

Zoological Survey of India  
Calcutta (India)

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## Studies on Indian Mites. 4. Three new *Pachylaelaps* with a key to the species

(Acarina: Mesostigmata)

(With 22 text figures)

Quite a number of species belonging to the genus *Pachylaelaps* BERLESE (1886) have been reported from the different parts of the world. But till now no record is available in so far India is concerned. In the present paper three species under the genus *Pachylaelaps* have been described from the Indian sub-continent as new to science. These are: *Pachylaelaps femoralis* spec. nov., *P. dorsalis* spec. nov. and *P. setosus* spec. nov.

### Key to the Indian species of *Pachylaelaps*

#### Males

- 1 Femur of leg III with spur . . . . . 2
- Femur of leg III without spur . . . . . *P. setosus* spec. nov.
- 2 Spermatophoral process long, slender and almost straight . *P. femoralis* spec. nov.
- Spermatophoral process long, slender and strongly curved . . *P. dorsalis* spec. nov.

#### Females

- 1 Posteriormost pair of setae of opisthotal shield extremely short; movable digit of chelicera unidentate; femur II with a seta-bearing tubercle . *P. femoralis* spec. nov.
- Posteriormost pair of setae of opisthotal shield not short; movable digit of chelicera bidentate; femur II without such tubercle . . . . . *P. dorsalis* spec. nov.

### *Pachylaelaps femoralis* spec. nov.

Male: Dorsal shield (long 0.900—1.026 mm. X wide 0.576—0.603 mm.) partly reticulated and bearing 30 pairs of setae of varying length. Setation of dorsal shield shown in fig. 1. Posterior extremity of opisthotal shield with a pair of extremely short setae.

Tritosternum with a narrow basal part and a pair of pilose laciniae. Genital orifice pre-sternal in position. Holoventral shield bearing 9 pairs of setae (Fig. 2) and reticulated except for the region around peritreme. A pair of par- and a post-anal setae present. Stigma situated between coxae III and IV; peritreme extending to coxa I and curved inwards between coxae II and III.

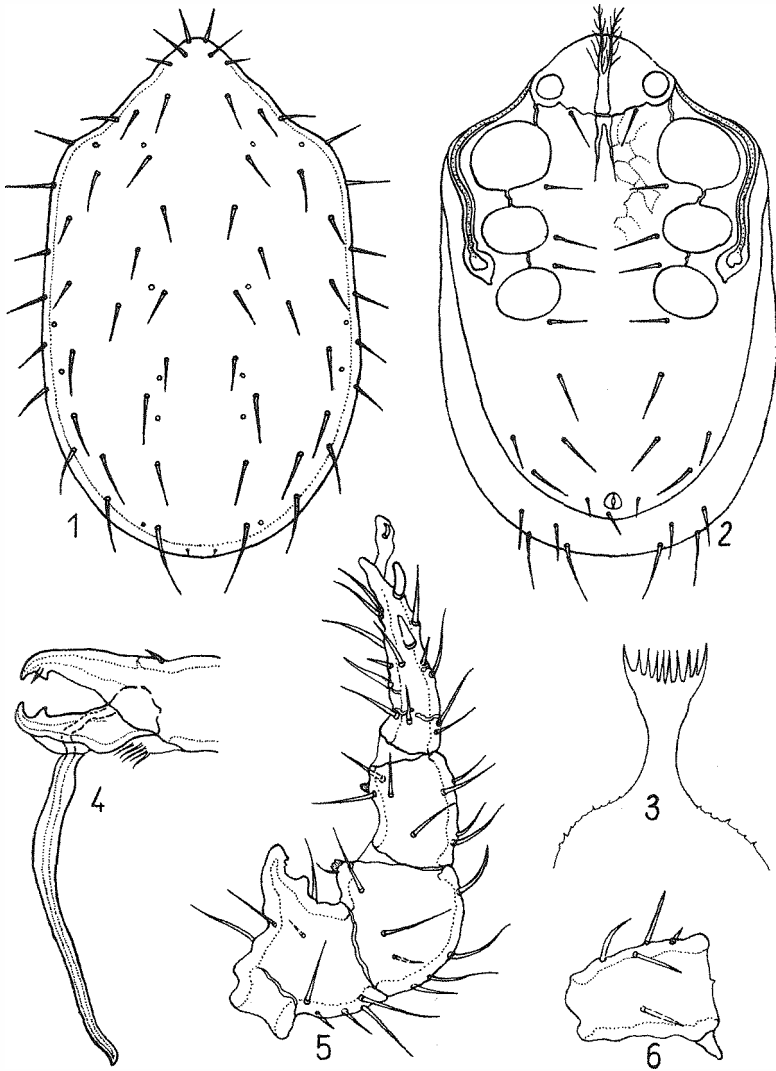
Tectum shown in fig. 3. Trochanter, femur and genu of pedipalp with 2, 5 and 6 setae respectively; apotele 3-pronged. Both digits of chelicera unidentate. Spermadactyl about

