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## Descriptions and Records of Bees - LIX

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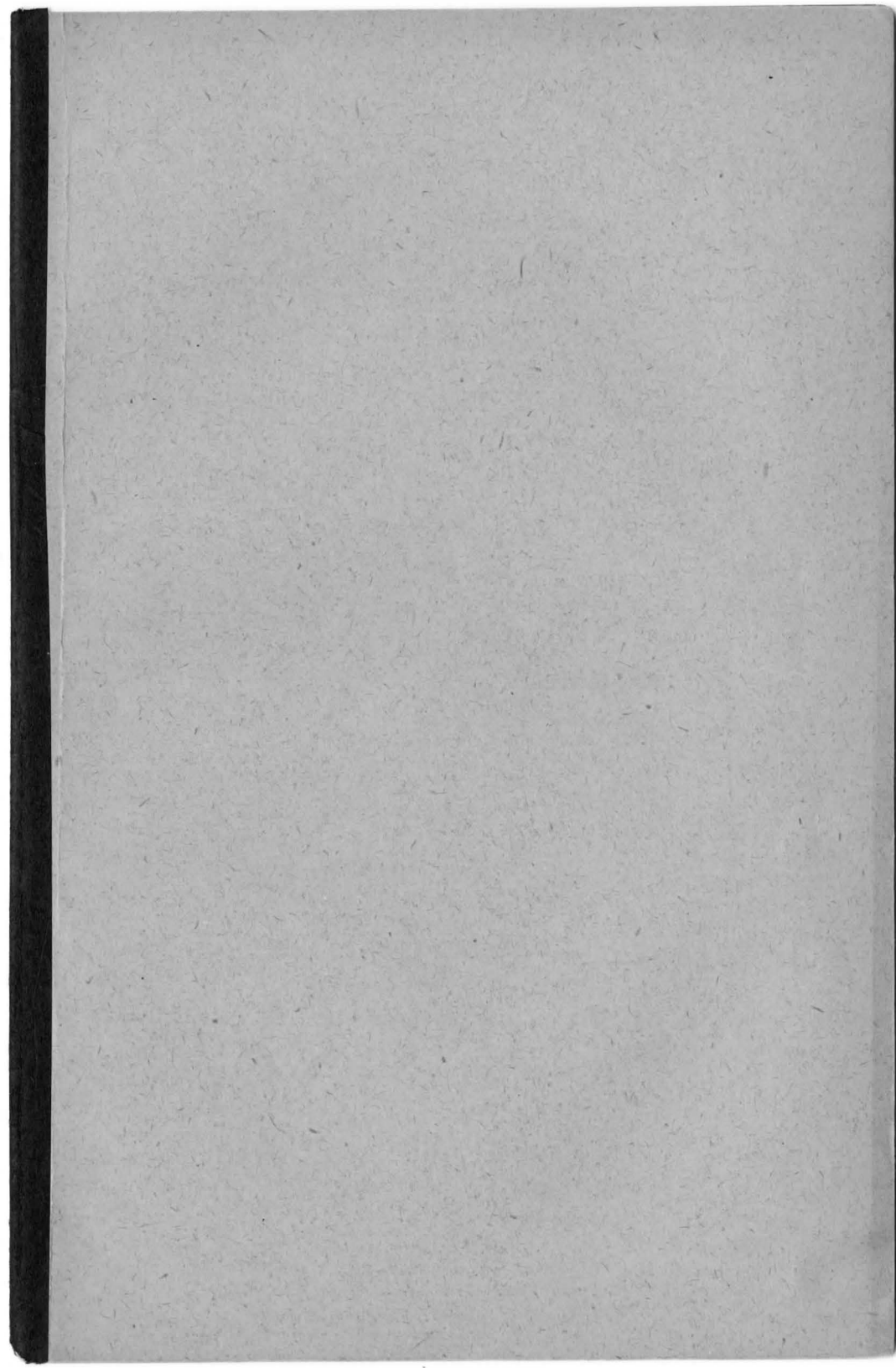
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*Descriptions and Records of Bees.*—LIX.

By T. D. A. COCKERELL, University of Colorado.

*Halictus hedleyi*, Cockerell, var. *a*.

♂.—Hind tibiae broadly dusky in middle; second abdominal segment red, with a very broad dusky apical shade, third segment red at sides of base, otherwise black, fourth black.

*Hab.* "Cheltenham, Victoria" (*French*, Froggatt coll. 184).

This differs from *H. hedleyi* only in the reduction of the red colour, and is presumably no more than an individual variation. Toward the end of the original description of *H. hedleyi*, venter is misprinted "vertex."

*Halictus vitripennis*, Smith, var. *a*.

♀.—First abdominal segment red, with a transverse dark mark.

*Hab.* Purnong (*S. W. Fulton*, Nat. Mus. Vict. 146).

*Halictus dampieri*, Cockerell.

♂.—Brisbane, May 13, 1912 (*H. Hackeri*, Queensl. Mus. 64).

*Halictus punctatus*, Smith.

Croydon (*S. W. Fulton*, Nat. Mus. Victoria, 178, 181, 179, 239, 240, 243).

*Halictus erythrurus*, sp. n. (*sphecodoides*, subsp. ?).

♀.—Length a little less than 5 mm.

