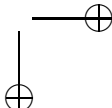
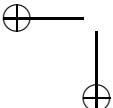


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Vladimir GRINTSOV, Murat SEZGIN

MANUAL FOR
IDENTIFICATION OF
AMPHIPODA FROM THE
BLACK SEA

Sevastopol
2011



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The manual focuses on the morphology, taxonomy and ecology of amphipods inhabiting the Black Sea (28 families, 41 genera, 80 species of Mediterranean complex). Description of each species contains the taxonomic key, synonymy and detailed illustrations. The book is intended for zoologists (faunistic and taxonomical disciplines), marine biologists (benthic fauna) and also for teachers and students of institutes of higher education.

DDC 595.371(262.5)

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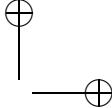
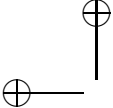
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Introduction

Investigations of the Black Sea amphipods were initiated more than one hundred and fifty years ago; the first publication on the subject dates back to 1837 and is that by Rathke, 1837. During the second half of the 20th century the biology, fauna and ecology of these marine organisms were studied in detail by I.I. Greze, the results had underlain a number of her topical articles, a monograph and two guides [34], [20], [21]. Nearly 30 years have passed since the latest guide was published. For these decades the species composition of amphipods inhabiting the Black Sea has conspicuously changed, 11 species and 2 genera new for the sea have entered the inventory. These formerly unknown amphipods have adapted to the new environment and been incorporated into many biotopes as a common and even mass component; however until recently their identification posed much difficulty because of the incomplete old guides, therefore the urgent need in the updated or novel identification keys. The recent guide offers descriptions of all amphipod species having been found in the Black Sea by 2010. The general morphology is adopted from [4]. The diagnoses of families and genera and the keys to families, genera and species facilitate species identification. Description of each species includes synonyms and the ecology in brief. The keys give thesis and antithesis a and b, respectively, each illustrated with the picture of discussed appendage. Special chapters are devoted to Glossary and the ecology of amphipod species which occur solely in the coastal sea of Turkey. The general morphology, diagnoses and descriptions of the families, genera and species, the illustrated keys, synonyms and the glossary were compiled by V. Grintsov from [4], [7], [8], [9], [10], [11], [23], [21], [22], [35], [41]. The brief ecological account is based on the relevant literature [7], [8], [9], [10], [23], [21], [22], [35], [41] and original materials of the authors. The data about the species diversity and the ecology of amphipods endemic to the Turkish coastal zone are the courtesy of Murat Sezgin. The handbook does not include amphipods of the relic Ponto-Caspian fauna the area of which is confined

to desalinated river mouths and coastal lakes. Interested readers may find their description and identification keys in [34]. Similarly the book does not have the diagnoses and description of species having been given in [7], [8], [9], [10], [20], [34], and those (e. g. *Microdeutopus damnoniensis* (Bate, 1856), *Corophium bonelli* (Milne-Edwards, 1830), *Nannonyx goesi reductus* Greze, 1975, *Chaetogammarus oliviformis* Greze, 1985, *Gammarellus carinatus* (Rathke, 1837), *Apherusa bispinosa* (Bate, 1857)) that require additional studying and taxonomic revision.

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Morphology of a Gammaridean Amphipod

Amphipods, like tanaids and isopods, lack carapace covering the thorax, so that seven definitive thoracic segments (pereonites). Gammaridean Amphipoda may be recognized by their possession of three pairs of pleopods and two or three pairs of uropods on the pleon (abdomen). The fairly consistent presence of at least six pairs of thoracic appendages, five-plus pairs of gills and four pairs of brood lamellae in females are definitive characters of Gammaridea.

The basic gammaridean generally head is about as long as 1.5 time of pereonites but it varies in different families and genera from much shorter than the first pereonite to as long as the first three pereonites combined.

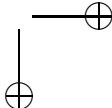
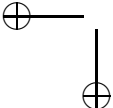
The absence of eyes is rarely of taxonomic concern other than at the specific level. The presence and/or condition of the cephalic rostrum is only occasionally conservative at the familial level.

Antennae — the head bears two pairs of antennae. The first three articles of the first pair are known as the peduncle, the remaining smaller articles are the flagellum. The callynophore may be present in the male and female or only in the male. It is located medially and usually contains many transverse rows of aesthetascs which are grouped together to form a brush. Many species have accessory flagellum. The second antennae bear five peduncular articles, followed by a single flagellum. The flagella of both antennal pairs may bear, especially in males, sensory appendages, such as aesthetascs and calceoli.

The mouthparts are composed of the following structures; they are highly variable intergenerically and their morphology is important for classification:

Upper lip — a single lobe or flap anterior to the mouth. Occasionally both epistome and upper lip are produced together and occasionally they are fully amalgamated.

Lower lip — a bilaterally symmetrical complex forming partition behind the mouth. Also known as a labium, the lower lip is composed of



at least a pair of lateral lobes, having their lateral extremities produced, often acute and bearing apicomedia a tiny cusp enclosing the meatus of a salivary duct.

Mandibles — a pair of appendages attached lateral to the mouth; with the upper and lower lips they form a box around the mouth, permitting buccal closure. Mandibles generally have their anterodistal ends (incisors) cut into a series of teeth which may be an articulated process, also toothed, lacinia mobilis (accessory plate) which may occur on only one or none of the mandibles. A molar with a grinding surface often occurs on the medioventral surface of the mandible. It may be ridged and toothed (tritulative), or smooth, or be completely absent. Most Gammaridea have a 3-articulate palp attached to the dorsolateral surface of the mandible, the palp being used to clean the bases of the antennae. Its absence is moderately frequent and often of familial importance, but its reduction to two or one articles is uncommon.

First maxillae — these are situated posterior to the lower lip. This pair of appendages is small, each bearing a medial free lobe, an outer lobe with heavy spines, and attached to the outer lobe with heavy spines, and attached to the outer lobe a palp composed of one or two articles, occasionally reduced in size or absent.

Second maxillae — these are two pairs of lobes located at behind and lateral parts of the plates, occasionally reduced to one plate or absent, rarely with the outer lobe attached to the inner by a basal geniculation or extension. The presence or absence of an oblique row of setae on the dorsal face of the inner plate often has strong taxonomic significance.

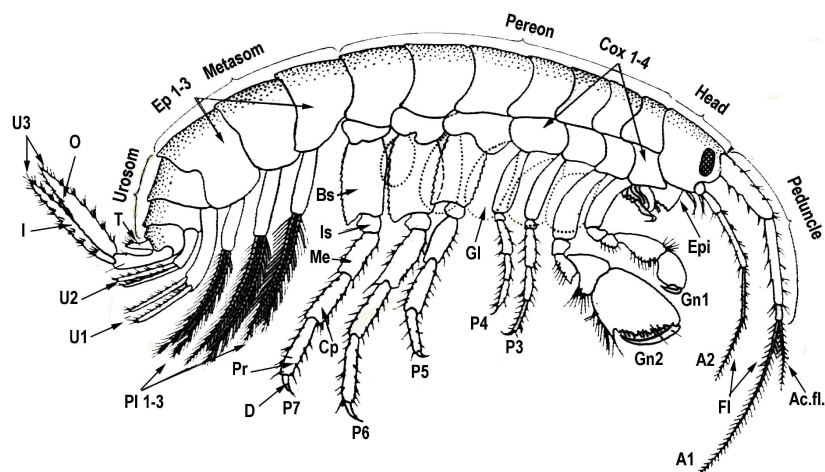
Maxilliped — one pair of appendages posterior to the maxillae, each side of the maxilliped is formed of an inner (proximal) lobe, an outer (distal) lobe and a palp of two to four articles, rarely absent in Gammaridea.

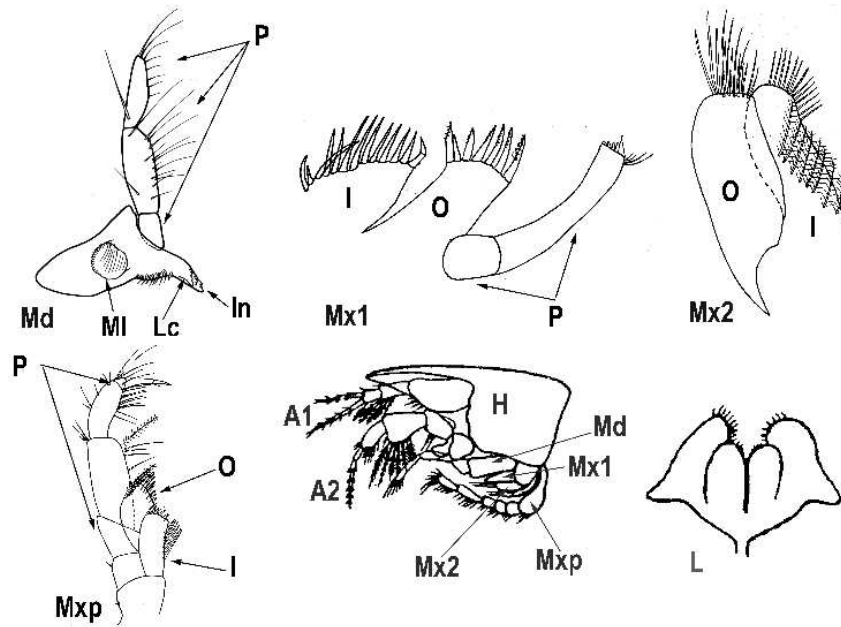
Pereion (thorax) — almost invariably bears seven pairs of legs. Thoracic appendages have seven articles — coxae, basis, ischium, merus, carpus, propodus and dactylus. The first two pairs are called gnathopods and usually are prehensile, having the seventh article (dactyl) folded

back on the sixth article (propodus, hand or palmar article). Rarely in gnathopod 1 there is sexual dimorphism but the male often has greatly enlarged second gnathopods. Female have oostegites — the medial surfaces coxae 2 to 5 (or 3 to 4 only) carry brood lamellae (oostegites).

Pleopods — are paired biramous appendages on the first three somits of the pleon, the rami multisegmented and strongly setose.

Urosome have three pairs of uropods. Armaments on uropods 1 to 2 are occasionally used to facilitate ecdysis of anterior appendages. In many Gammaridea, the third uropods still bear "swimming" setae, and may be used for paddling or as rudders. Male especially have natatory third uropods. Telson — a flap attached to the sixth pleonite above the anus. It is of primary taxonomic value, depending on whether it is cleft into two lobes, fused into a single flap, elongate, fleshy, or ornate.



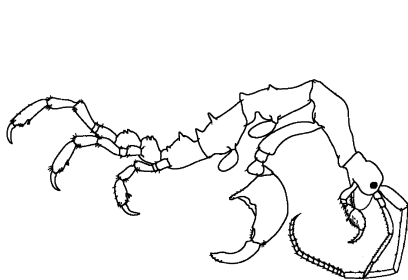


Body, appendages and mouthparts (by [34] with Grintsov addition). Designation: Bs — basis, Cp — carpus, D — dactilus, H — head, I — inner, In — incisor, Is — ischium, L — labium, Lc — lacinia mobilis, Md — mandible, Me — merus, Ml — molar, Mx1 — maxilla 1, Mx2 — maxilla 2, Mxp — maxilliped, O — outer, P — palp, Pr — propodus, T — telson, U3 — uropod 3.

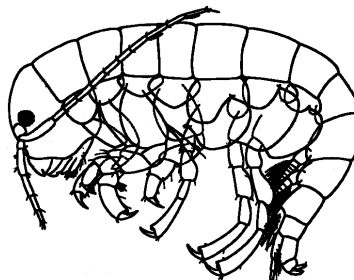
Order Gammarida

Key to Suborders

- 1 a. Gills not exceeding 3 pairs, oostegites not exceeding 2 pairs. Body otherwise skeletal, segments tubular or flattened and pleurate; abdomen vestigial and pereonite 1 fused to head . . . CAPRELLIDEA
- b. Gills exceeding 3 pairs, oostegites usually exceeding 2 pairs. Body compressed or flattened, segments very rarely tubular or pleurate; abdomen well developed, head free from pereonite 1 GAMMARIDEA



a) Body, by [9]



b) Body, by [7]

Suborder Gammaridea

Synonymy and diagnosis to Families and Genera

Family BIANCOLINIDAE J.L. Barnard, 1972

D i a g n o s i s: Body subcylindrical, head globular, lateral cephalic lobes lacking; A1 lacking accessory flagellum, peduncle art 1 short, sub-spherical; A2 gland cone absent; Labrum rounded, mandible lacking palp and molar, lacinia mobilis broad, serrate, labium with large inner lobes, Mx1 lacking palp, Mxp inner plates bearing thin setae, without cuspidiform spines, palp art 4 short; Gn1 and Gn2 similar, propodus feeble; P3 and P4 basis inflated, P5-7 prehensile; U1 and U2 peduncle with long plumose setae, U3 rami cylindrical; telson small, notched; oostegites with curled setae. Sexual dimorphism in U1 and U2.

Genus BIANCOLINA Della Valle, 1893

S y n o n y m s: *Biancolina* J.L. Barnard, 1972, 195

D i a g n o s i s: As for family.

Family CHELURIDAE Allman, 1847

S y n o n y m s: Cheluridae Boeck, 1876, 645; Sars, 1894, 626; Stebbing, 1906, 693; Chevreux & Fage, 1925, 371; Barnard, 1969, 180

D i a g n o s i s: Body depressed: coxae short, not overlapping; urosome large, its segs unmovably fused together, third urosome seg very large; A1-2 short, A1 weaker than A2, accessory flagellum present, flagellum of A2 represented largely by a single art; mouthparts basic; U1-3 very dissimilar to each other in structure and size, U1 with 2 rami, U2 with or without rami, and U3 inner ramus vestigial or lacking; telson entire.

Genus CHELURA Philippi, 1893

S y n o n y m s: *Chelura* Stebbing, 1906, 693; J.L. Barnard, 1969, 180; Lincoln, 1979, 544

Namartes White, 1847, 90

D i a g n o s i s: As for family.

Family COLOMASTIGIDAE Stebbing, 1899

S y n o n y m s: Colomastigidae Della Valle, 1893, 853

D i a g n o s i s: Body subcylindrical, urosomites 2–3 coalesced, coxae short but elongate and overlapping: A1 without accessory flagellum; mouthparts modified and very reduced except maxillipeds, mandible lacking palp, molar large, cutting edge with long spines, Mx1 with palp large and 1-articulate, Mx2 with lobes partially coalesced, Mxp inner plates very small, fused forming a subconical piece, outer plate large, palp elongate. Gn1 simple, in female elongate, propodus armed apically with spines or setae forming a brush, in male very reduced; Gn2 subchelate in female with small propodus, in male with very enlarged propodus. Pereopods very similar, basis elongate, not enlarged. Uropods biramous, with sexual dimorphism. Telson small, entire.

Genus COLOMASTIX Grube, 1861

S y n o n y m s: *Colomastix* J.L. Barnard, 1969, p. 184

Cratippus Bate, 1862, p. 275

Exunguia Norman, 1869, p. 359

D i a g n o s i s: As for family.

Family EUSIRIDAE Stebbing, 1888

S y n o n y m s: Calliopiidae Sars, 1895, 431

Pontogeneiidae Stebbing, 1906, 356

D i a g n o s i s: Body dorsally dentate or smooth. Urosome segs not coalesced. Accessory flagellum vestigial or absent. Mouthpart basic;

labrum entire or poorly incised; mandibles with triturative molar. Coxae of medium length or short. Gnathopods subchelate. U 1-2 outer ramus usually shortened: U3 rami elongate, broadly lanceolate, flat, uniarticulate. Telson normally elongate, entire or cleft or notched.

Genus APHERUSA Walker, 1891

S y n o n y m s: *Gossea* Bate & Westwood, 1861, p. 276

Apherusa J.L. Barnard, 1969, p. 174

D i a g n o s i s: Body slender, compressed, smooth or dentate dorsally. Rostrum small. Antennae long, slender, A1 shorter than A2. Accessory flagellum absent. Labium with slight inner lobes. Mandible molar strong, art 3 of palp shorter than art 2. Mx1 inner plate with setae, outer with spines. Mx2 inner plate the narrower. Coxa 4 slightly longer than coxa 1. Gn1 usually larger or equal in size to Gn2, rarely (in subadult forms) smaller. Gnathopods not strong, palms distinct. P5-7 rather strong. Telson not large, entire, laterally with or without one small notch.

Family GAMMARELLIDAE Bousefield, 1977

D i a g n o s i s: Body dorsally carinate, rostrum well developed. A1-2 stout, accessory flagellum multiarticulate. Labrum entire; labium without inner lobes; Md with triturative molar, palp strong, 3-articulate, art 3 slightly falciform; Mx1-2 basic, Mx2 inner plate with facial row of setae; Mxp palp stout. Coxae 1-4 moderately long, coxa 4 posteriorly excavate. Gn1-2 subequal, subchelate. P5-7 basis dilated, with postero-distal lobe. U1-2 biramous, long; U3 biramous, rami lanceolate, 1-articulate. Telson entire, slightly emarginated. Coxal gills on pereon segs 2-7.

Genus GAMMARELLUS Herbst, 1793

S y n o n y m s: *Gammarellus* J.L. Barnard, 1969, 242

Amathia Rathke, 1837, 375 (homonym)

Grayia Bate, 1862, 101

Amathilla Bate & Westwood, 1862, 359

D i a g n o s i s: Body with dorsal carina, rostrum well developed. A1-2 stout. A1 primary flagellum short and stout, accessory flagellum multiarticulate. A2 flagellum with short arts. Labrum entire labium without inner lobes. Mandibular palp strong, art 3 slightly falciform. Mx1 palp 2-articulate. Mx2 inner plate with medial row of setae. Mxp outer plate relatively small, palp stout. Coxae moderately long. Gn1-2 subequal subchelate. P5-7 basis dilated, with ventroposterior lobe. U1-2 biramous, long. U3 biramous, rami not exceeding tip of U1, lanceolate, both rami 1-articulate. Telson long, slightly emarginate. Females similar to males.

Family LEUCOTHOIDAE Dana, 1852

S y n o n y m s: Leucothoidae Sars, 1882, 27.

D i a g n o s i s: Body smooth. Accessory flagellum of A1 very small or absent. Epistome conically projecting. Labrum asymmetrically bilobed. Mandibles lacking molar, palp with 1-3 arts. Maxilliped outer lobe reaching half or full length of palp art 1. Coxae relatively broad, coxa 1 concealed or not concealed. Gn1 chelate between propodus and carpus, merus bulbous at base and produced into a slender thumb, mostly hidden by the carpus and parallel to propodus. Gn2 powerful, larger than Gn1, subchelate, carpus setose, produced along hind margin of the large propodus. Dactylus strong, curving over the large oblique palm nearly to the apical end of carpus. P5-7 subequal. U2 the shortest. U3 biramous, rami lanceolate, subequal, minutely spinose. Telson triangular, shorter than peduncle of U3.

Genus LEUCOTHOE Leach, 1814

S y n o n y m s: *Lycesta* Savigny, 1816, p. 109

D i a g n o s i s: A1 as long or longer than A2, both with long peduncle and relatively short flagellum. Labium lacking inner lobes. Mandible:

pars incisiva dentate, molar obsolete, lacinia mobilis well developed, palp with 3 arts, art 3 smaller than art 2. Mxl inner lobe very small, with 1 seta; outer plate with spines and setae, palp 2-jointed. Mx2 inner lobe broader than outer one. Mxp inner lobes small, partly coalesced, outer very small to completely lacking (reaching less than half of art 1 of palp), palp large.

Family MEGALUROPIDAE Thomas & Barnard, 1987

D i a g n o s i s: Body smooth, urosome segs not fused. Rostrum well developed; eyes very large (especially in the male). $A1 < A2$, slender, accessory flagellum 2-articulate. Labrum with medial incision; labium with inner lobes; Md palp 3-articulate, art 3 not falciform; Mx1-2 and Mxp basic. Coxae 1 and 3 < coxae 2 and 4. Gn1-2 weakly subchelate. P5-7 basis expanded. U3 with rami subequal, 1-articulate, large, foliaceous. Telson cleft to the base. Oostegites narrow.

Genus MEGALUROPUS Hoek, 1889

S y n o n y m s: *Megaluropus* J.L. Barnard, 1969, 244

Phylluopus K.H. Barnard, 1932, 145

D i a g n o s i s: Body slender, rostrum well developed. Lateral cephalic lobes long, eyes present. $A1 < A2$, slender, accessory flagellum 2-articulate. Labrum with medial incision, broader than long, labium with inner lobes. Mandibular palp 3-articulate, art 3 not falciform. Mx1 inner plates triangular, with setae. Mxp normal. Coxae moderately long, coxae 1 and 3 shorter than 2 and 4, coxa 5 < 4. Gn1 simple; Gn2 simple or subchelate. P3-7 normal. U1-2 normal. U3 with rami subequal, 1-articulate, large, foliaceous. Telson long, completely cleft. Gills simple, oostegites narrow. Females differ from males in several characters.

Family PONTOPOREIIDAE Dana, 1855

D i a g n o s i s: Head without rostrum. A1 geniculate between peduncle segs 1 and 2, seg 1 very robust, may form a pseudorostrum with its

opposite member. Mouthparts basic and setose. Gn1-2 simple, setose; Gn2 without dactylus. P3-7 very setose or spinose, dactylus masked by spines or setae; P3-4 short; P5-7 somewhat dissimilar. U3 inner ramus short, scale-like. Telson deeply cleft.

Genus BATHYPOREIA Lindström, 1855

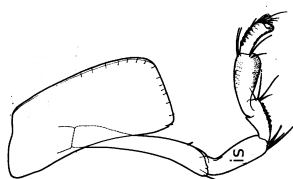
S y n o n y m y: *Bathyporeia* Stebbing, 1906, p. 119; Chevreux & Fage, 1925, p. 91; Watkin, 1938, p. 211; J.L. Barnard, 1969, p. 254; Lincoln, 1979, p. 314

Thersites Bate, 1857, p. 146

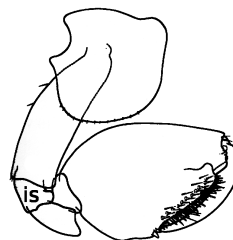
D i a g n o s i s: Head without rostrum. A1 geniculate between peduncle arts 1 and 2, art 1 very robust, ventral margin with plumose setae. A2 longer than A1. Md palp attached to basal process, molar ridged. Mx2 outer plate not enlarged. Mxp palp 4-articulate. Coxae small, setose. Gnathopods simple, setose, Gn2 lacking dactylus. Pereopods densely setose and spinose, P3-4 short and stout, P5-7 somewhat dissimilar. U3 inner ramus short, scale-like. Telson deeply cleft.

Key to Families

- 1 a. Gn2 ischium distinctly ($> 1.5 \times$) longer than broad 2
 b. Gn2 ischium not distinctly longer than broad 4.



a) Gn2, by [8]



b) Gn2, by [9]

- 2 a. Md without palp 3

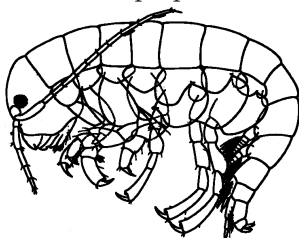
..... BIANCOLINIDAE (*Biancolina algicola* Della Valle, 1893)

S y n o n y m s: *Biancolina algicola* Ruffo, 1952, p. 106, fig. 1; Krapp-Schickel, 1969, p. 307

Biancolina cuniculus partim Stebbing, 1906, p. 647; Miloslavskaja, 1939, p. 133, fig. 30; Gurjanova, 1951, p. 904, fig. 627

E c o l o g y: Among algae (genus *Cystoseira*), depths 0–22 m.

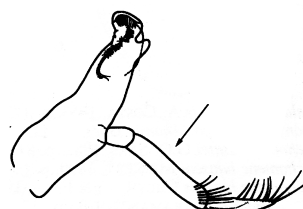
- b. Md with palp 3



a) Body, by [7]



a) Md, by [7]



b) Md, by [8]

- 3 a. Gn1 carpocheate, Gn2 subcheate, both large 4

..... LEUCOTHOIDAE (*Leucothoe spinicarpa* (Abildgaard, 1789))

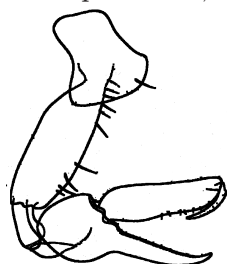
S y n o n y m s: *Gammarus spinicarpus* Abildgaard, 1789, p. 66

Leucothoe spinicarpa Stebbing, 1906m p. 165; Chevreux & Fage, 1925, p. 122, fig. 118–119; Gurjanova, 1951, p. 486, fig. 319; Krapp-Schickel,

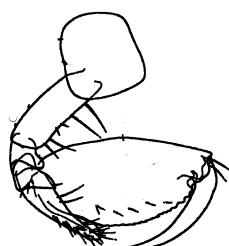
1975, p. 95, fig. 1-2

E c o l o g y: With Ascidiacea and sponges, on basal parts of algae (only from the coastal waters of Turkey), depths 1-150 m.

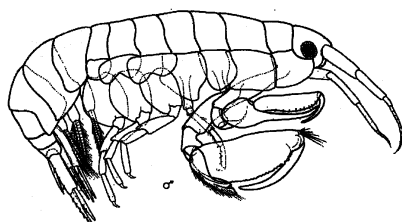
b. Gn1 not carpocheate, Gn 2 not large LYSIANASSIDAE



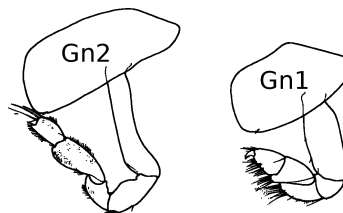
a) Gn1, by [8]



a) Gn2, by [8]

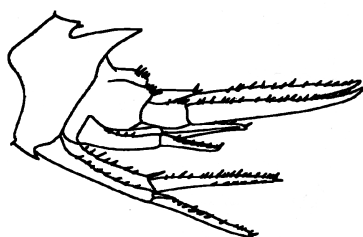


a) Body, by [8]



b) Gn1-2, by [8]

- 4 a. One or more urosome segments coalesced 5
 b. All urosome segments free 10



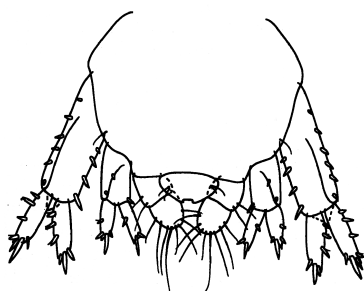
a) Us, by [7]



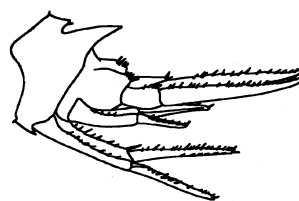
b) Us, by [9]

- 5 a. Urosome segments 1-3 coalesced 6

- b. Urosome segments 1 free, segments 2 and 3 coalesced 7



a) Us, by [7]



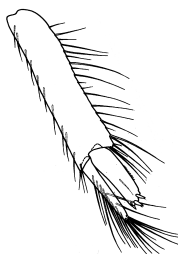
b) Us, by [7]

- 6 a. U1 and U2 very different in structure
 CHELURIDAE (*Chelura terebrans* Philippi, 1839).
 S y n o n y m s: *Chelura terebrans* G.O. Sars, 1895, p. 627, pl. 225;
 Stebbing, 1906, p. 693, fig. 119; Chevreux & Fage, 1925, p. 371, fig. 379,
 380; J.L. Barnard, 1950, p. 90, pl. 32, 33; J.L. Barnard, 1959, p. 4, fig. 1
 E c o l o g y: In submerged wood, inhabiting and enlarging tunnels.

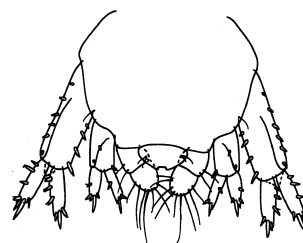
- b. U1 and U2 similar in structure
 COROPHIIDAE (*Corophium partim*)



a) U2, by [7]



a) U1, by [7]



b) Us,U1-2, by [7]

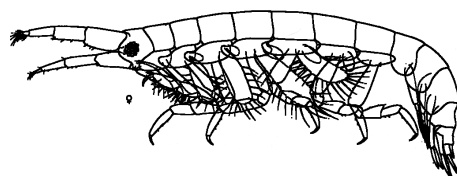
- 7 a. Telson entire; body cylindrical; mouthparts (exc. mxp) modified
 and strongly reduced
 COLOMASTIGIDAE (*Colomastix pusilla* Grube, 1864).
 S y n o n y m y: *Colomastix pusilla* Della Valle, 1893, p. 854, pl. 6,
 fig. 2; pl. 61, fig. 23-37; Stebbing, 1906, p. 207; Chevreux & fage, 1925,

p. 144, fig. 144; J.L. Barnard, 1955, p. 39, fig. 20

Cratippus crassimanus Heller, 1866, p. 50, pl. 4, fig. 12–13

E c o l o g y: Generally on sponges, depths 0 – 150 m.

