

SOME HITHERTO UNKNOWN MITES (ACARI) FROM BANGLADESH

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INTRODUCTION

Mite fauna of Bangladesh is very poorly known. One of the authors (MZRM) while examining some plant parts for quarantine purpose collected mites either infesting the plant parts directly or were found associated with some of the insect pests which occurred on those plants. The present paper is based upon this collection and it reports 10 species belonging to 10 families and 10 genera under 3 orders. Incidentally all form new reports from Bangladesh. The entire collection was made by one of the authors (MZRM).

SYSTEMATIC ACCOUNT

Order I. PROSTIGMATA

Family 1. TETRANYCHIDAE Donnadieu, 1875

1. *Tetranychus urticae* Koch

1836. *Tetranychus urticae* Koch, *Deu. Crust. Myr. Arach. Fasc.*, 1 : 10.

Material examined : 2 females, Bangladesh, Dhaka, ex Jute (*Corchorus capsularis* Linn.), 6.9.2000.

Distribution : Bangladesh (Dhaka). Elsewhere : Cosmopolitan.

Remarks : It is a serious pest of a number of agricultural crops throughout the world. Its occurrence has also been recorded on jute in India (Gupta, 1985). This is the first record on jute in Bangladesh.

Family 2. BDELLIDAE Duges, 1834

2. *Bdella maldahensis* Gupta

1992. *Bdella maldahensis* Gupta, In : *State Fauna Ser. 3, Fauna of West Bengal, Part 3*, p. 12.

Material examined : 2 females, Bangladesh, Savar, on rose (*Rosa centrifolia* Linn.) leaf feeding upon *Oligonychus biharensis* (Hirst), 21.8.2000.

Distribution : Bangladesh (Dhaka). Elsewhere : India.

Family 3. TARSONEMIDAE Kramer, 1877

3. *Tarsonemus granarius* Lindquist

1972. *Tarsonemus granarius* Lindquist, *Can. Ent.*, **104** : 1699.

Material examined : 2 males, Bangladesh, Dhaka, Savar, ex coconut (*Cocos nucifera* Linn.) leaf, 21.8.2000; 2 females, Savar, ex rose leaf infested with round scale insect, 27.9.2000.

Distribution : Bangladesh (Dhaka). Elsewhere : India, British Isls., Canada, Japan.

Remarks : The earlier reports indicate its feeding upon decaying grains, humus, grass, fungi, etc. (Hughes, 1976). However, its occurrence on rose leaf infested by scale insect appears to be interesting.

Family 4. TYDEIDAE Kramer, 1877

4. *Pronematus fleschneri* Baker

1968. *Pronematus fleschneri* Baker, *Ann. Ent. Soc. Am.*, **61**(5) : 1092.

Material examined : 1 female, Bangladesh, Dhaka, Savar, ex coconut (*Cocos nucifera* Linn.) infested with mealy bug, 20.7.2000.

Distribution : Bangladesh (Dhaka). Elsewhere : India.

Remarks : In India, it has been recorded on a number of plants feeding upon several species of spider mites, mostly their eggs (Gupta, 2002). However, its association with mealy bug is interesting. Might be, it fed upon eggs of mealy bugs.

Family 5. CHEYLETIDAE Leach, 1915

5. *Hemicheyletia* sp.

Material examined : 3 females, Bangladesh, Dhaka, Savar, ex rose (*Rosa centrifolia* Linn.) infested with round scale insect, 26.9.2000.

Remarks : The occurrence of this species on rose leaf infested with scale insect is interesting in the sense that so far no species of this genus has been recorded from such habitat. Due to the damaged condition of the species, the specific identity could not be ascertained.

Family 6. PYGMEPHORIDAE Cross, 1965

6. *Siteroptes* sp.

Material examined : 1 female, Bangladesh, Dhaka, Savar, ex rose (*Rosa centrifolia* Linn.) infested with round scale insect, 18.10.2001.

Remarks : Due to having inadequate literature, the specific identity could not be ascertained.

Family 7. MICRODISPIDAE

7. *Brennandania* sp.

Material examined : 2 females, Bangladesh, Dhaka, Savar, ex rose (*Rosa centrifolia* Linn.) infested with round scale insect, 18.10.2001.

Remarks : Due to paucity of literature, the specific identity could not be made.

Order II. ASTIGMATA

Family 8. ACARIDAE Leach, 1806

8. *Tyrophagus putrescentiae* (Schrank)

1781. *Acarus putrescentiae* Schrank, *Enum. Inst. Aust. Indig.*, 521.

Material examined : 1 female, Bangladesh, Dhaka, Savar, ex coconut infested with mealy bug (?), 20.8.2000; several females, savar, ex guava, associated with white mealy bug (?), 11.12.20002.

Distribution : Bangladesh (Dhaka). Elsewhere : Cosmopolitan.

Remarks : The occurrence of this mite on coconut and guava infested with mealy bug is rather interesting as because all the past records of this species were from habitats having mainly fungal infestation and no record is available where this mite has been collected in association with insects.

Order III. CRYPTOSTIGMATA

Family 9. GALUMNIDAE Jacot, 1925

9. *Galumna* sp.

Material examined : 6 females, Bangladesh, Dhaka, Savar, ex water hyacinth (*Eichornea crassipes* Solms.), 3.11.2001.

Family 10. ORIBATULIDAE Thor, 1929

10. *Oribatula* sp.

Material examined : 1 female, Bangladesh, Dhaka, Savar, ex coconut (*Cocos nucifera* Linn.) leaf, 21.8.2000; 5 females, Savar, ex books, 29.5.2001.