Pubescence scanty, dull white; head ordinary, black, the

convex supraclypeal area faintly greenish; apical half of mandibles red; flagellum rather dull red beneath; front dullish, very minutely sculptured; thorax black, with the mesothorax and scutellum dark olive-green; mesothorax dullish, finely and quite closely punctured, granulated between the punctures; disc of scutellum, except in middle, shining and very sparsely punctured; area of metathorax large, rounded behind, its surface covered with a very fine reticulation. Legs black, with pale hair, the knees and small joints of tarsi more or less ferruginous; hind spur with a very large subbasal tooth; tegulae pale rufo-testaceous, darkened at base. Wings clear hyaline, stigma and nervures testaceous; outer nervures much weakened, as in *Chloralictus*. Abdomen broad, without hair-bands, bright chestnut-red; the first segment, except the broad apical margin, extending more or less down sides, black. The anterior tibiae may be red in front, except apically.

Variety *a*.—Rather smaller; mesothorax more shining, dark bluish green.

*Hab.* Croydon, Australia (*S. W. Fulton*, Nat. Mus. Vict. 177, 182); var. *a*, same data (180).

Closely related to *H. sphecodoides*, Smith, and perhaps only a subspecies, but distinguished by the abdomen being all red except at base, the stigma paler, the flagellum lighter beneath. It appears to be the dry-country representative of *H. sphecodoides*.

It is possible, judging from Smith's description, that the original series of *sphecodoides* included the present species, but the type was restricted in Ann. & Mag. Nat. Hist., Sept. 1904, to the form with the apical part of the abdomen dark.

*Halictus caloundrensis*, sp. n.

♀.—Length 6 mm.

Robust, with scanty white hair; abdomen without hair-bands or spots; head ordinary, dark bluish green, shining; mandibles dark reddish apically; clypeus partly very bright green, well punctured; a fine sharp keel between the antennae; front finely longitudinally striate, the striae before middle ocellus longitudinal (transverse in *transvolans*); flagellum dark, obscure reddish apically; mesothorax very brilliant yellowish green, with curious transverse wave-like plicae, directed obliquely, so as to meet at an angle in middle line; scutellum peacock-green, the disc smooth and brilliantly shining; area of metathorax with longitudinal plicae or

ridges, joined at intervals by little transverse ones, so as to produce a cancellated effect; at sides the plicæ run over the edge of the area proper. Legs black, the middle and hind femora dark greenish; hind femora strongly concave beneath; hind spur with three or four short teeth; tegulæ rufous, hyaline in front. Wings clear hyaline; stigma dark brown, nervures sepia; outer r. n. and t.-c. evanescent; first r. n. meeting second t.-c. Abdomen broad, shining steel-blue, with slight purple tints; venter with a curled white floccus.

*Hab.* Caloundra, Queensland, Oct. 30, 1912 (*H. Hacker*, Queensl. Mus. 83).

*H. caloundrensis* is of the immediate group of *H. behri*, *transvolans*, and *flindersi*, but is easily separated by the remarkable sculpture of the mesothorax.

*Halictus urbanus*, Smith.

Stradbroke Island, Oct. 2, 1911 (*Hacker*, Queensl. Mus. 51).

*Halictus lanarius*, Smith.

Females (*lanarius*, Sm.): Brisbane, Jan. 17, 1912 (*Hacker*; Queensl. Mus. 16); Oakleigh (*Hill*; Nat. Mus. Vict. 69).

Males (*lanuginosus*, Sm.): Whittlesea (*J. A. Kershaw*; Nat. Mus. Vict. 97); Tambourine Mtn., Oct. 27 (*Hacker*; Queensl. Mus. 77); Windsor, Victoria (*French*; Froggatt, 82); Sydney, N.S.W. (*Froggatt*, 117); Timboon (*J. A. Kershaw*; Nat. Mus. Vict. 75).

*Halictus hæmatostoma*, sp. n.

♂.—Length about  $4\frac{3}{4}$  mm.

Robust, with dull white hair; head and thorax black, with labrum, mandibles (except base), and lower margin of clypeus bright ferruginous; mesothorax and scutellum shining dark bluish green; scape black, flagellum bright apricot-colour, slightly dusky above; mesothorax very distinctly but not very densely punctured, the punctures small; middle of scutellum distinctly punctured; area of metathorax small and short, irregularly wrinkled; knees and tarsi bright ferruginous; tegulæ dark reddish. Wings clear, nervures and stigma very light testaceous; outer t.-c. and r. n. evanescent. Abdomen piceous, with the hind margins of the segments pallid; a rather strong constriction between first and second segments. This male has exactly the build of a normal female, with robust body and short antennæ.

*Hab.* "Windsor, Victoria" (*French*; Froggatt coll. 196).

This is evidently related to *H. inclinans*, Smith, also found at Windsor, but cannot be its male, the mesothorax being much more shiny and sparsely punctured. In both, the first r. n. enters the third s.m. near the basal corner.

*Halictus holochlorus*, sp. n.

♀.—Length a little over 6 mm.

Green, with dull white hair; head broad, rather dark yellowish green; supraclypeal area shining, rather bluish green, contrasting with upper part of clypeus, which is pale golden green; lower part of clypeus black; mandibles red, except at base; front very finely longitudinally striate; scape slender, black, red at extreme base; flagellum ferruginous beneath, very dark reddish above; face and front rather conspicuously though thinly hairy; mesothorax peacock-green, quite bright, but granular and with dull surface, microscopically tessellate, with sparse yellow punctures, hardly visible with a lens; scutellum more shining; area of metathorax large, with fine longitudinal ridges, connected at intervals by cross-ridges, producing a minutely cancellate effect; upper part of pleura shining green. Legs black or piceous; knees and small joints of tarsi more or less ferruginous; tegulae ferruginous. Wings greyish hyaline, nervures and stigma light reddish testaceous; first r. n. meeting second t.-c.; outer r. n. and t.-c. weakened. Abdomen shining dark brassy greenish; apical margins of segments pale and translucent, covering the dark ferruginous bases of the succeeding ones; no distinct curled ventral scopa.

