A new species of the ulysses group, genus Haemolaelaps Berlese (Acari: Dermanyssidae)

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Haemolaelaps sisyphus, n. sp., a much reduced member of the Australian ulysses group, is figured and described from the nasal passages of the brush-tailed possum, Trichosurus vulpecula (Kerr) (Marsupialia: Phalangeridae), in New South Wales. A key to the eight known species is given.

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The distinctive new species of Haemolaelaps Berlese now described is the eighth member of the peculiarly Australian ulysses group, the history and host relationships of which can be gleaned from the following key. Two further references are Domrow (1979, 1981). In brief, four of the species (those with seta pl2 added on genu IV, as often in Haemolaelaps) are from non-petaurid hosts, while the holotrichous four (those lacking pl2) are all from petaurids. The latter four comprise two pairs, each pair from a non-gliding host and its gliding equivalent (Ride, 1970).

Terminology is after Evans and Till (1965), except for tarsi II-IV (Evans, 1969), the word 'holotrichous' referring to the setal condition in free-living dermanyssids. Measurements are in micrometres.

Genus HAEMOLAEAPS Berlese

Haemolaelaps Berlese, 1910: 261. Type-species Laelaps (Haemolaelaps) marsupialis Berlese.

Key to females of species of ulysses group, Haemolaelaps

1. Genu IV with seta pl2 added (if pl2 lacking, pd3 also lacking). From non-petaurids ........................................ 2
   Genu IV holotrichous (pd3 present).
   From petaurids ..................................................... 5

2. Dorsal shield with setae z3. Sternal shield with distinct cornua between coxae I-II.
   Metapodal shields enlarged. From Rattus fuscipes (Waterhouse) (Rodentia: Muridae) ............................................. laertes Domrow, 1972a
   Dorsal shield lacking setae z3. Sternal shield without exaggerated cornua. Metapodal shields normal .................................................. 3

3. Dorsal shield with minute setae; holotrichous at J4 (and elsewhere, except at z3). From Antechinus flavipes (Waterhouse) and A. stuartii Macleay (Marsupialia: Dasyuridae) ........................................... telemachus Domrow, 1964

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Dorsal shield with normal setae; hypertrichous at $j_4$ (if holotrichous, both podonotal and opisthonotal portions markedly hypotrichous elsewhere) ........................................ 4

4. Palpal tibia holotrichous. Dorsal shield hypertrichous at $j_4$; podonotal portion holotrichous, except at $z_3$; opisthonotal portion with $px_{2-3}$. Genu IV with $pl_2$ added; tibia IV holotrichous. From *Trichosurus caninus* (Ogilby) (Marsupialia: Phalangeridae) ........................................ *penelope* Domrow, 1964

Palpal tibia bideficient. Dorsal shield holotrichous at $j_4$; podonotal portion markedly hypotrichous; opisthonotal portion lacking $px_{2-3}$. Genu IV lacking $pd_3$; tibia IV lacking $pd_3$ and $pl_2$. From *Trichosaurus vulpecula* (Kerr) (Marsupialia: Phalangeridae) ........................................ *sisyphus*, n. sp.

5. Dorsal shield with setae $z_3$ ........................................ 6

Dorsal shield lacking setae $z_3$ ........................................ 7


Dorsal shield holotrichous at $j_4$. Coxae II-III with seta $av$ blade-like. From *Petaurus breviceps* Waterhouse and *P. norfoicensis* (Kerr) (Marsupialia: Petauridae) ............ *calypso* Domrow, 1966

7. Sternal shield with anterior margin eroded outside setae $st_1$. Terminal pair of ventral setae barely half as long as anal shield. From *Pseudocheirus peregrinus* (Boddart) (Marsupialia: Petauridae) ............ *ulysses* Domrow, 1961

Sternal shield with anterior margin not eroded outside setae $st_1$. Terminal pair of ventral setae as long as anal shield. From *Schoinobates volans* (Kerr) (Marsupialia: Petauridae) ............ *ulixes* Domrow, 1972a

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*Haemolaelaps sisyphus*, n. sp.

