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MARINE BIOLOGICAL LABORATORY

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THE JAPANESE ANTARCTIC RESEARCH EXPEDITION

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NOTES ON SOME TARDIGRADA  
FROM THE ANTARCTIC REGION

BY

KUNIYASU MORIKAWA

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MATSUYAMA, JAPAN

SIRAHAMA, WAKAYAMA-KEN  
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FROM the beginning of this century, the Tardigrada of the Antarctic region have been studied on the basis of the collections made by the research expeditions of Germany, Sweden, England and others, and there are known about 50 species to this date. The antarctic species comprise 6 genera belonging to 3 families excluding the marine *Bathyechiniscus* species: they are *Echiniscus* (about 12 spp.), *Pseudechiniscus* (2 spp.), *Mopsechiniscus* (1 sp.), *Macrobotus* (about 17 spp.), *Hypsibius* (about 15 spp.) and *Milnesium* (1 sp.). They were mostly collected from the South Orkney Islands, Kerguelen Island, Victoria land, South Shetland, South Georgia and other localities. Of these species, the endemic ones of the Antarctic region amount nearly to 25 species.

About 100 individuals of the material treated in this report were found in a small clump (about 2 cc.) of the blue-green algae (Cyanophyta and Chlorophyta) and diatoms which were collected by Dr. Yukinori NAKANO from a pond of East Ongul Island in February, 1958. Most of the specimens were *Hypsibius* (s. str.) *arcticus*, while the remaining 4 individuals were *H. (Diphascion) ongulensis* sp. nov. All the specimens were supplied for the author's study by Dr. Riozo YOSII, a member of the second Japanese Antarctic Research Expedition, and they are now preserved in the Biological Institute of Ehime University.

The author wishes to express his hearty thanks to Mr. Y. NAKANO for the precious collection and also to acknowledge his gratitude to Dr. R. YOSII and Dr. Minoru HIRANO of the Kyoto University for the rare opportunity to study it, to Mr. Osamu OCHI of our institute for his kind assistance in taking photographs using the phase-contrast microscope.

*Hypsibius (Hypsibius) arcticus* (JOHN MURRAY, 1907)

(Pl. I, figs. 1-4)

Body transparent, short and thick; legs are fairly short. Cuticula is even. The eye-spots are black in colour. Stylet is bowed. The mouth-tube  $5\mu$  wide and somewhat broader from the proboscis to the pharynx: the muscle-attaching process of the rostral part is hook-shaped; the pharynx is spherical ( $50\mu \times 50\mu$ ) and provided with a short apophysis and two macroplacoides. The first macroplacoid 3.9 times, the 2nd 2.7 times as long as broad: microplacoid is not provided. The outer claws somewhat longer than the inner ones; the basal claw is robust and curved from its base: the terminal claw long and

slender, and the terminal part of the claw strongly bent.

Body length  $400\mu$ , breadth  $135\mu$ . Legs about  $38\mu$  long. The length of buccal apparatus  $120\mu$  (300 ms); pharynx  $49\mu$  long (125 ms), and  $49\mu$  broad (100 cph). The length of macroplacoid: I.  $8.9\mu$  (22.3 cph), II.  $6.4\mu$  (16.0 cph); the breadth of macroplacoid  $2.3\mu$  (5.8 cph). The outer claw of the 4th legs  $17\mu$  long.

The eggs laid in the cast-off skin were generally found three by three. The egg shell is about  $7.6\mu$  thick.

*Hypsibius (Diphascos) ongulensis* sp. nov.

(Pl. I, figs. 5, 6)

Small and slender, transparent species. The legs are fairly long. Cuticula is even. No eyes. The mouth-tube inclined straight to mouth-opening which is open into subventral margin of the head. The curved pharyngeal tube about as long as the length of the pharynx and  $0.9\mu$  in diameter. The stylet and its holder are normally bowed. Pharynx is ovate and provided with apophysis, three rod-shaped macroplacoids and septulum; without microplacoid. The macroplacoids are reduced in length from the anterior to the posterior, but all their breadth are almost equal. The anterior and posterior claws and the main and secondary branches of the claws are almost the same in thickness, but their length varies individually a little. The skin of claws reaches to the medial part of the main branch of claws; accessory tips are indistinct.

Body length  $240\mu$ , breadth  $66\mu$ . Legs about  $38\mu$  long. The length of buccal apparatus  $76\mu$  (317 ms); pharynx  $29\mu$  long (121 ms) and  $23\mu$  broad (795 cph); the length of macroplacoid: I.  $2.0\mu$  (5.9 cph), II.  $3.3$  (11.4 cph), III.  $4.3\mu$  (14.8 cph); the breadth of macroplacoid  $0.7\mu$  (2.4 cph). The outer claw of the 4th legs  $10.2\mu$  long.

The egg is not observed.

*Holotype* 1 male, *paratype* 1 male.

*Remarks*: The present new species is similar to *H. (D.) pinguis* E. MARCUS, 1936 and *H. (D.) alpinus* (JOHN MURRAY, 1906) but they are distinguishable from one another in the following points: the new species has not the microplacoid; the body is fairly slender, the mouth-tube is narrow, and the legs are fairly long. These characters clearly differ from those of *H. pinguis*. In the present new species, the body is small, the pharyngeal tube is almost equal to the length of the pharynx, and the pharynx is fairly broad. These clearly differ from those of *H. alpinus*.

## Notes on some Tardigrada from the Antarctic region

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**PLATE I**

Figs. 1-4. *Hypsibius (Hypsibius) arcticus* (JOHN MURRAY)

1: general feature. 2: frontal part. 3: hind part. 4: eggs in the cast-off skin.

Figs. 5-6. *Hypsibius (Diphascon) ongulensis* sp. nov.

5: general feature. 6: frontal part.

