

## Two New Acarid Hypopi (Acari, Astigmata) from the Faeces of the Numbat *Myrmecobius fasciatus* Waterhouse (Marsupialia, Myrmecobiidae)

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### Abstract

*Cosmoglyphus angustus* sp. nov., *C. angustus distinctus* subsp. nov. and *Australhypopus flagellifer* gen. et sp. nov., are described as hypopi (heteromorphic deutonymphs) from the faeces of the Numbat or Banded Anteater in Western Australia.

### Introduction

We describe herein new acarid mites represented only by their hypopial stages (heteromorphic deutonymphs), found in the faeces of a female Numbat, *Myrmecobius fasciatus*, captured at Dryandra Forest in the south-west of Western Australia. Remains of termites and one ant were also present in the scat; the hypopi were probably associated with termites, which form the principal part of the Numbat's diet (Calaby 1960).

### Systematics

#### Genus *Cosmoglyphus* Oudemans, 1932

#### Type Species

*Tyroglyphus krameri* Berlese, 1881.

#### Diagnosis (hypopus)

Characteristically shaped. Dorsal surface strongly convex, but margins wide and very thin, forming flat membranes around body and covering basal articles of legs I and II and palposoma. Tibiae and genua I and II bearing very thick posterior spines. Suctorial plate very small, far from posterior margin of body. Posterior legs (III and IV) generally completely ventral.

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*Cosmoglyphus angustus* sp. nov.

Figures 1, 3-4, 6-8

**Holotype**

Western Australian Museum (WAM) reg. no. 82/1151; hypopus; taken from faeces of female *Myrmecobius fasciatus* Waterhouse (Marsupialia, Myrmecobiidae) which was released alive; locality: Dryandra Forest, Western Australia, 32°44'S, 116°53'E; 8.vii.1981; coll. J.A. Friend.

**Paratypes**

(a) Institut royal des Sciences naturelles de Belgique, Brussels (IRSNB); hypopus; collection data as for holotype. (b) Collection of A. Fain; hypopus; collection data as for holotype.

**Diagnosis (hypopus)**

Body narrow, its anterior margin rounded, setae *sc i* and *sc e* barbed.

