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LOHMANNIID MITES (ACARI: ORIBATEI) FROM KERALA, INDIA

1. A NEW SPECIES OF MERISTACARUS GRANDJEAN, 1934

BY M.A. HAQ AND M. JAIKUMAR *

**Abstract**: An extensive survey on the oribatid fauna of Kerala and neighbouring areas revealed the occurrence of several new species. The preliminary study on their biology indicates their potential in the biodegradation of the residues of higher plants, particularly materials of woody and leafy nature. In the present paper, we describe a new species of *Meristacarus*.

**Meristacarus degradatus** sp. nov. (Fig. 1-4)

*Colour*: Yellowish brown.

*Measurements*:

- **Length**: 918 µm (range: 791-956 µm).
- **Width**: 676 µm (range: 510-676 µm).

*Prodorsum* (Figs 1 and 2).

Prodorsum more or less triangular in outline rostrum progressively narrowing to form a pointed apex; a distinct medially pointed transverse ridge present at the rostral region which extends to the lateral borders of the prodorsum (Fig. 1B); in dissected out and well mounted rostral region of one specimen, this ridge appears discontinuous at the lateral region of the rostral margin, presenting a broad and stretched inverted 'V'; in such specimen the rostral tip broadly rounded; all prodorsal hairs long and barbed; seta *ro* inserted just below the transverse ridge, directed outwards and measuring 140 µm; seta *le* placed slightly but lateral to *ro* and measuring 185 µm; seta *in* located slightly above the bothridial cups and measuring 191 µm; anterior and posterior exostigmatic hairs (*exa* and *exp*) of the same nature and length, 179 µm each; bothridial cups (*bo*) small and oriented laterally, a more or less oblique ridge present in front of *bo*; sensillus (*ss*) unilaterally barbed with not less than 20 thin bristles, the length of which gradually decreases distally; a more or less arched transverse band originating from the postero-lateral margins of the prodorsum runs through the basal part of the oblique ridge, between the level of bothridium and lamellar setae, this band consists of serially arranged polygonal cells ranging from 2-4 rows; entire surface of the prodorsum except regions adjacent to dorsosejugal suture ornamented with well pronounced and clearly marked large rounded area porosae, sunken and indistinct round foveolae and fine micro-punctations; adjacent region of the dorsosejugal suture bears only micro-punctations.

*Notogaster* (Figs 1 and 2).

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Cylindrical and broad with a convex anterior margin; 9 wavy, curved or looped notogastral bands present each formed of round pores often connected by interlinking rods to give a chain-like appearance (fig. 16), band 1 incomplete and placed above setae $c_1$, $c_2$ and $c_3$, bands 2 and 3 complete while band 4 represented only medially in the form of incurved loops, bands 5 and 6 connected medially forming another loop while 7, 8 and 9 complete; notogastral integument densely porose and ornamented with scattered, pronounced area porosae; 16 pairs of barbed setae of varying size.
FIG. 2: *Meristacarus degradatus* sp. nov., lateral view.

arranged on the notogaster as shown in figure 1A; marginal and posterior setae very long when compared to the median setae, seta $e_1$ exhibits asymmetry in the holotype, $ps_2$ forms the longest seta measuring 225 µm and $d_1$, the shortest, reaching 77 µm in length; fissure $im$ seen somewhat medio-laterally, near seta $d_2$.

*Lateral region*: (fig. 2)

Lateral margin of the prodorsum slightly incised; rostral apex with a pointed tip, directed downwards; anterolateral corners of the notogaster with a ventral extension which carries lyrifissure $ia$, this extension runs downwards along the lateral border of the notogaster; lyrifissures $ip$ and $ih$ located near to setae $e_2$ and $h_3$ respectively; acetabula of all legs clearly visible laterally.

*Ventral region* (fig. 3).

*Gnathosomal region* (fig. 3B).

Labiogena1 articulation stenarthric; rutellum (fig. 3E) sclerotized with blunt teeth; 4 pairs of weakly barbed infracapitular setae $a, m_1, m_2$, and $h$ detected, $a$ shortest; mentum with thick punctation; chelicerae (fig. 3D) with strong and well sclerotized digits, each carries 3-4 prominent, blunt teeth, seta $chb$ long and barbed while cha represented by a very minute hair; pedipalp (fig. 3E) 5 segmented with a chaetotaxy of 0-1-0-2-1-10(1).

