

**NEW HOUSE-DUST MITES FROM MALAYSIA**  
**1. TWO NEW SPECIES OF AUSTROGLYCYPHAGUS FAIN & LOWRY, 1974**  
**(ASTIGMATA: GLYCYPHAGIDAE)**

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----- ABSTRACT—Two new species of *Austroglycyphagus* Fain & Lowry, 1974, (Astigmata: Glycyphagidae) are described from house-dust in Malaysia. These are *A. malaysiensis* sp. n. and *A. kualalumpurensis* sp. n. -----

In the course of investigations on the acarine fauna of house-dust in Malaysia, the junior author discovered 2 new species of the genus *Austroglycyphagus* Fain and Lowry, 1974 (Glycyphagidae). These are described here below.

Genus *Austroglycyphagus* Fain & Lowry, 1974  
 Subgenus *Austroglycyphagus* Fain & Lowry, 1974

The genus *Austroglycyphagus* Fain & Lowry, 1974, is divided in 2 subgenera:

1. Subgenus *Austroglycyphagus* s. str. — Presently, it contains 12 species collected from various habitats, e. g. 5 in bat guano from Australia, Africa and South America; 3 in house dust (1 in Surinam and 2 in Malaysia); 1 from nest of *Galago* in Africa; 1 from a bird nest in England; and 2 from bee-nests.

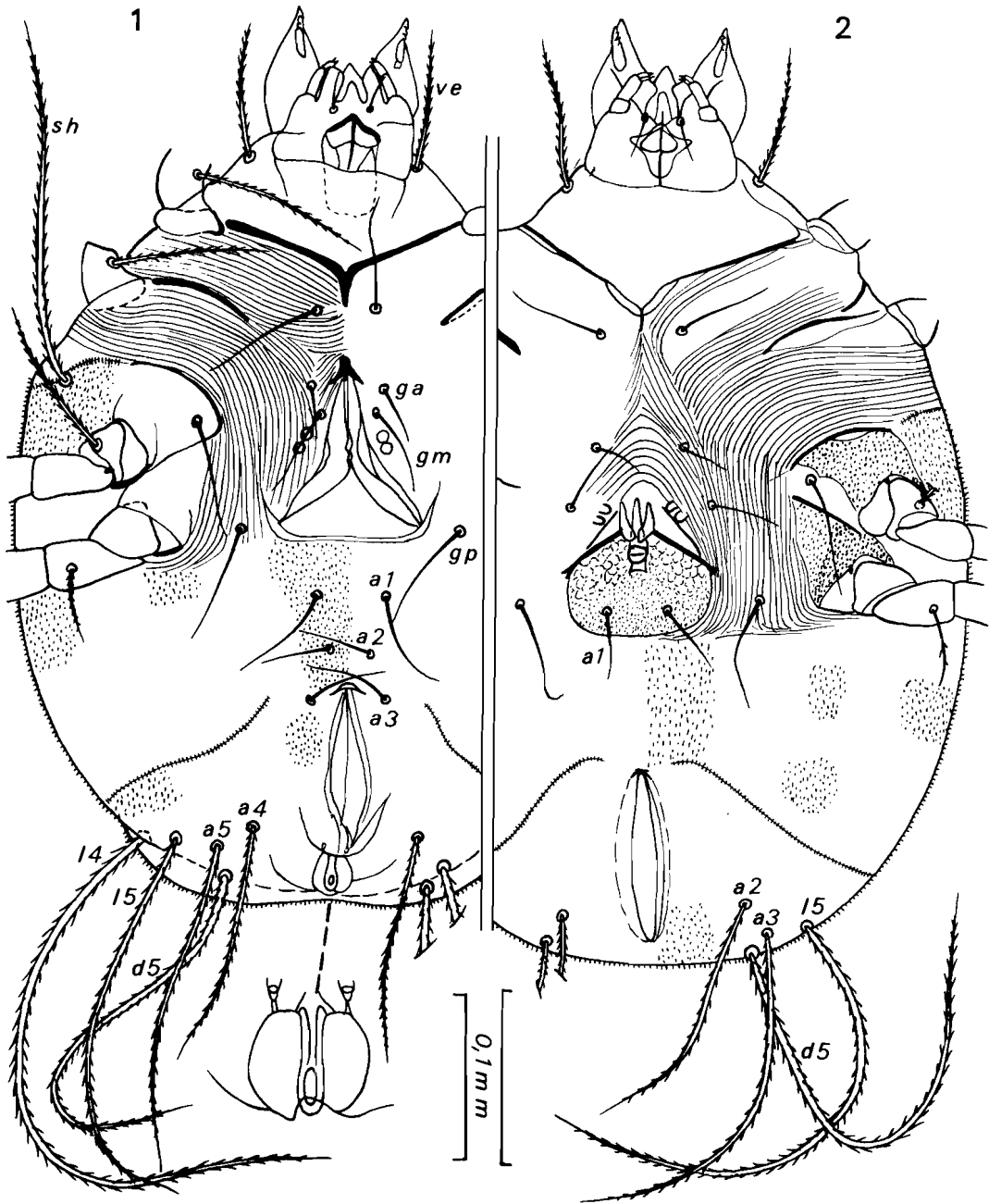
2. Subgenus *Muriglycyphagus* Fain, 1976 — It contains only the type species *A. (M.) rodentorum* Fain, 1976, collected from rat nests in Africa.