twice as long as movable digit, long and tapered (Fig. 4). Gnathosoma bearing 4 pairs of setae.

All legs with pulvillus and two claws. Femur, genu and tibia of leg II armed with spurs (Fig. 5). Femur of leg III (Fig. 6) bearing a spur.

Female: Dorsal shield (long 1.062 mm. X wide 0.648—0.693 mm.) similar to those of male.

Tritosternum with a narrow base and a pair of pilose laciniae. Sterniti-metasternal shield reticulated and bearing 4 pairs of setae (Fig. 7). Geniti-ventral shield reticulated, with

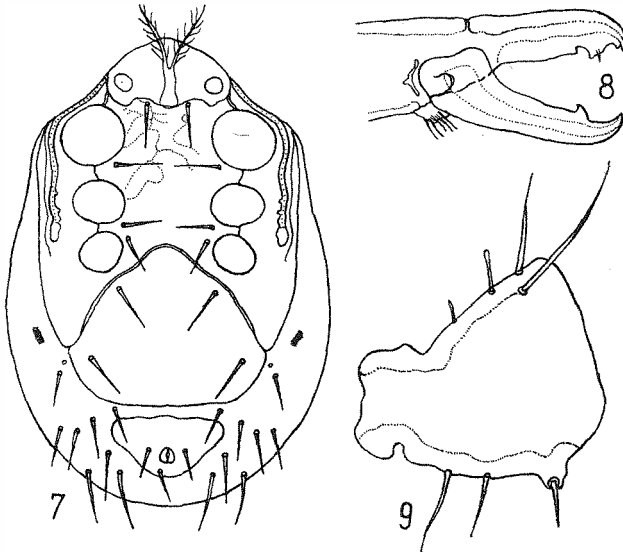


Figs. 1—6. *Pachylaelaps femoralis* spec. nov. ♂: Fig. 1. Dorsum of idiosoma. — Fig. 2. Venter. — Fig. 3. Tectum. — Fig. 4. Chelicera. — Fig. 5. Femur, genu, tibia, tarsus and prae-tarsus of leg. II. — Fig. 6. Femur of leg III

2 pairs of setae. Anal shield with a pair of par- and a post-anal setae. Interscutal membrane bearing 8 pairs of setae and 1 pair of metapodal shields. Stigma and peritreme as in male.

Tectum similar to male. Fixed and movable digits of chelicera bidentate and unidentate respectively (Fig. 8). Gnathosoma with usual 4 pairs of setae and its ventral groove with 7 rows of deutosternal denticles.

Femur of leg II with a seta bearing tubercle (Fig. 9). Femoral spur of leg III smaller than in male.



Figs. 7–9. *Pachylaelaps femoralis* spec. nov. ♀: Fig. 7. Venter. — Fig. 8. Chelicera. Fig. 9. Femur of leg II