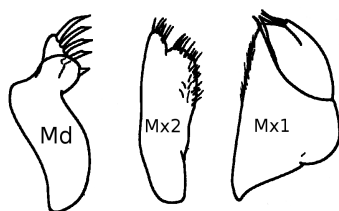
- b. Telson cleft; body laterally compressed 8



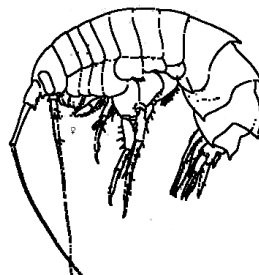
a) Body, by [7]



a) Mxp, by [7]



a) Md, Mx1–2, by [7]

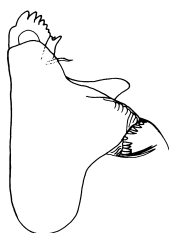


b) Body, by [7]

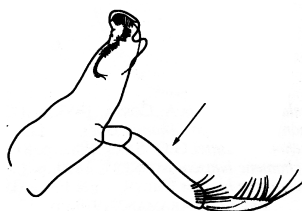


b) T, by [7]

- 8 a. Md without palp DEXAMINIDAE (exc. *Atylus*)
 b. Md with palp 9



a) Md, by [7]



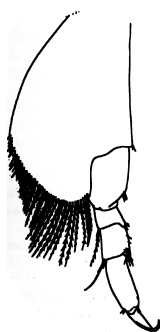
b) Md, by [8]

9 a. P7 very different from P6; eyes in the form of four cuticular lenses
AMPELISCIDAE

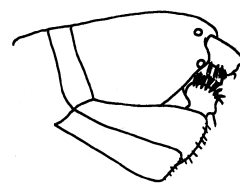
b. P7 similar P6 DEXAMINIDAE (*Atylus*)



a) P6, by [7]



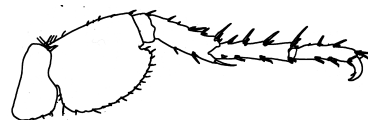
a) P7, by [7]



a) Eyes, by [7]



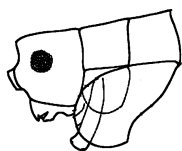
b) P6, by [7]



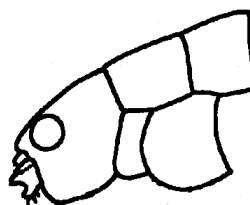
b) P7, by [7]

10 a. Coxa 1 small, largely hidden by coxa 2STENOTHOIDAE

b. Coxa 1 large or small, but not hidden by coxa 2 11

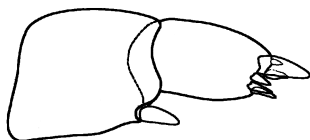


a) Cox1-2, by [9]

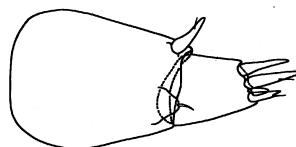


b) Cox1-2, by [9]

- 11 a. U3 uniramous 12
 b. U3 biramous, but inner ramus may be reduced or scale like ... 16

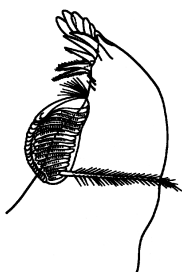


a) U3, by [8]

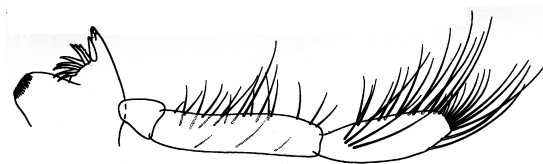


b) U3, by [8]

- 12 a. Md without palp 13
 b. Md with palp 14

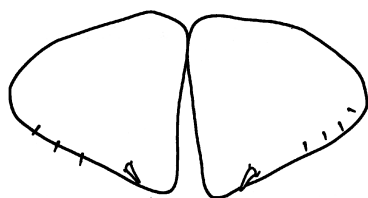


a) Md, by [8]



b) Md, by [7]

- 13 a. Telson clearly cleft HYALIDAE (*Hyale*)
 b. Telson entire or weakly notched TALITRIDAE

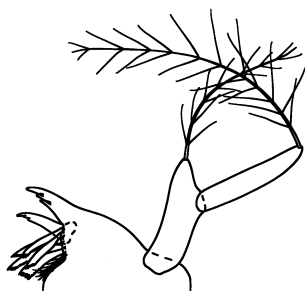


a) T, by [9]

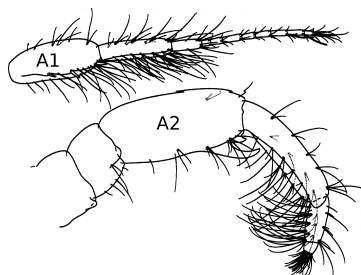


b) T, by [9]

- 14 a. Md palp with 1–2 articles; A2 peduncle distinctly longer and more developed than that of A1
 COROPHIIDAE (*Corophium* partim, *Siphonocetes*)
- b. Md palp with 3 articles; A2 peduncle not clearly longer and more developed than that of A1. 15



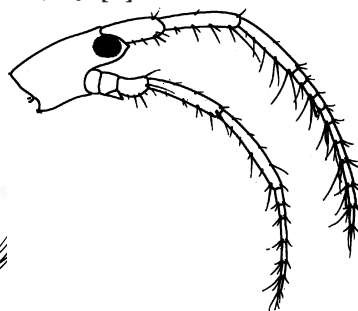
a) Md, by [8]



a) A1-2, by [8]



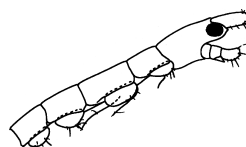
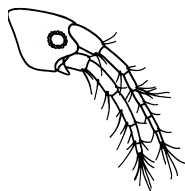
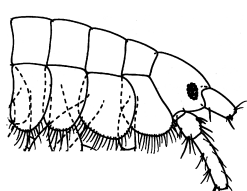
b) Md, by [7]



b) A1-2, by [8]

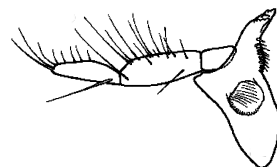
- 15 a. Coxae 1–4 well developed, contiguous; A1 and A2 about equal length
 ISAEIDAE (*Microprotopus*)

- b. Coxae 1–4 small, not contiguous
 ISCHYROCERIDAE (*Erichthonius*)



- a) Cox1–4, by [8] a) A1-2, by [8] b) Cox1-4, by [7]

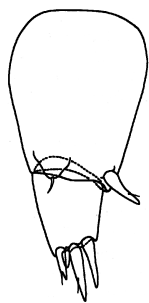
- 16 a. Md without palp 17
 b. Md with palp 18



- a) Md, by [9]

- b) Md, by [7]

- 17 a. U3 with inner ramus vestigial, spine-like; Mx1 palp with 1 article
HYALIDAE (*Parhyale*)
 b. U3 with inner ramus well developed
 BIANCOLINIDAE (*Biancolina algicola* Della Valle, 1893)



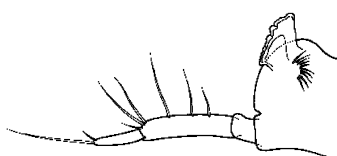
- a) U3, by [9]

- a) MxI, by [9]

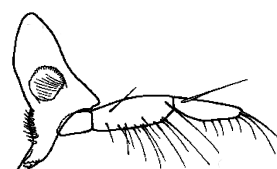
- b) U3, by [7]

- 18 a. Md molar absent
 LEUCOTHOIDAE (*Leucothoe spinicarpa* (Abildgaard, 1789))

- b. Md molar present 19



a) Md, by [8]



b) Md, by [7]

- 19 a. Coxae 2 and 4 clearly longer than coxae 1 and 3; Gnathopods feeble; U3 (often missing) biramous, with large oliaceous rami

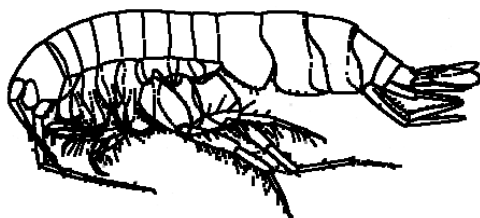
... MEGALUROPIDAE (*Megaluropus massiliensis* Ledoyer, 1976)

S y n o n y m s: *Megaluropus agilis massiliensis* Ledoyer, 1976, p. 1307, fig. 2, 4-1

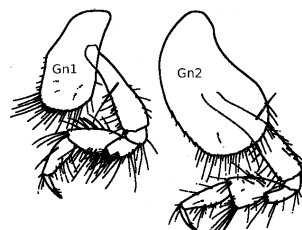
Megaluropus massiliensis G. Karaman, 1979, p. 60 *Megaluropus agilis* (partim) Chevreux & Fage, 1925, p. 226, fig. 236-237

E c o l o g y: On sandy bottoms, among phanerogams and algae, depths 1-40 m.

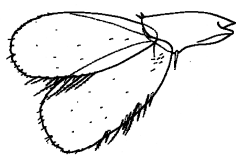
- b. This combination of characters not present 20



a) Body, by [7]

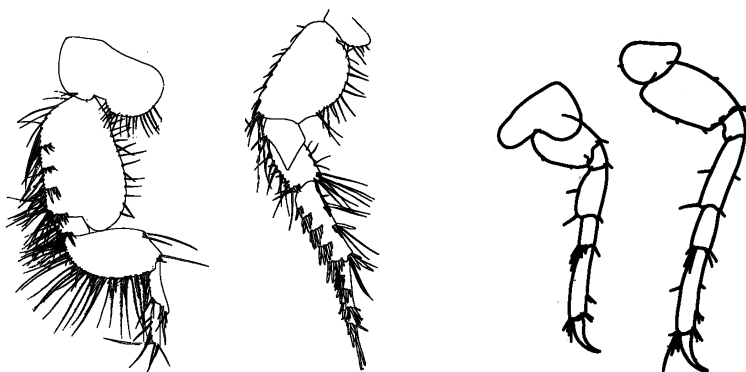


a) Gn1-2, by [7]



a) U3, by [7]

- 20 a. P5-7 clearly adapted for burrowing by expansion of articles and rich armature of spines and/or setae. (Md with well-developed palp; A1 with accessory flagellum) 21
- b. P5-7 not all adapted for burrowing, and thus not all expanded and strongly spinose and/or setose 22



a) P5, by [8]

a) P7, by [8]

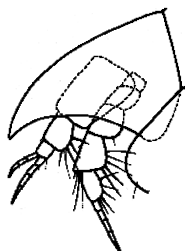
b) P5-7, by [8]

- 21 a. Rostrum well-developed, covering base of A1 like a hood; P6 clearly longer than P5 and 7 PHOXOCEPHALIDAE
- b. Rostrum small or absent; P6 not clearly longer than P5 and 7 ...
PONTOPOREIIDAE (*Bathypoeria guilliamsoniana* (Bate, 1857))

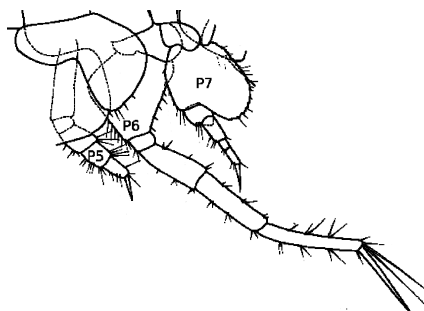
S y n o n y m s: *Thersites Guilliansonia* Bate, 1856, p. 59 (nomen nudum)

Bathypoeria norvegica Della Valle, 1893, p. 754 *Bathypoeria guilliamsoniana* Stebbing, 1906, p. 120; Watkin, 1938, p. 216, fig. 1 a-g; Lincoln, 1979, p. 316, fig. 147-148 *Bathypoeria Guilliansoniana* Chevreux & Fage, 1925, p. 92, fig. 84-85

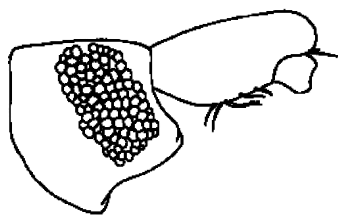
E c o l o g y: Fine sand beaches, depths 1-75 m.



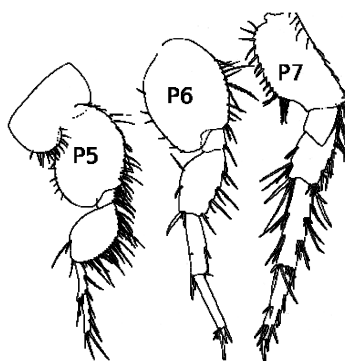
a) R, by [9]



a) P5-7, by [9]

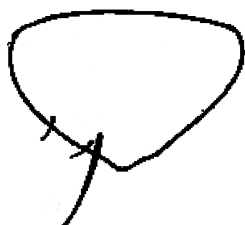


b) R, by [8]

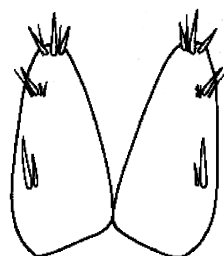


b) P5-7, by [8]

- 22 a. Telson entire or emarginated 23
 b. Telson more or less deeply cleft 29

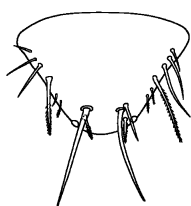


a) T, by [8]



b) T, by [7]

- 23 a. Telson thick and "fleshy" usually immovable 24
 b. Telson flat, variable in form, usually "flappable" 27

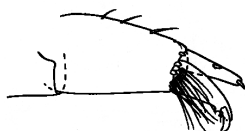


a) T, by [7]



b) T, by [9]

- 24 a. U3, at least one of rami uncinata 25
 b. U3, rami not uncinata 26



a) U3, by [8]



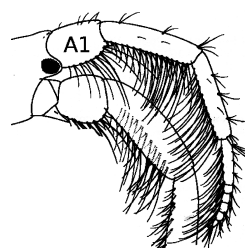
b) U3, by [7]

- 25 a. U3 peduncle length $>5\times$ breadth, much longer than rami, outer
 ramus acute, ending in small hooks; A1 peduncle art. 3 $>$ or = art.
 1 ISCHYROCERIDAE (*Jassa*)

- b. U3 peduncle length $< 2 \times$ breadth, a little longer than the broad rami, outer ramus ending and strong hook-like spines; A1 peduncle art. $3 < 1$ AMPITHOIDAE



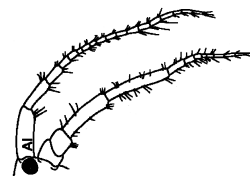
a) U3, by [8]



a) A1, by [8]

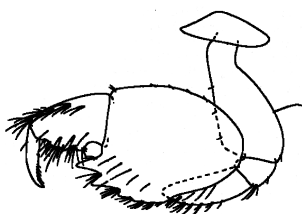


b) U3, by [7]

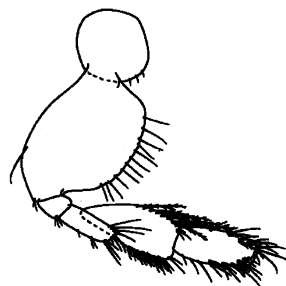


b) A1, by [7]

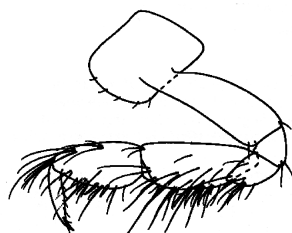
- 26 a. Gn1 larger and stronger than Gn2, especially in male AORIDAE
 b. Gn2 larger and stronger than Gn1, especially in male ISAEIDAE



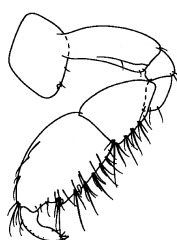
a) Gn1, by [7]



a) Gn2, by [7]



b) Gn1, by [8]



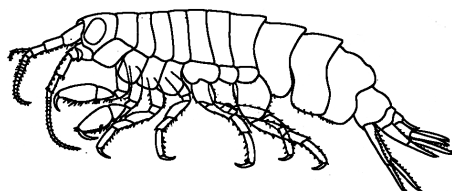
b) Gn2, by [8]

- 27 a. A1 with accessory flagellum well-developed
 ... GAMMARELLIDAE (*Gammarellus angulosus* (Rathke, 1843))

S y n o n y m s: *Amathilla angulosa* Sars, 1894, p. 492, pl. 173, fig. 2
Amathilla homari (partim) Della Valle, 1893, p. 685 *Gammarellus*
angulosus Stebbing, 1899 b, p. 423; Chevreux & Fage, 1925, p. 204,
 fig. 211, 212; G. Karaman, 1979, p. 55

E c o l o g y: Among algae, depth 0–75 m.

- b. A1 with accessory flagellum absent 28



a) Body, by [7]

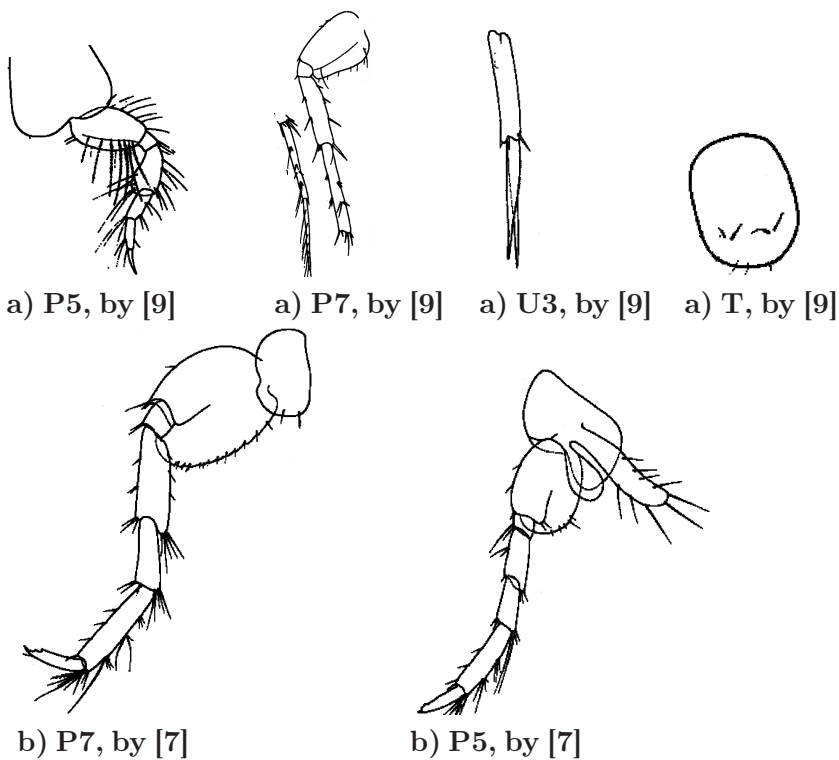


b) A1, by [9]

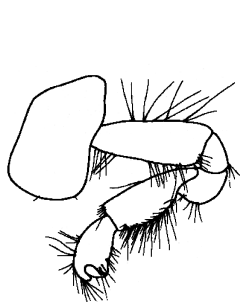
- 28 a. P7 much longer than P5-6; U3 with a long peduncle; telson short,
 rounded OEDICEROTIDAE
- b. P7 not much longer than P5-6
 EUSIRIDAE (*Apherusa chiereghinii* Giordani-Soika, 1950)

S y n o n y m s: *Apherusa chiereghinii* Giordani-Soika, 1950, p. 182,
 fig. 1; Krapp-Schickel, 1969 b, p. 420, fig. 1, 5

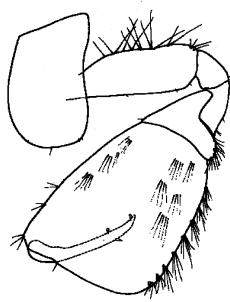
E c o l o g y: In algae, depths 0–130 m.



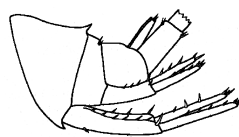
- 29 a. Gn2 much more powerful than G1; urosome with various dorsal processes, never with transverse rows of spines and setae
 MELITIDAE
- b. Gn1-2 about equal-sized; urosome segments with transverse rows of spines and seta GAMMARIDAE



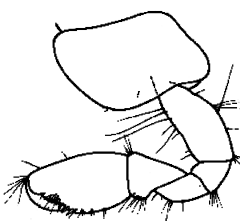
a) Gn1, by [7]



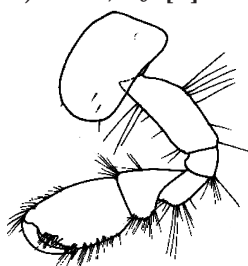
a) Gn2, by [7]



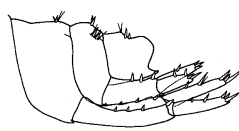
a) Us, by [7]



b) Gn1, by [7]



b) Gn2, by [7]



b) Us, by [7]

Family Ampeliscidae

Synonymy and diagnosis to Family and Genera

Family AMPELISCIDAE Bate, 1857

S y n o n y m s: Ampeliscidae Bate, 1857, 139 (*Tetromatides*), 173 (subfam. Ampeliscini); Sars, 1891, 162 (Ampeliscidae).

D i a g n o s i s: Head short or elongated, eyes composed of corneal lenses or absent. Body without dorsal process except on urosome seg 1. Urosome segs 2 and 3 coalesced. Antennae well developed. A1 without accessory flagellum. Mouthparts complete and well developed. Coxae 1-4 well developed. Gn 1 and Gn 2 slender subchelate or nearly simple. P3 and P4 slender with merus elongate. P7 as long as or shorter than P5-6 and of different morphology, basis of P5-7 dilated. U1-2 biramous. U3 well developed. Telson either elongate or very short, usually cleft. Sexual dimorphism present.

Genus AMPELISCA Krøyer, 1842

S y n o n y m s: *Ampelisca* J.L. Barnard, 1954; J.L. Barnard, 1960; Karaman, 1975; Karaman & Barnard, 1981, 256

Pseudophthalmus [sic] Stimpson, 1853, 57

Areneops Costa, 1853, 177

Tetromatus Bate, 1857, 139

Triodos, K.H. Barnard, 1916, 140

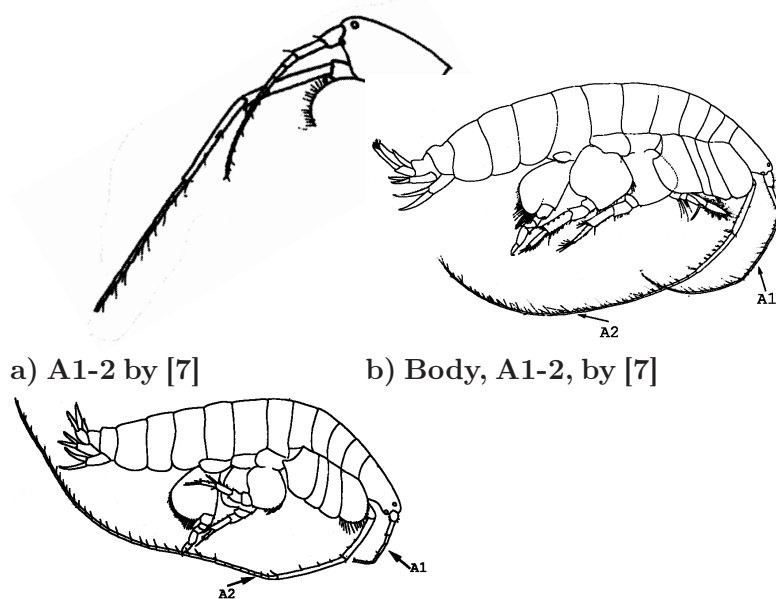
D i a g n o s i s: Head more or less elongate, anteroventral corner unproduced. Md palp 3-articulate, second article usually dilated. P5 and P6 with basis very broad, ischium, merus, carpus, propodus slender, dactylus short. P7 basis dilated with posterior lobe greatly expanded distally, bearing marginal plumose setae, anterior edge of the lobe near ischium without setae. Telson longer than broad and deeply cleft.

Key to species

1 a. A 2 peduncle = A 1 2

b. A 2 peduncle < A 1 *Ampelisca spinipes* Boeck, 1861.
 S y n o n y m s: *Ampelisca spinipes* G. O. Sars, 1891, p. 173, pl. 60, fig. 2; Chevreux & Fage, 1925, p. 81, fig. 72; Mills, 1963, p. 948, fig. 4–5
 E c o l o g y: Detritic and muddy bottoms (only from the coastal waters of Turkey), depths 5–150 m.

c. A 2 peduncle > A 1
 *Ampelisca pseudosarsi* Bellan-Santini & Kaim-Malka, 1977.
 E c o l o g y: Ecology unknown (only from the coastal waters of Turkey), depths 15–100 m.



2 a. A 2 < body *Ampelisca diadema* (A. Costa, 1853)
 S y n o n y m s: *Ampelisca diadema* Della Valle, 1893 (partim), p. 479;
 Chevreux & Fage, 1925, p. 82, fig. 74; Kaim-Malka, 1969, p. 142,

pl. 19–24; G. Karaman, 1975, p. 12, fig. 4–7

E c o l o g y: In muddy, sandy and all detritic bottoms, depths 5–150 m.

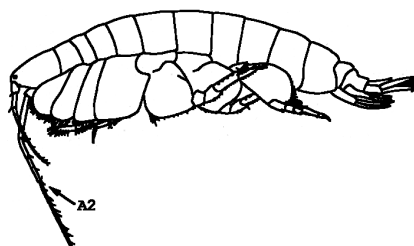
b. A 2 > body

. *Ampelisca pseudospinimana* Bellan-Santini & Kaim-Malka, 1977.

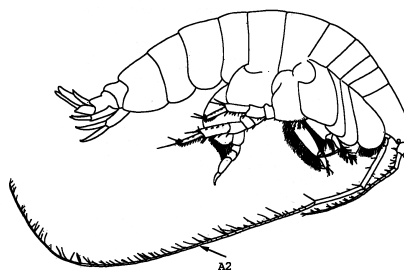
S y n o n y m s: *Ampelisca spinimana* Karaman, 1975, p. 40, fig. 20–22

Ampelisca pseudospinimana Bellan-Santini & Kaim-Malka, 1977, p.484

E c o l o g y: Muddy and sandy bottoms (only from the coastal waters of Turkey), depths 0–150 m.



a) Body, A1-2 by [7]



b) Body, A1-2 by [7]

Family Ampithoidae

Synonymy and diagnosis to Family and Genera

Family AMPITHOIDAE Stebbing, 1899

S y n o n y m s: Ampithoidae Stebbing, 1906, 631; Barnard, 1969, 141
D i a g n o s i s: Body smooth, rostrum absent. Lateral cephalic lobes only moderately produced. Coxae regular, medium size, quadrate or rounded: posterior margin of coxa 4 not excavate, coxa 5 with broad front lobe, as long as coxa 4. A1 peduncle art 3 short; accessory flagellum multiarticulate, small or lacking. Labium with outer lobes deeply notched or medially excavate. Mandibular palp robust, slender or lacking. Molar usually well developed. Gnathopods powerful, subcheliform, Gn2 usually larger, in male than female. P3-4 glandular. P5 the longest. U1-3 biramous. U3 with short rami, shorter than peduncle, the outer uncinat. Telson entire, short, fleshy.

Genus AMPITHOE Leach, 1814

S y n o n y m s: *Ampithoe* Leach, 1814, 403, 432; Stebbing, 1906, 631. J.L. Barnard, 1969, 143

Anisopus Tampleton, 1836, 185

Amphithoe Dana, 1852, 213

Amphithoe Dana, 1953, 935; Chevreux & Fage 1925, 332; Conlan & Bousfield, 1982, 45; Conlan, 1982, 2016. Pleonexes Bate, 1856, 59 (nomen nudum); Stebbing, 1906, 642; Barnard, 1969, 145; Conlan, 1982, 2020

D i a g n o s i s: Al lacking accessory flagellum. Mandible with palp. Labium with deeply notched outer lobes. Gnathopods large, subchelate, Gn2 equal to or larger than Gn1. P5-7 propodus widened or not widened. U3 outer ramus with two hooks, very reverted or not reverted. Telson apically without processes or with sclerified processes.

Genus *CYMADUSA* Savigny, 1857

S y n o n y m s: *Cymadusa* J.L. Barnard, 1969, 144; Conlan & Bousfield, 1982, 43

Grubia Czerniavsky, 1868, 103; Stebbing, 1906, 644; Chevreux & Fage, 1925, 338

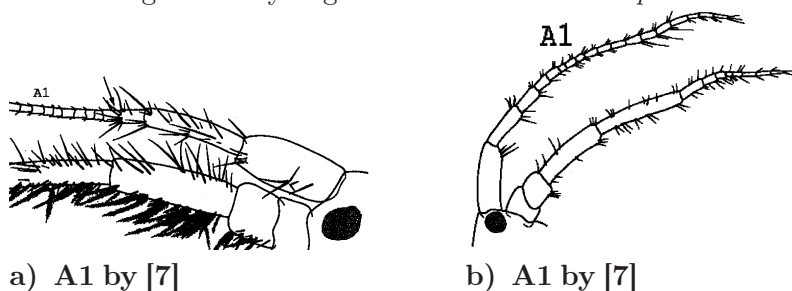
Acanthogrubia Stout 1912, 143

D i a g n o s i s: A1 with 1- or 2-articulate accessory flagellum. Mandible with palp. Labium with distinctly but not deeply notched outer lobes. Gnathopods large, subchelate, Gn2 equal to or larger than Gn1. Propodus of P5-7 not apically widened. Outer ramus of U3 with two hooks.