1. *Austroglycyphagus malaysiensis* spec. nov.

**FEMALE** (Figs. 1, 3-7)—Idiosoma 470µm long and 350µm wide (specimen from culture). In 4 paratypes: 390 x 295µm; 300 x 250µm (from house dust); 480 x 330µm; 490 x 380µm (from culture). **DORSUM**: Cuticle covered with very small projections resembling triangular scales except in two punctate paramedian longitudinal bands situated on propodonotum. Narrow fat grooves present as in other species of genus. Setae *sc i* situated slightly behind *sc e*. Orifice of bursa situated near posterior extremity. **VENTER**: Area in front of vulva striated and without cuticular projections; entire cuticle behind vulva and coxae IV covered with very small projections similar to dorsal cuticle. Epimerae I poorly sclerotized, fused in Y. Tarsi I-IV 150µm, 160µm, 190µm and 210µm long. Chelicerae 96µm long. **CHAETOTAXY**: Lengths of setae *vi* 150µm, *ve* 80µm, *sc e* 225µm, *sc i* 240µm, *d 1* 150µm, *d 2* 345µm, *d 3* 420µm, *d 4* 375µm, *d 5* 270µm, *l 1* 260µm, *l 2* 360µm, *l 4* 370µm, *l 5* 270µm, *h* 300µm, *sh* 200µm, *a 4* 150µm, *a 5* 190µm. All these setae barbed except *d 1*. Setae *a 1* to *a 3* thin and smooth, 50µm, 40µm and 50µm long respectively. Seta *s cx* thin, with a few and short barbs. Solenidion ω 2 situated at 50µm from base of tarsus I, 66µm long, its guard seta 15µm long. Solenidia *sigma* of genu I subequal and 80-90µm long.

**MALE** (Fig. 2)—Idiosoma 465µm long and 330µm wide (allotype) (specimen from culture). Dorsum as in female. Setae *sc i* located slightly behind *sc e*. **VENTER**: Genital plate well-sclerotized, with a network pattern, length 75µm (including two anterior sclerites), width 78µm. Aedeagus 30µm long (basal piece not included), flanked by two triangular strongly sclerotized sclerites 20-21µm long. Legs as in female. Tarsi I-IV 140µm, 147µm, 165µm and 189µm long respectively. Chelicerae 87µm long. **CHAETOTAXY** (allotype and paratypes): Length of setae

