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MAGOTANAIIS, A NEW GENUS OF TANAIIDACEA (TANAIIDOMORPHA, CRUSTACEA) FROM THE WEDDELL SEA, ANTARCTICA

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ABSTRACT

A new species and genus of Tanaidacea is described from the deep sea off Antarctica. *Magotanais* n. gen. resembles the genus *Tanaella* Norman & Stebbing, 1886 in its habitus. The biramous uropod, the form of the pars molaris, and the absence of coxae on the pereopods distinguishes it clearly from species belonging to the genus *Tanaella*. This genus is conformed by one species *Magotanais pruinosus* n. sp.

Key words: Tanaidacea, Colletteidae, *Magotanais pruinosus* n. gen. n. sp., Weddell sea, Antarctica, deep sea

INTRODUCTION

Even though the Antarctic is a remote region of the world, our knowledge of the local Tanaidacea is better than from other regions. The contributions of Beddard (1886), Vanhöffen (1914), Kussakin (1967), Shiino (1970), Kudinova-Pasternak & Pasternak (1981), and Sieg (1983a, 1984a, 1986a, b) give us a good overview of the Antarctic Tanaidacea. Until now 77 tanaid species are reported from the Antarctic, 50 from the continental shelf and 48 from the abyssal zone (Schmidt, 1999). During the examination of tanaids from the expedition ANT XV on board of the 'RV Polarstern', one new species that was originally considered as member of *Tanaella* was discovered. Superficially it resembles *Tanaella*

unisetosa Sieg, 1986, but the presence of a biramous uropod excluded this taxon from that genus. After detailed examination of the material we came to the conclusion that the specimens represent a new genus.

MATERIALS AND METHODS

The specimens examined belonging to the new genus were collected during the Antarctic expedition ANT XV to the Weddell Sea on board of the research vessel 'Polarstern', cruise 48, between February and March of 1998, using a modified epibenthic sledge (Brandt & Barthel, 1995). For information on station data see Table 1.

The body was measured from the tip of the cephalothorax to the tip of the pleotelson. The

Table 1. List of the epibenthic sledge samples from RV 'Polarstern' cruise 48 containing *Magotanais* n. gen.

Station	Latitude	Longitude	Date	Depth (m)
107	73°34'77"S	22°38'29"W	06-II-1998	938
272	71°28'76"S	15°10'30"W	26-II-1998	2077
320	62°22'64"S	58°41'79"W	17-III-1998	1052

figures were made using a Zeiss Axiolab microscope with camera lucida.

We followed the terminology of Dojiri & Sieg (1997) with some modifications proposed by Guerrero-Kommritz et al. (2002) and Larsen (2003).

The type series is deposited in the Zoological Museum of Hamburg (ZMH).

SYSTEMATICS

Family Colletteidae Larsen & Wilson, 2002

Genus *Magotanais* n. gen.

DIAGNOSIS. - Antennule with four articles, uropod biramous, exopod small, monoarticled, mandible with well-developed pars molaris, armed with four terminal spines and eight tubercles, pereopods without coxae, dactyli of pereopod 4 - 6 with dorsal spine.

DESCRIPTION. - Body short and compact, about 4.5 times longer than broad. Pereon composed of six free pereonites. Pleon composed of five free pleonites decreasing in width from first to fifth. Pleotelson with pointed apex. Antennule composed of four articles. Antenna composed of six articles. Mandible well sclerotized with well-developed pars molaris, armed with four terminal spines and eight tubercles. Maxillula with eight terminal spines. Maxilliped with fused basis; endites partially fused, each with one flat and one simple seta distally. Cheliped strong, attached to cephalothorax by side piece. Pereopods without coxa. Pleopods biramous. Uropods basal article simple, endopod and exopod free, monoarticled.

