TWO NEW GENERA AND SPECIES OF ERYCIINE TACHINIDAE (DIPTERA) FROM AUSTRALIA

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Abstract

Two new genera and species of Tachinidae from New South Wales, Victoria and the Capital Territory are described and assigned to the tribe Erygiini. The characters of the Erygiini and the occurrence of the group in Australia are briefly discussed.

INTRODUCTION

The Erygiini has been recognised as a tribe, under this name, of higher goniine Tachinidae by van Emden (1954) and Sabrosky and Arnaud (1965), and some Australian forms have recently been assigned to the tribe for the first time by Crosskey (1966). It is probable that the group is polyphyletic, but it will be many years before the inter-relationships of this difficult miscellany of forms—for many of which there is no knowledge of immature stages or hosts—become clear: at the moment the Erygiini is in practice a convenient assemblage of Goniinae that cannot satisfactorily be fitted in any of the more distinctive tribes (Winthemiini, Sturmiini, Carceliini or Goniini). The Erygiini therefore lacks any very positive characters for tribal definition, and must perforce be defined largely by the negative converse of the characters defining the other tribes of Goniinae: its main features are therefore that the humeral callus has fewer than five strong setae, the barette is bare or almost bare, the hind tibia is irregularly bristled (i.e. without a close-set even antero-dorsal fringe), the vibrissae are usually level with the mouth-margin (several exceptions, of which *Metaphryno* gen.n. here described is one), the inner margin of the lower calypter usually curves away from the scutellum, the gena is wider than the profrons, the antennae are usually inserted well above the level of the eye-middle, and the ocellar setae are never reclinate.

The Erygiini as so defined, and as treated by van Emden (1954), Sabrosky and Arnaud (1965) and by me, is equivalent to Mesnil's (1952-1956) four groups Erythrocerina, Trypherina, Masicerina, and Baumhaueriina together. The Erygiini cannot be equated exactly with the tribes recognised by Townsend (1936, 1940, 1941), but it corresponds in the main to a combination of his Frontinini, Lydellini, Phrynoini and parts of Trypherini.

The Erygiini is best represented in the Holarctic regions and is more poorly represented in the Old World tropics (including Queensland). Only a small number of erygiine genera and species have been described from Australia, but undoubtedly many undescribed forms occur: this is true for instance of the subtribe Baumhaueriina, not previously recorded from Australia. Of this group (characterised in the female by the presence of outwardly-directed prevertical setae) I have seen at least three undescribed forms from Tasmania: more material of these is awaited before description.

Apart from the two new genera here described, the erygiine genera known to me to occur in Australia are: *Austrophryno* Townsend, *Eipogonoides* Curran, *Parabrachelia* Townsend (known only from two very old Macquart types in poor condition and possibly belonging elsewhere), *Phorocerostoma* Malloch, *Aplomya* Robineau-Desvoidy, and *Erythrocera* Robineau-Desvoidy. The last-named genus belongs in the subtribe Erythrocerina characterised by the wing venation in which the part of vein *M* from the *m-cu* cross-vein to the bend is conspicuously longer than the apical part of *M* from the bend to its end: this subtribe includes *Bactromyia* Brauer and Bergenstamm, but it should be noted that *Bactromyia crassiseta* Baranov, 1938, described from Queensland, does not belong in this genus (I am unable to assign it satisfactorily to any genus at present). The genus *Bactromyiella*

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Mesnil, described from Queensland and Fiji, was included in Erythrocerina (i.e. part of Eryciini) by Mesnil (1952) and I recently (Crosskey 1966) placed it also in Eryciini: future study will probably show that the affinities of *Bactromyiella* lie more with the Blondeliini than with the Eryciini, since the *pra* seta is not longer and usually shorter than the first *post ia* seta.

The genus *Phorocerostoma* Malloch is the only Australian eryciine in which the cell R_5 is long-petiolate, and is closely allied to *Cestonia* Rondani, a genus placed by Mesnil (1953) in his subtribe Trypherina.

The genera *Palia* Curran and *Paliana* Curran, both described from Queensland, are somewhat intermediate between Eryciini and Sturmiini, but on balance it appears best to assign them to the latter tribe: they are still known only from the very small amount of type-material.