*Hab.* "Cheltenham, Victoria" (*French*; Froggatt coll. 179).

This is readily known from *H. urbanus* by the light reddish stigma and green abdomen. From *H. floralis* it is known by the larger size and other characters.

*Halictus hackeriellus*, sp. n.

♂.—Length about 5 mm.

Like *H. kesteveni*, differing as follows:—Head yellowish green; mesothorax dull brassy, scutellum the same colour, but shining, contrasting with the bluish-green postscutellum and metathorax (but the area is not at all blue, as it is in *kesteveni*); fourth antennal joint conspicuously longer than broad (not longer than broad in *kesteveni*); front longitudinally striate. As in *kesteveni*, the first r. n. enters base of third s.m.

This is easily known from the male of *H. dampieri* by the smaller size, much shorter antennæ, and absence of a yellow band on clypeus.

*Hab.* Brisbane, May 13, 1912 (*H. Hacker*, Queensl. Mus. 65).

*Halictus bicingulatus*, Smith.

♀.—Sydney, N.S.W., Nov. 29 and Dec. 1, 1910 (*Froggatt*, 131, 119); Kenthurst, N.S.W., Feb. 1904 (*Gallard*; *Froggatt* coll. 126); Brisbane, Nov. 5 and 25, 1905 (*Froggatt* coll. 166, 167).

The male from Kelvin Grove, Brisbane, Nov. 27, 1911 (*Hacker*; Queensl. Mus. 46), is like *H. leai*, except that the abdomen is black, without bands or spots.

*Halictus peraustralis*, Cockerell.

Sydney, N.S.W., Dec. 1, 1910 (*Froggatt*, 113, 130); Stradbroke I. (*Hacker*, Queensl. Mus. 53).

*Halictus tertius*, Dalla Torre (*rufipes*, Sm.).

Croydon (*S. W. Fulton*, Nat. Mus. Victoria, 267, 268).

With the above material before me I am able to revise the *H. bicingulatus* group, and separate the females of the species as follows:—

- |   |    |  |
|---|----|--|
| Wings reddish, costal region not blackened;<br>disc of mesothorax finely and densely, but<br>distinctly punctured .....                           | 1. |  |
| Wings with the costal region conspicuously<br>suffused with blackish; mesothorax differ-<br>ently sculptured .....                                | 2. |  |
| 1. Hind margins of abdominal segments hardly or<br>not reddened .....   |    | <i>bicingulatus</i> , Smith.   |
| Hind margins of abdominal segments broadly<br>ferruginous .....   |    | <i>bicingulatus</i> , var. <i>leai</i><br>[ <i>H. leai</i> , Ckll.]. |
| 2. Disc of mesothorax glaucous, shining, sparsely<br>punctured; scape and lower margin of<br>clypeus dark or obscure reddish .....                |    | <i>tertius</i> , D. T.   |
| Disc of mesothorax dull, appearing minutely<br>granular under a lens; scape bright ferru-<br>ginous, lower margin of clypeus broadly<br>red ..... |    | <i>peraustralis</i> , Ckll.  |

*H. peraustralis* has a patch of very bright orange tomentum on the postscutellum, which is absent from *H. tertius*. In 1904 I placed *tertius* as a synonym of *bicingulatus*, having compared specimens in the British Museum. Smith evidently confused the species of this group, the types of the



two he described not being in the British Museum. A specimen of supposed *bicingulatus* before me, from Smith's collection, is *peraustralis*. Smith's descriptions are, however, sufficiently exact, and I have no doubt of my identifications. When I described *H. leai* as a distinct species I was misled by the supposed *bicingulatus* from Smith's collection. Male *H. leai* shows the broad red plate, characteristic of the *hedleyi* and *tasmaniae* group, on the apex of abdomen. A male *leai* was taken at Croydon by S. W. Fulton (Nat. Mus. Vict. 156).

*Halictus griseovittatus*, sp. n.

♀.—Length about  $7\frac{1}{2}$  mm.

Black, robust, with dull white hair; tarsi reddish at apex, sometimes legs dark reddish; mandibles very obscurely reddish subapically; flagellum black or distinctly reddened apically; head broad; clypeus and supraclypeal area brilliantly shining, with large punctures; sides of face glistening, but middle and upper part of front perfectly dull, with exceedingly minute sculpture; a raised line running downward from middle ocellus; mesothorax shining, but strongly and quite closely punctured; scutellum with minute irregular punctures; area of metathorax semilunar, very finely wrinkled except near the margin, which is only moderately shining; sides of truncation not sharp or angular. Legs with white hair, very pale yellowish or fulvous on inner side of tarsi; hind spur with a single stout oblique tooth a little before the middle, and beyond this a very long low lamina or keel; tegulae piceous. Wings greyish hyaline, stigma dark rufo-piceous, nervures sepia; outer t.-c. and r. n. much weakened; first r. n. entering apical corner of second s.m. or meeting second t.-c. Abdomen shining, very minutely punctured; bases of segments with bands of pale greyish tomentum, broad and entire on third and fourth, mainly at sides on second; caudal rima pale greyish or brownish; venter with white hair, but no curled scopa.

