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## The American Bees of the Genus *Andrena* Described by F. Smith

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THE AMERICAN BEES OF THE GENUS ANDRENA DESCRIBED BY F. SMITH.

BY REV. F. D. MORICE AND T. D. A. COCKERELL.

(Continued from page 124.)

*Andrena fragilis*, Smith, 1853.

"This I suspect is the ♂ of *integra*; area similarly strigose, and abdomen also corresponds; tubercle matches also!"

Robertson thought this might be *A. platyparia*: but, he said, the description applied even better to *salicis*, and nearly as well to *mandibularis*. It cannot well be *salicis*, as that has the abdomen impunctate; if it is the ♂ of *integra*, it cannot well be *mandibularis*; it may perhaps be *platyparia*.

*Andrena frigida*, Smith, 1853.

"(Very near *apicata*, but hairs of thorax much darker) ? = *lapponica*; antennæ with very long third joint; tubercle  $\cap$ ; area granulated; abdomen in style of *apicata*."

Type locality, Nova Scotia. I do not know any similar species.

*Andrena fimbriata*, Smith, 1853 (*Americana*, D. T.).

"♂ abdomen rugulose and punctured, clothed with long adpressed hairs; tubercle slightly emarginate (?); area dull granulose; ♀ ditto. (Very near *fuscipes*, perhaps identical with it.)" This agrees with what I had already identified from Smith's description. It seems to agree with the description of *A. simillima*, Sm., even better than with that of *fuscipes*, but I doubt its actual identity with either.

*Andrena hirticeps*, Smith, 1853.

- ♂. "Tubercle pointed apparently, hard to see under thick bush of hair on clypeus; area obliquely rugose at base only, no raised margin; abdomen tessellate, practically impunctate; apical ventral valve somewhat bilobed; antennæ with article 3 = 4 + 5 about, all joints pretty long. Has a good deal the aspect of *gwynana*." This was considered the ♂ of *A. vicina*, but Robertson (1900) has come to regard it as a valid species. He further adds: "But for the description of the ♂, I would say that *A. errans* is the same as *A. hirticeps*." I have an Illinois "*hirticeps*," ♂, from Mr. Robertson, and the abdomen is distinctly punctate at the bases of the hairs, while the third antennal joint is barely longer than the fifth, the fourth being a little shorter than either. The apical ventral

valve also is not bilobed. In the female of Robertson's "*hirticeps*," the basal process of labrum is low, broad and rounded (semi-circular, Robertson expresses it), which does not agree with *vicina* or *errans*. Robertson's insect will therefore need a new name, as follows:

*Andrena Carlini*, n. n., Ckll.

*Andrena bicolor* (not of Fab.), Rob., Tr. Am. Ent. Soc., XVIII., 51.

*Andrena vicina* (not of Sm.), Rob., Tr. Am. Ent. Soc., XXII., 118.

*Andrena hirticeps* (not of Sm.), Rob., Trans. Acad. Sci., St. Louis, X., 47.

The true *A. hirticeps* is a northern species, from Hudson's Bay.

*A. Carlini* is from Illinois; type locality, Carlinville. It also occurs in Kansas, N. Y. and N. M. (see below).

*Andrena algida*, Smith, 1853.

- ♂. "Tubercle truncate; apical ventral valve 0; antennal joint 3 about = 5, slightly longer than 4; area (longitudinally) somewhat rugose; abdomen tessellate and also delicately punctured." Type locality, Hudson's Bay. The ♂ is rather suggestive of *Carlini*, except as to the tubercle.

The ♀ described by Smith is not at all like *Carlini*.

*Andrena nubecula*, Smith, 1853.

- ♀. "Tubercle emarginate; area shortly rugose at base; abdomen tessellated, impunctate; a pretty insect, with broad white bands and pale reddish-yellow apex; antennal article 3 scarcely = 4 + 5 (cf. *proxima* or *dorsata*)." "Wings remarkably clouded."

