

**New species of the genus *Pilocnema* HANSEN
from New Guinea
(Coleoptera: Hydrophilidae)
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ABSTRACT

Six new species of the Hydrophilid genus *Pilocnema* HANSEN, 1990 are described from Papua New Guinea: *Pilocnema bicolor* sp.n., *P. biroi* sp.n., *P. fusipalpis* sp.n., *P. gracilipes* sp.n., *P. humeralis* sp.n., *P. mianminensis* sp.n. An attachment of these species to Hansen's key (HANSEN 2003) is given and the male genitalia are illustrated.

KEY WORDS

Insecta, Coleoptera, Hydrophilidae, genus *Pilocnema*, New Guinea, new species.

ABBREVIATIONS

CHG Coll. F. Hebauer, Grafling, Germany
NMW Naturhistorisches Museum Wien (M.A. Jäch)
MNS Museum für Naturkunde, Stuttgart (W. Schawaller)
TMB Természettudományi Múzeum Budapest (O. Merkl, G. Szél)

INTRODUCTION

Short time after M. Hansen has sent his *Pilocnema* manuscript (HANSEN 2003) to press New Guinean outputs with undescribed species of that genus arrived to me from the Vienna Museum as well as from the Budapest Museum and the Stuttgart Museum. So this paper will be a supplement to the key of Hansen and also a supplement to the contribution to the knowledge of the New Guinean Hydrophilidae (HEBAUER, 2001) with description of six additional species from New Guinea. Including the species described in this paper now there are known 15 species of the genus from New Guinea, 2 species from Australia and 1 species from the Philippines.

SPECIES LIST

Considering the shape of the antennal club 3 species groups are to distinguish:

group a: (Fig. 7a).

<i>P. nigra</i> HANSEN, 1990	Australia
<i>P. philippinensis</i> HANSEN, 2003	Philippines

group b: (Fig. 7b).

<i>P. fusipalpis</i> sp.n.	Irian Jaya
<i>P. gracilipes</i> sp.n.	Irian Jaya
<i>P. kaindi</i> HANSEN, 2003	Papua
<i>P. maculiapex</i> HANSEN, 1990	Australia

group c: (Fig. 7c).

<i>P. anisopunctata</i> HANSEN, 2003	Papua
<i>P. bacchusi</i> HANSEN, 2003	Papua
<i>P. bicolor</i> sp.n.	Irian Jaya
<i>P. biroi</i> sp.n.	Papua
<i>P. brevisternum</i> HANSEN, 2003	Irian Jaya
<i>P. clypealis</i> HANSEN, 2003	Irian Jaya
<i>P. confusa</i> HANSEN, 2003	Irian Jaya
<i>P. crassipes</i> HANSEN, 2003	Irian Jaya
<i>P. grandis</i> HANSEN, 2003	Irian Jaya
<i>P. humeralis</i> sp.n.	Papua
<i>P. mianminensis</i> sp.n.	Papua
<i>P. obsoleta</i> HANSEN, 2003	Irian Jaya

THE SPECIES

Pilocnema bicolor sp.n.

HEBAUER, 2001:39, sp. 3.

The key to the *Pilocnema* species (HANSEN, 2003) is modified as follows:

- 3- Elytra uniformly dark, except *P. bicolor* _____ 4
- 5- Pronotum (and usually head) not distinctly paler than elytra, except *P. bicolor* _____ 6
- 6 Inner 3 rows of punctures evident in anterior half. Generally separated by 1 - 2 times their diameter. Metasternum short, its raised middle portion at most c. as long as mesosternal tablet (except *P. grandis*).
 - a) Inner 3 elytral rows of punctures consisting of rather fine punctures being much coarser than punctures of adjacent interstices _____ 7
 - b) Inner 3 elytral rows of punctures consisting of rather coarse punctures being not much coarser than punctures of adjacent interstices. Elytra black, pronotum and head red _____ ***P. bicolor***

Holotype (male, 3.0 x 2.0 mm): IRIAN JAYA: J. Waropen Prov. Wapoga riv., ca. 100 m, Kwadewa, logging rd., 1.-2.3.1999, leg. Riedel (NMW).- **Paratypes**: 1 ex.: IRIAN JAYA; Japen Isl., Kontiunai, 600-700 m, 26.XII.2000, leg. A. Riedel (CHG).