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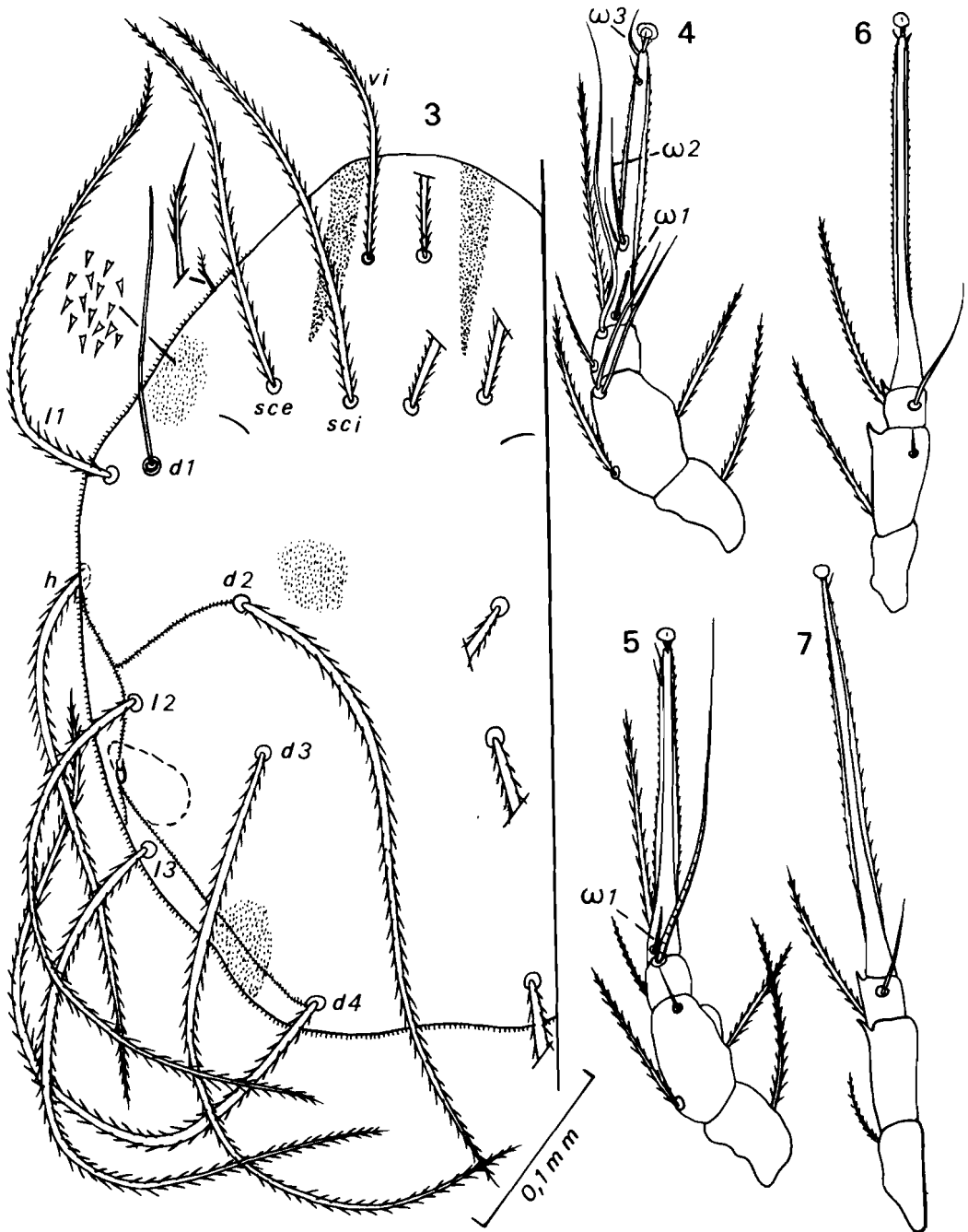


Figs. 1-2: *Austroglycyphagus malaysiensis* sp. n.—1, female; 2, male (both in ventral view).

