

Redescription of *Pygmodispus (Allodispus) mancus* (Acari, Tarsonemina, Scutacaridae), a mite species from Australia

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(With 8 figures)

Abstract

The terrestrial mite species *Pygmodispus (Allodispus) mancus* Mahunka, 1967, is redescribed. The original description based on a single specimen from Australia includes some misinterpretations and/or discrepancies due to state of the holotype specimen and therefore does not give sufficient information for recognition of the species.

Introduction

In the course of describing *Pygmodispus (Allodispus)* sp. n. from Austria (Ebermann, in press*), the morphology of type and reference material from the other six species of the subgenus *Pygmodispus (Allodispus)* Paoli, 1911, was compared. It was found that the new Austrian species is most similar to *P. (A.) mancus* Mahunka, 1967 from Australia. Examination of the holotype of *P. mancus* showed considerable discrepancies between the specimen, the only exemplar found to date, and its original description. Since it may not be possible to recognize *P. mancus* on the basis of the original description, the misinterpretations and omissions are noted here.

Material

Material examined: The holotype, a female. The material is deposited in the South Australian Museum (North Terrace, Adelaide, SA 5000) under No. N196816. Collection data (after Mahunka 1967): Workanda Creek National Park, Belair, S.A.; soil and vegetation, 30 August 1953, R. V. Southcott; extracted August 8 - September 10, 1953. Serial No. TX57. The name Bornemissza is given as collector on the slide's label.

The holotype is in good condition, except that tergite C has tipped to the side and a few setae are broken off or have become detached and cannot be located.

* see: Mitt. naturwiss. Ver. Steiermark, Graz, vol. 127

Redescription

Pygmodispus (Allodispus) mancus Mahunka, 1967
Mahunka 1967; p. 1300-1301, figs. 1 - 2.

Body sizes in μm : width of tergite C 162, width of posterior sternal plate measured at the widest point 99.

The entire surface of the body with tiny pores (Figs 1-2). Some pores in roundish foveolae which are distinctly enlarged in the area between setae c_1 and the free margin of the tergite C. Body surface in vicinity of apodemata 4 with a row of very enlarged foveolae forming a pearl-necklace-like ornamentation (Fig. 2). Free margin of tergite C with fine, radiating stripes. Cupulae ia and ip oval. Posterior margin of segments C, D and EF wavy; outer edge of tergite C anterior to setae c_2 slightly wavy.

Dorsal aspect (Fig. 1): only a short, broken shaft remains of seta c_1 ; right seta c_1 missing, as are both setae d . The length of c_1 is given by Mahunka as "about the same length" as c_2 ; all the other dorsal setae are "hardly discernible minute spines". Relative length of setae $c_2 > f > e = h_2 = h_1$. Measurements (left/right) in μm : c_1 (missing), c_2 19/22, d (missing), e 8/12, f 14/14, h_1 11/(missing), h_2 10/10. None of the lost, broken-off setae could be found on slide. Of the dorsal setae present, c_2 thin and smooth, f smooth or with occasional fine, short barbs, e , h_1 and h_2 smooth.

Ventral aspect (Fig. 2): apodemata 1, 3 and 4 well developed, 2 and 5 reduced. Front edge of the posterior sternal plate with a distinct ridge which comes to a point in the midline directed toward the posterior. Widened lateral anterior edges of the plate in the vicinity of 3c bulging and folded over, continuing toward the midline as a free-standing, deeply notched thin roof. The edges of this overlap slightly at the notch; underneath this there is a vault (Fig. 2, arrow). The lateral edge of the posterior sternal plate with a posteriorly-directed hook, slightly in front of insertion of 4c. Lateral plates (*sensu* Ebermann 1991) well developed. In the area of trochanter IV, cuticle duplicature (dpi) has sharp-edged caudal demarcation (Ebermann, in press: fig. 2, 6).

Setae $1a$ with thick shaft and heavily pinnated proximally; $1b$ like $1a$, but shorter and setae $1b$ are of different lengths on the two sides of the body; $2a$ thin, smooth, shorter than $1b$; $2b$ considerably widened and wedge-shaped, smooth (Figs 2, 3); $3a$ somewhat shorter than $3b$, but both very thin, short and smooth, $3a$ missing from right side of body, $3b$ on the right side of body with a broken shaft, $3c$ somewhat longer than $1a$ and barbed on one side. Setae $4a$ and $4b$ no longer present on the specimen (figure 2 of original description shows them as very short, thin hairs); $4c$ somewhat longer than $3b$, smooth; $ps_1 > ps_3 > ps_2$, all setae of the ps -series smooth, ps_1 and ps_3 strongly curved, ps_2 minute (only right seta remains).

Trichobothrium (Fig. 4): thin stemmed, distally with an ovoid thickening, surface details (scales, etc.) not apparent.

