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NOTES ON THE GENUS *SUIDASIA* OUDEMANS, 1905 WITH DESCRIPTIONS OF A NEW SPECIES FROM AUSTRALIA (ACARI, ASTIGMATA, SAPROGLYPHIDAE)

A. Fain and J. R. Philips

----- **ABSTRACT** —A new species of *Suidasia (S. australiensis)* collected from Australian beetles of the genus *Trox* is described. *S. medanensis* Oud. 1923 is placed in synonymy with *S. pontifica* Oud. 1905, the latter being redescribed and refigured. A new subfamily Suidasiinae is created in the Saproglyphidae to contain the genus *Suidasia* and a key to the species is given. -----

INTRODUCTION

Oudemans (1905) erected the genus *Suidasia* for a new species, *S. pontifica* Oud. 1905, represented by a female and a nymph (and not a male, see Oudemans 1924). These specimens had been found by E. L. Trouessart in the quills of the remiges of a bird *Aramus scolopaceus*, from tropical America. A more complete description with figures was given by Oudemans (1906) who believed that this mite was not a true parasite but most probably a detriticolous mite feeding on the dried pith of the quills or on dead Syringobiids.

In 1923, Oudemans published *Aphelenia medanensis* nom. nud. from a Xylocopa-nest in Medan, Sumatra but in 1924, he synonymyzed this genus with *Suidasia* and gave a description, without figures, of *S. medanensis*. In 1948, Hughes added a new species to the genus, *S. nesbitti*, found in stored food. In 1952, Sasa described *Chibidania tokyoensis*, which Hughes (1976) placed in synonymy with *S. nesbitti*. Karg (1971) described *Suidasia longiseta* from soil in E. Germany. This species is known only from the type female. Manson (1973) in New Zealand found a new species, *Suidasia reticulata*, very close to *S. medanensis*. Recently, Fain (1977) described a new species *S. africana* based only on males from a cave in Kenya.

Genus *Suidasia* Oudemans, 1905

Synonyms: *Aphelenia* Oudemans, 1923; *Chibidania* Sasa, 1952

Oudemans (1906) called the type species of *Suidasia "pontifica"* because it forms a bridge between the families Acaridae and Pterolicheae. According to Nesbitt (1945) this genus should be excluded, on the ground of definition, from the Acaridae because the males possess neither anal nor tarsal suckers.

As a matter of fact true and functional anal suckers are absent in the males of the genus *Suidasia* but tarsal suckers exist in all the species. Another character that separates this genus from the Acaridae is the presence of a rather well-developed pretarsus bearing the claw. The pretarsus however becomes invisible when the claw is retracted in the apex of the tarsus.

Fain (1977) placed provisionally the genus *Suidasia* in the family Saproglyphidae, owing to the presence of a pretarsus and in despite of the presence of the *v e* setae. We think now that this genus should be placed in the Saproglyphidae but in a separate subfamily.

SUBFAMILY SUIDASIINAE subf. nov.

DEFINITION —With intermediate characters between the Acaridae and the Saproglyphidae. It resembles the former by the presence of the *v e* setae, the presence of spines in the apical half of tarsi (this character also exists in some genera of Saproglyphidae) and in the male by the

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presence of tarsal suckers (on tarsi IV). It resembles the second family in both sexes by the presence of a pretarsus, in the male by the poor development or the absence of anal suckers, in the larva by the poor development or the complete absence of the Claparede organ.

Type genus- *Suidasia* Oudemans, 1905.

KEY TO THE SPECIES OF *SUIDASIA*

FEMALES

(N. B. The female of *S. africana* is unknown)

1. Most of dorsal setae long or very long; the *d 2* are from 120μ to 210μ long 2
- All dorsal setae short or very short except *l 5* which are long 3

2. The *g p* are situated behind genital orifice and not far from each other. Setae *d 2* and *d 3* are 210μ long. Tarsus I four times longer than wide; seta *ba* very short. With two solenidia *sigma* on genu I ..... *S. australiensis* sp. n.
- The *g p* are situated on coxae IV. Setae *d 2* and *d 3* are 120μ and 87μ long respectively. Tarsus I about 1 1/2 time longer than wide; seta *ba* about twice as long as tarsus. With only one solenidion *sigma* on genu I ..... *S. longiseta* Karg, 1971

