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## ON A COLLECTION OF SOIL ORIBATID MITES FROM SANDAKPHU, DARJEELING, WEST BENGAL, INDIA

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### INTRODUCTION

Taxonomic studies on oribatid mites of Darjeeling Himalayas have been done by a number of workers like Chakrabarti and Mondal (1981), Mondal and Kundu (1983, 1986 and 1988) and Ghosh and Roy (2004). However, not much information is available on oribatid fauna in altitudes higher than 3000m in the Darjeeling Himalayas of West Bengal.

In the present paper an account of oribatid mites, collected from Sandakphu (alt. 3636 m) is given. Sandakphu, the highest peak of West Bengal is located in Singalila range of the Darjeeling Himalayas of the state. This is a well-vegetated place under the temperate climatic zone of West Bengal. Temperature is low throughout the year and often falls below 0°C in winter. Fog and snowfall are common here. Relative humidity (69%-92%), soil moisture (22%-42%) and annual average rainfall (300-400 cm) are quite high in the region. Common trees in the area include *Arundinaria racemosa* (common bamboos of the hill), different species of *Rhododendron*, *Lithocarpus pachyphylla*, *Quercus spicata*, *Acer campbelii*, *Magnolia campbelii*, etc.

### MATERIALS AND METHODS

Soil samples with litter were collected by shovel up to a depth of 10cm of soil profile and brought to laboratory in polythene bags. Extraction was done by a battery of Tullgren funnel apparatus and mites were collected in vials with 90% alcohol and treated with a mixture of lactic acid and 90% alcohol (1 : 1) before identification.

Identification of specimens was done by consulting the keys prepared by Balogh and Balogh (1992) and the checklist of world oribatid mites by Subias (2004). The identified collections are

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deposited in the National Zoological Collection, Zoological Survey of India, Kolkata. All the specimens recorded in this paper are collected by the first author.

## SYSTEMATIC ACCOUNT

### I. Family PHTHIRACARIDAE Perty, 1841

#### 1. *Hoplophorella vitrina* (Berlese, 1913)

1913. *Hoplophorella* (*H.*) *vitrina* Berlese, Red. Firenze, **9** : 77-111.

1967. *Hoplophorella africana* Wallwork, *Revue. Zool. Bot. Afr.*, **75** : 35-45.

2004. *Hoplophorella* (*H.*) *vitrina*, Subias, *Graellsia*, **60** (*numero extraordinario*) : 49.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

#### 2. *Hoplophthiracarus tropicus* Mondal and Kundu, 1988

1988. *Hoplophthiracarus tropicus* Mondal and Kundu, *Rec. zool. Surv. India*, **85**(1) : 111-116.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004; 3 ♀ ♀; Sandakphu, Darjeeling; 20. iv. 2005.

#### 3. *Phthiracarus* (*P.*) *claviger* (Pearce, 1906)

1906. *Hoplophthiracarus claviger* Pearce, *Journ. Roy. Micr. Soc.*, 273.

2004. *Phthiracarus* (*P.*) *claviger*, Subias, *Graellsia*, **60** (*numero extraordinario*) : 53.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : The genus and the species are recorded here for the first time from the Darjeeling Himalayas.

### II. Family EUPHTHIRACARIDAE Jacot, 1930

#### 4. *Acrotritia otaheitensis* (Hammer, 1972)

1972. *Rhysotritia ardua* var. *otaheitensis* Hammer, *Biol. Skr. Dan. Vid. Selsk.*, **19**(3) : 12.

2004. *Acrotritia otaheitensis*, Subias, *Graellsia*, **60** (*numero extraordinario*) : 46.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : This is first record of genus and species from Darjeeling.

#### 5. *Acrotritia furcuta* (Bayumi and Mahunka, 1979)

1979. *Rhysotritia furcuta* Bayumi and Mahunka, *Entomologia Basiliensia*, **4** : 13-24.

2004. *Acrotritia furcuta*, Subias, *Graellsia*, **60** (*numero extraordinario*) : 45.

*Material examined* : 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

## III. Family OPPIDAE Sellnick, 1937

6. *Quadroppia* sp.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

## IV. Family HYPOCHTHONIIDAE Berlese, 1910

7. *Hypochthonius rufulus* Koch, 1836

1836. *Hypochthonius rufulus* Koch, 1836 *Deutschlands Crustaceen, Myriapoden und Arachniden*, 3.