Description: Total length 3.0 mm; total width: 2.0 - 2.2 mm.- Head, pronotum and legs unicoloured red; elytra black. Head entirely covered with microsculpture. Antennal cupule very large, completely concealing first club segment (Fig. 7c). Mesosternal tablet c. 4 x as long as wide; metasternum c. 1.25 x as long as mesosternal tablet; posterior femora c. 2.5 x as long as wide. Aedeagophore large (1.7 mm = 0.9 x as long as elytral length) and parallel-sided; median lobe about as long as the parameres, band-shaped, shortly pointed apically; parameres also band-like, apices pointed and curved to midline, a little concave on inner face (Fig. 1).

Discussion: This species is most similar to *P. obsoleta* and *P. bacchusi* in the sculpture of elytra, also in the shape of the mesosternal tablet, of metasternum length and of postfemora; to distinguish from both by the striking bicoloured surface. The aedeagus of *P. bacchusi* is quite distinct from that of *P. bicolor*. Unfortunately the aedeagus of *P. obsoleta* is still unknown.

Pilocnema biroi sp.n.

HEBAUER, 2001:39, sp. 4

The key to the *Pilocnema* species (HANSEN 2003) is modified as follows:

- 5 Inner three elytral rows rather sparsely punctate ...
 - (a) Mesosternal tablet c. 4.5 times as long as wide, posterior femora c. 2.4 times as long as broad _____ ***anisopunctata* HANSEN**
 - (b) Mesosternal tablet c. 3.8 times as long as wide, posterior femora c. 2.1 times as long as broad _____ ***biroi* sp.n.**
- Inner three elytral rows more uniformly punctate. ...

Holotypus (male; 3.5 x 2.5 mm): N. GUINEA, Biró 1899/ Sattelberg, Huon-Golf. (TMB).- **Paratypes**: 1 female: same data as holotype (CHG).

Description: Total length 3.5 - 4.0 mm; total width: 2.5 - 2.7 mm.- Very similar to *P. anisopunctata*, and agreeing in all external characters mentioned under *P. anisopunctata*, except as follows: Mesosternal tablet more slender (a. 3.8 times as long as wide) and posterior femora

more stout, c. 2.1 times as long as broad. Metasternum c. 1.2 times as long as mesosternal tablet. Antennal club very large, completely concealing first club segment (Fig. 7c). Aedeagophore striking large (2.6 mm = length of elytra), median lobe exceeding parameres, parallel-sided, abruptly narrowed at apex, parameres shorter than median lobe, parallel-sided, apically obliquely truncate (Fig. 3).

***Pilocnema fusipalpis* sp.n.**

The key to the *Pilocnema* species (HANSEN, 2003) is modified as follows:

- 3** Antennal cupule only concealing base of 1st club segment. Antennal grooves of prothorax moderately larger, defined posterolaterally by a strong ridge which extends c. ½ across the hypomeron.
- 3a** Elytra bicolorous, brownish to black with yellowish apical spot which often extends anteriorly along lateral margin and sometimes also across elytral base.
Smaller, 2.0 - 2.4 mm. - Australia (QLD) _____ ***P. maculiapex* HANSEN**
- 3b** Elytra uniformly dark. Larger, 2.5 - 2.7 mm.- Irian Jaya _____ ***P. fusipalpis* sp.n.**

Holotype (male, 2.5 x 1.8 mm): "Irian Jaya: Prov. Jayawijaya, Wamena Yobosim-Kiroma, 2500 - 2750 m, 13.9.1991, leg. A. RIEDEL" (MNS). - Paratype (female, 2.7 x 1.8 mm, teneral, yellowish): "Irian Jaya: Jayawijaya zw. Theila u. Habbama-See, 2000 - 2950 m, 22.10.1993, leg. A. RIEDEL" (MNS).