REMARKS. - One of the results of the first revision of the superfamily Paratanaidoidae (Larsen & Wilson 2002) was the designation of two new

families: Colletteidae and Tanaellidae. Both of them are characterized by a four articulated antennule, six or seven articulated antenna (with fusion line between articles 4 and 5), no seta or one flat seta on maxilliped endites, and cheliped attachment via sclerite. Numerous characters (e.g. broad or pointed pars molaris, presence or absence of pereopod coxae) are useful only in combination with other characters. As a result, only the confluence of reduced uropod exopod and lack of coxae on pereopod 4-6 at Tanaellidae allows for separation of both families. These sets of characters are confusing and more advanced study on the taxonomy of Paratanaidoidae is needed to improve the classification proposed by Larsen & Wilson (2002).

In general view *Magotanais* resembles *Tanaella* Norman & Stebbing, 1886 but it is immediately distinguished by the presence of a free uropod exopod. The absence of coxae at pereopod 1-3 excludes it from Tanaellidae. The pars molaris of *Magotanais* is armed with four terminal setae and eight tubercles and resembles those of the genus *Leptognathoides* Bird & Holdich, 1984, however the latter displays a series of other characters evidently distinguishing it from *Magotanais* (e.g., elongated body, robust cheliped, relatively short and stout pereopods).

The allocation of *Magotanais* to Colletteidae may raise doubts because of the completely fused basis of the maxilliped, and partially fused maxilliped endites, the presence of articulated setae on pleonites 3-5 and decreasing width of the pleon toward the posterior end. Nonetheless we propose to place *Magotanais* within Colletteidae due to the presence of biramous uropods, and the lack of coxae on the pereopods.

TYPE LOCALITY. - Weddell Sea; the Antarctic

ETYMOLOGY. - From 'magus', latin for magician.

