NEW BEES OF THE GENUS ANDRENA.

BY S. GRAENICHER, MILWAUKEE, WIS.

Andrena thaspis, n.sp. ♀.—Length 10–11 mm.; black, clothed with light ochraceous pubescence; head broader than thorax; facial quad-angle broader than long; cheeks broad, shining, with fine punctures, which are very close immediately behind the eyes; front below ocelli distinctly striate; facial foveæ broad, containing light pubescence; antennæ long and slender, black; flagellum brownish testaceous beneath, especially towards the tip; joint 3 of the antennæ as long as 4 and 5 together; clypeus shining, clothed with thin, light pubescence; a distinct impunctate line in the middle, otherwise with moderately coarse punctures; basal process of labrum truncate; mandibles dull testaceous at the tips; mesothorax slightly shining, and covered with short, thin pubescence; on the scutellum the hairs are rather long and dense; the punctures of the mesonotum are shallow and not close together; wings yellowish hyaline, hardly clouded at the apex, with honey-coloured nervures and stigma; second submarginal cell slightly narrowed above, about half as long as the third, receiving the first recurrent nervure beyond the middle of the cell; metathoracic enclosure defined by an impressed line, its surface more finely sculptured than the surrounding area of the metathorax, except at the base, where it is slightly rugose; legs dark brown; tibial scopa bright fulvous, shining; the basal joints of the middle and hind tarsi are covered with ferruginous pubescence on their inner surface; abdomen shining, with sparse light hairs which are long on the first segment, but otherwise very short, forming thin apical fasciæ on segments 2 to 4; anal fimbria dark fulvous, inclining to ferruginous.

♂.—Length 9 mm., pubescence of head and thorax longer than in female; clypeus more closely punctured throughout; joint 3 of antennæ longer than 5, but distinctly shorter than 4+5; metathoracic enclosure with the longitudinal rugæ extending throughout its whole length; joints 2 to 5 of anterior and middle tarsi, and all the joints of posterior tarsi, ferruginous.

Milwaukee, Wis.; 5 ♂ and 9 ♀ specimens captured on the flowers of *Thaspium trifoliatum aureum*, and *Angelica atropurpurea*, between May 29 and June 23. The females obtain their pollen mostly from the flowers of the first-named plant.

Andrena Cockerelli, n. sp. ♀.—Length 10–11 mm.; black, with long, thin, whitish pubescence; a few black hairs on front below ocelli; facial foveæ broad, black, reaching a little below the insertion of the antennæ; antennæ dark, joint 3 longer than 4 and 5 together; clypeus convex, somewhat shining, distinctly roughened and closely punctured; a median narrow and slightly elevated impunctate line; process of labrum triangular, notched at tip; mandibles black, slightly ferruginous near the tips; cheeks broad and evenly rounded, finely roughened, clothed with long, white pubescence; mesonotum dull, tessellate, with sparse, hardly visible, punctures; the disc of the mesonotum is somewhat shining, as also the scutellum; enclosure of metathorax small, bordered by an impressed line and somewhat rugose at base; wings hyaline, nervures and stigma testaceous; the second submarginal cell is about two-thirds as long as the third and receives the first recurrent nervure far beyond the middle of the cell; abdomen shining, minutely granular, without punctures; the thin white pubescence of the abdomen is most conspicuous on the first segment; legs dark brown, with white pubescence; the basal joints of the tarsi are clothed with fuscous hairs on their inner surface; anal fimbria dark purplish brown.

♂.—Length 9 mm.; the pubescence is of a purer white than in the female; in addition to the black hairs below the ocelli, there is a narrow row of black pubescence immediately behind and in front of the eye; there is also a patch of black hairs on the sides of the metathorax; head large, broader than the thorax; antennæ long, slender, joint 3 hardly as long as 4 + 5; the surface of the clypeus is concealed by long and dense pubescence; mandibles long and slender; cheeks broad, produced into a rounded angle, which is situated above the middle of the eye.

