

A REMARKABLE NEW GENUS AND TWO NEW SPECIES  
OF EMPIDIDAE (TACHYDROMIINAE, DRAPETINI)  
FROM THE COOK ISLANDS

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*Abstract:* Two new species of Empididae belonging to 2 genera are described. *Austro-drapetis* n. gen. is remarkable in that it possesses certain features unique for this family.

No Empididae have previously been recorded from the Cook Is. and none are known from the Society Is. which have a similar fauna (Gressitt *et al.*, 1961: 24). The nearest the family has been recorded is Samoa (Collin, 1929). Two species are now described, one of which belongs to a remarkable new genus possessing certain features unique in the family Empididae.

Subfamily TACHYDROMIINAE

Tribe Drapetini

Genus *Austrodrapetis* Smith, n. gen.

*Head* closely attached to thorax without a distinct neck. Eyes microscopically pubescent and quite widely separated above antenna, but contiguous for a short distance below antennae. Jowls very narrow. Two pairs of strong ocellar bristles and a pair of vertical bristles present. Antenna (fig. 1a) not long, but segment 3 with a long arista; segment 2 with a distinct seta beneath. Proboscis short. *Thorax* short and broad, humeri not differentiated. Thoracic bristles rather well developed with a strong pair of dorsocentrals at middle of thorax, a strong humeral, 2 notopleurals and a postalar. *Abdomen* (fig. 1h) rather membranous and in ♂ with a lateral internal sub-spherical structure of unknown function on each side (fig. 1f, h) of abdominal segments 3 & 4. Male genitalia (fig. 1g, h) of the type usual to the subfamily. *Legs* rather short, fore legs of ♂ exhibiting secondary sexual modifications (fig. 1 b-d). *Wings* (fig. 1e) with r2+3 abbreviated and rs short and steeply inclined to join r1 vein being in line with basal section of r4+5 which is also steeply inclined from point where r-m intersects it. Cells R and M almost equal in length, cell R being slightly shorter. No crossvein h; vein a1 absent.

This genus is clearly close to *Drapetis* Meigen *sens. lat.* in having humeri undifferentiated, eyes microscopically pubescent and head closely set upon thorax. The short rs and bristle beneath antennal segment 2 put it closer to *Crossopalpus* Bigot than *Drapetis sens. str.*, but there are no distinct jowls below the eyes. *Elaphropeza* Macquart has strong bris-

tles on the shaft of the hind tibia. *Isodrapetis* Collin (1928: 6-7), described from New Zealand, is only known from the ♀, but the antennae resemble those of *Elaphropeza* in having a conical 3rd segment and wings with a distinct anal vein. *Austrodrapetis* may be distinguished from all these genera by the abbreviated vein r2+3 and the modified fore legs of the ♂.

***Austrodrapetis coxalis* Smith, n. sp.** Fig. 1 a-h.

♂. *Head* black, shining, but occiput brownish dusted, except on a narrow postocular band. Eyes microscopically pubescent, separated above. Frons, at level of anterior ocellus, about as wide as antennal segment 3 is deep, narrowing to about depth of antennal segment 2 above antennae. Eyes touching for a short distance below antennae. No distinct jowls below eyes. Two pairs of strong ocellar bristles, anterior pair slightly convergent, posterior pair widely divergent. A pair of outer vertical bristles. Antenna (fig. 1a) blackish; segment 2 with a strong bristle below; segment 3 with some distinct hairs below. Arista about 2× antennal length and microscopically pubescent. Proboscis short, yellow. Palpi very short, yellowish and with a terminal bristle. *Thorax* shining black. No acrostichal bristles, but a pair of long dorsocentrals just before middle of thorax, with a much weaker pair behind. A very long upswept humeral bristle; 2 equal notopleural bristles and a postalar bristle. Scutellum black, dulled by brownish dust and with a pair of strong divergent apical bristles. Pleurae dull blackish, but shining on sternopleurae and hypopleurae. *Abdomen* (fig. 1h) brownish, not strongly sclerotized and with short dark hairs. Segments 3 & 4 with a sub-spherical internal structure on each side (fig. 1h, f) These structures are of unknown function, but resemble large glands, though there is apparently no opening through the tergites, to the inner surface of which they are attached. Hypopygium (fig. 1h, g) blackish, clothed with brownish dust, but partly subshining. *Legs* yellowish; tibiae and tarsi more brownish yellow with hind femur, blackish on distal 2/3 and hind tibiae brownish on distal 1/2. Fore coxa (fig. 1b) with a blackish pigmented 'sensory' spot, on inner face below, which can be seen (under a high power) to be densely clothed with minute tuberculate spinules. Fore femur with 2 or 3 bristles beneath at base and some weak posteroventrals. Hind femur with slender anteroventral bristles. Fore tibia (fig. 1d) swollen distally and with a sinuate series of strong bristles ventrally to posteroventrally; rather dense fine hairs distally on inner face and a patch of fine hairs on innerface towards base. Remaining tibiae and all tarsi simple and short-haired. *Wing* (fig. 1e) greyish with membrane tinged brownish along-side brownish veins. Basal section of r4+5 raises steeply above crossvein r-m and is in line with the steeply inclined basal section rs of r2+3. Cell R a little shorter than cell M. A strong bristle at base of wing. Haltere black with yellow stem.

