The genera *Orthoprosopa* Macquart and *Paratropidia* Hull (Diptera: Syrphidae), with a description of *P. pacifica* n. sp.

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Hippa, H.: The genera Orthoprosopa Macquart and Paratropidia Hull (Diptera: Syrphidae), with a description of P. pacifica n. sp.

Ent. scand. 11: 231–235. Lund, Sweden 7 July 1980. ISSN 0013-8711.

The differences and similarities of the genera Orthoprosopa and Paratropidia and the existing cladogenetic problems in their classification are discussed. The distinction between the genera is retained, despite the apparent paraphylety of Paratropidia. Paratropidia pacifica n. sp. is described from New Caledonia. The species belongs to a common group together with P. alex Thompson and P. margarita Thompson. The male genitalia of O. grisea (Walker), P. bilineata (Walker), and P. pacifica are figured.

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The genus Orthoprosopa Macquart, 1849, contains only its Australian type-species Helophilus griseus Walker, 1835 (see also Hardy 1921).

The genus *Paratropidia* Hull, 1949, includes three species hitherto described: the New Zealand type-species *Milesia bilineata* Walker, 1849, and two species, *Paratropidia alex* Thompson, 1972, and *P. margarita* Thompson, 1972, from New Guinea.

Orthoprosopa was assigned to the Eristaliinae (see e.g. Hardy 1921, Ferguson 1926, Hull 1936, 1949), and Paratropidia to the Xylotinae or Milesiinae until Thompson (1972) noted their similarities in the structure of the male genitalia and reassigned both to his Criorhina group of Milesiinae: Milesiini.

The present paper was written to discuss the differences and similarities of the two genera and to point out problems in their classification as well as to describe a new species, *Paratropidia pacifica*, from New Caledonia.

Genera Orthoprosopa and Paratropidia

In the footnote to his discussion on the relationships of *Paratropidia*, Thompson (1972) mentioned his remarkable discovery that the genitalia in *Orthoprosopa* are almost identical with those of *Paratropidia* and that it should be assigned to the Milesiini. In fact the characters of the genitalia of O. grisea fall so closely within the range of variation in the species of Paratropidia (see Figs. 4-10) that on the basis of these structures alone, generic separation would not be necessary.

In their other morphological characters, too, the two genera are largely similar, the principal differences being the following: in Orthoprosopa, the face of the male has a low median tubercle midway between base of antennae and upper mouth edge, while in Paratropidia, when present (P. alex), the tubercle is near the upper mouth edge; in Orthoprosopa mesonotum is without pale pollinose longitudinal stripes, but is distinctly striped in Paratropidia; in Orthoprosopa sternopleuron bears an entire hairy band, in Paratropidia only dorsal and ventral hair patches; and in Orthoprosopa, vein R4+5 is strongly looped, as in the Eristaliini, but is nearly straight in Paratropidia.

O. grisea has a pale face and strong scutellar rim like P. alex, P. margarita and P. pacifica, distinct lateral membraneous cleft on the metasternum like P. bilineata, P. margarita and P. pacifica, a well-developed pollinose pattern on tergites 2 and 3 like P. bilineata and P. pacifica, and a short tergite 9 like P. alex and P. pacifica.

The classification of these two genera is confused by some undoubtedly apomorphic characters found in *O. grisea* but only in a part of



fica n. sp., holotype. — 1. Profile of head. — 2. Dorsolateral view of abdomen. — 3. Prolateral view of hind trochanter, femur, and tibia.

Figs. 1-3. Paratropidia paci-

species of *Paratropidia*. The most striking of these are the strong emarginate rim of scutellum (cf. Thompson 1972), and the strongly shortened tergite 9 in male genitalia. In *Paratropidia* the apomorphic state is found in *P. pacifica*, *P. alex* and *P. margarita* (male unknown) and the plesiomorphic state, i.e. a weak to nearly absent scutellar rim and normal tergite 9, in *P. bilineata*.

In order to justify the retention of the distinction between these two extremely closely related groups, it must be assumed that *O. grisea* diverged first and that the apomorphic character states in *O. grisea* and the species of *Paratropidia* are not synapomorphic but convergent. Although I believe the opposite case to be true, I have refrained from merging the genera until their characters are more fully analyzed and weighted and until their derivation is better known and documented (see Thompson 1972).

Paratropidia pacifica, n. sp. Figs. 1–3, 6, 8, 10

Type locality: New Caledonia.

Type material: Holotype of, N. New Caledonia: Puebo.



Figs. 4-10. Male genitalia in lateral view (4-6), aedeagus in lateral view (7-9) and hypandrium in ventral view (10). - 4 and 9. Orthoprosopa grisea (Walker) (Australia). - 5 and 7. Paratropidia bilineata (Walker) (New Zealand). - 6, 8 and 10. Paratropidia pacifica n. sp., holotype.

coast-1, 500 ft.; IX. 1949.; L. E. Cheesman.; B. M. 1950-1. In Brit. Mus. (Nat. Hist.).—Paratype J, New Caledonia: Mont Koghi; 460 meters, 29 December 1976; R. E. Dietz IV. In U. S. Nat. Mus. Washington.

Diagnosis: A dark species with pale face, two-coloured legs and scutellum and pattern of pale-pollinose spots on abdomen.

