

tornus. Hind wings below buff, terminally shaded with brown; some scattered black irrorations. On fore wings vein 5 is from middle of discocellular, 6 and 7 from upper angle, 8 and 9 on long stalk from cell close to 10 and 11, which are free and not stalked as in typical *Gathynia*. The hind wings are toothed at veins 4, 6, and 7.

Expanse 21 mm.

*Hab.* Juan Vinas.

XLII.—*Descriptions and Records of Bees.*—LI.  
By T. D. A. COCKERELL, University of Colorado.

*Hylæoides waterhousei*, sp. n.

♀.—Length about  $13\frac{1}{2}$  mm.

A species with deep red markings, close to *H. concinnula*, Ckll., but pale area on clypeus entirely red, covering the whole of upper part of clypeus (but not extending beyond), and ending below as a broad lobe of colour in middle of clypeus, not reaching lower margin; scutellum and post-scutellum red except the narrow anterior border, which in the case of the scutellum is notched in the middle by the red; first abdominal segment with at least the basal half black; tegulæ very dark rufo-piceous. The broad red band on the third abdominal segment is greatly narrowed in the middle; ventral white band very well developed; prothorax above entirely and broadly red, but tubercles black.

Although this has a very strong superficial resemblance to the common *H. concinna* (Fab.), it is very distinct structurally by the very coarse deep punctures of the thorax and the more finely and shallowly but still very well punctured abdomen.

*Hab.* S. Australia (*Waterhouse*) (Nat. Mus. Victoria, 116).

Other specimens of *Hylæoides* from the Victoria Museum are all *H. concinna*, as follows:—(1) males, Raymond Isl., 247, 246; (2) females, Melbourne (*F. R. Spry*, 117); no loc., 248; Point Lonsdale, January (*I. Akershan*, 249).

*Euryglossa furcifera*, sp. n.

♀.—Length a little over 4 mm.

Bright chrome-yellow, marked with black; face broad, quite without dark markings; apical half of mandibles

ferruginous ; flagellum with greyish cross-bands (one to each joint) above ; a narrow black band across vertex, connecting ocelli, from which comes a narrow median black line, going less than halfway down front, while at the sides the band connects with the linear facial foveæ, which are also black, the whole making the form of a very broad three-pronged fork ; base of occiput black ; mesothorax largely orange, with no markings except a pair of very narrow dark lines leaving the anterior border and failing to reach the middle ; pleura entirely yellow ; upper side (area) of metathorax black, with a transverse yellow mark. Wings clear, stigma and nervures very pale yellowish ; lower side of first s.m. practically straight ; second s.m. fairly large, about as broad as high ; first r. n. entering *second* s.m. near base or joining first t.-c. ; upper side of second s.m. very little oblique. Legs yellow, the tibiæ with a more or less evident brown line behind, hind tarsi brown behind. Abdomen with about equally broad transverse bands of yellow and black ; venter yellow, without markings.

♂.—Length a little over 3 mm.

Six dark bands (instead of five) on abdomen, these dark brown, evanescent at margins ; lateral prongs of fork-like mark on head very short.

*Hab.* Purnong, near Murray River, S. Australia (*S. W. Fulton*). Nine specimens (Nat. Mus. Vict. 140, 234, 218, 139).

The type is a female. Apparently allied to *Euryglossina sulphurella*, but differing in the markings and venation. The facial foveæ bend and extend toward the ocelli above as in *sulphurella*. The b. n. does not seem to go to the t.-m., but joins the discoidal nervure so as to make an angle on the basad side.

Some species of *Euryglossa* having the same type of coloration as *E. furcifera* are much larger. *E. flavopicta*, Smith, has the yellow head, with black line enclosing the ocelli, but there is more dark colour on the thorax and abdomen, the general effect being very different. *E. euxantha*, Perk., also has the peculiar cephalic colour and markings, but the prevailing colour of the mesothorax is black.

*Euryglossa ridens*, sp. n.

♀.—Length slightly over  $4\frac{1}{2}$  mm.

