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NOTES ON THE BEES OF SOUTHERN MAINE: ANTHOPHORIDAE,  
HALICTOIDIDAE, MACROPIDAE AND PANURGIDAE.

BY J. H. LOVELL AND T. D. A. COCKERELL.

THE Anthophoridae, which are represented by numerous species in the Middle States, become comparatively rare in northern New England. At Waldoboro in southern Maine there have been taken as the result of much diligent collecting only five species of *Melissodes* and one of *Clisodon*. With few exceptions, which will be noted under the respective species, they are visitors in this locality of the Compositae and fly during midsummer and early autumn. With the exception of *Melissodes desponsa* Sm., which is rather common, they might easily escape the attention of the general entomological collector.

## MELISSODES.

*Melissodes desponsa* Sm.

? 1854 *Melissodes desponsa* Sm. ♀, Cat. Hym. Brit. Mus. 2:310.

This is the commonest species of *Melissodes* in this locality, and has been taken from July 21st to September 1st. It is a frequent visitor of the larger thistles, especially the pasture thistle (*Carduus odoratus*), though occasionally it is taken on the Canada thistle (*Carduus arvensis*). It also visits more rarely a number of other flowers, as *Pontederia cordata*, *Inula helenium* and the goldenrod.

Length of ♀ 12-14 mm. Length of ♂ 11-12 mm. This species is readily recognized by its robust form, the thorax clothed with ochraceous pubescence, and the black abdomen without fasciae. The male closely resembles the female, but is readily distinguished by the yellow clypeus and longer antennae; the labrum is entirely black. The female has the hair of occiput black, and the nervures black; it is questionable whether it is Smith's *desponsa*. For this species Robertson has proposed the name *M. cnici*.

*Melissodes agilis* Cress.

1878 *Melissodes agilis* Cress. ♂, Proc. Ac. Nat. Sci. Phil. p. 204.

1878 *Melissodes aurigenia* Cress. ♀ ♂, Proc. Ac. Nat. Sci. Phil. p. 212.

This species is regularly taken each year on the garden sunflower, but has never been collected on the inflorescence of any other plant. It flies from August 10th to September 2nd. This bee, especially the males, is very active upon the wing and easily frightened. One male is very remarkable, being a partial gyandromorph, with a male antenna on the left side and a female one on the right. The name *agilis* has priority of place, but the more northern *aurigenia* form (to which the Maine specimens belong) appears to be more widespread.

***Melissodes illata* n. sp.**

♀.—Length a little over 8 mm. Black, resembling *M. perplexa* Cr., but smaller and less robust, also closely related to *M. vernoniae* Robt., but clypeus of male yellow, and size smaller. Clypeus usually, labrum and upper part of face bare; clypeus rather coarsely and mesothorax finely punctured; sides of face below the insertion of the antennae, pleurae and sides of metathorax clothed with grayish pubescence; hair on vertex mixed with black; dorsum of mesothorax and scutellum covered with short black pubescence, which extends to the tegulae. Wings dusky with nervures and tegulae black. Legs fuscous, posterior pair with scopula on tibiae and outer side of basal joint of tarsi pale ochraceous. Abdomen small, oval, narrowly convex and shining; 1st segment bare except for erect white hairs at base; 2nd segment with oblique fasciae on the sides, interrupted in the middle, also a narrow hair band at base; median white fasciae on 3rd and 4th segments entire; the two apical segments clothed with black hair.

♂.—Length 8 mm. Antennae about the length of the body, fulvo-ferruginous beneath; pubescence longer and more dense than in the female; clypeus and large lunate spot at the base of labrum lemon yellow. Pubescence of legs griseous, on inner side of tarsi orange-red, apical tarsi rufous, tibial spurs pale yellow. Apical margins of abdominal segments testaceous, shining; abdominal fasciae median as in the female, but the band on 2nd segment entire, or nearly so. Acute lateral spines on the extreme sides of the two apical segments.

The female is very like *M. perplexa*, but smaller (*perplexa* has the size and build of *simillima*); the male is easily known from *perplexa* by the yellow (instead of creamy-white) clypeus, the upper part of which is not black. Herein it resembles

*M. manipularis* Smith, but that species has the light hair of the thorax differently colored. All specimens of the female were taken on *Solidago* from August 3rd to August 26th. The male specimens were collected from July 23rd to August 13th on *Epilobium angustifolium*, *Inula helenium*, and *Solidago*.

*Melissodes simillima* Robt.

1897 *Melissodes simillima* Robt. ♀ ♂, Trans. Ac. Sci. St. Louis, 7:355.

This species is distinguished from *M. illata* by its larger size, broad abdomen, black fascia on segment four, and red apices of mandibles. *M. simillima* is close to *M. perplexa*, but the female differs from cotype of *perplexa* by the ochreous tint of the pubescence of thorax, the black hair of middle of face and lower part of pleura, and the color of the hair on fourth abdominal segment. Typical *perplexa* is from Georgia. Collected on *Solidago* and *Carduus arvensis* from August 7th to September 3rd.