Two described genera from the Pacific islands are assignable to Eryciini, *Myiofijia* Baranov from Fiji (belonging in the subtribe Erythrocerina), and *Neomedina* Malloch from Samoa: the latter genus is closely related to *Aneogmena* Brauer and Bergenstamm, which Mesnil (1952) associates with the sturmiines but which in my view is better assigned to Eryciini near the genus *Elodimyia* Mesnil. *Aneogmena* occurs from Ceylon through the Oriental Region to the Sunda Islands, New Guinea and New Hebrides but is not yet known from Queensland (though probably occurring there).

The new genera of Eryciini here described are from south-eastern Australia.

Tribe ERYCIINI

ERYCINAE Robineau-Desvoidy, 1830, *Mém. prés. div. Sav. Acad. Sci. Inst. Fr.* **2**: 142.

Metaphryno gen.n.

Head profile as in Figure 1. Parafacials bare. Eyes bare. Ocellar setae well developed. Facial ridges bare, except for a few fine setulae immediately above vibrissae. Vibrissae distinctly above mouth-margin. Occiput with irregular fine black setulae behind postocular row. Humeral callus with three setae of which middle one set very slightly in front of others, sometimes supernumerary fourth seta present. Presutural intra-alar seta absent. One posthumeral seta. Scutellum without lateral setae and with minute hair-like divergent apical setae (latter sometimes indistinct). Mesonotum and abdomen coated with thick pale pollinosity except on a pattern of dark spots. Abdominal T1+2 excavate to hind margin. All abdominal tergites without discal setae. Mid tibia with two *ad* setae. Hind tibia with two dorsal preapical setae. Basal node of vein R_{4+5} with a single setula (occasionally a minute hair in addition). Second costal sector bare ventrally. Male genitalia as in Figures 4 and 6.

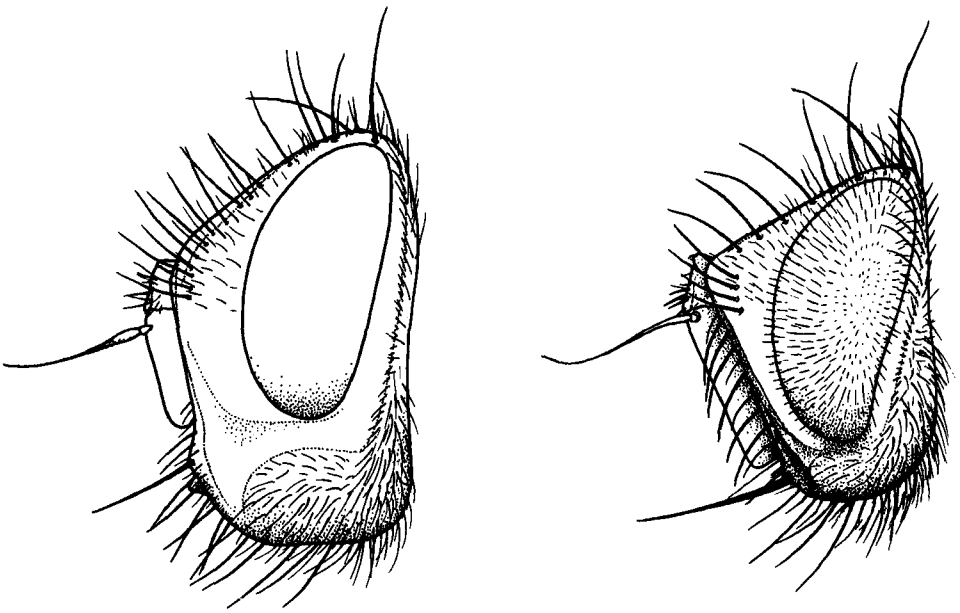
Type-species: *Metaphryno bella* sp.n.

Although there is a superficial resemblance between this new genus and the Sturmiini, especially in the head shape and the raised position of the vibrissae in relation to the mouth-margin, it seems more likely that the affinities of *Metaphryno* gen.n. are with the eryciine genera *Phryno* Robineau-Desvoidy and *Austrophryno* Townsend, especially as the shape of the lower calypter and the arrangement of bristles on the humeral callus are not of the sturmiine type but are typical of these and other genera of Eryciini. *Metaphryno* gen.n. may be distinguished from *Phryno* and *Austrophryno* by the following key:

1. Eyes hairy. Facial ridges very conspicuous in profile. Presutural intra-alar seta present. Basal node of vein R_{4+5} with 2-6 setulae, if two these strong and subequal. Thorax and abdomen without pattern of spots 2
   Eyes bare. Facial ridges not markedly showing in profile. No presutural intra-alar seta. Basal node of R_{4+5} with one long setula (occasionally a minute hair in addition). Mesonotum and abdomen thickly covered with pale pollinosity except on a pattern of small black spots .. .. **Metaphryno** gen.n.

