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Trypetidae of the Mangarevan Expedition'
(Diptera)

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This paper is based on the collection of Trypetidae made by the Mangarevan Expedition to southeastern Polynesia in 1934, and includes some additional data on two species collected by the late G. P. Wilder. Two genera are represented in the collection.

Genus **DACUS** Fabricius

Three of the four species of *Dacus* in the collection are described as new. With the exception of one species from the Society Islands, the collections are from islands from which the genus has been previously unrecorded.

The genus is widely distributed from Australia to China and Japan and throughout the Malayan region, in southern Asia and Africa, with one species occurring in southern Europe. It is unrepresented in the New World at present, but some of the species may be introduced there in commerce as the larvae are apparently invariably found in various fruits.

It appears unnecessary to present a key to the species, but exceptional features useful for recognition are noted under each new species. Keys to the species occurring in the Pacific islands have been published by Bezzi² and by me³.

The species now before me may be referred to the subgenus *Chaetodacus* Bezzi, but there is more variation in the chaetotaxy of the thorax in *Dacus incertus* than is usual. If we accept the presence of the supra-alar bristle as indicative of subgeneric status here, it

¹ Mangarevan Expedition Publication 24.

² Diptera, Brachycera and Athericera of the Fiji islands, p. 100, 1928.

³ Insects of Samoa . . . , pt. 6, fasc. 7, p. 254, 1931.

will be difficult to determine the position of specimens with that bristle present on one side and absent on the other, and of specimens in which the bristle is lacking on both sides. The exceptional feature of setulae on the upper side of the second section of the fifth wing vein can not be utilized for subgeneric segregation, as there is great variation in the number of bristles present, *D. incertus* usually lacking them.

***Dacus setinervis*, n. sp.**

This is the only species of the genus known to me, or described, in which there are always setulose hairs on the upper side of the second section of the fifth wing vein.

Head orange-yellow, with a large black triangle on each side of upper occiput, frons seen from in front with white dusting, ocellar spot black, no black spots on face, antennae except apex of second segment and third around base of arista brownish black, and palpi yellow. Frons over 2.5 times as long as wide; all four verticals strong, normally one pair of reclinate upper and two pairs of weaker lower incurved black orbitals, but frequently the upper pairs are duplicated. Face almost straight in profile, the usual central depression very shallow. A series of short but strong postocular setulae on upper half of occiput.

Thorax shiny black; mesonotum without gray dust; humeri, scutellum, on sides and below at apex, a large triangle on the mesopleura extending from upper anterior angle to almost the lower posterior angle, a small spot on the sternopleura below the lower extremity of the mesopleural triangle, and a round spot on the metapleural convexity ivory-white; posterior notopleural convexity and posterior edge brownish; prosternum yellow. Two notopleurals, one supra-alar, two postalar, and a pair of prescutellars usually present; surface closely piliferous punctate; mesopleural bristles distinct; scutellum convex, subtruncate at apex, with a pair of strong apical bristles.

Legs in male yellow, the mid and hind coxae blackened, and apices of the tarsi infuscated, in female the fore femora from near bases to apices, the mid and hind femora except extreme bases, and all of the mid and hind tibiae glossy black, fore tibiae and tarsi and apices of mid and hind tarsi dark brown. Hind tibia of male with the usual flattened and densely short-haired spot near apex on the posterodorsal surface.

Wings glassy, stigma yellowish, costa from apex of second vein to apex of fourth with a rather faint, narrow, fuscous border, cross veins not clouded and no anal streak present. Free part of anal vein shorter than the lobe of anal cell, especially in the male because of the marginal notch in the wing. Inner cross vein at about two fifths from apex of the discal cell; two to eight or more black setulae on upper side of fifth vein beyond apex of posterior basal cell.

Abdomen glossy black, with a pair of yellow spots on margin of one or more of the tergites, most noticeable on the fourth. Surface hairs pale; male hypopygium larger than usual.

Length, 6.5-7.5 mm.

Henderson Island: northwest side, 100 ft., holotype male, allotype female, and one female paratype, June 21, 1934; north side, 100 ft., one male paratype, June 18, 1934, collected by E. C. Zimmerman.

The difference in the coloring of the legs in the sexes is exceptional, and it might be considered worthwhile to segregate the species in a new subgenus on the character of the setulose fifth wing vein though I do not propose this course here.

Dacus atra, n. sp.

Male and Female. This is the only species known to me in which the entire thorax and scutellum is shiny black.

Head brown, occiput black, facial spots indistinct because of the dark ground color of the face; antennae brownish black, second segment paler, especially at apex; palpi black, paler at base. Frons about twice as long as wide; all four vertical bristles strong, the upper reclinate considerably weaker, and both pairs of incurved lower orbitals subequal in length to the upper. Face with the central depression more marked than in *D. setinervis*.