3. Seta *h* more than 3 times as long as *l* 1. Cuticular verrucae on dorsum long and narrow and very numerous. There are 35 to 40 such verrucae between the *d l* setae .... *S. nesbitti* Hughes, 1948
- Seta *h* less than 3 times longer than *l* 1. Cuticular verrucae shorter and less numerous .. 4

4. Dorsal cuticular verrucae relatively large. There are 5-6 verrucae between the *d l* setae. Setae *h* and *l* 1 are 44-68μ and 20-31μ long respectively ..... *S. reticulata* Manson, 1973
- Dorsal cuticular verrucae small and more numerous. There are 15-20 cuticular verrucae between the *d l* setae. Setae *h* shorter. Presence of a complicated sclerotized copulatory vestibule ..... *S. pontifica* Oud., 1905 (=*S. medanensis* Oud., 1924)

MALES

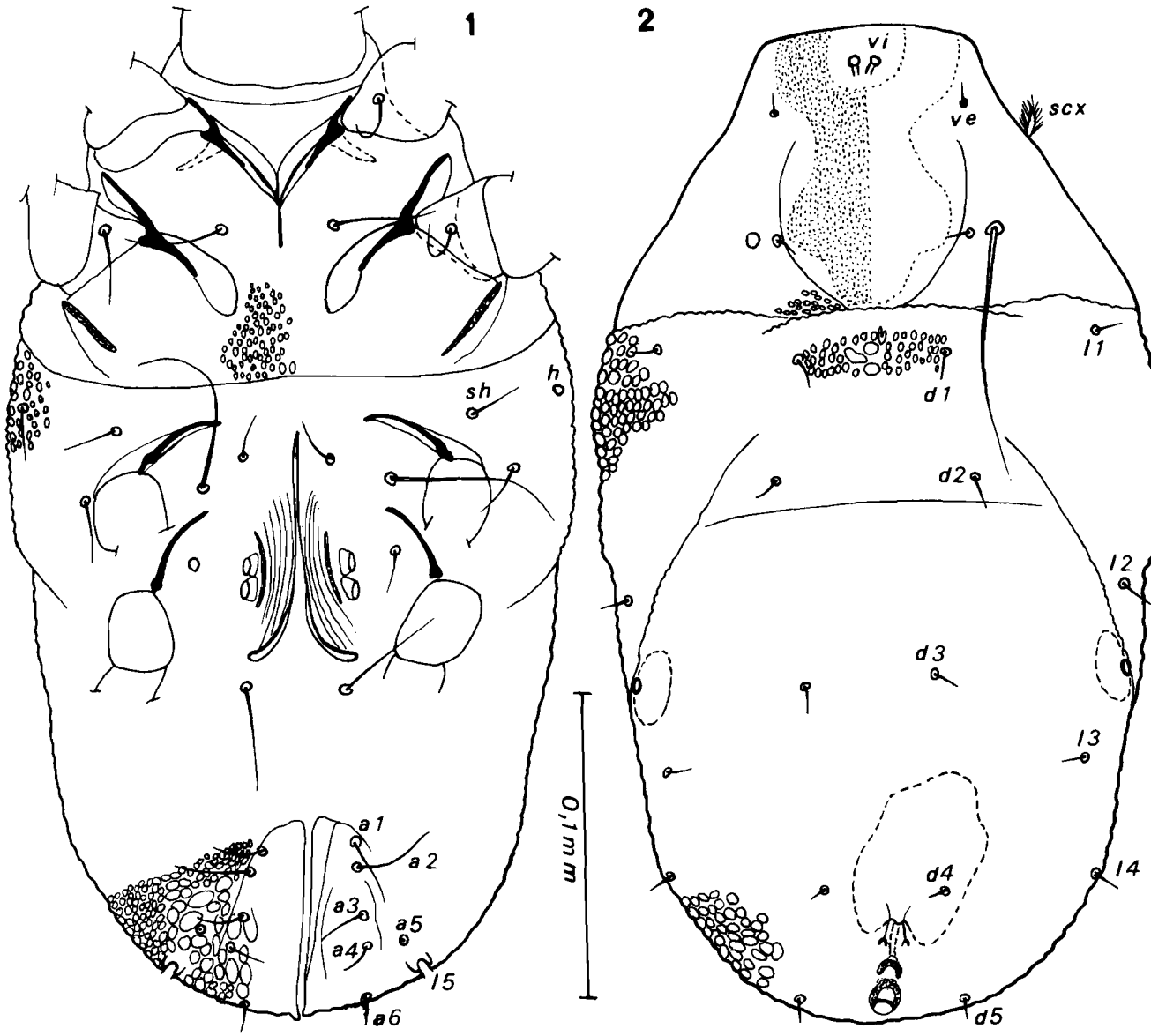
(N. B. : The male of *S. longiseta* is unknown)