Description

Male

Head. Profile of head, Fig. 1. Face with a slight median carina on dorsal part, without a trace of tubercle, yellow and yellowish pollinose except on upper mouth edge narrowly darkened and blackish brown and greyish pollinose lateroventrally; cheeks brown, grey pollinose and grey haired. Antenna dark brown, segment 3 subquadrate. Frontal lunule yellow; frontal triangle with a small median tubercle, yellow, yellow pollinose, yellow haired. Eye suture about as long as the part of vertical triangle in front of anterior ocellus. Vertical triangle black, in front of anterior ocellus vellowish brown pollinose, hairs brown to blackish; ocellar triangle rather far in front, hence the space of vertex between posterior ocelli and median hind corners of eyes is about as long as anteriorly wide. Postocular orbits black, grey pollinose and grey hairy, dorsally also with short black setulae.

Thorax. Mesonotum blackish, brownish pollinose except a very narrow and obscure median, a broad submedian and broken lateral longitudinal stripe of more greyish pollinosity, though this pattern not conspicuous; hairs on anterior half yellowish except a few bristle-like dark hairs at anterior margin, on posterior half black except laterally at postalar calli pale. Scutellum about twice as broad as long, with a broad flattened apical marginal rim, the basal third black, median part orange, apical part yellow, the rim heavily yellow pollinose; hairs, including the subscutellar fringe, yellowish. Pleura black to blackish brown, grey pollinose except more lightly and brownish pollinose especially on anterior parts of meso- and sterno- and largely on hypopleuron; hairs pale except mixed with black ones on posterior margin of meso- and dorsal margin of sternopleuron. Metasternum laterally with a broad membraneous cleft, black, pale pollinose and pale haired.

Wing with the petiole of apical cell slightly shorter than humeral cross vein, colour smoky brown, stigmal area basally dark brown, microtrichia absent posteriorly along the basal part of vein 1 A. Calypter greyish white with brown border and fringe. Halter yellowish white.

Legs. Coxae blackish to blackish brown, especially anterior and hind ones conspicuously grey pollinose, with pale and dark hairs. Tro-

chanters blackish brown, with pale and dark hairs, hind trochanter apicoventrally with a brush-like aggregation of black hairs. Hind trochanter, femur and tibia, Fig. 3. Anterior and middle femur orange approximately on apical half and dark brown on basal half, the dark colour more extensive retrolaterally than prolaterally, hairs pale except the basal patch of black setulae and with mixed black hairs on apical retrolateral half; hind femur orange except narrowly darkened apicodorsally and blackish basally, the dark colour extending prolaterally and dorsally near the middle but is retrolaterally more restricted, hairs pale except ventrally on apical half and narrowly apicodorsally dark. Ali tibiae yellow, pale haired. Tarsi dark brown except anterior and middle metatarsi yellowish, all dark haired.

Abdomen, Fig. 2: Colour of tergites dull blackish brown with the pattern composed of grey pollinose patches, the lateral ones of which on tergite 3 have the underlying integument yellowish, tergite 2 also having shining dark basolateral areas and tergite 3 with similar small areas between the two pollinose lateral patches: hairs of tergites dark except laterally on tergite 1, roughly on shining—pollinose patches on tergite 2 and on the most lateral pollinose patches on tergites 3 and 4 pale. Sternite 1 black, laterally and basally grey pollinose, sternite 2 pale brown, medially darker, sternites 3 and 4 brown; all pale haired except the apical part of sternite 4 dark haired.

Genitalia, Figs. 6, 8.

Female

Unknown.

Discussion

The holotype and paratype differ slightly in colouration, the latter being darker in having especially the dark areas on legs wider than the holotype.

P. pacifica is distinguished from the three other known species of the genus, e.g. by the following characters: from *P. bilineata* by the pale face, from *P. alex* and *P. margarita* by the less produced face and dark antennae, from *P. alex* by the lack of facial tubercle, from all by the two-coloured scutellum, from *P. alex* by the simple sternopleuron, from *P. bilineata* by the

partly orange legs, from *P. alex* by the basally darkened anterior and middle femora and largely dark tarsi, and from *P. alex* and *P. margarita* by having a distinct pollinose pattern on tergites 3 and 4. In the male genitalia, *P. pacifica* differs from *P. bilineata* e.g. by the very short tergite 9, which is about twice as high as long, about as long as it is high in *P. bilineata*, by the shorter and almost straight surstyli, by the lack of serrate ventral edge on the dorsal lobe of superior lobes and by the shape of the aedeagus; from *P. alex* by the longer and more slender surstyli and by the detailed structure and shape of the superior lobes and aedeagus (cf. Thompson 1972); the male of *P. margarita* is not known.

Thompson (1972) suggested that P. bilineata was derived before either P. alex or P. margarita and considered the synapomorphic characters for the latter two species to be the narrow frons of female, more strongly produced face, longer petiole of apical cell and a strongly emarginate scutellum. Except the unknown female characters and shorter face, P. pacifica is closely similar to the group of P. alex and P. margarita. In the male genitalia the shortened tergite 9 and the lack of a strongly serrate ventral edge on the superior lobe further demonstrate the common derived nature of P. alex and P. pacifica in contrast to P. bilineata. When compared with P. alex and P. margarita P. pacifica posseses the three apparently more plesiomorphic characters;

a less produced face, the shorter petiolus of the apical cell and a distinct pollinose pattern on tergites 3 and 4. These place *P. pacifica* in an intermediate position between *P. bilineata* on the one hand and *P. alex* and *P. margarita* on the other, as it is also geographically. See also under the discussion on the relationships of *Paratropidia* and *Orthoprosopa* above.

Acknowledgements: I wish to thank Dr. K. G. V. Smith, of the Brit. Mus. (Nat. Hist.), London, Dr. F. C. Thompson, of the U. S. Nat. Mus., Washington, D. C., and Dr. L. Tsacas, of the Mus. Nat. d'Hist. Nat., Paris, for the material used in the present study.

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Manuscript received November 1979