Broad, the head very broad ; head dullish black, minutely tessellate, the broad front with a delicate median groove and a very few scattered punctures ; antennæ inserted below

middle of face, the rather thick flagellum pale reddish beneath except basally; clypeus brilliant chrome-yellow, broadly truncate (a little concave) above, with large rectangular lateral notches; eyes dark purplish; mandibles yellow; cheeks entirely dark; thorax pure black, brilliantly shining, almost without hair; tubercles bright yellow, with a black spot; under the microscope the thorax above has an extremely delicate tessellation, while the mesothorax and scutellum have a very few scattered punctures; tegulae ferruginous. Wings slightly reddish; the large stigma and the nervures dull ferruginous; lower side of first s.m. distinctly curved; second s.m. rather large, receiving first r.n. very near its base; no approach to *Pachyprosopis* venation. Legs very dark brown, anterior knees and anterior tibiae in front bright yellow. Abdomen broad and flat, shining dark reddish brown, the hind corners of segments 1 to 3 yellow; venter brown.

*Hab.* Blue Mts., N. S. Wales (*Taylor*; Froggatt coll. 156).

A quite unique species by its small size and the bright yellow clypeus. *E. sinapipes*, Ckll., has a yellow clypeus, but is otherwise quite a different bee. The specific name is suggested by the very broad mouth.

*Euryglossina sulphurella*, sp. n.

♀.—Length slightly over 4 mm.

Very pale sulphur-yellow, the head bright yellow, except the lower parts, the clypeus and adjacent parts, and the mandibles except the dark apices, being white; dark brown linear facial foveae, beginning near the level of the middle of the face, run very close to the orbital margin until they reach the top of the eye, when they curve across the vertex toward the outer ocelli, which they fail to reach by a space about equal to the diameter of an ocellus; eyes very pale reddish; antennae yellow, flagellum quite thick. Wings clear, with very pale nervures, not reaching to end of abdomen; b. n. robust, falling considerably short of t.-m., but the b. n. seems to end at the t.-m. and to be joined before its end by the slender discoidal nervure; stigma large; first r. n. joining first s.m. some distance from its end, the distance equal to about three-fifths the length of the first t.-c.; lower side of the long first s.m. straight; second s.m. small, joined by the second r. n. at its lower apical corner; lower side of second s.m. strongly developed; hind basitarsus long and slender, with a strong apical spur; very little pubescence, the abdomen above subapically with quite long finely

plumose hairs; legs creamy white; no black markings on thorax, legs, or abdomen.

♂.—Length less than 4 mm.

Like the female, but without the dark facial foveæ; hind tibiæ very long and slender.

*Hab.* Purnong, near Murray River, S. Australia (*S. W. Fulton*). Nine specimens from the National Museum of Victoria (143, 211, 144).

Entirely unique by the pale yellow colour, without dark markings. The type is a female. This appears to correspond, in the Australian fauna, to the yellow species of *Perdita* in the American, and probably, like those, it frequents yellow flowers.

*Euryglossina fultoni*, sp. n.

♀.—Length 3–4 mm.

Broad, black, with the usual broad face; moderately shining, with hardly any pubescence; labrum ferruginous, mandibles paler, with darkened tips; flagellum short and thick, rather dilute reddish brown above, very pale yellowish below; tubercles pellucid whitish; tegulæ hyaline, with a cream-coloured patch. Wings clear, brilliantly iridescent, the large stigma and nervures rufo-fuscous; b. n. very strongly arched; lower side of the long first s.m. nearly straight; first r. n. joining first s.m. some distance before end; second s.m. small, narrow, its upper side strongly oblique (the venation approaches that of *Pachyprosopis*). Legs black basally, but the knees and all the tibiæ and tarsi cream-colour, the hind tibiæ with a large black patch behind. Abdomen shining, without bands or markings. Under the microscope the mesothorax is minutely tessellated, with scattered punctures. The linear facial foveæ run parallel with the inner orbit, without any bent portion above. The tibiæ and tarsi in some specimens are bright yellow. Claws simple.

♂.—Length about  $2\frac{3}{4}$  mm.

Like the female, but face up to level of top of scape, labrum, mandibles, and a broad band on lower half of cheeks bright chrome-yellow; antennæ chrome-yellow; sides of prothorax broadly, as well as tubercles, creamy white; anterior part of pleura pale; legs yellow, the femora with dark markings; extreme apex of abdomen pale yellowish.

*Hab.* Purnong, near Murray R., S. Australia (*S. W. Fulton*). Sixteen females and one male (*Nat. Mus. Vict.*, 210, 228, 231, 141, 142, 229, 212). The type is a female.

