

NEW GENERA AND SPECIES OF AUSTRALIAN
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The Muscoidea of all the principal regions of the earth have been catalogued, after a fashion, more or less completely, except those of Australia and Tasmania, which still stand without any published list whatever. The writer has recently prepared a complete synonymical catalogue of the Australian muscoid fauna, including that of Tasmania, in the course of which he has found it advisable to erect genera for certain described forms whose characters are sufficiently clearly recorded to allow of such action, credit being due to Bräuer and Austen for elucidating the several types of Macquart and Walker concerned. These genera are presented in the present paper, together with descriptions of a few additional genera for new forms represented in the U. S. National Museum collection.

Paracalliphora, new genus.

Genotype, *Calliphora oceanica* R. D., 1830, Myod., 438, Port Jackson and Timor (Brazil in error).

Differs from *Musca* (Calliphora) as follows: Epistoma more produced, not so constricted by the vibrissal angles. Ocellar bristles wanting in male, weak or vestigial in female. Cheeks and front both averaging narrower. Scutellum with only two strong marginal pairs of macrochætæ besides the apical pair. Abdomen scarcely broader than the thorax, much less thickly hairy. (Nine specimens: 4, Sydney, H. Gurney; 2, Reedy Creek, N.S.W., maggots from sheep; 3, Australia, Koebele, No. 483).

Calliphora tibialis (1st) Mcq., 1846, Dipt. Exot. Suppl. I, 195, Tasmania and Australia, belongs to this genus. Brauer (Sitz. Ak. Wiss. CVIII, 524) says: "Gehört mit *M. stygia* F. zu *Pollenia villosa* R. D." This would seem to be wrong, as specimens mentioned below in U. S. N. M. coll. agree fairly with Macquart's description and are congeneric with *oceanica*. They bear a strong superficial resemblance to *villosa*, but lack the fulvous hair of abdomen. (Three spms.: Croydon, N. S. W., W. W. Froggatt).

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Calliphora rufipes Mcq., 1843, Dipt. Exot. II (3), 286, Suppl. II, 99, Java and Tasmania, also appears to belong here, but I have no specimens and can only judge by comparing the description with material of *oceanica*, to which it seems extremely close. Brauer (Sitz. Ak. Wiss. CVIII, 526) says that it equals *Musca stygia* F. (*villosa* R. D.), but this seems doubtful since Macquart says "caerulea * * * abdomen bleu." It is also rather too small (6 mm.).

Tricyclopsis, new genus.

Genotype, *Rhynchomyia dubia* Mcq., 1855, Dipt. Exot. Suppl. V, 129-30, Adelaide. Brauer, Sitz. Ak. Wiss. CVIII, 514.

Near *Tricyclea* Wulp, but the third vein is bare. Facialia ciliate to above middle of face. Facial carina absent. Arista long-plumose above and below. Parafacialia with short bristly hairs. Third antennal joint three or four times as long as second. Palpi clubshaped. Epistoma strongly produced. Antennæ two-thirds as long as face.

Gerotachina, new genus.

Genotype, *Tachina obtusa* Walker, 1856, Dipt. Saund., 274-5, New South Wales. Austen, Ann. Mag. N. H. ser. 7, XIX, 330-1 (Syn. *Echinomyia stolidia* Wlk., 1858, Trans. Ent. Soc. London, n. s. IV, 195-6, male).

Differs from *Microtropesa* Mcq. as follows: Third antennal joint of female distinctly shorter than the second; that of male not longer than the second, or but slightly longer; in both sexes the third joint is convex on upper border. Arista short and stout. Row of six to eight small admedian spinelike macrochaetae on hind margin of second abdominal segment. Agrees with *Microtropesa* in all other characters given by Walker and Austen.

Tasmaniomyia, new genus.

Genotype, *Masicera viridiventris* (1st) Mcq., 1847, Dipt. Exot. Suppl. II, 84-5, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 336-7. (Syn. *Masicera viridiventris* 2d Mcq., 1851, Dipt. Exot. Suppl. IV (2), 163-4, female, locality Egypt in error).