I have this from Lincoln, Nebraska, collected in August and September, sent by Prof. L. Bruner (No. 12). Smith's description of the abdomen is inaccurate as regards the punctuation.

*Anarena obscuripennis*, Smith, 1853.


- ♀. "Tubercle convexly truncate; abdomen closely punctured; area bordered with raised ridge, rugose but not very largely so, and laterally only granulated; wings beautiful violet; pilosity rich red (large grand species)." Type locality, Georgia. This has some resemblance to *A. Hallii*, but is quite distinct.

*Andrena perplexa*, Smith, 1853.

- ♀. "Tubercle truncate; area seems nearly smooth, but dull, with fine close tessellations; abdominal segments smooth and closely punctured, except towards their apices, which are rugulose." Type

locality, Georgia. This is evidently different from any species I have seen.

*Andrena nivalis*, Smith, 1853.

- ♀. "Tubercle ; antennal joint 3 longer than 4 + 5; area rugose at base; abdomen distinctly punctured, but on an aciculated surface." Type locality, Hudson's Bay. This is very near to *A. semirufa*, Ckll., from New Mexico; possibly it is the same species.

*Andrena hilaris*, Smith, 1853.

- ♀. "Tubercle of labrum wide, truncate, below its centre a projecting pencil of golden hairs; clypeus coarsely punctured, with a smooth shining carina down its middle; metathoracic area finely rugulose, with some coarse short longitudinal strigæ at its base; abdomen distinctly punctured, its surface also microscopically (hardly visibly) rugulose; wings very yellow." Type locality, Georgia. Evidently distinct from anything I have before me.


*Andrena vicina*, Smith, 1853.

- ♀. Length "about 14 mill.; tubercle wide, truncate; clypeus with wide unpunctured central elevation; area dull rugulose; abdomen finely rugulose all over, and distinctly but shallowly punctured." Smith gives the length as only 5 lines, and says the species closely resembles *A. nitida*. I hardly know what to make of this; the species referred to *vicina* in American collections has the tubercle low and rounded, by no means truncate; also, it does not have the very shiny, oval abdomen of *nitida*, which species, it may be remarked, has the tubercle concavely truncate. *A. vicina* is said to be from the United States and Nova Scotia.

*Andrena placida*, Smith, 1853.

- ♀. "Tubercle very narrowly truncated; area rather coarsely rugulose, but not margined, I think; abdomen rugulose, a few sparse punctures; length about 12 mill., much smaller and narrower insect than *vicina*—looks like a *parviceps*." From "U. S." Smith gives the size the same as that of *vicina*, but this must be a mistake. *A. placida* seems to come close to *A. Macgillivrayi*.

*Andrena fastuosa*, Smith, 1879.


- ♀. "Tubercle , difficult to say if actually emarginate; area and abdomen as ♂."
   
♂. "Tubercle emarginate; huge stipites! area rugose, unmargined; abdomen closely punctured." From Orizaba, Mexico. *Andrena*

*argemonis*, Ckll., from New Mexico, is possibly not separable from *fastuosa*.


*Andrena discreta*, Smith, 1879.

- ♀. "Coloured like a big bright *cetii*; tubercle emarginate; area finely rugose, unmarginated; abdominal segments densely clothed above with fulvous hairs, except the basal which is naked." Oajaca, Mexico. When describing *A. jessicæ* I suggested that it might possibly be the ♂ of *discreta*, but it is now evident that this cannot be.

*Andrena sodalis*, Smith, 1879.

- "Tubercle ; abdomen shining, though rugulose, and also very delicately punctured; area not margined nor rugose." Oajaca, Mexico.

*Andrena simulata*, Smith, 1879.

- "Labrum almost pointed , I see no definite tubercle; abdomen smooth, very shining, shallowly punctured; area without ridge, rugosities slight, longitudinal at base." Orizaba, Mexico.


*Andrena agilis*, Smith, 1879.