Key to Genera

1 a. A1 with accessory flagellum *Cymadusa* (Costa, 1857)

b. A1 lacking accessory flagellum *Amphithoe* Leach, 1814



Key to species

1 a. A1 with accessory flagellum
..... *Cymadusa crassicornis* (Costa, 1857)

S y n o n y m s: *Amphithoe crassicornis* + *elongata* A. Costa, 1857, p. 206, pl. 3, fig. 1a-d; p. 209, pl. 3, fig. 5

Podocerus lngimanus + *longicornis* Heller, 1866, p. 46, pl. 4, fig. 6,7

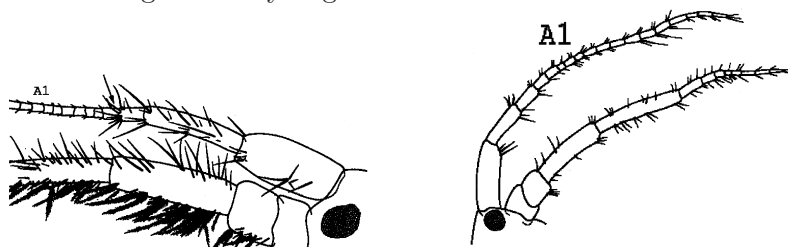
Grubia crassicornis Della Valle, 1893, p. 464, pl. 2, fig. 12; pl. 13, fig. 18-29; Stebbing, 1906, p. 644; Chevreux & Fage, 1925, p. p. 338,

fig. 340, 346

Cymadusa crassicornis Ruffo, 1947, p. 173, fig. 1 (4–6)

E c o l o g y: Between algae and sea-grasses, depths 0–50 m.

b. A1 lacking accessory flagellum 2



a) A1 by [7]

b) A1 by [7]

2 a. U3 outer ramus with very reverted hooks. Inner ramus oviform, apically with 3 spines. ♀ ov. 4.5–11 mm, Gn 2 palm distally excavate. ♂ — 13 mm, Gn 2 palm deeply excavated, defined by a protuberance. All gnathopods strongly setose

..... *Ampithoe ramondi* Audoin, 1826.

S y n o n y m s: *Amphithoe rubricata* Della Valle, 1893, pl. 13, fig. 1–17 (partim)

Amphithoe vaillanti Chevreux, 1911, p. 260, pl. 20, fig. 1–4; K.H. Barnard, 1916, p. 253; Chevreux & Fage, 1925, p. 333, fig. 341, 342

Amphithoe ramondi Schellenberg, 1928, p. 665; Shoemaker, 1942, p. 40; J.L. Barnard, 1955, p. 28; 1965 a, p. 25, fig. 15, 16; Krapp-Schickel, 1969, p. 327; Krapp-Schickel, 1978, p. 1, fig. 1–2

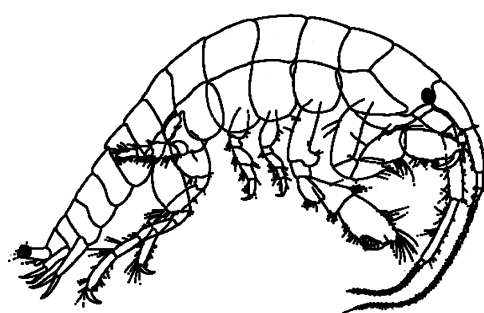
E c o l o g y: In fouling, between algae and sea-grasses, depths 0–70 m.

b. Spines on outer ramus of U 3 scarcely reverted. ♀ Gn 2 palm smooth, somewhat convex *Ampithoe helleri* Karaman, 1975

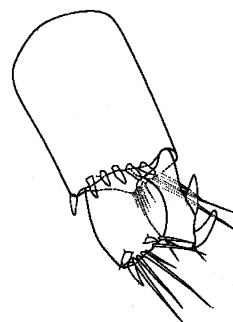
S y n o n y m s: *Amphithoe bicuspis* Heller, 1866, p. 44, pl. 4, fig. 1; Della Valle, 1893, p. 461, pl. 57, fig. 33035

Pleonexes bicuspis Giordani-Soika, 1950, p. 202, fig. 4,5; Krapp-Schickel, 1969, p. 333. *Ampithoe helleri* G. Karaman, 1975 c, p. 39

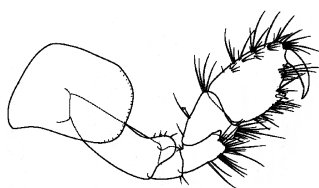
Amphithoe neglectus Lincoln, 1976, p. 229, fig. 1–4 *Amphithoe helleri*
 Krapp-Schickel, 1978, p. 4, fig. 4–5
 Ecology: In algae, depths 0–100 m.



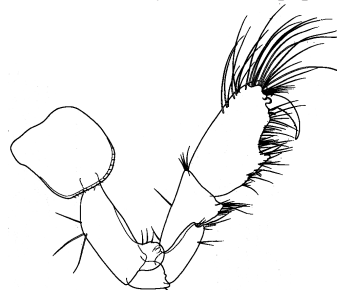
a) Body by [7]



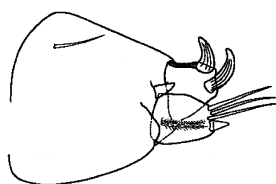
a) U3 by [7]



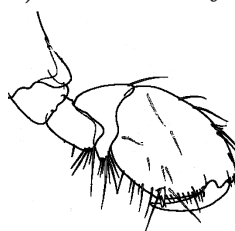
a) Gn2 Female
by [7]



a) Gn2 Male by [7]



b) U3 by [7]



b) Gn2 Female
by [7]

Family Aoridae

Synonymy and diagnosis to Family and Genera

Family AORIDAE Stebbing, 1899

S y n o n y m s: Aoridae Stebbing, 1906, 585; Chevreux & Fage, 1925, 292.

D i a g n o s i s: Lateral cephalic lobes only moderately produced, head only moderately recessed at insertion of A2; A1 generally longer than A2, primary flagellum usually longer than peduncle, accessory flagellum present, variable; rounded or weakly excavate; labium with mandibular projection of outer plate acute or rounded; mandibular palp 3-articulate, art 3 the longest or at least equal in length to art 2, and narrowest distally; Mx1 inner plate small, occasionally elongate with reduction of setae to 0 or 1; Mx2 inner plate posterior margin setiferous; Mxp inner plate large; coxa 4 not excavate posteriorly; Gn1 in male generally larger than Gn2; P3 and P4 glandular; U3 rarely projected beyond U1 and U2; telson entire, short, dorsoventrally thickened; coxal gills saclike, on pereon segs 2-6; oostegites large, laminar, smallest on pereon seg 6.

Genus *LEPTOCHEIRUS* Zaddach

S y n o n y m s: *Leptocheirus* Stebbing, 1906, 625; J.L. Barnard, 1969, 154; J.L. Barnard, 1973, 20; Lincoln, 1979, 482; Myers, 1982, 129 (key)
Boeckia Malm, 1871, 543

Ptilocheirus Stimpson, 1853, 55

D i a g n o s i s: Labium with mandibular projection of outer plate subacute. Mandibular palp 3-articulate, art 3 the longest, elongate ovoid or weakly falcate. Mx1 inner plate elongate, with a single terminal seta. Coxa 1 generally smaller than and often partially hidden by coxa 2. Gn2 simple, elongate, merus, carpus and propodus, and generally also basis with long pectinate sieve setae.

Genus MICRODEUTOPUS A. Costa

S y n o n y m s: *Microdeutopus* Costa, 1857, 230; Stebbing, 1906, 588; J.L. Barnard, 1969, 154; J.L. Barnard, 1973, 20; Myers, 1969, 96 (key); Lincoln, 1979, 474

Stimpsonia Bate, 1862, 162; Bate & Westwood, 1863, 284

Microdeuteropus Bate & Westwood, 1863, 287

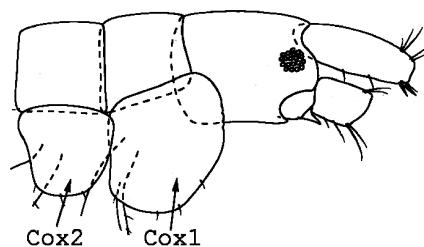
Stimpsonella Della Valle, 1893, 421

Coremapus Norman, 1905, 78

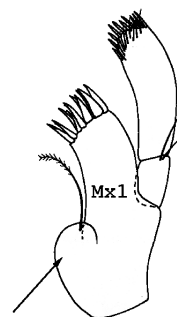
D i a g n o s i s: AORIDAE with male Gn1 carpocheate. U3 rami generally shorter than or subequal to peduncle.

Key to Genera

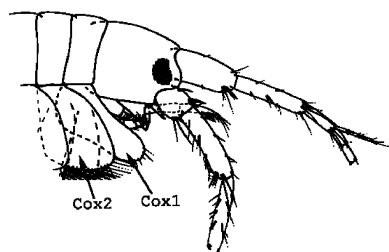
- 1 a. Coxa 1 the largest or at least as large as coxa 2; Mx 1 inner plate small *Microdeutopus* Costa, 1853
- b. Coxa 2 the largest, often partially obscuring coxa 1; Mx 1 inner plate elongate *Leptocheirus* Zaddach



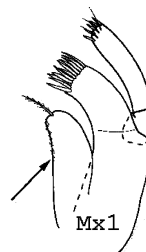
a) Cox1-2 by [7]



a) Mx1 by [7]



b) Cox1-2 by [7]



b) Mx1 by [7]

Key to species

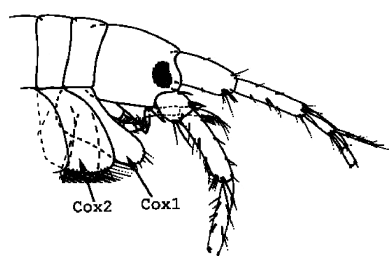
1 a. Coxa 2 the largest, often partially obscuring coxa 1; Mx 1 inner plate elongate *Leptocheirus pilosus* Zaddach, 1844
 S y n o n y m s: *Leptocheirus pilosus* Stebbing, 1906, p. 630; Sexton, 1911, p. 563, pl. 17; Chevreux & Fage, 1925, p. 322, fig. 331; Gurjanova, 1951, p. 869, fig. 609

Leptocheirus cornuaurei Sowinsky, 1898, p. 470, pl. 9, fig. 9–22; Chevreux, 1911, p. 252, fig. 15; pl. 18, fig. 12–17; pl. 19, fig. 1–4

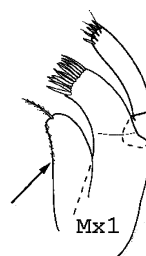
Leptocheirus subsalsus Norman, 1908, p. 307, pl. 12, fig. 1–6

E c o l o g y: Among algae, in brackish to almost fresh waters (coastal waters of Romania, Bulgaria and Turkey), depths 0–40 m.

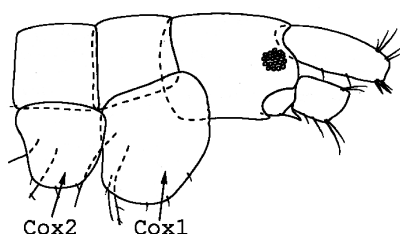
b. Coxa 1 largest than coxa 2: Mx 1 inner plate small (male only)
 2



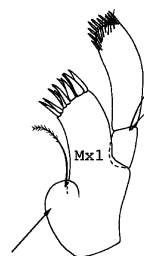
a) Cox1-2 by [7]



a) Mx1 by [7]

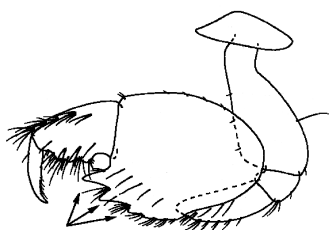


b) Cox1-2 by [7]

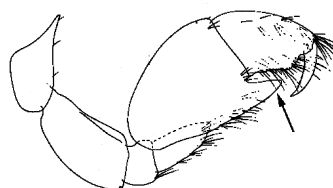


b) Mx1 by [7]

- 2 a. Gn 1 carpus with posterodistal margin produced into 2 or more teeth 3
- b. Gn 1 carpus with posterodistal margin produced into a single teeth 5



a) Gn1 by [7]



b) Gn1 by [7]

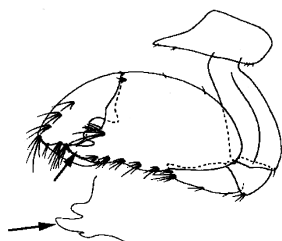
- 3 a. Gn 1 carpus with central of three teeth the longest
..... *Microdeutopus stationis* Della Valle, 1893

S y n o n y m s: *Microdeutopus stationis* Chevreux & Fage, 1925, p. 300, fig. 311; Gurjanova, 1951, p. 832, fig. 581; Myers, 1969 a, p. 104, fig. 2-6, 20

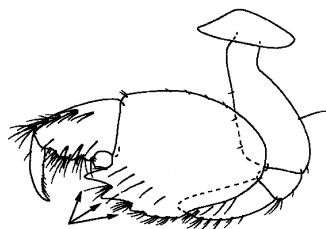
Microdeutopus gryllotalpa Nebeski, 1880, p. 45, fig. 41

E c o l o g y: Almost exclusively on fine sand (only from the coastal waters of Turkey), depths 0-35 m.

- b. Gn 1 carpus with inner of two or more teeth the longest 4



a) Gn1 by [7]



b) Gn1 by [7]

- 4 a. Gn 2 basis with anterior margin strongly convex and crenulate . . .
 *Microdeutopus gryllotalpa* Costa, 1853

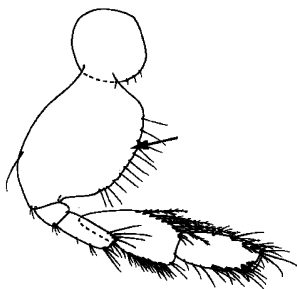
S y n o n y m s: *Microdeutopus gryllotalpa* Sars, 1894, p. 543, pl. 192, fig. 2; Chevreux & Fage, 1925, p. 299, fig. 310; Gurjanova, 1951, p. 831, fig. 580; Myers, 1969 a, p. 98, fig. 1-3, 5, 6, 20; Myers, 1971, p. 271, fig. 3-4

E c o l o g y: Fouling community, between algae, depths 0–60 m.

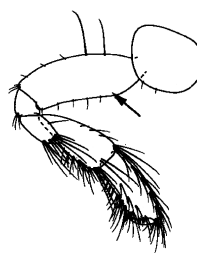
- b. Gn 2 basis not as above
 *Microdeutopus anomalus* (Rathke, 1843)

S y n o n y m s: *Microdeutopus anomalus* Boeck, 1871, p. 237; Sars, 1894, p. 540, pl. 191; Chevreux & Fage, 1925, p. 298, fig. 309; Gurjanova, 1951, p. 833, fig. 582; Myers, 1969 a, p. 110, fig. 7–10, 20

E c o l o g y: Among algae and phanerogams, depths 0–80 m.



a) Gn2 by [7]



b) Gn2 by [7]

- 5 a. Gn 2 very elongate and slender, with long pectinate setae on anterior margin of carpus and propodus

..... *Microdeutopus versiculatus* (Bate, 1856)

S y n o n y m s: *Coremapus versiculatus* Norman, 1905, p. 78; Chevreux & Fage, 1925, p. 301, fig. 312; Gurjanova, 1951, p. 835, fig. 585

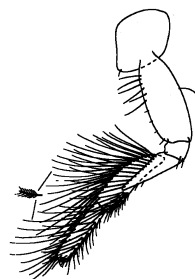
Microdeutopus versiculatus Myers, 1969 a, p. 101, fig. 1, 3, 5, 6, 20

E c o l o g y: Among algae and phanerogams, favouring areas of relatively high detritus accumulation, depth 0–100 m.

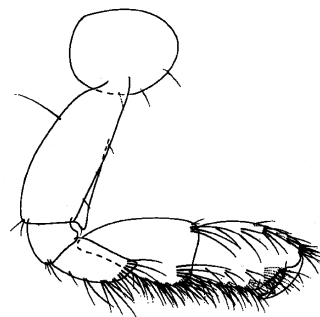
- b. Gn 2 not as above *Microdeutopus algicola* Della Valle, 1893

S y n o n y m s: *Microdeutopus algicola* Myers, 1969 a, p. 117, fig. 8–10, 20

E c o l o g y: Among algae (only from the coastal waters of Turkey), depths 0–100 m.



a) Gn2 by [7]



b) Gn2 by [7]

Family Corophiidae

Synonymy and diagnosis to Family and Genera

Family COROPHIIDAE Dana, 1849

S y n o n y m s: Corophiidae Boeck, 1876, 619; Stebbing, 1888, 1154; Sars, 1894, 606

D i a g n o s i s: Lateral cephalic lobes strongly produced, head strongly recessed at insertion of A2; A1 generally shorter than A2, primary flagellum often shorter than peduncle, accessory flagellum absent; labrum ventral margin weakly excavate, epistome slightly produced anteriorly, labium with mandibular projection of outer plate acute or rounded; mandibular palp 1, 2 or 3-articulate; where present, art 3 shorter than art 2; Mx1 inner plate small, asetiferous, Mx2 inner plate posterior margin setiferous. Mxp inner plate generally small; coxae usually short, discontinuous; Gn1 smaller than Gn2; P3 and P4 glandular; U3 uniramous not projecting beyond U1 and U2; telson entire, short, broad, sometimes with teeth or spines. Coxal gills saclike, on pereon segs 3-6 (or 7); oostegites narrow, smallest on pereon seg 2, large on pereon seg 5.

Genus COROPHIUM Latreille, 1806

S y n o n y m s: *Corophium* J.L. Barnard, 1969, 190; J.L. Barnard, 1973, 17; Myers, 1982, 185

Audouinia Costa 1851, 24

D i a g n o s i s: Al peduncular art 3 shorter than 1; mandibular palp 2-articulate, geniculate between arts 1 and 2; A2 often pediform. Gn1 normal, subchelate; Gn2 simple, weakly enlarged, incipiently merochelate, but merus fused with carpus, heavily setose; U3 short, peduncle generally flattened

Genus MEDICOROPHIUM Bousefield & Hendrycks, 1997

S y n o n y m s: *Corophium* Latreille, 1806, Chevreux & Fage, 1925: 363 (part).-Crawford, 1937: 592 (part).-Gurjanova, 1951: 974 (part).-Myers, 1982: 185 (part).-Bamard & Karaman, 1991: 185 (part)

D i a g n o s i s: Small to medium corophiids (1.5-6.0 mm), Urosome segments separate. Head, rostrum short or rounded; inferior sinus deep, regressed. Antenna 1 relatively elongate; segment 3 not shortened. Antenna 2 sexually dimorphic. Antenna 2 (male) pediform; segment 4 with single or bidentate distal process; segment 5, median tooth small or lacking, distal process lacking; gland cone medium strong. Mouthparts incompletely known (limited for *M. rotundirostre*). Upper lip, epistome produced (?). Lower lip, mandibular lobes weak (?) Mandibular palp advanced. Maxilla 1, palp not exceeding outer plate. Maxilliped, palp segment 2 elongate (?). Gnathopod 1 very weakly subchelate; dactyl pectinate behind, overlapping short, oblique propodal palm. Gnathopod 2, merus fused along entire lower length of carpus; dactyl simple or weakly bidentate distally. Peraeopods 3, 4; basis and segment 4 little broadened; segment 5 short, little overhung by segment 4; dactyls slender, elongate. Peraeopods 5, 6; basis little broadened; segment 4 short, little broadened anterodistally; segment 5 with weak, elongate, posterodistal spines; segment 6 and dactyl not reversed (?). Peraeopod 7 slender, elongate. Pleon plate 3, hind corner rounded. Uropod 1, peduncle slender; rami straight, subequal, outer margin spinose, apices with long spines. Uropod 2 not reduced. Uropod 3, ramus slender, longer and narrower than peduncle. Telson broad, rounded, with dorsal hook spines. Coxal gills slender, sac-like. Brood lamellae medium, sublinear (*M. runcicorne*).

Genus CRASSICOROPHIUM Bousefield & Hendrycks, 1997

S y n o n y m s: *Corophium* Latreille, 1806, Crawford, 1937: 606 (Section B, part).-Shoemaker, 1947: 47 (Section B + key, part).-Shoemaker, 1949: 66 (Section B + key, part).-Gurjanova, 1951: (part).-Just, 1970: 33

(part).-Bousfield, 1973: 198 (part).-Lincoln, 1979: 522 (part).-Hirayama, 1984: 2(+ key, part).-Barnard & Karaman, 1991: 184 (part). Ishimaru, 1994: 35 (part)

D i a g n o s i s: Urosome segments fused. Uropods 1, 2 arising from distinct lateral notches. Head, rostrum short, acute, slightly sexually dimorphic; inferior antennal sinus strongly regressed. Antenna 1, peduncular segment 1 variously inflated and medially spinose (female); segment 3 short. Antenna 2 sexually dimorphic; gland cone medium; peduncular segment 4 (male), posterodistal process weakly bidentate, thickened and strongly spinose (female); segment 5 with weak median and distal processes; flagellum short, with apical spines. Upper lip, epistome produced. Lower lip, mandibular lobes weak to medium. Mandibular palp, proximal segment distally produced; spine row with several (4-5) slender blades. Maxilla 1, palp slender, slightly exceeding outer plate. Maxilliped, inner plate with 4 strong setae; outer plate large; palp segment 2 medium. Gnathopod 1, dactyl weakly bidentate, exceeding oblique palm. Gnathopod 2, merus fused with medium-long carpus except for short posterodistal portion; propod narrowing, with minute palm and posterodistal cusp; dactyl strong, weakly bidentate, finely crenulate behind. Peraeopods 3, 4 short; based broad, glandular; segment 4 moderately broadened distally, partly overhanging short segment 5; dactyls elongate. Peraeopods 5, 6, medium; bases unequal in size, setose behind; segment 5 short, with 2 postero-lateral clusters of short hook spines; segment 6 and dactyls reversed. Peraeopod 7 moderately long; basis regular; segments 4, 5 subequal in length; dactyl short. Pleon plate 3, hind corner sharply rounded. Pleopod peduncles narrow basally, broadened distally. Uropod 1, peduncle medium, outer margin proximally setose; rami subequal, nearly straight, apices acute, slightly (or not) curved outwards, one apical spine elongate. Uropod 2, rami straight, subequal, as long as peduncle. Uropod 3 little broadened; ramus medium, longer than unmodified peduncle. Telson short, wider than long, apex rounded. Coxal gills slender sac-like, on peraeopods 3-6; brood plates elongate, strap-like, marginal setae numerous (30-40)

Genus MONOCOROPHIUM Bousefield & Hendrycks, 1997

S y n o n y m s: *Corophium* Latreille, 1806, Stebbing 1906: 685 (part). Crawford, 1937: 606 (Section B).-Chevreux & Fage, 1925: 363 (part).-Shoemaker, 1947: 47 (Section B.1, most). Gurjanova, 1951:684 (part).-Bousfield, 1973: 198 (part). Lineo1n, 1979: 522 (part).-Myers, 1982:185 (part).-Barnard & Karaman, 1991: 184 (part).-Ishimaru, 1994: 35 (part)

D i a g n o s i s: Urosome segments fused; uropods arising from lateral notches. Head, rostrum distinct; anterior margin sexually dimorphic. Antenna 1, segment 3 short. Antenna 2 strongly pediform, variously (or not) sexually dimorphic; segment 4 (male), with bidentate distal process; segment 5 usually with proximomedial tooth; distal process weak or lacking; gland cone short, relatively inconspicuous; flagellum short, 3-segmented, with apical paired spines. Upper lip, epistome little (or not) produced. Lower lip, mandibular lobes strong. Mandible: spine row moderate (35 blades). Maxilliped, inner plate short to medium, apex subacute; outer plate slender, medial margin setose throughout; palp segment 2 medium to short. Gnathopod 1 medium subchelate; dactyl denticulate behind or tip weakly bidentate, exceeding short oblique palm. Gnathopod 2, merus not covering small anterodistal portion of carpus; dactyl short, tri- or quadridentate. Peraeopods 3, 4 short, bases broad (glandular); segment 4 expanded, often setose anteriorly; segment 5 short, overhung by segment 4. Peraeopods 5, 6 short, segments 4 and 5 short, the latter with 2 clusters of short strong hook spines; segment 6 and dactyl reversed. Peraeopod 7 not elongate, basis medium broad; dactyl medium. Pleon plate 3, hind corner rounded. Pleopod peduncles stout, wider than deep. Uropods 1 and 2, peduncle stout, widening distally; rami short, spinose laterally and apically, apices curved, acute. Uropod 3, ramus short, broad. Telson short, wide, with dorsal hooks. Coxal gills slender, sac-like, on peraeopods 3-6. Brood lamellae relatively large, broad, margins with few setae

Genus SIPHONOECETES Krøyer, 1845

S y n o n y m s: *Siphonoecetes* Stebbing, 1906, 681; J.L. Barnard, 1969, 197; J.L. Barnard, 1973, 23; Karaman, 1981, 18; Just, 1983, 122

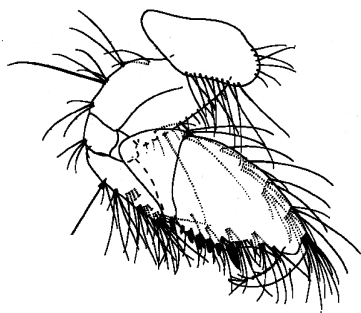
(*Centraloecetes*) Just, 1983, 124

(*Orientoecetes*) Just, 1983, 124

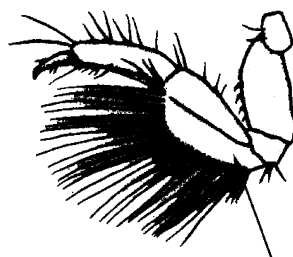
D i a g n o s i s: Al peduncular art 3 as long as 1; mandibular palp 1-articulate; Gn1 normal, subchelate, Gn2 enlarged, propodus larger than carpus; U3 short, peduncle flattened.

Key to Genera

- 1 a. Gn 2 subchelate *Siphonoecetes* Krøyer, 1845
 b. Gn 2 simple 2

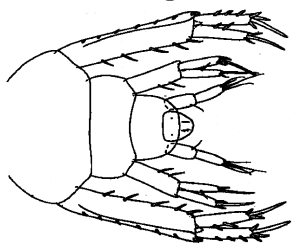


a) Gn2, by [21]

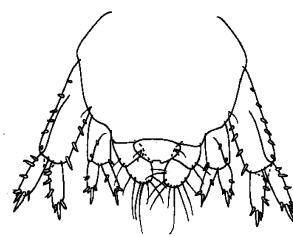


b) Gn2, by [7]

- 2 a. Urosome segments free 3
 b. Urosome segments fused 4

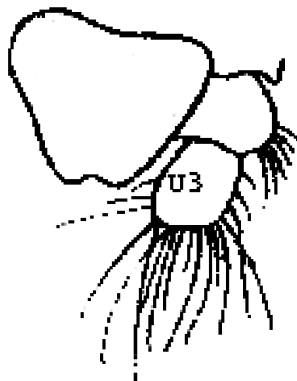


a) Us, by [7]

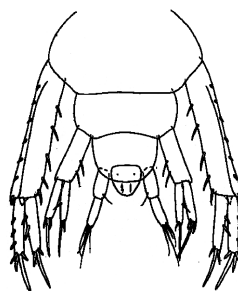


b) Us, by [7]

- 3 a. Uropod 3, ramus short, broad, little longer than peduncle *Corophium* Latreille, 1806
 b. Uropod 3, ramus slender, longer than peduncle *Medicorophium*, Bousefield & Hendrycks, 1997



a) U3, by [22]

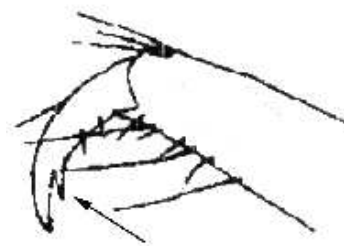


b) U3, by [7]

- 4 a. Gnathopod 2, dactyl with 2-3 posterior marginal teeth; mandibular palp segment 1 with unproduced distal shelf *Monocorophium*, Bousefield & Hendrycks, 1997
 b. Gnathopod 2, dactyl with single posterior marginal tooth; mandibular palp with distal process *Crassicorophium*, Bousefield & Hendrycks, 1997



a) Gn2, by [11]



b) Gn2 by [11]

Key to species

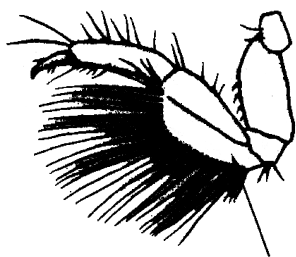
1 a. Gn 2 merus greatly enlarged, reaching end of carpus, with long filtrative setae 2

b. Gn 2 merus not greatly enlarged, not reaching end of carpus, lacking long setae *Siphonocetes dellavallei* Stebbing, 1899

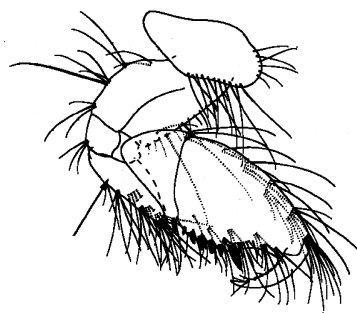
S y n o n y m s: *Siphonocetes typicus* Delle Valle, 1893 (partim), p. 358, pl. 4, fig. 11–13; pl. 7, fig. 23–38 (non *S. typicus* Krøyer, 1845)

Siphonocetes dellavallei Chevreux & Fage, 1925, p. 361, fig. 369

E c o l o g y: On mud, fine and coarse sand. Inhabiting empty shells of small gastropods, depths 10–40 m.