*Hab.* Brisbane, Queensland; the type from Kelvin Grove, Jan. 15, 1912 (*H. Hacker*; Queensl. Mus. 27); others from Sunnybank, Sept. 12, 1911, and Logan Road, Sept. 18, 1911 (*Hacker*; Queensl. Mus. 4, 26); also three from Mackay, Queensland, March and April 1900 (*Turner*, 1079).

A distinct species, rather like a small edition of *H. representans*, but with quite different metathorax.



*Halictus instabilis*, sp. n.

♀.—Length about 8 mm.

Black, robust, with greyish-white hair, mixed with fuscous on vertex, mesothorax, and scutellum; mandibles very faintly reddish subapically; clypeus shining, with irregular, not very large punctures, and no median depression; sides of front glistening, but middle broadly dull black, excessively closely punctured; flagellum dark; anterior angles of prothorax rather prominent; mesothorax shining, with very fine but distinct punctures; scutellum broad and flattened, very minutely punctured; area of metathorax rather short, well defined, finely plicate, with a band of subbasal fine connecting ridges; in the whole middle area the plicæ are very fine and irregular, and the surface between them is minutely pitted; posterior truncation not sharply defined at sides; pleura very hairy. Legs piceous, with glistening light hair, the hind tibiæ with a band of greyish-fuscous hair on outer side; hind spur like that of *H. griseovittatus*; tegulæ piceous, with a large rufous spot. Wings dusky, greyish, stigma and nervures dull reddish, second s.m. higher than broad, first r.n. meeting second t.-c. Abdomen broad, shining, very finely punctured, bases of segments with greyish-white tomentum as in *H. griseovittatus*, but the bands have a slightly ochreous tint.

*Hab.* Croydon, Victoria (*Miss A. M. Fulton*; Nat. Mus. Vict. 77).

Variety *a*.

Stigma clearer red; second s.m. very broad, broader below than high; wings slightly reddish; area of metathorax longer.

*Hab.* "Windsor, Victoria" (*French*; Froggatt coll. 191).

Variety *b*.

Wings practically as in variety *a*, with broad second submarginal cell; postscutellum longer, subangulate behind; area of metathorax sharply defined, with stronger plicæ.

*Hab.* Victoria, Sept. 1901 (*C. F.*; Turner coll.).

Closely related to *H. griseovittatus*, but larger, with the bands on the abdomen differently coloured. Possibly variety *b* is a distinct species, but I hesitate to separate it, especially since var. *a* is intermediate between it and the type.

*Halictus representans*, Smith.

Bacchus Marsh, Nov. 5 (*F. L. Bellinghurst*; Nat. Mus. Vict.); Emerald, Victoria, Nov. 19, 1903 (*J. A. Kershaw*; Nat. Mus. Vict.).

*Halictus orbatus*, Smith.

Fern Tree Gully (*R. F. Spry*; Nat. Mus. Vict. 252); Victoria, Sept. 1901 (*C. F.*; Turner coll.).

I cannot quite clearly separate *H. convexus*, Smith, from this, but actual comparison of types would, perhaps, show good characters.

*Halictus sturti*, Cockerell.

Mackay, March 1900 (*Turner*).

*Halictus cyclognathus*, sp. n.

♂.—Length not quite  $4\frac{1}{2}$  mm.

Black, with scanty greyish-white hair; head very large and broad; cheeks broad and flattened, angled behind; mandibles long, strongly curved, cream-coloured, red apically; clypeus with an apical cream-coloured band, not approaching orbits; supraclypeal area shining; front dullish, somewhat shining; antennæ rather long, black; mesothorax and scutellum shining, with sparse minute punctures; area of metathorax rugose and opaque, with a shining rim; mesopleura shining; anterior tibiæ ferruginous, with a large dark patch, middle tibiæ red at extreme apex and base; tarsi ferruginous, the hind ones dusky; tegulæ reddish. Wings clear, brilliantly iridescent, nervures and stigma ferruginous; first r. n. joining second s. m. a short distance before apex; outer r. n. and t. c. weakened. Abdomen short for a male, shining black, thinly hairy, not spotted or banded. Microscopical characters:—Front striate (very obliquely at sides above), with punctures between the striæ; middle of mesothorax minutely tessellate between the punctures, at sides and in front lineolate; disc of scutellum hardly at all punctured; area of metathorax irregularly subreticulate; punctures of abdomen very minute, not at all dense.

*Hab.* Croydon, Australia (*S. W. Fulton*; Nat. Mus. Victoria, 200).

Quite unique, but apparently allied to the green *H. pur-nongensis*, having a similar head.

*Halictus seductus*, sp. n.

♀.—Length about 10 mm.

Black, robust, with greyish-white hair, mixed with fuscous on vertex and mesothorax; mandibles entirely black; flagellum very obscurely brownish beneath. Legs black, with white hair, a band of fuscous hair on outer side of hind tibiae; clypeus strongly punctured and more or less striate; front dull; mesothorax roughened and strongly punctured, dull, with the disc somewhat shining; scutellum rough, but somewhat shining; area of metathorax sharply defined, strongly striate, produced and pointed in middle behind; lateral margins of truncation sharply defined; hind spur appearing simple, its hind margin very feebly microscopically nodulose; tegulae piceous. Wings smoky hyaline, stigma and nervures dusky ferruginous; second s.m. very broad, receiving first r.n. well before end; outer t.-c. and r.n. very weak. Abdomen shining, not distinctly punctured, lateral basal margins of second and third segments with bands of white tomentum, and a similar band on fourth hidden under margin of third; apex with fuscous hair; venter with glistening white hair, but no curled scopa. Microscopical characters:—Front striate-punctate; sides of mesothorax cancellate, passing in the middle into oblique wave-like rugae; punctures of second abdominal segment excessively small, nowhere dense.

