

NOTE ON THE SCALE MITE *PTERYGOSOMA NEUMANNI*  
(ACARINA: PROSTIGMATA: PTERYGOSOMIDAE)  
FROM THE AGAMID LIZARD HOST *CALOTES VERSICOLOR*

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**ABSTRACT.** – A scale mite *Pterygosoma neumanni* (Berlese, 1910) was recorded for the first time in Singapore from the agamid lizard *Calotes versicolor*. The pterygosomid mite was found beneath imbricating scales of the body integument and tympana of the lizard host.

**KEY WORDS.** – Mite, *Calotes versicolor*, *Pterygosoma neumanni*.

## INTRODUCTION

Prostigmatic mites of the genera *Pterygosoma*, *Gekobia*, and *Geckobiella* are parasites of gekkonid and agamid lizards in Africa (Lawrence, 1935, 1936, 1953; Davidson, 1958; Jack 1961, 1962), India (Abdussalam, 1941; Nager et al., 1978; Lawrence, 1953), and the Philippines (Cuy, 1979). These mites of lizards were first investigated by Peters in 1849 who erected the genus *Pterygosoma* to record a prostigmatic scale mite from *Agama mossambica* (see Lawrence, 1935: 3). The family Pterygosomidae, which comprises eight genera and over 50 species, (Davidson, 1958; Nagar et al., 1978), is poorly known, probably due to the scarcity of materials for study. In this note, we report the occurrence of *Pterygosoma neumanni* (Berlese, 1910) from the introduced agamid lizard host *Calotes versicolor* in Singapore (Chou, 1995).

## TAXONOMY

**Materials examined.** – Mite specimens from eight adult *Calotes versicolor* (SVL 98 – 125 mm) collected from Marina South Park, Singapore in September 2000 were examined. Integument of the host was excised and placed in warm alcohol to collect the mites. Description and measurements on *Pterygosoma neumanni* were based on 12 adult female specimens; microscope slides of these specimens were deposited at the Zoological Reference Collection, Raffles Museum, National University of Singapore, and assigned catalogue nos. ZRC.2001.1158 to 1163.

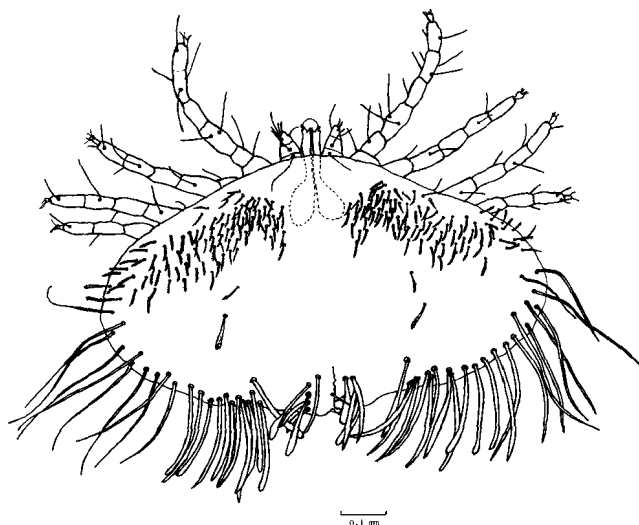


Fig. 1. Dorsal view of female *Pterygosoma neumanni*

**Description.** – *Idiosoma*: Soft, bag-like in appearance, much broader than long. *Dimensions*: length 545-680  $\mu$ , width 903-1130  $\mu$  ( $n = 12$  females). Dorsum with dense anterior patch of serrated setae on each side of median line (Fig. 1); 17-26 peripheral setae; setae towards the media-lateral region are fine-pointed and longer, setae towards anal region broad and expanded terminally. Majority with 5 pairs of broad genital setae; genital setae of varying lengths; two specimens with 6 setae on one side and 5 setae on the other side of the genital

opening. Presence of 3 anal spines of varying lengths. Posterior half of venter with 3 pairs of setae. Eyes absent. Stigmata openings at bases of chelicerae. *Gnathosoma*: Palps with 8 setae. Chelicerae measure 210-230  $\mu$  in length. *Legs*: Tarsi with a pair of feather-like bipectinate setae; tarsi I and II with stout spiniform seta; empodia with tenent setae. *Anal opening*: Posterior.

**Site Of Infestation.** – Adult females attached beneath dorsal, lateral, and ventral body scales; mites were more densely distributed beneath scales in anterior half of body, and in tympanum; also observed beneath scales in gular area and forelimbs; colour in life is pinkish red; specimens preserved in alcohol, yellowish to brown.

## DISCUSSION

Scale mites of the family Pterygosomidae parasitize lizards by attaching themselves under body scales or between digits of hosts (Hirst, 1925). Their soft bodies are flattened dorso-ventrally and devoid of any sclerotization. Scale mites are entirely absent in lizards in which scales are absent or which lack imbricating scales. In *C. versicolor*, imbricating scales make up the integument of the entire trunk region; the posterolateral margins of these scales are slightly deflexed to form a small pocket, and it is to the skin under these imbricating scales that the scale mite, *P. neumanni*, was attached.

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## LITERATURE CITED

- Abdussalam, M., 1941. Pterygosomid mites from two north Indian lizards. *Indian J. Entomology*, **III** (1): 65 - 72
- Chou, L. M., 1995. *Calotes versicolor*- a new record. *Herpetol. Rev.*, **12** (1): 12 - 13.
- Cuy, L. S., 1979. Synopsis of Philippines Pterygosomidae (Acarina: Prostigmata). *Philipp. J. Biol.*, **8** (2): 155 - 161.
- Davidson, J. A., 1958. A new species of lizard mite and a generic key to the family Pterygosomidae (Acarina, Anystoidea). *Proc. Ento. Soc. Wash.*, **60** (2): 75 - 79.
- Hirst, S., 1925. On the parasitic mites of the suborder Prostigmata (Trombidiodea) found on lizards. *J. Linn. Soc. London Zool.*, **36**: 173 - 200.
- Jack, K. M., 1961. New species of Near Eastern agamid scale-mites (Acarina, Pterygosomidae) with notes on the developmental stages of *Geckobia hemidactyli* Law., 1936. *Parasitol.*, **51**: 241 - 256.
- Jack, K. M., 1962. Observations on the genus *Pterygosoma* (Acari: Pterygosomidae). *Parasitol* **52**: 261-295.
- Lawrence, R. F., 1935. The prostigmatic mites of South African lizards. *Parasitol.*, **27** (1): 1 - 45.
- Lawrence, R. F., 1936. The prostigmatic mites of South African lizards. *Parasitol.*, **28** (1): 1 - 39.
- Lawrence, R. F., 1953. Two new scale-mite parasites of lizards. *Proc. U.S. Nat. Mus.*, **103** (3312): 9 - 18.
- Nagar, S. K., K. Kumar & R. N. Raizada, 1978. Redescription and certain developmental stages of the pterygosomid mites of the Delhi state. *The Annals of Zool.*, **14** (3): 93 - 117.