Description: Total length: 2.5 - 2.7 mm; total width: 1.8 mm.- Surface uniformly dark. Head and pronotum smooth and shining, almost impunctate. Maxillary palpi very long and slender, palpomere 2 and 3 strongly clubbed, palpomere 4 almost symmetrical, sharply pointed (Fig. 8). Antennal cupule very large, fully as wide as club segments, only concealing base of 1st club segment; 1st and 2nd club segments cylindrical, not distinctly narrowed apically (Fig. 7b). Eyes protruding, distance between eyes c. 6 times eye width. Pronotum strongly narrowed anteriorly. Serial punctures of elytra standing in distinct striae, except near suture in basal half, very fine there, distinctly coarser laterad and apicad. Interstices with moderately fine, irregular and little dense punctation. Mesosternal tablet narrow, c. 4 times as long as wide, point both anteriorly and posteriorly, nearly as long as elevated middle portion of metasternum. Aedeagus with short knife shaped parameres; median lobe nearly parallel-sided, obtusely rounded at apex (Fig. 6).

Discussion: This species comes close to the Australian *P. maculiapex* HANSEN for the shape of the antennal club, the similar elytral series and the shape of the mesosternal lamina. It differs mainly in the larger size, uniformly piceous colour and the different aedeagus. The single female paratype of *P. fusipalpis* seems to be somewhat uncertain because of its teneral condition and therefore with pale colour but agrees in all sculptural characters and in the antennal type. The maxillary palpi however differ from those of the holotype in length and width (Fig. 8), maybe this is caused by the teneral stage.

***Pilocnema gracilipes* sp.n.**

The key to the *Pilocnema* species (HANSEN 2003) is modified as follows:

- 4a** Body slightly broader, elytra only slightly (c. 1/10) longer than wide, broadly rounded posteriorly. Elytral striae effaced in c. apical ¼ -1/5.- Irian Jaya _____ ***gracilipes* sp. n.**
- Body slightly narrower, elytra c. 1/5 longer than wide, more attenuated posteriorly. Elytral striae effaced in c. apical half.- Papua _____ ***kaindi* HANSEN**

Holotypus (male; 2.9 x 2.0 mm): IRIAN JAYA: Paniai Prov. Kamandoga, Bilai, [03°55'S-136°21'E] 1900-2300 m, 3.1.1996, leg. A. Riedel (NMW).- **Paratypes**: 1 female: same data as holotype (NMW); 8 exs.: Irian Jaya: Jayawijaya, Bime, 1600-1900 m, 22.9.1993, leg. A. Riedel (7 MNS, 1 CHG); 1 ex.: IRIAN JAYA: Tetaho Kosmena, 1700 m, 28.III.1993, leg. A. Riedel (MNS); 11 exs.: Irian Jaya: Jayawijaya, Jiwika, 24.10.1993, 1990-2050 m, leg. A. Riedel (MNS); 9 exs.: Irian Jaya: Jayawijaya, Wamena, Jiwika, 29.9.1992, 1900-(2000)2300 m, leg. A. Riedel (MNS); 2 exs.: Irian Jaya: Jayawijaya, Okloma-Emdoman, 1750-1950 m, 28.8.1993, leg. A. Riedel (MNS); 4 exs.: Irian Jaya, Jayawijaya, Diuremna, 9.-11.9.1992, 1900-2100 m, leg. A. Riedel (3 MNS, 1 CHG); 22 exs.: Irian Jaya, Baliem-Tal, Jiwika-Wandaku, 5.-6.8.1990, 700-2300 m, leg. A. Riedel (21 MNS, 1 CHG); 9 exs.: Irian Jaya: Baliem-Dist., Kangime, 4.9.1990, 1900 m, leg. A. Riedel (MNS); 2 exs.: Irian Jaya: Baliem-Tal, Jiwika, 1700-2300 m, 1.-2.9.1990, leg. A. Riedel (MNS); 1 ex.: Irian Jaya: Jayawijaya, Borme, 1000-1450 m, 12.-15.8.1992, leg. A. Riedel (MNS); 4 exs.: IRIAN JAYA: Waigeo Isl., Urbinasopen Gn. Susu, 350-450 m, 25.1.2001, leg. A. Riedel (MNS).