Differs from *Microtropesa* Mcq. as follows: Parafacials bare, only with some hairs above. Facial carina narrow, sunken, not easily visible from in front. No ocellar bristles. Male claws long and slender, female claws short. Vertex in female as wide as one eye, in male narrower. Several rows of bristles on parafrontals in both sexes, but orbitals apparently absent in female as well as male. Abdomen of female flattened and pointed, that of male more oval; male hypopygium small, not directed forward. Front prominent, face receding, epistoma not prominent. Third antennal joint over twice to three times as long as second. Hind cross-vein sinuate, at two-thirds distance between small cross-vein and cubitus.

Acephana, new genus.

Genotype, *Masicera rubrifrons* Mcq., 1847, Dipt. Exot. Suppl. II, 85, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 339-40.

Differs from *Microtropesa* Mcq. as follows: Eyes hairy. Abdominal macrochaetae weak. Vibrissal angles somewhat convergent. Third antennal joint pointed on upper apical corner, like that of *Acemyia*. No ocellars. Female with two orbitals, and two verticals. Differs from *Goniophana* (equals *Tritaxys* Mcq.) in the hind tibiae not ciliate; and from *Gadiophana* in the short second arisal joint. Epistoma not very prominent. Arista thickened to middle. Hind cross-vein sinuate, at two-thirds distance between the small cross-vein and bend of fourth.

Opsophana, new genus.

Genotype, *Masicera ruffacies* Mcq., 1847, Dipt. Exot. Suppl. II, 87, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 340.

Differs from *Microtropesa* Mcq. as follows: No ocellar bristles. Eyes thickly hairy. Hind tibiae pectinate, with longer bristles below. Abdomen with only thin bristle-like macrochaetae. Male claws long. Epistoma much produced, the vibrissae situated high above oral margin. Related to *Goniophana* and *Acephana*. Front of male narrow. Frontals not descending below base of antennae. Third antennal joint about four times as long as the second. Apical cell ending near wing apex.

Chlorodexia, new genus.

Genotype, *Chlorodexia froggattii*, new species.

Differs from *Chlorotachina* Townsend (Proc. Biol. Soc. Washn. XXVIII, 21) as follows: Epistoma not nearly so produced, vibrissæ not farther above oral margin than length of second antennal joint. Cheeks wider in proportion to eye-height, ocellar and frontal bristles stronger. Pubescence of eyes longer. Cubitus well removed from hind margin of wing, with long and strong stump; hind cross-vein much nearer to cubitus. Abdominal macrochætæ longer and stronger, hairs of abdomen longer.

Chlorodexia froggattii, new species.

Length of body 11 mm.; of wing 11 mm. One male Merriwa, N. S. W. (W. W. Froggatt).

Metallic green, with a rather thick coat of silvery pollen over all. Facial plate and cheek grooves testaceous, the former with an ochre-gold pollen; frontalia dark brown, first two antennal joints dark rufous, third joint and arista brown, palpi dark brown. Parafrontals dull golden pollinose, extending to cheek grooves. Cheeks, occiput, thorax, scutellum and abdomen deep metallic green, more or less thickly pollinose, four heavy blackish vittæ on mesoscutum, abdomen showing more distinctly bright green, venter and pleuræ with less pollen. Legs dark brown, the femora blackish. Wings nearly clear. tegulæ tawny whitish.

Holotype—No. 19971 U. S. N. M.

Named in honour of Mr. W. W. Froggatt.

Protomiltogramma, new genus.

Genotype, *Protomiltogramma cincta*, new species.

Differs from *Miltogramma* as follows: Form more elongate, subcylindrical, the abdomen subconical. Vibrissæ strong, decussate, well differentiated from the peristomal bristles. Third antennal joint elongate, nearly three times as long as second. Cheeks of female about as wide as margin of epistoma, those of male much narrower. Scutellum enlarged, elongate and broad, especially so in female, with about five or six marginal pairs of macrochætæ besides the apical pair.

