

PARASITES OF WESTERN AUSTRALIA

III

ALABIDOPUS MURIS SP. NOV. (ACARINA: ASTIGMATA:
GLYCYPHAGIDAE) FROM *RATTUS TUNNEYI*

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ABSTRACT

Alabidopus muris sp. nov., a follicle inhabiting hypopus from *Rattus tunneyi* and the tritonymph are figured and described.

INTRODUCTION

In a previous paper, Fain (1967) described *Alabidopus hydromys* from *Hydromys chrysogaster reginae* from Queensland and erected the new subfamily Alabidopinae Fain, 1967, intermediate between Labidophorinae and Lophuromyopinae. Up to now the subfamily was known only from the heteromorph deutonymph of the type species. During the Western Australia Field Program 1976 the senior author collected hypopi of the genus from *Rattus tunneyi* and successfully reared them to tritonymphs, which enables us to confirm the systematic position of the subfamily. These hypopi are closely related to *A. hydromys* Fain, 1967. They differ mainly by broader body, closed coxal field III, stronger and more conical spines on metapodosoma, and shape and length of several leg setae. They are figured and described here.

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ALABIDOPUS MURIS SP. NOV.

Hypopus (holotype) of ovoid shape, small size and white to pale yellow colour with brown legs and epimera. Length 245 μ , in 10 paratypes measured average 229 μ (207-248), width 152 μ , in paratypes 145 (128-163).

Venter (Fig. 1): Cuticle in region of gnathosoma, coxal field I and metapodosoma weakly sclerotized with tiny white spots; soft between epimera II and coxal field III. Epimera I fused in short Y-shape; epimera III and IV fused to closed coxal field III. Epimerites IV fused with small pregenital shield. Palposoma well formed with one pair of 16 μ long dentated setae and solenidia *alpha* on typical cylindrical prolongations. Short spines in coxal region I; broad 9-10 μ long spines in coxal regions III and IV. Opisthosoma strongly reduced. Genital region caudad with two pairs of genital suckers, in most paratypes pressed out of genital valves by preparation. They are inside the body in all the living specimens pressed out of follicles and kept in rearing vials. Genital anterior and median setae setiform (11, 14). Pilicolous organ and claspers absent. Legs inserted almost laterally.

Dorsum (Fig. 2): Cuticle, with exception of a soft region along sejugal furrow, sclerotized with tiny white spots. Present are: serrated setae *vi* (17), *ve* (6), *sh* (10); long spines with rounded end *sci* (9-10), *sc e* (9-10), *d 1* (9), *l 1* (9); broader conical spines dorsals 2-4 (9, 8, 7), laterals 2-5 (8, 8, 7, 5); tiny spines *d 5*, *a i* and *a e* and setiform supracoxals (9). Anal pore is situated toward dorsum. Dorsal glands between laterals 2 and 3, pores near humerals.

Legs (Figs 3-5) with very short pretarsus and long curved claws (11, 10, 6, 5), strongly curved in legs I and II, more stretched in hind legs. All tarsi relatively long (30, 30, 40, 33). Tarsus IV with strong, 114 μ long seta. Trochanters III and IV with forwardly directed spurs. Broadened tibial setae III and IV deeply inserted with three distinctly unequal dentations. Genua and tibiae III and IV shortened. Chaetotaxy of legs: tarsi 8-8-8-8, tibiae 2-2-1-1, genua 2-2-1-0, femora 1-1-0-0, trochanters 1-1-1-0. Solenidiotaxy as generally in hypopi of family: *omega* 1 (13), *omega* 3 (5), *omega* II (12), *phi* I-IV (51, 14, 5, 3), *sigma* I and II (5, 5), *famulus* present.