Thorax glossy black in the male which is slightly general; the posterior half of the mesopleura and the metapleural convexity slightly brownish. Mesonotum with hairs brownish yellow, more conspicuous than in *D. setinervis* and showing indications of forming two discal vittae. Chaetotaxy and structure as in *D. setinervis*.

Legs black in both sexes, only the bases of the tarsi brownish yellow.

Wings glassy, stigma yellowish, the costa with a very faint indication of a yellowish tinge; neither cross vein clouded, and no anal streak. Inner cross vein more oblique than in *D. setinervis*, at about two fifths from apex of the discal cell. Free part of the anal vein shorter than the lobe of anal cell. Fifth vein bare.

Abdomen black, with yellow decumbent hairs that lie at different angles in central stripes so that when the abdomen is viewed from different angles they appear to form vittae.

Length, 7-8 mm.

Austral Islands: Raivavae, near Umurau, 100-200 ft., holotype male and two paratypes, August 3, 1934, collected by E. C. Zimmerman.

There is no color distinction in the legs of the sexes of this species. This distinction is not present in *D. carbonarius* Hendel in which the general color is rather similar though the usual yellow thoracic markings are present on the lateral margins of the mesonotum behind the suture, on the mesopleura and the metapleura; the humeri are brown. Hendel's species was described from New Britain.

Dacus incertus, n. sp.

Male and Female. A shiny brownish yellow species, with close resemblance to *D. luteola* Malloch, but with the yellow thoracic marks

much more contrastingly pale than the mesonotum, and but one pair of incurved infraorbital bristles.

Head brownish yellow, with a small black intraocellar spot and a small black triangular mark on each side of occiput; no black facial spots; third antennal segment fuscous except at base; palpi yellow. Vertical and supra-orbital bristles black, infraorbital pair brownish yellow. Frons about three times as long as wide; genal bristle brownish yellow.

Thorax with the following ivory-white or very pale yellow markings: Humeri, scutellum, a large subdivided mark on metapleura, the upper part of which is not as pale as the lower, a spot on upper edge of the sternopleura, and a large subtriangular mark that occupies the entire upper and hind margins of the mesopleura; the posterior notopleural convexity hardly paler than the remainder of the mesonotum which is without evident dust or vittae. Chaetotaxy very variable, the supra-alar bristle present or absent, sometimes very weak, or present on one side only, sometimes three postalars, and the scapular bristles weak or strong; scutellars two.

Legs yellow, normal in structure.

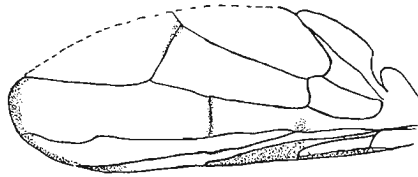


FIGURE 1.—*Dacus incertus*, wing.

Wings glassy, stigma and marginal cell yellowish brown, a brown costal streak starting at apex of second vein and continued to apex of fourth, becoming gradually slightly wider as it advances; both cross veins narrowly pale brown, clouded; anal streak pale, almost obsolete. Inner cross vein oblique, at less than one third from apex of the discal cell (fig. 1). Fifth vein in two or three specimens with one or two very minute setulae on upper side near base of the discal cell. Free part of the anal vein in female about as long as, in male about two-thirds as long as, lobe of cell.

Abdomen with usually a blackish transverse mark on each side near base of each tergite and a small blackish spot in center of each though this is very variable, the markings being sometimes lacking; the basal section of the genital cone in female is always black or dark brown. Hairs pale, the third tergite in male with a lateral apical comb of curled brown bristles; fifth tergite in both sexes with a large oval discal depression on each side of which the hairs are much shorter, finer, and closer together than they are elsewhere on the tergite. Hypopygium of male with an anterior, downwardly directed, stout process that has a short spur on the apex behind, the superior forceps pincerlike, directed downward and finely haired.

Length, 6.5-7.5 mm.

Tuamotu Archipelago: Hao Island, Boring Bay, holotype male, allotype female, and 10 paratypes, May 18-19, 1934, collected by E. C. Zimmerman; Makatea, one male and one female paratype,

mounted in each case with two puparia, from *Guettarda speciosa*, November 5, 1932, collected by G. P. Wilder.

Dacus psidii Froggatt.