Protomiltogramma cincta, new species.

Length of body 7 to 10 mm.; of wing 5 to 6.5 mm. One male and one female, latter the larger; male from Hamilton, Upper North Pine, Queensland, Jany., 1890; female from Buderim Mt., Queensland, Dec., 1889 (Dept. of Mines and Agr.).

Face and cheeks luteous, with pale yellowish bloom; rather more silvery in male. Frontalia fulvous to fulvotestaceous, antennæ wholly light ochre-yellow, arista brown. Parafrontals golden. Thorax, pleuræ and scutellum with golden pollen, which is paler in front and on sides; the mesoscutum with three heavy brown vittæ plainly continued on scutellum. Abdomen dark brown or blackish, the second to fourth segments evenly bordered anteriorly with rather broad band of silvery, which may have a faint golden lustre. Legs black, femora pollinose on outside. Wings clear, tegulæ watery-white.

Holotype—No. 19972 U. S. N. M., female.

Froggattimyia, new genus.

Genotype, *Froggattimyia hirta*, new species.

Parafrontals and parafacials evenly covered with short black bristly hairs. Parafacials bulged, their planes not oblique but nearly transverse. Cheek grooves restricted. Cheeks of male swollen, one-half eye-height in width, evenly clothed with fine short black hairs; those of female with yellowish hairs. Female vertex a little less than width of one eye, that of male hardly over one-half eye-width. Female with two proclinate orbitals, male without. Ocellar bristles small. Front of male prominent; in profile, frontals descending only a little below base of antennæ face rather receding; facial plate elongate and narrow, only a little sunken, with rather sharp carina, vibrissæ situated well above oral margin, epistoma not prominent. Third antennal joint about two and one-half times second; palpi club-shaped. Apical pair of separated and strong scutellar bristles, and two lateral pairs. Abdominal macrochætæ vestigial in both sexes. Hind tibiæ very short-ciliate in both sexes. Apical cell ending well before wing tip, open; hind cross-vein sinuate, nearer to bend; latter rounded, without wrinkle or stump. Parafrontals slightly widening below.

where they are nearly as wide as facial depression. Frontalia broad in both sexes, narrowed posteriorly in male.

Named in honour of Mr. W. W. Froggatt.

Froggattimyia hirta, new species.

Length of body 7 to 10 mm.; of wing 6.75 to 8 mm. One male and one female, Mittagong, N. S. W., reared from sawfly larvæ, Feby., 1902 (W. W. Froggatt). The smaller measurements are of the female, whose abdomen is flexed.

Checks, face and front pale golden; frontalia fulvous to rufous; antennæ fulvous, third joint brown on upper edge at least distally. Mesoscutum dark; with thin pollinose coat in male leaving five vittæ, the middle one linear; thick coat of ashy pollen in female, leaving four vittæ and a faint suggestion of fifth. Scutellum dull luteous. Abdomen brownish, broadly dull fulvorufous on sides from first to fourth segments in male, narrowly so on first to third segments in female, ashy pollinose on dark parts and yellowish pollinose on lighter parts. Legs luteous to fulvous, femora of male blackish on base. Wings nearly clear. Tegulæ pale yellowish to whitish.

Holotype—No. 19973 U. S. N. M., male.

Protomeigenia, new genus.

Genotype—*Protomeigenia aurea*, new species.

Differs from *Froggattimyia* as follows: Parafacials bare, with some short bristly hairs above near lowest frontals. Vertex of female fully as wide as one eye, that of male about two-thirds same. Frontalia rather wider, front more prominent, face more receding. Parafacials rather broader, not bulged, their planes oblique; facial plate distinctly more sunken. Scutellum with a weak decussate apical pair of bristles in both sexes, and three lateral pairs of stronger ones. Cheek grooves not so restricted. Cheeks not so swollen.

Protomeigenia aurea, new species.

Length of body 7 to 9 mm.; of wing 6.5 to 7.5 mm. One male and one female, Manilla, N. S. W., reared from sawfly larvæ,

Jany. 10 and 13, 1902 (W. W. Froggatt). The female is the smaller and has the abdomen flexed.