Milwaukee, Wis.; numerous ♂ and ♀ specimens from April 6 to 30, on flowers of willows, especially of *Salix discolor*. Kent Co., Mich.; 1 ♂, April 1, 1902 (collected by A. D. Macgillivray, received from Prof. T. D. A. Cockerell). Hartford, Conn.; 1 ♀, April 19, 1896 (collected by S. N. Dunning, No. 1011, received from Prof. T. D. A. Cockerell).

The females are all about the same length. The males vary considerably in size, ranging from 6 to 9 mm. in length. This species resembles *A. macoupinensis*, Rob., but differs from it mainly in the following characters: Facial foveæ distinctly black (pale in *macoupinensis*); legs dark brown (hind tibiæ and tarsi ferruginous in *macoupinensis*);

anal fimbria dark purplish-brown (ochraceous in *macoupinensis*). It is also very close to *A. perarmata*, Ckll., a species with black facial foveæ. In this respect Prof. Cockerell, to whom several of my specimens were submitted, writes as follows: "Your ♀ differs from ♀ *perarmata* by lacking the black hair on metathorax. Also, type *perarmata* has the process of labrum more pointed than in your insect." The ♂ of *Cockerelli* may be readily distinguished from that of *perarmata* by the absence of a tooth at the base of the mandibles.

Andrena Milwaukeensis, n. sp. ♀.—Length 11 mm.; black, with bright fulvous, erect, stiff hairs on vertex, thorax above, and first two segments of abdomen above, otherwise the pubescence is black; vertex minutely granular; cheeks rounded, with thin, black pubescence, which does not conceal the sparse shallow punctures; front finely striate; facial foveæ broad, appearing dark chocolate brown when viewed from above; antennæ slender, brownish, dull ferruginous beneath towards the tip; joint 3 of flagellum hardly longer than 4 and 5 together; a patch of light hair about the insertion of the antennæ; clypeus smooth, shining, covered with short, thin, black pubescence; on the sides of the clypeus the punctures are small and crowded, towards the middle they become coarse and rather sparse; a median impunctate and polished area, widening gradually below; process of labrum shining, truncate, emarginate; mandibles black with a ferruginous area near the tips; the mesonotum and scutellum are opaque, granular, not punctured, thickly covered with fulvous pubescence; tegulæ testaceous; wings fibro-hyaline, stigma testaceous, nervures dark brown; second submarginal cell somewhat narrowed above; the first recurrent nervure joins the latter near the second transverse cubital nervure; third submarginal cell more than twice as long as second; enclosure of metathorax distinctly outlined by a smooth impressed line, with small rugæ at its base; legs black, with black hairs, becoming dark brown on the front tibiæ; abdomen tessellate, without punctures, black, shining, with slight metallic reflections; segments 2 to 4 are depressed about one-third apically; there is a patch of fibrous pubescence on segments 1 and 2, covering segment 1 almost entirely, and becoming narrow towards the apex of segment 2; otherwise the segments are clothed with short, stiff black hairs, not forming apical fasciæ; anal fimbria black.

♂.—Length 9 mm.; differs from the female as follows: Pubescence longer, but thinner, entirely fulvous, without a trace of black hairs; head

extremely broad; clypeus with small punctures throughout, except a median impunctate and very narrow line; mandibles very long and slender, strongly curved, with tips entirely ferruginous; joint 3 of the very long antennæ shorter than 4 + 5; cheeks considerably produced, forming a rounded angle above the middle of the eye; sixth and seventh abdominal segments with thin fulvous pubescence.

Milwaukee, Wis.; 4 ♂, 13 ♀ specimens taken between May 4 and June 23, on various flowers. The colour of the pubescence varies from light ochraceous to bright fulvous in the female. One of my male specimens has only 2 submarginal cells on each side. This species resembles *A. Hallii*, Dunning, but the latter is a larger insect, and differs otherwise from *A. Milwaukeeensis*. In some of the females the patch of fulvous pubescence on the abdomen extends even to the tip of the third segment. This patch of light ochraceous or bright fulvous pubescence on the first 2 or 3 abdominal segments separates this species from *A. Hallii*, as also from any of the species of *Andrena* flying in this locality.