*Melissodes apicata* n. sp.

♀.—Length 10 mm. A robust species with white pubescence. This species differs from *illata*, *simillima* and *perplexa* in having the white abdominal fasciae of fine tomentum apical instead of median, that on the second segment failing in the middle. Facial quadrangle broader than long; clypeus bare, closely and confluent punctured; labrum clothed with pale ferruginous hairs; mandibles rufous at tips; antennae dark with flagellum faintly reddish beneath. Mesothorax with strong punctures on a very shiny ground; hair of disc of mesothorax black, separated from tegulae by a narrow strip of white. Wings strongly dusky, tegulae black. Scopa of hind legs white; hair on inner side of basal joint of hind tarsi nigrofuscous; hair on inner side of middle tibiae largely dark. The abdomen is without metallic tints; abdominal segments 2-4 with white apical fasciae, interrupted on 2; the two apical segments with black hair.

The abdomen and hind legs are very suggestive of those of *Tetralonia actiosa* Cress., although the abdomen is not nearly so rugose as in that species, and the color of the apical hair and the sculpturing of the mesothorax is entirely different. One specimen on the flowers of *Pontederia cordata*, July 21, 1904.

## CLISODON.

*Clisodon terminalis* Cress.

1869 *Anthophora terminalis* Cress. ♀ ♂, Trans. Am. Ent. Soc. 2 : 292.

1879 *Clisodon terminalis* Patton, Bull. U. S. Geol. Surv. 5 : 479.

One female on the flowers of *Pontederia cordata*, July 21, 1904. No species of *Tetralonia*, *Xenoglossa*, or *Anthophora*, have yet been recorded from Maine.

Intermediate between the old divisions of Andrenidae and Apidae there are numerous genera of bees, representing different phylogenetic lines, but possessing the common character of two submarginal cells. They are of special interest to the florocologist from the fact that many species are oligotropic flower-visitors. In the arid regions of New Mexico it has been observed that most species of *Perdita*, which are in that area numerous, confine their visits to one kind of flower.\* As so little is known of the bees of northern New England, it seems desirable to enumerate the Maine species belonging to this group, and to note their times of flight and flower records.

## HALICTOIDES.

*Halictoides novae-angliae* Robt.

1897 *Panurgus novae-angliae* Robt. ♂, Trans. Ac. Sci. St. Louis, 7 : 339.

1904 *Conohalictoides lovelli* Vier. ♀ ♂, Ent. News, 15 : 244.

This species is a common visitor of *Pontederia cordata*, but it has never been collected on any other aquatic or upon any land plant. The writer knows of no other common bee found at Waldoboro, which entirely restricts its visits to one species of flower. Mr. H. L. Viereck in his description in Entomological News states that this bee is also found at Derby, Pa., and at Chestertown, Md. Robertson described it from "Mass., Ct. (A. P. Morse)."

## MACROPIS.

1880 *Macropis ciliata* Patton, ♀ ♂, Ent. Mo. Mag. 17 : 31.

The females of this genus are usually regarded as oligotropic visitors of *Lysimachia*. I have, however, found *M. ciliata* ♀ a common visitor to the umbels of

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\* Cockerell, T. D. A. Notes on New Mexican Flowers and their Insect Visitors. Bot. Gaz., 1897, p. 104.

*Aralia hispida*. Besides this plant the female also visits *Lysimachia terrestris* and *Kalmia angustifolia*. The males visit *Aralia hispida*, *Sedum acre*, *Kalmia angustifolia* and the goldenrod. Taken from July 10-27.

#### PERDITA.

*Perdita octomaculata* Say.

1824 *Panurgus octomaculatus* Say, ♀ ♂, Long's 2nd Exp. 2:350.

1888 *Perdita octomaculata* Provancher, Add. faun. Can. Hym. p. 321.

Common on *Solidago juncea* from August 1-27, the females collecting pollen. In one instance this bee was seen on another species of goldenrod.

#### CALLIOPSIS.

*Calliopsis andreniformis* Sm.

1853 *Calliopsis andreniformis* Sm. ♀, Cat. Hym. Brit. Mus. 1:128.

Only two females and three males of this species have been taken at Waldoboro (July 10th to August 7th); and the only flower record is *Solidago juncea*, August 7, 1904. It is rather singular that all five specimens were collected in 1904; while in 1905, when a special effort was made to obtain as many species of *Anthophila* as possible in this locality, no specimens of *C. andreniformis* were found.

#### PANURGINUS.

*Panurginus asteris* Robt.

1895 *Calliopsis asteris* Robt. ♀ ♂, Trans. Am. Ent. Soc. 22:121.

One male specimen taken on *Solidago*, August 17, Waldoboro, Maine. In the table in Trans. Am. Ent. Soc., Dec. 1898, p. 197, this runs to 35, and cannot be separated from *P. asteris* Robt.