*Epimeral region* :

Epimeral plates distinct, sejugal apodeme well developed, apodeme 3 of both sides continuous medially and produced into a posterior extension, setal formula of the epimerata 3-1-3-4, all setae barbed and of varying size, epimeral plates densely punctated.

*Anogenital region* :

Anogenital region of holo gastric type; genital plates elongate, each plate broader posteriorly, carrying 10 barbed setae arranged in two rows of 5 each; preanal plate broad, anal plates thin, narrow and devoid of setae while adanal plates well developed carrying 4 barbed setae which decrease in length in the order $ad_1 > ad_2 > ad_4$; adanal plates ornamented variously, more often with polygonal cells; fissures $ia, ip$ and $ih$ clearly visible ventrally as shown in figure; ano adanal plates bordered by porose chitinous tubercles and polygonal cells, the
Fig. 3: *Meristacarus degradatus* sp. nov.

A. — Ventral view. B. — Gnathosoma (paratype). C. — Rutellum (paratype). D. — Chelicerae with well developed teeth (paratype)

E. — Pedipalp (paratype).
FIG. 4: *Meristacarus degradatus* sp. nov. leg I
entire ventral surface porose, region outside and lateral to genital and anal plates boarded by sculptures similar to anterior prodorsal part.

**Legs**

All legs monodactylous; chaetotaxy of leg-1 (fig. 4): 0-5-2(2)-4(1)-18(2); femur-1 carries 5 setae barbed in various degrees, a well developed notch dorsally and a keel ventrally; genu-1 bears 2 solenidia \( a' \) and \( a'' \), the latter thicker than the former, seta \( d \) thin and smooth while seta \( f \) thick and serrate; tibia -1 carries a stout and long solenidion \( \varphi \), \( d \) seta coupled with this solenidion; seta \( xt_1 \) thicker than \( xt_2 \), \( l \) barbed; tarsus-1 carries 20 setae, including 2 solenidia \( \rho_1 \) and \( \rho_2 \), setae \( p' \), \( p'' \), \( s \) and \( m'' \) eupathidic, \( tc' \) and \( tc'' \) thick, curved apically and bearing small barbs intermittently, a famulus \( \varepsilon \) placed in between \( \omega_1 \) and \( \omega_2 \), setae \( pv' \), \( pv'' \), \( ft' \), \( ft'' \), \( n' \), \( \imath' \), \( \imath'' \), \( a' \), \( a'' \) and \( u'' \) variously barbed, all segments with a porose integument.

**Material examined:**

Holotype \( ? \); paratypes 9 \( \delta \delta \) and 7 \( \varphi \varphi \) collected from the litter and soil samples, 4 kms away from Calicut University Campus, Kerala, India on 10.IV.1989; collected by M. A. HAQ. The holotype will be deposited at the Zoological Survey of India, Calcutta, India.

**Remarks**

GRANDJEAN (1934) erected the genus *Meristacarus* from Central America with *M. porcula* as the type species. Later additions to the genus were made by BALOGH (1958, 1961 and 1962), BALOGH and BALOGH (1983), BULANOVA-ZAKHVATKINA (1960), CSIZAR (1961), AOKI (1965), PÉREZ-IRIGO (1968), HAMMER (1972, 1980), MAHUNKA (1978, 1988), CORPUZ-RAROS (1979), and HAQ and CLEMENT (1991). BALOGH (1987) compiled the family Lohmanniidae, Berlese 1916, wherein he included thirteen species of this genus. Comparative studies on the members of the genus *Meristacarus* show that the present species resembles *M. wynadensis* Haq and Clement, 1991 in having a general appearance of the body and ornamentation and disposition of its body setae. In addition, presence of prodorsal and notogastral bands, decrease in length of adanal setae from \( ad_1 \) to \( ad_4 \) are some of the other points of similarity of the present species with *M. wynadensis*.

However, *M. degradatus* can be distinguished from *M. wynadensis* in the possession of the following characters:

1. A prominent rostrum with pointed tip.
2. Presence of a medially pointed transverse ridge at the rostral region.
3. Well developed prodorsum with an oblique ridge in front of bothridia and an arched transverse band consisting of 2-4 layers of serially arranged polygonal cells below the bothridia.
4. Medially incurved nature of fourth notogastral band.
5. Existence of interlinking rods between the round pores of notogastral bands.
6. Difference in the epimeral setal formula and nature, arrangement and formula of setae on pedipalp and leg-1.

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**References**


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