

## **Suidasia pontifica Oudemans, 1905, a pest of insect collections in tropical regions**

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A collection of small members of the family Cicadellidae from Cuba, presented by Dr. Starý to the Entomological Department of the National museum in Prague, contained several individuals damaged in an interesting way in that the head and posterior part of their body were separated from it without any visible cause. Later, members of the Entomological Department of the National museum collected insects in Cuba and placed them between layers of cellulose wadding in large closed cardboard boxes for storage in tin drawers at a hotel in Havana. Several days later, a layer of dust was observed under several specimens which was a reliable sign that these individuals had been damaged. The mite *Suidasia pontifica* Oudemans, 1905 was identified as the species responsible for this damage.

These mites attack all fine parts outside and inside the insect body and destroy completely the connecting parts between the individual segment which results in their decomposition. Although they attack mainly the weakest and smallest members of the family Cicadellidae (Typhlocybinae), they are capable of destroying several medium-large species (up to 1 cm in length) of the family Flatidae. Members of the families Cicadidae, Membracidae and Cercopidae are more resistant to these mites because their exoskeleton is rather strong. The mites consume the entire contents of the body leaving only the individual cleaned segments and some more heavily chitinized parts which they are unable to ingest.

The insects in the collection in the Zoological Institute Academy of Sciences, Havana (Instituto zoológico de l'Academia de Ciencias, Habana) are carefully treated with naphthalene and the described damage has been observed on a few solitary specimens only which apparently had been damaged before being placed in the collection boxes.

According to our experience and to that of local entomologists, members of the family Psocidae are dreaded as pests of insect collections in tropical regions. Fresh insect collections are generally being attacked in the hotel already by ants of the species *Monomorium pharaonis*. There is no reference to mites in guides to the collection of insects in tropical regions (Ribber 1931, Oman and



Cushman 1964). The mite *Thyreophagus entomophagus* has occasionally been found in untreated collections in the temperate zone. The dead bodies of the mites remain intact for tens of years either in the insect body or under the elytra of larger insect species.

The genus *Suidasia* Oudemans, 1905 is evidently of tropical origin, because conditions of the temperate zone are not satisfactory for the development of these mites as evidenced by species introduced to this zone by imported goods.

The type species *Suidasia pontifica* was recovered from the feathers of *Aramus scolopaceus* from tropical regions of America. The original description although very brief contains one important piece of information, i. e., that the male does not possess copulatory suckers. The species has caused considerable difficulties to acarologists, because the female is identical to that of *S. medanensis* (Oudemans, 1923), but the male of the latter species has very conspicuous suckers. These, again, are absent in the male of *S. nesbitti* Hughes, 1948. This tangle was cleared by Oudemans' unpublished drawing which are in the possession of the Rijksmuseum van Natuurlijke Historie at Leiden. Oudemans regarded the mite figured on table 1297 as the male of *Suidasia pontifica* Oudms. The size given for this male was 200  $\mu$  and hence conform to the measurement in the original description. However, the figured mite was not a male but a nymph, and Oudemans himself, apparently later, crossed out the male sign and replaced it by Nph. III.

These unpublished drawings brought light to the confusing situation inside the genus *Suidasia*: *Suidasia potifica* Oudemans, 1905 = *Aphelenia medanensis* Oudemans, 1923 syn n. = *Suidasia medanensis* Oudemans, 1924 = *Suidasia*

*insectorum* Fox, 1950. Thus the type species of the genus is a well-defined and well-known species living frequently in close proximity to man. It was first recovered from the quill of *Aramus scolapaceus* (evidently a museum deposit), next from a nest of bees of the genus *Xylocopa* in Medan, Sumatra. Fox (1950) found it under conditions similar to ours, i. e., in a collection of mosquitoes from San Juan, Puerto Rico, but unfortunately, his material consisted of 5 adult mites and two developmental stages only. Another finding of the mite species was recorded from a culture of *Trogoderma granarium* at the Pest Infestation Laboratory Slough, England, and them in a culture of *Callosobruchus* at the same laboratory, imported from Ibadan, Nigeria (Hughes 1955). Additional records are available from Angola (Hughes 1961), Japan (Oshima 1970) and Malaysia (Kurosa, 1976). Sofar unpublished is the finding of the species on *Dasytes novemcinctus*, Caimitillo, Panama. August 28, 1972, lgt. G. Madrid (the material was supplied by curtesy of Dr. F. Lukoschus, Katholieke Universiteit Nijmegen, det. Samšiňák). In Czechoslovakia, the first author found the species in a fresh shipment of green coffeebeans from Brasil, but it disappeared very suddently without the use desinsectants. The incidence of the mite seems to dependt on the present of insects and it follows them to some stored products. Kurosa (1976) did not regard seta he of the female as a reliable diagnostic sign as did Hughes (1961) in his key. Since our observations are conform to those of Kurosa, a reliable identification of the female necessitates a difficult comparison of the dorsal structure as indicated by Hughes (1961), drawings.

The second species of the genus is *Suidasia nesbitti* Hughes, 1948 (*Chibidania tokyoensis* Sasa, 1952). Although first found and described a long time after *S. pontifica*, the species is well-known in a number of European countries, in N-America, Africa (Hughes 1961), Japan (Sasa 1952). It was found in a number of stored products and has been suspected to cause dermatitis in man (Kilpio and Pirila 1952).

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#### Literature

- Chmielewski, W., 1971: The results of the studies of acarofauna in the imported wares with a particular reference to the species, new for Poland. — *Prace naukowe inst. ochrony roślin*; 13:187–200.
- Fox, I., 1950: A new tyroglyphid mite from Puerto Rico. — *Proc. Biol. Soc. Wash.*, 63:205–208.
- Hughes, A. M., 1955: On *Suidasia medanensis* Oudemans (Acaridae) — a mite new to Great Britain. — *Proc. Zool. Soc. Lond.*, 125:41–47.
- Hughes, A. M., 1961: The mites of stored food. — London.
- Hughes, A. M., 1976: The Mites of Stored Food and Houses. London, 1976:1–400.
- Kilpio, O., Pirila, V., 1952: A new tyroglyphid mite causing dermatitis. — *Acta Derm.-Ven.* 32:197–200.
- Kurosa, K., 1976: Notes on Tarsonemini and Acaridae (Acari) from Pasoh Forest Reserve and its vicinities, Malaya. — *Nature and Life in Southeast Asia* 7:61–81.
- Oshima, S., 1970: Mites in housedust and their bionomics. — *Kūhi Seijō*; 9:25–37 (in Japanese).

- Oudemans, A. C., 1905: Acarologische Aanteekeningen XV. — *Ent. Ber.* 1:207–210.  
Oudemans, A. C., 1924: Acarologische Aanteekeningen LXXVII. — *Ent. Ber.* 6:317–336.  
Oman, P. W., Cushman, A. D., 1946: Collection and preservation of insects. — *Misc. Publ. USDAW.*  
Ribbe, C., 1931: Anleitung zum Sammeln in tropischen Ländern. — Stuttgart.  
Sasa, M., 1952: Two new acaroid — tyroglyphoid (mites of possibly sanitary or economic importance in Japan. *Japan J. Exp. Med.* 22(6):511–521.  
Žďárková, E., 1967: Stored food mites in Czechoslovakia. — *J. Stored Prod. Res.* 3:155–175.

During the press appeared:

- Fain, A., Philips, J. R., 1978: Notes on the genus *Suidasia* Oudemans, 1905 with descriptions of a new species from Australia (Acari, Astigmata, Saprogllyphidae). — *Intl. J. Acar.* 4:115–123.