

# An undescribed tardigrade of genus *Milnesium* from Inhovde, East Antarctica

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In the 56th Japanese Antarctic Research Expedition, the first-ever biological exploration was carried out in Inhovde (69°51'S, 37°06'W), East Antarctica, on 11th January 2015. We found an undescribed tardigrade species of *Milnesium* from a moss sample. We observed the morphology of three adult females, two of which have been shown in the last Symposium, one malting male, three 1st-instar hatchlings, and the exuvia which included the above three eggs. Two other specimens were analyzed for the DNA sequences. Specimens for the light microscopy were mounted on slide glasses with Hoyer's gum chloral solution and examined by BX50 DIC microscope (Olympus). Measurements of the largest female: body length, 899.8  $\mu\text{m}$ ; buccal tube length, 64.1  $\mu\text{m}$ ; buccal tube width, 17.2  $\mu\text{m}$ ; stylet support insertion point, 39.6  $\mu\text{m}$ ; primary branch length of claw IV, 24.9  $\mu\text{m}$ . The malting male (body length, 586.3  $\mu\text{m}$ ) showed newly generated 3rd-instar (adult) cuticle in the old (2nd instar) juvenile cuticle. Although the old cuticle have ordinary female-type secondary branch of the claw on the 1st leg, the new adult cuticle exhibit the male character with the robust secondary branch on the 1st leg. Hence, the sex determination by its claw shape is impossible at juvenile stages, as described in other tardigrades (Rebecchi and Nelson, 1998). The body length of a specimen of the hatchlings, 293.4  $\mu\text{m}$ . The most remarkable feature of these specimens is observed at the secondary branch of double claws of each leg, having 4–7 points (hooks) on each branch. All described species in this genus have 2 or 3 points (Morek et al., 2016) with the only exception of *M. quadrifidum* Nederström, 1919 described from Finland with diagnosis of 4 points on each secondary branch. The similar morphological trait as the milnesiid from Inhovde has already been reported from several areas within the East Antarctic region. The specimens from Langhovde (Sudzuki, 1964) showed 2–5 points on the secondary branch. The specimens from Evening Mountain (67°39'S, 46°06'E), near Molodeznaya Station, Enderby Land, also have variably 4–7 points on the secondary branch, mostly 5–6 points; while typical specimens with 3 points were reported from King George Island (Dastyh, 1984). *Milnesium antarcticum* Tumanov, 2006 described from King George Island also has 3 points. Therefore, the milnesiid in East Antarctica with 5–6 points on the secondary branch apparently belongs to a different taxon from all the other milnesiids reported so far worldwide. In addition to the taxon we are reporting, some other milnesiids including *M. antarcticum* might colocalize in East Antarctica because a '*M. tardigradum*' with 3 points on each secondary branch was recorded from Molodeznaya (Utsugi and Ohyama, 1991).

## References

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