1. Most of dorsal setae long or very long and rather thick (the *d 2* and *d 3* are 110μ long). Adanal suckers completely absent. Suckers of tarsi IV very small and preapical .... *S. australiensis* sp. n.
- Most of dorsal setae short and very thin. The *d 2* and *d 3* are very short. Adanal suckers either absent or present. Suckers of tarsi IV larger 2

2. Adanal suckers completely absent. Proximal tarsal sucker closer to the apex than to the base of tarsus IV. Leg III much thicker than by IV and ending by two latero-apical strong spines ..... *S. africana* Fain, 1977
- Adanal suckers present. Proximal sucker of tarsus IV situated either in basal third or in the middel of tarsus. Leg III not thicker than leg IV and with small apico-lateral spines... 3

3. Adanal suckers very small, vestigial. Tarsi IV with one sucker in the basal third .... *S. nesbitti* Hughes, 1948
- Adanal suckers oval, large and modified. Tarsi IV with one sucker preapical the other being situated approximately in the middle of tarsus but a slightly closer to the base than to the apex 4

4. Setae *h* 44-60μ long. There are only 5 to 6 cuticular verrucae between the setae *d l*..... ..... *S. reticulata* Manson, 1973
- Setae *h* shorter. There are 15-25 cuticular verrucae between the setae *d l* .... *S. pontifica* Oudemans, 1905 (=*S. medanensis* Oud., 1924)

