

Free-Living Prostigmatic Mites Found around Syowa Station, East Antarctica

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昭和基地近くの露岩地帯で得られたダニ

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要旨: 第17次南極地域観測隊の生物調査として、昭和基地のあるオングル島をはじめ、リュツォ・ホルム湾の沿岸にある露岩地帯の砂の中から自由生活性のダニ類を採集した。これらのうちから *Nanorchestes antarcticus*, *Tydeus erebus*, *Protoreunetes minutus* の3種のダニが同定された。オングル島を含むリュツォ・ホルム湾沿岸の露岩地帯からこれらのダニが報告されるのは最初である。

Abstract: As one of the biological programmes of Japanese Antarctic Research Expedition, the collection of free-living mites was made at sandy habitats of the following ice-free areas in Lützow-Holm Bay in January and February, 1976: East Ongul Island, West Ongul Island, Langhovde and Skarvsnes. The three species of prostigmatic mites were identified from the collection as follows: *Nanorchestes antarcticus*, *Tydeus erebus* and *Protoreunetes minutus*. This is the first record on these mites from the ice-free areas mentioned above.

MATSUDA (1977) reported the occurrence of free-living mites in the ice-free areas near Syowa Station located on East Ongul Island in Lützow-Holm Bay, East Antarctica. Two mites belonging to genus *Tydeus* and one to *Nanorchestes* were recorded by him, but their specific identification was not made.

One of the present authors, OHYAMA, investigated free-living mites at sandy habitats without visible vegetation in Ongul Islands and in the ice-free areas along the Sôya Coast of Lützow-Holm Bay in January and February of 1976. An adequate quantity of surface sand was taken from the sites near snow patch or water course so that the sand holds moisture. The mites were extracted from the sand by the floatation method. Three species of prostigmatic mites were identified in the present collection. This is the first record of these free-living mites from the above-mentioned areas.

Nanorchestes antarcticus STRANDTMANN

Nanorchestes antarcticus STRANDTMANN, 1963, Pac. Insects, 5 (2), 470.

The mite is the most popular species in antarctic sandy habitats or the chalikosystems defined by JANETSCHKE (1963). The mite in the present collection was obtained

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from almost all sampling sites and showed very high density of population at some sites. Since the mite occurs in very vast regions including subantarctic islands, Antarctic Peninsula and Antarctic Continent, it has some morphological variations in the dorsal, bifurcate cheliceral seta, in the number of rays on the empodial claw, and in the ornamentation of the posterior pair of sensory setae (STRANDTMANN, 1967). In spite of these morphological variations, STRANDTMANN (1967) reported that the mite has no differences in the body size, the leg lengths, the leg segmentation, and the chaetotaxy of leg and body among the specimens from various regions. The cheliceral seta and the ornamentation of the posterior pair of sensory setae in the present specimens were similar to those of the original description from Ross Island.

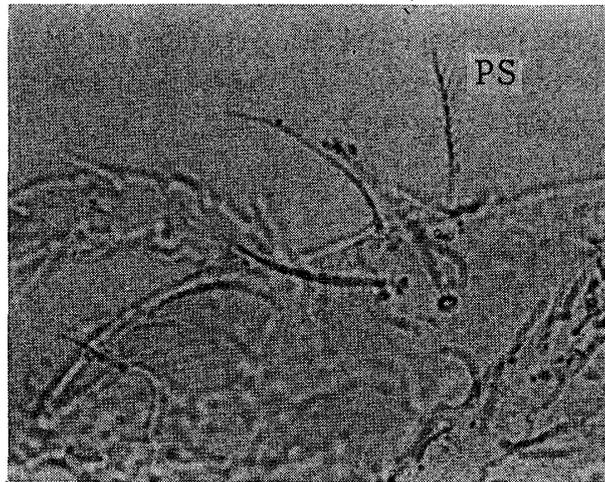


Fig. 1. Propodosomal setae of *N. antarcticus*. PS, posterior sensory seta.

