather brownish (piceous), the hind margins of the segments more or less testaceous, first segment more or less punctured, if only microscopically; stigma honey color.

a. Flagellum more or less testaceous beneath, tarsi rufous, first segment of abdomen transversely striate.

***Halictus subobsecurus* Ckll.**

Not very common. Las Cruces, April, on *Sisymbrium*; also one on August 14. Santa Fé, one on July 25, 1895. The last mentioned shows hair-bands on bases of segments 2 and 3, that on 2 interrupted.

- (β.) Flagellum wholly dark, tarsi dark, first segment of abdomen not transversely striate.

***Halictus lusorius* Cress.**

One from the west fork of the Gila River, New Mexico, July 16

(C. H. T. Townsend). The pubescence of the head and thorax is rather pale ochraceous than grayish, and the abdomen has scattered, very minute punctures, visible with a compound microscope. It is possible that the specimen represents a species distinct from *lusorius*, but Cresson's description so nearly fits it that the identity may be assumed until the contrary is proven.

(2.) Males.

- (a.) A transverse yellow patch on lower part of clypeus, antennæ very long.

Haliectus angustior n. sp. (♀ supra)

What I suppose to be probably the ♂ of *angustior* differs from the ♀ by its slender form, very narrow subcylindrical abdomen, very long antennæ (which are wholly dark), transverse yellow patch on lower part of clypeus, narrower face, mesothorax more shining and sparsely punctured. Wings clear, metathorax with a more elevated rim round the enclosure. Abdomen without hair bands. One specimen on *Rhus*, Ruidoso Creek, New Mex., 6600 feet, July 10 (E. O. Wooton, 172). The tegulæ, stigma and nervures are all dark piceous, practically black.

- (b.) Clypeus wholly dark.

- a. Abdomen long and cylindrical, strongly punctured; stigma brown.

Haliectus sp.

In the shape of the abdomen this resembles much the supposed ♂ of *angustior*, but it is a smaller insect, with much shorter antennæ, face covered with white pubescence below the level of the antennæ. I cannot identify it with anything described, but defer a name and full description in the hope of obtaining the ♀. The tegulæ are testaceous.

Hab.—Santa Fé, New Mex., July 16, on white umbelliferous flowers, and August 2 on *Clematis ligusticifolia* (Ckll. 1481, 4056). Ruidoso Creek, New Mex., 6400 feet, July 8, on *Asclepias* (E. O. Wooton, 94).

- β. Abdomen not so long and narrow, stigma darker.

- i. A small species with a hoary face.

Haliectus pectoraloides Ckll. (♀ supra).

What I have supposed to be the ♂ of *pectoraloides* differs by its smaller size, much more slender build, punctured abdomen, and dark sepia-brown flagellum. The metathorax is very shiny; the tegulæ are piceous with a testaceous spot; the antennæ are only moderately long. I felt sure that this was the real ♂ of *pectoraloides* until I

noted that it is quite different from the ♂ of *quadrinaculatus* as described by Robertson. The females of *pectoraloides* and *quadrinaculatus* are so much alike that it is hard to believe that they would have quite different males. The punctuation of the abdomen is not nearly so strong as in the Santa Fé insect just described above.

Hab.—Las Cruces, New Mex., on *Solidago canadensis* November 15; and on supposed *Flaveria* August 25.

- ii. A comparatively large and stout species, the face not covered with white pubescence.

Halictus sisymbrii Ckll. (♀ supra).

What I suppose to be the ♂ of this is quite stoutly built, like a ♀, larger than *pectoraloides*, with more or less broadly interrupted abdominal hair-bands, which are oblique and best developed at the sides. The abdomen is strongly punctured; the stigma is rufescent with a dark margin; tegulæ testaceous. Length 8 mm.

Hab.—Watrous, New Mex., July 13; two specimens.

- (c.) Small, slender species, with the thorax black and the abdomen largely rufous.

Halictus semicoloratus n. sp. ♀.—Length about 4.5 mm. Slender, head and thorax black. Abdomen orange rufous, largely suffused with blackish on the third and following segments. Head fairly large, broader than long; face covered with white appressed pubescence; the lower half of the clypeus bare, shining, with large, scattered punctures; mandibles rufous; front dullish, with rather large very close punctures; antennæ short and stout, flagellum sepia-brown, its first joint broader than long. Thorax rather small, the white pubescence sparse; mesothorax shining, with large, moderately close punctures; enclosure of metathorax longitudinally ribbed, bounded by an obtuse, but prominent rim. Legs brown-black, hind tarsi pallid; tegulæ testaceous. Wings rather short, hyaline, beautifully iridescent, nervures and stigma piceous, second submarginal cell very narrow. Abdomen long and narrow, shining, without hair-bands, or any conspicuous pubescence, punctured, but the punctures very minute.

Hab.—Las Cruces, New Mex., on *Sisymbrium* March 23, 1896. A very distinct species.

Halictus sp. ♂.—Similar to *semicoloratus*, but larger, the antennæ long and black; the abdomen black, with the apical sides of first segment, the base and sides of second, the sides of third, and the entire venter of 2 and 3 deep rufous; mandibles rufous only at tips; tegulæ shining, piceous; enclosure of metathorax with the longitudinal ridges close and wrinkled. Wings beautifully iridescent; second submarginal cell very narrow.

Hab.—Santa Fé, New Mex., on *Solidago canadensis* August 2 (Ckll. 4045).

A species very near to the last, but surely distinct. A name is not now given, as it is hoped that the ♀ may be found, and the validity of the species thus confirmed.