Rearing Tests

Hypopi pressed out of hair follicles from female hosts together with the skin irritations of infected hosts were used for rearing tests. They were put into 10 ml glass vials and covered with dense cloth material. The vials were

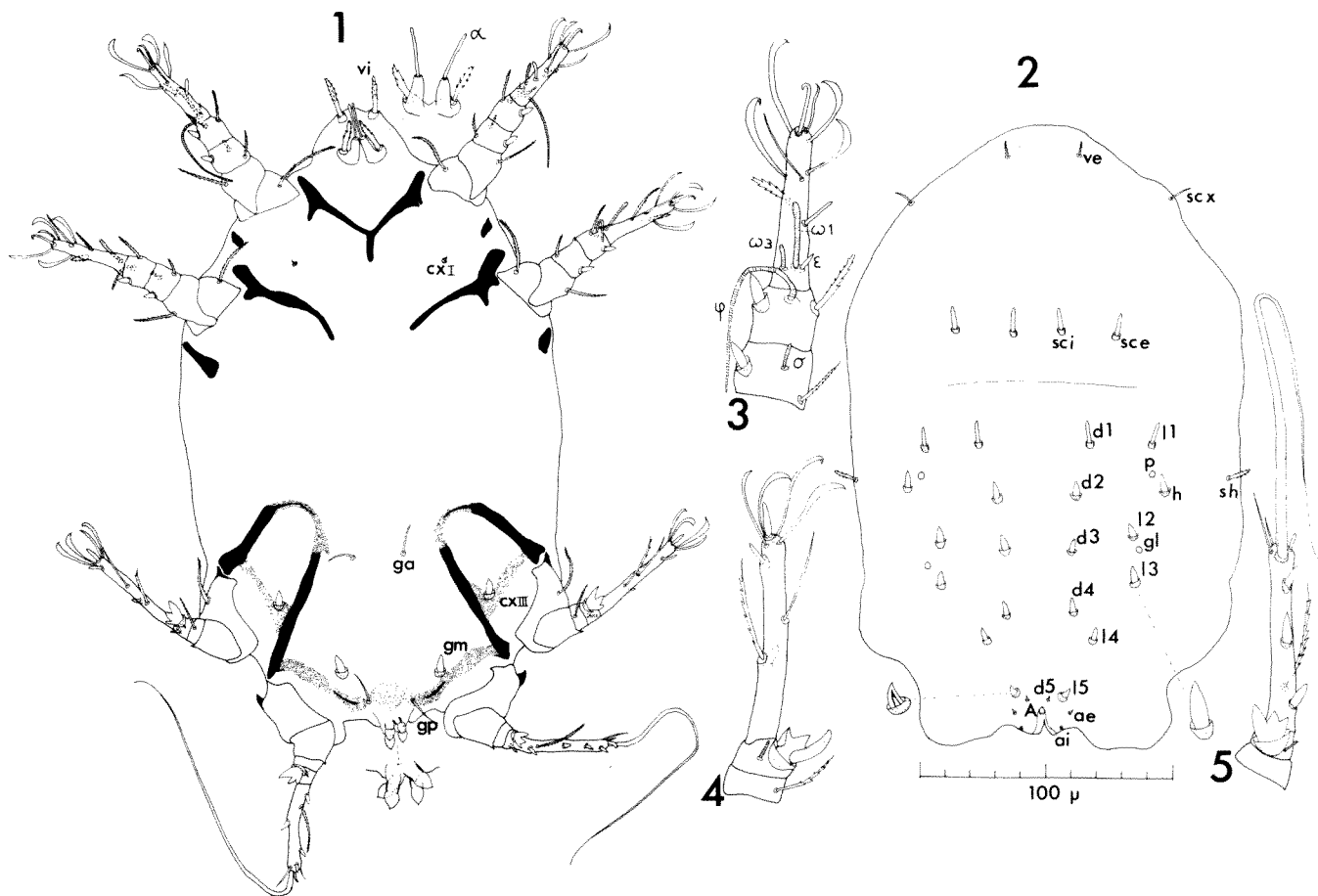
then placed in cans containing about 1 cm of water and almost closed. The cans were deposited in shade amongst the roots of Pandanus palms just above the water level of a pool. Daily observations showed that the first tritonymphs were present on the third day; on the fifth day all the specimens were dead. Death was obviously caused by the extremely high temperatures (maximum in shade 45°C, minimum 33°C).