Legs:

Leg I (Fig. 5): tibiotarsus ovoid with 16 setae, distally with a flat tubercle bearing setae tc' and tc'' ; directly next to setae tc' is the articulation of a relatively long-

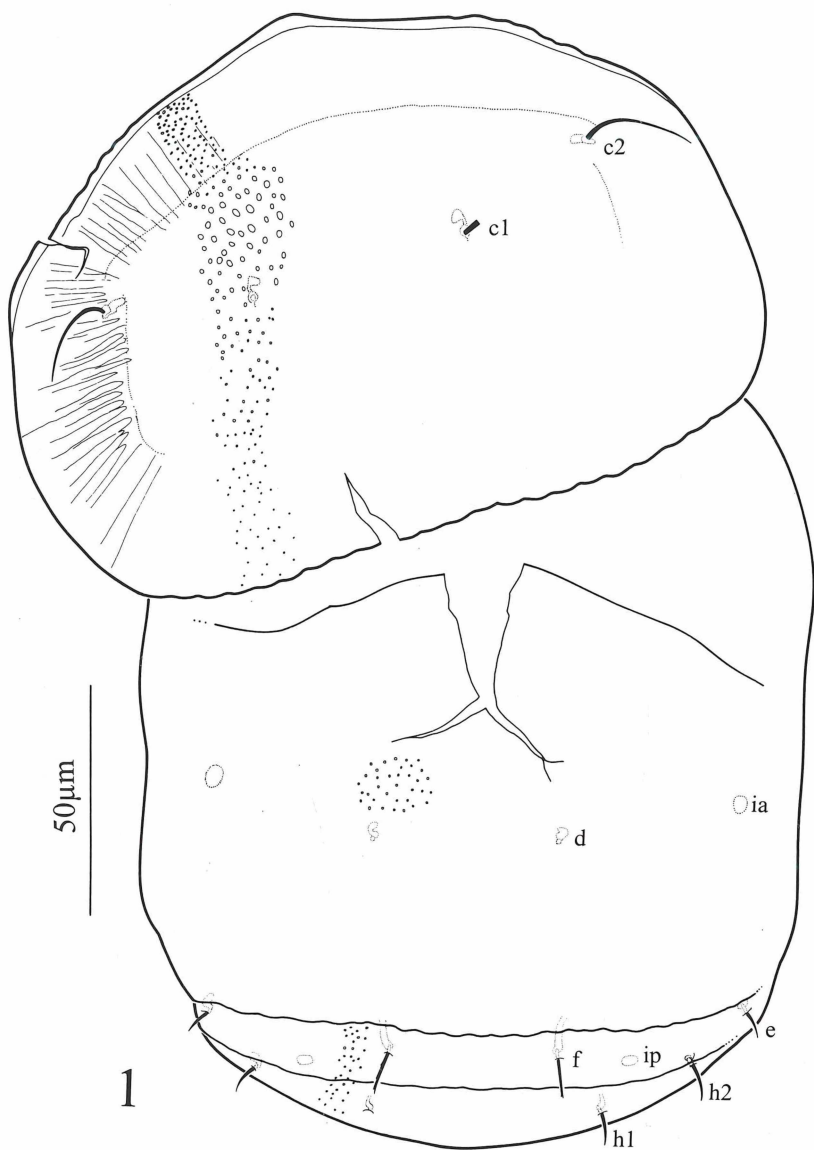


Fig. 1. *Pygmodispus (A.) mancus* Mahunka, 1967; holotype female, dorsal aspect.