- ♂. "Labrum looks truncate, I can't see tubercle; clypeus not all white, but marked with yellow like a ♀ *Ceratina*; abdomen finely punctured; area rugulose, not clearly defined at sides; central impression deep?" Oajaca, Mexico.

*Andrena modesta*, Smith, 1879.

- ♀. "Sides of propodeum fringed with short white hairs; area rugulose, not margined; abdomen finely punctured; no tubercle to be seen." Oajaca, Mexico.


*Andrena commoda*, Smith, 1879.

- ♀. "Tubercle pointed ; area not margined, fine basal strigæ; abdomen punctured, also aciculate, dull." This nearly agrees with *A. pruni*, Rob., but the tubercle of that species is not at all pointed. *A. commoda* is from Canada.

*Andrena flavoclypeata*, Smith, 1879.

- ♂. "Clypeus has a *third* black spot in middle of apex; tubercle hard to see through hairs, I think a little emarginate; area not ridged; abdomen tessellated, scarcely punctured." Locality, Canada. This is regarded as a synonym of *A. bipunctata*, Cresson, and is well known. The third black spot is not always present.

*Andrena miranda*, Smith, 1879.

♂ ♀: "Clypeus ; area coarsely clathrate and margined; abdomen strongly punctured." Canada. Related to *A. Forbesii*, but not the same.

*Andrena mæsta*, Smith, 1879.

"Area scarcely rugulose, not margined; abdomen scarcely punctured (*lapponica* style); tubercle slightly emarginate or bilobed. Canada. This species appears to differ from any known to me.

*Andrena errans*, Smith, 1879.

"Area not margined, smooth nearly; abdomen with shallow punctures; tubercle pointed (one ♀ has the discs of abdominal segments densely clothed with black upright hairs, probably a different species)." Vancouver I. This is not the north-western species which I have regarded as *errans*; the female with hairy abdomen may be *pluvialis*.

A close study shows that there are several species confused with *vicina* or *errans* in American collections. These (♀) all agree in being about 13 or 14 mm. long; the thorax densely clothed with upright rather short hair (bright ferruginous in *Hallii*, pale ochraceous in the rest); the abdomen shining black, without hair-bands; the anal fimbria black; the wings decidedly brownish. The species of this series now before me are:

*A. Carlini*, Ckll.: Tubercle of labrum broad and evenly rounded; clypeus with a median impunctate ridge; hair of face mixed pale and black, of pleura black; basal area of metathorax roughened, not plicate; abdomen tessellate and well punctured; antennal joint 3 rather shorter than in *Hallii*. Illinois; Beulah, N. M., May 30 (*W. Porter*); Baldwin, Kansas, May (*J. C. Bridwell*); Ithaca, N. Y., May 17 (*Macgillivray*). Seven specimens examined.

*A. Hallii*, Dunning: Tubercle of labrum broad but truncate; median line of clypeus impunctate, but minutely tessellate; hair of face and pleura black; basal area of metathorax obliquely plicate at base; abdomen tessellate, with numerous small punctures. Pullman, Wash. (*C. V. Piper*).

*A. cupreotincta*, Ckll., n. sp.: Tubercle with sloping sides and truncate apex; clypeus without a median impunctate ridge, or it is very short and rudimentary; hair of face, cheeks, occiput and

pleura black; basal area of metathorax strongly longitudinally plicate, its sculpture entirely different from that of the adjacent lateral areas, though it has no raised margin; abdomen well punctured on a smooth surface, the punctures very strong and close at the sides of the segments; hair on inner sides of basal joints of tarsi tinged with coppery. Skokomish River, Wash., April 26, 1892 (*Trevor Kincaid*).

