

A NEW HETEROMORPHIC DEUTONYMPH (ACARI: WINTERSCHMIDTIIDAE) PHORETIC ON THE FLEA PYGIOPSYLLA HOPLIA JORDAN AND ROTHSCHILD IN AUSTRALIA.

A. FAIN¹ and R.W. MASON²

¹*Institut Royal des Sciences Naturelles de Belgique, Rue Vautier 29, B-1040 Brussels, Belgium*

²*Department of Agriculture, Veterinary Laboratory Branch, Mt Pleasant Laboratories, P.O. Box 46, Kings Meadows, Tasmania, Australia, 7249*

Abstract

The heteromorphic deutonymph, or hypopus, of *Psylloglyphus foveolatus* sp. n. is figured and described from the flea, *Pygiopsylla hoplia* Jordan and Rothschild, taken on *Rattus rattus* (L.) (Muridae). It is the first Australian record of this cosmopolitan genus.

Introduction

The genus *Psylloglyphus* Fain is known only from its phoretic deutonymphal stage also called hypopus. This hypopus is a modified nymph bearing two pairs of suckers which enable it to fix to various insects, in this case a flea, and so to be transported from one nest to another. This passive transport of the mite by fleas which in turn are carried by rats, is necessary for the survival of the mite colony living in the nests of rats. Seven species, grouped in three subgenera, have been described in phoretic association with various genera of fleas from different parts of the world. They are known from Gabon, Zaire, Rwanda, Kenya, Madagascar, Malaysia, Vietnam, USA, Chile and Crozet Is. (46°S, 52°E) (Fain and Beaucournu 1986). These mites are of no medical importance.

Description

Genus *Psylloglyphus* Fain

Psylloglyphus Fain 1966, *Rev. Zool. Bot. afr.* 73: 161. Type species *P. uilenbergi* Fain.

Psylloglyphus (Psylloglyphus) foveolatus sp. n.

Material examined. All hypopi, phoretic on *Pygiopsylla hoplia* Jordan and Rothschild in Australia (Pygiopsyllidae) from *Rattus rattus* (L.) (Muridae) caught on a farm 12 km S of Launceston, Tas., 13.xi.1977, R.W.M.

Holotype (No. J2664) and five paratypes in Tasmanian Museum, Hobart; five paratypes in Queensland Museum, Brisbane; 10 paratypes in Institut Royal des Sciences Naturelles de Belgique, Brussels. Most

paratypes are macerated and in rather bad condition.

Abbreviations: *vi* = vertical internal; *ve* = vertical external; *sci* = scapular internal; *sce* = scapular external; *scx* = supracoxal; *d1* to *d5* = dorsal 1 to dorsal 5; *l1* to *l5* = lateral 1 to lateral 5; *h* = humeral; *sh* = subhumeral.

Hypopus

Holotype 138 μ m long, 93 μ m wide; five paratypes 145 μ m x 99 μ m, 141 μ m x 96 μ m, 138 μ m x 97 μ m, 135 μ m x 99 μ m and 128 μ m x 75 μ m.

Dorsum (Fig. 1): Anterior angle of propodonotum with poorly developed reticulum, posterior part with small irregular pits medially. Hysteronotum almost completely pitted. All the setae are thin. Setae *vi* 11 μ m long; setae *sci* 6 μ m long; setae *sce* about 8 μ m long, set closely behind *scx*, the latter 12 μ m long; *d1* to *d5* and *l1* and *l2* 5 μ m to 8 μ m long. *Venter* (Fig. 2): Epimera I and II thin, I fused into narrow sternum. Suctorial plate 35 μ m wide; anterior suckers 6 μ m in

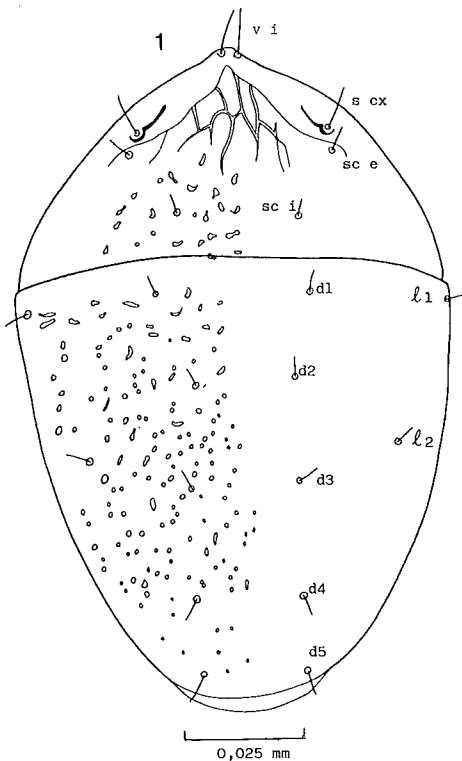
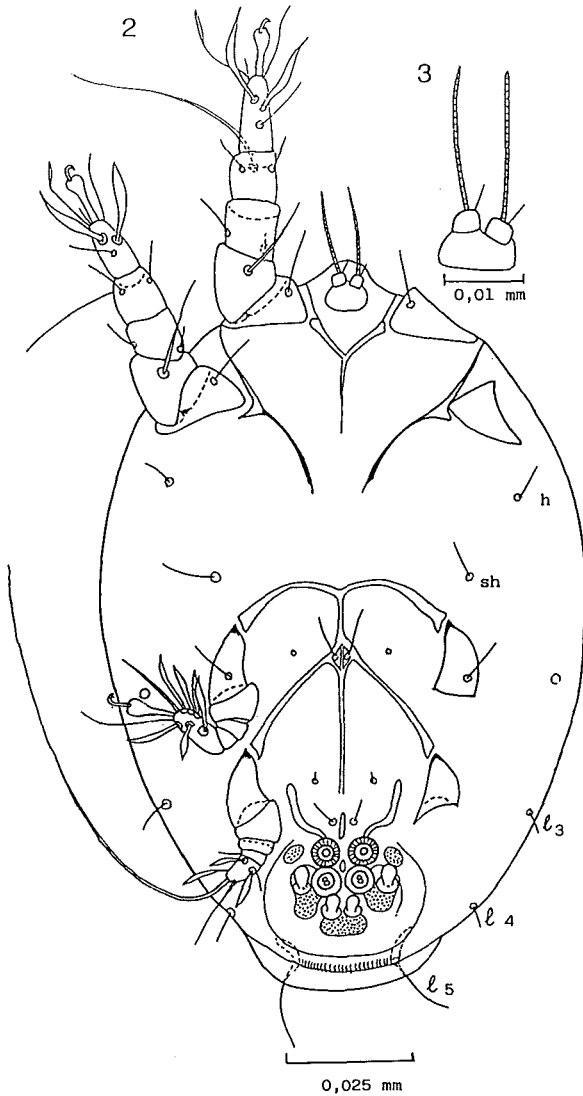