*Hab.* "Windsor, Victoria, 1909" (*French*; Froggatt coll. 93).

Resembles *H. representans*, Sm., but easily known by the sculpture of the mesothorax. The microscopical characters and larger size readily separate it from *H. gilesi*, Ckll.

*Halictus circumdatus*, sp. n.

♀.—Length about  $8\frac{1}{2}$  mm.

Black, shining, with thin greyish-white hair; mandibles red apically; flagellum dark, with a very faint reddish tint beneath; small joints of tarsi more or less reddened; hair of vertex all pale, but that of scutellum and mesothorax mixed with fuscous; head broad; clypeus shining, with strong irregular punctures; front dull in middle, glistening at sides; mesothorax shining, strongly but not very densely punctured; scutellum very irregularly punctured, some of the punctures very minute, others large, and a median slender groove; area of metathorax concave, shining, strongly longitudinally plicate, sharp-edged, with the apical marginal area smooth and shining, depressed in middle; mesopleura

strongly obliquely striate. Legs with light hair, pale fuscous on posterior side of hind tibiae; tegulae piceous, with a rufous spot. Wings dusky, nervures and stigma dusky reddish; second s.m. broad, receiving first r.n. near end; outer t.-c. and r.n. weakened. Abdomen rather elongate, pure black, shining, very finely punctured, bases of second to fourth segments with dense bands of clear white tomentum, visible only as triangular lateral patches on second; a long narrow caudal plate; hair of apex fuscous; long white hair of venter somewhat curled.

*Hab.* "Rutherglen, Victoria" (*French*; Froggatt coll. 174).

Resembles *H. representans*, but easily separated from this and from *H. seductus* by the character of the metathoracic enclosure. There is a strong resemblance to *H. costulatus*, Kriechb. (Mark Brandenburg, Falkenberg, June 6, 1875; Gerstaecker coll.).

*Halictus sanguinipes*, sp. n.

♂.—Length about 8 mm.

Black, with bright chestnut-red legs; clypeus with a very broad pale yellow band, pointed at each end, and with an upwardly-directed point in middle; mandibles black; flagellum very obscurely reddish beneath; hair of head and thorax dull white below, faintly brownish dorsally; front dull and minutely granular, even at sides; mesothorax rough, glistening; scutellum brilliantly shining, with irregular punctures; area of metathorax very long, irregularly wrinkled; truncation small, with sharp lateral margins; tegulae piceous, with a rufo-testaceous spot. Wings reddish, more dusky at apex; stigma and nervures ferruginous; second s.m. rather narrow; first r.n. joining second t.-c.; outer nervures strong. Abdomen black, shining, very finely punctured, without hair-bands or spots, clavate in form, narrowing basally; red apical plate extremely broad, truncate, faintly emarginate in middle. The coxae and trochanters are black, contrasting with the red femora. The front is microscopically striate, with coarse punctures between the striae.

*Hab.* "Windsor, Victoria" (*French*; Froggatt coll. 182).

Close to *H. bicingulatus*, but easily separated by the clavate abdomen, the colour of the tegulae, and the area of the metathorax.

*Halictus eurhodopus*, sp. n.

♀.—Length about 5 mm.

Rather slender, black, with the legs, except the coxæ, bright clear ferruginous; pubescence dull white, no hair-bands or patches on the smooth shining abdomen; mandibles red apically; scape long, red; flagellum dark; face, front, and mesothorax dull or slightly shining, but not at all polished, with no evident sculpture under a lens; area of metathorax large, minutely reticulate, with shining rim; tegulæ light reddish testaceous. Wings hyaline, a little dusky, stigma piceous, nervures fuscous; first r. n. meeting second t.-c.; third s.m. very short. Abdomen with a narrow red apical plate; venter with a curled white scopa. Microscopical characters:—Front microscopically tessellate (not punctured or striate); mesothorax minutely roughened; abdomen minutely transversely lineolate; spur of middle tibia minutely short-pectinate.

*Hab.* Cairns, Queensland, "Kur. I. 02" (Turner).

A very distinct little species, allied to *H. cassiaefloris*, but distinguished by the red femora.

*Halictus cassiaefloris*, sp. n.

♀.—Length about 5 mm.

Rather robust, with broad abdomen; black, with dull white hair, not forming bands or spots on abdomen; mandibles clear red; scape clear red, the apical half above black or nearly; flagellum dusky reddish below; knees, tibiæ, and tarsi clear ferruginous; tubercles with a red mark; tegulæ light rufo-testaceous; head broad; front dullish, without evident sculpture; mesothorax dull; area of metathorax large, rough, with a shining rim. Wings greyish hyaline, stigma piceous, nervures sepia; first r. n. meeting second t.-c.; outer r. n. and t.-c. very weak; third s.m. very short, not larger than second. Abdomen moderately shining; venter with long hair. Microscopical characters:—Front and mesothorax minutely tessellate; area of metathorax with fine irregular ridges; abdomen very finely transversely lineolate; hind spur with three long stout spines.

*Hab.* Mackay, Queensland, two at *Cassia*, Dec. 1899 (Turner, 14 a). Related to *H. eurhodopus*, the two forming a little group or section.