Description: Total length 2.5 - 2.9 mm; total width: 1.8 - 2.0 mm.- Very similar to *P. kaindi* and agreeing with all external characters mentioned under this species, except for the slightly broader shape and apically more abbreviated elytral striae (see key); furthermore the mesosternal tablet is slightly wider (5 times as long as wide), metasternum c. 1.4 times as long as mesosternal tablet, legs paler, reddish brown. Posterior femora 3 times as long as wide. Antennal cupule very large, completely concealing first club segment (Fig. 7c). Aedeagophore dainty with narrow and very long (1.1 mm) parallel-sided and filiform median lobe, widely exceeding the parameres, these parallel-sided, membranous in apical third, tips longly curved to midline; basal piece twisted (Fig. 5).

Pilocnema humeralis sp.n.

HEBAUER, 2001:39, sp. 1.

The key to the *Pilocnema* species (HANSEN 2003) is modified as follows:

- 11 Elytral interstices very finely punctate in anterior half, markedly less finely punctate behind middle, especially in posterior third.- Papua _____ ***bacchusi* HANSEN**
- Elytral interstices very finely punctate, also posteriorly _____ **12**
- 12 Body black, at most vaguely paler apically, legs piceous; maxillary palpi and antennae brownish, the latter usually with paler cupule and club; cupule rarely infuscated, but still paler than palpi. Dorsal surface generally slightly less finely punctate.- Papua _____ ***humeralis* sp. n.**
- Body reddish brown, legs reddish; maxillary palpi and antennae yellowish red, the latter with darker cupule and club, cupule markedly darker than palpi. Dorsal surface generally slightly more finely punctate.- Irian Jaya _____ ***obsoleta* HANSEN**

Holotypus (male; 2.8 x 2.0 mm): PAPUA N.G.: Morobe Prov. Mindik, 27.4.1998, 1400-1550 m, sifted, leg. A. Riedel (NMW).- **Paratypes**: 34 exs.: same data as holotype (31 NMW, 3 CHG).- 6 exs.: IRIAN JAYA: Sorong, Makbon, Malawor, 50 m, 28.I.2001, leg. A. Riedel (5 MNS, 1 CHG); 2 exs.: IRIAN JAYA: Wandammen Bay, Wondiwoi Mts., Wasior, 500-700 m, 14.I.2001, leg. A. Riedel (1 MNS, 1 CHG); 1 ex.: same locality, 800-880 m, 5.I.2001, leg. A. Riedel (MNS); 2 exs.: IRIAN JAYA: Waigeo Isl., Urbinasopen Gn. Susu, 350-450 m, 25.1.2001, leg. A. Riedel (1 MNS, 1 CHG).

Description: Total length 2.3 - 2.9 mm; total width: 1.7 - 2.0 mm.- Very similar to *P. bacchusi* and *P. obsoleta*, and agreeing in all external characters mentioned under *P. bacchusi*, except as follows: Microsculpture of clypeus generally slightly more extended, covering about anterior 2/3 of clypeus in front of eyes (i.e. virtually entire deflexed portion): Antennal cupule very large, completely concealing first club segment (Fig. 7c). Elytral punctation not coarser posteriorly; mesosternal tablet c. 4.8 times as long as wide, metasternum c. 1.4 -1.5 times as long as mesosternal tablet. Antennal cupule usually rather pale, paler than maxillary palpi. Aedeagus very small (0.74 mm) and slender, median lobe exceeding the parameres, evenly attenuate in distal half; parameres apically shortly hooked to midline; basal piece twisted (Fig. 4).