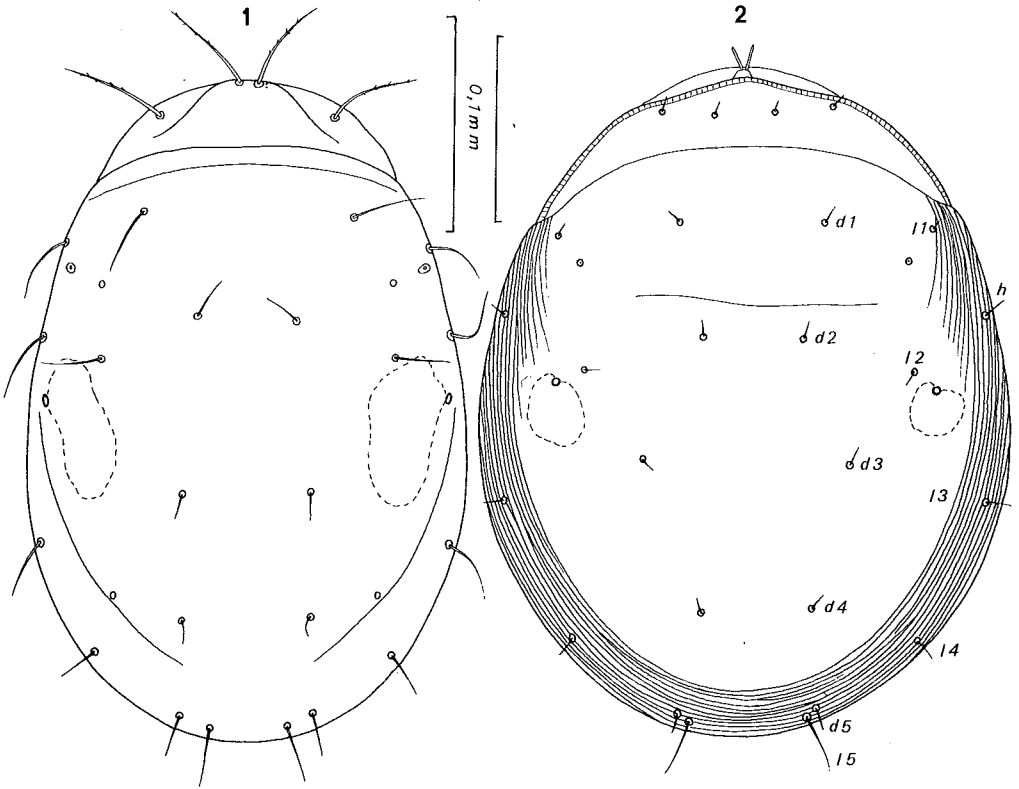
**Description (hypopus)**

Holotype 306  $\mu\text{m}$  long and 220  $\mu\text{m}$  wide; paratypes 310  $\mu\text{m}$  x 222  $\mu\text{m}$  and 315  $\mu\text{m}$  x 219  $\mu\text{m}$ . Ratio length/width 1.38 to 1.43. Dorsum: Anterior margin of body wide, membranous. Propodotum short, setae *sc e* and *sc i* 45  $\mu\text{m}$  long and placed in a convex line. Hysteronotum with thin setae 18  $\mu\text{m}$  to 30  $\mu\text{m}$  long. Venter: *v i* setae 18  $\mu\text{m}$  long. Sternum and epimeres II not reaching posterior margin of coxal fields. Epimeres III and IV long but not reaching anterior margins of coxal fields III-IV. Palposoma 33  $\mu\text{m}$  long, 9-10  $\mu\text{m}$  wide, bearing solenidia  $\alpha$  45  $\mu\text{m}$  long and two pairs of short setae. Suctorial plate small (42  $\mu\text{m}$  wide) with posterior suckers oval (9  $\mu\text{m}$  long, 7.5 to 8  $\mu\text{m}$  wide), and anterior suckers circular (7.5  $\mu\text{m}$  in diameter); lateral conoids situated at same level as posterior suckers. Setae *cx I*, *cx III* and *gp* modified in conoids; *ga* and *gm* short, piliform. Legs I longer than legs II. Tarsi I to IV 39  $\mu\text{m}$  – 32  $\mu\text{m}$  – 32  $\mu\text{m}$  – 39  $\mu\text{m}$  respectively. Tarsi I with three foliate subapical setae, one longer subapical spoon-like seta, two very slightly foliate preapical setae, one simple preapical dorsal seta, one short preapical ventral spine and one rather long simple posterobasal seta. Tarsus II as tarsus I but spoon-like seta shorter. Tarsi III-IV with five foliate preapical setae and three other simple setae. Tibiae I-II with two spines, one strong posteroventral and one smaller anteroventral. Genua I-II with a strong posteroventral spine and a short dorsobasal spine. Solenidion  $\omega$  1 of tarsus I 16-17  $\mu\text{m}$  long, not reaching apical third of tarsus.

**Remarks**

The genus *Cosmoglyphus* contains 18 species, mostly represented only by their heteromorphic deutonymph (hypopus) and so inadequately described that their identification is difficult. Only the nine following species may be determined with certainty from their hypopial stage: *C. krameri* Berlese, 1881, *C. triscissus* (Vitzthum, 1935), *C. bipilis* (Vitzthum, 1935), *C. tetramorii* (Samsinak, 1957), *C. solenopsidis* (Samsinak, 1960), *C. arushensis*, (Mahunka, 1961), *C. limbata*

(Mahunka, 1974), *C. inaequalis* Fain and Caceres, 1973 and *C. chantalae* Fain and Caceres, 1973. *C. angustus* sp. nov. is clearly distinguished from all nine by the rounded aspect of the anterior margin of the body (sinuous or angulate in the other species), the barbed aspect of the setae *sc i* and *sc e* (simple in the others) and the narrower body.



Figures 1-2 (1) *Cosmoglyphus angustus* sp. nov. Hypopus in dorsal view. (2) *Australhypopus flagellifer* sp. nov. Hypopus in dorsal view.

*Cosmoglyphus angustus distinctus* subsp. nov.