Tritonymph (allotype) of ovoid shape and white colour. Cuticle with tiny transverse striations without tiny spines as in tritonymphs and adults of subfamily Labidophorinae and without remarkable sclerotization as in subfamily Ctenoglyphinae, or verrucose structures as in Lophuromyopinae. Lateral view shows only very slight elevations between the striations. Supplementary larger striations present in metapodosomatal region. Length 275 μ , average 268 μ from 10 paratypes measured (248-295), width 142 μ , average in paratypes 153 (127-174).

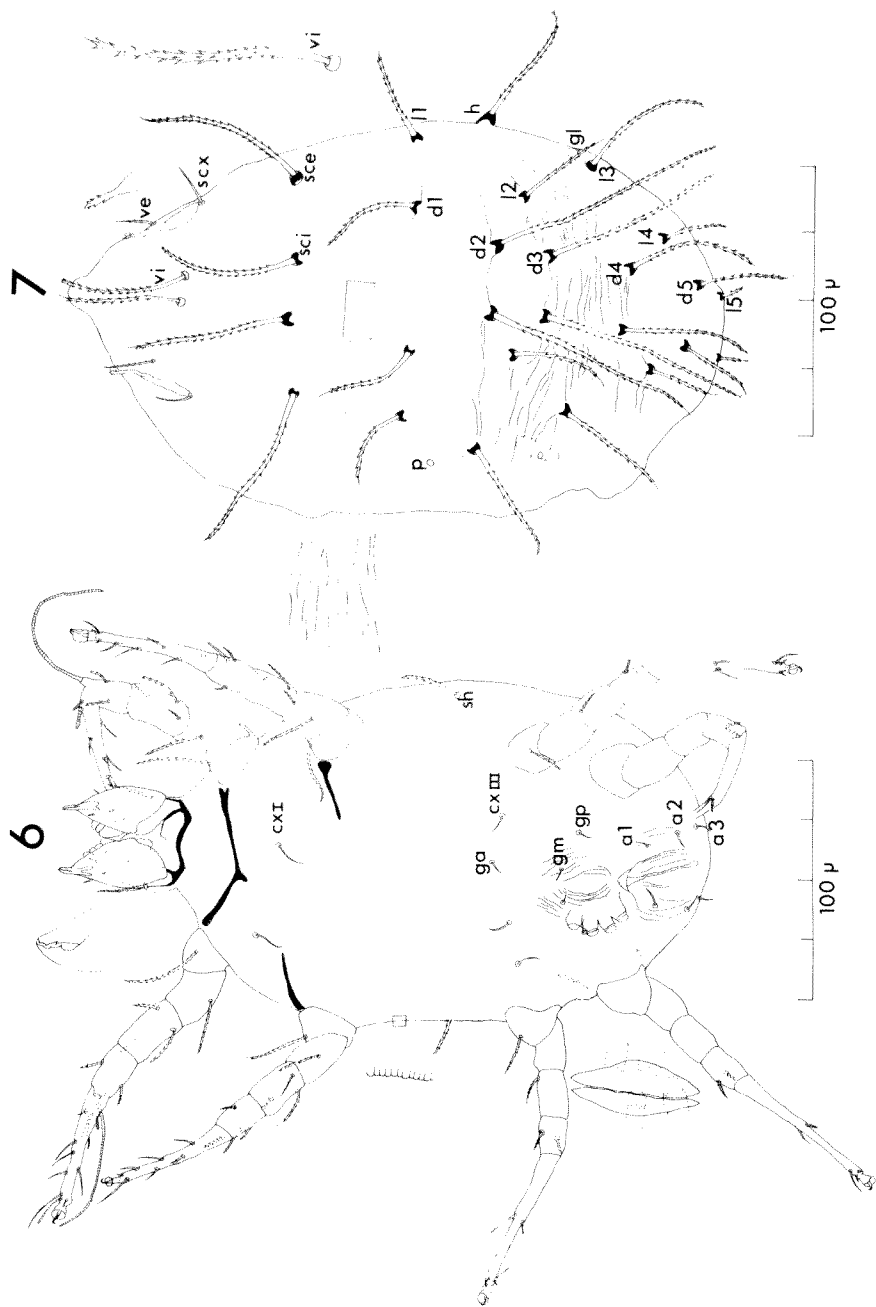
Venter (Fig. 6): Epimera I fused in short Y-shape, epimera II-IV and epimerites free and only weakly sclerotized. Setiform coxal setae in fields I (15) and III (10), *ga* (9), *gm* (8), *gp* (8). Genital region between legs IV with two pairs of two-segmented genital suckers. Position of suckers differs in the reared specimens: in allotype and four paratypes they are lying in one row of four suckers (Fig. 6), in three paratypes in a row of three suckers with the fourth on the opposite side, and in 16 specimens in normal situation (see figure). Anal region with three pairs of short anal setae (7, 9, 8). Gnathosoma with well sclerotized functional chelicerae and normal palps.