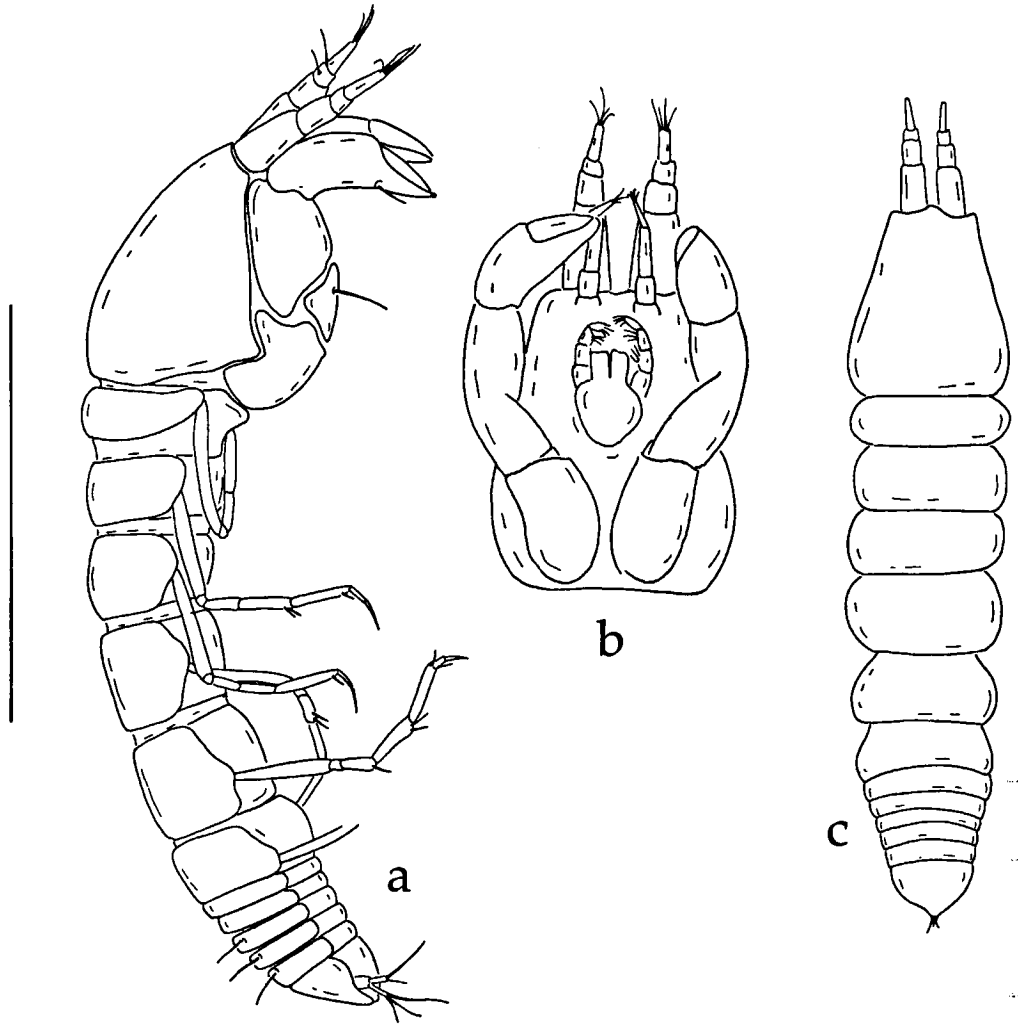


Fig. 1. *Magotanais pruinosus*, female, paratype ZMH 40362. A, lateral view. B, ventral view of cephalothorax. C, dorsal view (scale = 1 mm).

The name refers to the apparent magical properties of this genus which were overlooked many times by the senior author.

TYPE SPECIES. - *Magotanais pruinosus* n. sp.

TYPE MATERIAL. - *Tanaella paraforcifera* (Lang, 1968) ZMC CRU - 7711, holotype, Galathea Expedition 1950-52, 234, 5°25'S 47°09'E, Madagascar-Mombasa transect, Petersen-Grab 0.2 (PG0.2), 4800 m, 10-III-1951.

REMARKS. - Type material in bad condition; only antenna, two pereopods and some parts of the cuticula were found.

***Magotanais pruinosus* n. gen. n. sp.**

Figs. 1-3

MATERIAL. - Holotype: ZMH K- 40360, non ovigerous female, 2.12 mm, ANT 48 - 107, EBS.

Paratypes: ZMH K- 40361, non ovigerous female, 2.43 mm, ANT 48-107, EBS, dissected; ZMH K- 40362, neuter, 1.42 mm, ANT 48-272, EBS; ZMK K- 40363, neuter, 1.66 mm, ANT 48-320, EBS.

DIAGNOSIS. - As genus diagnosis.

