Bees of the Genus Megachile from Australia

T. D. A. Cockerell
University of Colorado

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know this beautiful "Copper" no more, while C. thersamon and other interesting species will probably share the same fate.*

Leaving the meadows which proved so unprofitable, I went up a sandy lane on the left, the banks of which were thickly covered with sloe bushes; flitting round these were numbers of S. acacieae, all in beautifully fresh condition, while another D. pandora found its way into my net. Every sloe bush had three or four clusters of the orange eggs of A. crategi upon it, and in one place were covered with the enormous full-fed larvae of Saturnia pini.

The following day I left Budapest, and arrived in London two days later.

BEES OF THE GENUS MEGACHILE FROM AUSTRALIA.

By T. D. A. Cockerell.

Megachile cornifera, Rad.

This remarkable insect was described as from Sydney, where it certainly never was found. It has been rediscovered by Mr. Horace Brown at Southern Cross, two hundred and sixty miles inland from Perth, Western Australia; both sexes were forwarded to me by Professor Froggatt. The male, not before known, resembles the female, but is more slender, about 19 mm. long, the quite narrow face covered with light yellow hair, and without prominences; eyes red; anterior tarsi flattened, very light yellow with a large ferruginous spot at the end of each joint, the last joint ferruginous, the first joint very short, crescentic, the whole tarsus very broadly fringed on each side with white hair; anterior coxae with long curved spines; hind tarsi extremely long; middle tarsi short; sixth abdominal segment with a broad transverse keel, obliquely emarginate in middle; venter of abdomen with much white hair. Also at Southern Cross, Mr. Brown collected a female of M. fumipennis (Froggatt, 205).

* I traversed this same ground on July 16th; the morning brilliantly fine, the afternoon attended by a downpour of tropical violence. The sole Chrysophanid observed was E. phialus (one specimen), and hardly a butterfly was to be seen, except S. circe, on the sandy cart-track just before coming to the village of Kamacardo. Evidently the second generation of C. dispar var. rudulis, and C. thersamon had not emerged here; but, as Mr. Gunney points out, the cutting had been conducted ruthlessly, and the mortality of larvae must have been enormous. I may add that on this ground I was asked by the forester for my "permit." I need scarcely say I had none, but I made him understand I was an English entomologist, and he appeared quite satisfied to let me proceed in peace. My bag for a six hours' day was absolutely nil! C. thersamon, second generation, at Parkes Volgy, outside the Buda Cemetery, fresh, July 17th.—H. R.-B.
Megachile phenacopyga, Cockerell.

Warooma, Western Australia, March 9th, 1908 (G. F. Berthoud; Froggatt, 208). A female from the same locality and collector (Froggatt, 207), but collected December 26th, 1908, agrees with a female "M. ignita, Sm.", from Western Australia, determined by F. Smith. It looks much like *M. phenacopyga*, and is perhaps its female; but if so, it cannot be *M. ignita*, since that species was originally described from a male with simple anterior tarsi.

An argument in favour of the reference of these females to *ignita* rather than to *phenacopyga* is found in the fact that they have the tegument of the sixth abdominal segment and the apical part of the fifth red, which is not true of male *phenacopyga*. A feature of the supposed female *ignita* is the presence of conspicuous white lateral hair patches on abdomen; this distinguishes it from *M. mackayensis*, henrici, &c. Smith indicates no such patches for male *ignita*. The abdomen of the supposed female *ignita* is of the relatively narrow, parallel-sided type, not broad like that of *M. chrysopyga*.

Megachile horatii, sp. n.

3. Length about 13 mm.; like *M. erythropyga*, Smith, but larger, with hair of face pure white; third abdominal segment (as well as first and second) with lateral white hair-patches; sixth segment rather more produced; face narrower, with the eyes more parallel; eyes black.

Southern Cross, Western Australia, 1912 (Horace Brown; Froggatt, 206).

In the white hair of the face it is like the much smaller *M. tomentella*, Ckll.

I must add, with regard to *M. erythropyga*, that I possess only the male (a specimen from F. Smith’s collection labelled New Holland, and two collected by French in Victoria); Smith’s short description is characteristic, but it should be added that the apical margin of the fourth abdominal segment, except at the sides, is covered with red hair. The female was described from the W. W. Saunders collection, and is presumably at Oxford. Judging from the descriptions, it seems quite possible that the sexes described do not belong together; the female, in fact, is probably the insect referred to above as supposed *M. ignita*. Although the female of *erythropyga* has precedence of place on the page, it will be better, under the circumstances, to designate the male as the type. This leaves us with a series of readily distinguishable males (*erythropyga*, *ignita*, *phenacopyga*), and one (or two?) females which will have to be connected with the males by workers in the field.
Megachile derelicta, sp. n.