Length 1.5 mm.

♀. Similar to ♂, but fore coxa with patch of sensory spinules reduced and fore tibia simple. Abdomen mostly fleshy with penultimate segment sclerotized and blackish and lacking the sub-spherical structures in abdominal segments 3 & 4.

Holotype ♂ (BISHOP 3609); paratypes 9 ♂♂, 5 ♀♀, Cook Islands, Akaiami, Aitutaki, III.1955, N. L. H. Krauss. In Bishop Museum, Honolulu except for 2 ♂♂, ♀ paratypes retained in British Museum (Nat. Hist.), London.

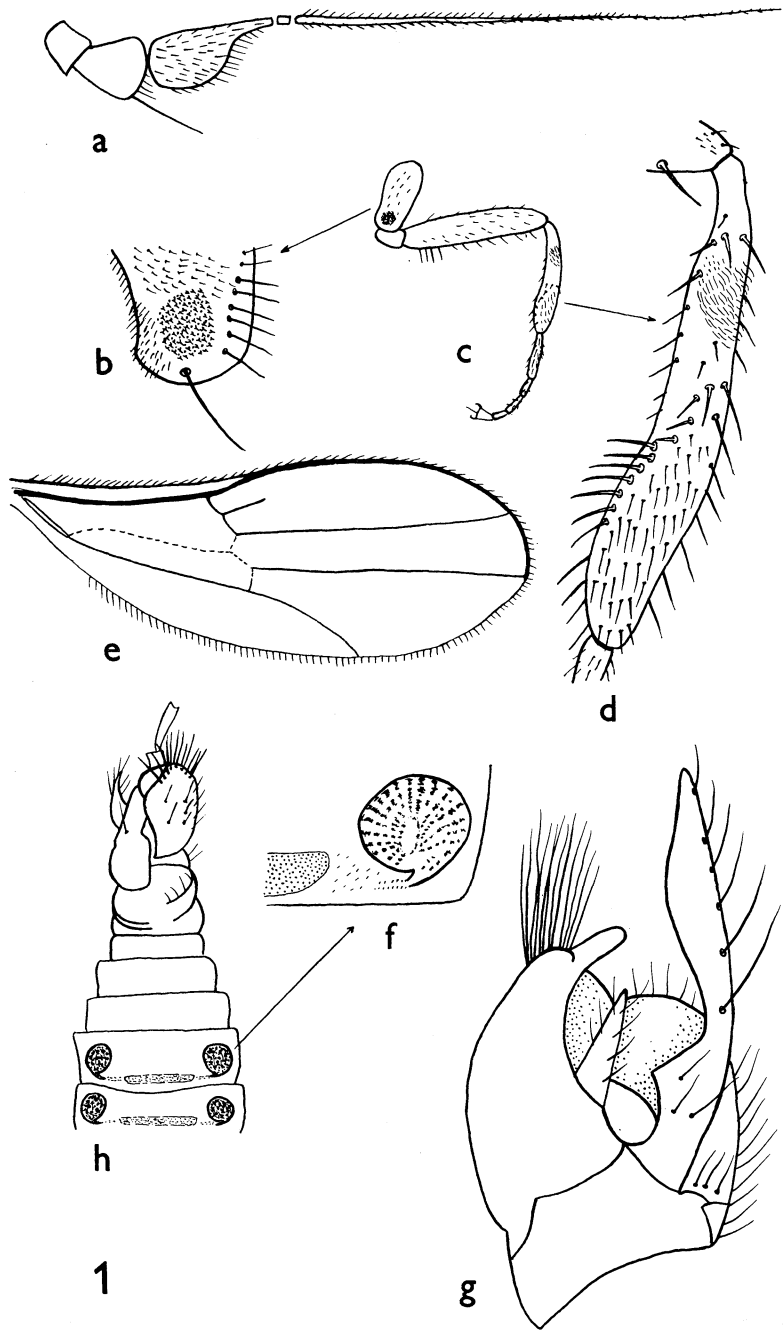


Fig. 1. *Austrodrapetis coxalis*, ♂. a, antenna; b, fore coxa (from inside); c, fore leg (from inside); d, fore tibia (from inside); e, wing; f, enlarged view (dorsal) of internal abdominal structures; g, genitalia (right lateral view); h, abdomen (macerated) in dorsal view showing the paired lateral structures in abdominal segments 3 & 4.