DESCRIPTION NON OVIGEROUS FEMALE, NEUTER. -

Body (Fig. 1A) well sclerotized, about 4.5 times

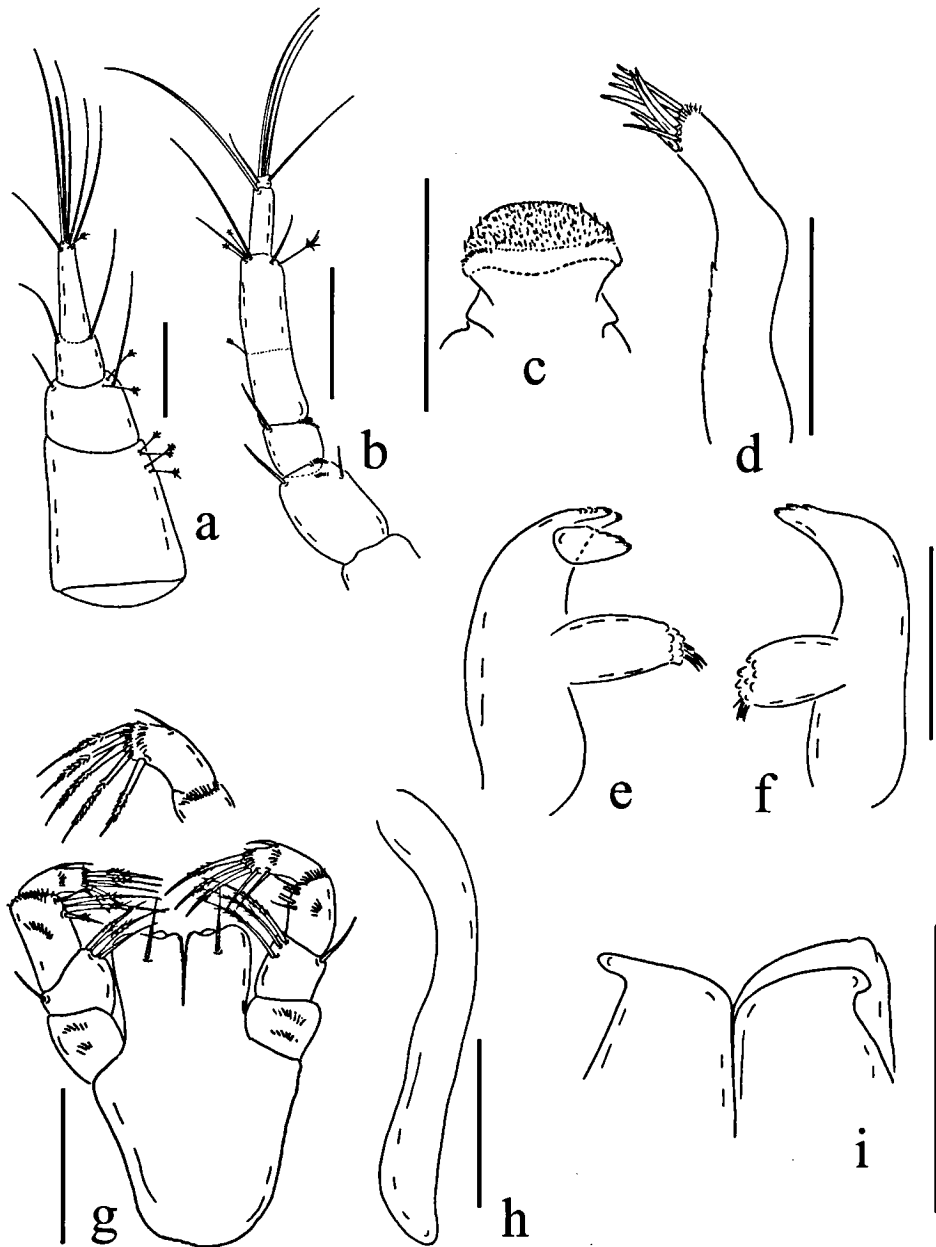


Fig. 2. *Magotanais pruinosus*, female, paratype ZMH 40361. A, antennule. B, antenna. C, labrum. D, maxillula. E-F, mandibles. G, maxilliped. H, epignath. I, labium (scales = 0,1 mm).

longer than broad. Cephalothorax (Fig. 1C) longer than broad, tapering to antennule, posterior margin twice wider than anterior and as wide as pereon. Pereonites (Fig. 1C) broader than long, rounded laterally. Pereonite 1 shortest, with a

ventral blunt hyphosphenia (Fig. 1A). Pereonites 2, 3 and 5 of equal length, pereonite 4 longest, pereonite 6 longer than 1 but shorter than pereonite 5. Pleon (Figs. 1A, C) shorter than cephalothorax. Pleonites decreasing successively

in width, tapering to pleotelson. First pleonite longest, subsequent pleonites of equal length. Fifth pleonite narrower. Third, fourth and fifth pleonites with simple dorso-lateral seta. Pleotelson triangular, apex pointed with three terminal setae.

Antennule (Fig. 2A) four articulated. Article 1.5 times longer than wide and as long as article 3 and 4 together, with four setulose setae on distal ventral margin. Article 2 with one long, one short simple and two setulose setae. Article 3 as long as wide, with two long simple setae. Article 4 as long as article 2 and 3 combined, tipped by five simple and one setulose setae and one aesthetasc.

Antenna (Fig. 2B) six articulated. Article 1 short and partly fused with cephalothorax. Article 2 longer than wide with two comb rows and two short distal simple setae. Article 3 as long as wide, with one comb and one simple seta. Article 4 longest with a fusion line and one setulose seta in the middle, with one long, two short simple and three setulose setae distally. Article 5 with one long simple seta. Article 6 shortest, with three long and two short terminal setae.

Labrum (Fig. 2C) hood shaped, distal part covered with setules.