2. Length about 12 mm., anterior wing nearly 7, the wings relatively short; black, elongated and parallel-sided, the abdomen widest at fourth segment; hair of head and thorax rather scanty, but conspicuously white at sides of face, around the shining tubercles, on under side of thorax and on metathorax; on the broad vertex, the mesothorax and scutellum, the thin hair is pale fuscous-tinted; head rather large, with broad cheeks; clypeus short and broad, the lower edge straight, but above the edge is a pair of large semicircular shining hollows, each one surmounted above by a small tubercle, the median space between the hollows occupied by a large tubercle; upper part of clypeus, face and front densely punctured, vertex with the punctures sufficiently separate to have shining margins; mandibles long, the apical margin with three short teeth, the inner margin with a low angular projection; labrum with a small red sub-apical tubercle, and its lateral apical corners acutely pointed; flagellum obscurely reddish beneath; hind ocelli much nearer to each other than either is to the occipital margin; mesothorax and scutellum shining, but very closely punctured; area of metathorax dullish, depressed in middle; tegulae dark rufous; wings dilute brownish, nervures piceous; legs black, with pale hair, the tarsi reddish apically; abdomen closely punctured, second and third segments with a deep transverse depression; sides of first abdominal segment with conspicuous white hair; hind margins of second and third segments with dense bands of pale yellowish hair, failing in middle, becoming white at sides; extreme basal margins of third and fourth segments with an ochraceous line; fourth segment entirely without hair bands or spots; fifth and sixth segments, except at sides, covered with pale yellow tomentum (between dilute orange and ochraceous); ventral scopae white, on the last segment fuscous-tinted.

3. Length about 9 mm.; hair of face entirely white; anterior coxae with tubercles in place of spines; tarsi dark red, the anterior ones simple; tegulae rufopiceous; bands on second and third abdominal segments broadly interrupted in middle, and with very little yellowish; pale yellow apical hair-patch including fifth segment and a broad apical band on fourth (except at sides), and the base of sixth; sixth segment rather obtusely bidentate, the teeth broad-triangular; no apical ventral spine.

Female (type) from Windsor, Victoria (French; Froggatt coll., 198); male from Victoria (French; Froggatt coll., 50). Allied to M. tomentella, Ckll. (male), but differing by the dusky wings and conspicuous hair-bands. The female may be compared with M. keridiformis, Sm., but it has no bands on the fourth abdominal segment. The species is also somewhat allied to M. trichognathus, Ckll.

Megachile hackeri, sp. n.

I had identified this as M. apicata, Sm., but comparison with the genuine apicata, from Victoria, shows it to be quite distinct.

2. Length, 8½ mm.; similar to apicata, but the three clypeal teeth very low and widely spaced; flagellum dark (bright red beneath in apicata); mesothorax and bases of abdomen entirely red.

3. Length, 7½ mm.; mandibles (orange) (in apicata light yellow) segment, not the other; or obtuse teeth sharp irregularly anterior tarsi an.

The female from Brisbane, Queensland Museum, same data.

2. Windsor, Gippsland, Vic.

The male is in comparison with M. apicata, Sm.

3. Length most parts of hair pure white half much longer than hair on inner 

4. Length, 9 mm.; hind ocelli much nearer to each other than either is to the occipital margin; mesothorax and scutellum shining, but very closely punctured; area of metathorax dullish, depressed in middle, becoming white at sides; extreme basal margins of third and fourth segments with an ochraceous line; fourth segment entirely without hair bands or spots; fifth and sixth segments, except at sides, covered with pale yellow tomentum (between dilute orange and ochraceous); ventral scopae white, on the last segment fuscous-tinted.