The mite reported by MATSUDA (1977) as *Nanorchestes* sp. might be *N. antarcticus*, for the present survey was made in same Ongul Islands and no other species of this genus were found.

Sampling sites - - -

East Ongul Island: Located 69°00'S, 39°35'E. Covered almost the whole area of the island. February 13-14, 1976.

West Ongul Island: Located just west of East Ongul Island. East half of the island surveyed. February 10, 1976.

Langhovde: Ice-free area on the Sôya Coast, located about 25 km south of East Ongul Island. Lower parts of the Yukidori Valley which is a permanent water course in this area. January 14-16, 1976.

Skarvsnes: Ice-free area on the Sôya Coast about 50 km south of East Ongul Island. Almost covered the whole area. January 22-25, 1976.

***Tydeus erebus* STRANDTMANN**

Tydeus erebus STRANDTMANN, 1967, Antarct. Res. Ser., **10**, 70.

Thirteen individuals of genus *Tydeus* were found in the present collection besides the great majority of *N. antarcticus*. Two specimens, one male and one female, were identified to this species. The rest of the specimens were not specifically identified but they are thought to be *T. erebus* judging from the chaetotaxy of legs, and the body setae including the propodosomal setae and the external genital setae.

In March of 1966 one of the authors, MATSUDA, collected some mites of *Tydeus* on green algae in Ongulkalven Island, but their species were not yet identified until the present time. Their external genital setae and the propodosomal setae suggest that these specimens are assignable to this species.

The mite was reported first from Mule Island of the Vestfold Hills, East Antarctica, and then the records of the mite were added from the mainland and the islands of the Vestfold Hills (JOHNSTONE *et al.*, 1973; ROUNSEVELL, 1977). The mite was not yet recorded other than Vestfold Hills as far as the authors know.

Sampling sites - - -

Langhovde: Same as *N. antarcticus*.

Ongulkalven Island: 4 km west of East Ongul Island. On green algae. March 22, 1966.

***Protereunetes minutus* STRANDTMANN**

Protereunetes minutus STRANDTMANN, 1967, Antarct. Res. Ser., **10**, 55.

Two individuals of mites other than the previous two species were found in the present collection. They have somewhat large body size for this species, being 320 and 260 μ respectively. One of them, female, coincided completely with the original description of the species except that the external vertical seta was much longer than half length of the scapular seta. Another specimen is inadequate for specific identification, but it is probably *P. minutus* in view of the propodosomal setae, the shape of epi-vertex and the chaetotaxy of legs.

The mite was reported only from South Georgia, South Orkney Islands, Antarctic Peninsula and adjacent islands, and this is the first record of the mite from East Antarctica as far as the authors know.

Sampling sites - - -

West Ongul Island: Two sites in the east half of the island. February 10, 1976.

The present survey was made exclusively at barren sandy habitats which contained some moisture due to melt water from snow patch or to seepage from the water course. Most of the mites obtained were *N. antarcticus*. According to MATSUDA (1977) and ROUNSEVELL (1977), the mite *Tydeus* tends to occur in association with mosses or algae.