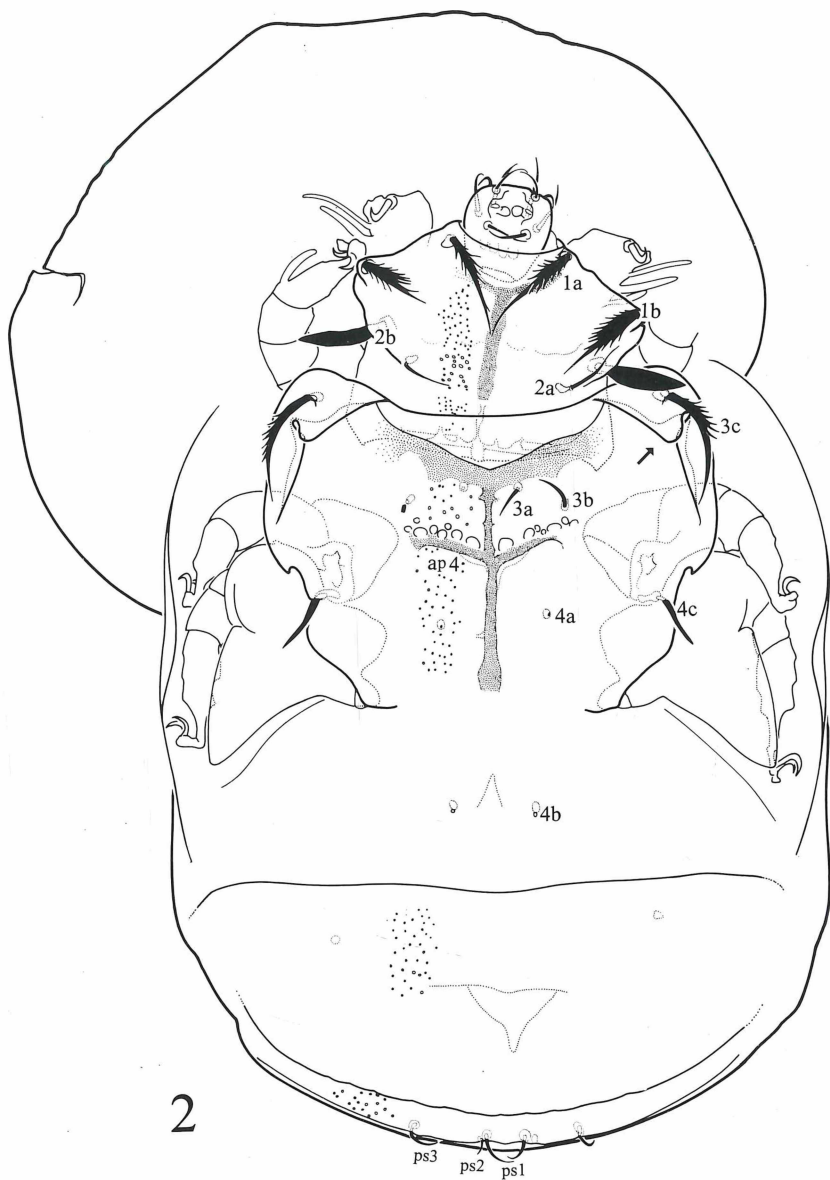


Fig. 2. *Pygmodispus* (A.) *mancus* Mahunka; holotype female, ventral aspect.

stemmed claw. Solenidia $\omega_2 > \omega_1 > \phi_2 > \phi_1$; ω_2 , ω_1 and ϕ_2 rod like, ϕ_1 with a thin stem. Both legs I are drawn back under the anterior sternal plate up to the tibiotarsus so that further details not visible.

L e g II (Fig. 6): formula of setae: trochanter (Tr) cannot be seen, femur (Fe) 3, genu (Ge) 4, tibia (Ti) 4 (solenidion ϕ), tarsus (Ta) 6 (solenidion ω); ω finger shaped, longer than ϕ ; Ta with 2 claws and small empodium.

L e g III (Fig. 7): formula of setae: Tr 1, Fe 2, Ge 2, Ti 4 (solenidion ϕ), Ta 6, Ta with 2 claws and small empodium.

L e g IV (Fig. 8): formula of setae: Tr 1, Fe 2, Ge 1, Ti 4 (solenidion ϕ not visible due to positioning), Ta 6; Tr with triangular shaped "trochanter plate" oriented caudally, length of trochanter plate corresponds to total length of tarsus and pretarsus, the latter short, with two claws and empodium.