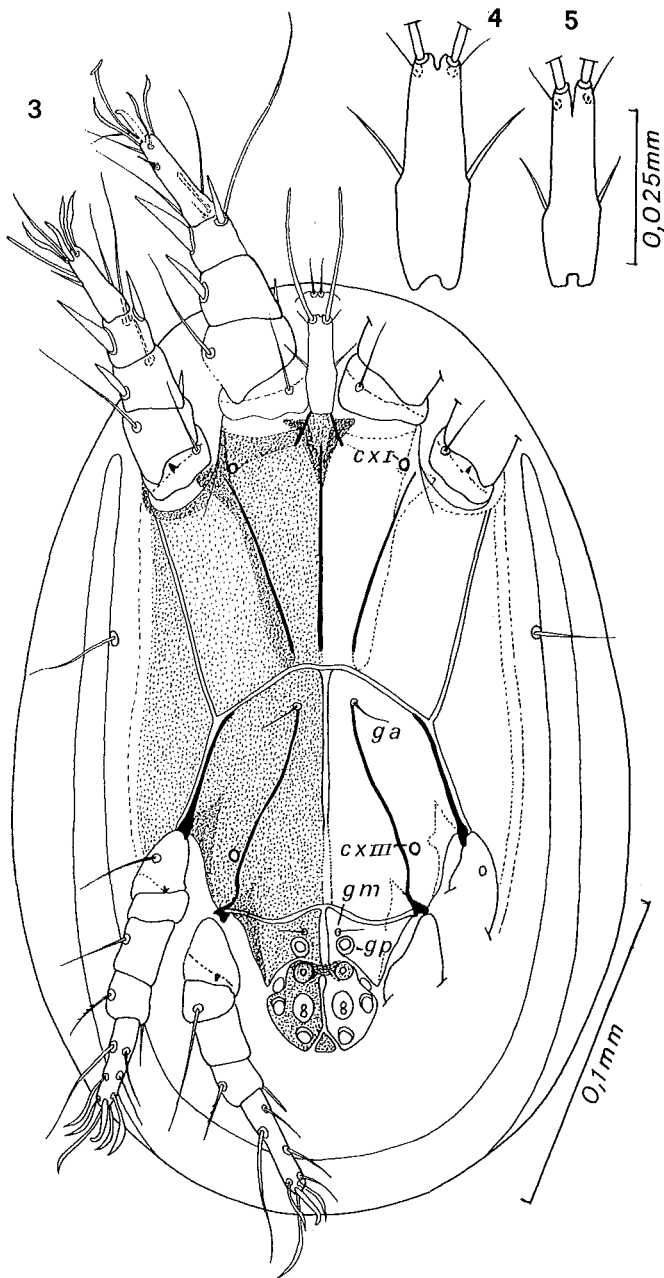
Figure 5

**Holotype**

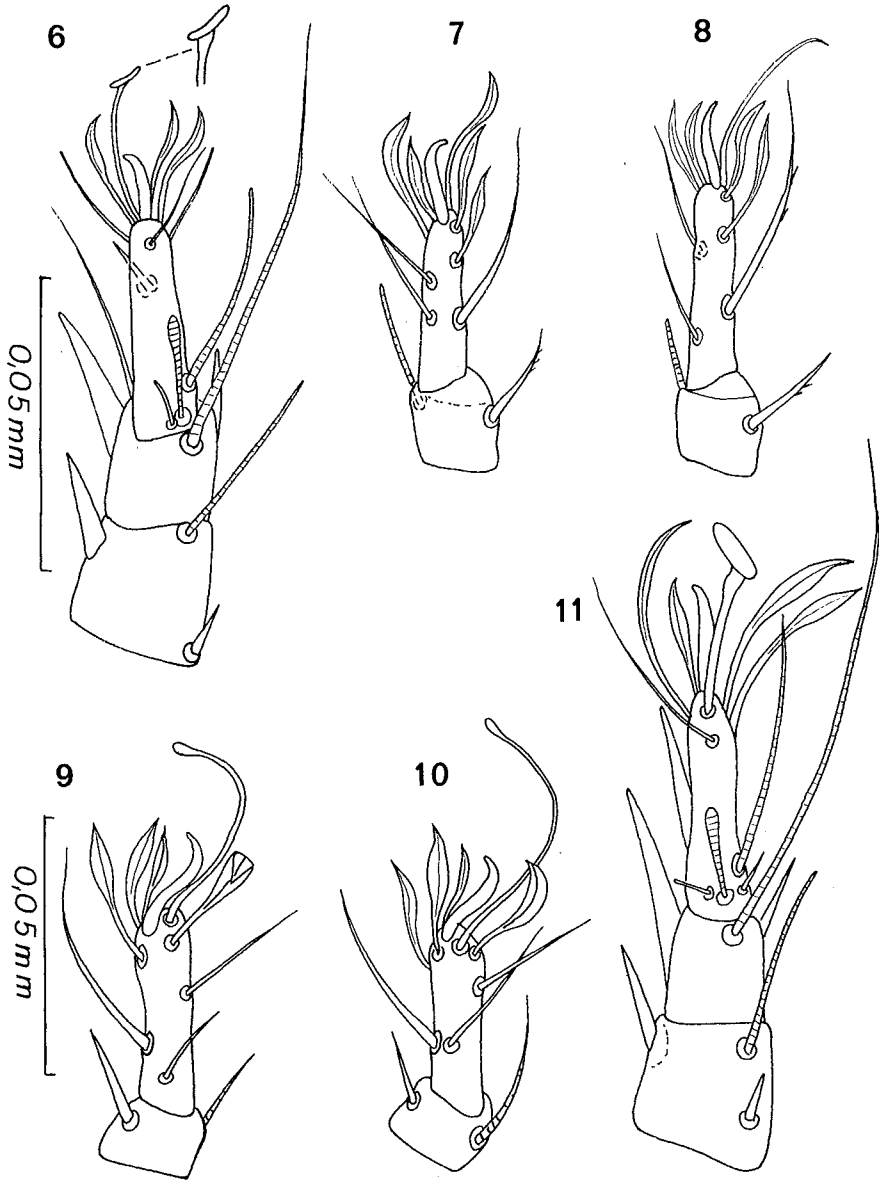
WAM 82/1152; hypopus; collection data as for holotype of *C. a. angustus*, above.

**Paratype**

Collection of A. Fain; hypopus; collection data as for holotype of *C. a. angustus*, above.



Figures 3-5 (3-4) *Cosmoglyphus angustus* sp. nov. (3) Hypopus in ventral view; (4) Palposoma. (5) *Cosmoglyphus angustus distinctus* subsp. nov. Palposoma. Lower scale line, Figure 3. Upper scale line, Figures 4 and 5.



Figures 6-11 (6-8) *Cosmoglyphus angustus* sp. nov. (6) Leg I dorsally; (7) Leg III; (8) Leg IV. (9-11) *Australhypopus flagellifer* sp. nov. (9) Leg IV; (10) Leg III; (11) Leg I dorsally. Upper scale line, Figures 6-8. Lower scale line, Figures 9-11.

### Diagnosis (hypopus)

Differing from typical form as follows: body shorter, less elongate; palposoma shorter and relatively narrower, with posterior setae more posterior; solenidion  $\omega$  1 longer; setae *sc i* and *sc e* shorter.

### Description (hypopus)

Holotype 255  $\mu\text{m}$  long and 190  $\mu\text{m}$  wide; paratype 253  $\mu\text{m}$  x 186  $\mu\text{m}$ . Ratio length/width 1.34 to 1.36. Dorsum: Anterior margin and dorsal surface as in typical form. Setae *sc e* and *sc i* shorter (28-33  $\mu\text{m}$ ). Hysteronotal setae 15 to 25  $\mu\text{m}$ . Venter: As in typical form except that palposoma is shorter and narrower (27  $\mu\text{m}$  x 6.3  $\mu\text{m}$ ) with posterior pair of setae situated more posteriorly (Figure 5). Tarsi I-IV 32  $\mu\text{m}$  – 27  $\mu\text{m}$  – 27  $\mu\text{m}$  – 32  $\mu\text{m}$  respectively. Legs as in typical form but solenidion  $\omega$  1 of tarsus is longer (19  $\mu\text{m}$ ), reaching apical third of tarsus.

### Genus *Australhypopus* gen. nov.

#### Type Species

*Australhypopus flagellifer* sp. nov.