2. Lateral scutellar setae absent. Apical scutellar setae very strong and crossed. Upper half of parafacial with stiff black hairs. Intermediate abdominal tergites without discal setae. [Tasmania and south-eastern Australia] .. .. **Austrophryno** Townsend, 1916
Lateral scutellar setae present. Apical scutellar setae undeveloped. Parafacials bare. At least one and usually both of intermediate abdominal tergites with discal setae. [Palaearctic Region] .. .. **Phryno** Robineau-Desvoidy, 1830

It should be noted here that, as I have established elsewhere (Crosskey, in press), *Archimera* Mesnil, 1954, is a synonym of *Austrophryno* through synonymy of the type-species. Mesnil (1954) placed *Archimera* in his Masicerina (i.e. part of Eryciini) and associated it with *Platymya* Robineau-Desvoidy, but the characters of *Archimera* = *Austrophryno* appear to ally it more closely, as Townsend's name suggests, with *Phryno*. The present association of *Metaphryno* gen.n. with these genera is more tentative, and the new genus is certainly more distinct from either *Phryno* or *Austrophryno* than these are from each other.



1. 2.

FIGS. 1, 2.—Head in profile: (1) *Metaphryno bella* sp.n.; (2) *Austronilea livida* sp.n.

Metaphryno bella sp.n. (Figs. 1, 3, 4, 6)

Holotype ♂: NEW SOUTH WALES: 3 mls. N.W. of Rules Point, 30.i.1964 (T. G. Campbell). In Australian National Insect Collection, C.S.I.R.O., Canberra.

Paratypes (in Australian National Insect Collection unless otherwise stated): NEW SOUTH WALES: 7 ♂, data as for holotype (2 in British Museum (Natural History), London); 1 ♂, Tinderys, 27.ii.1957 (E. F. Riek); 2 ♂, Kiandra, Alpine Creek, 28.ii.1963 (S. J. Paramonov); 2 ♂, Snowy Mtn. Highway, Alpine Creek, 2.ii.1965 (Z. Liepa) (one in British Museum); 1 ♂, Snowy Mts., Sawpit Creek, 17.ii.1963 (D. K. McAlpine) (Australian Museum, Sydney). VICTORIA: 6 ♂, 3 m. E. of Bright, 15.xii.1949 (S. J. Paramonov) (one in British Museum and one in U.S. National Museum, Washington); 1 ♂, 3 mls. East of Bright, 15.xii.1949 (T. G. Campbell); 1 ♂, Millgrove, 10.ii.1929 (F. E. Wilson).

Male

Head.—Head profile as in Figure 1, antennal insertions a little above eye middle level and antennal axis a little longer than vibrissal axis. Eyes bare. Face, parafacials, extreme lower ends of parafrontals, genae and postgenal regions reddish-orange or brownish-orange in ground colour, with thin yellow pollinosity on parafacials and a patch of whitish or silvery pollinosity at lower ends of parafrontals; genal dilation non-pollinose and rather shining. Interfrontal area orange-yellow to rich brownish-red, usually darkening posteriorly; parafrontals with yellowish to dark greyish-brown ground colour and indistinct yellowish to golden pollinosity, sometimes a little shining. Vertex, ocellar triangle and cerebrale blackish-brown; upper occiput with dark brownish-yellow to dark brown ground colour and evenly yellowish pollinose; postorbits thickly yellow to golden-orange pollinose, sometimes with dark ground colour. Interfrontal area broad, about twice as wide at mid point as a parafrontal. Vertex in dorsal view 0.28-0.31 of head-width (0.29 in holotype). Gena 0.38-0.42 of eye-height (0.40 in holotype). Uppermost hairs of postocular row long fine and curved, upper occiput with an irregular row of fine black setulae. Inner vertical setae not strong, outer vertical setae undeveloped; ocellar setae strong. Frons with 10-14 pairs of inclinate frontal setae, rows slightly irregular, tips of frontal setae cruciate or meeting; lowest pair of frontals inserted just above level of apex of second antennal segment. Three or four pairs of orbital setae, suberect and forming a continuous row with the frontals; uppermost pair of orbitals stronger than others, set closer to eye and distinctly reclinate. Parafrontals without proclinate orbital setae; parafrontal hair black, long fine and sparse. Parafacials bare, at most with one or two minute hairs near lowest frontal seta. Facial ridges mostly bare, a few setulae on lowest quarter or third above vibrissae; vibrissae strong and crossed, inserted well above mouth-margin; peristomal setae moderately strong. Genal hair long and fine, black, some hair rather strong near peristomal setae; hair of postbuccae fine and black, hair merging to yellow or pale golden-orange on back of head. Antennae orange; third segment 2.4-3.0 times as long as second segment (2.6 times in holotype) and falling short of mouth-margin by about two-thirds of its length; arista bare, yellow or orange basally and black on slender part, basal aristal segments not elongate, arista thickened only at base. Palpi fully developed, yellow. Proboscis short, mentum yellow-brown to dark brown.