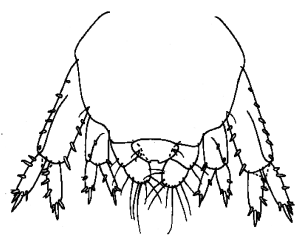
a) Gn2, by [21]



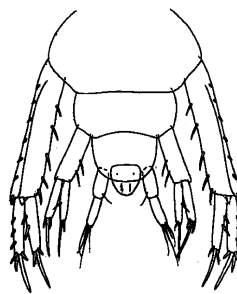
b) Gn2, by [7]

2 a. Urosome segs coalesced 3

b. Urosome segs free 7



a) Us, by [7]



b) Us, by [7]

- 3 a. Female. A 2 art 4 broad and with 7-12 solitary spines. Male. A 1 art 1 with 6-7 solitary spines
 *Crassicorophium crassicorne* Bruzelius, 1859

S y n o n y m s: *Corophium crassicorne* Czerniavsky, 1868, 96; Boeck, 1876, 626; Sars, 1894, 615; Sovinsky, 1897, 455; Stebbing, 1906, 690; Chevreux & Fage, 1925, 367; Miloslavskaya & Pauli, 1931, 61; Gurjanova, 1951, 976; Mordukhai - Boltovskoi, Greze & Vasilenko, 1969, 485

E c o l o g y: In detritic bottoms, depths 0–10 m.

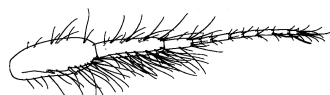
- b. Female. A 2 art 4 not broad and with 3-5 solitary spines or/and some pair. Male. A 1 art 1 less than 6-7 solitary spines 4



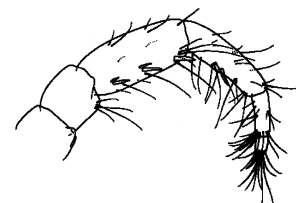
a) A1 Male, by [21]



a) A2 Female, by [21]

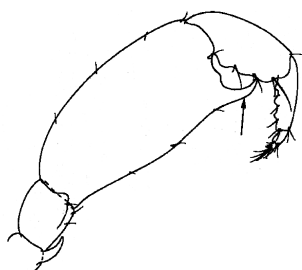


b) A1 Male, by [7]

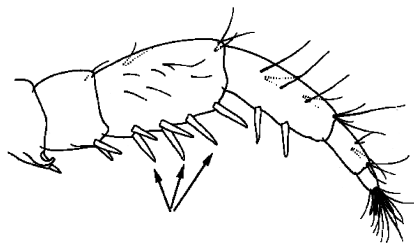


b) A2 Female, by [7]

- 4 a. A 2 art 4 with large terminal tooth or teeth 5
 b. A 2 art 4 with spines but no tooth 6



a) A2 Male, by [7]

b) A2 Female,
by [7]

- 5 a. Rostrum elongate = $1/3$ length of A 1 peduncular art 1
 *Monocorophium insidiosum* Crawford, 1937

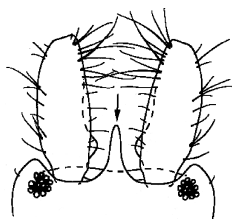
S y n o n y m s: *Monocorophium insidiosum* Schellenberg, 1942, p. 225,
 fig. 183; De Casablanca, 1967, p. 401, fig. 1-2

E c o l o g y: In brackish water, building mud tubes on algae or hydroids,
 depths 0-20 m.

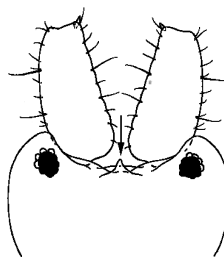
- b. Rostrum short = less than $1/3$ length of A 1 peduncular art 1 ...
 *Monocorophium acherusicum* Costa, 1851

S y n o n y m s: *Monocorophium acherusicum* Della Valle, 1893, p. 364,
 pl. 1, fig. 11; pl. 8, fig. 17, 18, 20-41; Chevreux & Fage, 1925, p. 368,
 fig. 376; Grawford, 1937, p. 617; Gurjanova, 1951, p. 977, fig. 680

E c o l o g y: Fouling community, between algae, tunicates, depths
 0-20 m.



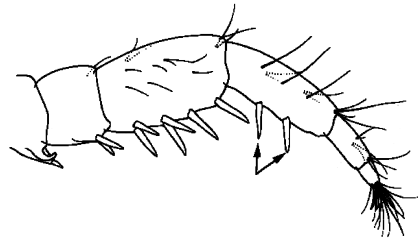
a) R, by [7]



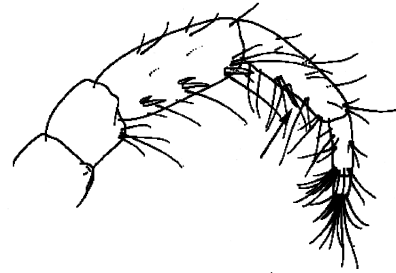
b) R, by [7]

- 6 a. A 2 art 5 with 2 or more spines
 *Monocorophium acherusicum* Costa, 1851

- b. A 2 art 5 with 1 spine only
 *Monocorophium insidiosum* Crawford, 1937



a) A2 Female,
by [7]



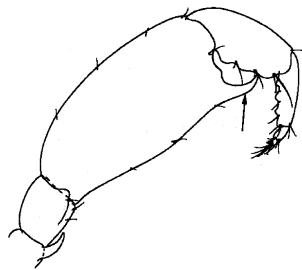
b) A2 Female,
by [7]

- 7 a. A 2 art 4 without spines but with large distoventral tooth 8

- b. A 2 art 4 with spines and with or without distoventral tooth
 *Medicorophium runcicorne* Della Valle, 1893

S y n o n y m s: *Corophium runcicorne* Chevreux & Fage, 1925, p. 365,
 fig. 373; Crawford, 1937, p. 605; Gurjanova, 1951, p. 983, fig. 684

E c o l o g y: In mud and mobile substrates, depths 10–130 m.



a) A2 Male, by [7]



b) A2 Female,
by [7]

- 8 a. U 3 ramus subovoid as long as broad
 *Corophium volutator* (Palas, 1766)

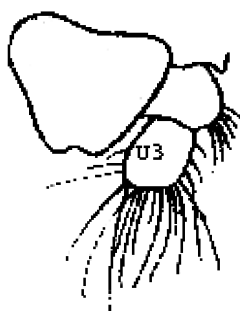
S y n o n y m s: *Corophium volutator* (Palas, 1766), 1766, p. 190, tab. 14
 (Oniscus). *Corophium longicorne* Latreille, 1806, p. 302. *Corophium*
 forma *orientalis* Schellenberg, 1928, p. 673

Corophium orientalis Stock, 1960, p. 3; Miloslavskaja, 1939, p. 141;

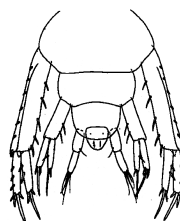
Mordukhai - Boltovskoi, Greze & Vasilenko, 1969, p. 486

E c o l o g y: Different biocenosis coastal zone in brackish water, depths 0–10 m.

- b. U 3 ramus rod-like, over $3 \times$ as long as broad
..... *Corophium runcicorne* Della Valle, 1893



a) U3, by [21]



b) Us, by [7]

Family Dexaminidae

Synonymy and diagnosis to Family and Genera

Family DEXAMINIDAE Leach, 1814

S y n o n y m s: Dexaminidae Stebbing, 1888, 573, 900

D i a g n o s i s: Body dorsally carinate or toothed, segs 2-3 of urosome coalesced. Eyes, when present, ommatidial. Accessory flagellum vestigial, uniarticulate or absent. Gnathopods feeble, generally subchelate, pereopods occasionally cheliform. U3 biramous. Telson long or short, weakly to strongly cleft.

Genus ATYLUS Leach, 1815

S y n o n y m s: *Atylus* Mills, 1961, 17 (key); J.L. Barnard, 1970, 164

Nototropis Costa, 1853, 170. *Epidesura* Boeck, 1861, 656

Paratylus Sars, 1895, 462

Anatylus Bulychева, 1955, 205

(*Kamehatylus*) J.L. Barnard, 1970, 93

D i a g n o s i s: DEXAMINIDAE with lateral cephalic lobes distinctly truncate or bearing two teeth aligned vertically and bearing weak to strong excavation between them; inner lobes of labium absent or obsolescent; palp of Mx 1 biarticulate; palp of Mxp 4-articulate; mandible bearing palp.

Genus DEXAMINE Leach, 1814

S y n o n y m s: *Amphithonotus* Costa, 1851, 45

D i a g n o s i s: Body rather stout, some segs with projections. Head, rostral projection very small, cephalic lobes pointed or non verticalized. Labium with rudimentary inner lobes. Palp of Mxl uniarticulate, inner plate with a single seta; mandibular palp absent; Mxp palp triarticulate. Gn2 rather longer than Gn1.

Genus TRITAETA Boeck, 1871

S y n o n y m s: *Tritaeta*, 1876, 317; Lincoln, 1979, 452

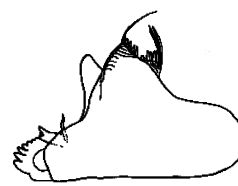
D i a g n o s i s: DEXAMINIDAE with lateral ocular lobe truncate or rounded. Segs of metasome not produced dorsally, urosome with seg 1 dorsally produced. Coxae small and of irregular angular form. Mouth-parts and gnathopods nearly as in Dexamine. P3-7 strong, merus longer than carpus + propodus; carpus and propodus short; carpus gradually widening distally forming an expansion armed with strong spines; dactylus curved. Uropods and telson as in Dexamine.

Key to Genera

- 1 a. Mandible with palp *Atylus* Leach, 1815
 b. Mandible without palp 2



a) Md, by [7]

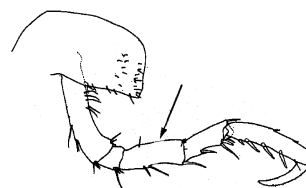


b) Md, by [7]

- 2 a. P3-7, merus longer than carpus and propodus combined
 *Tritaeta* Boeck, 1871
 b. P 3-7, merus shorter than carpus and propodus combined
 *Dexamine* Leach, 1814



a) P4, me, by [7]



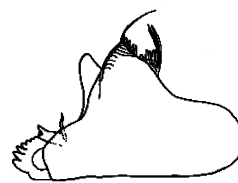
b) P3, me, by [7]

Key to species

- 1 a. Mandible with palp 2
 b. Mandible without palp 3



a) Md, by [7]



b) Md, by [7]

- 2 a. Seg 7 of the pereon with a dorsal tooth
 *Atylus guttatus* (Costa, 1851)
 S y n o n y m s: *Nototropis guttatus* A. Costa, 1857, p. 194, pl. 1, fig. 7;
 Stebbing, 1906, p. 331
Atylus costae Heller, 1866, p. 31
Amphitonotus guttatus Carus, 1885, p. 408
 ? *Atylus andrusowi* Sowinsky, 1895, p. 244, pl. 4, fig. 7–14
 E c o l o g y: Occurs essentially in sandy biotopes and phanerogam
 meadows, depths 8–130 m.

- b. Seg 7 of the pereon without dorsal tooth
 *Atylus massilensis* Bellan-Santini, 1975
 S y n o n y m s: *Atylus andrusowi* Bellan-Santini & Ledoyer, 1973,
 p. 907
 E c o l o g y: Essentially in the sand biotopes with detritus, depths
 1–10 m.



a) Pereonite 7 + P1 + Us, by [7] b) Pereonite 7 + P1 + Us, by [7]

- 3 a. P 3-7, merus longer than carpus and propodus combined
 *Tritaeta gibbosa* (Bate, 1862)

S y n o n y m s: *Tritaeta gibbosa* Sars, 1894, p. 479, 698, pl. 168, fig. 2;
 suppl. Pl. VIII, fig. 1; Chevreux & Fage, 1925, p. 266, fig. 276; Ruffo,
 1959, p. 406; Krapp-Schickel, 1969, p. 298

E c o l o g y: On sponge and ascidia, depths 3–80 m.

- b. P 3-7, merus shorter than carpus and propodus combined 4



a) P4, me, by [7]

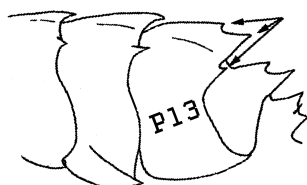
b) P3, me, by [7]

- 4 a. Pleon seg 3 dorsally tridentate
 *Dexamine spiniventris* (Costa, 1853)

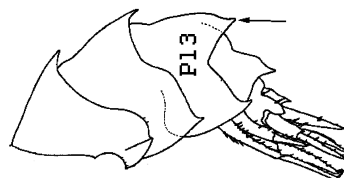
S y n o n y m s: *Dexamine spiniventris* Stebbing, 1906, p. 516; Chevreux
 & Fage, 1925, p. 262, fig. 271–273; Rancurel, 1949, p. 165

E c o l o g y: On algae and phanerogams, rare in motile substratum
 biotopes (only from the coastal waters of Turkey), depths 0–35 m.

- b. Pleon seg 3 dorsally unidentate 5.



a) Pleon, by [7]



b) Pleon, by [7]

- 5 a. Basis of P 7 normally expanded
 *Dexamine spinosa* (Montagu, 1813)

S y n o n y m s: *Amphithonotus marionis* A. Costa, 1857, p. 195

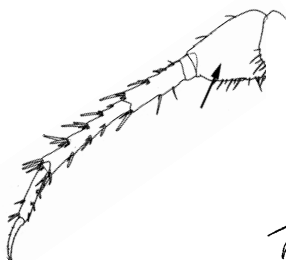
Dexamine spinosa Della Valle, 1893 (partim), p. 573; Sars, 1894, p. 475, pl. 166, fig. 2; pl. 167; Stebbing, 1906, p. 515; Chevreux & Fage, 1925, p. 264, fig. 274; Gurjanova, 1951, p. 789, fig. 550

E c o l o g y: In different biotopes of coastal water, depths 0–95 m.

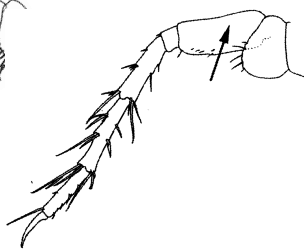
- b. Basis of P 7 linear, propodus of Gn 2 ♂ with a deep sinus in the front margin *Dexamine thea* Boeck, 1861

S y n o n y m s: *Dexamine thea* Sars, 1894, p. 477, pl. 168, fig. 1; Stebbing, 1906, p. 516; Patience, 1908, p. 117, pl. 5; Chevreux & Fage, 1925, p. 265, fig. 275

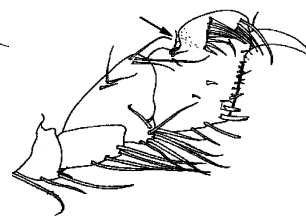
E c o l o g y: In algae and fouling, very rare, 0–? m.



a) P7, by [7]



b) P7, by [7]



b) Gn2, Male, by [7]

Family Gammaridae

Synonymy and diagnosis to Family and Genera

Family GAMMARIDAE Leach, 1813

S y n o n y m s: Gammaridae Sars, 1882, 28; Stebbing, 1888, 1004

D i a g n o s i s: Urosome segs not fused. A1 accessory flagellum present. Mouthparts basic; labium without inner lobes; Md with triturate molar, mandibular palp 3-articulate; Mx1 palp 2-articulate; Mx2 inner plate with medial row of setae. Coxae 1-4 moderately long. Gn 1-2 subchelate, about equal sized. Pleopods normal, biramous. U1-2 biramous, rami sometimes partially reduced; U3 biramous, outer ramus generally 2-articulate, art 2 short, inner ramus long or reduced. Telson cleft nearly to base. Gills on pereon segs 2-6 (7); oostegites on pereon segs 2-5.

Genus *ECHINOGAMMARUS* Stebbing, 1899

S y n o n y m s: *Echinogammarus* Stock, 1968, 19; G. Karaman, 1977, 78

Echinogammarus (partim) G. Karaman, 1977, 118

Chaetogammarus Martynov, 1925, 31

Gammarus (*Marinogammarus*) Schellenberg, 1937, 270

Gammarus (*Homoeogammarus*) Schellenberg, 1937, 272

Ostiogammarus S. Karaman, 1931, 61

Gammarus (*Pectenogammarus*) Ried, 1940, 288

Gammarus (*Parhomoeogammarus*) Schellenberg, 1943, 2

Eulimnogammarus (European records only) Stock, 1969, 67

D i a g n o s i s: Lateral cephalic lobes short, obtusely rounded to acute. A1 longer than A2, accessory flagellum present. Labrum entire, symmetrical or slightly asymmetrical; labium without inner lobes. Mandibular palp art 1 short, art 2 elongate; art 3 tapering distally, bearing A, B, D, E-setae and sometimes also C-setae. Mx1 inner plate with several setae,

outer plate with ca 11 spines, palps 2-articulate, dissimilar. Mx2 plates narrow, inner plate with medial row of setae. Mxp well developed. Coxae moderately long. Gn1-2 subchelate; Gn1 may be smaller or larger than Gn2; P3-4 narrow, poorly to densely setose along posterior margin, without fan of setae. P5-7 basis without posterodistal lobe. Pleopods well developed. U1-2 well developed, rami with lateral and distal spines. U3 moderately long; inner ramus scale-like, short, outer ramus 2-articulate (rarely 1-articulate); art 2 short. Telson cleft nearly to base. Gills on pereon segs 2-6 or 2-7. Oostegites of variable shape, on pereon segs 2-5. Female differs from male in smaller Gn1-2, shorter U3 and differences in setal armature.

Genus GAMMARUS Fabricius, 1775

S y n o n y m s: *Rivulogammarus* S. Karaman, 1931, 60

Carinogammarus S. Karaman, 1931, 60 (homonym)

Lagunogammarus Sket, 1971, 6

D i a g n o s i s: Rostrum short, urosome segs 1-3 with dorsal groups of spines and setae. Lateral cephalic lobes short. A1>A2 slender, antennal gland cone short. Labrum entire, labium without inner lobes. Mandibular palp 3-articulate, art 3 almost falciform. Mx1 inner plate triangular, outer plate with many spines palps asymmetric. Mx2 inner plates with medial row of setae. Mxp normal. Coxae moderately large distal margin entire, coxa 4 with posterodistal lobe, coxa 5 shorter than 4. Gn1-2 subchelate P3-7 normal, basis of P5-7 without posterodistal lobe. U1-2 biramous, normal. U3 moderately long; outer ramus 2-articulate, art 2 short; inner ramus slightly shorter than outer, both rami marginally setose. Telson short, deeply cleft, with spines and/or setae. Female differs from male in having smaller Gn1-2, different setation, shorter U3, and absence of calceoli. Oostegites moderately broad, on pereon segs 2-5.

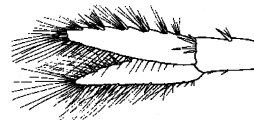
Key to Genera

1 a. Inner ramus of U 3 not reaching 1/3 of outer ramus
 *Echinogammarus* Stebbing, 1899

b. Inner ramus of U 3 exceeding 1/3 of outer ramus
 *Gammarus* Fabricius, 1775



a) U3, by [7]

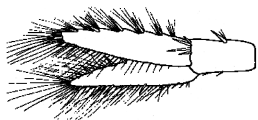


b) U3, by [7]

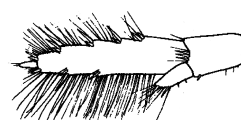
Key to species

1 a. Inner ramus of U 3 exceeding 1/3 of outer ramus 2

b. Inner ramus of U 3 not reaching 1/3 of outer ramus 5



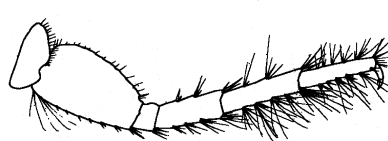
a) U3, by [7]



b) U3, by [7]

2 a. P 5-7 basis elongate (basis P7 1 1/2 or more longer than broad) 3

b. P 5-7 basis broad (basis P7 1 1/3 × as long as broad) 4



a) P7, by [7]



b) P7, by [7]

3 a. Telson poorly setose, setae not longer than spines. A 2 without calceoli in males. Coxa 4 nearly as long as broad
 *Gammarus insensibilis* Stock, 1966

S y n o n y m s: *Gammarus insensibilis* Karaman, 1979, p. 58
Gammarus locusta (partim) Della Valle, 1893, p. 759, pl. 2, fig. 1;
 pl. 24, fig. 20–34; pl. 42, fig. 1–11 (only Napoli records)
Gammarus plumicornis (partim) Pirlot, 1939, p. 54 (only Napoli
 records) E c o l o g y: In shallow coastal waters, often slightly brackish
 water, under stones or among algae, depths 0–65 m.

- b. Telson with numerous setae, which are much longer than the spines.
 A 2 with calceoli in males. Coxa 4 distinctly longer than broad

..... *Gammarus aequicauda* (Martynov, 1931)

S y n o n y m s: *Gammarus locusta* (partim) Chevreux & Fage, 1925,
 p. 257

Gammarus plumicornis A. Costa, 1853, p. 176; Stock, 1967, p. 24, fig.
 9–12

Gammarus tunetanus Simon, 1885, p. 6; Della Valle, 1893, p. 768; Stock,
 1970, p. 49

Gammarus eduardi Vecchi, 1931, p. 57, fig. 1–4

Gammarus locusta (non L.) Ruffo, 1936, p. 24, fig. 1–4

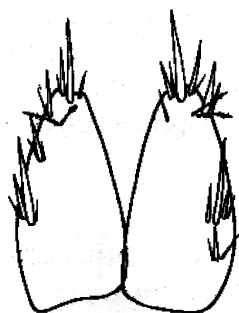
Gammarus (*Gammarus*) *aequicauda* Schellenberg, 1937, p. 269; Ruffo,
 1948, p. 296

Gammarus locusta f. *saumatre* Rancurel, 1949a, p. 4., fig. E II 2, B IX 3

Gammarus locusta f. *camarguaise* Guigues, 1961, p. 153, pl. 1–5

Gammarus aequicauda Stock, 1967, p. 45, fig. 21–26; 1970, p. 49; G.
 Karaman, 1979, p. 56

E c o l o g y: In shallow coastal waters, usually in localities with fresh-
 water influence, under stones or among algae, depths 0–5 m.



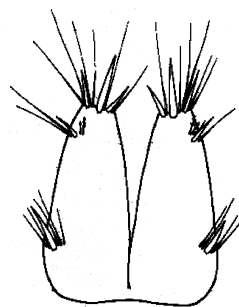
a) T, by [7]



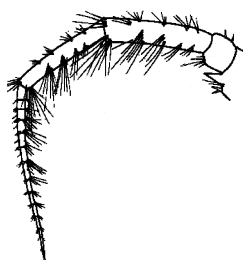
a) A2, by [7]



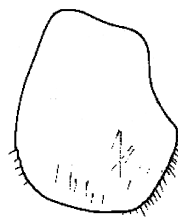
a) Cox4, by [7]



b) T, by [7]



b) A2, by [7]



b) Cox4, by [7]

- 4 a. A 2 peduncle arts 4-5 (in males) with ventral setae much longer than dorsal setae. Eyes more than $2 \times$ as long as broad. P 7 basis posterior margin densely crenulate, with numerous short setae. Urosome segs distinctly elevated and laterally compressed
 *Gammarus subtypicus* Stock, 1966

S y n o n y m s: *Gammarus subtypicus* G. Karaman, 1979, p. 58.
Gammarus locusta forme *marine subtypique* Rancurel, 1949 a, p. 4, fig. F 9, F 10

Gammarus massiliensis Brun, 1963, p. 2934 (nomen nudum)

E c o l o g y: In shallow coastal waters, bays, lagoons, often in brackish water, on sandy bottoms or under stones, depths 0-35 m.

- b. A 2 peduncle arts 4-5 (in males) with ventral and dorsal setae of the same length. Eyes nearly $2 \times$ as long as broad. P 7 basis posterior margin less densely crenulate, with fewer short setae. Urosome slightly elevated, elevations not laterally compressed
 *Gammarus crinicornis* Stock, 1966

S y n o n y m s: *Gammarus crinicornis* Karaman, 1979, p. 57

Gammarus plumicornis Pirlot, 1939, p. 54, fig. 4-7; Den Hartog, 1964, p. 429, fig. 6; Vader, 1966

E c o l o g y: In shallow coastal waters, under stones or among algae, localities where freshwater influence is observed, depths 0-8 m.



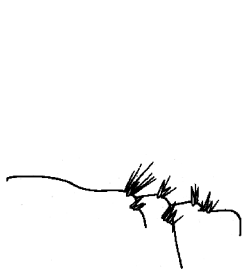
a) A2, by [7]



a) Eyes, by [7]



a) P7, by [7]



a) Us, by [7]



b) A2, by [7]



b) Eyes, by [7]



b) P7, by [7]



b) Us, by [7]

- 5 a. Us segments with spines and a very short setae. A 1-2 ♂ without calceoli and a curly setae. Ep 2-3 distal margin with spines, usually lacking setae *Echinogammarus olivii* (Milne-Edwards, 1830)

S y n o n y m s: *Gammarus Olivii* Chevreux & Fage, 1925, p. 251, fig. 262 (partim)

Gammarus marinus (partim) Della Valle, 1893, p. 762

Gammarus (Echinogammarus) olivii Schellenberg, 1937, p. 272

Gammarus (Echinogammarus) Olivii Ruffo, 1938, p. 138, fig. 1-7

Marinogammarus olivii (partim) Sexton & Spooner, 1940, p. 645, fig. 4 f-o

Gammarus (Marinogammarus) atlanticus Dahl, 1958, p. 11, fig. 2-4

Chaetogammarus olivii Stock, 1968, p. 66, fig. 31-33; G. Karaman, 1969, p. 71, fig. 39-51

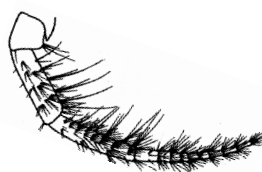
Echinogammarus olivii G. Karaman, 1974, p. 73, fig. 10

E c o l o g y: In shallow coastal waters, under stones, depths 0-5 m.

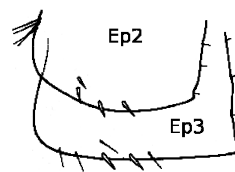
- b. Us segments with setae and spines. A 1-2 ? with calceoli or a long and curly setae 6



a) Us, by [7]



a) A2, by [7]



a) Ep2-3, by [7]



b) Us, by [7]



b) A2, by [7]

- 6 a. A 2 ♂ with calceoli but without a curly setae. Ep 2-3 distal margin with setae, lacking spines

..... *Echinogammarus foxi* (Schellenberg, 1928)

S y n o n y m s: *Gammarus* (*Echinogammarus*) *foxi* Schellenberg, 1937, p. 272

Echinogammarus foxi Stock, 1968, p. 40, fig. 14–21; G. Karaman, 1969, p. 70; 1971, p. 29; 1972, p. 10, fig. 6–7; 1977 a, p. 113, fig. 1, 1 III, 2, 8.

E c o l o g y: In shallow coastal waters, in sand biotopes and stones, depths 0 m.

- b. A 2 ♂ without calceoli but with a curly setae. Ep 2-3 distal margin with spines, lacking setae

..... *Echinogammarus ischnus* Stebbing, 1899

S y n o n y m s: *Gammarus ischnus* Behning, 1924: 212–213

Gammarus tenellus Sars, 1896: 455 pl. 7, fig 12–22; Sowinskyi, 1904: 414–415

Gammarus Sowinskyi Behning, 1915: 42–44

Gammarus (*Chaetogammarus*) *ischnus*; Schellenberg, 1942: 38–39

Chaetogammarus tenellus; Carausu, Dobreanu & Manolache, 1955: 106–107; Jarocki & Demianowicz, 1931: 513–530. *Chaetogammarus tenellus* var. *becningi* morpha Sowinskyi Martynov, 1919: 47–49

Chaetogammarus tenellus subsp. *becningi* prn. sowinskyi Martynov, 1925; 32–33

Chaetogammarus ischnus sowinskyi: Jarczewski, 1980: 90–92

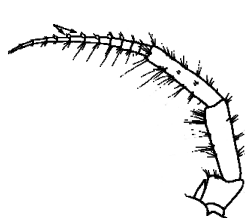
Chaetogammarus tenellus subsp. *becningi* Carausu, 1943: 29–38; Mordukhai-Boltovskoi, 1970: 20

Gammarus (*Chaetogammarus*) *ischnus bechningi*; Deddyu, 1967: 39–41

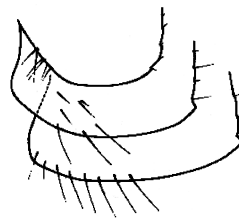
Chaetogammarus ischnus; Straskraba, 1967: 204; Pinkster, 1978: 245; Herhaus, 1978: 71–77

Echinogammarus ischnus Jarczewski & Konopaska, 1988: 78–81; Kohn & Waterstraat, 1990: 74–82

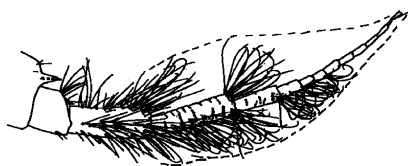
E c o l o g y: In shallow coastal waters, under stones, depths 0–? m.