Remarks : The mites of this genus are known to inhabit soil and plants but none has so far been recorded within books and therefore, it is an interesting habitat for this mite wherefrom the present record has been made.

Keys to orders, families, genera and species treated in this paper
(Partly based on Meyer *et al.*, 1973)

1. Ambulacra of legs comprising a median claw with a prominent pre-tarsus or an associated membranous pad or a stalked-sucker-like organ, chelicerae invariably chelate, trichobothria never present on idiosoma, stigma and tracheae absent
..... *Astigmata* (*Tyrophagus putrescentiae*)
- Ambulacra of legs not as above, chelicerae chelate or variously modified into piercing stylets or hook-like organ, idiosoma often with trichobothria, a respiratory system usually present 2
2. Propodosomal trichobothria, when present, usually with conspicuous pseudostigmata, chelicerae rarely chelate dentate; pedipalps various, often tibia and tarsus forming thumb-claw complex, tracheae when present opening by paired stigmata situated between the chelicerae or on the dorsal surface of propodosoma and often with associated peritremes, usually weakly sclerotized mites *Prostigmata*, 3
- One pair of propodosomal trichobothria almost invariably present and comprising piliformed, barbed or clavate pseudostigmatid organ arising from conical depressions, the pseudostigmata, chelicerae typically chelate dentate, pedipalps simple, tibia never with a distal claw, tracheal system when present, opening to the exterior in the acetabular cavities of legs I and II or in the form of brachytracheae opening to the legs I & II or pseudostigmata, idiosoma normal, well sclerotized mites *Cryptostigmata*, 9
3. Gnathosoma with minute palpi lying closely appressed laterally, chelae tiny and stylet like, with 4 pairs of legs, stigma of female opening behind gnathosoma or propodosoma, male without stigma or tracheae, usually a membranous flap-like organ attached to claws 4
- Gnathosoma usually conspicuous, with large chelicerae; palpi usually well developed, rarely without 4 pairs of legs, stigma opens at base of chelicerae, empodium free, pad-like or claw-like arising from tarsus 6

4. Leg IV of female with separate femora and genua, often with claws and membranous empodia, leg IV of male 5 segmented Pygmephoridea, 5
- Leg IV of female when present with fused femora and genua and without claws and empodia; leg IV of male when present usually 4 segmented with a sessile claw Tarsonemoidea*
- * Leg IV of female ending in terminal and subterminal whip-like setae Tarsonemidae**
- ** Pedipalps never prolonged to form snout-like beaks, inner margins of femora IV not modified, tibiotarsus IV not conspicuously incurved, leg IV with terminal claw and 4 pairs of dorsopropodosomal setae *Tarsonemus****
- *** Gnathosoma longer than wide, palps cylindrical, nearly parallel, dorsal propodosomal shield triangular, apodemes of leg I meet to form sternum, those of legs II, III free, stigmata open at base of Leg I *T. granarius*
5. Propodosoma with 2–3 pairs of setae, femora I with 3–5 setae Pygmephoridae (*Siteroptes* sp.)
- Propodosoma with only one pair of setae, femur I with 3 setiform setae Microdispidae (*Brennandania* sp.)
6. Without a palpal thumb-claw complex 7
- With a palpal thumb-claw complex 8
7. Cheliceral bases fused or if not fused, not capable of lateral scissors-like motion over gnathosoma Tydeidae*
- * Femer III and IV without forked seta *Pronematus***
- ** Solenidion on tarsus I distal *P. fleschneri*
- Chelicerae free, attached at base and free to move scissors-like laterally across gnathosoma Bdellidae*
- * Six pairs of ventral hysterosomal setae, 4 pairs of trichobothria and undeveloped genital tracheae, expanded palpal tibiotarsus *Bdella***
- ** Hysterosoma with 7 pairs of setae including humeral, palp tibiotarsus with 5 setae *B. maldahensis*
8. Cheliceral bases closely fused with gnathosoma and without indication of suture; peritremes usually M-shaped, may be present on gnathosoma*
- * Comb-like and sickle-like setae may or may not be present on palp, tarsi II, III, IV and usually I with claws and empodia Cheyletidae**
- ** Pedicel of tarsus I normal, about as long as any seta arising on it, claws on tarsus I smaller than those on tarsus II, but not difficult to discern, mesal paraterminal sensillus of tarsus I setiform not overhanging tips of claws *Hemicheyletia*

- Cheliceral bases fused with each other but not with gnathosoma, having suture conspicuous, peritremes usually present on anterior portion of propodosoma*
- * Tarsi I and II with specialized duplex setae, female genitalia wrinkled, stylophore relatively broad *Tetranychidae***
- ** Empodia splits distally usually into 3 pairs of hairs, duplex setae on tarsus I separated *Tetranychus****
- *** Anterior and posterior projections of aedeagal knob similar *T. urticae*
9. Pteromorphae movable or not movable but never articulate, genital setae 4–5 pairs.....
..... *Oribatulidae**
- * Dorsosejugal suture present, 10 pairs of notogastral setae, 4 pairs of genital setae, legs tridactylous *Oribatula*
- Pteromorphae movable, articulate or semicircular, 6 pairs of genital setae present
..... *Galumnidae**
- * Lamellar line *L* present, lamellar setae originate between lines *L* and *S* **
- ** Mites with specialised tarsal setae *Galumna*

SUMMARY

The present paper reports 10 species of mites belonging to as many families and genera occurring on rose, jute, coconut, guava and also from some unusual habitat like book, etc. Incidentally all the species form new records from Bangladesh.

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