Face, cheeks and front golden. Facial plate lighter, frontalia brownish-rufous. Antennæ bright rufous, the third joint blackish on upper edge and distally. Mesoscutum of both sexes with four vittæ, the inner pair linear. Scutellum fulvorufous. Abdomen of male with only the faintest suggestion of fulvous on sides, that of female without. Thorax and abdomen dark, quite thickly coated with silvery. Otherwise the colour description of preceding species applies exactly.

Holotype—No. 19974 U. S. N. M., male.

Austrophorocera, new genus.

Genotype, *Phorocera biserialis* Mcq., 1847, Dipt. Exot. Suppl. II, 89, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 347.

Allied to *Thrycolyga*. Facialia ciliate in two rows to base of antennæ. Apical scutellar bristles very fine, short, decussate. Male front rather broad, with two rows of bristles on each side. Frontals descending well below base of antennæ. Third antennal joint four times as long as the second, which is not elongate. Arista thickened on only basal half. Parafacials bare. Eyes hairy. No discal macrochætæ on intermediate segments of abdomen. Hind cross-vein sinuate, at two-thirds the distance between the small cross-vein and bend of fourth vein.

Pareupogona, new genus.

Genotype, *Masicera oblonga* Mcq., 1847, Dipt. Exot. Suppl. II, 86, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 338.

Runs to *Eupogona* in B.B.'s tables of Masiceratidæ, and to *Gædia* in their tables of Phoroceratidæ. Differs from *Eupogona* as follows: Male only. Second and third abdominal segments with discal macrochætæ. Legs elongate. Scutellum with strong separated pair of apical macrochætæ. Differs from *Gædia* in the open apical cell, which is very narrow at the end. Four postsuturals. Ocellars long, fine, proclinate. Facialia double-ciliate half way up. Parafacials with some short bristly hairs. Frontals strong, descending to middle of face. Vertex moderately wide. Eyes bare. Second

aristal joint short. Male claws long. Male with row of delicate bristles outside the frontals, together with short bristly hairs. Apical cross-vein straight, cubitus without stump. Vertical bristles strong. First abdominal segment with marginal macrochætæ. Costal spine small, third vein bristled only at base. Hind tibiæ not ciliate. Proboscis short and stout, palpi club-shaped. Third antennal joint of male enlarged, about three times as long as the second.

To this genus apparently belongs *Masicera simplex* Mcq., 1847. Dipt. Exot. Suppl. II, 87. Tasmania; Brauer, Sitz. Ak. Wiss. CVI. 337. The characters agree well, except that the male vertex is considerably narrower.

Eurygastropsis, new genus.

Genotype, *Eurigaster tasmaniae* Walker, 1858, Trans. Ent. Soc. London, n. s. IV, 197, Tasmania, Austen, Ann. Mag. N. H. ser. 7, XIX, 331.

Allied to *Frontina*. Eyes and parafacials hairy. Ocellar bristles wanting. Epistoma very prominent. Macrochætæ of abdomen only marginal. Male claws short. Male frontalia narrowed posteriorly. Frontal bristles descending one-third way down the face. Facialia ciliate practically their whole length. Antennæ reaching the epistoma, third joint six times as long as second. Arista thickened its whole length, hardly as long as third antennal joint. Cubitus obtuse, apical cross-vein slightly bent in, apical cell ending well before wing tip, hind cross-vein nearer to cubitus than to small cross-vein.

Mesembriomintho, new genus.

Genotype, *Mesembriomintho compressa*, new species.

Differs from *Mintho* as follows: Apical cell closed in margin, ending just before wing tip; cubitus close to hind margin of wing; costal spine atrophied. Front of male at vertex hardly over one-third width of one eye, that of female about one-half eye-width. Facialia bare. Arista plumose. Frontal bristles not descending below base of antennæ. Abdomen strongly compressed laterally

in both sexes. No median macrochætæ on first abdominal segment. Front claws of male longer than others.

