

**Two new species of the genus *Copelatus* ERICHSON, 1832,  
subgenus *Papuadytes* BALKE, 1998  
(Insecta: Coleoptera: Dytiscidae) from Papua New Guinea**

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**Abstract**

*Copelatus (Papuadytes) desii* sp.n. and *Copelatus (Papuadytes) messeri* sp.n. are described from Papua New Guinea lowlands. The latter species is closely related to *Copelatus (Papuadytes) casuarinus* BALKE, 1998, and *Copelatus (Papuadytes) fume* BALKE, 1998 from Irian Jaya. The position of *C. (P.) desii* sp.n. is unclear at present.

**Zusammenfassung**

Die neuen Arten *Copelatus (Papuadytes) desii* sp.n. und *Copelatus (Papuadytes) messeri* sp.n. werden hier beschrieben. Beide stammen aus dem Flachland von Papua Neu Guinea. *Copelatus (Papuadytes) messeri* sp.n. ist nahe mit den Arten *Copelatus (Papuadytes) casuarinus* BALKE, 1998 und *Copelatus (Papuadytes) fume* BALKE, 1998 aus Irian Jaya verwandt. Dafür sprechen zwei Merkmale: 1.) Spitze des Medianlobus des Aedeagus in Lateralsicht knopfartig erweitert und 2.) Halsschild lateral nicht gerandet. Die Stellung von *C. (P.) desii* ist derzeit nicht zu klären.

**Introduction**

BALKE (1998) erected the subgenus *Papuadytes* for the New Guinea running water species of the Dytiscidae genus *Copelatus* ERICHSON, 1832. Two known and 31 new species were treated in that paper. Most species have rather limited distributional ranges and the high degree of endemism observed made the discovery of additional taxa likely. Recently I received ten unidentified specimens collected in Papua New Guinea lowlands. This series is composed of two hitherto undescribed species. I describe these below to make their names available for an ongoing phylogenetic analysis.

**Materials and methods**

The specimens studied here were borrowed from the National Museum of Natural History, Smithsonian Institution, Washington D.C., USA (USNM). Some paratypes are deposited in the Naturhistorisches Museum Wien, Austria (NMW).

The style of the descriptions follows BALKE (1998). The illustrations were traced from SEMs taken with a magnification of 110x. The abdominal sternite 7 is the last visible sternite, or the 6<sup>th</sup> visible sternite.

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The diagnoses are rather short. Most species of this species rich subgenus are very similar to each other. Often, only males can be identified with certainty. Main character is the median lobe of the aedeagus. The subgenus was described in detail by BALKE (1998). Here, only features being useful for species identification are given for each species.

### Taxonomy

The subgenus *Papuadytes* of *Copelatus* is characterised by: 1.) elongate Copelatinae 2.) without pronotal or elytral striae or striae, 3.) protarsomere 4 of male with hook-shaped stout seta antero-laterally (BALKE 1998).

#### *Copelatus (Papuadytes) desii* sp.n. (Figs. 1 - 2)

**Holotype** ♂: Papua New Guinea: East Sepik Province: Amboin patrol post, Karawari lodge, 14.I.1983, A.C. Messer (USNM). **Paratypes**: 3 ♀♀, same label data as holotype (USNM, NMW).

**Diagnosis**: Total length of beetle 3.7 - 3.9 mm, length of beetle minus head 3.5 - 3.7 mm.

**Surface sculpture**: Upper surface with distinct microreticulation consisting of small polygonal cells. Meshes only moderately deeply impressed, beetle shiny. Head moderately densely and coarsely punctured posteriorly. Pronotum with dense and coarse puncturation, size of punctures corresponding with size of meshes. Elytron with moderately dense and coarse puncturation as on pronotum. Venter with few punctures only.

**Structures**: Pronotum with distinct lateral bead. Prosternum with distinct ridge, slightly modified anteriorly, no lateral extensions obvious. Prosternal process lanceolate, rebordered, slightly convex and with few setae. Sternite 7 gently rounded apically.

**Male**: Protarsomere 4 with antero-lateral hook large. Protarsomere 5 simple, on venter anteriorly a sparse row of short setae, posteriorly only 1 - 2 short setae present. Antenna simple, moderately stout. Sternite 7 with few lateral striae (some 3 - 4).

Median lobe of aedeagus Figs. 1, 2; parameres rather simple, gently curved towards apex, apical half twisted (cf BALKE 1998, fig. 37).