Mandible (Figs. 2E, F) well sclerotized, pars molaris with four terminal spines and eight tubercles. Lacina mobilis flat with terminal blunt teeth.

Maxillula (Fig. 2D) endite tipped by seven strong and one weak terminal spines and row of terminal setules; six spinules on ventral margin.

Maxilla not recovered.

Labium (Fig. 2I) composed of two triangular lobes with outward directed apex, naked.

Epignath (Fig. 2H) curved, ribbon shaped.

Maxilliped (Fig. 2G) basis fused, endites partially fused, each with one distal flat seta and one simple seta distally. Palp composed of four articles with usually two to three comb setae on each. First article as long as wide. Second article with one outer simple seta and three strong inner setae. Third article with one simple and three strong setae on inner margin. Fourth article with five strong terminal setae and a simple seta on outer margin. Articles 1, 3 and 4 with combs of setules.

Cheliped (Fig. 3A) attached to cephalothorax ventrally by rectangular side piece. Basis strong; ventral margin covered with scale-like structures.

Merus triangular with one simple seta as long as merus. Carpus long, about as long as propodus, with two ventral setae at midlength, two dorsal setae one distal and one proximal, and one distal tubercle near insertion of propodus. Propodus 2.5 times longer than broad with two ventral seta at midlength. Fixed finger with four dorsal setae (three near middle of cutting edge and one at articulation to dactylus). Cutting edge with four teeth. Dactylus as long as fixed finger, naked.

Pereopod 1 (Fig. 3B) no coxa. Basis naked, long and slender, five times longer than broad. Ischium short with simple short seta. Merus twice as long as broad, with two ventral setae. Carpus three times longer than broad, with four short simple setae distally. Propodus four and a half times longer than broad, with six or seven dorsal comb, two short dorsal simple, one ventral simple, one long simple setae, and two spines distally. Dactylus as long as ventral seta of propodus. Unguis long and sharp. Pereopod 2 (Fig. 3C) similar to pereopod 1, except carpus with combs of setae. Pereopod 3 (Fig. 3D) as pereopod 2 except merus with two combs of setae. Pereopod 4 (Fig. 3E) no coxa. Basis about five times longer than broad, naked. Ischium with one simple seta. Merus twice as long as broad, with two simple strong ventral setae and one comb seta. Carpus two and a half times longer than broad, with three combs and three strong and one short distal setae. Propodus four and a half times longer than broad, with one dorsal setulose seta at midlength, four or five ventral comb, two ventral simple setae and one dorsal terminal spine. Dactylus about as long as unguis with one dorsal short spiniform seta. Unguis sharp. Pereopod 5 (Fig. 3F) similar to pereopod 4, with two setulose setae on basis. Merus, carpus and propodus with more comb setae. Pereopod 6 (Fig. 3G) as pereopod 4, except merus with comb setae and short strong seta on distal margin. Propodus lacks setulose seta.

Pleopods (Fig. 3H) biramous. Basal article square, exopod and endopod monoarticled, of similar paddle-shape. Endopod with eight terminal simple long setae, exopod with four simple terminal setae.

Uropods (Fig. 3I) biramous. Basal article wider than long. Exopod with one simple seta at outer margin, tipped by one short and one very long seta. Endopod about one third longer than exo-