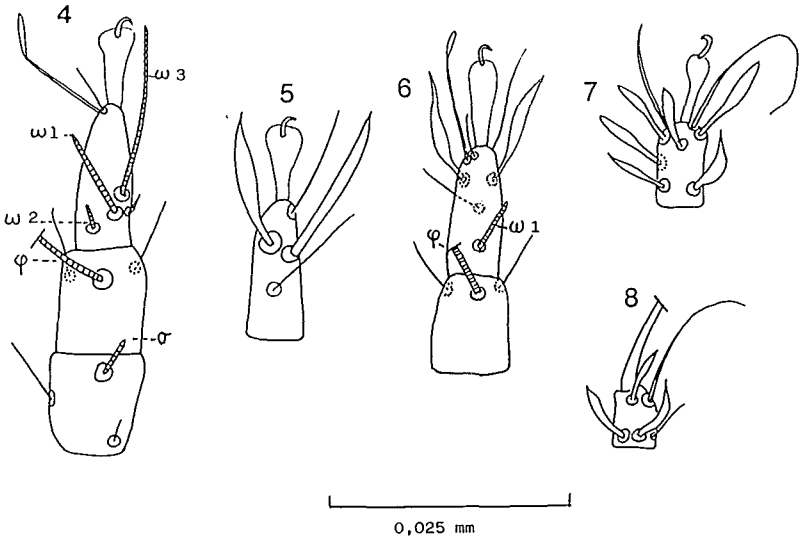
Fig. 1. *Psylloglyphus foveolatus*, hypopus: idiosoma in dorsal view.

diameter, posterior ones $7\mu\text{m}$. Setae *h*, *sh*, *l3* and *l4* are $5\text{--}8\mu\text{m}$ long and set ventrad; *l5* $12\mu\text{m}$ long. *Palposoma* (Fig. 3): Typical for genus. *Legs* (Figs 4-8): Tarsi I-III with small claws $3.6\mu\text{m}$ long, its peduncle $8.5\mu\text{m}$ long (from tip of tarsus to base of claw); tarsus IV ending in a



Figs 2-3. *Psylloglyphus foveolatus*, hypopus: (2) in ventral view; (3) palposoma enlarged.

long strong seta; tarsi I-IV 15 μ m, 12 μ m, 9.5 μ m and 7 μ m long respectively. *Chaetotaxy*: Tarsi I and II with six setae (two foliate, three simple and one spoonlike); tarsus III with eight setae (six foliate, one apical narrowly membranous and one simple posteroapical 20 μ m-25 μ m long); tarsus IV with six setae (three foliate and three simple, including one long strong apical, one shorter and thinner, and one much shorter). *Solenidia*: On tarsus I $\omega 1$ 11 μ m long, $\omega 2$ 2.6 μ m and $\omega 3$ 18 μ m; on tibia I ϕ 45 μ m; on genu I σ 6 μ m; on tarsus II $\omega 1$ 9.5 μ m; on tibia II ϕ 23 μ m (data for leg setation and solenidia applying to holotype and paratypes).



Figs 4-8. *Psylloglyphus foveolatus*, hypopus: (4) genu, tibia and tarsus of leg I in dorsal view; (5) tarsus I in ventral view; (6) tibia and tarsus II in dorsal view; (7) tarsus III in ventral view; (8) tarsus IV in ventral view.

This new species is distinguished from all others in the genus by a combination of three characters: body size small; dorsum reticulate in its anterior angle but irregularly pitted elsewhere; and tarsi I and II with a spoonlike seta.

Acknowledgements

We wish to acknowledge the assistance of Dr R. Domrow, Queensland Museum and Ms S. Leighton in the preparation of this report

References

- FAIN, A. and BEAUCOURNU, J.C., 1986. Un nouvel hypope *Psylloglyphus* (*Tetrapsyllopus*) *micronychus* subg. et spec. nov. phoretique sur une puce sudamericaine (Acarina: Astigmata). *Acarologia* 27: 257-261.