**Etymology**: Named for my old buddy Dr. Kai "Onkel Desi" Desinger, Berlin.

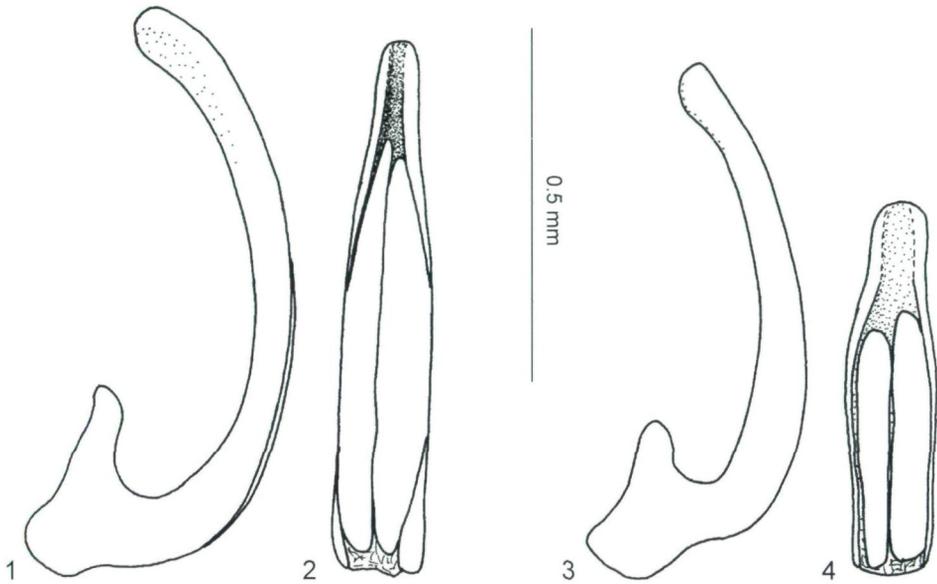
**Affinities**: This species is well characterised by its 1.) moderately dense and coarse puncturation of pronotum and elytron and 2.) form of its median lobe. Its position is unclear because I found no synapomorphies with other taxa yet.

#### *Copelatus (Papuadytes) messeri* sp.n. (Figs. 3 - 4)

**Holotype** ♂: Papua New Guinea: East Sepik Province: Amboin patrol post, Karawari lodge, 7.II.1983, A.C. Messer (USNM). **Paratypes**: 4 ♂♂, 1 ♀ same label data as holotype (USNM, NMW).

**Diagnosis**: Total length of beetle 3.3 - 3.7 mm, length of beetle minus head 3.0 - 3.3 mm.

**Surface sculpture**: Upper surface with distinct microreticulation consisting of small polygonal cells. Meshes only moderately deeply impressed, beetle shiny. Head moderately densely and coarsely punctured posteriorly. Pronotum with sparse and fine puncturation, faint on elytra. Venter with few punctures only.



Figs. 1 - 4: Median lobe of (1 - 2) *Copelatus (Papuadytes) desii* sp.n., (3 - 4) *Copelatus (Papuadytes) messeri* sp.n., (1, 3) in lateral view, (2, 4) in dorsal view.

**Structures:** Pronotum without lateral bead. Prosternum with distinct ridge, slightly modified anteriorly, no lateral extensions obvious. Prosternal process lanceolate, rebordered, slightly convex and with few setae. Sternite 7 gently rounded apically.

**Male:** Protarsomere with antero-lateral hook large. Protarsomere 5 simple, on venter anteriorly a sparse row of short setae, posteriorly only 1 - 2 short setae present. Antenna simple, moderately stout. Sternite 7 with few lateral striae (some 3 - 6).

Median lobe of aedeagus Figs. 3, 4; parameres rather simple, gently curved towards apex, apical half twisted (cf BALKE 1998, fig. 37).

**Etymology:** Named in honour of the collector, Mr. A.C. Messer.

**Affinities:** This species is closely related to *C. (P.) casuarinus* BALKE, 1998 (N Irian Jaya) and *C. (P.) fume* BALKE, 1998 (C Irian Jaya) because all of them share 1.) lack of lateral pronotal bead and 2.) median lobe of aedeagus, in lateral view, with interiorly thickened tip. *Copelatus messeri* can readily be separated from both because of its distinctly smaller size: total length minus head 3.8 - 4.1 mm in *C. (P.) casuarinus*, and 3.8 - 4.5 mm in *C. (P.) fume*.

#### Acknowledgements

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### References

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