Gerdocypris, a new genus of Paracyprididae (Ostracoda) from the North Atlantic, Mediterranean and East Africa

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ABSTRACT—The genus Gerdocypris (type species Gerdocypris muelleri sp. nov.) is described as new based on a mature male from the Bay of Naples. Gerdocypris ranges from the North Atlantic and Mediterranean to East Africa. Its differences from Aglaiocypris and Aglaiella are discussed and tabulated.

INTRODUCTION

The description by Hartmann (1964) of a new genus, Ghardaglaia, from the Red Sea and the comparison of this genus with Aglaiocypris Sylvester-Bradley, 1947 originally described from Messina, Sicily (Brady, 1868) and Aglaiella Daday, 1910 described from the Marocit, Alexandria, Egypt, refocussed attention upon a difficult group of related genera in the ostracod family Paracyprididae. Re-examination of types and new material led McKenzie (1982) to a brief review of these and some related taxa, including Tasmanocypris McKenzie, 1979. As a result, several taxa previously assigned to Aglaiocypris are now known to be distinct from that genus (and the other genera listed above) necessitating the description of a new paracypridid genus.

SYSTEMATIC DESCRIPTIONS

Suborder Podocopina Sars, 1866
Superfamily Cypridacea Baird, 1845
Family Paracyprididae Sars, 1923
Genus Gerdocypris McKenzie gen. nov.
(Pl. 1, figs. 1–15)

Type species. Gerdocypris muelleri sp. nov.

Derivation of name. For Prof. Gerd Hartmann, the University of Hamburg, in recognition of his many contributions to ostracod taxonomy.

Diagnosis. A genus of the family Paracyprididae characterised by a weakly calcified, regularly elongate bean-shaped carapace, smooth surfaced and whitish. Inner lamellae broad anteriorly and ventrally, narrow posteriorly; marginal pore canals short and straight, except ventrally where a few are longer; normal pore canals simple, rimmed; muscle scars of general cypridacean type; male shell bears the imprints of 4 strands of seminal vesicles posteriorly. Antennule 5-segmented; antenna with strongly reduced ‘natatory’ setae; maxillule epipod with 3 downwards directed setae and about 10 Strahlen, 3rd lobe with 2 smooth Zahnborsten; P1 epipod with 6 Strahlen; P2 terminal claw long, slender and regularly curved; P3 5-segmented, the long reflexed bristle jointed at about 2/3 its length from the proximal end; furcal lamella short and broad, with 2 strong stubby claws, an anterior bristle and 2 longish posterior bristles; rake like organ with 14 small teeth. Hemipenis with coils opening ventrally, peniferum digitate; Zenkers Organ with 5 whorls; endopods of the male P1 symmetrical, i.e. not dissimilar on right and left of the body.

Remarks. McKenzie (1982, pp. 416–417) points out that Aglua complanata (Brady & Robertson, 1870) which was figured in the American Treatise (Moore, 1961) as representing Aglaiocypris is not an example of this genus, having a different radial pore canal pattern and a different soft anatomy. The former character has been confirmed from examination of specimens of A. complanata in the Norman Collection at the British Museum (Natural History). Unfortunately, no dissection slides for the taxon are available in the BM (NH) collections.

The finding recently of a mature male of the species identified by G.W. Müller (1894) as A. complanata enables a more detailed comparison with the male described by Brady (1868) among the syntypes of Aglaiella pulchella Brady, 1868 which is the type species of Aglaiocypris. The re-illustration of the type of Aglaiella (McKenzie, 1982, Pls. 5, 6) also enables a comparison with that genus (Table 1).

In addition to the data presented in Table 1, Aglaiella differs from Gerdocypris in that the reduced ‘natatory’ setae of the antennae are somewhat longer in Aglaiella and more numerous (5 in Aglaiella versus 3 in Gerdocypris).

Gerdocypris muelleri sp. nov.

Derivation of name. After G.W. Müller, who described and illustrated this taxon as A. complanata in his Bay of Naples monograph (Müller, 1894).