(Figs 1-14)

*Material.* Holotype ♀, allotype ♂, five paratype ♀♀ and two paratype ♀♂, nasal passages of a brush-tailed possum, *Trichosurus vulpecula* (Kerr) (Marsupialia: Phalangeridae), Timbilinea State Forest, N.S.W., 26.iii.1979, D. M. Spratt and P. Haycock. Holotype, allotype and one paratype ♀ in Australian National Insect Collection, CSIRO, Canberra; remainder in my institute.

*Female.* Basis capituli (Fig. 4) slightly wider than long, with setae $c$ short, failing to reach either deutosternum or sides of basis; deutosternal denticles six, mostly single (occasionally double, rarely triple). Hypostome with $h_3 > h_1 > h_2$. $h_3$ slightly exceeding sides of basis; cornicles well sclerotized; internal malae with ciliations.
almost as long as inner edge of cornicles, but not clearly seen; epipharynx spiculate; salivary stylets almost reaching tips of cornicles; anteromedial extension of subcheliceral shelf present (as it is in all members of group), short, hastate. Epistome (Fig. 8) reaching apices of palpal femora, pointed, with a few serrations and submarginal dendritic pattern. Palpal trochanter-genu holotrichous (2.5.6); trochanter with $v_2$ only slightly expanded basally; genu with $al_{1-2}$ spatulate, dorsobasal pore present; tibia bideficient (12, including two dorsodistal rods); tarsus with a few slender ventral setae and terminal cluster of rods (figured diagrammatically), claw bifid. Chelicerae (Fig. 9) 190 long overall, with stout, strongly sclerotized shafts 35 in diameter (in dorsoventral view); basal segment 65 long; dorsal setule short (length not available because of refraction of light), not inflated basally, dorsal and external pores both present; coronal ciliations short; fixed digit with two denticles, divided tip and short, setiform pilus dentilis; movable digit 50 long, occupying 26% of overall length, with two denticles and simple tip.

Idiosoma a little broader posteriorly, but not expanded more than in Fig. 1 even when fed or gravid. Dorsal shield similarly wider posteriorly, 655-665 long, 385-405 wide (maximum); surface lightly reticulate, with paired muscle insertions and all 22 pairs of pores (lyriform behind setae $j_1$, distinctively sclerotized near $Z_3$ and $S_5$); podonotal portion hypotrichous, with 14 pairs of setae (excluding $r_3$, always present, but on cuticle) compared to usual 22 (i.e. $z_{1-3}$, $s_{1-3}$ and $r_{2-4}$ lacking — actually, only on one side of one specimen, left-hand side of Fig. 1, is entire complement of 14 present; all other counts are 13 or 12, due to absence of $j_2$, right-hand side of Fig. 1, or $z_2$, or both); opisthonotal portion also hypotrichous, with 14 pairs, left-hand side of Fig. 1, nearly quartered except for occasional setae $r_3$.

Figs 1-2. Haemolaelaps sisyphus, idiosoma, dorsal. 1.  ♂, 2. ♀. (All scales = 100 μm).
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\textit{Haemolaelaps sisyphus} $\delta$. 3. Idiosoma, ventral. 4. Capitulum, ventral (true right palp dorsal).

compared to usual 17 (i.e. $S_1$ and $px_{2-3}$ lacking; $S_3$ absent on one side of one specimen and $F_4$ on one side of another two, right-hand side of Fig. 1). Dorsal cuticle continuous posteriorly, with about eight pairs of setae (including $r_3$).

Tritosternal base unarmed (Fig. 3), laciniae well ciliated. Sternal shield 105-110 long in midline, 130-135 wide at setae $st_2$; anterior margin flatly convex, merged almost imperceptibly with presternal striae; posterior margin irregularly concave; surface reticulate only anterolaterally, with two pairs of lyriform pores; setae $st_{1-3}$ short, subequal. Metasternal shields not taking in setae $mst$ (of which one is absent on one side of four specimens) and associated pores. Genital shield 145-160 long behind setae $g$, 145-175 wide (maximum); expanded and sharply truncate behind coxae IV; surface reticulate, with paired muscle insertions and leaving genital pores free in cuticle (though not on right-hand side of Fig. 3); setae $g$ short; operculum reaching over posterior margin of sternal shield, rayed and supported by apodemes between coxae IV; insemination apparatus visible only as pale, narrow adductor canals running in from between coxae III-IV. Anal shield 125-150 long (including cribrum), 140-145 wide, only narrowly separated from genital shield; surface reticulate, with paired muscle insertions and two pores on margin; anus set forward of centre, flanked by setae $aa$ and followed by longer $pa$. Metapodal shields in two elongate elements,
outer one much the larger. Ventral cuticle with one or two pairs of shieldlets flanking genital shield, some paired pores and about 11 pairs of setae of increasing length posteriorly (including two pairs flanking genital shield). Peritremes reaching forward almost to anterior margins of coxae I; peritrematal shields fused very narrowly to vertex of dorsal shield, with two narrow expansions (the more posterior with a pore) along dorsal margins and variably free posteriorly of crescentic exopodal shields IV.