### Diagnosis

Body very convex dorsally with margins thin, flat, membranous, covering basal segments of legs I-II and most of palposoma. Anterior margin entire, rounded. A sinuous fold present between sejugal furrow and anterior border of body. Sternum and epimeres II reaching posterior margins of coxal fields I-II. Anterior margin of coxae III with a transverse sclerite which does not reach trochanters III. Palposoma strongly developed, bearing very long solenidia (about three times as long as palposoma), and a very long pair of posterior setae. Legs I slightly longer than legs II. Tarsus I with a relatively very large spoon-like seta, and a rather long posteroventral spine. Tarsi I-IV with four foliate setae. Setae *cx I* and *cx III* piliform. Other characters as in *Cosmoglyphus*.

### Remarks

This genus differs from *Garsaultia* Oudemans, 1916 and *Cosmoglyphus* Oudemans, 1932 in the piliform shape of *cx I* and *cx III* setae, and in the abnormal development both of solenidia  $\alpha$  and of posterior setae of palposoma. It is distinguished from *Cosmoglyphus* by the fusion of a sternum and epimeres II to a transverse sclerite forming the posterior limits of coxae I and II.

### *Australhypopus flagellifer* sp. nov.

Figures 2, 9-12

#### Holotype

WAM 82/1150; hypopus; collection data as for holotype of *C. a. angustus*, above.

#### Paratypes

(a) IRSNB; hypopus; collection data as for holotype of *C. a. angustus*, above. (b) Collection of A. Fain; hypopus; collection data as for holotype of *C. a. angustus*, above.