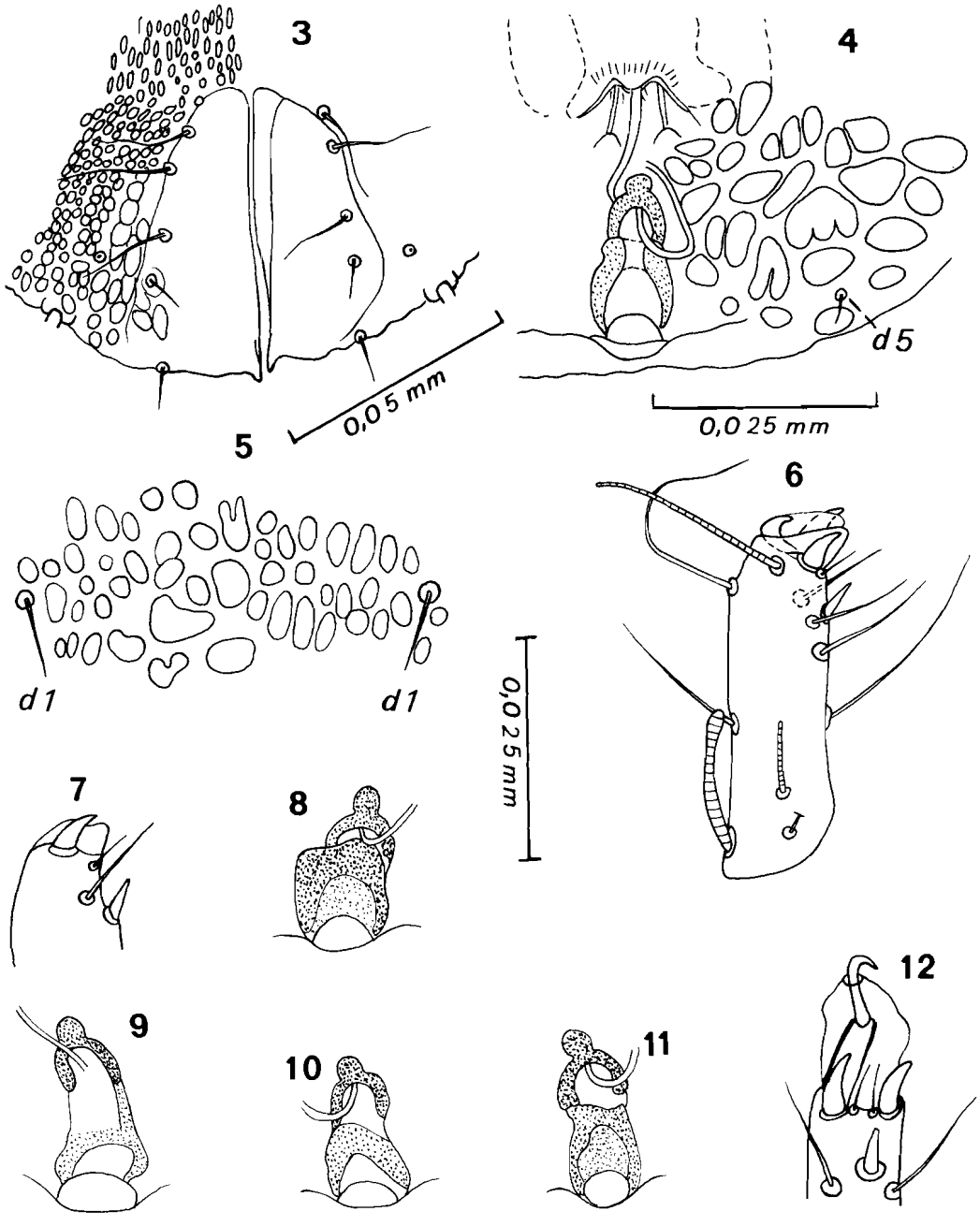


Suidasia pontifica Oud. Lectotype female in ventral (1) and dorsal (2) view.

Suidasia pontifica Oudemans, 1905

Suidasia pontifica Oudemans, 1905: 209; 1906: 245
Aphelenia medanensis Oudemans, 1923: 208. nom. nud.
Suidasia insectorum Fox, 1950: 205; Hughes, 1976: 131
Suidasia medanensis Oudemans, 1924: 320. SYN. NOV.

This species has been described from one female and one nymph, the latter being erroneously described as a male (sse Oudemans, 1924). The senior author had the opportunity to examine the typical slides of *S. pontifica* and *S. medanensis*. He was not able to find any character which could allow to separate these two species and they should therefore be considered as synonyms.



Suidasia pontifica Oudemans: Fig. 3-7, lectotype female; Fig. 3, anal region; Fig. 4, bisacculate copulatory pouch and bursa; Fig. 5, verrucous area between *d l* setae; Fig. 6-7, tarsus I in posterior (6) and anterior view (7) (N. B. The claw is completely withdrawn in apex of tarsus); Figs. 8-12, female specimens from various countries; Figs. 8-11, copulatory pouches in specimens from bats in Surinam (8 to 10) or from soil in Ivory Cost (11); Figs. 12, apex of tarsus I in a specimen from a dead bat of Surinam (with claw extended).

Karg (1971), in this key to the genus *Suidasia*, separated these two species on the basis of the presence of long *l 5* setae (= *s ae*) in *medanensis* and their absence in *pontifica*. As a matter of fact these setae have broken off in the lectotype female of *S. pontifica* and they are represented only by their bases, which are large (fig. 1).

We give here a new description and drawings of the lectotype female of *S. pontifica* (fig. 1-7) and drawings of some organs of specimens from Central Africa and South America (figs. 8-12).

The types of *S. medanensis* are in a very poor condition, very transparent and retracted, but nevertheless we could see in the female the same copulatory structure as in the type of *S. pontifica*.

LECTOTYPE FEMALE OF *SUIDASIA PONTIFICA* (Fig. 1-7)— We designate here the female type as the lectotype of the species. Idiosoma 318μ long and 180μ wide. DORSUM— Propodosoma bearing a median punctate shield and with verrucae in its postero-lateral parts. This shield has a straight posterior margin and sinuous lateral borders. Hysterosoma with cuticle uniformly covered with small and rounded or slightly elongate verrucae. There are 15 verrucae between the *d l* setae. Copulatory orifice large, situated close to posterior border of body. Bursa copulatrix beginning by a complex sclerotized vestibule formed of two pouches, a superficial cylindrical and a deeper conical and more sclerotized, the latter being prolonged by a very narrow tubule. VENTER—Opisthosoma, lateral parts of metapodosoma and posterior part of propodosoma verrucose. Anus long, ventral and reaching the posterior margin of body. Vulva long. Genital discs short. Legs stout. Tarsi (I to IV) 36μ, 30μ, 28μ and 34μ long respectively, all ending in a claw. All the claws are withdrawn in the fleshy pretarsus. Gnathosoma and chelicerae well developed.