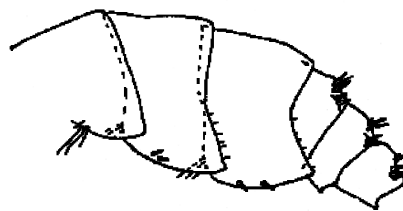
a) A2, by [7]



a) Ep1-3, by [7]



b) A2, by [35]



b) Ep1-3, Us, by [35]

Family Hyalidae

Synonymy and diagnosis to Family and Genera

Family HYALIDAE Bulycheva, 1957

D i a g n o s i s: Urosome segs not fused. A1 accessory flagellum absent. Labium without inner lobes; Md with triturative molar, without palp; Mx1 palp reduced, sometimes rudimentary. U3 essentially uniramous, inner ramus, when present, spine-like or scale-like. Telson short, entire or cleft, poorly spinose.

Genus *HYALE* Rathke, 1837

S y n o n y m s: *Hyle* Stebbing, 1906, 559; J.L. Barnard, 1965 (key); J.L. Barnard, 1947, 49; Lincoln, 1979, 230

Nicea Nicolet, 1849, 238

(*Allorchestina*) Brandt, 1850, 141

Galanthus Bate, 1857, 136 (homonym, Mollusca)

D i a g n o s i s: MxI palp 1-articulate, reaching base of apical spines of outer plate. Mxp palp art 4 unguiform. Gnathopods subchelate in both sexes, Gn2 larger than Gnl. U3 uniramous. Telson cleft.

Genus *MICROPYTHIA* Krapp-Schickel, 1971

S y n o n y m s: *Micropythia* Krapp-Schickel, 1976, 33

D i a g n o s i s: MxI palp reaching or exceeding spines of outer lobe. Mxp palp art 4 very short, smaller than distal spine. Gnathopods subchelate in both sexes. U3 without inner ramus. Telson cleft.

Genus *PARHYALE* Stebbing

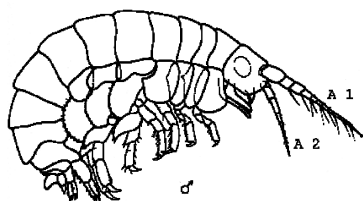
S y n o n y m s: *Parhyale* Stebbing, 1897, 26; J.L. Barnard, 1979, 120 (key)

Hyaloides Schellenberg, 1939, 126

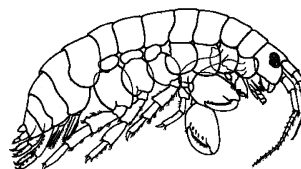
D i a g n o s i s: Mxl with 1-articulate palp. Mxp palp art 4 unguiform. Gnathopods subchelate; male Gn2 > Gn1; female Gn2 ≥ Gn1. U3 small, with scale-like inner ramus. Telson cleft.

Key to Genera

- 1 a. Body carinate *Micropythia* Krapp-Schickel, 1971
 b. Body smooth 2

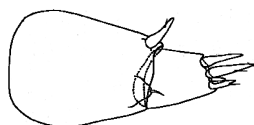


a) Body, by [9]



b) Body, by [9]

- 2 a. U 3 with small scale-like inner ramus ... *Parhyale* Stebbing, 1897
 b. U 3 without inner ramus *Hyale* Rathke, 1837



a) U3, by [9]

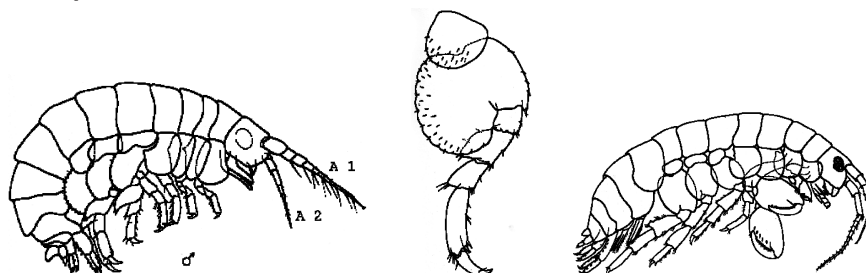


b) U3, by [9]

Key to species

- 1 a. Body carinate. A 1 > A 2. P 7 without dominant spine on anterior margin of propodus *Micropythia carinata* (Bate, 1862)
S y n o n y m s: *Hyale carinata* Stebbing, 1906, p. 561; Chevreux & Fage, 1925, p. 281, fig. 291; Giovannini, 1965, p. 281, fig. 1
Pythia carinata Krapp-Schickel, 1971 a, p. 183, fig. 1–5
Micropythia carinata Krapp-Schickel, 1976, p. 33
E c o l o g y: Among algae (only from the coastal waters of Turkey), depths 0–40 m.

- b. Body smooth 2



a) Body, by [9]

a) P7, by [9] b) Body, by [9]

- 2 a. U 3 without inner ramus 3

- b. U 3 with small scale-like inner ramus
Parhyale aquilina (Costa, 1857)

S y n o n y m s: *Nicea fasciculata* Heller, 1866, p. 6, pl. 1, fig. 10–11

Nicea nudicornis Heller, 1866, p. 8, pl. 1, fig. 16–19

Nicea rudis Heller, 1866, p. 12, pl. 1, fig. 33

Hyale aquilina Della valle, 1893, p. 523, pl. 16, fig. 43–47

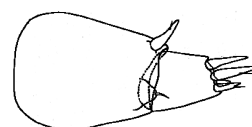
Allorchestes aquilinus Chevreux, 1911, p. 240, pl. 16, fig. 20–25;
 Chevreux & Fage, 1925, p. 289, fig. 300–301

Parhyale aquilina Krapp-Schickel, 1974, p. 326, pl. 5–7

E c o l o g y: Under stones and among algae, depths 0–1 m.



a) U3, by [9]



b) U3, by [9]

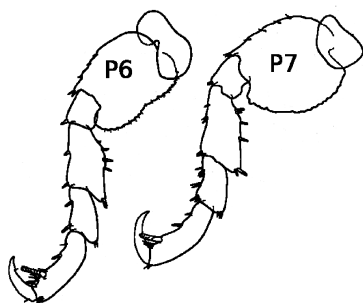
- 3 a. P 3–7 with a strong, dominant, striped spine on anterior margin of propodus *Hyale pontica* Rathke, 1837

S y n o n y m s: *Hyale pontica* Stebbing, 1888, p. 173, p. 499; Stebbing, 1906

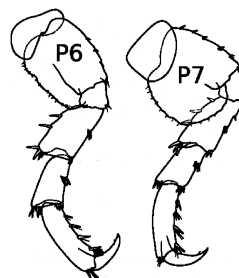
Hyale pontica Bate, 1862, p. 87, pl. 14 a, fig. 1

E c o l o g y: Fouling and between algae, depths 0–10 m.

- b. P 3-7 without striped spine on anterior margin of propodus 4



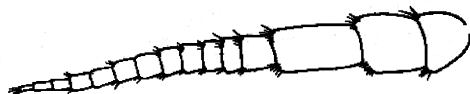
a) P6-7, by [9]



b) P6-7, by [9]

- 4 a. A 2 $\leq$ 1/2 body length 5

- b. A 2 $>$ 1/2 body length 6.



a) A2, by [9]

- 5 a. Body and legs elongate. A 2 $>$ 1/3 body length. Gn 1-2 $\varnothing$ differing in length. Gn 2 $\varnothing$ with many setae and some spines. P 7 elongate, slender *Hyale perieri* (Lucas, 1849)

S y n o n y m s: *Nicea macronyx* Heller, 1866, p. 9, pl. 1, fig. 20-24

Hyale Prevostii Della valle, 1893 (partim), p. 519

Hyale perieri Stebbing, 1906, p. 570; Giovannini, 1965, p. 290, fig. 8-9;

Krapp-Schickel, 1974, p. 329, pl. 15-17

Hyale Perieri Chevreux & Fage, 1925, p. 284, fig. 290, 295

Hyale prevostii Schellenberg, 1936, p. 16

Hyale Prevostii Ruffo, 1938, p. 145

Hyale minor Krapp-Schickel, 1974, p. 329

E c o l o g y: Fouling and between algae, depths 0-2 m.

- b. Body stout, legs short. A 2 ♂ < 1/3 body length. Gn 1-2 ♀ not much differing in length. Gn 2 ♀ with some setae and many spines, also on posterior margin of merus. P 7 short, stout
 *Hyale crassipes* (Heller, 1866)

S y n o n y m s: *Nicea Bucchichi* Heller, 1866, p. 7, pl. 1, fig. 13-15; Stebbing, 1888, p. 366

Hyale Prevostii Della Valle, 1893 (partim), p. 519

Hyale prevostii Stebbing, 1906, p. 565 (not synonym of *Hyale carinata*, cf. Stebbing, 1906, p. 561

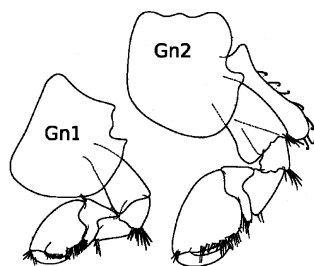
Hyale buccichii Stebbing, 1906, p. 572

Hyale gulbenkiani Mateus & Mateus, 1962, p. 595, fig. 1-5; Mateus & Mateus, 1965, p. 109, pl. 1-2; Giovannini, 1965, p. 294, fig. 12

textitHyale perieri var. *minor* Giovannini, 1965, p. 292, fig. 10-11

Hyale crassipes Krapp-Schickel, 1974, p. 329, p. 334

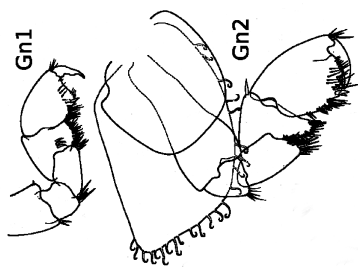
E c o l o g y: Fouling and between algae, depths 0-5 m.



a) Gn1-2, by [9]



a) P7, by [9]



b) Gn1-2, by [9]



b) P7, by [9]

- 6 a. U 3 ramus $< 1/2$ peduncle. Ep 2-3 posterodistal corner acute. Mxp palp ♂ with long setae distally. Gn 2 ♂ palm clearly defined by little hump *Hyale camptonyx* (Heller, 1866)

S y n o n y m s: *Hyale camptonyx* Stebbing, 1906, p. 570; Chevreux, 1911, p. 236, pl. 16, fig. 3–8; Chevreux & Fage, 1925, p. 286, fig. 297; Giovannini, 1965, p. 298, fig. 14–15; Ruffo, 1969, p. 38; Krapp-Schickel, 1974, p. 332, pl. 18–19

E c o l o g y: In algal biotopes (only from the coastal waters of Turkey), depths 0–35 m.

- b. U 3 ramus $\geq 3/4$ peduncle. Ep 2-3 posterodistal blund. Mxp palp ♂ with short setae distally. Gn 2 ♂ palm not clearly defined, posterior margin of propodus regularly convex
..... *Hyale schmidtii* (Heller, 1866)

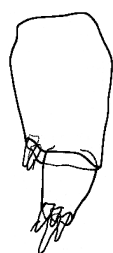
S y n o n y m s: *Hyale schmidtii* Stebbing, 1906, p. 571

Hyale Schmidtii Chevreux, 1911, p. 237, pl. 16, fig. 9–12; Chevreux & Fage, 1925, p. 288, fig. 299

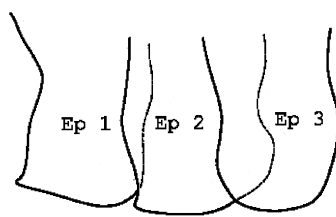
Hyale Dollfusi Chevreux, 1911, p. 238, fig. 13; pl. 16, fig. 13–19

Hyale schmidtii Giovannini, 1965, p. 301, fig. 16–23; Krapp-Schickel, 1974, p. 332, pl. 20–22

E c o l o g y: In algal infralittoral biotopes and fouling community, depths 0–5 m.



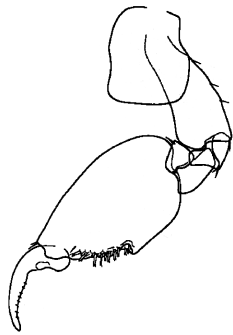
a) U3



a) Ep1-3, by [9]



a) Mxp, by [9]



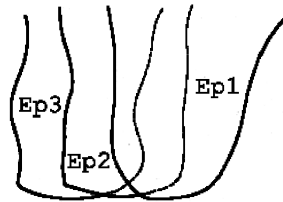
a) Gn2, by [9]



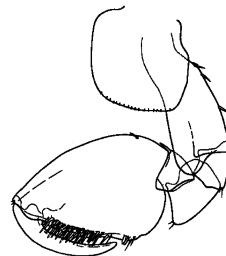
b) U3



b) Mxp, by [9]



b) Ep1-3, by [9]



b) Gn2, by [9]

Family Isaeidae

Synonymy and diagnosis to Family and Genera

Family ISAEIDAE Dana, 1853

S y n o n y m s: Isaeidae Barnard, 1969, 264

D i a g n o s i s: Body smooth. Coxae usually deep, rarely shallow, often ventrally setose; coxae 2-5 often largest; coxa 4 not excavate behind; coxa 5 with deep anterior lobe. Rostrum generally absent; head strongly recessed at insertion of A2; eye lobes often extended, sometimes bearing eyes on proximal or distal portion. Antennae subequal in length or A2 longer; antennae elongate, slender, primary flagellum often shorter than peduncles, frequently setose; A2 never sexually dimorphic, accessory flagellum variable. Labrum ventral margin weakly excavate or notched, epistome often strongly produced, acute. Labium with distinct inner lobes, mandibular processes never attenuated. Mandible molar strong; palp slender, 3-articulate, article 3 generally spatulate, terminally setose. Mx1 inner plate small with 1 to several apical setae, outer plate generally with 10 spines, palp large. Mx2 with inner plate small with 1 to several apical plates strong. Gn2 subchelate, sexually dimorphic, always enlarged in male and generally larger than Gn1. P3-4 basis usually not expanded; dactyli with gland ducts. P5-7 elongate; P7 slightly longer than P6. Pleopod peduncles normal. U1-2 slender; U1 peduncle rarely with distoventral spine-like process, rami generally subequal. U3 sometimes projecting beyond U1-2, peduncle often elongate, inner ramus tending to reduction, sometimes absent; terminal spines of rami simple. Telson short, thick, fleshy, entire, sometimes with dorsolateral crests. Coxal branchiae sac-like on pereon segs 2-6. Oostegites large, laminar, smallest on seg 5.

Genus MEGAMPHOPUS Norman, 1869

D i a g n o s i s: Head with lateral lobes strongly produced, subocular cephalic margin very strongly recessed. Mandibular palp art 2 > 3; A1 art

3 > 1; accessory flagellum composed of one long and one rudimentary terminal art; coxa 2 largest, coxae 3-7 relatively shallow; male Gn1-2 subchelate; male Gn2 greatly enlarged; female Gn2 differing little from Gn1; U3 rami longer than peduncle.

Genus MICROPROTOPUS Norman, 1867

S y n o n y m s: *Microprotopus* Stebbing, 1906, 604; J.L. Barnard, 1969, 274; J.L. Barnard, 1973, 20; Lincoln, 1979, 512

Orthopalmate Hoek, 1879, 123

D i a g n o s i s: Head with lateral lobes moderately produced, subocular margin moderately recessed. Mandibular palp art 3 shorter than art 2, rod-shaped. A1 and A2 subequal, A1 with art 3 shorter than art 1, accessory flagellum composed of one long and one short terminal art. Coxae 1-5 large, coxa 5 bilobed, the anterior lobe the longer. Male Gn2 larger than Gn1, complex subchelate. U3 uniramous.

Genus PHOTIS Krøyer, 1842

S y n o n y m s: *Photis* Stebbing, 1906, 605; J.L. Barnard, 1962, 26 (Key); J.L. Barnard, 1969, 274; J.L. Barnard, 1973, 22; Conlan, 1983, 42 (key North Pacific)

Eiscladus Bate & Westwood, 1863, 411

Heiscladus (lapsus) Norman, 1869, 255

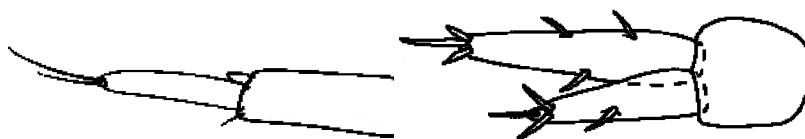
Photis (Cedrophotis) J.L. Barnard, 1967, 26

Pseudophotis Hirayama, 1984, 35

D i a g n o s i s: Head with lateral lobes strongly produced, eyes situated entirely in terminal portion of lobe. A1, art 3 equal to or longer than art 1; accessory flagellum vestigial or absent. Coxae 1-5 large. Gn1 subchelate, Gn2 subchelate or sometimes chelate in male. U3 uniramous or if biramous, inner ramus one half or less the length of the outer.

Key to Genera

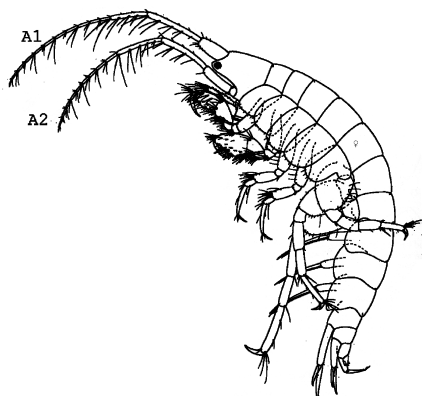
- 1 a. U 3 inner ramus quite reduced or lacking 2
 b. U 3 inner ramus $> 1/2$ length of outer
 *Megamphopus* Norman, 1869



a) U3, by [8]

b) U3, by [8]

- 2 a. Accessory flagellum absent or scale-like, A 1 art 3 > 1
 *Photis* Krøyer, 1842
 b. Accessory flagellum well developed, A 1 art 3 < 1
 *Microprotopus* Norman, 1867



a) Body, A1, by [8]



b) A1, by [8]

Key to species

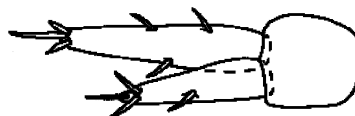
- 1 a. U 3 inner ramus quite reduced or lacking 2
 b. U 3 inner ramus $> 1/2$ length of outer
 *Megamphopus cornutus* Norman, 1869

S y n o n y m s: *Megamphopus cornutus* G.O. Sars, 1894, p. 564, fig. 200; Chevreux & Fage, 1925, p. 319, fig. 328; Schellenberg, 1942, p. 195, fig. 162; Carausu & Carausu, 1942, p. 75, fig. 6–7; Myers, 1976 a, p. 129, fig. 4; Lincoln, 1979, p. 508, fig. 244

E c o l o g y: On sandy bottoms, depths 16–150 m.



a) U3, by [8]



b) U3, by [8]

2 a. Accessory flagellum absent or scale-like, A 1 art 3 > art 1

. *Photis longicaudata* (Bate & Westwood, 1862)

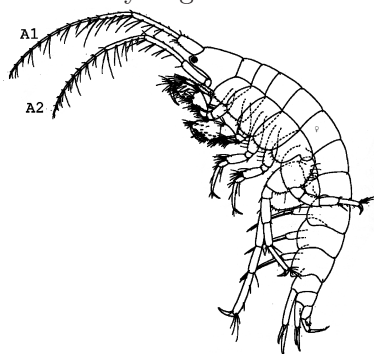
S y n o n y m s: *Heiscladus longicaudatus* Norman, 1869, p. 255

Photis longicaudata Meinert, 1877, p. 142; G.O. Sars, 1894, p. 571, pl. 203, fig. 1; Chevreux & Fage, 1925, p. 310, fig. 319; Myers & McGrath, 1981, p. 766

Photis reinhardi Della Valle, 1893, p. 395, pl. 3, fig. 3; pl. 10, fig. 1–19 (non *P. reinhardi* Krøyer, 1842, p. 155)

E c o l o g y: Among algae (only from the coastal waters of Turkey), depths 1–150 m.

b. Accessory flagellum well developed, A 1 art 3 < art 1 3



a) Body, A1, by [8]



b) A1, by [8]

3 a. A 2 flagellum with 3 arts. ♀ Gn 1 propodus with evenly convex palm, Gn 2 carpal setae longer than propodus, propodus simple, elongate, slender *Microprotopus longimanus* Chevreux, 1887

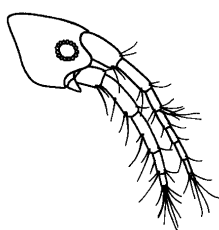
S y n o n y m s: *Microprotopus longimanus* Chevreux, 1887 a, fig. 5 (p. 295), p. 311, pl. 5, fig. 5–10; Chevreux, 1890 a, p. 148, fig. 1, 3, 5; Stebbing, 1906, p. 605; Chevreux & Fage, 1925, p. 307, fig. 316–317

E c o l o g y: On epiphytic algae, depths 10–80 m.

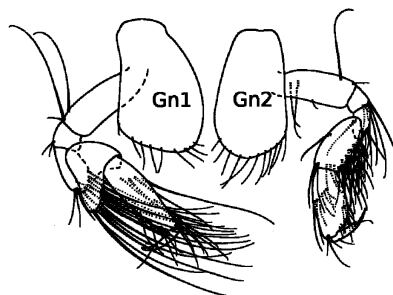
b. A 2 flagellum with 7 arts. ♀ Gn 1 propodus with very oblique palm, Gn 2 carpal setae shorter than propodus, propodus subchelate, short and broad *Microprotopus maculatus* Norman, 1867

S y n o n y m s: *Microprotopus maculatus* Della Valle, 1893, p. 393, pl. 56, fig. 13–16; G.O. Sars, 1894, p. 567, pl. 201; Chevreux & Fage, 1925, p. 308, fig. 318; Myers, 1976 a, p. 129, fig. 5–6

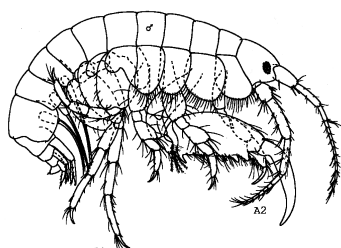
E c o l o g y: Among algae and fine sand, depths 0–7 m.



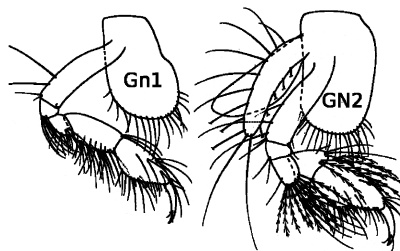
a) A1, by [8]



a) Gn1-2, by [8]



b) Body, A2, by [8]



b) Gn1-2, by [8]

Family Ischyroceridae

Diagnosis to Family and Genera

Family ISCHYROCERIDAE (Stebbing, 1899)

S y n o n y m s: Ischyroceridae Barnard, 1969, 275

D i a g n o s i s: Lateral cephalic lobes moderately to strongly produced, subocular margin often excavate. A1-2 subequal or A2 larger, accessory flagellum reduced or absent. Labrum ventral margin rounded or weakly excavate, epistome produced anteriorly; labium with mandibular projection of outer plate generally rounded or subacute; mandibular palp 3-articulate, art 2 the longest, art 3 truncate; Mx1 inner plate small with reduction of setae often to 0 or 1; Mx2 inner plate posterior margin setiferous. Coxa 4 not excavate posteriorly. Gn2 in male larger than Gn1, sometimes carpocheate. P3-4 glandular. U3 rarely projecting beyond U1-2, biramous or uniramous, peduncle strong, rami shorter than peduncle, outer ramus uncinat, with hooked teeth at apex.

Genus ERICTHONIUS Milne Edwards, 1830

S y n o n y m s: *Erichthonius* Stebbing, 1906, 670; J. L. Barnard, 1969, 192; J.L. Barnard, 1973, 24; Lincoln, 1979, 558; Myers & McGrath, 1984, 379 (keys)

Pyctilus Dana 1852, 218

D i a g n o s i s: Antenna 1 peduncular art 3 as long as 1; mandibular palp 3-articulate. Gn1 normal, subchelate. Gn2 in male very enlarged, carpocheate, in female subchelate. U3 peduncle elongate, ramus much shorter than peduncle.

Genus JASSA Leach, 1814

S y n o n y m s: *Jassa* Stebbing, 1906, 652; J.L. Barnard, 1969, 279; J.L. Barnard, 1973, 25; Thurston, 1974, 99; Lincoln, 1979, 548
Cratophium Dana, 1952, 309 (nomen nudum); 1853, 840

Macleayia Haswell, 1880, 32

Lusita Nardo, 1847, 20

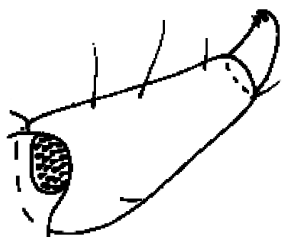
Bruzeliella Norman, 1905, 83

Hemijassa Walker, 1907, 38

D i a g n o s i s: Accessory flagellum small but distinct. Male Gn2 subchelate, propodus with palm delimited by large process or processes. Coxa 5 anterior lobe larger than posterior lobe. U3 peduncle elongate, outer ramus with basally immersed distal spine.

Key to Genera

- 1 a. U 3 uniramous *Ericthonius* Milne Edwards, 1830
 b. U 3 biramous *Jassa* Leach, 1814



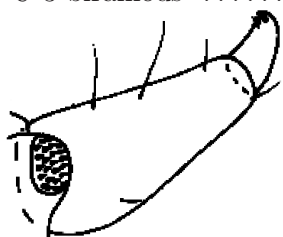
a) U3, by [7]



b) U3, by [8]

Key to species

- 1 a. U 3 uniramous 2
 b. U 3 biramous 3



a) U3, by [7]



b) U3, by [8]

- 2 a. Gn 2 ♂ carpus with two divergent teeth, or in very old males inner tooth with a rounded process
 *Erichthonius punctatus* (Bate, 1857)

S y n o n y m s: *Erichthonius abditus* Sars, 1894, p. 602, pl. 215

Erichthonius brasiliensis Stebbing, 1907, p. 671; Gurjanova, 1951, p. 948, fig. 659

Erichthonius brasiliensis Chevreux & Fage, 1925, p. 353, fig. 360–361

E c o l o g y: Among algae, phanerogams, hydrozoans, tunicates (only from the coastal waters of Turkey), depths 2–25 m.

- b. Gn 2 ♂ carpus with a slender simple tooth, or with one main tooth and a small accessory tooth
 *Erichthonius difformis* Milne-Edwards, 1830

S y n o n y m s: Schellenberg, 1942 (in part), p. 214, fig. 174 (not 174a); Gurjanova, 1951, p. 950, fig. 661; Myers & McGrath, 1984, p. 387, fig. 5–6

Erichthonius (sic) *difformis* Sars, 1894, p. 604, pl. 216, fig. 1; Chevreux & Fage, 1925, p. 354, fig. 362; Greze, 1968, p. 1095, with unnumbered fig

E c o l o g y: In algal biotopes, depths 0–20 m.



a) Gn2, by [7]

b) Gn2, by [10]

- 3 a. Gn 2 with pectinate setae, ♂ propodus with thumb-like proximal tooth (hyperadults) or broadly triangular excavation (subadults), ♀ propodus with single excavation
 *Jassa marmorata* (Holmes, 1903)

S y n o n y m s: *Jassa marmorata* Lincoln, 1979, p. 552, fig. 265

Jassa falcata Chevreux & Fage, 1925, p. 344, fig. 352–353; Sexton & Reid, 1951, p. 29 (partim); Bousfield, 1973, p. 190, pl. 58, fig. 2

E c o l o g y: Fouling and between *Mytilus*, depths 0–10 m.