$vi$  150 $\mu$ m,  $ve$  75 $\mu$ m,  $sc e$  215 $\mu$ m,  $sc i$  220 $\mu$ m,  $d 1$  150 $\mu$ m,  $d 2$  350 $\mu$ m,  $d 3$  440 $\mu$ m,  $d 4$  360 $\mu$ m,  $d 5$  250 $\mu$ m,  $l 1$  290 $\mu$ m,  $l 2$  390 $\mu$ m,  $l 3$  360 $\mu$ m,  $l 4$  330 $\mu$ m,  $l 5$  225 $\mu$ m. Solenidia as in female.

**REMARKS**—The holotype and allotype were cultured in Institute of Tropical Medicine, Antwerp, Belgium. They are distinctly larger than the specimens cultivated in the Institute for Medical Research (I. M. R.), Kuala Lumpur, Malaysia. We thank Dr. F. Lukoschus who brought the living mites over from Malaysia.

**HABITAT AND LOCALITY**—(1) Bedroom's floor, K-125, Belakang Pasar Lama, Kepong, Kuala Lumpur, 20.II.1979 and 1.VI.1979 (2 females and 1 male, paratypes); Lorong Raja, Laut Kechil,



Figs. 3-7: *Austroglycyphagus malaysiensis* sp. n. (female): 3, dorsal view; 4, leg I; 5, leg II; 6, leg III; 7, leg IV.

Kuala Lumpur, 17. XII. 1977 (1 female, paratype). (2) I. M. R. culture, Jalan, Pahang, Kuala Lumpur, 1. VI. 1979 (7 female, 1 male and 1 tritonymph, all paratypes). (3) From subcultures obtained in Antwerp with material from Kuala Lumpur (July 1979) (holotype and 20 female paratypes, allotype and 20 male paratypes).

Holotype in Institut des Sciences naturelles, Bruxelles. Paratypes in I. M. R., Kuala Lumpur, in British Museum London, in U. S. National Museum, Washington, D. C. and in collection of the authors.

2. *Austroglycyphagus kualalumpurensis* spec. nov.

FEMALE (Figs. 8-12)—Holotype 420 $\mu$ m long (idiosoma) and 306 $\mu$ m wide; in paratype 429 $\mu$ m x 304 $\mu$ m. DORSUM: With very small cuticular projections as in *A. malaysiensis* but these projections lacking in anterior part of propodonotum between setae *s cx* and longitudinal sclerotized bands. Setae *sc i* located well anterior to *sc e*. VENTER: As in *A. malaysiensis* but striations in front of genital region very poorly marked. Bursa ventral, subterminal. LEGS Tarsi I-IV 87 $\mu$ m, 117 $\mu$ m, 150 $\mu$ m and 183 $\mu$ m long respectively. Chelicerae 75 $\mu$ m long. CHAETOTAXY: Length of setae *vi* 120 $\mu$ m, *ve* 60 $\mu$ m, *sci* 155 $\mu$ m, *sce* 160 $\mu$ m, *d1* 90 $\mu$ m, *d2* 345 $\mu$ m, *d3* 420 $\mu$ m, *d4* 330 $\mu$ m, *d5* 85 $\mu$ m, *l1* missing, *l2* 315 $\mu$ m, *l3* 345 $\mu$ m, *l4* 330 $\mu$ m, *l5* 90 $\mu$ m, *h* 180 $\mu$ m, *sh* 90 $\mu$ m, *a5* 165 $\mu$ m. All these setae thick and barbed except *d1* which is thin and smooth. Setae *a1* to *a3* very thin, 20 to 50 $\mu$ m long, *a4* lacking in both female specimens examined. SOLENIDIOTAXY:  $\omega 2$  situated at 36 $\mu$ m from apex of tarsus I; solenidia *phi* of genu I unequal, 45 $\mu$ m and 36 $\mu$ m long respectively.