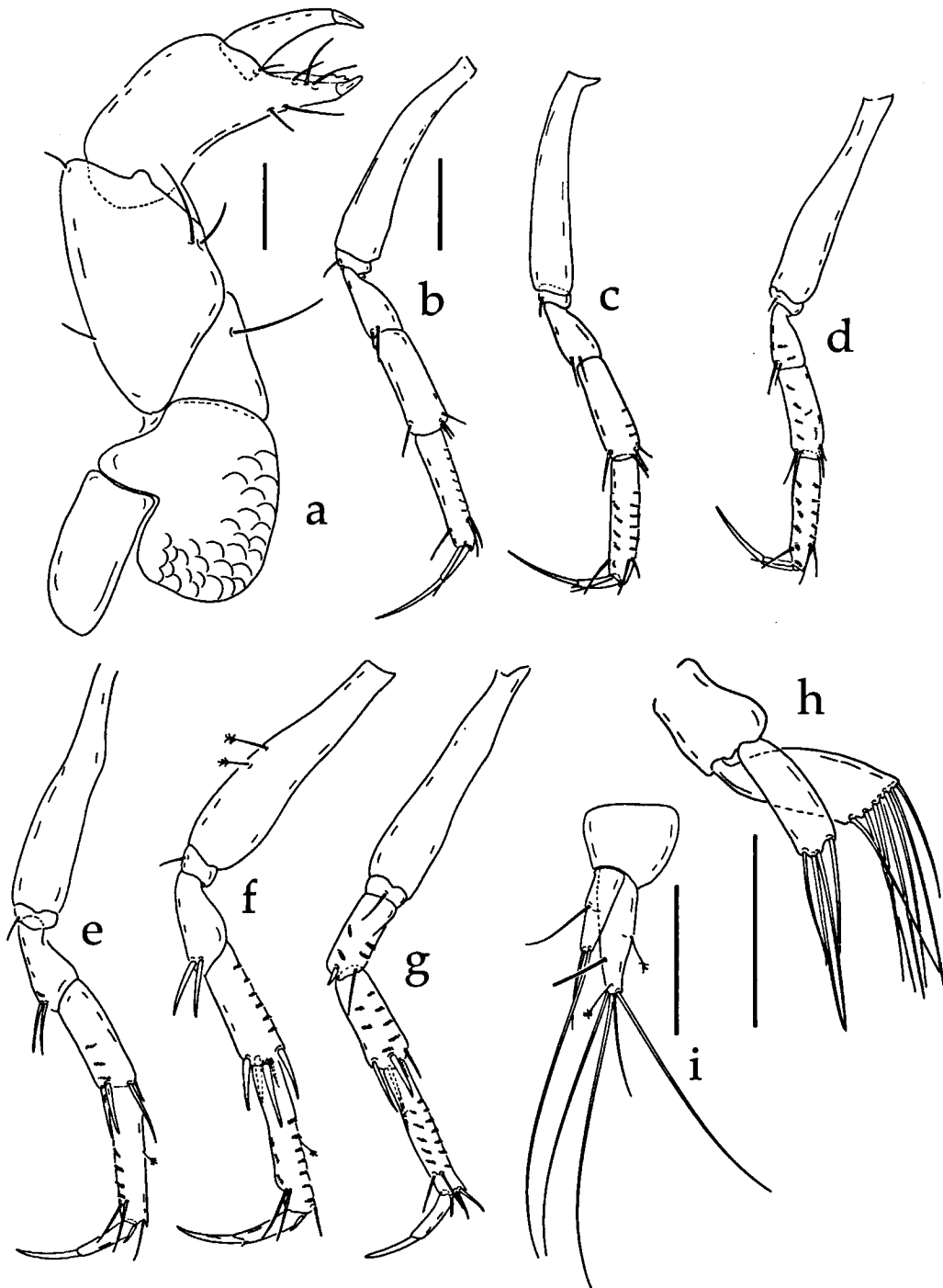


Fig. 3. *Magotanais pruinosus*, female, paratype ZMH 40361. A, cheliped. B-G, pereopods 1-6. H, pleopod. I, uropod (scales = 0,1 mm) (all pereopods the same scale).

pod, with one dorsal setulose, one ventral simple seta at midlength, tipped by three very long simple, one short and one setulose terminal setae.

OVIGEROUS FEMALES. - Unknown.

NEUTER. - As non ovigerous female.

MALES. - Unknown.

TYPE LOCALITY. - ANT 48-107, 73°34'77"S, 22°38'29"W, 06-II-1998, 938 m depth, Weddell Sea, Antarctica.

ETYMOLOGY. - From '*pruina*', latin for frost. The name refers to the cold and frozen Antarctic where this species was found; *Magotanais pruinosus* means the frosty magical tanaid.

REMARKS. - The side piece of the cheliped is only visible after dissection. This species was found on the continental slope (depth range 938-2077 m) in the Antarctic region.

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