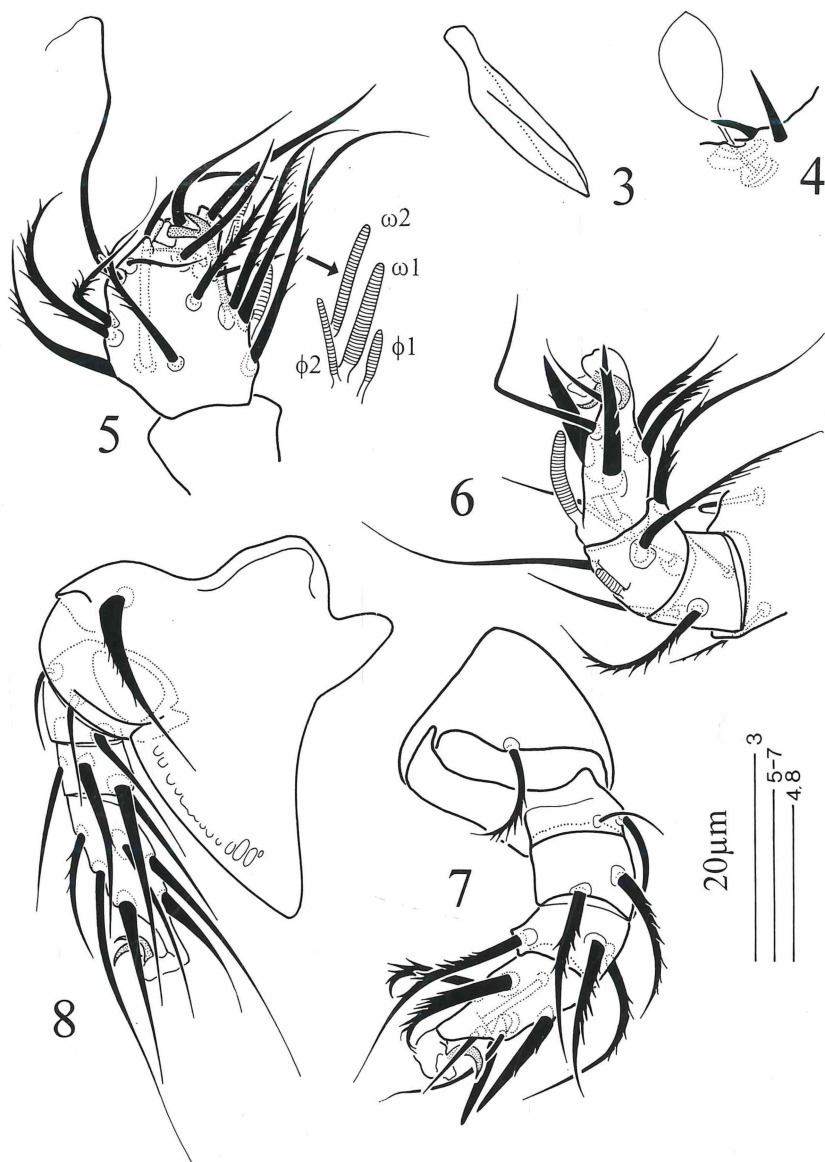
The following morphological details of *P. mancus* were incorrectly figured by Mahunka (1967: fig. 2) or were wrongly interpreted in the text:

(1) Anterior and lateral edge of the posterior sternal plate and the position of setae 4c are incorrectly drawn; (2) the pearl-necklace-like ornamentation on the posterior sternal plate, and setae 2a, 2b, 3c are missing; (3) leg I is described as "clawless" in the text and this condition is given by Mahunka as a distinguishing character for the species; (4) legs are not illustrated.

D i a g n o s i s : Owing to the pearl-necklace-like ornamentation on the posterior sternal plate and to the form of the trochanter plate of leg IV, *P. mancus* is closest to the species *Pygmodispus* (A.) sp. n. from Austria (Ebermann, in press). It can be clearly differentiated from the new species by the absence of apodeme 2, a distinctly larger trochanter plate on leg IV, and a difference in the form of the posterior sternal plate in the vicinity of the insertion of setae 3c. The following features mainly distinguish *P. mancus* from other species of the subgenus *Allodispus*: the pearl-necklace-like ornamentation on the posterior sternal plate, the unique form of the posterior sternal plate in the vicinity of setae 3c, the enlarged triangular trochanter plate and the setation on leg IV.

R e m a r k s : A pearl-necklace-like ornamentation on the posterior sternal plate is only known at present for *P. mancus*, *Pygmodispus* (A.) sp. n. and *Crenatoplaxa diademata* Mahunka, 1972 (the questionable taxonomic status of the monotypical genus *Crenatoplaxa* will be discussed elsewhere within the context of a redescription of *C. diademata*).

Ebermann's studies (1991) on the behavior in *Pygmodispus* (A.) sp. n. showed that the widened edges of the posterior sternal plate as well as the lateral plates and the greatly enlarged trochanter plate from leg IV are special defensive formations related to feigned death (thanatosis). When these animals are in danger they can hide their legs into such structures and then appear to be dead. With respect to these special structures in the ventral idiosoma region, *P. mancus* generally resembles the new taxon which justifies the assumption that *P. mancus* is also capable of thanatosis.



Figs 3 - 8. *Pygmodispus* (A.) *mancus* Mahunka; holotype female: 3 - seta 2b, 4 - trichobothrium, 5 - tibiotarsus leg I, arrow: solenidia in dorsal view, 6 - leg II, 7 - leg III, 8 - leg IV.

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Zusammenfassung

Es wird die Wiederbeschreibung der Milbenart *Pygmodispus (Allodispus) mancus* Mahunka, 1967 vorgelegt. Diese Art wurde nach dem Fund eines einzigen Exemplares aus Australien veröffentlicht. Beim Vergleich der Originalbeschreibung mit dem Holotypus konnten Diskrepanzen und/oder Mißinterpretationen festgestellt werden, die ein Wiedererkennen ausschließen. Aufgrund der weitgehenden morphologischen Übereinstimmung mit der nahestehenden neuen Art *Pygmodispus* aus Österreich ist anzunehmen, daß auch *P. mancus* die Fähigkeit zum Totstellverhalten (Thanatosis) besitzt.

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