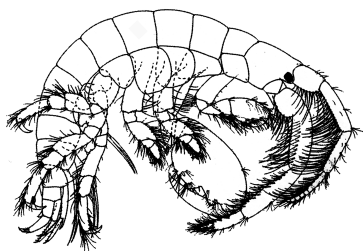
b. Gn 2 with simple setae, ♂ propodus with 2 mediodistal tooth, ♀ propodus with 2 excavations *Jassa ocia* (Bate, 1862)

S y n o n y m s: *Podocerus ocius* Bate & Westwood, 1862, p. 450; Della Valle, 1893, p. 448, pl. 14, fig. 11–27; Walker, 1895 a, p. 473

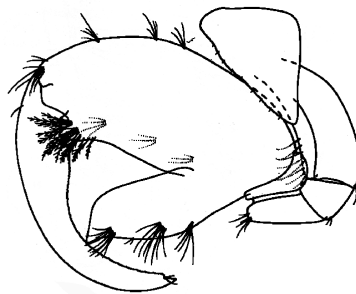
Jassa ocius Stebbing, 1906, p. 655

Jassa ocia Chevreux & Fage, 1925, p. 347, fig. 351, 355; Lincoln, 1979, p. 554, fig. 266 g–j

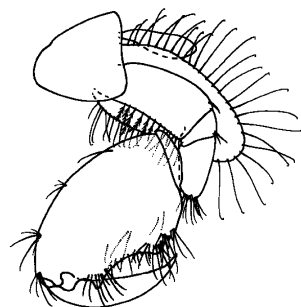
E c o l o g y: On stones and between algae, depths 0–20 m.



a) Body, by [8]



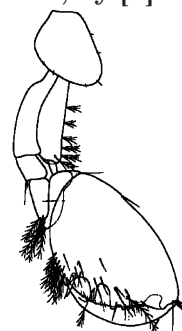
a) Cn2, Male, by [8]



a) Cn2, Female,
by [8]



b) Gn2, Male, by [8]



b) Gn2, Female,
by [8]

Family Lysianassidae

Diagnosis to Family and Genera

Family LYSIANASSIDAE Dana, 1849

S y n o n y m s: Lysianassidae Buchhols, 1874, 229

D i a g n o s i s: Body compact, robust, integument usually very smooth, porcelanous. Coxae generally large; coxae 1-4 strongly overlapping. Head rostrum normally very weak or lacking. Al peduncle art 1 large, inflated, arts 2-3 much shorter, often telescoped, flagellum short, accessory flagellum very rarely absent; A2 peduncle short, flagellum short in the female, often much longer and with calceoli in the male. Mouthparts very variable. Epistome variously differentiated, often very enlarged; mandible cutting edge normally not toothed, molar present or absent, when present triturating or not, palp always present but variable in position; labium without inner lobes. Mxl outer plate with 9-11 spine teeth, palp 2-articulate, occasionally reduced or absent. Mxp outer plate generally large, palp 4-articulate, sometimes reduced. Gn1 simple, subchelate or chelate; Gn2 very characteristic for the family*, slender, microchelate or microsubchelate, ischium elongate, distinctly longer than merus, carpus and propodus with a fuzz of scales or minute setulae, propodus densely setose, with distal tufts of long and strong setae. P5-7 basis usually broadly expanded. U1-2 biramous, slender; U3 exceptionally uniramous, rami lanceolate, outer ramus generally 2-articulate, often sexually dimorphic. Telson entire, emarginate or variously cleft. Branchiae large, sometimes lobate.

Genus ORCHOMENE Boeck, 1871

S y n o n y m s: *Orchomene* Lincoln, 1979, 68

Tryphosa Boeck, 1871, 117

Orchomenella Sars, 1895, 66

Orchomenopsis Sars, 1895, 73

?*Allogaussia* Schellenberg, 1926, 245

(*Orchomenyx*) De Brouer, 1984, 198

Abyssorcomene De Broyer, 1984, 198

D i a g n o s i s: Epistome generally lobate in front, sometimes acutely produced. Mandible narrow, elongate, molar formed by a setulose crest with poorly ridged triturative area, palp attached proximally to molar; Mx1 inner plate slender, narrow, with distal setae, outer plate with 11 spine-teeth (7 stronger, 4 shorter). Mx2 plates narrow, elongate, outer plate a little larger than inner. Mxp outer plate not very wide, reaching beyond the apex of palp art 2, palp 4-articulate. Coxa 1 distinctly expanded distally. Gn1 generally stout, subchelate, propodus > carpus. Gn2 minutely chelate. p5-7 relatively short. u3 outer ramus 2-articulate. telson distally emarginated or cleft only for 1/6 of the length. sexual dimorphism marked (urosome, A1-2, telson).

Genus NANNONYX Sars, 1895

D i a g n o s i s: Mouthparts substyliform. Epistome and labrum coalesced. Mandible molar obsolete, palp attached proximally. Mx 1-2 elongate. Mxp inner and outer plates long, reaching the tip of 4-articulate palp. Gn 1 simple, or with very small palm; carpus and propodus short and stout. U 3 small, outer ramus 2-articulate, as long as peduncle or slightly shorter, inner ramus much smaller. Telson entire or slightly emarginate.

Key to Genera

As key to species

Key to species

1 a. Gn 1 subchelate *Orchomene humilis* (Bate, 1857)

S y n o n y m s: *Lysianassa humilis* A. Costa, 1853, p. 172

Anonyx humilis + *Anonyx Goëssii* Della Valle, 1893, p. 817, 920, pl. 26, fig. 32-37

Orchomene batei G.O. Sars, 1882, p. 81; G.O. Sars 1890, p. 60, pl. 22

Orchomene hansenii Meinert, 1890, p. 154, pl. 1, fig. 18–24

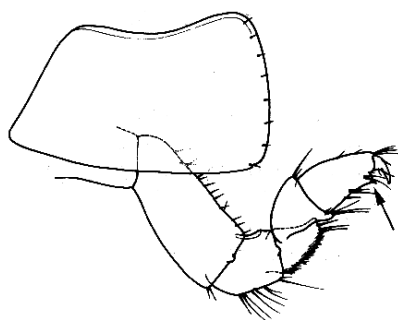
Orchomene humilis Chevreux & Fage, 1925, p. 59, fig. 45–46; Ceccini & Parenzan, 1935, p. 166, fig. 10; g. Karaman, 1973, p. 139, fig. 18; Oleröd, 1975, p. 207, fig. 32–43, 60; Lincoln, 1979, p. 70, fig. 25 h–k; fig. 26 a–d

E c o l o g y: Among various algae, often in association with sponges, ascidians, bryozoans, 30–100 m depths.

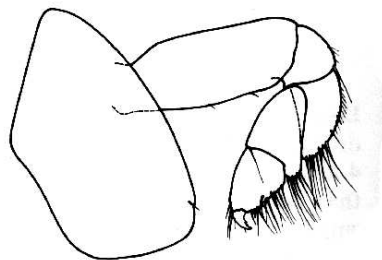
b. Gn 1 simple *Nannonyx propinquus* Chevreux, 1911

S y n o n y m s: *Nannonyx propinquus* Chevreux & Fage, 1925, p. 37, fig. 16–17; Macquart-Moulin, 1968, p. 311

E c o l o g y: Infralitoral, on algae.



a) Gn1, by [8]



b) Gn1, by [8]

Family Melitidae

Description to Family

Family MELITIDAE Bousfield, 1973

D e s c r i p t i o n . Head free, not coalesced with peraeonite 1; exposed; as long as deep, or longer than deep; anteroventral margin notched (not complete) , anteroventral corner rounded or subquadrate or hooked; rostrum present or absent, short; eyes present, well developed or obsolescent, or absent; not coalesced; 1 pair; not bulging. Body laterally compressed; cuticle smooth. Antenna 1 subequal to antenna 2, or longer than antenna 2; peduncle with sparse robust and slender setae; 3-articulate; peduncular article 1 shorter than article 2, or subequal to article 2, or longer than article 2; antenna 1 article 2 longer than article 3; peduncular articles 1-2 not geniculate; accessory flagellum present; antenna 1 callynophore absent. Antenna 2 present; short, or medium length; articles not folded in zigzag fashion; without hook-like process; flagellum shorter than peduncle; 5 or more articulate; not clavate; calceoli absent. Mouthparts well developed. Mandible incisor dentate; lacinia mobilis present on both sides; accessory setal row without distal tuft; molar present, medium, triturative or non-triturative; palp present. Maxilla 1 present; inner plate present, strongly setose along medial margin; palp present, not clavate, 2 -articulate. Maxilla 2 inner plate present; outer plate present. Maxilliped inner and outer plates well developed or reduced, palps present, well developed or reduced; inner plates well developed, separate; outer plates present, large or small; palp 4-articulate, article 3 without rugosities. Labium smooth. Peraeon: Peraeonites 1-7 separate; complete; sternal gills absent; pleurae absent. Coxae 1-7 well developed, none fused with peraeonites. Coxae 1-4 longer than broad or broader than long, overlapping, coxae not acuminate. Coxae 1-3 not successively smaller, none vestigial. Coxae 2-4 none immensely broadened. Gnathopod 1 not sexually dimorphic; smaller (or weaker) than gnathopod 2, or subequal to gnathopod 2; subequal to coxa 2; gnatho-

pod 1 merus and carpus not rotated; gnathopod 1 carpus/propodus not cantilevered; subequal to propodus, or longer than propodus; gnathopod 1 not produced along posterior margin of propodus; dactylus large. Gnathopod 2 sexually dimorphic; subchelate; coxa subequal to but not hidden by coxa 3; ischium short; merus not fused along posterior margin of carpus or produced away from it; carpus/propodus not cantilevered, carpus short, shorter than propodus, slightly produced along posterior margin of propodus or not produced along posterior margin of propodus. Peraeopods heteropodous (3-4 directed posteriorly, 5-7 directed anteriorly), none prehensile. Peraeopod 3 well developed. Peraeopod 4 well developed. 3-4 not glandular; 3-7 without hooded dactyli, 3-7 propodi without distal spurs. Coxa well developed, longer than broad; carpus subequal to propodus, not produced; dactylus well developed. Coxa subequal to coxa 3 or larger than coxa 3, not acuminate, with well developed posteroventral lobe or with small posterior lobe or without posteroventral lobe; carpus not produced. Peraeopods 5-7 with few robust or slender setae; dactyli without slender or robust setae. Peraeopod 5 well developed; shorter than peraeopod 6; coxa smaller than coxa 4, without posterior lobe; basis expanded, with posteroventral lobe or without posteroventral lobe; merus/carpus free; carpus linear; with a few subterminal setae. Peraeopod 6 subequal in length to peraeopod 7; merus/carpus free; dactylus with a few subterminal setae. Peraeopod 7 with 6-7 well developed articles; longer than peraeopod 5; similar in structure to peraeopod 6; with 7 articles; basis expanded, without dense slender setae; dactylus with a few subterminal setae. Pleon: Pleonites 1-3 with transverse dorsal serrations or without transverse dorsal serrations, without dorsal carina; without slender or robust dorsal setae. Epimera 1-3 present. Epimeron 1 well developed. Epimeron 2 setose, or without setae. Urosome not dorsoventrally flattened; urosomites 1 to 3 free; urosomite 1 longer than urosomite 2, or much longer than urosomite 2; urosome urosomite 1 bicarinate, or urosomites not carinate; urosomites 1-2 without transverse dorsal serrations. Uropods 1-2 apices of rami with robust setae. Uropods 1-3 radically dissimilar in structure

and size, or similar in structure and size. Uropod 1 peduncle without long plumose setae, with 1 or 2 basofacial robust setae, without ventromedial spur. Uropod 2 well developed; without ventromedial spur, without dorsal flange; inner ramus subequal to outer ramus, or longer than outer ramus. Uropod 3 not sexually dimorphic; peduncle short; outer ramus longer than peduncle, 1-articulate or 2-articulate, without recurved spines. Telson laminar; deeply cleft; longer than broad, or as long as broad; apical robust setae present.

Synonymy and diagnosis to Genera

Genus CHEIROCRATUS Norman, 1867

S y n o n y m s: *Cheirocratus* Stebbing, 1906, 417; J.L. Barnard, 1969, 239

D i a g n o s i s: Rostrum short, lateral cephalic lobes short, urosome segs free. Coxae 1-4 short progressively shorter towards coxa 4; coxa 4 as long as coxa 5. A1 shorter than A2, accessory flagellum with 2 arts. Labrum entire, labium with inner plates. Mandibular palp 3-articulate, attached to anterior part of mandible, art 3 of palp subfalciform. Mx1 inner plate triangular, with setae, outer plate with 11 spines. Palp symmetric, 2-articulate. Mx2 inner plate with medial row of setae. Mxp with large inner and outer plates, palp 4-articulate. Gn1 simple, Gn2 simple in female, powerfully subchelate in male. U1-2 normal U3 moderately long, rami subequal, uniarticulate, lanceolate, marginally spinose. Telson moderately long, cleft almost to basis. Oostegites narrow, occurring on pereon segs 2-5.

Genus MELITA Leach, 1814

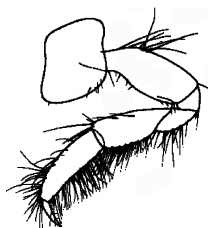
S y n o n y m s: *Melita* J.L. Barnard, 1969, 245; G. Karaman, 1981, 4

D i a g n o s i s: Body smooth or with dorsal teeth. Eyes present or absent. A1 peduncle long, accessory flagellum with 1 or several arts. A2 shorter than A1. Coxae moderately long. Labrum entire, labium

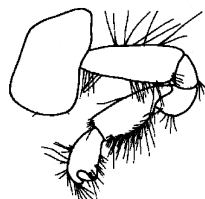
with inner lobes. Mandibular palp 3-articulate, art 3 not falciform. Mx1 inner plate conical or triangular, outer plate with 7-9 spines, palp 2-articulate, usually dissimilar. Mx2 plates narrow, inner plate without medial row of setae. Mxp well developed, palp 4-articulate. Gn1 small, subchelate, propodus in some species anterodistally produced. Gn2 large, subchelate. P3-7 normal. U1-2 normal. U3 with inner ramus scale-like, outer ramus long, with 1 art. Telson cleft nearly to base, lobes acuminate.

Key to Genera

- 1 a. Gn 1 simple *Cheirocratus* Norman, 1867
 b. Gn 1 distinctly subchelate *Melita* Leach, 1814



a) Gn1, by [7]



b) Gn1, by [7]

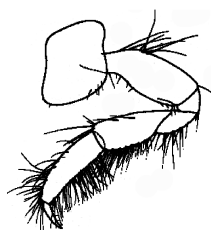
Key to species

- 1 a. Gn 1 simple *Cheirocratus sundevalli* (Rathke, 1843)
 S y n o n y m s: *Cheirocratus sundevalli* G. Karaman, 1973, p. 115
Cheirocratus Sundevalli Chevreux & Fage, 1925, p. 223, fig. 232, 233;
 Ceccini & Parenzan, 1935, p. 191, fig. 28
 E c o l o g y: On muddy and sandy bottoms (only from the coastal waters of Turkey), depths 8–130 m.

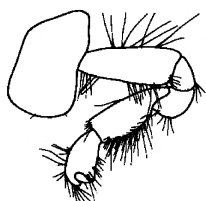
- b. Gn 1 distinctly subchelate *Melita palmata* (Montagu, 1804)
 S y n o n y m s: *Melita palmata* A. Costa, 1857, p. 192, pl. 2, fig. 4;
 Heller, 1866, p. 36; Sars, 1894, p. 508, pl. 179; Chevreux & Fage, 1925,

p. 230, fig. 241; G. Karaman, 1972 a, p. 98; 1979, p. 63; 1981, p. 42

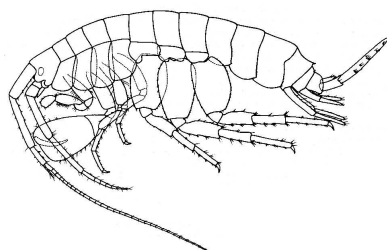
E c o l o g y: Fouling community and under stones, depths 0–40 m.



a) Gn1, by [7]



b) Gn1, by [7]



b) Body, by [7]

Family Oedicerotidae

Synonymy and diagnosis to Family and Genera

Family OEDICEROTIDAE Liljeborg, 1865

S y n o n y m s: Oedicerotidae Boeck, 1871, 160; Stebbing, 1906, 235
D i a g n o s i s: Rostrum often present and well developed, sometimes lacking. Eyes, when present, generally coalesced. Head generally massive or galeate. Accessory flagellum vestigial or absent. Mouthparts basic but lobes of Mx2 nearly rounded and labium often with inner lobes coalesced. Mandible incisor process more or less produced and toothed, molar often reduced and bearing spines or smooth. Gnathopods chelate or subchelate, never simple, carpus generally lobate and produced. P7 distinctly longer than P5 or P6. Uropods with 2 rami, U3 with long peduncle. Telson relatively short, entire or slightly emarginated.

Genus MONOCULODES Stimpson, 1853

S y n o n y m s: *Monoculodes* Stebbing, 1906, 258; J.L. Barnard, 1962, 356; Lincoln, 1979, 348

Kroyera Bate, 1857, 140

D i a g n o s i s: $A1 < A2$. A1 art 3 less than $1/2$ as long as art 1. A2 not broadened. Mandible incisor process toothed and projecting, molar tritulative. Gnathopods subchelate, often asymmetrical. Gn1 generally stouter than Gn2. Gn1 carpus lobate, lobe long or short not distinctly guarding propodus. Gn2 generally with carpus long, projecting and guarding propodus. $U2 = U3$. Telson entire or emarginate.

Genus PERIOCULODES G.O. Sars, 1895

S y n o n y m s: *Perioculodes* Sars, 1895, 312; Stebbing, 1906, 237; Lincoln, 1979, 338

D i a g n o s i s: Mandible incisor process toothed and projecting, molar reduced, conical, bearing spines. Labium with inner lobes coalesced.

Gnathopods subchelate, symmetrical with carpus produced in a long and narrow lobe guarding the posterior margin of propodus, which is nearly linear. U2 reaching end of U3.

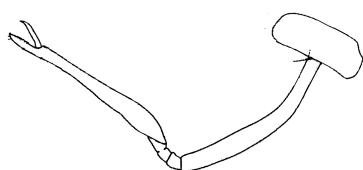
Genus SYNCHELIDIUM G.O. Sars, 1895

Synonymy: *Synchelidium* Sars, 1895, 317; Stebbing, 1906, 241; Lincoln, 1979, 344

Diagnosis: Gn2 chelate with carpus completely coalesced with propodus, and not extending in front of the apex of the chela. Mandibular molar reduced, nearly unarmed. P3-4 dactylus reduced or not.

Key to Genera

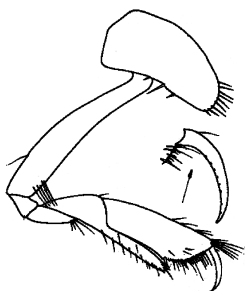
- 1 a. Gn 2 chelate. Mandible molar more or less degraded *Synchelidium* G.O. Sars, 1895
 b. Gn 2 subchelate. Mandible molar normal or not 2



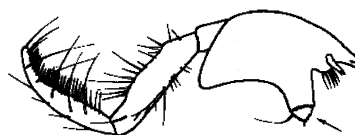
a) Gn2, by [9]



a) Md, by [9]

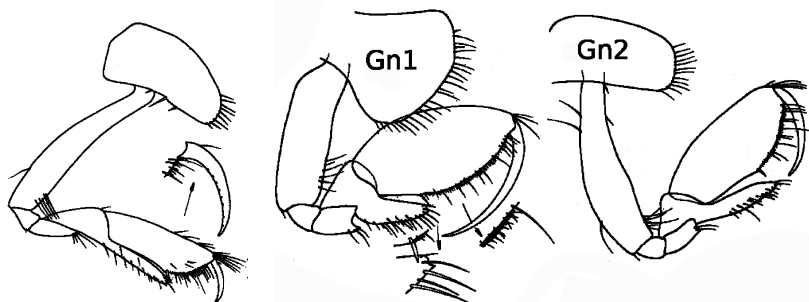


b) Gn2, by [9]



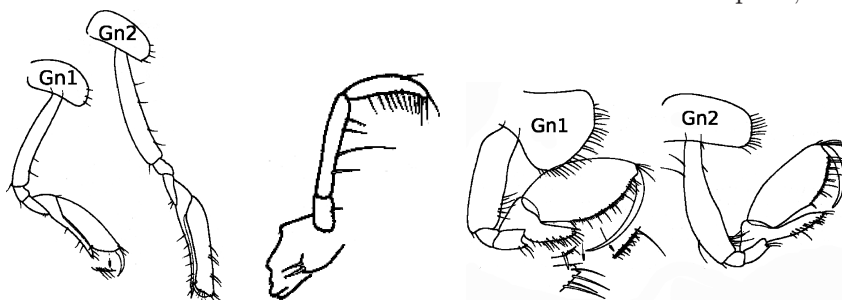
b) Md, by [9]

- 2 a. Gn 1 — 2 distinctly dissimilar *Monoculodes* (Partim)
 b. Gn 1 — 2 similar or nearly similar 3



a) Gn2, by [9] b) Gn1-2, by [9]

- 3 a. Mandible molar reduced. Gn 1 Û 2 carpus ending in a long and straight lobe totally guarding the post-palmar edge of propodus ...
 *Periiculodes* G.O. Sars, 1895
 b. Mandible molar tritulative. Gn 1-2 carpus not as above
 *Monoculodes* Stimpson, 1853



a) Gn1-2, by [9] a) Md, by [9] b) Gn1-2, by [9]

Key to species

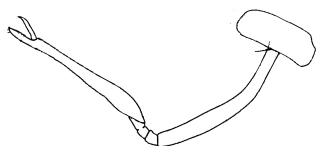
- 1 a. Gn 2 chelate. Mandible molar more or less degraded
 *Synchelidium maculatum* Stebbing, 1906
 S y n o n y m s: *Kroyera arenaria* Della Valle, 1893, p. 554, pl. 4, fig. 1;
 pl. 34, fig. 18-34 (non *Kroyera arenaria* Bate, 1858, p. 15)
Synchelidium maculatum Chevreux & Fage, 1925, p. 167, fig. 168 ? 169;

Lincoln, 1979, p. 344, fig. 158 a, fig. 162. N.B.

Pontocrates haplocheles Boeck and *Synchelidium haplocheles* G. O. Sars are considered synonyms of *S. tenuimanum*, but are very close to *S. maculatum* sensu Lincoln, Boeck, [1876] figures Gn 1 as in *S. maculatum*, but Gn 2 is more slender than in Lincoln's figure (163 d) and agrees with Gn 2 of Mediterranean specimens. The telson is not distinctly emarginate

E c o l o g y: In sandy and muddy biotopes, depths 20–110 m.

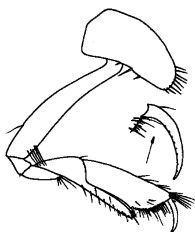
b. Gn 2 subchelate. Mandible molar normal or not 2



a) Gn2, by [9]



a) Md, by [9]



b) Gn2, by [9]



b) Md, by [9]

2 a. Gn 1-2 distinctly dissimilar

..... *Monoculodes gibbosus* Chevreux, 1888

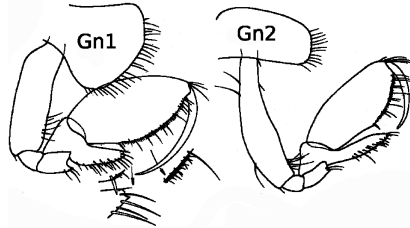
S y n o n y m s: *Monoculodes gibbosus* Chevreux, 1900, p. 59, pl. 8, fig. 3; Stebbing, 1906, p. 259; Chevreux & Fage, 1925, p. 172, fig. 175; Ledoyer, 1983, p. 63, fig. 4 Gi

E c o l o g y: In soft bottoms, depths 20–100 m.

- b. Gn 1-2 similar or nearly similar 3



a) Gn2, by [9]



b) Gn1-2, by [9]

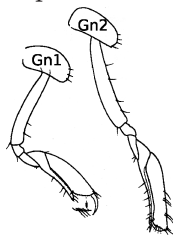
- 3 a. Mandible molar reduced. Gn 1-2 carpus ending in a long and straight lobe totally guarding the post palmar edge of propodus
 *Periocolodes longimanus longimanus* Bate & Westwood, 1868
 S y n o n y m s: *Periocolodes longimanus* G. O. Sars, 1982, p. 313, pl. 110, fig. 2; pl. 111, fig. 1; Stebbing, 1906, p. 237; Chevreux & Fage, 1925, p. 162, fig. 163-164; Ledoyer, 1972, p. 775, fig. 2-3; Ledoyer, 1973 a, p. 44, pl. 5-6; Lincoln, 1979, p. 338, fig. 159
Oedicerus longimanus Della Valle, 1893, p. 547, pl. 4, fig. 9; pl. 33, fig. 32-36

E c o l o g y: In soft bottoms, depths 5-100 m.

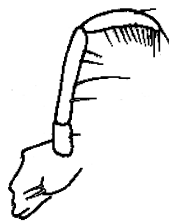
- b. Mandible molar tritulative. Gn 1-2 carpus not as above
 *Monocolodes griseus* Della Valle, 1893

S y n o n y m s: *Monocolodes griseus* Stebbing, 1906, p. 262; Chevreux, 1911, p. 207; Ledoyer, 1983, p. 64, fig. 4 Gr

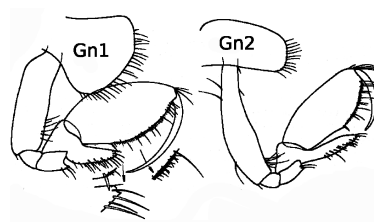
E c o l o g y: In soft bottoms (only from the coastal waters of Turkey), depths 10-150 m.



a) Gn1-2, by [9]



a) Md, by [9]



b) Gn1-2, by [9]

Family Phoxocephalidae

Synonymy and diagnosis to Family and Genera

Family PHOXOCEPHALIDAE Bate, 1857

S y n o n y m s: Phoxocephalidae Sars, 1891, 842

D i a g n o s i s: Head elongate, with overhanging hoodlike rostrum; A1 generally shorter than A2, accessory flagellum present, multiarticulate; labrum ventral margin rounded or concave; labium with inner lobes; mandibular molar triturative or not, mandibular palp 3-articulate; Mx1 palp 1-2 articulate; Mxp palp 4-articulate; coxae 1-4 deep; Gn1-2 subequal or unequal, subchelate; pereopods adapted for burrowing; P5-7 generally of different shape. U1-3 biramous. Telson incised. Coxal gills simple, on pereon segs 2-6 or 2-7. Oostegites narrow, laminar, on pereon segs 2-5.

Genus *HARPINIA* Boeck, 1876

S y n o n y m s: *Harpinia* Sars, 1895, 150; Stebbing, 1906, 140; J.L. Barnard, 1960, 344; Barnard & Drummond, 1978, 535

D i a g n o s i s: Eyes absent; male A2 short; female A1-2 short; A2 peduncular art 1 with or without ensiform process; Md incisor toothed, molar non-tritulative, palp art 3 linear, distally setose. Mx1 inner plate short, with 2 setae, outer plate with 9 spines, palp 2-articulate. Mx2 both plates subequal, without oblique facial row of setae. Mxp inner plate short, setose distally, outer plate short, narrow, palp art 3 unlobed, art 4 small, with nail of various length. Coxae 1-3 with or without posterodistal notch. Gn1-2 somewhat dissimilar, Gn2 a little larger; Gn1-2 propodus palm oblique, defined by strong corner tooth. P3-4 normal. P5 basis narrow, unlobed. P6 the longest, basis dilated, arts 4-6 elongate, dactylus very slender, long; P7 short, basis large, ovoid. Pleopods normal. U1-2 outer ramus scarcely longer than inner. U3 biramous, outer ramus 2-articulate, spinose to setose (in males), inner ramus of

variable length. Telson deeply incised, setose. Females benthonic, males planktonic. Coxal gills occur on pereonites 2-6.

Key to species

1 a. Coxae 1-3 with posterodistal notch

. *Harpinia dellavallei* Chevreux, 1910

S y n o n y m s: *Phorus plumosus* Graeffe, 1883, p. 86

Harpinia neglecta Della valle, 1893, p. 747, pl. 5, fig. 6; pl. 35, fig. 1-18; pl. 60, fig. 19; Graeffe, 1900, p. 55; ? Walker, 1901, p. 300; ? Chevreux, 1902, p. 693 (non G.O. Sars, 1891, p. 153, pl. 53, fig. 1)

Harpinia Della Vallei Chevreux, 1910, p. 135; Chevreux, 1911, p. 190, pl. 11, fig. 1-8; Ruffo, 1946, p. 50

Harpinia Della-Vallei Chevreux & Fage, 1925, p. 1925, p. 109, fig. 101, fig. 103; Kuneva ? Abadjieva, 1964, p. 75, fig. 1

Harpinia della-vallei Reys, 1960, p. 90

Harpinia dellavallei J.I. Barnard, 1960, p. 353; Picard, 1965, p. 107; Ledoyer, 1970, p. 15; Vamvakas, 1970, p. 126; G. Karaman, 1973 d, p. 60, fig. vii-ix; G. Karaman, 1987 a, p. 28, fig. vi, 5-8; fig. vii)

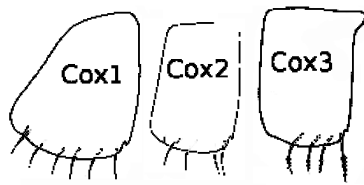
Harpina della valley Draco & Albertelli, 1978, p. 211

E c o l o g y: In sandy and muddy bottoms (only from the coastal waters of Turkey), depths 7-150 m.

