

Malayan Trombiculid Mites. 1, *Schoutedenichia vercammeni* n. sp. with a note on the genus

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THE INTEREST of the species here described is that it is the third known representative from the Oriental region of an essentially African genus. The interest of the genus lies in the fact that it shows a range of variation including several characters which are taxonomically controversial; while it links the Gahrlepiinae (Walchiinae) with the Trombiculinae so closely that the distinction between these subfamilies will require reconsideration. This taxonomically important genus has been recognized by the efforts of Dr. J. B. Jadin (Medical Director) and P. H. Vercammen-Grandjean (Biologist) of the Laboratoire Medical Provincial du Kivu, Bukavu, Belgian Congo. Some 27 species, in three distinct groups, can be ascribed to this genus, but many of these have not yet been described (Vercammen-Grandjean, personal communication).

The genus *Schoutedenichia* Jadin & Vercammen-Grandjean, 1954:195, was raised to accommodate a species, *S. fulleri*, which had legs with 7.6.6 segments (i.e. with the femora of legs II and III undivided) and was therefore placed in the subfamily Gahrlepiinae (Walchiinae) together with *Walchiella* Fuller 1952 (type: *Trombicula oudemansi* Walch, 1922). That the leg segmentation is not a reliable subfamilial, or even necessarily a generic, character, was stressed by Audy (1954:153) and it was clearly shown to be of only specific importance in a new subgenus (*Trombicula panieri* group) studied by Vercammen-Grandjean (1956a, c). We may therefore note:—

- (a) that African species with 7.7.7 legs, hitherto placed in *Euschöngastia* and *Ascoschöngastia*, in fact properly belonged to *Schoutedenichia*, *sensu lato*;
- (b) that the larvae of one group of species within *Schoutedenichia* showed a very close general resemblance to *Walchiella* and the closely related *Euschöngastia lacunosa* group; and that this resemblance was due to convergence—for example, the new species described in the present paper may be compared with *E. lacunosa* (Gater) and *E. (Walchiella) asonluca* Traub & Audy, 1954.
- (c) that the nymphs of several species, reared by Vercammen-Grandjean in the Belgian Congo, possessed the distinct dorsal 'stump' to the fore tarsi, hitherto considered characteristic of the Gahrlepiinae (= Walchiinae) and in fact that it was impossible by present criteria to distinguish several of these nymphs from those of *Gahrlepieia*; and
- (d) that the *crocidura*-group (*Ascoschöngastia crocidurae* Lawr., 1949), provisionally placed by Audy (1954:159) in *Doloisia*, was a distinct group within the genus *Schoutedenichia*.

The genus *Schoutedenichia* has accordingly been revised (Verc. & Audy 1956; Verc. 1956b).

Genus *Schoutedenichia*, sensu lato

Type.—*Schoutedenichia fulleri* Jad. & Verc., 1954:203, *Ann. Mus. Congo, Tervuren, Zool.*, 1, 194–206.

Diagnosis of Genus (after Verc. & Audy, 1956).—Trombiculinids, the larvae of which generally resemble those of *Walchiella* or the *E. lacunosa* group but differ in having the posterior scutal margin generally concave between PL bases and rarely emarginate; eyes usually 1+1 or rudimentary (exceptionally 2+2); the tibiala on leg III absent and only 2 genualae (not 3) present on leg I. One group of species, intranasal in habitat, have a reduced scutum and twin teeth on the chelicera showing relationships with *Doloisia*. Nymphs with heavily plumose sensillae, spiculate or barbiculate proximally; scutum either similar to those of *Walchiella* or broad and narrow (cf. *Doloisia*, *Guntherana*, and *Gahrlepiines*); tarsi I regularly with terminal dorsal 'stump', as described by Womersley 1952:393 for the nymphs of *Gahrlepieia*, sensu lato.

Schoutedenichia vercammeni n.sp. (Fig. 1).

Diagnosis of Larva.—Described from a solitary specimen from Malaya, distinguished from species of *Walchiella* on generic characters, especially the absence of tibiala III and 1+1 eyes. Differs from two other Oriental species now ascribed to this genus as shown in the key below.