NOTE: Separated from *P. bacchusi* and *P. obsoleta* by the characters given in the key. Moreover several specimens of *P. humeralis* (incl. holotype) have a characteristic humeral hump (absent in all other *Pilocnema* spp.); this hump is, however somewhat variable, sometimes only weakly pronounced, or even absent.

***Pilocnema mianminensis* sp.n.**

HEBAUER, 2001:39, sp. 2.

Among species with short metasternum (*P. brevisternum*, *confusus*, *crassipes*, *mianminensis*) belonging to the species with finer and sparser punctate inner elytral striae:

(a) Inner elytral striae coarser: *P. brevisternum*, *confusus*.

(b) Inner elytral striae finer: *P. crassipes*, *mianminensis*.

The key to the *Pilocnema* species (HANSEN 2003) is modified as follows:

9 Metasternum shorter, its raised middle portion ...

(a) Mesosternal tablet rather broad c. 3.5 times as long as wide. Clypeus with microsculpture restricted to a narrow anterior band. Length, 2.7 - 3.0 mm.- Papua

***mianminensis* sp.n.**

(b) Mesosternal tablet narrower, c. 4.5 times as long as wide. Clypeus with microsculpture more extended (c. anterior 2/3 of clypeus in front of eyes). Length, 2.6 mm.- Irian Jaya

***crassipes* HANSEN**

- Metasternum longer, its raised middle portion ...

Holotypus (male, 2.7 x 2.0 mm): PAPUA N.G.: Sandaun Prov. S.Mianmin, 1000 m, 19.5.1998, sifted, leg. A. Riedel (NMW).- **Paratypes:** 3 exs.: same data as holotype (2 NMW, 1 CHG); 1 ex.: PAPUA N.G.: Sandaun Prov. N.Mianmin, 1100 m, 20.5.1998, sifted, leg. A. Riedel (NMW).

Description: Total length 2.3 - 2.8 mm; total width: 1.8 - 2.0 mm.- Very similar to *P. brevisternum* in most external characters, but different by the following: inner elytral striae (particularly 2 and 3) more finely and sparsely punctate; mesosternal tablet c. 3.5 times as long as wide; legs slightly thicker, posterior femora c. 2.2 times as long as wide. Metasternum c. 1.0 times as long as mesosternal tablet. Antennal cupule very large, completely concealing first club segment (Fig. 7c). Aedeagophore striking large (1.7 mm = half as long as body length); median lobe broader than parameres, widely exceeding the latter; basal piece twisted, nearly as long as the parameres, these strongly narrowed in the middle, widened and rounded apically (Fig. 2)