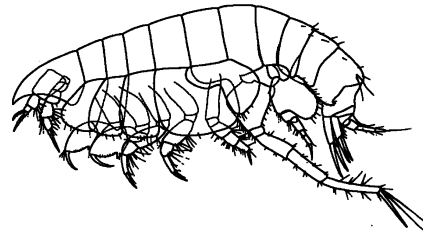
b. Coxae 1-3 entire *Harpinia crenulata* (Boeck, 1871)

S y n o n y m s: *Harpinia crenulata* Boeck, 1876, p. 221, pl. 8, fig. 2; G.O. Sars, 1891, p. 158, pl. 55, fig. 2; Chevreux, 1900, p. 36; Walker, 1901, p. 300; Chevreux, 1902, p. 693; Stebbing, 1906, p. 141; Chevreux, 1911, p. 189, pl. 10, fig. 14-15; Chevreux & Fage, 1925, p. 110, fig. 105; Ruffo, 1946, p. 50; Ledoyer, 1968, p. 191; Febvre-Chevalier, 1969, p. 471; Carpine, 1970, p. 134; G. Karaman, 1973 d, p. 53, fig. iv-vi; Ledoyer, 1977, p. 402

E c o l o g y: Prevalent on muddy bottoms (only from the coastal waters of Turkey), depths 10-150 m.



a) Cox1-3, by [9]



b) Body, Cox1-3, by [9]

Family Stenothoidae

Synonymy and diagnosis to Family and Genera

Family STENOTHOIDAE Boeck, 1871

S y n o n y m s: Stenothoidae Stebbing, 1888, 747; Sars, 1892, 234

D i a g n o s i s: Body smooth or carinate; rostrum inconspicuous. Coxa 1 small, hidden by the following coxae; coxa 4 enlarged, shieldlike, not posteriorly excavate. Accessory flagellum absent or with 1-2 vestigial arts. Labrum incised. Mandible with weak, sparsely spiniferous molar, not tritulative, palp absent or with 1-3 arts. Labium usually with inner lobes amalgamated, outer lobes with blunt extremities. Gnathopods usually powerful, subchelate, occasionally feeble. P3 with slender basis. U3 uniramous with 2 arts. Telson of medium length, entire.

Genus STENOTHOE Dana, 1852

S y n o n y m s: *Stenothoe* Dana, 1853, 923; Stebbing, 1906, 192; J.L. Barnard, 1974, 117; Lincoln, 1979, 194

Probolium Costa, 1853, 170; Costa, 1857, 199

Montagua Bate, 1857, 137

Montaguana Chilton, 1883, 78

Microstenothoe Pirlot, 1933, 2

D i a g n o s i s: A1-2 subequal. A1 with long flagellum. A2 with long peduncle. Mx1 with large palp. Mxp inner plates very small, outer evanescent or wholly absent, palp elongate. Gn1-2 more or less distinctly subchelate. Gn1 merus produced into a lobe along side of carpus. Gn2 proodus powerfull, differing between sexes.

Key to species

- 1 a. Telson without spines, unarmed or with setae only
..... *Stenothoe monoculoides* (Montagu, 1815)

S y n o n y m s: *Stenothoe monoculoides* G. O. Sars, 1892, p. 240, pl. 82, fig. 1; Della Valle, 1893 (partim), p. 568, pl. 58, fig. 79; Stebbing, 1906 (partim), p. 196; Chevreux & Fage, 1925, p. 133, fig. 132; Schellenberg, 1942, p. 123, fig. 102; Krapp-Schickel, 1976 a. p. 2m fig. 3

E c o l o g y: In different biotopes, depths 0–75 m.

b. Telson armed with spines *Stenothoe marina* (Bate, 1856)

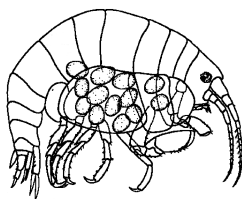
S y n o n y m s: *Montagua marinus* Date, 1856, p. 57

Montagua marina Bate, 1857, p. 137

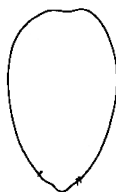
Stenothoe marina G.O. Sars, 1892, p. 236, pl. 80; Chevreux & Fage, 1925, p. 136, fig. 136; Krapp-Schickel, 1976 a, p. 32

Stenothoe marina ssp. *mediterranea* Ledouer, 1973, p. 894, fig. 12–13

E c o l o g y: With hydroids (only from the coastal waters of Turkey), depths 80–150 m.



a) Body, by [9]



a) T, by [9]



b) T, by [9]

Family Talitridae

Synonymy and diagnosis to Family and Genera

Family TALITRIDAE Rafinesque, 1815

D i a g n o s i s: Urosome segs not fused. A1 accessory flagellum absent, distinctly shorter than A2. Labium without inner lobes; Md with triturrative molar, without palp; Mx1 palp rudimentary. U3 uniramous. Telson entire, apically notched, heavily spinose.

Genus ORCHESTIA Leach, 1814

D i a g n o s i s: Mx1 usually with palp 2-articulate or absent. Gnathopods subchelate in both sexes, male Gn2 larger than Gn1, female Gn2 with propodus expanded distally, dactylus produced beyond a minute chela-forming finger. U3 lacking inner ramus, telson entire.

Genus PLATORCHESTIA Bousfield, 1982

D i a g n o s i s: Medium-sized, smooth-bodied semi-fossorial tsilritid little evolved from the "beach flea" facies (relatively weakly spinose appendages), characterized by: antenna 1 short, not exceeding peduncle 4 of antenna 2, peduncular segments subequal; antenna 2 short, sexually dimorphic (peduncle usually strongly incrassate in male); inferior antennal sinus shallow, distinct; eyes medium to small, vertically subrectangular, quadrate to round. Buccal mass directly beneath head; left mandibular lacinia cleanly 5-dentate; maxilliped palp relatively short, broad, obscurely 4-segmented, segment 2 strongly spinose medially, with mediodistal lobe, segment 3 rounded apically, spines masking minute 4th segment. Coxa 1 shallow, shorter than cusped coxae 2-4, anterodistal border rounded, not sharply acute. Gnathopod 1 ♂ distinctly subchelate, dactyl equal to or slightly exceeding palm, propod not narrowing distally, carpus not elongate, segments 5 and 6 with posterior tumescence; gnathopod 1 ♀, propod with short palm, greatly exceeded

by dactyl, segments 4-6 not tumescent behind; gnathopod 2 ♂ powerfully subchelate, palm nearly vertical, notched or sinuous, dactyl stout; gnathopod 2 ♀, basis broadened anteroproximally; segment 3 short, segment 5 (not 4) shallow-tumescent posteriorly, segment 6 shorter than carpus. Peraeopods 3-7 cuspidactylate, nails short. Peraeopods 3 and 4 unequal; in peraeopod 4, segment 5 often very short (width nearly equal length), body of dactyl usually strongly pinched or sharply constricted; peraeopods 5-7 more or less similar in form, increasing in length posteriorly, bases rounded behind, peraeopod 7 (and often peraeopod 6) sexually dimorphic in form, segments 4 and 5 incrassate in male; coxa 5 anterolobate; coxa 6, hind lobe nearly vertical, antero-distal corner right-angled, or with short distal process. Abdominal sideplates 1-3, hind margin weakly serrulate, hind corners acute; pleopods normal, linear, outer margins of peduncles 2 and 3 weakly spinulose, inner with 2 retinacula. Uropods short, not heavily spinose; uropod 1, distolateral (interramal) spine not developed, outer ramus marginally bare or nearly so, terminal spines long; uropod 2, inner ramus spinose on inner and outer margins. Uropod 3, peduncle moderately broad, spinose posteriorly; ramus shorter than peduncle, with short posterior and apical spines. Telson short, lobes distally rounded, with dorsal and apical spine groups. Coxal gills reduced especially on peraeopods 3-5, 2 and 6 Brood plates ♀, elongate-ovate, smallest on 5, marginal setae long, simple-tipped.

Genus TALITRUS Latreille, 1802

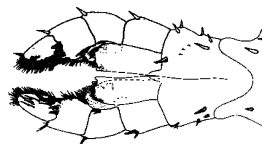
D i a g n o s i s: A1 much shorter than peduncle of A2, A2 often robust. Mx1 palp reduced. Mxp palp broad, art 4 absent. Gn1 simple in male and female. Gn2 small in both sexes, propodus with apex rounded, produced beyond the minute longitudinally placed finger. P5-7 robust, spinose. U1-2 biramous, U3 uniramous. Telson entire and weakly notched. Sexes similar.

D i a g n o s i s: Generally similar to *Orchestia* except Gn1 in female which is simple.

1 a. Mxp palp art 4 absent; Gn 2 male mitten-type	<i>Talitrus</i> Latreille, 1802
b. Mxp palp art 4 present; Gn 2 male strongly subchelate	2



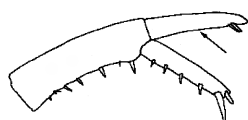
a) Mxp, by [9]



b) Mxp, by [9]

-

b) Gn1, by [9]



Key to species

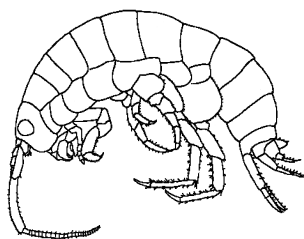
- S y n o n y m s: *Talitrus locusta* G.O. Sars, 1890, p. 23, pl. 9

Talitrus saltator Chevreux & Fage, 1925, p. 271, fig. 282

Talitrus saltator var. *Briani* Ruffo, 1936, p. 28

E c o l o g y: On sandy beaches, among debris and decaying algae (only from the coastal waters of Turkey), depths >0 m.

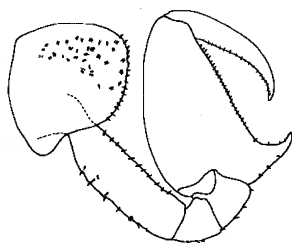
- b. Gn 2 ♂ strongly subchelate, Mxp palp art 4 present, rare absent
..... 2



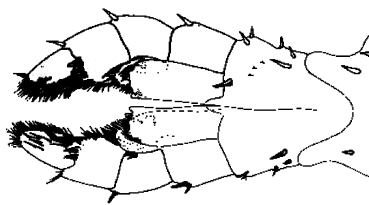
a) Gn2, by [9]



a) Mxp, by [9]



b) Gn2, by [9]



b) Mxp, by [9]

- 2 a. Gn 1 ♀ simple, Mxp palp art 4 absent
 *Talorchestia deshayesii* (Audouin, 1826)

S y n o n y m s: *Orchestia Deshayesii* Audouin, 1817, pl. 11, fig. 8;
 A. Costa, 1851 b, p. 2, pl. 3 bis, fig. 3; Della Valle, 1893, p. 507, pl. 2,
 fig. 5; pl. 15, fig. 13–30; pl. 57, fig. 70–73

Orchestia Deshayesii heller, 1866, p. 3, pl. 1, fig. 5–6

Talorchestia deshayesii Stebbing, 1906, p. 545; Bulycheva, 1957, p. 140,
 fig. 51

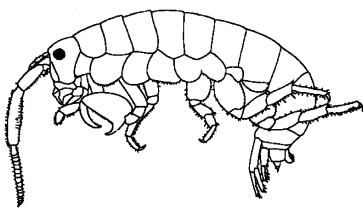
Talorchestia Deshayesii Chevreux & Fage, 1925, p. 278, fig. 288; Ruffo,
 1936, p. 30

Talorchestia Deshayesii Ruffo, 1938, p. 145

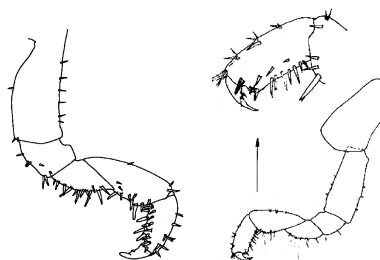
Talorchestia deshayesii Krapp-Schickel, 1974, p. 324

E c o l o g y: On beaches, burrowing in fine sand, under seaweed
 stranded ashore, depths >0 m.

- b. Gn 1 ♀ subchelate, with very short palmar margin 3



a) Body, by [9]



a) Gn1, by [9] b) Gn1, by [9]

- 3 a. A 2 with peduncle inflated, outer ramus of U I lacking lateral spines
 *Platorchestia platensis* Krøyer, 1845

S y n o n y m s: *Orchestia platensis* Chevreux, 1908 c, p. 494, fig. 14;
 Chevreux & Fage, 1925, p. 276, fig. 287; Stephensen, 1945, p. 57,
 fig. 15–16; Bulycheva, 1957, p. 159, fig. 57; G. Karaman, 1971 d, p. 12,
 pl. 3; pl. 4, fig. 25–31; Morino, 1975, p. 172, fig. 1–3

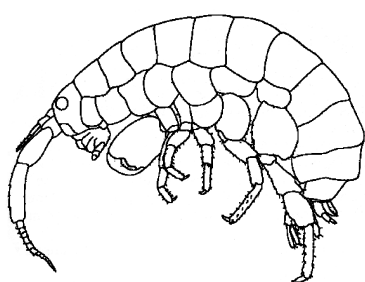
Orchestia crassicornis A. Costa, 1867, p. 42; Chevreux, 1895 b, p. 154

Orchestia incisimana Chevreux, 1888 b, p. 347, pl. 6, fig. 1–2

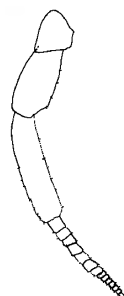
Orchestia gammarellus Della Valle, 1893 (partim), p. 499

E c o l o g y: Supralittoral under seaweed, depths >0 m.

- b. A 2 with peduncle not inflated, outer ramus of U 1 with lateral
 spines 4



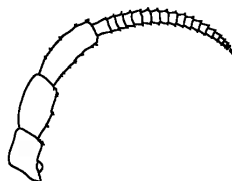
a) Body, by [9]



a) A2, by [9]



a) U1, by [9]



b) A2, by [9]

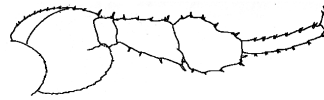


b) U1, by [9]

- 4 a. P 7 merus and carpus not dilated 5
 b. P 7 merus and carpus well dilated 6



a) P7, by [9]



b) P7, by [9]

- 5 a. Gn 2 propodus palm sinuate with median excavation, dactylus with a small protuberance corresponding at the excavation
 *Orchestia cavimana* Heller, 1865

S y n o n y m s: *Orchestia Bottae* Chevreux & fage, 1925, p. 276, fig. 286; Ruffo, 1937 a, p. 35, fig. 1–8

Orchestia cavimana Heller, 1865, p. 979, pl. 17; Nebeski, 1880, p. 142, pl. 11, fig. 10–12, fig. 16–17; S. Karaman, 1934 a, p. 218; Ruffo, 1938, p. 144; Schellenberg, 1940, p. 206; Giordani-Soika, 1950, p. 193; Ruffo, 1951 a, p. 2; G. karaman, 1965, p. 27P; G. Karaman, 1971 d, p. 27, pl. 8

Orchestia bottae Stebbing, 1906, p. 534; Bulycheva, 1957, p. 162, fig. 58

E c o l o g y: Supralittoral under seaweed, depths >0 m.

- b. Gn 2 propodus palm not sinuate without median excavation, dactylus lacking protuberance ... *Orchestia stephensi* Cecchini, 1928

S y n o n y m s: *Orchestia stephensi* Ruffo, 1951 a, p. 1

Orchestia ghigii Vecchi, 1929, p. 249, fig. 1–5; Maccagno, 1939, p. 11; Mateus & mateus, 1959, p. 441

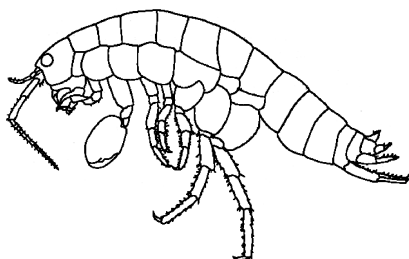
Orchestia Ghigii Ruffo, 1937 a, p. 39; Ruffo, 1949, p. 323

Orchestia mediterranea Bulycheva. 1957 (partim), p. 154; J.L. Barnard, 1958, p. 134

Orchestia stephensi G. Karaman, 1971 d, p. 32; G. karaman, 1973 c, p. 137, fig. 1–3

? *Orchestia stephensi* Calvario & Marques, 1983, p. 88, pl. 3–4

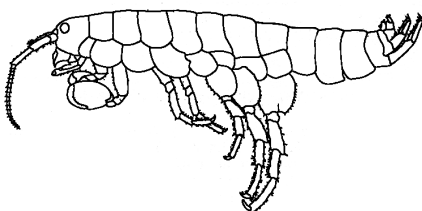
E c o l o g y: Supralittoral under seaweed, depths >0 m.



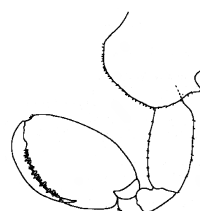
a) Body, by [9]



a) Gn2, by [9]



b) Body, by [9]



b) Gn2, by [9]

- 6 a. Gn 2 propodus palm with a strong excavation, dactylus with a median protuberance at the inner margin
 *Orchestia montagui* Audouin, 1817

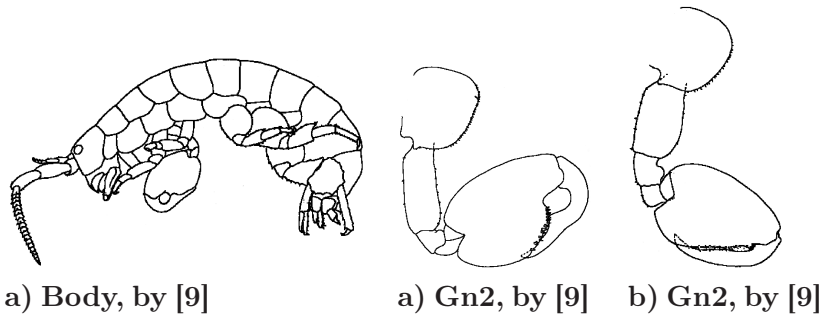
S y n o n y m s: *Orchestia montagui* Audouin, 1826, p. 93; Heller, 1866, p. 2, pl. 1, fig. 3–4; Chevreux & Fage, 1925, p. 275, fig. 285

Orchestia gammarellus Della Valle, 1893 (partim), p. 499

Orchestia montagui Stebbing, 1906, p. 533; Bulycheva, 1957, p. 155, fig. 56; G. Karaman, 1971 d, p. 6, pl. 1–2

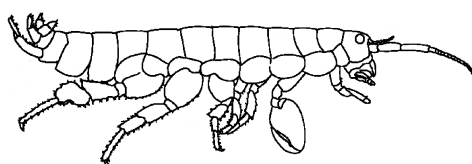
E c o l o g y: Supralittoral under seaweed, depths >0 m.

- b. Gn 2 propodus palm without strong excavation, dactylus without protuberance 7

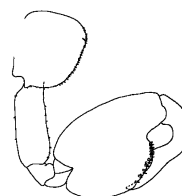


- 7 a. Gn 2 propodus pyriform with palm oblique
 *Orchestia mediterranea* A. Costa, 1853
 S y n o n y m s: *Orchestia mediterranea* A. Costa, 1857, p. 181; Heller, 1866, p. 4, pl. 1, fig. 7; Stebbing, 1906, p. 531; Chevreux, 1911, p. 231; Chevreux & Fage, 1925, p. 273, fig. 283; Ruffo, 1938, p. 142; Bulycheva, 1957, p. 154, fig. 55; G. Karaman, 1971 d, p. 18, pl. 5; pl. 6, fig. 43
Orchestia chilensis Della valle, 1893 (partim), p. 498, pl. 2, fig. 8; pl. 15, fig. 31–38
Orchestia spinimana Della Valle, 1893, p. 941
Orchestia magnifica Vecchi, 1931, p. 62, fig. 5–7
 E c o l o g y: Supralittoral under seaweed, depths >0 m.
- b. Gn 2 propodus oval, palm convex
 *Orchestia gammarella* (Pallas, 1766)
 S y n o n y m s: *Orchestia littorella* Leach, 1814, p. 402, pl. 221, fig. 6; Sowinski, 1880, p. 116
Orchestia litorea Heller, 1866, p. 2
Orchestia gammarellus Stebbing, 1906, p. 532; Chevreux, 1911, p. 231; Ruffo, 1938, p. 143; Ruffo, 1941, p. 117; Dahl, 1943, p. 78
Orchestia gammarella Chevreux & Fage, 1925, p. 274, fig. 284; A. Brian, 1939, p. 6, fig. 1; Giordani-Soika, 1950, p. 193; Bulycheva, 1957, p. 151, fig. 54; G. Karaman, 1971 d, p. 23
Orchestia Chevreuxi Ceccini, 1928, p. 6, pl. 1, fig. 4 (non De Guerne, 1888, p. 59, fig. 1)

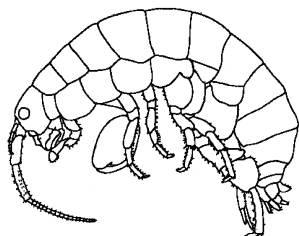
E c o l o g y: Supralittoral under seaweed, depths >0 m.



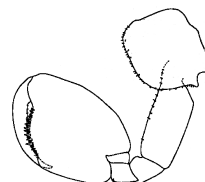
a) Body, by [9]



a) Gn2, by [9]



b) Body, by [9]



b) Gn2, by [9]

Suborder Caprellidea

Description to Families and synonymy, diagnosis to Genus

Family CAPRELLIDAE Leach, 1814

D e s c r i p t i o n. Head free, not coalesced with peraeonite 1, or partially or completely coalesced with peraeonite 1; exposed; as long as deep, or longer than deep; anteroventral margin straight or concave, anteroventral corner subquadrate; rostrum present or absent, short; eyes present, well developed or obsolescent, or absent; not coalesced; 1 pair; bulging, or not bulging. Body cylindrical; cuticle smooth, or processiferous. Antenna 1 subequal to antenna 2, or longer than antenna 2; peduncle with sparse robust and slender setae; 3-articulate; peduncular article 1 shorter than article 2, or subequal to article 2; antenna 1 article 2 subequal to article 3, or longer than article 3; peduncular articles 1–2 not geniculate; accessory flagellum absent; antenna 1 calynophore absent. Antenna 2 present; short; articles not folded in zigzag fashion; without hook-like process; flagellum shorter than peduncle; less than 5-articulate; not clavate; calceoli absent. Mouthparts well developed. Mandible incisor dentate; lacinia mobilis present on both sides; accessory setal row without distal tuft; molar present, medium, tritritative; palp present or absent. Maxilla 1 present; inner plate absent; palp present, not clavate, 2-articulate. Maxilla 2 inner plate present; outer plate present. Maxilliped inner and outer plates well developed or reduced, palps present, well developed or reduced; inner plates well developed, separate; outer plates present, small; palp 4-articulate, article 3 without rugosities. Labium smooth. Peraeon. Peraeonites 1–7 separate; complete; sternal gills absent; pleurae absent. Coxae 1–7 vestigial or absent, none fused with peraeonites. Coxae not acuminate. Coxae 1–3 not successively smaller, none vestigial. Coxae 2–4 none immensely broadened. Gnathopod 1 not sexually dimorphic; smaller (or weaker) than gnathopod 2; gnathopod 1 merus and carpus not rotated; gnathopod 1 carpus/propodus not cantilevered; shorter than propodus;

gnathopod 1 not produced along posterior margin of propodus; dactylus large. Gnathopod 2 not sexually dimorphic; subchelate; ischium short; merus not fused along posterior margin of carpus or produced away from it; carpus/propodus not cantilevered, carpus short, shorter than propodus, not produced along posterior margin of propodus. Peraeopods 3–4 absent, 5–7 directed anteriorly, some or all prehensile. Peraeopods 5–7 with few robust or slender setae; dactyli without slender or robust setae. Peraeopod 5 well developed; subequal in length to peraeopod 6; basis slightly expanded or linear, subrectangular, without posteroventral lobe; merus/carpus free; carpus weakly expanded; setae absent. Peraeopod 6 shorter than peraeopod 7; merus/carpus free; dactylus without setae. Peraeopod 7 with 6–7 well developed articles; longer than peraeopod 5; similar in structure to peraeopod 6; with 7 articles; basis expanded or slightly expanded, without dense slender setae; dactylus without setae. Pleon. Pleonites 1–3 without transverse dorsal serrations, without dorsal carina; without slender or robust dorsal setae. Epimera 1–3 absent. Urosome not dorsoventrally flattened; urosomites 1 to 3 coalesced; urosomites 1–2 without transverse dorsal serrations. Uropods 1–3 reduced to one vestigial pair. Uropod 2 absent.

Genus CAPRELLA Lamarck, 1801

S y n o n y m s: *Caprella* McCain & Steinberg, 1970, p. 8

Liparis Bosc, 1802, p. 79

Capreola De Brebisson, 1825, p. 252

Haploarthron Schurin, 1935, p. 202

D i a g n o s i s: Mandible lacking palp, pars incisiva and lacinia mobilis each with 5 teeth and ciliae, molar well developed. Labium inner and outer lobes apically with dense, short setae. Mx1 palp with spines and setae, outer lobe with 6–8 bifid robust spines. Mx2 long with setae on apical margin. Mxp with inner plate shorter or equal to outer one, both with spines and setae. A2 flagellum with 2 arts. P3–4 lacking. P5–7 normal. Male: anterior pleopods generally with 2 arts, posterior

ones rudimentary or lacking. Female without pleopods. Gills on pereonites 3–4.

Family PARIAMBIDAE Laubitz, 1993

Description. Head partially or completely coalesced with peraeonite 1; exposed; as long as deep, or longer than deep; rostrum present or absent, short; eyes present, well developed or obsolescent; not coalesced; 1 pair; not bulging. Body cylindrical; cuticle smooth, or processiferous. Antenna 1 longer than antenna 2; peduncle with sparse robust and slender setae; 3-articulate; peduncular article 1 shorter than article 2, or subequal to article 2; antenna 1 article 2 longer than article 3; peduncular articles 1–2 not geniculate; accessory flagellum absent; antenna 1 calynophore absent. Antenna 2 present; short; articles not folded in zigzag fashion; without hook-like process; flagellum shorter than peduncle; less than 5-articulate; not clavate; calceoli absent. Mouthparts well developed. Mandible incisor dentate; lacinia mobilis present on both sides; accessory setal row without distal tuft; molar present, medium, tritritative; palp present or absent. Maxilla 1 present; inner plate absent; palp present, not clavate, 2-articulate. Maxilla 2 inner plate present; outer plate present. Maxilliped inner and outer plates well developed or reduced, palps present, well developed or reduced; inner plates well developed or reduced, separate; outer plates present, small; palp 4-articulate, article 3 without rugosities. Labium smooth. Peraeon. Peraeonites 1–7 separate; complete; sternal gills absent; pleurae absent. Coxae 1–7 vestigial or absent, none fused with peraeonites. Coxae not acuminate. Coxae 1–3 not successively smaller, none vestigial. Coxae 2–4 none immensely broadened. Gnathopod 1 not sexually dimorphic; smaller (or weaker) than gnathopod 2; gnathopod 1 merus and carpus not rotated; gnathopod 1 carpus/propodus not cantilevered; shorter than propodus; gnathopod 1 not produced along posterior margin of propodus; dactylus large. Gnathopod 2 not sexually dimorphic; subchelate; ischium short; merus not fused along posterior margin of carpus or produced away from it; carpus/propodus not cantilevered, carpus short or elon-

gate, shorter than propodus or subequal to propodus, not produced along posterior margin of propodus. Peraeopods 3–5 greatly reduced, 6–7 directed anteriorly, some or all prehensile. Peraeopod 3 greatly reduced, some articles absent. Peraeopod 4 greatly reduced or absent. Peraeopods 5–7 with few robust or slender setae; dactyli without slender or robust setae. Peraeopod 5 well developed, or greatly reduced, or reduced; shorter than peraeopod 6, or subequal in length to peraeopod 6; basis linear, subrectangular, without posteroventral lobe; merus/carpus free; carpus linear; setae absent. Peraeopod 6 subequal in length to peraeopod 7; merus/carpus free; dactylus without setae. Peraeopod 7 with 6–7 well developed articles; subequal to peraeopod 5; similar in structure to peraeopod 6; with 7 articles; basis linear, without dense slender setae; dactylus without setae. Pleon. Pleonites 1–3 without transverse dorsal serrations, without dorsal carina; without slender or robust dorsal setae. Epimera 1–3 absent. Urosome dorsoventrally flattened; urosomites 1 to 3 coalesced; urosomites 1–2 without transverse dorsal serrations. Uropods 1–3 reduced to one vestigial pair. Uropod 2 absent.