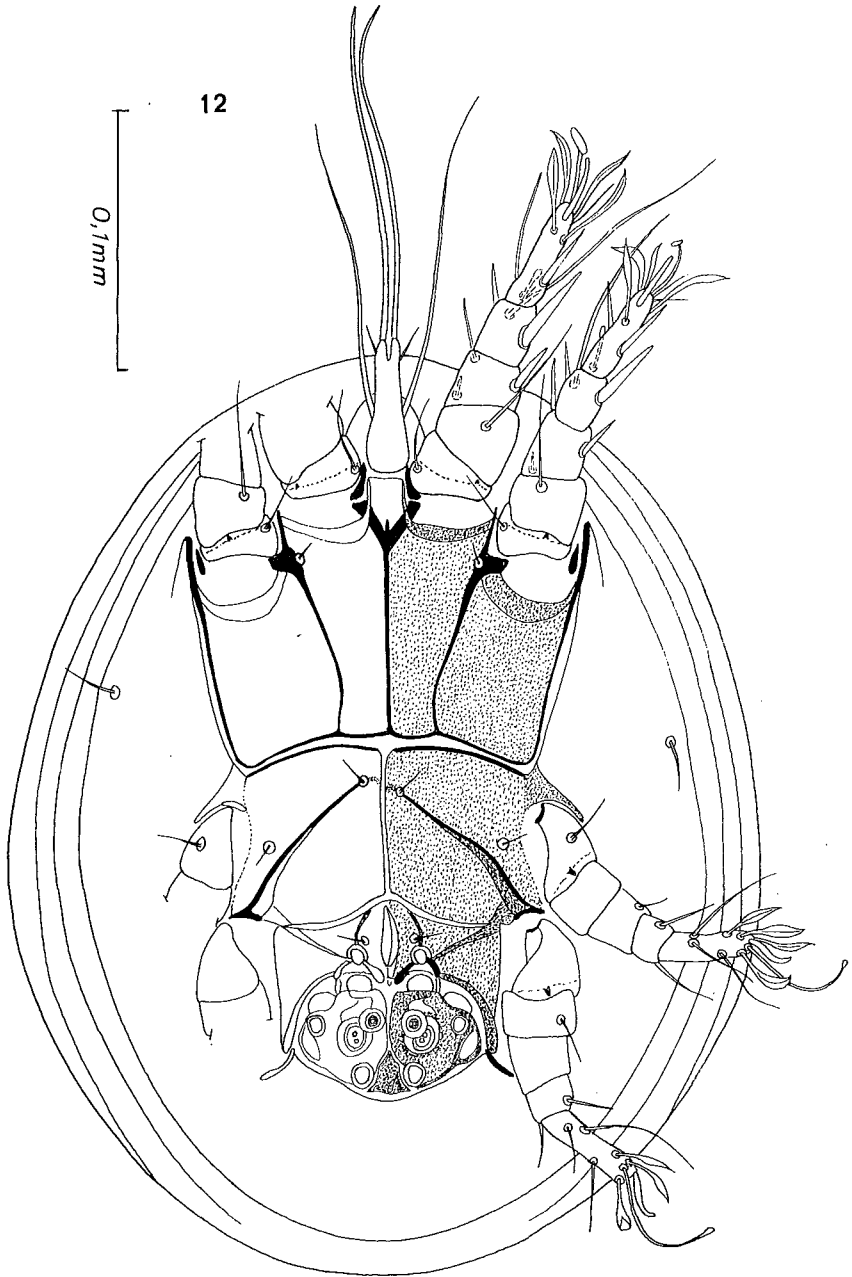


Figure 12 *Australhypopus flagellifer* sp. nov. Hypopus in ventral view.

**Description (hypopus)**

Holotype 360  $\mu\text{m}$  long, 285  $\mu\text{m}$  wide, paratype 348  $\mu\text{m}$  x 279  $\mu\text{m}$  (second paratype slightly damaged). Dorsum: Anterior margin rounded, there being immediately behind a sinuous fold. Setae *sc e* and *sc i* very short (5-6  $\mu\text{m}$ ) situated on a transverse line. Hysteronotal setae thin and short (5-8  $\mu\text{m}$ ) but  $\ell$  5 longer (25-30  $\mu\text{m}$ ). Venter: Sternum and epimeres II long, reaching posterior margin of coxal shields I-II. Transverse sclerite on anterior margin of coxal fields III, not reaching trochanters III. Suctorial plate 70  $\mu\text{m}$  wide. Lateral conoids situated a little in front of posterior suckers. Setae *cx I* and *cx III* are thin, piliform. Palposoma 51  $\mu\text{m}$  long, 16  $\mu\text{m}$  wide (maximum width) bearing two long solenidia  $\alpha$  (130  $\mu\text{m}$ ) and a pair of very long posterior setae (130  $\mu\text{m}$ ). Tarsi I-IV 45  $\mu\text{m}$  — 39  $\mu\text{m}$  — 35  $\mu\text{m}$  — 39  $\mu\text{m}$  long respectively. All tarsi with four foliate setae, in addition tarsi I-II with one spoon-like seta, one simple dorsopreapical seta and one strong posterobasal spine; tarsi III-IV with four simple setae, the apical one with bulbous apex.

**References**

- Berlese, A. (1881). Indagini sulle metamorfosi di alcune Acariinsetticoli. *Atti Ist. Veneto* (5) 8: 45.
- Calaby, J.H. (1960). Observations on the Banded Ant-eater *Myrmecobius f. fasciatus* Waterhouse (Marsupialia), with particular reference to its food habits. *Proc. zool. Soc. Lond.* 135: 183-207.
- Fain, A. and Caceres, I. (1973). Notes sur la faune acarologique de l'Angola. *Publ. Cult. Cia. Diamantes Angola* 87: 105-127.
- Mahunka, S. (1961). Wissenschaftliche Ergebnisse der ersten ungarischen zoologischen Expedition in Ostafrika. 5. Acarina: Acaridae und Anoitidae. *Ann. Hist. Nat. Mus. Hung.* 53: 525-530.
- Mahunka, S. (1974). Auf Insekten lebende Milben (Acari, Acarida, Tarsonemida) aus Afrika. IV. *Acta Zool. Acad. Scient. Hungaricae* 20: 367-402.
- Oudemans, A.C. (1916). Acari verzameld by Bonn. *Entomologische Berichten* 4: 261-266.
- Oudemans, A.C. (1932). Acarologische Aantekeningen. 112. *Entomologische Berichten* 8: 350-364.
- Samsinak, K. (1957). *Acotyledon tetramorii* n. sp. eine neue myrmecophile Tyroglyphide (Acari). *Acta Soc. Entomol. Cechosloveniae* 54: 396-399.
- Samsinak, K. (1960). Ueber einige myrmekophile Milben aus der Familie Acaridae. *Acta Soc. Entomol. Cechosloveniae* 57: 185-192.
- Vitzthum, H.G. (1935). Myrmecophile Tyroglyphiden (Acari). *Zool. Anz.* 112: 1-8.