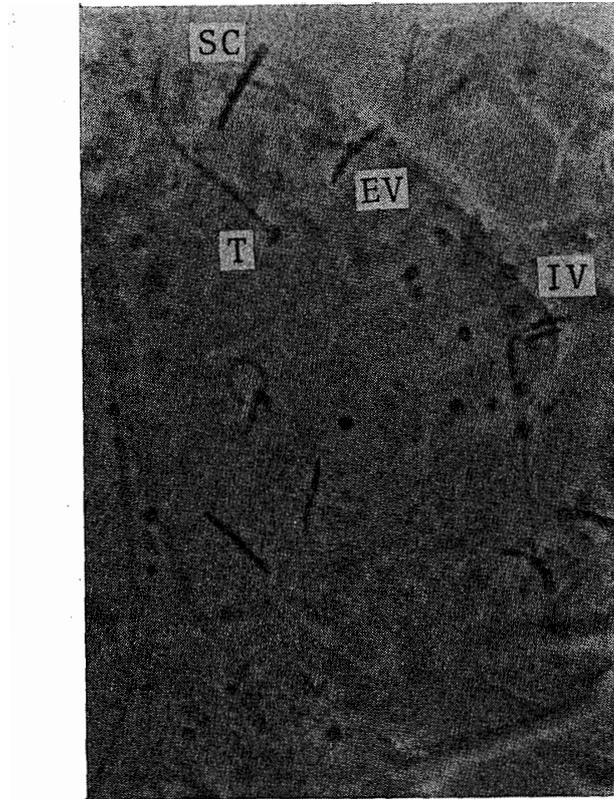


Fig. 2. Propodosomal setae of *P. minutus*.
IV, internal vertical seta; *EV*, external vertical seta; *SC*, scapular seta; *T*, trichobothrium.

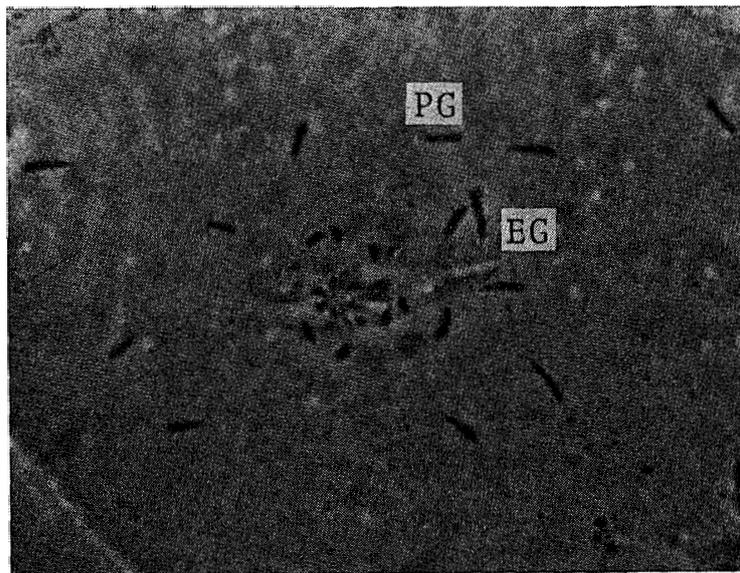


Fig. 3. Genital part of *P. minutus*.
EG, external genital setae; *PG*, paragenital setae.

P. minutus is also found frequently with mosses or lichen (STRANDTMANN, 1967). Since the mite *N. antarcticus* prefers sandy habitats without visible vegetation as pointed out by MATSUDA (1977), it was the most abundant species found in the present survey. The population density and the distribution of the mites obtained in the present survey will be reported in another paper.

References

- JANETSCHKE, H. (1963) : On the terrestrial fauna of the Ross-Sea area, Antarctica (preliminary report). *Pac. Insects*, **5**(1), 305–311.
- JOHNSTONE, G. W., LUGG, D. L. and BROWN, D. A. (1973) : The biology of the Vestfold Hills, Antarctica. *ANARE Sci. Rep., Ser. B (1) Zoology*, **123**, 1–62.
- MATSUDA, T. (1977) : Ecological investigations on free-living mites near Syowa Station Antarctica. Adaptations within Antarctic Ecosystem, 3rd SCAR Symposium on Antarctic Biology, ed. by G. A. LLANO (in press).
- ROUNSEVELL, D. E. (1977) : Ecological adaptation in the panantarctic mite *Nanorchestes antarcticus* (STRANDTMANN). Adaptations within Antarctic Ecosystem, 3rd SCAR Symposium on Antarctic Biology, ed. by G. A. LLANO (in press).
- STRANDTMANN, R. W. (1967) : Terrestrial prostigmata (trombidiform mites). *Entomology of Antarctica, Antarct. Res. Ser.*, **10**, 51–80.
- WOMERSLEY, H. and STRANDTMANN, R. W. (1963) : On some free-living prostigmatic mites on Antarctica. *Pac. Insects*, **5**(2), 451–472.

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