*Halictus kurandensis*, sp. n.

♂.—Length about  $6\frac{1}{2}$  mm.

Rather robust, black, with dull white hair; apical half of clypeus (narrowing laterally, not reaching sides) bright lemon-yellow, but the actual margin light ferruginous; labrum pale reddish; mandibles with apical part chestnut-red; clypeus prominent, face narrowed below; flagellum very long (about 4 mm.), strongly crenulate beneath, very obscurely reddish; front dull; cheeks small; tubercles slightly brownish; disc of mesothorax glaucous, with very fine scattered punctures; area of metathorax very large, hardly defined at sides, covered with labyrinthiform ridges; mesopleura obliquely striated; truncation of metathorax very sharply defined at sides; tegulae rather large, piceous, with the margin narrowly lighter. Wings hyaline, slightly dusky, strongly iridescent; stigma and nervures ferruginous; outer nervures strong; first r. n. meeting second t.-c.; second s.m. higher than broad. Legs reddish-black, the tarsi obscure reddish brown. Abdomen shining, without hair-bands; broad apical margins of segments strongly shining and slightly elevated, but the region before them duller and more or less glaucous. The microscope shows the front to be coarsely striato-punctate.

*Hab.* Cairns, Queensland, "Kur. 4.02" (Turner).

By the striated pleura it resembles *H. circumdatus*; by the glaucous mesothorax it resembles *H. tertius*; from both it is readily separated by the sculpture and other characters.

*Halictus helichrysi*, sp. n.

♀.—Length about 7 mm.

Black, with dull white hair, the broad abdomen thinly hairy at sides and dorsally beyond middle, but not banded; mandibles bidentate, with more than the apical half chestnut-red; flagellum chestnut-red beneath, except at extreme base; hind margins of second and third abdominal segments narrowly reddish, of fourth broadly hyaline; legs black, tarsi reddened apically; head broad; clypeus shining, with irregular not very large punctures; front glistening at sides, dull in middle, where it is extremely densely punctured, the punctures more or less in rows; mesothorax shining, with strong well-separated punctures; scutellum shining, with very small punctures; metathoracic area with very fine sinuous rugae; sides of apical truncation not sharply defined; tegulae rufous, piceous at base. Wings clear, nervures and

stigma sepia; outer t.-c. and r. n. weakened; first r. n. meeting second t.-c.; hind spur with a few large teeth. Abdomen shining, finely punctured; venter with stiff white hair, but no curled scopa.

*Hab.* Tambourine Mountain, Queensland, at flowers of *Helichrysum bracteatum*, Oct. 27, 1912 (*H. Hacker*, Queensl. Mus. 84); also a cotype from Brisbane, Jan. 17, 1912 (*Hacker*; Queensl. Mus. 31).

Easily known from *H. griseovittatus* by the absence of hair-bands at bases of abdominal segments.

The following three species are very like *H. helichrysi*, the four being separable as follows:—

Flagellum dark, faintly brownish beneath .....	<i>H. imitans</i> .
Flagellum red beneath .....	1.
1. Mesothorax strongly punctured; scutellum with sparse small punctures; hind margin of fourth abdominal segment broadly whitish hyaline ....	<i>H. helichrysi</i> .
Mesothorax more finely punctured; hind margin of fourth segment not broadly whitish hyaline ..	2.
2. Lateral bases of abdominal segments 2 to 4 broadly white-tomentose; scutellum duller, more closely punctured .....	<i>H. victoriellus</i> .
Lateral bases of abdominal segments 2 to 4 not white-tomentose; scutellum shining, very minutely and more sparsely punctured .....	<i>H. plebeius</i> .

*Halictus imitans*, sp. n.

♀.—Length about  $6\frac{1}{2}$  mm.

Black, robust, with scanty dull white hair, faintly creamy on head and thorax above; mandibles with the apical part variably dark reddish; antennæ entirely dark; clypeus shining, with sparse weak punctures; front dull, somewhat glistening at sides, the middle punctured and feebly striate; mesothorax glistening, but quite strongly and densely punctured; scutellum with minute, rather close punctures; area of metathorax large, finely and regularly striate; hind spur with a large subbasal tooth; tegulæ piceous, with a large rufous spot. Wings dusky, nervures and stigma dusky red; outer r. n. and t.-c. weakened; first r. n. meeting second t.-c. Abdomen shining, very minutely punctured; lateral bases of second and following segments with rather inconspicuous patches of dull white tomentum, on third segment twice as extensive as on second; venter with abundant white hair.

*Hab.* Victoria, Feb. 1901 (*C. F.*; Turner coll.). Two specimens.



*Halictus victoriellus*, sp. n.

♀.—Length a little over 6 mm.

Like *H. imitans*, but smaller and less robust, with the flagellum dull red beneath; mesothorax more shining and finely punctured; area of metathorax shorter, with weaker striæ, which are oblique, and on the basal half joined by many little cross-ridges; stigma testaceous (instead of castaneous); hind margins of abdominal segments suffused by reddish; hair of venter short and not abundant.

*Hab.* Victoria, Feb. 1901 (C. F.; Turner coll.). Two specimens.

*Halictus plebeius*, sp. n.

♀.—Length about  $6\frac{1}{2}$  mm.