Legs slender, but II a little thicker; holotrichous, with two exceptions: genu IV lacking $pd_3$, tibia IV lacking $pd_3$ and $pl_4$ (Figs 13-14). Seta $av$ on coxae II-III somewhat expanded; $ad_4$ on femora I-IV strengthened and bifid at very tip, but other $d$ setae on femora (and genua) undistinguished; $pd_3$ on tarsus IV not long and outstanding. Individual variations noted once (twice for genu IV) include unideficiencies: $pd_3$ on genu I, $av$ on genua III-IV and $ad_3$ on tarsus IV; and doubled setae: $ad_4$ on femur III (anterior seta normal, bifid, posterior seta short, simple, each in its own alveolus) and $pl_4$ on tarsus IV (setae subequal, in contiguous alveoli). Dorsodistal sensory islet on tarsus I (Figs 11-12) including a forked seta and occupying 19% of length. Setae on this segment, four distals and two laterals are longer, and one middorsal long and outstanding, cf. H. n.sp. Domrow, 1981). Coxae II with anterodorsal process small; II-IV with posterointernal apodemes. All tarsi with stalked ambulacrum and two claws.

**Male.** As $\varnothing$, except as follows. Deutosternum at times with seven denticles. Seta $v_2$ on palpal trochanter not expanded basally. Chelicerae (Fig. 10) 165-170 long overall; setule, pores and corona not seen clearly; fixed and movable digits with one denticle and simple tip; spermatodactyl 55 long, occupying 32% of overall length, sharply upcurved at tip.

Dorsal shield fuller, 520-525 long, 280-290 wide (maximum); podonotal portion hypotrichous, with 14 pairs of setae (though not same 14 pairs as in $\varnothing$ since $r_3$, always present, is on shield, except on one side of one specimen, and $z_4$ is lacking — notwithstanding this, the regularity with which one or both $z_4$s are absent in $\varnothing$ suggests this signature will also be found in $\sigma$ when more material becomes available) compared to usual 22 (actually, only on one side of two specimens is entire complement of 14 present; all other counts are 13 or 12, due to absence of $j_2$, left-hand side of Fig. 2, or $j_2$ and $r_3$ in one case or $r_3$ in another, right-hand side of Fig. 2); opisthonotal portion also hypotrichous, with 14 pairs compared to usual 17. Dorsal cuticle interrupted posteriorly, with about four setae to each side.

Hololventral shield (Fig. 5) with genital aperture on convex anterior margin; 445-450 long overall, 155-175 wide behind coxae IV where ventral portion is irregularly expanded to usurp two (in one case, Fig. 6, one plus an alveolar remnant too imperfect ever to have housed a seta) or three pairs of ventral setae (one specimen with one $mst$ seta, another with both $mst$ and one $g$ absent, Fig. 7). Metapodal shields likewise irregular, the larger divided posteriorly on one side of one specimen. Ventral cuticle with about five pairs of setae of increasing length posteriorly. Peritrematal shields fused broadly, $via$ more anterior of two expansions of their dorsal margins, to dorsal shield.

Individual variations in leg setation (all unideficiencies) even more common than in $\varnothing$: $pl$ on femur IV, $av$ on genu III and $av_2$ on tibia I (all noted once); $av$ on trochanter I and $ad_3$ on femur I (on same side of one specimen); and $av$ on genu IV (on both sides of two specimens).

**Etymology.** Named after Sisyphus, said to have been Ulysses’ father.

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References