Mesembriomintho compressa, new species.

Length of body 6.75 to 8.5 mm.; of wing 5.25 to 6.75 mm. One male and one female, Hamilton, Upper North Pine, Queensland, Jany. 1890 (Dept. of Mines and Agriculture). The female is the smaller.

Black, silvery pollinose. Frontalia and first two antennal joints dark brown; third joint dusky, with a silvery bloom. Palpi fulvous, obscurely infusate basally in female. Thorax silvery; with four linear vittæ, the middle ones stopping at suture; the outer ones obliterated anteriorly by a heavy broad vitta on each side, the two being confluent on anterior edge of thorax. Scutellum blackish. First abdominal segment, apical half of second and more than apical half of third shining black, not pollinose; rest of abdomen silvery-white pollinose. Legs blackish; femora brownish, silvery on outside, especially front pair. Wings lightly yellowish-smoky. Tegulæ watery-whitish.

Holotype—No. 19975 U. S. N. M., male.

Parabrachelia, new genus.

Genotype, *Masicera rufipes* Mcq., 1847, Dipt. Exot. Suppl. II, 86, Tasmania. Brauer, Sitz. Ak. Wiss. CVI, 339.

Differs from *Brachelia* as follows: Male only. Cheek's broad. Proboscis short, palpi slender. Apical cell closed in margin, cubitus without stump. Hind tibiæ not ciliate. Parafacials broad, bare. Ocellars present, proclinate. Male claws elongate. Abdominal macrochætæ discal and marginal. Apical cross-vein straight. Eyes thickly hairy. Epistoma prominently produced. Apical scutellar bristles erect, delicate, not decussate; the laterals very long and strong. Vertical bristles present. Second aristal joint short. First abdominal segment shortened, hypopygium small. Frontal bristles descending one-third way down the face. Third antennal joint three times the second, which is not elongate. Hind cross-vein only a little nearer to cubitus than to small cross-vein.

Austrophryno, new genus.

Genotype, *Tachina densa* Walker, 1856, Dipt. Saund., 288-9, New South Wales. Austen, Ann. Mag. N. H. ser. 7, XIX, 331 (Syn. *Tachina hebes* Wlk., l.c. 289, male, Tasmania).

Allied to *Phryno*. Facialia ciliate on lower one-third. Cheeks one-third eye-height. Antennæ inserted above eye-middle. Face broad. Frontal bristles descending to base of arista, with some small bristles below. Abdominal macrochaetæ only marginal. Epistoma only slightly prominent. Eyes hairy. Frontalia narrow. Antennæ about as long as face; the third joint slender in female and less than three times the second, in male about three times second. Arista much longer than third antennal joint, thickened at base. Cubitus hardly obtuse, apical cross-vein slightly bent in at base, hind cross-vein more or less bent inward.

Tracheomyia, new genus.

Genotype, *Oestrus macropi* Froggatt, 1913, Agric. Gazette N. S. W., July 2, 1913, pp. 567-8, pl. (5 figs.), Moramana Station, Walgett District, Australia. Maggot lives in the *windpipe* of the kangaroo. Fly unknown.

This appears to be an endemic Australian æstrid, and is the first one known. Its existence is thus of the greatest interest from the biogeographical point of view, as well as with relation to the phylogeny of muscoid stocks. The particular combination of larval characters is unique, as may be seen from the description and figures. The larval habitat in the host is likewise unique. The host itself is distinctively Australian. All these facts argue for the marked distinctness of the fly. The small boss of the anal stigmatic plates described by Froggatt would seem to be the false stigmatic opening or so-called button, and can hardly contain the spiracles which should lie outside the button in the field of the plates. It appears that the anal stigmata much resemble those of *Æstrus ovis*, but the armature is very distinct and approaches that of certain tachinids. Evidently this maggot does not belong to any of the described genera of Australian flies. It may be allied to *Pharyngomyia* or *Pharyngobolus*, judging from larval habit, but on larval characters it is nearer to *Æstrus* than to either of the genera named.