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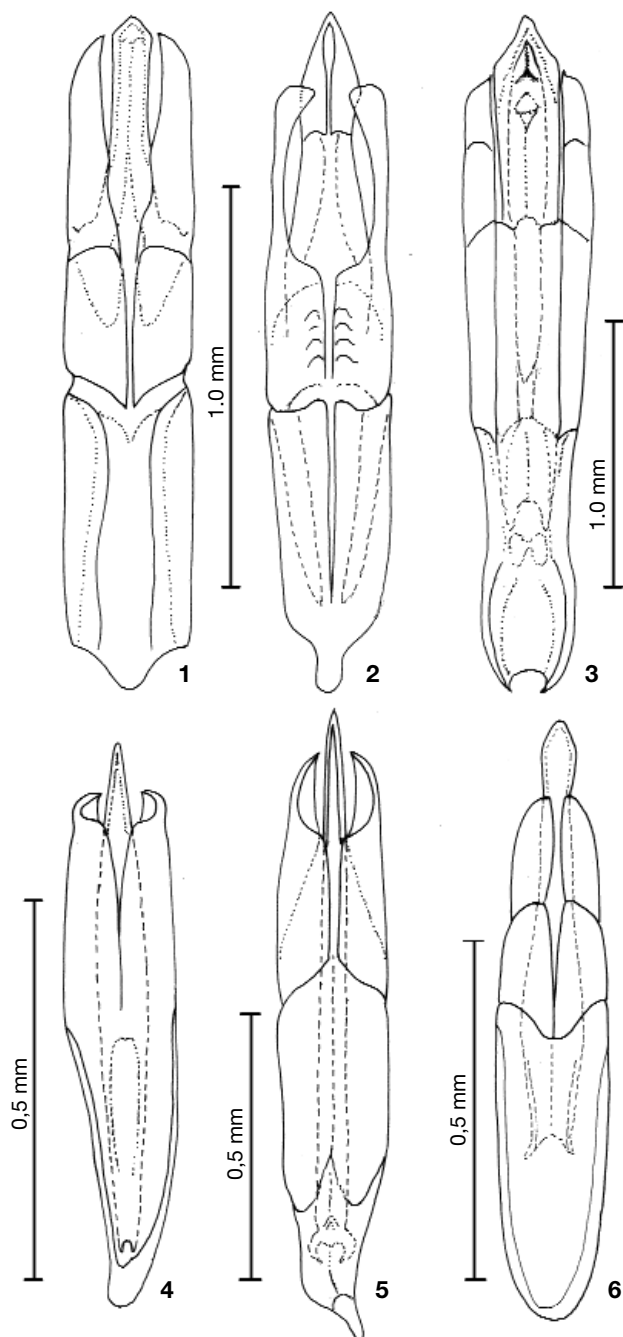


Fig.1-6: Aedeagophores of *Pilocnema* spp.:

1 *bicolor* sp.n., **2** *mianminensis* sp.n., **3** *biroi* sp.n., **4** *humeralis* sp. n., **5** *gracilipes* sp.n.,
6 *fusipalpis* sp.n.

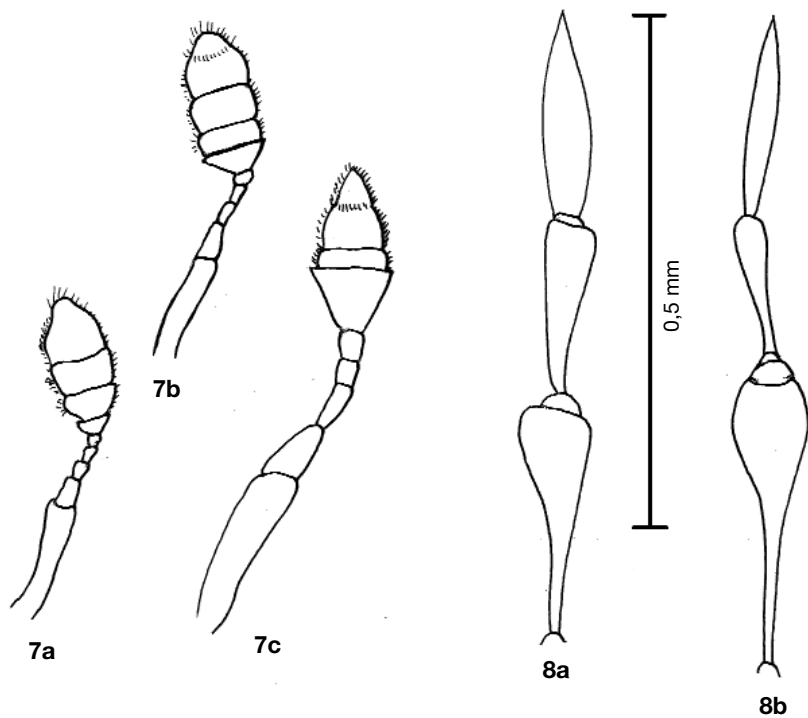


Fig. 7: *Pilocnema* sp., antennal types: **a)** *P. nigra*-type; **b)** *P. maculiapex*-type; **c)** *P. brevisternum*-type.