Like *H. imitans*, but mesothorax and scutellum much more shining, with fine punctures; flagellum dull red beneath; area of metathorax shorter, with much less distinct striæ, which frequently anastomose, so that the surface is cancellate; stigma smaller; hind spur yellowish white (red in *imitans*). The first and second abdominal segments are very finely, but distinctly and regularly punctured; the front is densely striato-punctate.

♂.—Length a little over 5 mm.

Clypeus with a broad ivory-coloured band on apical half; flagellum long and rather thick, obscurely brownish beneath; cheeks not enlarged; legs black, with very slender reddish-brown tarsi; area of metathorax so finely reticulate as to appear roughened under a lens; abdomen shining, not hairy. The tegulæ have a clear testaceous spot. Known from related males by the small size and dark legs.

*Hab.* Purnong, near Murray R., S. Australia (S. W. Fulton; Nat. Mus. Vict. 108, 157). The female is the type.

*Halictus idoneus*, sp. n.

♂.—Length about 7 mm.

Slender, black, with white hair; mandibles rufous apically; lower half of clypeus cream-colour, depressed in middle; flagellum long, entirely dark, very strongly crenulated beneath; legs black, with the tarsi, and extreme apices of tibiæ, clear ferruginous; abdomen parallel-sided, with the extreme bases of third and fourth segments reddened. Face rather broad, with much white hair; middle of front

dull, densely but shallowly punctured; mesothorax very densely and shallowly punctured, but glistening; scutellum shining, finely punctured; area of metathorax appearing rough under a lens, but with fine ridges, connected by transverse ones, the apical part with an exceedingly minute cancellation, the cells transversely elongate; apical truncation without sharp lateral margins; tegulae rufo-testaceous. Wings perfectly clear; stigma light reddish, with darker margin; nervures sepia; outer r. n. and t.-c. rather slender, but dark; second s.m. narrow; first r. n. meeting second t.-c. Abdomen with a very thin pruinose pubescence, and indistinct patches of tomentum at lateral bases of segments; apical plate dark brown, very broad, and rounded. The second abdominal segment is very densely punctured in the subbasal region.

*Hab.* Brisbane, Queensland, Oct. 3, 1912 (*Hacker*; Queensl. Mus. 72).

Readily known from *H. blackburni* by the rough mesothorax, the dense punctures visible under a lens. Compared with *H. forresti*, the clypeus is less produced, and the mesothorax is very much more densely punctured.

*Halictus mediopolitus*, sp. n.

♀.—Length about  $6\frac{1}{2}$  mm.

Black, with very pale ochreous-tinted or creamy hair; mandibles dark; head broad, clypeus and supraclypeal area shining, with sparse small punctures; sides of face and front glistening, middle of front dull, striate, with small punctures at intervals between the striae; flagellum dark the last two joints lively red beneath; mesothorax and scutellum bare, highly polished, and shining; mesothorax with sparse very minute punctures and very widely scattered large ones; scutellum with extremely minute sparse punctures, principally about the median depression; area of metathorax very large, semilunar, appearing granular under a lens, but actually minutely reticulate, the margin finely punctate; posterior truncation small, sharply defined at sides below. Legs black, the apical tarsal joints ferruginous; hind spur with a single large blunt subbasal lamina; tegulae clear rufo-testaceous. Wings clear, stigma and nervures dusky rufous, the stigma very long; outer r. n. and t.-c. evanescent; second s.m. very broad, receiving first r. n. near apex. Abdomen shining, minutely and quite closely punctured; segments 2 to 4 with dense basal bands of creamy-

white tomentum, much broadened at sides; venter with stiff white hair, no curled scopa.

*Hab.* Purnong, near Murray R., S. Australia (*S. W. Fullon*; Nat. Mus. Vict. 136, 216, 224).

A distinct species, readily known by the highly polished mesothorax and scutellum, and the dense conspicuous abdominal hair-bands.

*Halictus opacicollis*, sp. n.

♀.—Length about 7 mm.

Black, with scanty dull white hair; mandibles black, with a faint subapical reddish spot; flagellum very obscurely brownish beneath; head broad; clypeus opaque, with sparse rather large punctures, except the lower margin, which is broadly shining; supraclypeal area dull; middle of front dull, finely striate, with obscure punctures between the striæ; mesothorax dull, minutely tessellate, with widely scattered very shallow punctures; scutellum shining, dull in middle and posteriorly; area of metathorax very large, finely but very distinctly striate. Legs reddish black or obscurely brownish, small joints of tarsi ferruginous; hind spur with a large blunt tooth near the middle, and beyond that a long low keel; tegulæ piceous, with a rufous or pallid spot. Wings dusky, the large stigma dull red, nervures fuscous; outer r. n. and t.-c. weakened; second s.m. very broad, receiving first r. n. a short distance before its end. Abdomen broad, somewhat shining, the hind margins of the segments obscurely reddish, or the whole abdomen very dark brown; small triangular patches of dull whitish tomentum at lateral bases of segments 2 to 4, not very conspicuous; first two abdominal segments transversely lineolate, subtessellate, hardly at all punctured.

*Hab.* Victoria (type locality), Feb. and Sept., 1901 (*C. F. Turner* coll.); Hobart, Tasmania (*Lea*; Froggatt coll. 165).

A commonplace-looking species, distinguished from *H. orbatus*, Sm., by the less strongly punctured mesothorax and other characters. The surface of the mesothorax, under a lens, looks much like that of the New Zealand *H. smithii*, D. T. The Tasmanian specimens are smaller than those from Victoria, with browner abdomen.

*Halictus granulithorax*, sp. n.

♀.—Length about  $6\frac{1}{2}$  mm.