Dorsum (Fig. 7) without sejugal furrow. All dorsal setae, with exception of setiform supracoxals (17), relatively strong with short strong pectinations. Most setae on stronger sclerotized protuberances. Present are: *vi* (50), *ve* (14), *sci* (68), *se* (75), dorsals 1-5 (44, 95, 84, 51, 37), laterals 1-5 (36, 43, 55, 28, 14) and humerals (55). Dorsal glands near laterals 3, pores near lateral 1. Grandjean organ well formed, 34 μ long with hairlike cuticular prolongations.

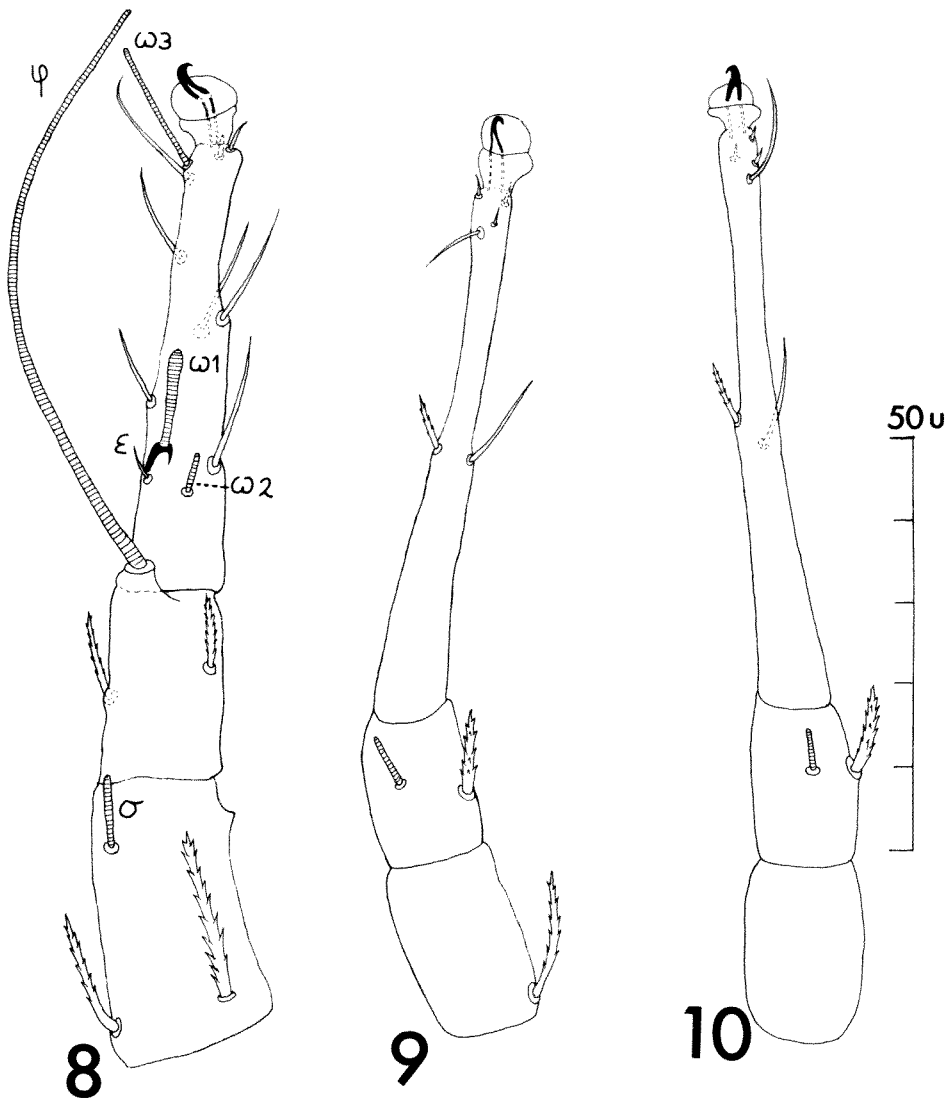
Legs (Figs 8-10) with stalked pretarsus, carrying a strong short curved claw. All tarsi long (50, 50, 59, 60). Chaetotaxy of legs: tarsi 8-8-6-6, tibiae 2-2-1-1, genua 2-2-1-0, femora 1-1-0-0, trochanters 1-1-1-0. Solenidiotaxy: tarsi 3-1-0-0, tibiae 1-1-1-1, genua 1-1-0-0. *Omega* 1 on protuberance (10), *omega* 2, 3 (6, 13), *omega* II (9), *phi* I on typical strong protuberance surpassing apical border of tibia as in species of genus *Xenoryctes* Zachvatkin, 1941. *Phi* I-IV (74, 16, 6, 6), *sigma* I and II (9, 7), *famulus* present.