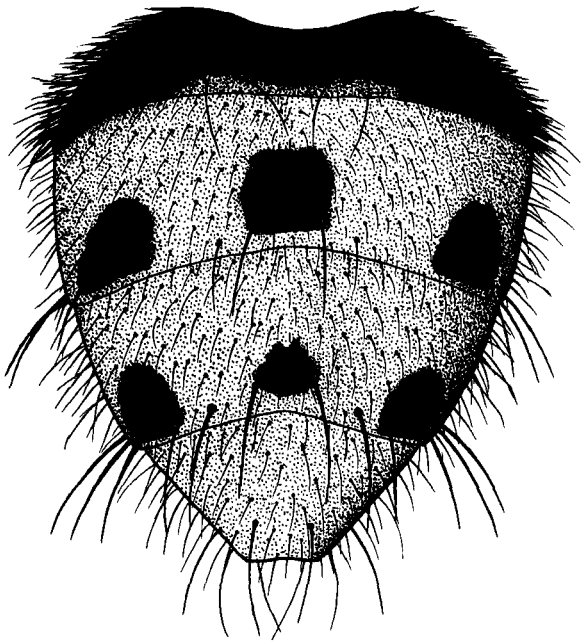
Thorax.—Dorsum with thick covering of pale pollinosity obscuring most of dark mahogany-brown or blackish ground colour; the pollinosity pale yellowish-grey or slightly greenish-grey, covering humeral calli, notopleura, anterior parts of postalar calli, all of prescutum except for a pair of black rounded spots antero-laterally (between *ph* seta and *prst dc* setae) and indefinite blackish area antero-medially, and most of scutum except for a large subquadrate black prescutellar patch and less distinct brown areas over supra-alar setae. Paired black spots on prescutum giving mesonotum a bimaculate appearance. Scutellum dark mahogany-brown, without pollinosity. Pleural regions brownish-orange with traces of whitish or pale yellowish pollinosity, indefinite except on upper part of sternopleuron. All thoracic hair black; hair very fine and erect on mesonotum, very sparse or almost absent on notopleuron; barette bare or with a few hairs anteriorly; propleuron bare; hair of scutellum long and rather strong, suberect. Chaetotaxy: one strong and one weaker propleural and prostigmatic setae; prosternum setulose, several long strong downward setulae on each side; humeral callus with three setae of which middle one set a little more forward than others, sometimes a supernumerary fourth seta in front of and between inner two of the basal three or mesad of the line of three; one *ph* seta (in one of twenty-two specimens seen two posthumeral setae present); normally 3+3 *acr* setae, sometimes one missing or a supernumerary present on one or both sides; 3+4 *dc* setae, sometimes a supernumerary fourth present anteriorly, rarely one missing posteriorly; *prst ia* seta absent, most often two *post ia* but frequently three *post ia* setae, *ia* complement therefore 0+2 (3); *pra* seta long, usually a little longer than first *post dc* seta; third *sa* seta longer than *pra* and subequal to second *sa* seta; three sternopleural setae arranged 2+1; scutellum with only two pairs of strong setae (basals and subapicals, of which former a little smaller than latter), lateral setae absent and apical setae represented if present at all by a pair of long strong hairs usually at a higher level than subapical setae. All thoracic bristles rather long.