Description of Larva.—Body oval, almost cordiform, 390 μ long (+ 56 μ gnathosome) \times 260 μ . Colour unknown but pallid. Eyes 1 + 1, rudimentary, visible only with phase-contrast except in fresh mount. *Gnathosome*: Cheliceral base not angulated; sparsely punctate; blade 42 μ , with a distinct recurved dorsal tooth near the tip (similar to the first tooth on the chelicerae of *E.(W.) oudemansi*). Galeal seta nude. Palp: seta on femur and genu nude, longer than in *E. lacunosa*; tibial setae nude except for ventral which is long and carries 5 long branches; tarsus with 4 pectinate setae, a basal tarsala (spur) and an apical sensory rod (?homologue of a terminala) somewhat shorter than the basal tarsala. Claw 3-pronged, axial fairly straight, dorsolateral accessory prong longer than ventromedial. *Legs*: all 7-jointed, I–III 210 μ , 170 μ , and 214 μ long. Leg I: tarsus and pretarsus 74 μ , second (distal) annular thickening ("bar") present on tarsus but poorly developed; parasubterminala half length of subterminala, inconspicuous microtarsala as in *lacunosa*, tarsala (spur) 17 μ ; distal tibiala blunt, on edge of joint anterior to long microtibiala, second tibiala pointed, proximal to mid-joint; only 2 genualae, anteroproximal and posterior, with long microgenuala. Leg II: tarsus and pretarsus 58 μ ; microtarsala anterior and proximal to base of tarsala; 2 tibialae in tandem; genuala. Leg III: tarsus and pretarsus 69 μ ; tibiala absent; short genuala. Coxal setae 38, 36, 42 μ . *Scutum*: similar to that of *lacunosa* but the PW is some 20 μ wider than AW in *vercammeni* and some 10 μ wider in *lacunosa*, and the punctuation is much more scanty in *vercammeni* in which the punctae also thin out anteriorly and avoid the AM base widely; and the PL setae in *vercammeni* are much longer (42 as against 27 μ) and the AM setae shorter (25 as against 45 μ —roughly a reversal in the two relationships). Sensillae missing but by analogy probably clavate to lanceolate. The Standard Measurements of the unique type are: AW 59; PW 80; SB 47; ASB 28; PSB 23; AP 44; AM 25; AL 31; PL 42. *Sens.*—*Body Setae*: Dorsal setae (DS) roughly in rows, 2.8.7.2. (submedian).12.12.10.6.4.4. = 72 + 23 CS (caudal setae, 41 μ) + 30 VS (ventral setae, 22–31 μ) which are irregularly arranged and generally shorter and more lightly barbed than the posterior caudal setae, but the VS and CS pass insensibly into each other.

Type Material.—Holotype CORU. 28108, unique specimen from R16306, *Rattus sabanus* (giant-rat, forest floor), Bukit Lagong Forest Reserve, Kepong, Selangor, 22 October 1951. Deposited in British Museum (Natural History).