CHAETOTAXY —The *vi*, *l 5* and *a 5* are broken and represented only by their bases. The *v e* are very thin and 8-9μ long. The *s cx* is present only at one side and is viewed in oblique position; it is flat and bears long barbs at each side. The *h*, present at one side, is 16μ long. The *cx 1* are 30-36μ long. The *g a* and *g m* are short, the *g p* are 45-55μ long. The anals are unequal, the longest is the *a 2* (25μ), the shortest is the *a 4* (6μ); the *a 5* are broken. The tarsi I-II bear three short conical spines, two are strong and apico-lateral, the third smaller is subapico-ventral. The two apical spines are separated by a prominent conical formation which represents the retracted fleshy pretarsus. (In specimens where the claws are extended this formation is lacking (figs. 12)).

The shape of the superficial pouch of the copulatory vestibule varies according to the position of the mite, while the second pouch, more deeply situated, is constant in shape. We give here drawings of these organs in 4 females from S. America or Central Africa (figs. 8-11).

GEOGRAPHICAL DISTRIBUTION OF *S. PONTIFICA* — The types of *S. pontifica* had been found on the feathers of *Aramus scolopaceus*, from tropical America. The type specimens of the named *S. medanensis* had been collected from the nest of a bee *Xylocopa* sp. in Medan, Deli, Sumatra.

Hughes (1976) reported this species from rice bran, groundnuts, cowpeas. Fox (1950) found it on dead mosquitoes in Puerto-Rico. Manson (1973) reported *S. medanensis* from insects collected in New-Guinea, Pakistan, India and New-Zealand.

Suidasia australiensis sp. n. : holotype male in dorsal (13) and ventral view (14).

The senior author collected this species in the following localities and biotopes, all from tropical countries: (1) Kinshasa, Zaïre- in stored corn (food for horses) (30. I. 1971); in house dust (I and II. 1966); on dead Simuliums (I. 1969); in the following foods: dry roots of manioc, beans, maize, bird-seed, paprika (Fain, 1971). (2) Tshofa (Kasai Province), Zaire: numerous specimens on dead insects (collected by Jeanine Bielevez, VI. 1972). (3) Mayumbe, Zaire: on dead *Tetralobus chevrolati* (Elateridae) and in the general cavity of a great Cicadid (20. II. 1970) (Collected by P. Elsen). (4) Angola: on various dead rodents and bats (collected by Dr. Machado) (Fain and Caceres, 1973). (5) Côte d'Ivoire: numerous specimens from the soil of Lamto Savanna (Fain, 1973). (6) Lagos, Nigeria: in house dust (collected by Y. Mumcuoglu). (7) Serengeti Park, Tanzania: biotope ? (8) Surinam: on various dead bats and rodents (14 specimens collected by Dr. F. Lukoschus, 1970).

It appears from these data that *S. pontifica* is a cosmopolitan and mainly tropical species. One might wonder if its presence in Europe was not purely accidental and if all these specimens were not imported from the tropics with contaminated material.

Suidasia nesbitti Hughes, 1948

Suidasia nesbitti Hughes, 1948
Chibidania tokyoensis Sasa, 1952

This species seems to be much more scarce than *S. pontifica*. It has been recorded from the following biotopes: wheat pollards, bran, rice, whale meat infested with Dermestidae, on birds'skins imported from Central Africa, from milking machinery in a flour mill in Dakar, Senegal. It has been recorded from cases of dermatitis in man (see Hughes, 1976).

Fain (1971) reported this species from maize flour in Kinshasa, Zaire. The senior author found several specimens in the alcohol which had contained shrews (*Eothenomys smithii*) received from Japan.

Suidasia australiensis spec. nov.