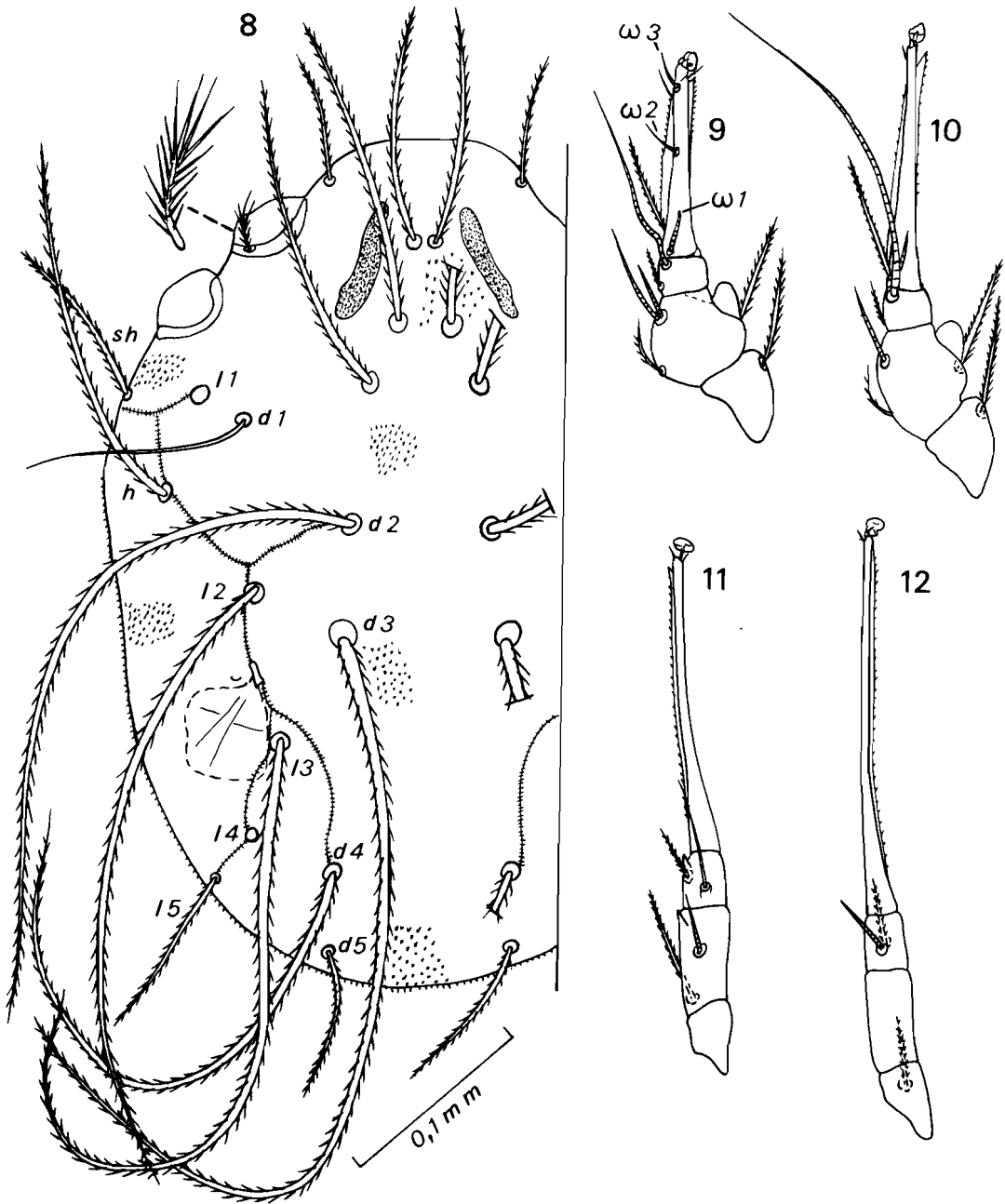
HOST AND LOCALITY—Holotype and 1 paratype female from bedroom's floor, in Lorang Raja Laut, Kechel, Kuala Lumpur, Malaysia, 17. XII. 1977 (slide DM 248). Holotype deposited in Institut de Médecine Tropicale, Nationalestraat 155, B-2000 Antwerpen, Belgium. Deposition of holotype: as for *A. malaysiensis* (see previous species).