M. hackeri, sp. n. (French).

1900 (French)

M. chrysops

water, Victoria

1892 (Froggatt)

M. lucidica
the wings and abdomen scantly, but bicolored, on vertex, the stem; head and vertex, the lower semicircular tubercle, the tubercle; vertex with ridges; mandibles black, with a tuft of dull white hair on inner apical corner; clypeus and front very densely punctured; distance between hind ocelli less than from either one to occipital margin; antennae long and slender, the flagellum very obscurely brownish beneath; mesothorax and scutellum very densely punctured, but margins of punctures shining; a little tuft of dull white hair on each hind corner of mesothorax; tegulae piceous; wings hyaline, the rather well-developed stigma and the nervures rufous; legs black, the tarsi reddened apically; anterior coxae unarmed and anterior tarsi quite simple; abdomen shining, strongly punctured, the hind margins of the segments narrowly rufous; rudiments of white hair-bands at sides of first three segments; no apical hair-patch; sixth segment depressed above, the projecting part obtusely bilobate, emarginate.

Victoria, 1900 (French; Froggatt coll., 63). A rather insignificant little species, resembling M. austeni, Okl., but much smaller, and without black hair on head and thorax.

Megachile henrici, Okl.—Melbourne, Victoria (Froggatt and French).

M. erythropyga, Sm., 3.—Melbourne, Victoria, January 20th, 1900 (French); Windsor, Victoria (French; Froggatt coll., 190).

M. chrysopyga, Sm.—Melbourne, Victoria (Froggatt); Bayswater, Victoria (French); Bendigo, Victoria, November 23rd, 1892 (Froggatt).

M. lucidiventris, Sm.—Windsor, Victoria (French).
M. macularis, D. T.—Nagambie, Victoria (French); Worialda, N.S.W., March 29th (Froggatt).
M. semilucens, Sm.—Wimmera, Victoria (Froggatt); Rutherglen, Victoria (French).
M. latipes, Sm.—Rutherglen, Victoria (French); South Australia (Lea, 10710; Froggatt coll., 209).
M. oculipes, Ckl. (possibly = male of onufrons, Sm.).—Manilla, N.S.W., male bred from nest (cell of the usual form, 12 mm. long and 6 wide), January 20th, 1902 (Froggatt, 162). Larger than the type (length about 10 mm.), with reddish eyes, but otherwise the same. Another male, from Nagambie, Victoria, 1909 (French) is 10 mm. long, and has green eyes.

NOTES AND OBSERVATIONS.

Society for the Promotion of Nature Reserves.—We have received the prospectus and appeal of the Society for the Promotion of Nature Reserves, and an extremely interesting document it is for naturalists in general and entomologists in particular. The objects of the Society are to collect and collate information as to areas of land in the United Kingdom which retain their primitive conditions, and contain rare and local species; to prepare a scheme showing which such areas should be secured and handed over to the National Trust, and thus safeguarded as national possessions against encroachment and destruction. Meanwhile, agreeing that one of the first results of success in this direction will be "to encourage the love of Nature study, and to educate public opinion to a better knowledge of the value of nature study," we may confidently look forward also to the exercise of more practical means than we have at present to rescue the rarer insects of the British fauna from extinction. And that the entomological aspect of the Nature Reserve will be carefully considered goes without saying, for among the many distinguished scientists comprising the committee we read the names of Professor E. B. Poulton, F.R.S., the Hon. N. C. Rothschild, Mr. E. G. B. Meade-Waldo, and Mr. W. H. St. Quintin. On the Continent not a few Governments have already done good work for the cause of natural history by enclosing favourable areas, and submitting them to an intelligent system of guardianship; the wholesale exportation of local lepidoptera and plants has been checked; and private owners have supplemented official effort by putting suitable land under Government control. A beginning has been made in England with Blakeney, a part of Wicken Fen, and the "Ruskin Reserve," near Oxford. But much more remains, and, as Dr. Chalmers Mitchell well put it in his address to the Zoological Section of the British Association at Dundee last year, it is only by the deliberate and conscious interference of man that the evil wrought by man in this respect has been, and can be in the future, arrested. The present headquarters of Cromwell Road, J. H. Fabre, Sir Edward T. Grant and the particulars to those subscription.—H.

The Entomologist.

Dr. David Sharp.

J. H. Fabre, an honorary member.

Entomological Society be chosen from among the members of the Society.

PROTOZOA named Ichneumon, communication to the Entomologist.—Claude.

It is of interest to observe that artists and closely allied Disease, also disc.

the genus Noseum: thousandth of the aumambula which lining the aline.

by repeated division, ultimately secret.

serve for the inter fertil.

The second Herpetomona, as is found in the a development, a small nucleus.

pathogenic agent, known as the the Ichneumon, that the organism single flagellum.

ing movements, reaches the hind parasite absorbs thickened wall of cysts or post-infected faces, and are ingested by a new host.

Is Tinea py 1851 described...