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Eualus kinzeri, a new hippolytid shrimp from the Weddell Sea (Antarctica)

(Crustacea: Decapoda: Natantia)

By **Ludwig Tiefenbacher**

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A new species of the family Hippolytidae, *Eualus kinzeri*, spec. nov., is described from the eastern Weddell Sea, Antarctica. It is the first species of this genus found beyond the Antarctic Circle. The species seems to be closely related to *Eualus gaimardii* (H. Milne Edwards, 1837), which is known to be circumarctic.

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Introduction

The material was collected by the R/V "Polarstern" during the expeditions ANTARKTIS III, 3 (1985) and ANTARKTIS VII, 4 (EPOS III) (1989) in the Weddell Sea (Antarctica). Among the shrimps caught by an Agassiz-trawl (AGT) and a Bottom-Trawl (GSN) I found a species of *Eualus* which has not yet been described. It is the first species of *Eualus* recorded south of the Antarctic Circle. I wish to express here my sincere thanks to Professor Dr. W. Arntz, Alfred-Wegener-Institute for Polar and Marine Research (Bremerhaven, FRG) for his kindness in placing this material at my disposal.

Eualus kinzeri, spec. nov.

Material: Holotype: ♀ (length 51 mm), Zoologische Staatssammlung, München (ZSM) (Sach. Kat. no. 554/1); type locality: 71°06.2′S / 12°53.8′W; depth 771 m; st. 293. – Paratypes: 3 ♀ (ZSM, Sach. Kat. no. 554/1), locality same as holotype; 1 ♂, 1 ♀ (ZSM, Sach. Kat. no. 554/2); locality: 72°35′S / 18°07′W; depth: 673 m; st. 273.

Dates of catch:
ANT III/3; 1/27/1985; st. 273; day; AGT, hol 8
ANT VII/4; 2/20/1989; st. 293; day; GSN, hol 15

Description

The rostrum is directed straight forward or curving very slightly dorsad. It reaches somewhat beyond the antennular peduncle, but fails to reach the end of the scaphocerite. The dorsal margin is armed with 6 to 8 anterior teeth; these are widely, but irregularly spaced. The first 2 or 3 teeth of the dorsal series are situated on the carapace behind the orbital margin. The ventral margin bears 6 to 9 closeset teeth. Laterally we find a distinct carina.

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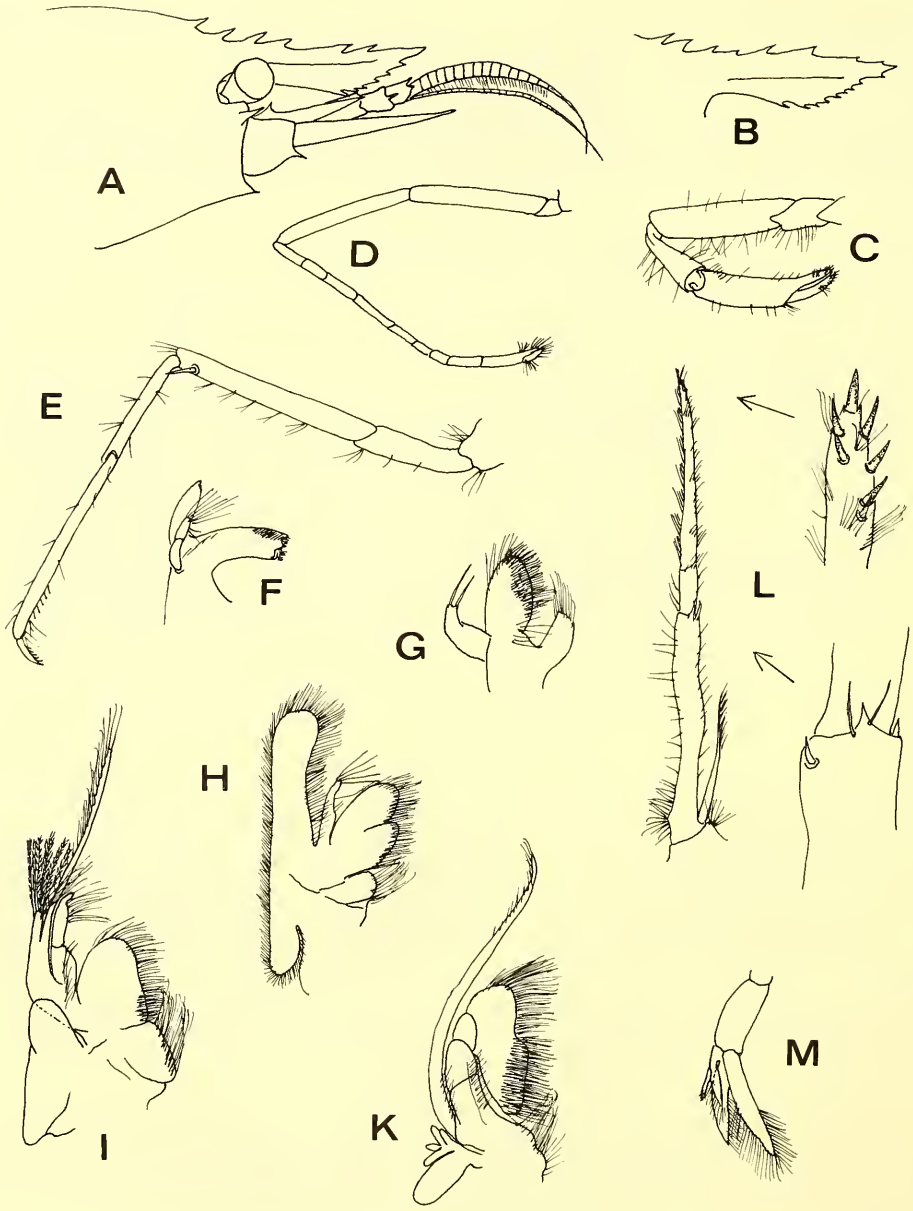

Fig. 1. A. anterior part of body of holotype in lateral view; – B. rostrum (paratype); – C. first pereiopod (holotype); – D. second pereiopod (holotype); – E. third pereiopod (holotype); – F. mandible (holotype); – G. first maxilla (holotype); – H. second maxilla (holotype); – I. first maxilliped (holotype); – K. second maxilliped (holotype); – L. third maxilliped (holotype), with magnifications of the tip of the last joint and of the articulation between antepenultimate and penultimate joints in lateral view; – M. second pleopod of male (paratype).