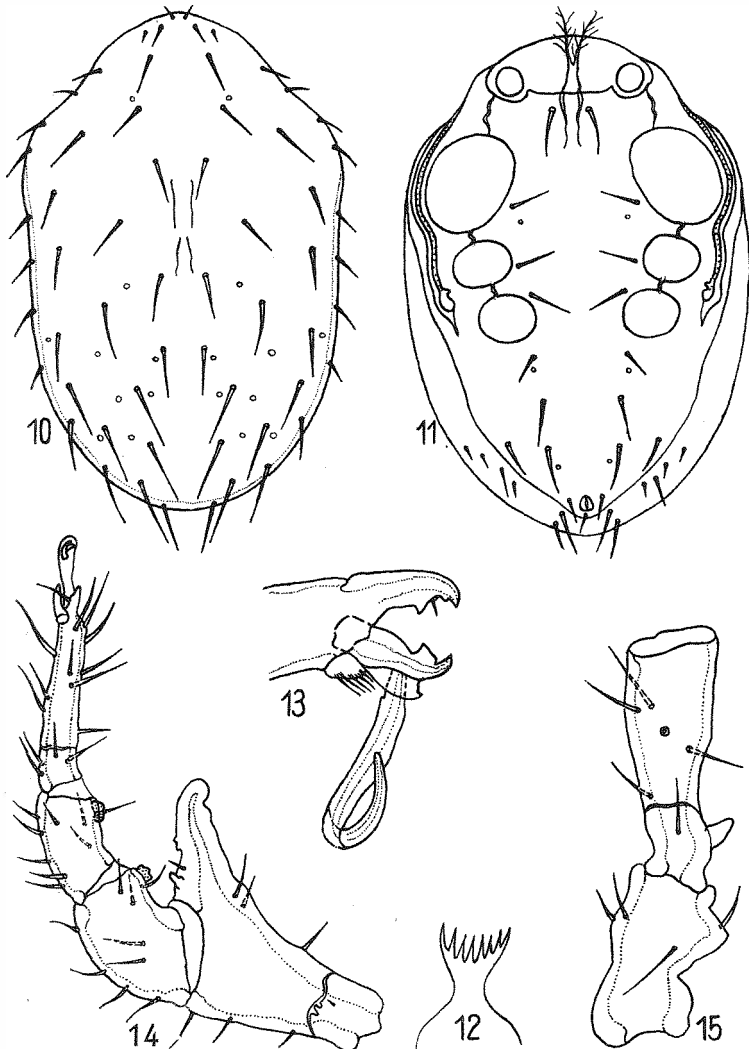
Locality. Holotype ♂, allotype ♀ and 3 paratypes, 2 ♂♂ and 1 ♀ from soil litter under Bottle gourd plant (*Lagenaria vulgaris* SER.), Ganeshpur, Nilgunge, 24 Parganas district, West Bengal, India, 27. XII. 1965 (MISS M. SENGUPTA). The types are in the collections of the Zoological Survey of India, Calcutta.

Remarks. The male of *P. femoralis* spec. nov. resembles *P. longisetis* HALBERT (1915) which is figured by EVANS and HYATT (1956) by the shape spermadactyl but differs from it by the presence of femoral spur on leg III, by the shape of spur on femur of leg II, and by the structure of tectum. From HALBERT's *longisetis*, the above new species differs in the dentition of the chelicera in the female sex. Further the opisthonotal end of the new species bears a pair of extremely short setae whereas in *P. longisetis* it is long.

#### *Pachylaelaps dorsalis* spec. nov.

Male: Dorsal shield (long 0.504–0.558 mm. X wide 0.342–0.369 mm.) reticulated, bearing 30 pairs of setae and 2 pairs characteristically longitudinal lines (Fig. 10).

Tritosternum with a pair of pilose laciniae. Genital aperture lying medianly on anterior margin of holoventral shield. Holoventral shield with 19 setae (including a pair of par- and a post-anal setae). Number, disposition and length of setae variable on interscutal membrane.



Figs. 10–15. *Pachylaelaps dorsalis* spec. nov. ♂: Fig. 10. Dorsum of idiosoma. — Fig. 11. Venter. — Fig. 12. Tectum. — Fig. 13. Chelicera. — Fig. 14. Femur, genu, tibia, tarsus and prae-tarsus of leg II. — Fig. 15. Trochanter and femur of leg III

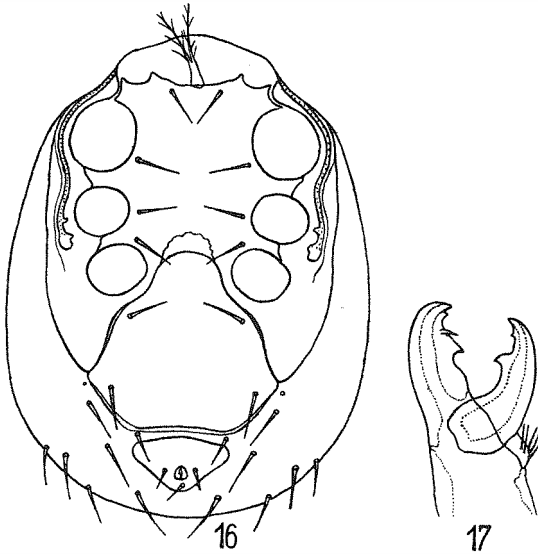
Stigma situated between coxae III and IV (Fig. 11); peritreme extending beyond coxa I and curved inwards between coxae II and III.