Wings.—Hyaline, membrane tinged faintly yellow basally, veins yellowish. Basal node of R_{4+5} with one long setula dorsally (sometimes also a supernumerary hair) and with or without a single setula ventrally, veins otherwise bare; second costal sector bare ventrally. Third costal sector about 2.1 times as long as second sector; bend of *M* strongly curved but without appendix or fold, nearer to wing margin than to cross-vein *m-cu*; apical section of *M* much longer than part from *m-cu* to bend; distance on vein *M* from *r-m* to *m-cu* twice that from *m-cu* to bend; cell R_5 open; sixth vein not reaching wing margin. Calyptrae semi-translucent smoky yellowish-brown; halteres reddish-yellow. Inner apical angle of lower calypter rounded, not abutting against scutellum.

Legs.—Entirely reddish-yellow or reddish-orange, even tarsi not darker than rest, at most darker red-brown traces on femora. Fore tibia with one or two *p* setae (one in holotype). Mid tibia with two *ad* setae, a submedian *v* seta and two *p* setae. Hind coxa bare on postero-dorsal margin; hind tibia with two or three strong *ad* setae interspersed with a row of irregular smaller *ad* setae, with two strong *pd* setae, one or two small *av* setae and two dorsal preapical setae. All claws moderately long.

Abdomen.—Ovate-conical, last visible tergite (T5) slightly longer than T4, T1+2 excavate to hind margin. T1+2 dark mahogany-brown to blackish, except for narrow posterior marginal strip in about median third of thick pale greyish-yellow pollinosity, the pollinose strip slightly expanded at each end. Dorsum of T3-T5 very thickly and uniformly pale greyish-yellow or very pale grey (sometimes faint greenish-yellow tinge) pollinose, except for following pattern of dark brown or black spots: T3 and T4 each with a subquadrate or subtriangular spot and a pair of smaller sublateral spots (Fig. 3), the spots separated from hind margins of the tergites by narrow pollinose strips, the median spots of T4 smaller than that of T3 and usually less quadrate in shape (sometimes irregular). Thick pale pollinosity of dorsum fading out on sides of abdomen and venter with only thin traces of pollinosity over brownish-orange ground colour; concealed sternites and extreme edges of tergites ventrally dark brown. T1+2 and T3 each with a pair of strong median marginal setae, those of T1+2 standing on front edge of pollinose strip, those of T3 standing on posterior corners of median spot; T3 sometimes with a weak or strong supernumerary median marginal seta on one or both sides of the normal pair; T4 with transverse row of very strong marginal setae middle pair of which stand on hind corners of median dark spot, sometimes a little forward of the others; marginal setae of T5 very weak, sometimes little more than long erect hairs; dorsal hair of T3 and T4 fine and even, semi-recumbent laterally and erect medially; dorsal hair of T5 very sparse but very long and fine; all tergites without discal setae. Venter without dense hair-patches. Lateral lobe of sternite 5 with a tuft of several long strong hairs. ♂ hypopygium as in Figures 4 and 6; paralobes and mesolobes with fine hair only, former short and broad and much shorter than mesolobes, latter slightly dilated and rounded in profile.

Measurements.—Body length 9.9 mm (range 9.2-10.6 mm), wing length 9.4 mm (range 8.7-9.8 mm) [10 specimens].



3.

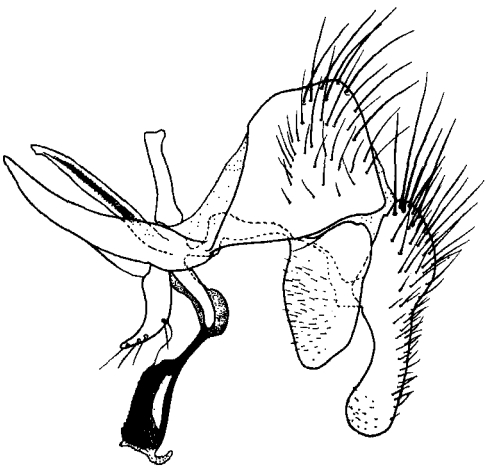
FIG. 3.—Abdomen of *Metaphryno bella* sp.n., showing pattern of black spots and thickly pollinose pale areas.

Female

Unknown. Probably with thoracic and abdominal pattern similar to the male and with one pair of more strongly isolated reclinate orbital setae.

Comments

Metaphryno bella sp.n. is a beautiful and unmistakable species immediately recognisable by the very unusual patterning of black spots on the abdomen and prescutum, the dark spots being formed by non-pollinose 'islands' surrounded by the thickly and evenly pale pollinose areas. Such an arrangement of pattern is rare in higher Tachinidae, though it occurs for instance on the abdomen in the Western Australian sturmiine genus *Arrhenomyza* Malloch and elsewhere in the calyptrate flies is found in the genus *Amphibolia* Macquart (Tachinidae) and in the ameniine fly *Formosiomima nigromaculata* (Malloch). It is notable that this type of pattern appears to crop up only in unrelated forms in Australia, for I know of no Tachinidae from outside the Australian continent in which it occurs.