*A. pluvialis*, Ckll., n. sp.: Tubercle with sloping sides and truncate apex; clypeus without any impunctate line; hair of face black, a little pale at sides, of vertex and cheeks black, of occiput pale, of pleura black; area roughened, not plicate, longer than in *cupreotincta*, and so larger, larger than in *Carlini* because broader behind, its posterior angle greater; abdomen with a sericeous lustre, the punctures small; surface of abdomen quite hairy, the hairs black. Olympia, Wash., May 1, 1894 (*Trevor Kincaid*).

*A. anogra*, Ckll., n. sp.: Agrees with *pluvialis*, except that pubescence of thoracic dorsum is brighter, more fulvous; hair of face is wholly black; tubercle is small and emarginate or binodulose at apex; area is more coarsely rugulose and much narrower behind, being shaped as in *Carlini*. Colorado Springs, Colo., middle of July, at flowers of a white *Enothera* (Ckll., 3567).

*A. vicina*, Smith: Tubercle broad and truncate, the truncation sometimes concave and distinct, sometimes rather obscure; clypeus with a median impunctate ridge, which is more or less roughened; hair of face pale, black only round the mouth, or only below the mouth; hair of cheeks, vertex, occiput and pleura pale, area roughened, large, not narrower behind, shaped as in *pluvialis*, but the sides of the metathorax are clothed with pale hair, whereas in *pluvialis* it is black; abdomen tessellate and well punctured, hardly hairy except apically, being much less hairy than in *pluvialis*; hair on first segment pale. Olympia, Wash., June 4, 1895 (*Trevor Kincaid*); Michigan (*C. F. Baker*, labeled *A. bicolor*); Hartford, Ct., May 30, 1894, and May 31st, 1896 (*S. N. Dunning*). This is evidently the true *vicina* of Smith; it ranges further north than *Carlini*.

*Andrena cerulea*, Smith, 1879.

"Area smooth, not margined; abdomen rugulose with slight raised points; tubercle I think slightly emarginate." Vancouver I. *A.*

*cærulea*, var. *terrata*, Ckll., Entom., 1898, p. 89, is perhaps a distinct species; in the description, line 15—from top of page, tinge is misprinted "fringe." *A. nigrocærulea*, from the same region, has the tubercle concavely truncate, one might say slightly emarginate, but it is otherwise different from *cærulea*.

*Andrena subtilis*, Smith, 1879.

"Tubercle  $\wedge$ ; abdomen tessellated, hardly punctured; area smooth, not ridged laterally." Vancouver I. I do not know this species.

*Andrena candida*, Smith, 1879.

"Abdomen dull green, scarcely punctured; area with rugosities slight, no ridge; labrum? a little emarginate." Vancouver I.; Olympia, Wash., June 18, 1895 (*Trevor Kincaid*). In Mr. Kincaid's specimen the hair at apex of abdomen is blackish, but the species is doubtless the same. *A. geranii*, Rob., is closely allied.

*Andrena auricoma*, Smith, 1879.

"Can't see labrum; a pretty insect with fulvous upright pilosity on discs of segments and golden fasciæ at the apices; area granulose, not margined." Vancouver I. Unknown to me.

#### BOOK NOTICE.

REPORT OF INJURIOUS INSECTS and Common Farm Pests during the year 1900, with Methods of Prevention and Remedy. By Eleanor A. Ormerod, LL.D. London: Simpkin, Marshall & Co., 1901 (1s. 6d.; pp. 111).

It is with deep regret that we learn from the preface of this her twenty-fourth annual report that the talented authoress has decided that it shall be the last. For almost a quarter of a century Miss Ormerod has labored hard and well in the service of her country, without any remuneration and with scanty recognition from the officials who should have been the first to express their gratitude to her. But, on the other hand, she has won for herself a high reputation in Great Britain, in America, in South Africa and Australia, and also in several European countries. She is known far and wide as a painstaking entomologist, a keen observer, a diligent collector of facts and observations, a thoroughly practical and sensible adviser, and one who has been all through these years most unselfish in placing her time and her work at the disposal of those who needed them most—the farmers and gardeners of her native land.