Tectum as in fig. 12. Trochanter, femur and genu of pedipalp with 2, 5 and 6 setae respectively. Apotele 3-pronged. Fixed digit of chelicera bidentate and movable digit unidentate, with a recurved spermadactyl (about twice as long as movable digit) as shown in fig. 13.

All tarsi of legs with ambulacra. Femur of leg II (Fig. 14) with a large falcate and a short accessory spurs. Genu and tibia II with spurs. Distinctive features of trochanter and femur of leg III delineated in fig. 15.

Female: Dorsal shield (long 0.585–0.594 mm. X wide 0.396–0.414 mm.) similar in structure and chaetotaxy to male.

Tritosternum as in male. Sterniti-metasternal and geniti-ventral shields bearing 4 and 2 pairs of setae respectively (Fig. 16). The latter with truncated posterior margin. Seven setae situated on each side of geniti-ventral and anal shields. Stigma and peritreme as in male.



Figs. 16–17. *Pachylaelaps dorsalis* spec. nov. ♀: Fig. 16. Venter. — Fig. 17. Chelicera

Tectum similar to male. Each of the two digits of chelicera bidentate (Fig. 17).

All legs provided with ambulacra and without any spur.

Locality. Holotype ♂, allotype ♀ and 4 paratypes, 1 ♂ and 3 ♀♀ from soil under *Pinus* sp., Haringhata, Nadia District, West Bengal, India, 7. I. 1966 (Miss M. SENGUPTA). The types are in the collections of the Zoological Survey of India, Calcutta.

Remarks. The new species resembles to *P. pectinifer* (G. & R. CANESTRINI, 1881) which is figured by SCHWEIZER (1961) in the shapes of spurs on genu and tibia of leg II of the male, but differs in the presence of finger-like spur on the femur of leg III, in the structure of femoral spur of leg II, in the possession of 2 teeth on the fixed digit of chelicera and also in the form of recurved spermadactyl.