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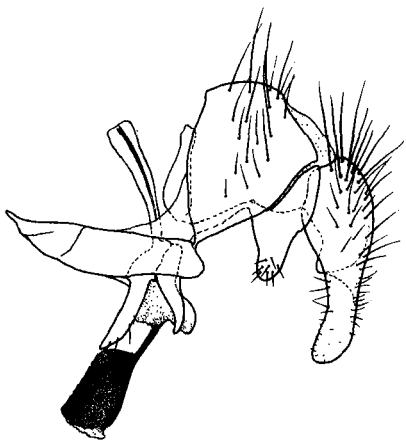


5.

FIGS. 4, 5.—Male hypopygium in profile: (4) *Metaphryno bella* sp.n.; (5) *Austronilea livida* sp.n.

Austronilea gen.n.

Head profile as in Figure 2. Parafacials bare. Eyes densely haired. Ocellar setae strong. Facial ridges strongly bristled. Vibrissae level with mouth-margin. Occiput with black setulae. One pair of reclinate orbital setae. Interfrontal area parallel-sided. Arista thickened on less than basal half. Humeral callus with four setae, a straight basal line of three and one set forward. Apical scutellar setae absent. Abdominal T1+2 excavate to hind margin. Abdominal tergites with discal setae. Mid tibia with two *ad* setae. Hind tibia with two dorsal preapical setae. Basal node of R_{4+5} with one strong setula (sometimes also a small supernumerary hair). Second costal sector bare ventrally. Male genitalia as in Figures 5 and 7.

Type-species: *Austronilea livida* sp.n.

Austronilea gen.n. fits best in the *Platymya* R.-D. group of eryciine genera (the Platymyiariae of Mesnil, 1953: 295) characterised by the combination of T1+2 excavate to hind margin, humeral callus with a straight basal line of three setae, the apical scutellar setae horizontal or absent (i.e. not directed strongly upwards as in the Phryxariae and Lydellariae of Mesnil, *loc.cit.*), and only one definite pair of reclinate orbital setae. Within this group, *Austronilea* gen.n. appears to be closest to the European genus *Nilea* Robineau-Desvoidy, agreeing with this genus in having black setulae on the upper occiput, two dorsal preapical setae on the hind tibiae,

and the facial ridges with very strong downcurved bristles interspersed with smaller setulae up their length. However *Austronilea* differs from *Nilea* in the complete absence of apical scutellar setae (these very strong, horizontal and crossed in *Nilea*), in the parallel-sided interfrontal area (divergent posteriorly in *Nilea*), and in possessing only a single strong setula on the basal node of R_{4+5} (two or three strong node setulae in *Nilea*), and in view of these characters, together with the distribution, it is best to treat *Austronilea* as a distinct genus.

Austronilea livida sp.n. (Figs. 2, 5, 7)

[specific name alludes to bluish-black colour to naked eye]

Holotype ♂: AUSTRALIAN CAPITAL TERRITORY: Black Mt., 25.xi.1959 (I.F.B. Common). In Australian National Insect Collection, C.S.I.R.O., Canberra.

Paratypes: AUSTRALIAN CAPITAL TERRITORY: 21 ♂, 25 ♀, Black Mt., 2.xi.—13.xii.1959 (I. F. B. Common); 1 ♂, Black Mt., 23.x.1960 (I. F. B. Common); 1 ♂, Black Mt., 17.xii.1964 (I. F. B. Common); 2 ♀, Black Mt., 23.xii.1964 (I. F. B. Common). Paratypes in Australian National Insect Collection (14 ♂, 18 ♀), British Museum (Natural History) (8 ♂, 8 ♀) and United States National Museum (1 ♂, 1 ♀).

Holotype and all paratype material obtained from light trap and so labelled.