KEY TO THE SUBGENUS *AUSTROGLYCYPHAGUS* s. str.

## FEMALES

(N. B. : The females of *A. lukoschusi* Fain and *A. spieksmai* Fain are unknown)

1. Tibiae I-II with 1 solenidion and 2 barbed setae ..... 2
- Tibiae I-II with 1 solenidion and 1 barbed seta ..... 3
2. Setae of tibiae I-II equal. Setae *sc i* and *sc e* situated on a nearly straight transverse line. Setae *vi* much closer to anterior border of idiosoma than to setae *sci*. With only 2 unequal pairs of setae in front of anus. Setae *a2* and *a3* strongly unequal. Genital setae short. Copulatory tube short, rounded and dorsal. Body 342 $\mu$ m long (chelicerae included) (from description of Vitzthum) ..... *A. geniculatus* (Vitzthum, 1919).
- Setae of tibiae I-II unequal. Setae *sc i* more posterior than *sc e*. Setae *vi* much closer to *sc i* than to anterior border of idiosoma. With 3 unequal and far apart pairs of setae in front of anus. Setae *a2* and *a3* subequal. Genital setae long. Copulatory tube longer, conical and ventral. Body 550 $\mu$ m long (chelicerae included)..... *A. rwandae* Fain, 1976
3. Opisthogaster almost completely striated, with cuticular projections confined to a narrow lateral band. Propodonotum with a median rectangular shield. Setae *sc e* and *sc i* situated on a straight transverse line ..... *A. hughesae* Fain, 1976
- Opisthogaster almost completely covered with very numerous cuticular projections; striation when exist are restricted to area between anus and vulva. Propodonotal shield forming 2 narrow rectangular paramedian bands. Scapular setae variable ..... 4
4. Setae *sc i* situated slightly posterior or on same transverse line as *sc e*. Tarsus I 120-150 $\mu$ m long with solenidion  $\omega 2$  situated at junction of basal 1/3 with apical 2/3 of tarsus I. Cuticular projections very small. Setae *d5* and *l5* very long (200-300 $\mu$ m).....
- ..... *A. malaysiensis* sp. n.
- Setae *sc i* situated distinctly anterior to *sc e*. Solenidion  $\omega 2$  situated either in middle or in apical half of tarsus I. Other characters variable ..... 5
5. Dorsal cuticular projections resembling mono or bidentate scales as wide as long. The median area between vulva and anus striated and without piliform cuticular projections. Solenidion  $\omega 2$  situated in apical third of tarsus I ..... *A. squamulatus* Fain, 1976
- Dorsal cuticular projections more narrow and never bidentate. Median area between vulva and anus not striated but with piliform cuticular projections. Situation of  $\omega 2$  variable.... 6



Figs. 8-12: *Austroglycyphagus kualalumpurensis* sp. n. (female, holotype): 8, dorsal view; 9, leg I; 10, leg II; 11, leg III; 12, leg IV.

- 6. Tarsi I about 140-150 $\mu$ m long ..... 7
- Tarsi I not longer than 100 $\mu$ m ..... 8
  
- 7. Solenidion *sigma* 1 and 2 of genu I 48-50 $\mu$ m long. Seta *sc x* not forked .....  
 ..... *A. weelawadjiensis* Fain & Lowry, 1974
- Solenidion *sigma* 1 and 2 of genu I 80 $\mu$ m long. Seta *sc x* forked. ....  
 ..... *A. troglodytus* Fain & Lowry, 1974