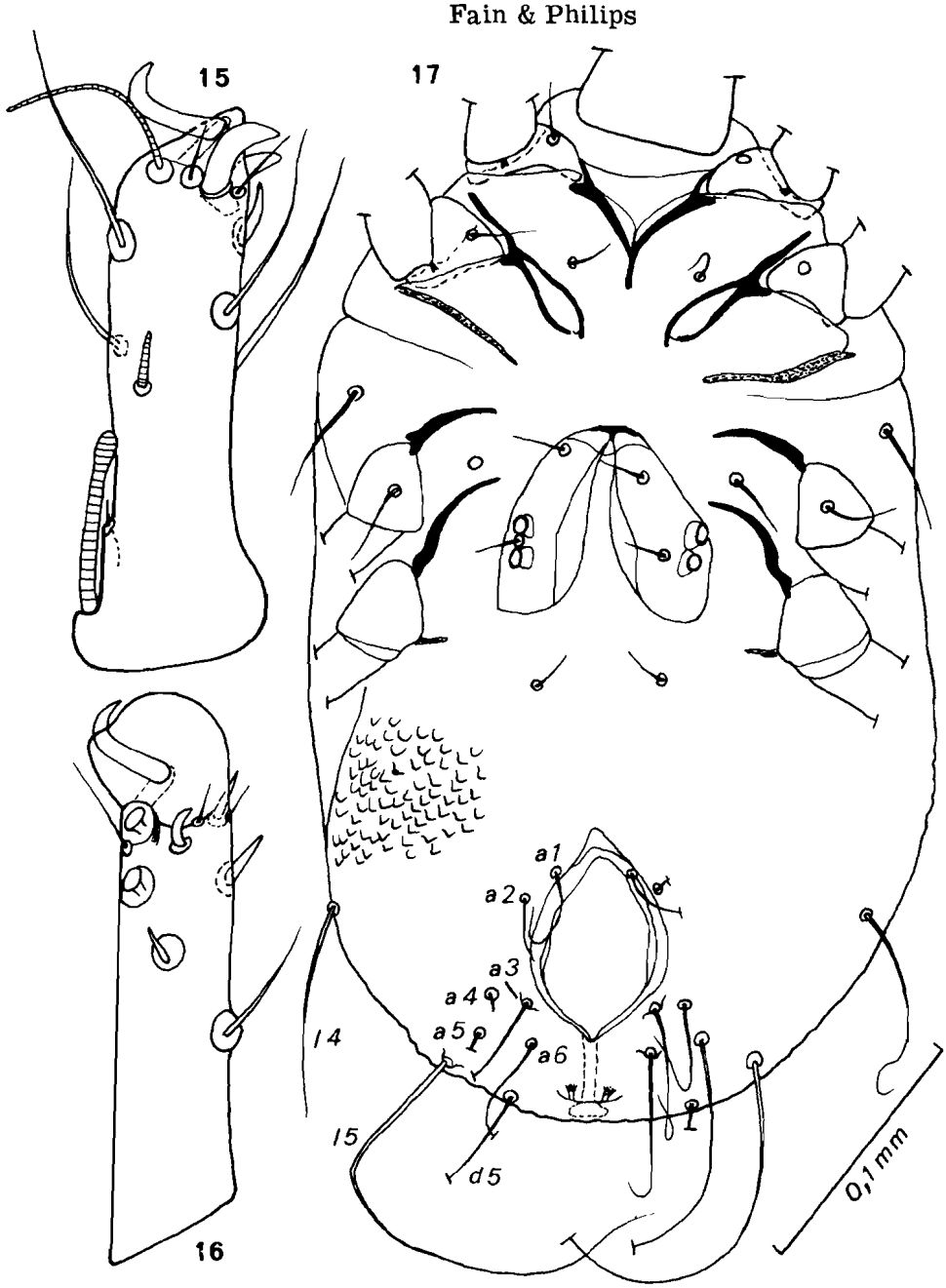
This new species is represented by adults of both sexes, nymphs and one larva. These specimens were attached on several beetles of the genus *Trox* from Australia. These beetles belong to the collections of Harvard College.

MALE (figs. 13-16)—In the holotype the idiosoma is 380μ long and 241μ wide.

DORSUM —Hysterosoma covered with small rounded more or less scaly-like verrucae. Propodosoma bearing a wide punctate shield with a trilobate posterior border. VENTER—The cuticular verrucae are also present in some parts of venter but they are less distinct. Epimera I fused in a sternum, other epimera free. Genital organ situated at the level of coxae IV. Genital discs small. Anus ventral. Legs well developed. All tarsi distinctly longer than their corresponding tibiae. Claws not very strong, with a well-developed pretarsus. In some specimens, as in the holotype the claws are retracted in the apex of the tarsi. Gnathosoma normally developed.