This insect is intermediate between *Euryglossina* and *Pachyprosopis*, differing in no radical way from *P. flavicauda*, Ckll., although much smaller and with different details of coloration. The abdomen has nothing of the purplish lustre of *E. semipurpurea* (Ckll.) and *E. cockerelli*, Perk.

*Euryglossina xanthodonta*, sp. n.

♂.—Length about  $3\frac{1}{2}$  mm.

Bright yellow (altered to red by cyanide in type) and black, the black distributed as follows: vertex broadly (but with a square-cornered lobe of yellow in front of middle ocellus), mesothorax except in front broadly and more narrowly at sides (in front the yellow sends two large triangular tooth-like lobes into the black), metathorax above, and dorsal surface of abdomen except sides narrowly, declivity of first segment, and two transverse yellow bands, at the bases of the second and third segments; the face, legs, scutellum, and underside of thorax and abdomen are entirely yellow; flagellum short and thick, the joints broader than long; tegulæ hyaline. Wings clear, stigma and nervures red-brown; b. n. strongly arched, not appearing to reach t.-m.; lower side of first s.m. nearly straight; first r. n. entering apical corner of first s.m., and practically in a straight line with first t.-c.; second s.m. small and narrow, receiving second r. n. a little before its end; upper side of second s.m. oblique (approach to *Pachyprosopis* venation); facial foveæ long and linear, black, not much curved above, but ending about halfway between eye and lateral ocellus. Claws bidentate.

*Hab.* Purnong, near Murray River, S. Australia (S. W. Fulton). Nat. Mus. Vict. 223.

Quite unique by the minute size and peculiar coloration.

*Euryglossina chalcosoma*, sp. n.

♀.—Length a little over  $3\frac{1}{2}$  mm.

Head and thorax dark æneous, very minutely tessellate, the mesothorax with a system of evenly and closely placed microscopical punctures, joined by fine lines (a fine network with punctures where the lines intersect); front with slightly crimson tints; clypeus, supraclypeal area, mandibles (except tips), labrum, tubercles, and legs bright yellow (turned red by cyanide in the specimens described); head ordinary, face broad; flagellum short and thick, light reddish beneath; tegulæ pellucid. Wings clear, nervures and the large stigma dilute reddish sepia; lower side of first s.m. straight; first

r. n. joining first s.m. quite a long distance before end; second s.m. small and nearly square; marginal cell bulging below. Abdomen shining piceous, with the apex rather broadly yellow, the extreme lateral margins also yellow, broadening to cover the hind corners of the second and third segments.

♂.—Length about 3 mm.

Like the female, but face up to above middle of front and the antennæ entirely yellow; a very fine yellow line following orbits up to top of eyes; cheeks behind eyes very broadly yellow; sides and under surface of thorax, with sides and very broad anterior corners of mesothorax, all yellow; abdominal venter all yellow.

*Hab.* Croydon, Australia (Nat. Mus. Vict. 194). 3 ♀, 1 ♂ (the type is a ♀), collected by S. W. Fulton.

Quite unique by the æneous head and thorax and small size, the colour and markings closely resembling those of some species of *Perdita*.

*Euryglossina proctotrypoides*, sp. n.

♀.—Length about 4 mm.

Rather narrow and parallel-sided, with a peculiar thick oblong head, irregularly oval in lateral profile, the whole appearance suggesting a Proctotrypid; head and thorax black, without light markings, abdomen very dark obscure purplish; lower margin of clypeus reddish; mandibles lively castaneous subapically; antennæ dark, flagellum obscure reddish beneath; vertex and thoracic dorsum microscopically tessellate, with widely scattered extremely feeble punctures; femora and tibiæ dark brown or piceous, the anterior tibiæ dull yellow in front and behind; tarsi reddish brown, the anterior ones palest; claws simple. Wings clear, the nervures and very large stigma dilute reddish sepia; b. n. not appearing to reach t.-m.; lower side of first s.m. straight; first r. n. joining first s.m. some distance before end; second s.m. very broad, broader than high; no approach to *Pachyprosopis* venation.

*Hab.* Croydon, Australia (S. W. Fulton; Nat. Mus. Vict. 163).

A singular little species, allied to *Euryglossina purpusilla* (*Euryglossa perpusilla*, Ckll.), but differing in the shape of the head, colour of the legs, &c.