*Materials examined* : 3 ♀ ♀, 2 ♂ ♂; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : The species is recorded for the first time from West Bengal.

## V. Family NOTHRIDAE Berlese, 1896

8. *Nothrus gracilis* Hammer, 1961

1961. *Nothrus gracilis* Hammer, *Biol. Skr. Dan. Vid. Selsk.*, 13(1) : 28.

*Materials examined* : 3 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 19. xi. 2004.

9. *Nothrus* sp.

*Materials examined* : 2 ♂ ♂; Sandakphu, Darjeeling; ex. soil and litter; 20.iv. 2005.

## VI. Family ORIBOTRITIIDAE Grandjean, 1954

10. *Oribotritia gigas* Bayumi and Mahunka, 1979

1979. *Oribotritia gigas* Bayumi and Mahunka, *Entomologia Basiliensia*, 4 : 13-24.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : This is first record of the genus and species from West Bengal.

## VII. Family NANHERMANNIIDAE Sellnick, 1928

11. *Masthermannia* sp.

*Materials examined* : 3 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

## VIII. Family SUCTOBELBIDAE Jacot, 1938

12. *Rhynchobelba* sp.

*Materials examined* : 2 ♀ ♀; Sandakphu, Darjeeling; ex. soil under grass; 18. xi. 2004.

*Remarks* : This is first record of the genus from India.

## IX. Family TETRACONDYLIDAE Aoki, 1961

13. *Dolicheremaeus speciosus* (Pearce, 1906)

1906. *Amerus speciosus* Pearce, *Journ. Roy. Micr. Soc.*, 272.

2004. *Dolicheremaeus speciosus*, Subias, *Graellsia*, **60** (*numero extraordinario*) : 143.

*Materials examined* : 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004. 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 20. iv. 2005.

*Remarks* : The species is recorded here for the first time from Darjeeling.

## X. Family PTEROCHTHONIIDAE Grandjean, 1950

14. *Pterochthonius* sp.

*Material examined* : 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 19. xi. 2004.

*Remarks* : The genus is recorded for the first time in India.

## XI. Family CARABOCEPHEIDAE Mahunka, 1986

15. *Carabocephus* sp.

*Materials examined* : 2 ♂♂; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : This is the first record of the genus from India.

## XII. Family CARABODIDAE Koch, 1837

16. *Trichocarabodes* sp.

*Materials examined* : 2 ♀♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

*Remarks* : This is the first record of the genus from India.

## XIII. Family TECTOCEPHEIDAE Grandjean, 1954

17. *Tectocephus velatus* Michael, 1888

1888. *Tectocephus velatus* Michael, *Ray. Soc.*, 65.

*Materials examined* : 2 ♀♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004. 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 20. iv. 2005.

18. *Tectocephus* sp.

*Materials examined* : 2 ♀♀; Sandakphu, Darjeeling; ex. soil and litter; 19. xi. 2004.

## XIV. Family CERATOZETIDAE Jacot, 1925

19. *Ceratozetes gracilis* Michael, 1884

1884. *Ceratozetes gracilis* Michael, *British Oribatidae*, London : 8, xi & 336.

*Material examined* : 1 ♀; Sandakphu, Darjeeling; ex. soil and litter; 18. xi. 2004.

## XV. Family AUSTRACHIPTERIIDAE Luxton, 1985

20. *Lamellobates (L.) molecula molecula* Berlese, 1916

1916. *Achipteria molecula* Berlese, *Red. Firenze*, 12 : 289-338.

1958. *Lamellobates palustris* Hammer, *Biol. Skr. Dan. Vid. Selsk.*, 10(1) : 100.

2004. *Lamellobates (L.) molecula molecula*, Subias, *Graellsia*, 60 (numero extraordinario) : 167.

*Materials examined* : 4 ♀ ♀; Sandakphu, Darjeeling; ex. soil and litter; 20. iv. 2005.

## SUMMARY

The paper contains the record of 20 species under 17 genera and 15 families of soil and litter inhabiting oribatid mites collected from Sandakphu (3636 m), Darjeeling, West Bengal. Of these, 4 genera are recorded here for the first time in India. Further 2 genera and 2 species and 2 genera and 3 species are recorded as first time from West Bengal and Darjeeling district, respectively.

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