Figs 1-5: *Alabidopus muris* sp. nov., holotype venter (1), dorsum (2), legs I (3), III (4) and IV (5).



Figs 6-7: *Alabidopus muris* sp. nov., allotype tritonymph venter (6) and dorsum (7).



Figs 8-10: *Albidopus muris* sp. nov., legs I (8), III (9) and IV (10).

Systematic Position of Genus *Albidopus*

Without adult specimens it is difficult to determine the exact position of the genus *Albidopus*. Based on the tritonymph, it appears that this genus belongs to the family Glycyphagidae. The absence of distinct cuticular ornamentation suggests that it does not belong to the Glycyphaginae nor to

the other subfamilies of Glycyphagidae (Lophuromyopinae, Ctenoglyphinae).

Host and Locality

Rattus tunneyi (Thomas, 1904), Mount Hart, 10, 12, 14 September 1976, Port Warrender, 28, 29, 30 October 1976, collected by mammal group of expedition, coll. nos 2679, 2681, 2700, 2707, 3099, 3106, 3112, 3137 and 3140. Hosts in Field Museum of Natural History, Chicago, and Western Australian Museum, Perth.

Pathology

The mites were found in hair follicles of dorsum of hosts above pelvis and vertebral column. They caused skin irritations and loss of hair. In strong infections, irritations were mange-like. Several hypopi were found to inhabit one follicle. They were situated with the head part towards follicle opening. Morphological adaptations for anchoring hypopi within follicles are the spurs of trochanters III and IV, forwardly directed spines of dorsum, spines of leg segments, especially broadened tibial spines III and IV, and forward and outward moving legs III and IV.

Deposition of Types

Holotype and allotype in Western Australian Museum, Perth; numerous paratypes in Perth; Field Museum of Natural History, Chicago; U.S. National Museum of Natural History, Washington, D.C.; The Acarology Laboratory, Columbus, Ohio; British Museum (Natural History), London; Muséum National d'Histoire Naturelle, Paris; Institute of Parasitology, Prague; Zoologisches Museum, Hamburg; Forschungsinstitut Senckenberg, Frankfurt; Bernice P. Bishop Museum, Honolulu; Institut de Médecine Tropicale Prince Léopold, Antwerp; Zoologisch Laboratorium, Nijmegen.

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