*Pachyprosopis saturnina*, sp. n.

♀.—Length 4–4½ mm.

Like *P. humeralis*, Ckll., but differing thus:—Scutellum with a large yellow cruciform mark, rather suggestive of the planet Saturn; face, legs, and underside of abdomen orange, though the patches at sides of mesothorax are clear yellow; lateral face-marks gradually tapering from clypeus to a very fine line which runs to top of eyes; scape slender (doubtless a sex-character); mesothorax with two fine, short, yellow antero-discal lines; abdomen with only one light band, that at apex of first segment. The mesothorax is microscopically tessellated, with rather numerous minute punctures; in *P. humeralis* it is quite the same.

Another specimen is not well coloured, but I think the scutellum would have been all yellow.

*Hab.* Purnong, near Murray River, S. Australia (*S. W. Fulton*; Nat. Mus. Vict. 225, 233).

This is probably not the undescribed female of *P. humeralis*, as it seems unlikely that that sex would have the large yellow scutellar mark wanting in the male.

*Halictus purnongensis*, sp. n.

♂.—Length 5 mm.

Head and thorax shining olive-green; abdomen piceous, with the first segment dark greenish, hind margins of segments broadly reddish subhyaline; head enormous, about as large as and much broader than thorax; face (especially the brassy-tinted supraclypeal area) shining, but front granular and dull; hair of head and thorax throughout thin and white; apical part of clypeus broadly cream-colour, with a crescentic depression; mandibles very large and long, scimitar-shaped, cream-colour except the sharply pointed ends and the reddened inner edge; cheeks broad, with a large prominent tooth below; antennæ rather long, the thick flagellum very strongly crenulated beneath; scape dark green; flagellum black above, broadly pale reddish fulvous below; middle flagellar joints about as long as wide; mesothorax and scutellum brilliantly shining, the punctures very fine and scattered; area of metathorax large, with fine radiating wrinkles, connected near the base by transverse wrinkles; tegulæ hyaline, tinged with testaceous. Wings clear hyaline, nervures and stigma rather pale reddish; b. n. very strongly arched; second s. m. receiving first r. n. very

near its end ; third s.m. short and high ; second r.n. and third t.-c. evanescent. Legs dark green basally, but broad apices of femora and all the tibiae and tarsi ferruginous, the hind tibiae pallid at base. Apical plate of abdomen transverse, broad, and short.

*Hab.* Purnong, near Murray River, S. Australia (S. W. Fulton).

Perfectly unique among the Australian species by the very large head, with toothed cheeks. It belongs to the subgenus *Chloralictus*.

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XLIII.—*Description of a new Cyprinid Fish from Singapore.*

By C. TATE REGAN, M.A.

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*Rasborigthys altior*, sp. n.

Depth of body 3 in the length, length of head 4. Diameter of eye 3 to  $3\frac{1}{2}$  in length of head, interorbital width  $2\frac{1}{2}$  to  $2\frac{2}{3}$ . Mouth very oblique ; lower jaw included ; maxillary ending below nostrils. Pharyngeal teeth hooked, compressed, triserial, 1.3.5-5.3.1. 36 to 38 scales in lateral line, 8 from origin of dorsal fin to lateral line, 4 from lateral line to base of pelvic fin. Dorsal 9-10, with 7 branched rays ; origin equidistant from eye and base of caudal ; first branched ray longest, shorter than head ; free edge straight or slightly convex. Anal 18-20 ; origin behind end of dorsal ; free edge straight or slightly emarginate. Pectoral  $\frac{3}{4}$  or  $\frac{4}{5}$  length of head, nearly or quite reaching the 8-rayed pelvics. Caudal forked. Caudal peduncle as long as deep. Olivaceous above, silvery on sides, with or without dark stripes along the series of scales.

Singapore.

Three specimens, 60 to 85 mm. in total length, the smallest received from Herr J. Paul Arnold, the two larger ones from Herr Hans Gaukel.

*R. helfrichii*, Bleek., from Borneo, the only other species of the genus, is more slender (depth  $4\frac{1}{2}$  in the length) and has smaller scales (55 in the lateral line).



Cockerell, Theodore D. A. 1913. "Descriptions and records of bees. LI." *The Annals and magazine of natural history; zoology, botany, and geology* 11, 387–394.

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