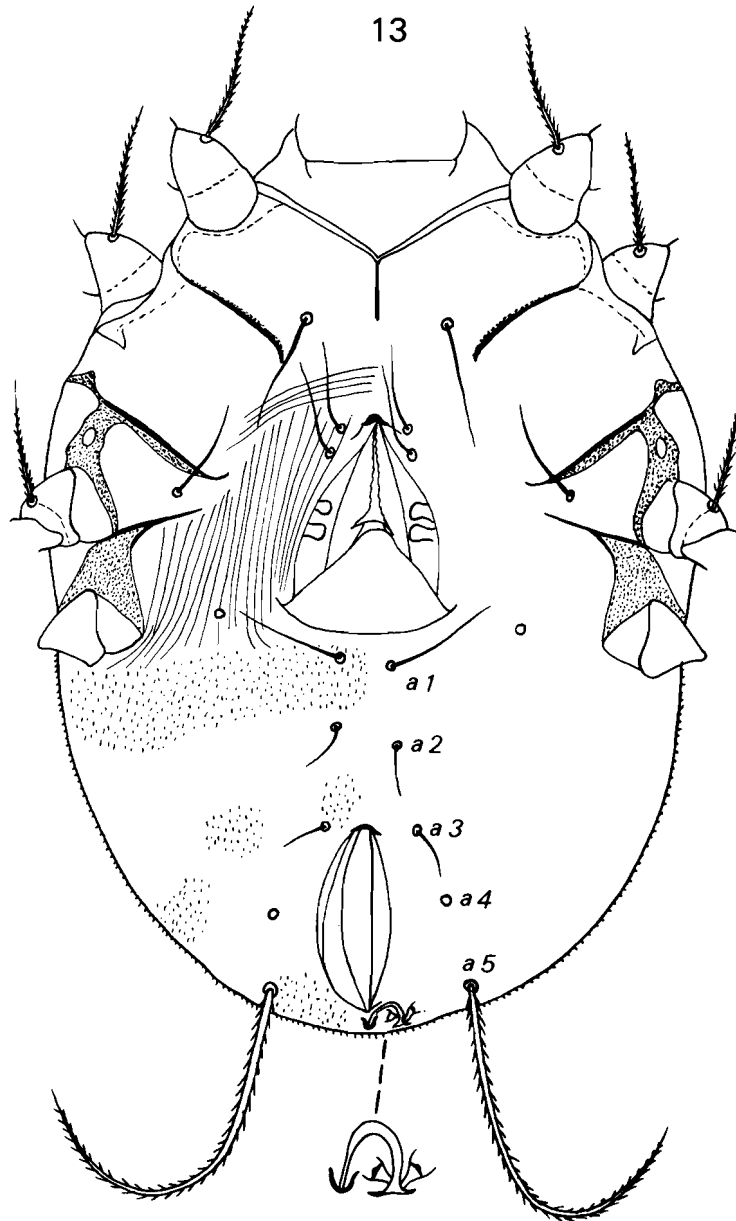


Fig. 13: *Austroglycyphagus kualalumpurensis* sp. n. : female in ventral view.

8. Solenidion  $\omega 2$  closer to apex ( $16\mu\text{m}$ ) than to middle ( $26\mu\text{m}$ ) of tarsus I. Tarsi I and IV  $84\mu\text{m}$  and  $160\mu\text{m}$  long respectively. Setae  $d 5$  and  $l 5$  very long ( $200\mu\text{m}$  and  $130\mu\text{m}$  respectively). Idiosoma  $375\mu\text{m} \times 285\mu\text{m}$  (holotype) ..... *A. asthmaticus* Fain, 1978.
- Solenidion  $\omega 2$  closer to middle than to apex of tarsus I. Setae  $d 5$  and  $l 5$  less than  $100\mu\text{m}$  long. Idiosoma more elongate. .... 9
9. Striations of propodogaster very distinct. Cuticular projections of dorsum relatively large ( $2.5$  to  $4\mu\text{m}$  long) resembling triangular scales ..... *A. kenyensis* Fain, 1977
- Striations of propodogaster very poorly distinct and incomplete. Cuticular projections of dorsum extremely small (about  $0.5\mu\text{m}$  long) ..... *A. kualalumpurensis* sp. n.

## MALES

(N. B. : The males of *A. squamulatus*, *A. geniculatus* and *A. kualalumpurensis* are unknown).

