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SHORT NOTE

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Diphascon (*Adropion*) *tricuspidatum*, a new species of eutardigrade from Antarctica

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Abstract A new species of freshwater eutardigrade, *Diphascon* (*Adropion*) *tricuspidatum* sp. nov., is described from Antarctica. It has a narrow bucco-pharyngeal tube without drop-shaped thickening, a pharyngeal bulb with small apophyses, three short macroplacoids and a small microplacoid, and very long outer claws with long and divergent accessory points.

Materials and methods

In a gravelly sediment sample from a small lake in Crater Cirque (Victoria Land) 12 specimens belonging to a new species of eutardigrade, *Diphascon* (*Adropion*) *tricuspidatum*, were found with *Acutuncus antarcticus*. The genus *Acutuncus* was described (Pilato and Binda 1997) for *Hypsibius antarcticus* (Richters 1904). The holotype and paratypes were mounted in polyvinyl lactophenol and are preserved in the collection of Binda and Pilato (Dipartimento di Biologia Animale, Università di Catania, Italy).

Results

Diphascon (*Adropion*) *tricuspidatum* sp. nov.

Type locality and material examined: Antarctica, Victoria Land, Crater Cirque: holotype and 11 paratypes.

Description of the holotype

Body length 260 μm (Fig. 1a); colourless; cuticle smooth with very small caudal dots; eyes absent.

Bucco-pharyngeal apparatus of *Adropion* type (Fig. 1b), i.e. no cuticular thickening between the rigid buccal tube and the flexible pharyngeal tube. The bucco-pharyngeal tube 58.1 μm long measured from the anterior margin of the stylet sheaths to the base of the pharyngeal apophyses. The rigid buccal tube, 20.7 μm, is 35.6% of the total length of the bucco-pharyngeal tube, and 1.7 μm wide ($pt = 8.3$), where the *pt* index is the percent ratio between the length of a structure and the length of the rigid buccal tube (Pilato 1981). Peribuccal lamellae and peribuccal papulae absent.

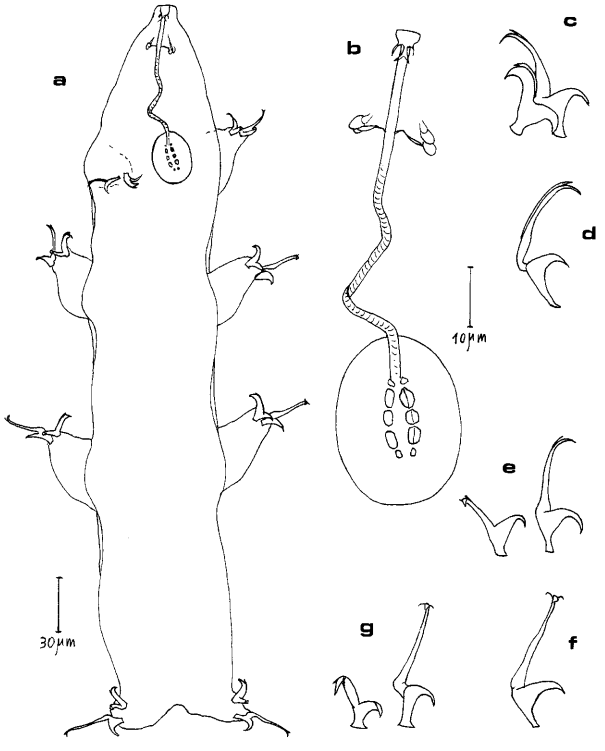

Fig. 1 *Diphascon* (*Adropion*) *tricuspidatum* sp. nov. **a** Habitus; **b** bucco-pharyngeal apparatus; **c–g** claws of various paratypes, **c** claws of the first pair of legs; **d** outer claw of the second pair of legs; **e** claws of the third pair of legs; **f–g** claws of the fourth pair of legs

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Table 1 Dimension range of some structures of *Diphascon* (*Adropion*) *tricuspidatum* sp. nov. (up to four measurements for each structure)

Structure	Minimum		One measurement only		Maximum	
	Length (μm)	*pt*	Length (μm)	*pt*	Length (μm)	*pt*
Body	260				277	
Bucco-pharyngeal tube	58.1				67.2	
Buccal tube	20.7				22.5	
% of the total length of the bucco-pharyngeal tube	33.5				35.6	
Buccal tube width	1.7	8.2			2.9	12.9
Stylet supports		64.1		65.4		
Line of placoids + microplacoid	10.9	52.6			12.1	54.4
Line of macroplacoids	9.3	44.9			10.1	47.3
1st macroplacoid	3.2	14.4			3.4	16.4
2nd macroplacoid	2.7	13.0			2.9	13.2
3rd macroplacoid	3.2	15.4			3.5	15.7
Microplacoid	1.7	7.8			1.7	8.3
Outer claw 1st pair of legs			18.44	82.0		
Inner claw 1st pair of legs			10.7	47.5		
Outer claw 3rd pair of legs			18.3	85.9		
Inner claw 3rd pair of legs	?	?			?	?
Posterior claw of the hind legs	22.1	103.7			23.7	114.5
Anterior claw of the hind legs			9.3	43.7		

The stylet supports are inserted on the buccal tube at 65.4% of its length ($pt = 65.4$). The pharyngeal bulb, 26.1 μm by 18.7 μm, has small apophyses, three short macroplacoids and a small microplacoid. The first macroplacoid is the longest, 3.4 μm ($pt = 16.4$); the second macroplacoid is the shortest, 2.7 μm ($pt = 13$); the third is 3.2 μm ($pt = 15.4$); microplacoid 1.7 μm ($pt = 8.2$); the entire placoid row including microplacoid 10.9 μm ($pt = 52.6$), excluding microplacoid 9.3 μm ($pt = 44.9$).

The two claws of each leg are very different in shape and size (Fig. 1c–g). The outer claws have very long, slender main branches, with long and divergent accessory points. This characteristic gives the impression that the distal extremity of the outer claw has three points (Fig. 1f,g). The accessory points of the inner claws are well developed but not divergent. The junction between the basal portion and the main branch in the outer claws is very long and flexible; this characteristic, and the variable orientation, make it almost impossible to find claws oriented exactly in the same manner (that was impossible even in the same specimen) and, therefore, the outer claw length appears to be a variable character (but it is only an artifact). In the holotype the posterior claws on the fourth pair of legs are about 23.1 μm and 23.7 μm long ($pt = 111.6$ and 114.5, respectively); the main branch length is 75.4–78.4% of the total claw length. The unfavourable orientation prevented measurements of the other claws.

The paratypes are similar to the holotype. In a paratype with buccal tube length of 21.3 μm, the outer claws on the third pair of legs are 18.3 μm ($pt = 85.9$); the posterior claws on the fourth pair of legs are 22.1 μm ($pt = 103.7$) and the anterior claws are 9.3 μm ($pt = 43.7$). The length of the outer claw main branches is 72–77% of the total claw length on the I–III pairs of legs, and 75.5–81.4% on the fourth pair of legs. In Table 1 the dimension range of some structures is provided.

Lunulae and other cuticular thickenings on the legs are absent.

Eggs were not found.

Derivatio nominis: *tricuspidatum* means provided with three points. The name refers to the aspect of the distal end of the outer claws.

The characters of the bucco-pharyngeal apparatus and of the claws (particularly the very remarkable length of the outer claws and their long and divergent accessory points) allow us to distinguish *Diphascon* (*Adropion*) *tricuspidatum* from all other species of the subgenus.

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