Fig. 8: *Pilocnema fusipalis*: maxillary palpus, **a)** Holotype (male), **b)** Paratype (female).

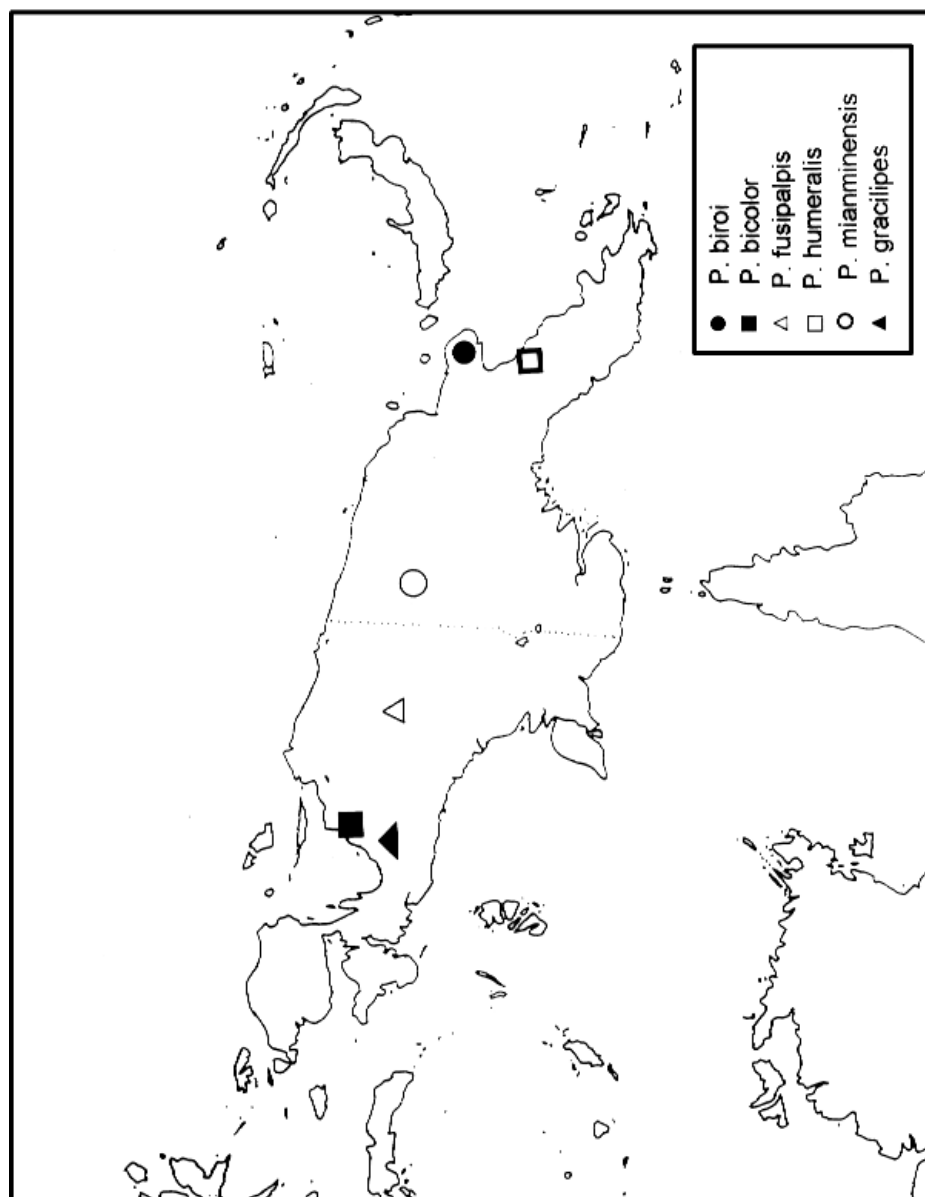


Fig. 9: Distribution map of the new species (Papua New Guinea).

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