1. Tibiae I-II with 1 solenidion and 2 barbed setae ..... *A. rwandae* Fain, 1976
- Tibiae I-II with 1 solenidion and 1 barbed seta ..... 2
  
2. Opisthogaster nearly completely striated, with cuticular projections confined to a narrow lateral band. With a median propodotal shield ..... *A. hughesae* Fain, 1976
- Opisthogaster not striated but entirely covered with very numerous cuticular projections. Propodotum with 2 paramedian rectangular stripes, slightly sclerotized ..... 3
  
3. Solenidion  $\omega$  2 situated approximately at the junction of the 1/3 basal and the 2/3 apical of tarsus I. Genital plate 60-75 $\mu$ m wide. Setae *sc i* either on the same line as *sc e* or slightly in front or behind the latter. .... 4
- Solenidion  $\omega$  2 situated closer to apex than to base of tarsus I. Genital plate not wider than 53 $\mu$ m. Setae *sc i* far in front of *sc e* ..... 5
  
4. Setae *sc i* 150 $\mu$ m long and situated slightly in front of *sc e*. Tarsi I 96 $\mu$ m long. Genital organ with small lateral sclerites, aedeagus poorly developed. Seta *s cx* with rather long barbs. Propodotal cuticular projections very numerous, l. 5-2.5 $\mu$ m long ..... *A. spieksmai* Fain, 1976
- Setae *sc i* 220 $\mu$ m long and situated slightly posterior to *sc e*. Tarsi I 140 $\mu$ m long. Aedeagus flanked by 2 strongly sclerotized and triangular sclerites 20-25 $\mu$ m long, aedeagus well developed. Setae *s cx* with very short barbs. Propodotal cuticular projections less numerous and very small (0.8 to 1.2 $\mu$ m long) ..... *A. malaysiensis* sp. n.
  
5. Tarsi I 140 to 150 $\mu$ m long, tarsi IV 220 to 250 $\mu$ m. Australian species ..... 6
- Tarsi I 69 to 93 $\mu$ m long, tarsi IV 165 to 195 $\mu$ m long. American and African species. .... 7
  
6. Setae *s cx* bifid. Genital plate 75-80 $\mu$ m long, 50-55 $\mu$ m wide. Aedeagus thick, 30-32 $\mu$ m long. Solenidia *sigma* 1 and 2 of genu I 68-72 $\mu$ m long ... *A. troglodytes* Fain & Lowry, 1974
- Setae *s cx* simple. Genital plate 110 $\mu$ m long, 45 $\mu$ m wide. Aedeagus narrow, 40-45 $\mu$ m long. Solenidion *sigma* 1 and 2 of genu I 45-50 $\mu$ m long ... *A. weelawadijensis* Fain & Lowry, 1974
  
7. Tarsus I 75 $\mu$ m long, solenidion  $\omega$  2 situated at 15-18 $\mu$ m from apex. Seta *d 5* 170 $\mu$ m long ..... *A. asthmaticus* Fain, 1978
- Solenidion  $\omega$  2 much closer to middle than to apex of tarsus I. Seta *d 5* 45-70 $\mu$ m long. .... 8
  
8. Tarsi I and IV 69-72 $\mu$ m and 165 $\mu$ m long. Idiosoma 285 $\mu$ m long. Solenidion of genu II shorter than genu. Genital plate 42 $\mu$ m long, 32 $\mu$ m wide. Cuticular projections very small, those of dorsum 0.8 to 1.0 $\mu$ m long ..... *A. lukoschusi* Fain, 1976
- Tarsi I and IV 93 $\mu$ m and 195 $\mu$ m long. Idiosoma 360 $\mu$ m long. Solenidion of genu II longer than genu. Genital plate 60 $\mu$ m long and 33 $\mu$ m wide. Cuticular projections much larger, those around *d 2* setae 3 to 4 $\mu$ m long ..... *A. kenyensis* Fain, 1977

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