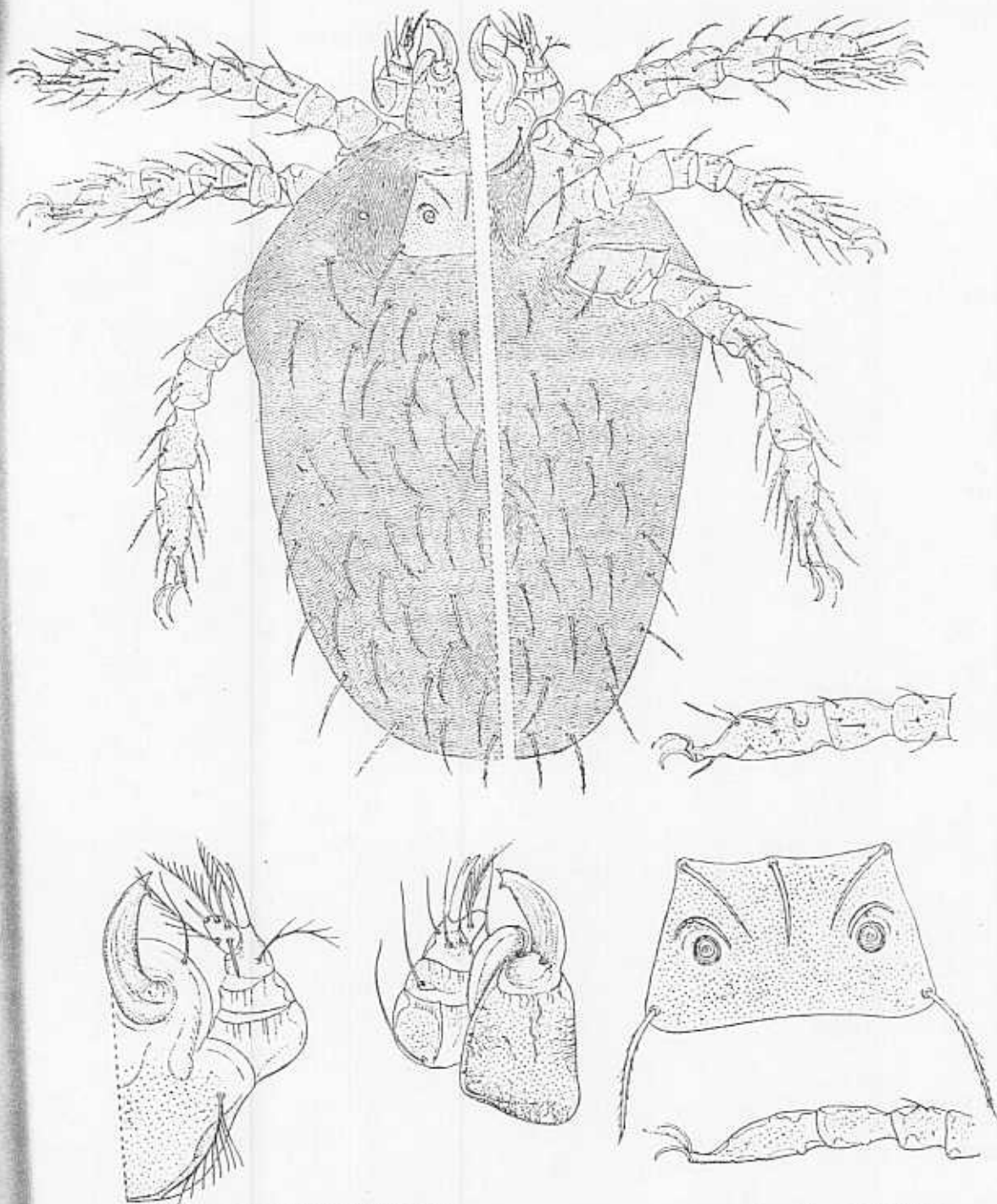


Fig. 1. *Schoutedenichia vercammeni* n.sp.
 Dorsal and ventral halves of larva; ventral and dorsal aspects of gnathosome; scutum;
 and legs I & III to show the presence of two chitinous thickenings ('bars') to tarsus I, and
 the combination of 2 genualae-I with the absence of a tibiala-III.
 Drawn by and published with the kind permission of THOMAS M. EVANS.

Comments.—This species, named for Vercammen-Grandjean in recognition of his work on this genus, was to have been described as an aberrant member of the *lacunosa*-group in collaboration with Robert Traub, whom I wish to thank for his relinquishment and for his co-operation in joint studies on these mites. I am greatly indebted to Mr. Thomas Evans of Colonel Traub's department in the Army Medical Service Graduate School, Washington, D.C., for his drawings of *S. vercammeni*. Acknowledgements are due to Womersley for checking the leg-chaetotaxy of his *T. jubbulporensis* and of species of *Guntherana*, as well as for the loan of specimens of *nausheraensis*.

The significance of the absence of tibia III in this particular group was first recognized by Vercammen-Grandjean and its fundamental importance has since become obvious. It is generally associated with the presence of less than the usual 3 genualae I, although the converse does not always hold. Tibia III is absent in the Gahrlepiinae, and in *Schoutedenichia*, *Doloisia*, and *Guntherana*. Audy (1954:159) placed *Trombicula praomyia* Rad., *T. jubbulporensis* Wom., and *Schöngastia nausheraensis* Wom. in his *crocidura*-group: it can now be confirmed that these are all species of *Schoutedenichia*.

The absence of tibia III, usually associated with the presence of 2 and not 3 genualae I, may appear in other groups which seem to be unrelated to the *Schoutedenichia-Doloisia-Guntherana-Gahrlepiea* complex, as shown by Brennan and Jones (1954). This however appears to be a most useful character for distinguishing many larvae of *Schoutedenichia* from those of *Walchiella* or the *lacunosa*-group which they may closely resemble. The nymphs show several major differences.

The three species of *Schoutedenichia* from the Oriental region may be distinguished as follows (in the palpal formula, N = nude, B = barbed, and the setae in order are femoral, genual, and dorsal-lateral-ventral tibial):—

Palp N/N/NNB, claw not stout, only slightly curved, 3-pronged; Eyes rudimentary 1+1; DS ca 72, VS+CS ca 52; Coxa III 1-setose; Measurements AW 59, PW 80, SB 47, ASB 28, PSB 23, AP 44, AM 25, AL 31, PS 42, Sens. —

Schoutedenichia vercammeni, unique specimen from giant-rat, Malaya.

Palp B/B/NNB, claw stout, 2-pronged; Eyes?; DS 38, VS?; Coxa III 1-setose; Measurements AW 56, PW 87, SB 45, ASB 28, PSB 12, AP 50, AM 25, AL 22, PL 50, Sens. —

Schoutedenichia jubbulporensis (Wom.), new comb.

Trombicula jubbulporensis Womersley, 1952:119, unique specimen (now damaged) from rat, Jubbulpore, central India.

Palp B/B/NNB, claw stout and fairly strongly curved, 2-pronged; Eyes 2+2; DS ca 40, VS+CS 26-28; Coxa III 3-setose; Measurements AW 51, PW 68, SB 37, ASB 22, PSB 22, AP 34, AM 20, AL 20, PL 30, Sens. 36.

Schoutedenichia nausheraensis (Wom.), new comb.

Schöngastia (Ascoschöngastia) nausheraensis Womersley, 1952:202; 12 specimens from mouse, Naushera, Himalayan range, India.

Womersley's description and his fig. 52C (scutum) require slight emendation. Paired eyes 2+2 can be seen in specimens remounted from material kindly provided by Womersley. The 2+2 eyes make *nausheraensis* distinctive, for the eyes are generally

reduced in this genus. *S. audyi* Verc., 1954, with 7.6.6 legs, also has the multisetose coxa III; while the species described as *Ascoshöngastia schoutedeni* in the same paper is in fact also a *Schoutedenichia* but with 7.7.7 legs.

No endoparasitic (intranasal) forms of *Schoutedenichia* have been found in our collections in Malaya and Borneo, but such forms occur in central Africa.

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