Description. Carapace of medium size (length 0.73 mm),
Table 1. Some differences between the shells and soft anatomies of *Gerdocypris*, *Aglaiella* and *Aglaiocypris*.

|                          | *Gerdocypris* | *Aglaiella* | *Aglaiocypris* |
|--------------------------|---------------|-------------|----------------|
| Number of antennular segments | 5             | 6           | 7              |
| Number and type of Zahnborsten | 2, smooth     | 2, smooth   | 3, smooth      |
| Ventromarginal furcal bristles | long         | short       | short          |
| Radial pore canals       | short, straight | moderately long, some branched | long, branched |
| Imprints of seminal vesicles on shell | 4             | not known   | 7              |
| Shell patch pattern      | absent        | absent      | present        |
| Nature of shell          | weakly calcified | well calcified   | strongly calcified |

regularly elongate bean-shaped and weakly calcified; greatest height medial and less than half the length; dorsum regularly arched; venter inflexed near-medially; anterior and posterior margins subequally rounded, the posterior slightly narrower. In dorsal view, elongate sub-elliptical; greatest width medial and less than half the length; extremities subacuminate. Surface of the valves smooth; colour whitish. Inner lamellae broad anteriorly and ventrally, narrow posteriorly; line of concrescence submarginal; consequently the radial pore canals are very short and straight (not particularly numerous) except ventrally where a few are longer; normal pore canals scattered, simple, rimmed; muscle scars comprising a cypridacean rosette of 3 anterior and 2 posterior adductors (the uppermost adductor divided), a fulcal scar, plus 2 small mandibular scars (Pl. 1, fig. 1).

Antennule 5-segmented; length ratios of the segments about 5:1:3:1:0.5; 1st segment with a proximodorsal and 2 long ventrodorsal bristles; 2nd segment with a dorsodistal bristle; 3rd segment carrying 1 mediodorsal and 1 mediodistal bristle; 4th segment with 4 bristles, 3 of them long and 1 very long; 5th segment with 4 terminal bristles, 3 long (including 1 very long) and 1 short and slender (Pl. 1, fig. 2).

Antenna 6-segmented; comprising coxale, basale, exopod and endopod. Coxale with 2 unequal relatively short ventrodorsal bristles; basale with a long ventrodorsal bristle. Exopod reduced to a small baseplate bearing 3 unequal bristles, 1 about half the length of the 1st endopod segment, the remaining 2 very small. Endopod 4-segmented; length ratios of the segments 11:4:4:2; 1st segment with a well developed near proximal Y-aesthetasc, a ventrodorsal bristle and a small subventrodorsal clump of 3 short bristles (which are the strongly reduced relicts of natatory bristles); 2nd segment with a medioventral bristle and 2 distal bristles, plus a ventrodorsal claw; 3rd segment with 2 distal claws and a distal bristle, the 2 claws dorsal (1 of them very strong), the bristle ventral and short; 4th segment with a strong distal claw and 2 slender distal bristles (Pl. 1, fig. 3).

Explanation of Plate 1
All figures are × 425 unless otherwise specified.
*Gerdocypris muelleri* McKenzie gen. et sp. nov., mature male, Secca di Forio, Bay of Naples; BM(NH) no. 1982.176, holotype.

Fig. 1, RV, int. lat. (× 140); fig. 2, antennule; fig. 3, antenna; fig. 4, mandible (chaetotaxy omitted); fig. 5, maxillule, showing the 3 downwards-directed bristles of the epipod, the palp and lobes with the 2 smooth Zahnborsten of the 3rd lobe; fig. 6, head region; fig. 7, maxilla (P1), epipod and exopod; fig. 8, rake-like organ; fig. 9, chitin support; figs. 10, 11, P3 (Cleaning Limb); fig. 12, hemipenis; fig. 13, furca; figs 14, 15, P2 (Walking Leg).
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Mandible comprising coxal, basale, epipod and endopod. Coxal with at least 4 strong teeth, the anteriormost incisor-like, the others molar-like and decreasing in size from front to rear, plus a medial anterior bristle and 2 small sideway-directed posteroventral bristles. Basal with 3 ventral bristles, one of them a slender α bristle. Epipod with at least 4 Strahlen. Endopod 3-segmented; length ratios of the segments 3:4; 1st segment with a dorsodistal bristle and a clump of at least 3 (and probably 4) ventrodistal bristles, but a β bristle could not be distinguished; 2nd segment with 5 dorsodistal bristles, a mediodistal bristle and 2 ventrodistal bristles (the mediodistal bristle undifferentiated); 3rd segment with 2 terminal claws (one larger than the other) and at least 1 slender terminal claw (Pl. 1, fig. 4).

Maxillule comprising epipod, endopod and lobes. Epipod with 10 Strahlen and 3 downwards-directed bristles. Palp and lobes elongate; palp 2-segmented; length ratio of the segments 5:2; 3rd lobe with 2 smooth Zahnbögen (Pl. 1, fig. 5).