Male

Head.—Head profile as in Figure 2, antennal insertions well above level of eye middle, profrons very prominent and antennal axis about 1.6 times as long as vibrissal axis. Eyes densely long haired. Ground colour of head mainly blackish, traces of a bluish tinge on upper occiput and genal dilation, ground colour reddish-brown around genal dilation and somewhat yellowish on epistome; interfrontal area brownish-black; frontal and facial regions with thin silvery-greyish or yellowish-grey pollinosity, pollen sometimes distincly pale yellow on parafrontals and face; pollinosity thin on occipital region and genal dilation, these areas appearing sub-shining in some lights. Interfrontal area narrow and parallel-sided, at mid point about equal in width to parafrontal. Whole frons rather narrow, vertex in dorsal view 0.22-0.23 of head-width (0.22 in holotype). Gena 0.19-0.23 of eye-height (0.21 in holotype). Uppermost hairs of postocular row long and fine, upper occiput with irregular black setulae. Inner vertical setae long and rather fine; outer vertical setae fine, weak and hair-like, scarcely distinguishable from uppermost setulae of postocular row; ocellar setae long and strong. Frontal setae in about 8-10 inclinate pairs, upper ones long and rather fine, cruciate or meeting, usually one or two pairs of very fine uppermost pairs that are suberect and immediately precede the orbital setae, sometimes an irregular duplicated row of frontals opposite base of antenna. One pair of long strong orbital setae, distinctly longer and stronger than uppermost frontals, but only weakly reclinate and set almost in line with the frontal rows, sometimes not conspicuously distinguishable from the erect uppermost frontals; the single pair of orbital setae sometimes accompanied by one or a pair of small fine supernumeraries. Parafrontals without proclinate orbital setae; parafrontal hair very fine, black and sparse, suberect, the hair near the vertex longer and very fine and erect. Parafacials bare, much narrower than third antennal segment. Facial ridges very strongly bristled along their length with a mixture of strong downwardly-directed setae and finer downcurved hairs; vibrissae long and strong, about level with mouth-margin (which is curved forward from face but not visible in profile); only a few strong peristomal setae. Genal hair long and fine, black, stronger near peristomal setae; hair of postbuccae fine and black; soft hair of back of head yellowish-white. Antennae black, brownish at extreme end of second segment, first segment projecting slightly upwards in profile; third segment heavy, a little broader than second segment and 3.8-4.6 times as long as second segment (4.2 times as long in holotype); arista bare (micropubescent under high power), thickened only on about basal third, second aristal segment about twice as long as broad and first aristal segment not elongate; antennae falling short of mouth-margin by about one-sixth of length of third segment. Palpi fully developed, yellow darkening to brownish at base. Proboscis short, mentum brownish-black.

Thorax.—Ground colour entirely blackish, on the mesonotum with a slightly metallic bluish or even dark greenish tinge, dorsum appearing bluish-black to naked eye; sides and dorsum with thin whitish pollinosity, that on prescutum and scutum only noticeable when viewed from behind. Viewed from behind mesonotum showing two pairs of very fine blackish vittae, no median vitta, the sublateral vittae linear and the lateral vittae on the prescutum subtriangular. All thoracic hair black; hair of mesonotum fine and erect, moderately long; barette bare; propleuron bare; hair of scutellum sparse,

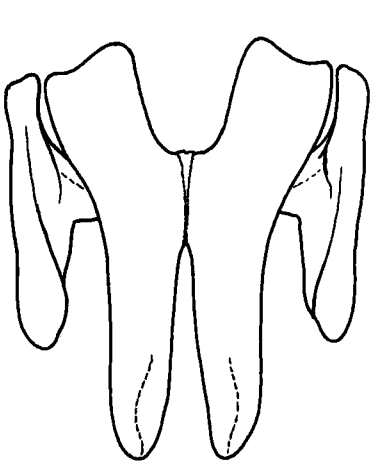
moderately stiff and long erect but not at all spiniform. Chaetotaxy: one strong and one weak propleural seta; one very strong prostigmatic seta; prosternum setulose; humeral callus with three basal setae in straight line and a fourth seta set forwards in front of middle one of basal line, sometimes a feebly developed fifth seta or stronger than normal hair; two *ph* setae; 3+3 *acr* setae; 3+4 *dc* setae; 1+3 *ia* setae; *pra* seta long and strong, a little smaller than third *sa* seta; second *sa* seta enormous, when wings closed reaching beyond basal node of R_{4+5}; three sternopleural setae arranged 2+1; scutellum with long strong basal and subapical setae, former a little smaller than latter, with one pair of lateral setae that are smaller than the basals, and with one pair of preapical setae, apical scutellar setae entirely absent. All thoracic bristling rather long and fine for its length.

