A new species of the genus *Paputrombidium* FAIN, 1992 (Acari: Trombidiidae) from a fly *Chersodromia* spp. (Diptera; Hybotidae) from Papua New Guinea

by A. FAIN & P. GROOTAERT

**Abstract**

*Paputrombidium chersodromia* n.sp. (Acari: Trombidiidae), parasitic on *Chersodromia* spp. (Diptera: Hybotidae), is described from Papua New Guinea.

**Key words:** Taxonomy. Larva of *Paputrombidium*. Acari. Parasitic on Diptera. Papua New Guinea.

**Résumé**

*Paputrombidium chersodromia* n.sp. (Acari: Trombidiidae), parasite de mouches du genre *Chersodromia* (Diptera: Hybotidae), est décrit de Papouasie Nouvelle Guinee.


**Introduction**

We describe here a second species in the genus *Paputrombidium* FAIN, 1992 (Acari: Trombidiidae). The three larvae, representing the species, were attached to the abdomen of small flies of the genus *Chersodromia* (Hybotidae) from Papua New Guinea. *Paputrombidium grootaerti* FAIN, 1992, the nominotypical species of the genus was collected in the same locality (Laing I.) but from another dipteran host (*Cymatopus* sp., a marine dolichopodid genus). The hosts of both trombidiid species have a completely different biology and that can explain the presence of two species of the same genus in a rather restricted habitat (see below).

The measurements used here are in micrometers.

**Family Trombidiidae LEACH, 1815**

**Subfamily Paputrombidinae, FAIN, 1992**

**Genus Paputrombidium** FAIN, 1992

**Paputrombidium chersodromia** nov. spec.

**Larva** (holotype) (figs 1-6): Body elongate but less than in *P. grootaerti*. **Metric data** of the holotype and of one paratype (measurements of the latter between brackets): Length and width of idiosoma 180 (210) and 114 (125). The paratype is distinctly flattened. **Anterior shield:** AM 18 (19); AL 18 (20); PL 20 (22); SENS 36 (-); AMB 27 (26); AW 19 (17); MA 15 (14); AP 18 (19); SA 17 (18); SP 11 (12); SB 27 (26); L 48 (47); W (eyes excluded) 45 (50); LN 9 (11); ASB 39 (40); PSB 12 (12). **Posteromedian shield:** PSW 63 (63); PSL 21 (23); Q 25 to 30 (24 to 30). **Legs:** Tal 44 (44); Ta 2 37 (39); Ta 3 (38); T1 33 (30); T2 27 (26); T3 33 (34); Ge 1 30 (28); Ge 2 21 (19); Ge 3 21 (22); Fe 30 (30); Fe 2 27 (26); Fe 3 (30). **Solenidia:** wI 19 (19); wII 16 (17); tpI apical or anterior 13 (13); tpI basal or posterior 16 (17); tpII apical 12 (12); tpII basal 11 (12); aI anterior 13 (14); aII posterior 13-14 (14); G 27 (28). **Gnathosoma** almost terminal. Dorsum: anterior shield mostly striated longitudinally or obliquely except in a short anterior part at the level of AM where there are a few transverse striations; in front of these striations the shield is smooth. **Setae** AM and AL very thick with numerous very thin and long pectinations. Sensillae with about 15 rather long pectinations in their apical half or two thirds. Anterior pair of eyes rounded, 12 wide, posterior pair 6 wide. Anterior one with 9 pectinate setae 27-30 long. Hysteronotum with about 13-14 transverse rows of 13-13-13-11-14-12-11-11-10-8-8-7-4 pectinate setae (total 135 to 140 setae 14 to 19 long). Coxae I to III with 2-6-7 pectinate setae 18 to 28 long. **Urstigma** oval. Hysterogaster with 10 rows of 8-5-12-12-12-11-9-6 pectinate setae and 8 pairs of lateral setae (total 110 to 120 setae) 12 to 18 long. **Legs:** number of pectinate setae: Trochanters 1-1-1; Femora 5-3-3; Genua 4-2-2; Tibiae 6-5-5; Tarsi 17-13-13. Femora 1 to III with a very thin and smooth prebasal seta. The gnathosoma bears a pair of very broad ventral setae. Tarsi I with one dorsal eupathidia.
Hosts and localities

Holotype larva from Chersodromia flavipyga (Diptera: Hybotidae) from Papua New Guinea, Madang province, Laing Island, Station XIX, 7 May 1994 (leg. P. GROOTAERT, sample no. 069). Two paratypes (one in bad condition) from a Chersodromia sp. from New Ireland, Nusen I., Papua New Guinea, 24 April 1993 (leg. P. GROOTAERT, sample no. 051). Types in IRSNB.

Remarks

P. chersodromia n.sp. differs from P. grootaerti by the following characters:
1. Body distinctly shorter and relatively wider
2. AMB, AW, PW and SB much longer
3. All the legs shorter
4. Solenidia, especially αI, αII and αIII, much shorter
5. Posterior shield trapezoidal bearing 9 setae (this shield is strongly convex in P. grootaerti and bears only 6 setae)
6. The pair of ventral setae of gnathosoma and the setae AM and PL are much thicker than in P. grootaerti.
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**References**


Department of Entomology, Royal Belgian Institute of Natural Sciences 29 Rue Vautier, B-1040 Brussels, Belgium

**Biology of the host**

The genus *Chersodromia* consists of small (1-2 mm) halophilic flies which are bottom dwellers. They are restricted to sandy parts of the beaches and so are not found on rocky shores. *Ch. flavipyga*, the host of *P. chersodromia*, was found associated on Laing I. with burrows of ghost crabs (GROOTAERT & VAN DE VELDE, 1994). It is not clear yet if it represents a case of commensalism (development of larvae in food or droppings of the crabs) or opportunism (shelter for heat and wind).

*Paputrombidium grootaerti*, the first described species on Laing I., was found on *Cymatopus* flies. These flies are larger (2.5-5 mm) than *Chersodromia*, and are also bottom dwellers. They are however found foraging at low tide on rocky substrates in the intertidal zone where they feed on larvae and emerging adults of chironomid and ceratopogonid flies. At high tide they aggregate often in large numbers on the supralittoral part of the beach. Their larvae and pupae live in the thin layer of algae and debris on rocks in the intertidal zone. There is no association known with crabs.

Although both host flies occur together on the same island, they live in different habitats and have quite a different biology.