The carapace is smooth and without prominent grooves or ridges. The antennal spine is placed slightly ahead of and below the lower orbital angle. The pterygostomial spine is well developed. The abdomen is smooth, the pleura of segments 1 to 4 are broadly rounded, those of the fifth end with a

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sharp tooth. The sixth abdominal segment is about 1.5 times as long, and the telson about twice as long as the fifth segment. The telson fails to reach the posterior margin of the uropods. It is armed with 4 to 5 pairs of dorsolateral spines, the first of which are situated just ahead of the middle. The posterior margin shows two pairs of lateral spines. The inner spines are 3 times as long as the outer ones. Between these pairs, 8 slender spines are situated; these are 2/3 as long as the inner lateral spines.

The cornea of the well-developed eyes is rounded, well pigmented and shows a small ocellus.

The stylocerite of the basal segment reaches the middle of the second segment of the antennular peduncle. The second and third segments are nearly equal in length and both together are just a little shorter than the first. The second segment bears one strong spine at the distal dorsolateral margin; the third segment has two smaller spines at the same position. The outer antennular flagellum has 15 thickened joints. The scaphocerite reaches beyond the antennular peduncle, and is about 2.5 times as long as broad. Its distolateral spine is strong.

The incisor process of the mandible is swollen at the center and ends in 2 to 4 very small teeth. The molar process shows a field of numerous very close-set and very short hairs, arranged in rows, like a smooth brush. The two-jointed palp bears 7 to 8 bristles at its distal segment. The 1st maxilla has a slender lower endite; the upper endite is broad and the palp bilobed. The 2nd maxilla possesses a reduced lower endite of two short lobes, and a much larger bilobed upper endite. The palpus ends in 5 long bristles. The scaphognathite is well-developed. The maxillipeds (mxp) 1 to 3 possess exopods. The exopod of the 1st mxp is provided with a process, which shows a distal tuft of feathered hairs. Its palpus is two-jointed. The 2nd mxp has the typical *Eualus* shape. The 3rd mxp reaches distinctly beyond the scaphocerite. The last joint is about 4 times as long as the penultimate and the antepenultimate is nearly of the same size. The last joint bears at its top 7 to 8 movable spines with dark tips. The antepenultimate joint is provided distally with two small lateral spines. The exopod of the 3rd mxp reaches just a little beyond the middle of the antepenultimate segment. An epipod is present. The 1st pereiopod (P) is shorter and heavier than the second. Its fingers are 0.6 times as long as the palm, and show two ungues at the end of the dactylus and one ungue at the fixed finger, both with dark tips. The chela and the merus are of equal size, the carpus is somewhat shorter. P 2 possesses a small and slender chela. The carpus is almost 4 times as long as the chela and consists of 7 (8) joints, of which the 3rd (4th) counted from its base is about twice as long as any of the others. The merus measures about half of the carpus, and the ischium somewhat less. P 3 to P 5 are very similar. On each of the three we find a spine in the posterodistal part of the merus, decreasing in size from P 3 to P 5. The dactyli of P 3 to 5 bear a row of 6 to 8 spinules on their posterior margins, progressively becoming longer distally and the propodus has a row of 4 to 5 spinules in the same position near its distal end. The merus is almost as long as the propodus. Carpus and ischium have nearly the same size. The carpus is about 0.5 times as long as the propodus. The P 1 to 3 are provided with epipods.

The male at my disposal has the appendix masculina about 0.7 times as long as the appendix interna, and it bears very small hooks at the tip.

The holotype of *Eualus kinzeri* is a female of st. 293, all other specimens mentioned here are paratypes.

Remarks

Eualus kinzeri (E. k.) seems to be closely related to *Eualus gaimardii* (H. Milne Edwards, 1837) *(E. g.)* of the northern hemisphere, but there are some distinct differences (Holthuis 1950; Smaldon 1979; Williams 1984):

1. The rostrum of *E. k.* bears 6–8 / 6–9 teeth (in *E. g.* only 5–7 / 3–5) and reaches just beyond the antennular peduncle. It has twice the length of the antennular peduncle in *E. g.*

2. The second and third joints of the antennular peduncle are equal in size, while the ratio is 1:0.5 in *E. g.* In addition, possesses *E. k.* two spines on the distal margin of the third articulation.

3. The antennal scale overreaches the antennular peduncle only by a quarter of its length (in *E. g.* by a half).

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4. The P 1 to 3 of *E. k.* are provided with epipods, while these are found only on P 1 and P 2 in *E. g.*

5. The pleura 1 to 4 of the abdomen are broadly rounded. Only the pleura of the 5th segment possess posterolateral spines. In *E. g.* we find them in the 4th segment, as well.

Acknowledgement

It is a pleasure for me to name this species in honour of Dr. Johannes Kinzer (Institut für Meereskunde, Kiel, FRG), my friend and colleague in marine research, in recognition of his own investigations in the Antarctic Sea.

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