CHAETOTAXY OF THE IDIOSOMA —All the dorsal setae are rather strong and stiff, except the *v e* which are very thin and laterally situated, slightly behind the *v i*. The *v i*, *sc i* and *sc e* are 75μ, 60μ and 200μ long respectively. The *d l*, *d 2*, *d 3*, *d 4*, *d 5* are 63-75μ, 110μ, 115μ, 45μ and 27μ long respectively. The *l l*, *l 2*, *l 3*, *l 4* and *l 5* are 25μ, 105μ, 120μ, 45μ and 240μ long respectively. The *h* is 180μ, the *sh* 48μ. The supracoxal seta is thin and poorly haired. There are 3 pairs of anal setae the *a 3* is 110μ long.

LEG CHAETOTAXY — Tarsus I with two recurved subapical spines (an anterior and a posterior); 1 thin spine and 8 fine setae. Tarsus II as tarsus I but with only 7 fine setae. Tarsus III as tarsus I but with only 5 fine setae. Tarsus IV with 2 preapical recurved small spines, 2 short and thin conical spines, 4 fine setae and 2 very small preapical suckers. Tibiae (I-IV) with 2-2-1-0 setae.



Suidasia australiensis sp. n. : Figs. 15-16, holotype male: tarsi I (15) and IV (16); Fig . 17, allotype female in ventral view.

SOLENIDIOTAXY — Tarsi (I-IV) 3-1-0-0. Tibiae 1-1-1-1. Genua 2-1-1-0.

FEMALE (figs. 17)— The idiosoma in the allotype is 395μ long and 240μ wide.

DORSUM—General aspect as in the male.

HABITAT —Attached on dead beetles of the genus *Trox* from Australia and conserved in the Harvard College Museum (Coll. J. Philips).

From *Trox alternans*- holotype and 1 paratype male, 2 tritonymphs, 2 protonymphs and 1 larva, all paratypes.

From *Trox* sp. , from Sydney- Allotype and 3 paratypes female, 8 males and 1 tritonymph, all paratypes.

Types– In U. S. National Museum, Washington.

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REFERENCES

Fain, A. (1971). Notes sur les Acariens des denrées alimentaires à Kinshasa. (République Démocratique du Congo). Rev. Zool. Bot. Afr. , LXXXIV (1-2): 175-183.

_____. (1973). Observations sur la faune acarologique du sol dans une savane de Côte d'Ivoire. Bull. de l'IFAN, 36, Sér. A , nº 1: 69-91.

_____. (1977). Nouveaux Acariens Astigmates cavernicoles du Kenya. Revue Suisse Zool. , 84 (3): 565-581.

_____, and I. Caceres. (1973). Notes sur la faune acarologique de l'Angola. Familles Acaridae, Saproglyphidae, Glycyphagidae et Pyroglyphidae (Sarcoptiformes). Publ. Cult. Co. Diam. Ang. Lisboa: 106-127.

Hughes, A. M. (1976). Mites of Stored Food and Houses. Tech. Bull. 9. Minist. Agric. Fish. Food. pp: 127-138.

Karg, W. (171). Zur Kenntnis der Gattung *Suidasia* Oudemans, 1905 (Acarina, Acaridae). Abhand. u. Berich. Naturkundemuseums Görlitz. 46 (5): 1-8.

Manson, D. C. M. (1973). *Suidasia reticulata* (Acarina: Acaridae) a new species of mite from New Zealand. The New Zealand Entomologist 5 (2): 192-197.

Nesbitt, H. H. J. (145). A revision of the family Acaridae (Tyroglyphidae). Order Acari, Based on Comparative Morphological Studies. Part I. Historical, Morphological and General Taxonomic Studies. Can. Jl. Res. 23 (6): 139-188.

Oudemans, A. C. (1905). Ent. Ber. 21: 207-210.

_____. (1906). Notes on Acari 16°Ser. Tijdschr. v. Entom. 49 (4) 2: 244-249, pl. 10.

_____. (1923). Ent. Ber. 6, nº 133: 208.

_____. (1924). Acarol. Aanteek. 77. Ent. Ber. 6, nº 140: 319-320.

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