Black, robust, with dull white hair, slightly tinged with brownish dorsally; mandibles obscurely reddish in middle;

clypeus quite closely punctured, the punctures of different sizes; supraclypeal area dullish, finely punctate; front dull, extremely densely, subconfluently punctured, the punctures tending to run in vertical rows; antennæ dark; mesothorax dull, appearing granular under a lens, extremely densely punctured; scutellum somewhat shining, well punctured, but not so densely as mesothorax, and shining between the punctures; area of metathorax large, very feebly sculptured, the surface minutely tessellate, the sides with fine ridges reaching halfway to margin, the middle irregularly reticulated; hind spur with a short tooth, and a long low feebly dentate lamella; tegulæ fulvous. Wings faintly dusky, stigma and nervures reddish sepia; outer r. n. and t.-c. weakened; second s.m. broad, receiving first r. n. before its end, or (Pt. Lonsdale specimen) first r. n. meeting second t.-c. Abdomen broad, hind margins of segments suffusedly reddish; first two segments minutely transversely wrinkled and rather closely punctured; lateral base of second segment with a little dull pale tomentum, and bases of third and fourth with the same right across; venter with short white hair, toward base longer and somewhat curled.

*Hab.* Victoria (type locality), Feb. 1901, two (C. F.; Turner Coll.); Pt. Lonsdale, Jan. 1908 (J. A. Kershaw; Vict. Nat. Mus. 265). Very like *H. willsi*, Ckll., but the second s.m. is differently shaped, and the sculpture of the front, metathorax, and abdomen differ.

*Halictus niveifrons*, sp. n.

♂.—Length about  $4\frac{3}{4}$  mm.

Black, with white hair, copious and snow-white on face and front; mandibles bright red at apex; face strongly narrowed below; clypeus with tegument entirely black, covered with densely plumose white hairs; antennæ wholly dark, flagellum stout, comparatively short, almost like that of a female; front minutely, very densely striato-punctate; mesothorax somewhat shining, microscopically lineolate-tessellate, without evident punctures; area of metathorax dull, feebly striatulate basally; tegulæ clear testaceous. Wings clear, the stigma large, piceous; nervures fuscous, outer r. n. and t.-c. very weak; second s.m. much higher than broad, receiving first r. n. well before middle; third s.m. very short, no larger than second. Abdomen broad, black, and shining, without hair-bands or patches; the surface very finely and weakly transversely lineolate, without evident punctures.

*Hab.* Tasmania, two males (Lea; Froggatt coll. 144).

Readily known by the dark clypeus, small size, and white hair on face. I do not know a close relative.

*Halictus repertus*, sp. n.

♂.—Length about  $6\frac{1}{2}$  mm.

Black, rather slender, with dull white hair; head broad; mandibles broadly bright red in middle; lower half of clypeus cream-colour, shining and sparsely punctured; antennæ long, entirely dark; front dull, extremely densely punctured, except at sides, where the punctures are elongated, and well separated; mesothorax shining, quite strongly punctured, the punctures about as far apart as the diameter of one, the surface between minutely and feebly lineolate; scutellum shining, sparsely punctured; area of metathorax with coarse irregular ridges, with transverse ones between, the marginal area finely lineolate, and inclined to be tessellate; knees, tibiæ at extreme apex, and tarsi entirely, ferruginous; tegulæ rufous. Wings hyaline, slightly milky, stigma and nervures ferruginous; outer nervures hardly at all weakened; second s.m. higher than broad, receiving first r. n. just before end; third s.m. considerably larger than second. Abdomen shining, but not highly polished, hind margins of segments broadly dusky reddish, the extreme margins becoming hyaline; no hair-bands or patches; first two dorsal abdominal segments with very fine, not at all dense punctures; apex with a very large, broadly rounded, bright ferruginous plate (as in the *hedleyi-tasmanie* group); ventral segments fringed with white hair.

*Hab.* Near Melbourne (Nat. Mus. Victoria, 105). Very close to *H. cambagei*, Ckll., which has a similar caudal plate, but metathorax different.

*Halictus expansifrons*, sp. n.

♂.—Length about 6 mm.

Black, robust (like a female), with dull white hair; head broad; mandibles dark; clypeus with a transverse pale yellow band, having a triangular median projection above; antennæ rather long, flagellum thick, obscure reddish beneath; front dull, extremely densely punctured, the punctures (seen under microscope) glistening; mesothorax shining, strongly punctured, sparsely in middle, densely in front, the surface between the punctures smooth and polished; scutellum shining, finely punctured, not depressed in middle; area of metathorax under a lens appearing

rugose, with a thick shining rim ; under the microscope the sides of the area show strong ridges, which are vertical, not oblique ; lateral margins of posterior truncation not sharply defined ; tegulae fulvous or rufo-fulvous. Wings clear, stigma and nervures ferruginous ; outer nervures scarcely weakened ; second s.m. broad below ; first r. n. meeting second t.-c., or entering extreme apical corner of second s.m. Legs black, the knees and apices of tibiae more or less pale reddish ; tarsi cream-colour, becoming pale ferruginous apically. Abdomen broad, shining, first two segments finely, not densely punctured ; hind margins of segments very faintly, variably, reddish ; bases of second and following segments with bands of pale tomentum, not always exposed ; apical plate very broad, dark.

*Hab.* New South Wales, two specimens (Nat. Mus. Victoria, 102). Closely allied to *H. clelandi*, Ckll., but mesothorax and tarsi different.