Andrena viburnella, n. sp. ♀.—Length 11 mm.; body robust, black; head, thorax and legs with very light ochraceous pubescence; vertex distinctly roughened, not punctured; cheeks tessellate, finely and closely punctured; the thin pubescence is slightly longer on the lower portion of the cheeks than on the face; front coarsely striate, with a median ridge extending from the ocellus to the base of the antennæ; the upper one-third of this ridge is low, but the remaining part is very prominent; facial quadrangle broader than long; antennæ stout, dark brown, with testaceous tips; joint 3 about equaling joints 4 + 5, certainly not longer; facial foveæ broad, with dark reddish-brown pubescence; clypeus shining, clothed with short hairs; the punctures of the clypeus are close and moderately coarse; a median impunctate stripe is visible; process of labrum long, truncate; mandibles black, ferruginous on their apical halves, notched within near the tips; mesonotum thickly covered with short, stiff hairs, its surface is dull, tessellate, with close, shallow punctures; scutellum shining, somewhat swollen, with a median impression; its punctures are closer and more distinct than those of the mesonotum; tegulæ piceous; wings dusky, nervures and stigma ferruginous; second submarginal cell not as broad as third, receiving the first recurrent nervure at the middle; metathorax coarsely roughened, its enclosure defined by a faint impressed line; the enclosure is somewhat

rugose at base, otherwise finely sculptured; legs dark brown, the small tarsal joints ferruginous; tibial scopa shining, of a lighter colour than the pubescence of the body in general; abdomen shining, bare, without hair-bands; segments 2 to 4 closely and finely punctured, depressed about one-third apically; the depressions are tessellate, and contain only a few scattered punctures; anal fimbria dark fulvous.

Milwaukee, Wis.; 2 ♀ specimens, May 29, 1902, from the flowers of *Viburnum lentago*. In the type specimen the legs are dark brown; in the second specimen the legs are inclined to ferruginous.

Andrena albofoveata, n. sp. ♀.—Length 9 mm.; black; pubescence whitish, more or less yellowish on mesonotum; facial quadrangle broader than long; head with short, sparse pubescence; cheeks finely roughened, with very small punctures; front striato-punctate; facial foveæ very broad above, narrowing gradually below and not unusually separated from eye; the pubescence of the foveæ is silvery-white, appressed; antennæ robust, black, somewhat testaceous beneath; joint 5 shorter than 4, both together longer than 3; clypeus nearly bare, shining, with close and coarse punctures, and an elevated impunctate line; process of labrum small, shining, lightly truncate; thorax with short, thin, erect pubescence; mesonotum hardly shining, with fine punctures, which are close on the sides, but sparse on the disc; median and parapsidal grooves present, the latter very distinct; scutellum shining and more coarsely punctured than the mesonotum; tegulæ piceous, a testaceous spot exteriorly; wings yellowish-hyaline with rufo-testaceous nervures and stigma; second submarginal cell about one-third as long as the third, and receiving the first recurrent nervure near the second transverse cubital nervure; enclosure of metathorax with longitudinal rugæ, bordered by a low transverse ridge; legs very dark brown, covered with griseous hairs; on the inner surface of the basal joints of the tarsi the pubescence is yellowish; segments of abdomen depressed about one-third apically, closely and finely punctured throughout; there are thin apical fasciæ of whitish pubescence, which are interrupted in the middle on segments 2 and 3; anal fimbria light fulvous, sparse.

Milwaukee, Wis.; 7 ♀ specimens, June 15 and 16, 1902, on flowers of *Angelica atropurpurea*. This species belongs to the genus *Trachandrena*, Rob. It is rather variable; in some of the specimens the pubescence is light ochraceous, and the hind tibiæ and tarsi are ferruginous.