THE GENUS MACROCHELES LATREILLE (ACARINA: MACROCHELIDAE) IN INDIA* MORPHOLOGICAL VARIATIONS AND GEOGRAPHICAL DISTRIBUTION

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(With five text-figures and one plate)

Key words: Acarina, Macrocheles sp., habitat, morphological variation, distribution

Data pertaining to habitats and geographical distribution of five species of Macrocheles Latreille, viz. peniculatus Berlese, penicilliger (Berlese), krantzi Evans and Hyatt, merdarius (Berlese) and muscaedomesticae (Scopoli) are presented. Morphological variations observed in the first two species are discussed with illustrations.

INTRODUCTION

This part of the series documents the data pertaining to habitats and geographical distribution of five species of Macrocheles Latreille, viz. peniculatus Berlese, penicilliger (Berlese), krantzi Evans and Hyatt, merdarius (Berlese) and muscaedomesticae (Scopoli) from India. Morphological variations observed in peniculatus and penicilliger are discussed and illustrated. Of the five aforementioned species, peniculatus was earlier reported in Part 2 of the series (Roy 1991 a). The remaining are known through the works of Evans and Hyatt (1963), Pramanik and Raychaudhuri (1968), Pramanik (1977), Sharma and Sharma (1973) and Singh and Kapoor (1976). This paper incorporates additional information on habitats.

Unless otherwise indicated, the collector was this author. The material has been deposited in the Zoological Survey of India, Calcutta. The altitudes given are approximate.

1. Macrocheles peniculatus Berlese, 1918
   (Figs. 1-2; Pl. 1: Fig. 1)

Macrocheles (Coprholaspis) peniculatus Berlese, 1918, Redia 13: 166.

Macrocheles vicarius Berlese, 1918, Redia, 13: 167

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*This paper is ninth in the series on “Studies on Indian Macrocheles”.

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1980). European records are from USSR (Bregetova and Koroleva 1960), Ghilyarov and Bregetova 1977) and Hungary (Eröss and Mahunka 1971). Costa (1966) recorded it from Israel. In India, it is confined to the southern region. Records indicate that the species is well represented in the southern hemisphere.

Remarks: The species has been described and illustrated by Bregetova and Koroleva (1960). The material at hand conforms to the description and illustration given by Bregetova and Koroleva (op. cit.) except for the presence of a procurved medial line and dorsal seta (s4) being simple (Fig. 1). In addition, the movable digit of chelicera (Fig. 2) is tridentate in contrast to the bidentate nature of the digit in the European counterpart, as depicted by Bregetova and Koroleva (1960). It was reported earlier from Kodaikanal by Roy (1991a, b).

2. *Macrocheles penicilliger* (Berlese, 1904) (Figs. 3-5; Pl. 1; Figs. 2-3)

Fig. 1. Ventral shields of *Macrocheles peniculatus* Berl., Female (82 X);
Fig. 2. Ventral shields of *Macrocheles penicilliger* (Berl.), Female (136 X);
Fig. 3. Ventral Shields of *Macrocheles penicilliger* (Berl.), Male (94 X)


**Distribution:** *M. penicilliger* is frequently encountered in Europe: Italy (Berlese 1904), England (Evans and Browning 1956), Austria (Franz 1954), Hungary (Eröss and Mahunka 1971), Iceland (Sellnick 1940), USSR (Bregetova and Koroleva 1960), Germany (Krauss 1970). Pramanik and Raychaudhuri (1978) first recorded females of *M. penicilliger* from India: The species is an exotic in India, away from its Palearctic homeland and is widely represented. India. Manipur, Meghalaya, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. This species was first recorded from West Bengal (Pramanik and Raychaudhuri 1978). Others are new records.

**Remarks:** In recent years the species has been redescribed by Evans and Browning (1956) and by Bregetova and Koroleva (1960), based on material collected in England and USSR. Indian material conforms with the European material. Pramanik (1977) provided collection data from West Bengal, with measurements of female. Males are recorded here for the first time. Bregetova and Koroleva (*op. cit.*) illustrated both the sexes. The nature of spurs and ridged setae on legs II and IV in male in Indian material differs from USSR specimens as illustrated by these authors. Segments of legs II and IV in
male, bearing spurs and ridged setae, are illustrated in Figs. 3-5. Coxa II bearing sclerotised ridge (Fig. 3); femur, genu and tibia of leg II spurred (Fig. 4). Segments of leg IV provided with plumose and ridged setae (Fig. 5); trochanter and femur IV with spurs (Fig. 5).


**Material examined:** 1 female, Assam: Nowgong dist. Lumding, 29.xii.1973 ex goat dung; 1 female, Karnataka: Bangalore, Entomology Museum, University of Agricultural Sciences, coll. date and coll. not listed, ex *Scarabaeus brahminus* Cast.

**Distribution:** Australia (Krantz and Filipponi 1964, Wallace 1986), India and Ceylon (Evans and Hyatt 1963). India: Assam (new record), Karnataka (new record) and Tamil Nadu.

**Remarks:** This species was originally described by Evans and Hyatt (1963) from specimens collected from *Scarabaeus brahminus* Cast. at Namakal, Salem (Tamil Nadu) and *S. erichsoni* Harold at Colombo (Sri Lanka) respectively, both the beetles are represented in the British Museum collections. Subsequently Krantz and Filipponi (1964) reported three specimens from Townsville, Australia, collected off *Onthophagus laminatus* Moll., and assigned dubiously three Australian specimens to *M. krantzi*. Wallace (1986) reported seven additional collections (ex *Onthophagus nodulifer* and *O. laminatus*) from Townsville and Ingham, northeastern Queensland, Australia. Anwarullah and Irshad (1971) described a new species of *Macrocheles* by the name *M. krantzi*. The description and illustrations of the species provided by them are quite dissimilar to those of *M. krantzi* of Evans and Hyatt and suggest a different species.

4. *Macrocheles merdarius* (Berlese, 1889)

*Holostaspis merdarius* Berlese, 1889, *Acari Myriapoda et Scorpioes etc.*, 52 (1).


**Distribution:** *M. merdarius* is a nearly cosmopolitan species. The following distribution records are known so far. It occurs widely in Europe: Italy (Berlese 1889, Filipponi and Pegazzano 1963, Rota and Serini 1976); Great Britain (Evans and Browning 1956, Hyatt 1956); USSR (Bregetova and Koroleva 1960); Hungary (Erőss and Mahunka 1971); Bulgaria (Balogh...

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