Wings.—Clear hyaline. Basal node of R_{4+5} with one long setula above and below, sometimes accompanied by a second small hair, veins otherwise bare; second costal sector bare ventrally. Third costal sector 2.5-3.2 times as long as second sector (2.8 times in holotype); bend of vein *M* strongly and sharply angulate but without appendix, slightly nearer wing margin than *m-cu*; apical part of *M* from bend to apex much longer than part from *m-cu* to bend; distance on *M* from *r-m* to *m-cu* about twice that between *m-cu* and bend; cell R_5 open; sixth vein not nearly reaching wing margin. Calyptrae whitish or slightly yellowish; halteres yellowish-brown. Inner apical angle of lower calypter rounded, not abutting against scutellum.

Legs.—Black. Fore tibia with two *p* setae. Mid tibia with two *ad* setae (proximal one sometimes small and inconspicuous), a submedian *v* seta and two *p* setae. Hind coxa bare on postero-dorsal margin; hind tibia with two strong *ad* setae interspersed with a sparse fringe of smaller irregular *ad* setae, with two strong *pd* setae, a small *av* seta and sometimes a smaller more basal *av* setula in addition, and two *d* preapical setae. Claws long.

Abdomen.—T1+2 excavate to hind margin, T5 not elongate and about two-thirds as long as T4. Black with dark bluish or brassy-greenish reflections, appearing slightly metallic bluish-black to naked eye; tergites with rather even covering of thin inconspicuous greyish pollinosity, T3 and T4 with narrow median black vitta visible in some lights. T1+2 without marginal setae; T3 with a pair of long strong marginal setae, sometimes accompanied by one or two much weaker erect marginals; T4 with usual transverse row of very long strong marginal setae; T5 with strong erect discal setae as strong as marginals; T3 and T4 each with a pair of very long strong median discal setae, sometimes accompanied by a second pair of strong discals preceding the main pair; hair of T3 and T4 fine and curved, semi-erect, short and rather close anteriorly on T3 but long and sparse on T4; T5 with a few fine erect hairs among the strong discals. ♂ hypopygium as in Figs. 5 and 7; paralobes and mesolobes with fine hair only, former very small and subtriangular in profile and much shorter than mesolobes.

Measurements.—Body length 6.2 mm (range 5.3-6.9 mm), wing length 5.2 mm (range 4.4-6.0 mm) [10 specimens].



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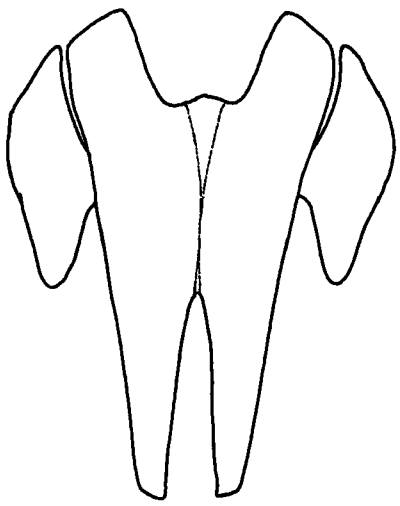

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FIGS. 6, 7.—Posterior view of mesolobes and paralobes of male hypopygium (hairs omitted): (6) *Metaphryno bella* sp.n.; (7) *Austronilea livida* sp.n.

Female

Generally like the ♂ but differing as follows: head with usual pair of strong proclinate orbital setae and with strong outer vertical setae; only about 5-7 pairs of frontal setae of which uppermost pair usually very weak and erect, quite distinct from the single pair of strong reclinate orbital setae; parafrontals rather wide and at mid point distinctly broader than interfrontal area; vertex 0.28-0.31 of head-width; ground colour of facial regions more distinctly yellowish than in ♂ and parafrontals more thickly silvery-grey pollinose. Antennae orange except for about apical half of third segment which is blackish-brown, dark colour of third segment usually extending upwards on front edge; antennae shorter than in ♂, third segment 3.0-3.9 times as long as second segment and falling short of mouth-margin by about a quarter of its length. Hind tibia with few *ad* setae, only about two or three in addition to the two strong ones. Abdomen more distinctly metallic than in ♂, not more than one pair of discal setae on each intermediate tergite, hair of these tergites all recumbent. *Measurements:* body length 5.6 mm (range 4.7-6.3 mm), wing length 5.0 mm (range 4.4-5.5 mm) [10 specimens].

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