Genus *Crossopalpus* Bigot

*Crossopalpus* Bigot, 1857, Ann. Soc. Ent. France ser. 3, 3: 563.

This genus (often regarded as a subgenus of *Drapetis*) is almost world-wide in distribution, but is not recorded from New Zealand or Australia. I have seen specimens from New Zealand and Borneo. It occurs in Micronesia (Quate, 1960: 60, *D. brevicula* Mel.) and Hawaii (Melander 1952; Hardy 1960). Collin (1929: 183) described *Drapetis savaiiensis* from Samoa, but this appears referable to *Drapetis sensu stricto*, though *rs* is very short.

***Crossopalpus kraussi* Smith, n. sp.** Fig. 2 a-d.

♂. *Head* black heavily dusted greyish. *Frons*, at level of 1st ocellus, about 1.5× ocellar width, narrowing to a little less than ocellar width above antennae. *Face* linear. *Eyes* with silvery margin behind and below. *Occiput* with short pale hairs, except for a few longer hairs below. *Clypeus* shining black. *Ocellar bristles* strong and divergent and a pair of long vertical bristles. *Antenna* with segments 1 & 2 yellow; segment 2 with a bristles below; segment 3 black, rounded with a long terminal arista about 3× antennal length. *Proboscis* brownish, about 1/2 head height. *Palpi* yellow, short, rounded with pale hairs and a strong terminal bristle. *Thorax*

shining black, rather densely clothed with adpressed brownish pubescence. A strong distinct pair of prescutellar dorsocentrals present and if viewed laterally 3 pairs of small anterior dorsocentrals may be seen on disc of thorax. Two short equally strong notopleurals, a short supra-alar and a strong postalar bristle present. *Pleurae* shining black, mesopleura margined on all but upperside (except for a tiny patch at middle) with silvery tomentum, a small roundish patch of silvery tomentum behind humerus and beneath wing base. *Scutellum* shining black with a pair of strong apical bristles, an inner pair of bristly hairs and an outer pair of bristly hairs. *Abdomen* shining black, short haired. *Hypopygium* (fig. 2 a-c) black. *Legs* pale brownish. Anterior preapical bristles well developed on all femora. Fore femur with slender anteroventral bristles. Legs otherwise without strong bristles except for strong antero- and posteroventral preapical bristles on anterior and median tibia. Hind tibial apical process short and broad with pointed tip. *Wings* (fig. 2d) clear, wing veins brown, venation typical of *Crossopalpus*. Halteres yellowish.

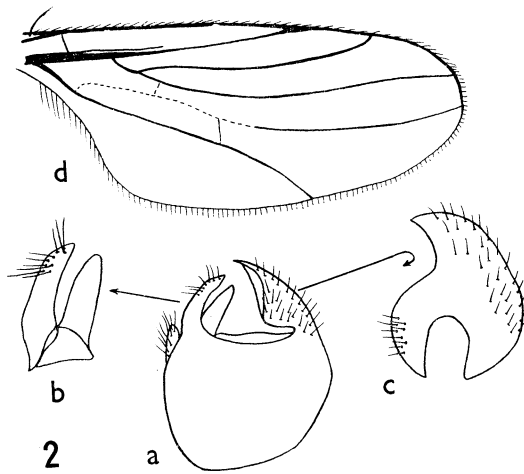


Fig. 2. *Crossopalpus kraussi* ♂. a-c, genitalia in dorsal view showing 'exploded' details to a larger scale; d, wing.

Length 2.5 mm.

♀. Unknown.

Holotype ♂ (BISHOP 3610), Cook Islands, Akaiami, Aitutaki, III.1955, N. L. H. Krauss.

This species superficially resembles the Palearctic *C. curvipes* Meigen in having dorso-central bristles on the thoracic disc, but that species has an anterodorsal row of bristles on the hind tibia and the legs are black. *C. phaeoptera* Bezzi (= *obscuripennis*) (1904a: 351; 1904b: 145; 1912: 479) from New Guinea has the hind femora partly black. The cosmopolitan *C. aenescens* Wiedemann has dorsocentrals on the thoracic disc, but the femora of that species are black and the 3rd & 4th veins more strongly convergent at tip.

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## SOME AGROMYZIDAE (Diptera) FROM THE JUAN FERNANDEZ ISLAND

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*Abstract:* Kuschel's collection of Agromyzidae from Juan Fernandez Is. includes 5 species: 2 are described as new, 2 are common in Chile and the other is semi-cosmopolitan.

Prof. G. Kuschel has kindly allowed me to examine 82 Agromyzidae he collected during several visits to the Juan Fernandez Is. during 1951-1955. Five species are represented in