Maxilla (P1) comprising protopod, epipod, exopod and endopod. Protopod possibly bare. Epipod with 6 Strahlen. Exopod with a terminal cluster of about a dozen slender bristles plus 2 more proximal ventral bristles. Endopod obscured on the dissection slide but Müller (1894, Pl. 12, Fig. 42) illustrates a small 2-segmented palp with a single sigmoidal terminal claspung part ending in a small spine—presumably the right and left endopods are not dimorphic in the male since Müller does not record dimorphism. Female endopod (Müller, 1894, Pl. 12, fig. 43) a simple lobe with 3 terminal bristles (Pl. 1, fig. 7).

P2 (Walking Leg) with a 4-segmented endopod; length ratios of the segments 12:6:6:1.5; 1st and 2nd segments each bearing a ventrodistal bristle of similar length; 3rd segment with a short ventrodistal bristle; 4th segment with single short ventro- and dorsodistal bristles plus a long, slender and regularly curved terminal claw (Pl. 1, figs. 14, 15).

P3 (Cleaning Limb) reflexed, 5-segmented; length ratios of the last 4 segments about 10:6:6:1.7; 1st segment with at least 1 long bristle (ventrodistally); 2nd segment and 3rd segment each bearing a dorsodistal bristle of similar length; 4th segment with a short dorso- distal bristle; 5th segment with a short terminal bristle and 2 opposed larger bristles, the smaller of these claw-like (about twice the length of the short bristle) and the larger about 3 times longer than the claw-like bristle and divided at about 2/3 its length from the proximal end (Pl. 1, figs. 10, 11).

Furca bilamellar, short and broad; each lamella with 2 strong, stubby terminal claws which are spinose distally, plus a slender anterodistal bristle and 2 nearly equal slender bristles (almost as long as the claws) on the margin behind the posterior claw but well separated from it and from each other (Pl. 1, fig. 13).

Chitin Support thick, rather pointed at the end where it connects with the furca and forked proximally with a large eyelet in the fork (Pl. 1, fig. 9).

Head region simple, arcuate, coming to a point at the tip of the labrum (Pl. 1, fig. 6).

Rake-like organ with about 14 small teeth (Pl. 1, fig. 8).

Hemipenis subquadrate; anterior lobes rather broadly rounded; seminal tube complexly coiled, the coils opening downwards; copulatory process broadly pointed, digitate (Pl. 1, fig. 12).

Zenker's Organ with 5 inner whorls.

**Holotype.** A mature male BM(NH) no. 1982.176 comprising 2 separated valves (somewhat damaged during dissection) on a microslide, plus a dissection slide.

**Material.** Single mature male (the holotype), plus several juveniles.

**Locality.** Secca di Forio, Bay of Naples; depth 50m.

**Dimensions (mm)**

|      | Length | Height |
|------|--------|--------|
| Holotype | 0.73   | 0.295  |

**Remarks.** The new species is very similar to *Aglaiola complanata* as represented in the Norman Collection at the BM(NH), especially the specimen from Bitterbury Bay, Ireland (no. 1911.11.8 M.2998). Unfortunately, this specimen is broken and appears to be an A-1 juvenile without soft parts. The other specimen of *A. complanata* in the collections (no. 1911.11.8 M.2997), a left valve, is mature and higher with respect to its length also more robustly calcified than *Gerdocypris muelleri*. It, too, lacks soft parts.

Due to the unsatisfactory nature of these specimens, it seems preferable at this stage to describe *G. muelleri* as a new species, while recognising that better and topotypic material of *A. complanata* may lead subsequently to the synonymising of *muelleri* with *complanata*.

Another species which clearly belongs in *Gerdocypris* is *Aglaiocypris eulitorulis* Hartmann, 1974. The soft parts of *A. eulitoralis* are very close to those of *G. muelleri*, except that on the furca the posterior of the 2 bristles on the ventral margin of the lamella is about twice as long as the anterior ventromarginal bristle, whereas in *G. muelleri* this bristle is only slightly longer than the anterior ventromarginal bristle. In size and shape *A. eulitoralis* is smaller and somewhat higher with respect to its length than *G. muelleri* (Hartmann, 1974, Pl. 144, figs. 995–1005).

*Gerdocypris* as presently understood, therefore, includes the species:

- *Gerdocypris muelleri* sp. nov. (the type species);
- *Gerdocypris complanata* (Brady and Robertson, 1870); and
- *Gerdocypris eulitoralis* (Hartmann, 1974).

The genus is distributed through the North Atlantic (*complanata*), in the Mediterranean (*muelleri*) and on
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the coast of East Africa (*eulitoralis*); at depths ranging from the littoral to about 50m.

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