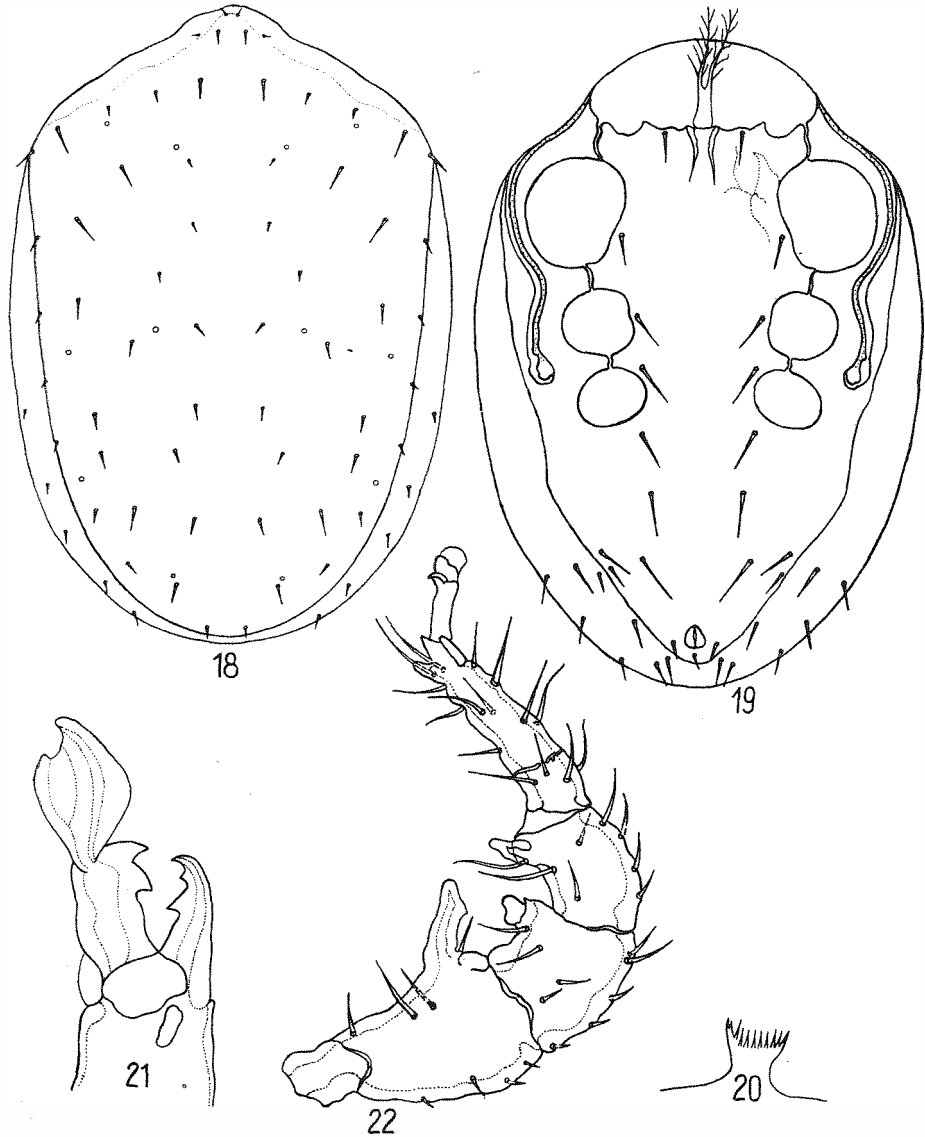
#### *Pachylaelaps setosus* spec. nov.

Male: Dorsal shield (long 0.106 mm. X wide 0.062 mm.) oval, reticulated, and bearing 30 pairs of setae of which majority are short (Fig. 18).

Tritosternum with a narrow base and a pair of pilose laciniae. Holovenral shield bearing 4 pairs of setae in the sterniti-genital region and 5 pairs (excepting a pair of par- and a post-anal setae) in preanal region. Setation of interscutal membrane shown in fig. 19. Stigma situated between coxae III and IV; peritreme curved inwards between coxae II and III, and extending beyond coxa I.

Tectum as in fig. 20. Fixed digit of chelicera bidentate; and movable digit unidentate, with a short and broad spermadactyl (Fig. 21).

Legs I—IV each with pulvillus and two claws. Femur, genu and tibia of leg II with spurs (Fig. 22).



Figs. 18—22. *Pachylaelaps setosus* spec. nov. ♂: Fig. 18. Dorsum of idiosoma. — Fig. 19. Venter. — Fig. 20. Tectum. — Fig. 21. Chelicera. — Fig. 22. Femur, genu, tibia, tarsus and prae-tarsus of leg II

Female: Unknown.

Locality. Holotype ♂ from litter and humus under grass, Sitala, Sonarpur, 24 Parganas District, West Bengal, India, 6. XI. 1963 (Dr. S. K. BHATTACHARYYA). The type is in the author's collection.

Remarks. This species superficially resembles to *P. sculptus* BERLESE, 1920, in the spurs of leg II but greatly differs in the length of dorsal setae, in the short and broad spermadactyl.

#### Acknowledgements

I express my thanks to the Director, Zoological Survey of India, for providing facilities for this acarological work, and also to Dr. D. N. RAYCHAUDHURY, Department of Entomology, University of Calcutta, who gave me working space for the taxonomic study of *Pachylaelaps setosus* spec. nov.

#### Summary

Three new species of the genus *Pachylaelaps* BERLESE are described from India: *P. femoralis*, *P. dorsalis* and *P. setosus*.

#### Zusammenfassung

Es werden drei neue Arten der Gattung *Pachylaelaps* BERLESE aus Indien beschrieben: *P. femoralis*, *P. dorsalis* und *P. setosus*.

#### Резюме

Описываются три новых вида в роде *Pachylaelaps* BERLESE из Индии: *P. femoralis*, *P. dorsalis* и *P. setosus*.

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