A shiny black species with the humeri except the upper margins, the posterior notopleural convexities, lateral edges of the scutellum, a vertical streak on the hind margin of the mesopleura and a spot below on the sternopleura, and a double spot on the metapleura ivory-white or pale yellow. Wings glassy, with the stigma and a very narrow costal clouding brownish yellow, the inner cross vein faintly and the outer one hardly brown clouded; anal streak inconspicuous. Abdomen black, with a pair of brownish yellow vittae on dorsum more or less well developed. Length, 7-8 mm.

Society Islands. Moorea: large series reared from guavas, collected by G. P. Wilder. Tahiti: Mango, January 12, 1929, collected by G. P. Wilder; Mataia, from outer pulp of *Inocarpus edulis*, June 26, 1932, emerged July 16, 1932, collected by G. P. Wilder; near Papeete, eggs laid on guava, March 23, 1934, collected by E. C. Zimmerman; no locality, several specimens from *Nephetium* sp., December 1923, collected by G. P. Wilder.

Genus **PAROXYNA** Hendel

There are two species of this genus, both apparently undescribed, in the collection of the Mangarevan Expedition.

Paroxyna angustipennis, n. sp.

Male. Belongs to the section of the genus in which the upper supraorbital bristle is white, scutellum has two long basal and two very short apical bristles, head not longer than high, and two small hyaline dots below apex of second wing vein.

Head, including antennae and palpi, orange-yellow, ocellar spot and central part of occiput black, the latter with gray dust, frons with orbits and a complete central vitta silvery white, dusted. Frons a little longer than wide, orbits narrow; ocellar bristles long and strong, outer vertical, upper supraorbital, and moderately long postvertical bristles white, all others black, three pairs of infraorbitals. Gena about one tenth as high as eye, equal to twice the width of parafacial, and about half as high as width of third antennal segment, with one or two long yellow bristles behind and with rather dense, short, stiff, fulvous hairs in front; vibrissal angle slightly produced. Proboscis with apical section as long as head; palpi equally long, lanceolate.

Thorax black, not shiny, uniformly golden brown dusted on dorsum, merging into gray below on sides, scutellum slightly shiny, yellowish at apex, with yellowish brown dusting on disc. All dorsal bristles, one on the mesopleura, and one on the sternopleura, black; all hairs, the pteropleural bristle, and some short posterior mesopleural bristles yellow.

Legs orange-yellow, fore coxae and mid and hind femora partly infuscated. Posteroventral surface of fore femur with a series of widely separated bristles, longest apically.

Wings (fig. 2, *a*) narrower than usual, longer than thorax and abdomen combined, dark brown, with numerous small hyaline spots, stigma dark brown on apical two thirds, pale at base. Halteres yellow.

Abdomen colored and dusted as thorax, apices of tergites slightly yellowish, third and fourth tergites each with a pair of large blackish spots. Fifth tergite as long as the two preceding tergites combined, with a few marginal bristles. Hairs on the fused basal tergites yellow, those on disc of the other tergites black.

Length, 4.5 mm.

Rapa: Mt. Teptahu, south side, 400-600 feet, July 20, 1934, collected by E. C. Zimmerman.

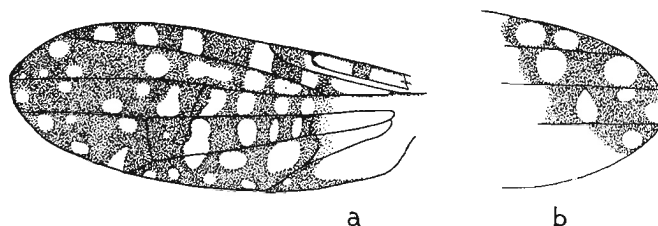


FIGURE 2.—*Paroxyna*: *a*, *P. angustipennis*, wing; *b*, *P. media*, wing.

Paroxyna media, n. sp.

Male and female. Belongs to the same group as *P. angustipennis*, agreeing with it in the armature and shape of the head, and in the scutellar bristling; differing markedly in the wing pattern.

The third antennal segment is slightly darkened but the specimens are greasy so that it is not possible to be certain if this is normal. The frons shows the same white dusted markings as in *P. angustipennis*, but there are only two pairs of infraorbital bristles present.

Thorax greasy in both specimens but apparently with gray dust, bristling as in *P. angustipennis*.

Legs yellow, all coxae and femora almost entirely black, with gray dust.

Wings (fig. 2, *b*) not as narrow as in *P. angustipennis*, dark brown, with larger hyaline spots, the stigma entirely dark brown and a single large hyaline spot below apex of the second vein.

Abdomen greasy in both specimens, genital cone of the female glossy black. Length, 3 mm.

Rapa: type female, Morongota, 700-800 feet, July 11, 1934; allotype, east ridge of Mt. Perahu, 1,200-1,500 feet, July 21, 1934, collected by E. C. Zimmerman.