Genus PSEUDOPROTELLA Mayer, 1890

D i a g n o s i s: P2–4 rudimentary, the others normal. 2 pairs of 1-articulate pleopods in male, lacking in female. 1 pair of gills in pereonite 3–4. A2 flagellum with 2 arts, mandible with molar and palp with 3 arts. Mxp inner lobe shorter than outer, both lacking teeth or setae. Anterior oostegites with ciliated inner margin, posterior ones ciliated only on posterior margin.

Family PHTISICIDAE Vasilenko, 1968

S y n o n y m s: Phtisicidae McCain, 1970, 838 - 839; Vasilenko, 1974, 94

D e s c r i p t i o n. Head partially or completely coalesced with pereonite 1; exposed; longer than deep; rostrum present or absent, short; eyes present, well developed or obsolescent; not coalesced; 1 pair; not

bulging. Body cylindrical; cuticle smooth, or processiferous. Antenna 1 longer than antenna 2; peduncle with sparse robust and slender setae; 3-articulate; peduncular article 1 shorter than article 2, or subequal to article 2; antenna 1 article 2 shorter than article 3, or subequal to article 3, or longer than article 3; peduncular articles 1–2 not geniculate; accessory flagellum absent; antenna 1 calynophore absent. Antenna 2 present; short; articles not folded in zigzag fashion; without hook-like process; flagellum shorter than peduncle; less than 5-articulate, or 5 or more articulate; not clavate; calceoli absent. Mouthparts well developed. Mandible incisor dentate; lacinia mobilis present on both sides; accessory setal row without distal tuft; molar absent; palp present. Maxilla 1 present; inner plate absent; palp present, not clavate, 2-articulate. Maxilla 2 inner plate present; outer plate present. Maxilliped inner and outer plates well developed or reduced, palps present, well developed or reduced; inner plates well developed, separate; outer plates present, vestigial; palp 4-articulate, article 3 without rugosities. Labium smooth. Peraeon. Peraeonites 1–7 separate; complete; sternal gills absent; pleurae absent. Coxae 1–7 vestigial or absent, none fused with peraeonites. Coxae not acuminate. Coxae 1–3 not successively smaller, none vestigial. Coxae 2–4 none immensely broadened. Gnathopod 1 not sexually dimorphic; smaller (or weaker) than gnathopod 2; gnathopod 1 merus and carpus not rotated; gnathopod 1 carpus/propodus not cantilevered; shorter than propodus; gnathopod 1 not produced along posterior margin of propodus; dactylus large. Gnathopod 2 sexually dimorphic, or not sexually dimorphic; subchelate, or parachelate; ischium short; merus not fused along posterior margin of carpus or produced away from it; carpus/propodus not cantilevered, carpus short or elongate, shorter than propodus or longer than propodus, not produced along posterior margin of propodus. Peraeopods heteropodous (3–4 directed posteriorly, 5–7 directed anteriorly), some or all prehensile. Peraeopod 3 small, or greatly reduced, some articles absent. Peraeopod 4 well developed, or small, or greatly reduced, some articles absent. 3–4 not glandular; 3–7 without hooded dactyli, 3–7 propodi without distal spurs. Coxa well

developed; carpus longer than propodus, not produced; dactylus small or poorly developed. Not acuminate; carpus not produced. Peraeopods 5–7 with few robust or slender setae; dactyli without slender or robust setae. Peraeopod 5 well developed, or reduced, or greatly reduced; basis linear, subrectangular, without posteroventral lobe; merus/carpus free; carpus linear; setae absent. Peraeopod 6 shorter than peraeopod 7, or subequal in length to peraeopod 7; merus/carpus free; dactylus without setae. Peraeopod 7 with 6–7 well developed articles; longer than peraeopod 5; similar in structure to peraeopod 6; with 7 articles; basis slightly expanded or linear, without dense slender setae; dactylus without setae. Pleon. Pleonites 1–3 without transverse dorsal serrations, without dorsal carina; without slender or robust dorsal setae. Epimera 1–3 absent. Urosome dorsoventrally flattened; urosomites 1 to 3 coalesced; urosomites 1–2 without transverse dorsal serrations. Uropods 1–3 reduced to two vestigial pairs. Uropod 2 well developed.

Genus *PHTISICA* Slabber, 1769

S y n o n y m s: *Proto* Leach, 1814, p. 433

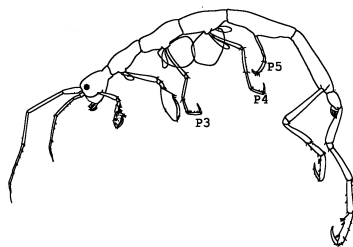
Leptomera Latreille, 1817, p. 51

Naupredia Latreille, 1829, p. 128

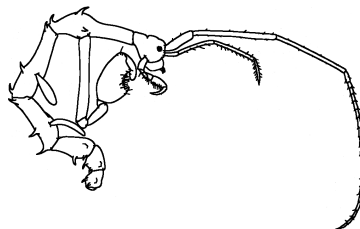
D i a g n o s i s: A2 flagellum with 2–5 arts. Mandible lacking molar, palp with 3 arts. Mxp inner plate with spines, outer one unarmed. Gills on pereonites 2–4. P3–4 with 6 arts. P5 with 5 arts. Male abdomen with 2 pairs of 2-articulate pleopods and 1 rudimentary pair of appendices. Broad pouches not ciliated.

Key to Genera

- 1 a. Gills on pereonites 2–4. P 3–7 fully articulate. 3 pairs of pleopods, the first rudimentary in both sexes. Mxp inner plate=outer. Mandible lacking molar *Phtisica* Slabber, 1769
- b. Gills on pereonites 3–4. P 3–4 rudimentary or lacking. Maximally 2 pair of pleopods. Mxp inner plate much shorter than outer. Mandibles with molar 2



a) Body, by [9]



b) Body, by [9]

- 2 a. Md palp present. P 3–4 reduced to 2 arts *Pseudoprotella* Mayer, 1890
 *Pseudoprotella* Mayer, 1890
 b. Md palp absent. P 3–4 lacking *Caprella* Lamarck, 1801



a) Md, by [9]



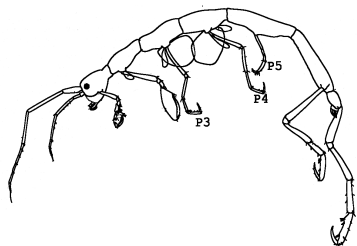
b) Md, by [9]

Key to species

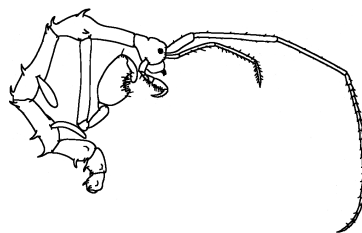
- 1 a. P3–5 fully articulate *Phtisica marina* Slabber, 1769
 S y n o n y m s: *Phtisica marina* Chevreux & Fage, 1925, p. 434, fig. 422; Fiorencis, 1940, p. 11, fig. 1; pl. 1, fig. 1-2; S. Costa, 1960, p. 99; McCain, 1968, p. 91, fig. 46–47; mccain & Steinberg, 1970, p. 65.
Proto brunneovittata Haller, 1879, p. 231; Haller, 1880, p. 399, pl. 22, fig. 19–22
Proto pedata Haller, 1879, p. 230; Haller, 1880, p. 398
Proto ventricosa Mayer, 1882, p. 22, pl. 1, fig. 1; pl. 3, fig. 16–29; pl. 4, fig. 12–13; pl. 5, fig. 1–5; Mayer, 1890, p. 12, pl. 3, fig. 4–6; pl. 5, fig. 3–6; pl. 6, fig. 1; pl. 7, fig. 1; Mayer, 1903, p. 20, pl. 6, fig. 23; Monterosso, 1915, p. 3

E c o l o g y: In green or brown algae, depths 10–130 m.

- b. P 3–4 rudimentary or absent 2



a) Body, by [9]



b) Body, by [9]

- 2 a. Md palp absent 3

- b. Md palp present *Pseudoprotella phasma* (Montagu, 1804)

S y n o n y m s: *Caprella quadrispinis* Grube, 1864 a, p. 63

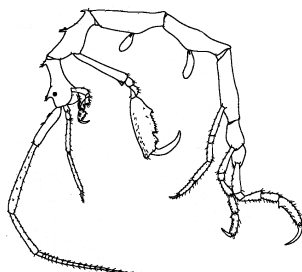
Protella phasma Mayer, 1882, p. 29, pl. 1, fig. 2; pl. 4, fig. 1–8, fig. 34–37;
pl. 5, fig. 19–21

Pseudoprotella phasma Cavedini, 1982, p. 52

E c o l o g y: Among algae or/and hydroids, depths 0–100 m.



a) Md, by [9]



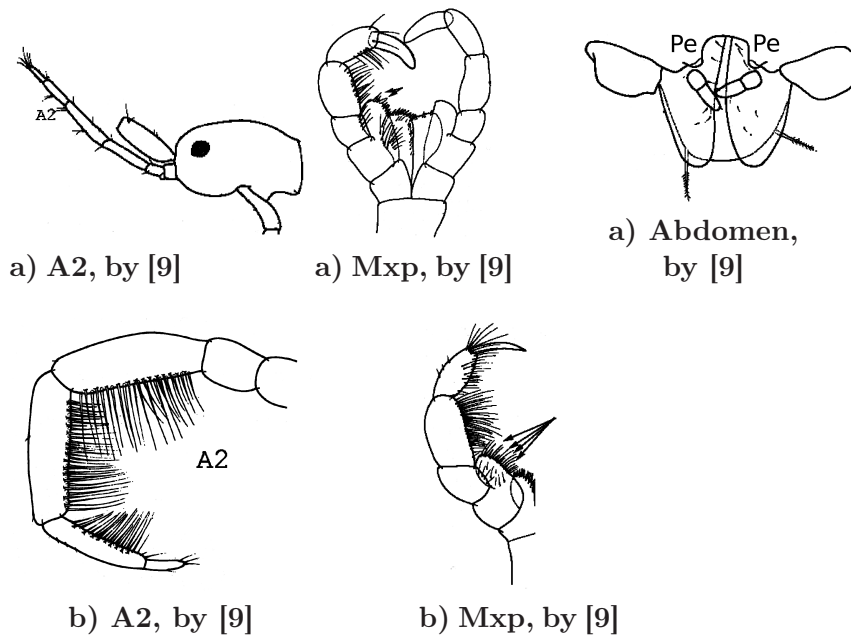
b) Body, by [9]



b) Md, by [9]

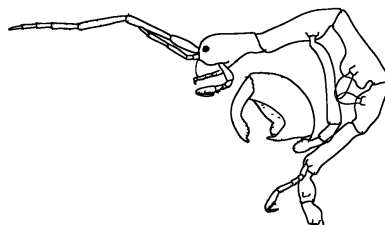
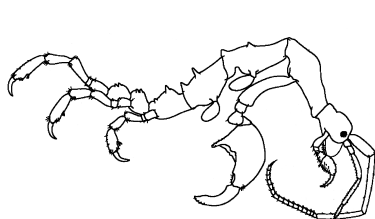
- 3 a. A2 ventral margin with short setae. Mxp outer plate with 1–3 spines. ♂ with lateral penis (Pe) 4

- b. A2 ventral margin with long setae. Mxp outer plate with 3–5 spines.
♂ with medial penis 6



4 a. Body with dorsal processes *Caprella acanthifera* Leach, 1814
 S y n o n y m s: *Caprella acanthifera* Mayer, 1882, p. 39, pl. 1, fig. 6;
 pl. 3, fig. 10–15; Mayer, 1890, p. 44, pl. 2, fig. 1–5; pl. 4, fig. 11–15;
 pl. 5, fig. 36; pl. 6, fig. 18 b, 35–36; G.O. Sars, 1894, p. 666, pl. 239,
 fig. 3; Mayer, 1903, p. 77, pl. 3, fig. 1–2; pl. 7, fig. 60–61; Chevreux &
 Fage, 1925, p. 446, fig. 427–428; Caullery, 1926, p. 126, pl. 3; McCain &
 Steinberg, 1970, p. 8; Cavedini, 1982, p. 494, fig. 1
Caprella aspera Heller, 1866, p. 55, pl. 4, fig. 20–21
Caprella leptonyx Heller, 1866, p. 56, pl. 4, fig. 22
Caprella armata heller, 1866, p. 56, pl. 4, fig. 23
Caprella achantifera Fiorencis, 1940, p. 16, fig. 7; pl. 1, fig. 5
 E c o l o g y: Among algae and hydroids, depths 0–120 m.

- b. Body smooth 5



a) Body, by [9]

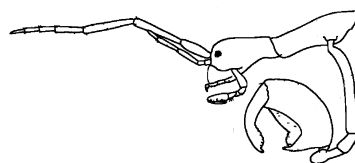
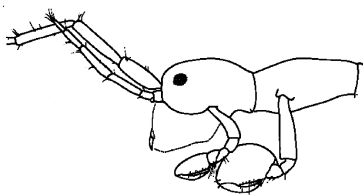
b) Body, by [9]

- 5 a. Gn2 basis shorter or equal to pereonite 2
 *Caprella rapax* Mayer, 1890 ♀

S y n o n y m s: *Caprella rapax* McCain & Steinberg, 1970, p. 36;
 Schiecke, 1973, p. 107; Cavedini, 1982, p. 508, fig. 5–6

E c o l o g y: Endopsammic in coarse sand (only from the coastal waters
 of Turkey), depths 0–70 m.

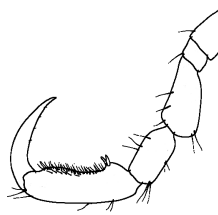
- b. Gn2 basis much longer than pereonite 2
 *Caprella rapax* Mayer, 1890 ♂



a) Gn2, by [9]

b) Gn2, by [9]

- 6 a. P5–7 carpus with a row of small teeth 7
 b. P5–7 carpus without teeth 8



a) P7, Cp, by [9]

b) P5, Cp, by [9]

- 7 a. P5–7 carpus with row of teeth on inner margin. Pereionites 5–6 with 2 pairs of dorsal tubercles. ♂ pereionites 2–4 with 1 pair of lateral spines. A1 art 2–3 with dense felt of long setae on inner margin. Gn2 basis with strongly dentate carina. Poison tooth enormous and covered with setae *Caprella liparotensis* Haller, 1879

S y n o n y m s: *Caprella liparotensis* Haller, 1880, p. 404, pl. 23, fig. 41–42; Mayer, 1890, p. 57; Mayer, 1903, p. 114, pl. 8, fig. 23; Chevreux & Fage, 1925, p. 452, fig. 431; Fiorencis, 1940, p. 15, fig. 6; McCain & Steinberg, 1970, p. 29; Cavedini, 1982, p. 504

Caprella dentata Haller, 1880 a, p. 744, fig. 4–9; Mayer, 1882, p. 50, pl. 1, fig. 8; pl. 3, fig. 1–9; pl. 4, fig. 33

E c o l o g y: Always associated with hydroids, depths 0–35 m.

- b. P5–7 carpus with row of non marginal teeth. Dorsal tubercles lacking. ♂ pereonites 2–4 lacking lateral spines. A1 arts 2–3 without setae. Gn2 basis with dorsal carina lacking teeth. Poison tooth small and smooth *Caprella danilevskii* Czerniavski, 1868

S y n o n y m s: *Caprella Danilevskii* Mayer, 1890, p. 58, pl. 5, fig. 44; pl. 7, fig. 12–13

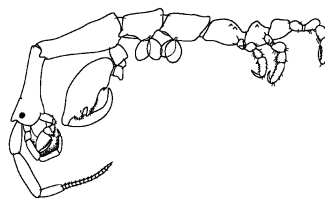
Caprella Danilevskii Chevreux & Fage, 1925, p. 454, fig. 432

Caprella danilevskii McCain, 1968, p. 22, fig. 10–11; McCain & Steinberg, 1970, p. 16; Cavedini, 1982, p. 499

E c o l o g y: With *Cystoseira*, among bryozoa, depths 0–20 m.



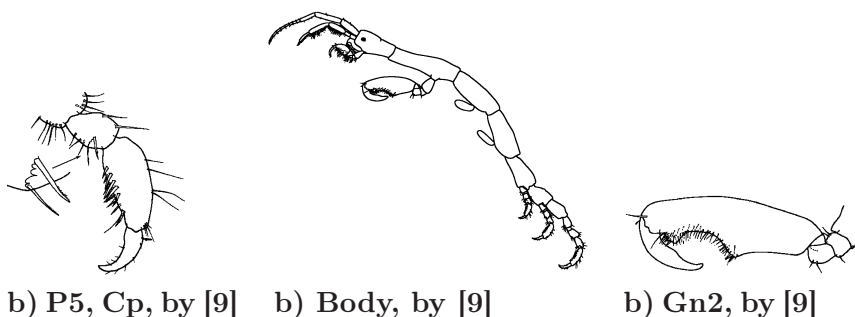
a) P7, Cp, by [9]



a) Body, by [9]



a) Pereion-
ite5-7, by [9]



8 a. One ventral spine between Gn2. Pereonite 5 with a pair of lateral tubercles anteriorly. Gn2 basis robust, short and with carina

. *Caprella equilibra* Say, 1818

S y n o n y m s: *Caprella equilibra* McCain, 1968, p. 25, fig. 12–13; McCain & Steinberg, 1970, p. 19; Cavedini, 1982, p. 500

Caprella monacantha Heller, 1866, p. 54, pl. 4, fig. 17–19

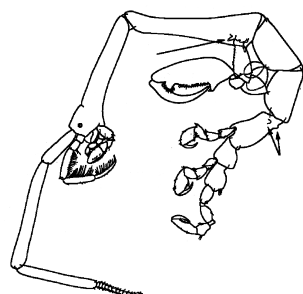
Caprella aequilibra Mayer, 1882, p. 45, pl. 1, fig. 7; pl. 2, fig. 1–11; pl. 4, fig. 20–25; pl. 5, fig. 16–18; Mayer, 1890, p. 48, pl. 2, fig. 42–43; pl. 4, fig. 35–37; pl. 6, fig. 18 a, 37; Mayer, 1903, p. 89, pl. 3, fig. 29–34; pl. 7, fig. 66–69; Chevreux & Fage, 1925, p. 455, fig. 433; Fiorences, 1940, p. 13, fig. 3–4; pl. 1, fig. 3–4, 7

E c o l o g y: Between algae, hydroids, bryozoa, sponges and ascidiacea (only from the coastal waters of Turkey), depths 0–10 m.

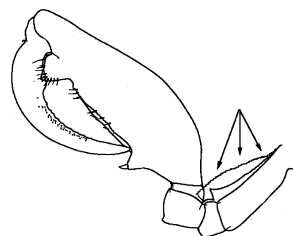
b. No ventral spine. Pereonite 5 smooth. Gn2 basis very long, without carina *Caprella mitis* Mayer, 1890

S y n o n y m s: *Caprella mitis* Monterosso, 1915, p. 13; McCain & Steinberg, 1970, p. 31; Cavedini, 1982, p. 505, fig. 3–4

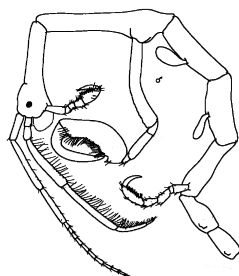
E c o l o g y: In biocenosis of detritic bottoms, depths 0–5 m.



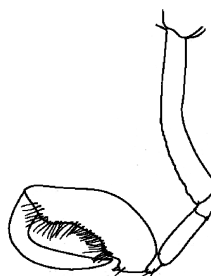
a) Body, by [9]



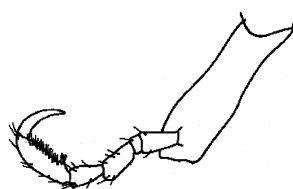
a) Gn2, by [9]



b) Body, by [9]

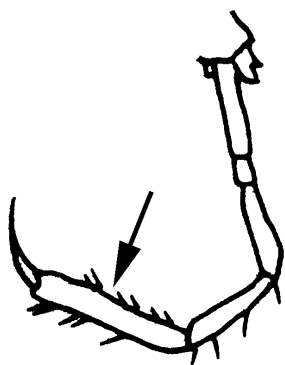


b) Gn2, by [9]

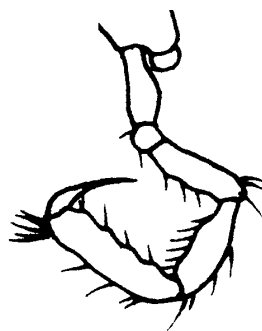
b) Pereon-
ite5, by [9]

Key to subspecies *Caprella acanthifera*

- 1 a. P7. Propodus width $\leq 1/5$ its of length *Caprella acanthifera acanthifera* Leach, 1814
- b. Propodus width $\leq 1/4$ its of length *Caprella acanthifera ferox* Leach, 1814



a) P7, propodus, by [41]



a) P7, propodus, by [41]

Ecology of Amphipoda from the coastal waters of Turkey

Ampelisca pseudospinimana Bellan Santini & Kaim-Malka, 1977

BLACK SEA (Turkish Coast): Infralittoral *Zostera*+sand, *Zostera*+sand+mud [15]; Infralittoral (17-18m) muddy sand and algae [38]; mud+clay (19m), mud (39m), fine sand+mud (20 m), mud (24 m) [27].

GENERAL: *Posidonia*+sand, sand and sand+mud [39]; *Zostera*+sand and *Posidonia* [42]; detritic and muddy biotopes [13, 24]; *Padina pavonia* facies [25].

Ampelisca pseudosarsi Bellan-Santini & Kaim-Malka, 1977.

BLACK SEA (Turkish Coast): fine sand (13m), mud (40m), sand (24 m), mud and clay (40m); fine sand+mud (24m), mud (45m); fine sand+dead shells (36m), mud (74m) [27]

GENERAL: Sand+mud, *Posidonia*, *Posidonia*+sand and algae (13–47 m) [39]; 18–90 m depths [6]; sandy and muddy bottoms (20–50 m) [42]; rock [26]

Ampelisca spinipes Boeck, 1861.

BLACK SEA (Turkish Coast): Muddy and sandy bottoms (10-65 m) [40]

GENERAL: *Posidonia*+sand and sand+mud (20–109 m) [39]; mud and detritic (12–39 m) [32]; sandy (0–120 m) [12]; *Zostera* and algae (0.2–50m) [42]; *Zostera marina* [14]

Caprella equilibra Say, 1818

BLACK SEA (Turkish Coast): *Cystoseira*+*Corallina*+*Padina* (0–0.5m) and rock+stone [2]; *Cystoseira barbata* and *Ulva rigida* facies [19]

GENERAL: Between *Posidonia*, Bryozoa, Porifera, Ascidiacea, green and red algae species [?]; With *Amphithoe* sp. and *Jassa* sp [17]

Caprella rapax Mayer, 1890

BLACK SEA (Turkish Coast): *Zostera*+sand and *Zostera*+sand+mud (2–4 m) [15]; *Cystoseira*+*Corallina*+*Padina* (0–0.5m) and rock+stone [2]; *Cystoseira barbata*, *Ulva rigida* and *Mytilus galloprovincialis* facies [19]; Infralittoral; among algae (16–21m) [38]

GENERAL: Between algae, *Posidonia* and *Posidonia*+sand biotopes [39]; Infralittoral; among various algae [28]; among *Lithophyllum* sp. [31]; Infralittoral; among *Cystoseira* sp. and *Enteromorpha* sp. [28]; Rocky (0–5m) [1]; *Padina pavonia* facies [25] and among thick sand [6]

Dexamine spiniventris (A. Costa, 1853)

BLACK SEA (Turkish Coast): *Cystoseira*+*Padina* (0–0.5m); rock+stone and *Mytilus* sp. [2]; among *Cystoseira barbata* and *Ulva rigida* [19]

GENERAL: *Posidonia* and *Posidonia*+sand (5–20 m) [39]; - Infralittoral; among various algae [28]; among *Zostera* sp. (0.5–1m) [18]; rocky and muddy biotopes [3]; among Photophilic algae (0.5–20m) [1]; *Padina pavonia* [25] and *Cystoseira* sp. facies [29]; Rocky [26]

Erichthonius punctatus (Bate, 1857)

BLACK SEA (Turkish Coast): *Cystoseira*+*Padina* (0–0.5m); rock+stone [2]; *Zostera*+sand (2–4 m) [15]; among various algae [38]; *Mytilus galloprovincialis*, *Ulva rigida* and *Cystoseira barbata* facies [19]

GENERAL: *Posidonia*, *Posidonia*+sand, mud and sand+mud (7–54 m) [39]; Infralittoral; among various algae [16]; among *Posidonia* and *Cymodocea* sp (Scipione et al., 1996); Among *Zostera* sp. [14]; *Padina pavonia* [25]

Hyale camptonyx (Heller, 1866)

BLACK SEA (Turkish Coast): *Zostera*+sand (4m) [15]; *Cystoseira*+*Corallina*+*Padina* (0–0.5m) and rock+stone [2]; *Cystoseira barbata* and *Mytilus galloprovincialis* facies [19]

GENERAL: Infralittoral; among various algae (50m) (Bellan-Santini et al., 1982); among photophilic algae (0.5–35m) [1]

Leptocheirus pilosus Zaddach, 1844

BLACK SEA (Turkish Coast): among various algae and rock+stone (0–0.5m) [2]; Infralittoral; muddy sand and algae (8–18m) [38]

GENERAL: *Posidonia*, algae, sand+mud biotopes (5–54 m) [39]; among Serpulid Polychaeta colonies [28]; shallow brackishwater [7]; In mud tubes with hydroids and algal colonies [5]; Rocky substratums [26]

Microdeutopus stationis Della Valle, 1893

BLACK SEA (Turkish Coast): sand, *Mytilus* sludge zoocenosis (13–80m) [40]

GENERAL: *Posidonia*+sand, sand, sand+mud (7–44 m) [39]; among algae (1–15 m), *Zostera* and *Cymodocea*, muddy bottoms [28]; in sponge [30]; Infralittoral, among fine sand and fanerogams [7]; *Padina pavonia* facies [25]; Rocky substratums [26]

Monoculodes griseus Della Valle, 1893

BLACK SEA (Turkish Coast): Mud+clay, 13–79 depth range [27]

GENERAL: Sand+mud (19–51m) [39]; Soft substratums from circalittoral to [9]

Orchestia stephenseni Cecchini, 1928

BLACK SEA (Turkish Coast): Among *Zostera*, *Cymodocea* and in rock caves [39]; *Cystoseira*+*Corallina* (0–0.5 m) and rock-stone-*Mytilus* sp. [2]; supralittoral rocky and sandy, mediolittoral algae, rocky and muddy sand substratums [38]

GENERAL: Under *Posidonia* sp. [9]; Supra and mediolittoral; under rock [28]; among dead *Zostera* sp. and *Cymodocea* sp. [37]; among Photophilic algae [1]

Stenothoe marina (Bate, 1856)

BLACK SEA (Turkish Coast): Fine sand, muddy bottoms, 13–45 m depth range

GENERAL: Mud (96m) [39]; with Hydroid (G.O.Sars, 1882), Madreporaria and Gorgonaria (80–260m) [32]

Talitrus saltator (Montagu, 1808)

BLACK SEA (Turkish Coast): Supralittoral; rock, sand-rock and dislodged algae [40]

Glossary

Accessory flagellum. The secondary ramus of antenna 1, often absent or vestigial, and attached medially to peduncular article 3.

Aestetasc, aestete. Sensory setae of antennae, flattened and non-tapering.

Basis. Article 2 of a pereonal appendage.

Calceolus. A small globular, linguiform or helmet-shaped, articulate sense organ on antennae; of rare occurrence in marine Gammaridea and most often seen in Eusiridae and Lysiannassidae.

Callynophore. Partially or completely fused proximal articles of primary flagellum on antenna 1 which bear transverse rows of aestetasc usually grouped together into one or two longitudinal fields to form a brush.

Carpochelate. Immovable finger of prehensile appendage occurring on carpus (article 5); examples *Microdeutopus*.

Carpus. Article 5 of a thoracic appendage (gnathopod, pereopod).

Chela. Immovable finger of prehensile appendage.

Chelate. Descriptive of the palm of a gnathopod protruding as an immovable finger on which the dactyl closes.

Coxa, coxal plate. Article 1 of a pereonal appendage, expanded into a lateral lamella.

Cuticular lens. A brightly shining circular or ovate thickening of the cuticle on the head; one assumes the lens focuses light on the brain or pigment surrounding parts of the brain; common in Ampeliscidae.

Dactyl. Talon-like terminal article of gnathopods, pereopods (article 7) or maxillipeds (article 3 or 4).

Emarginate. Descriptive of the concave posterior end of an uncleft telson.

Epimeron. A lateral pleuron of pleonites 1-3; the ventrolateral plate-like extension of the body segment.

Epistome. The anterior surface of the head above the labrum; this area is often extended ventrally to appear as a part of the labrum and

may be anteriorly produced as a cusp or lobe.

Foliaceous. Broadened, leaf-like; applied especially to plates or lobes of mouthparts and rami of uropod 3.

Fossorial. Associated with the habit of burrowing, often referring to the excessively spinose or setose condition of appendages used for burrowing by Gammaridea; especially applicable to Haustorioidea, Oedicerotidae and Phoxocephalidae, with some setae of articles 4-6 of pereopods 5-7 more than half as long as those articles; and some spines in groups forming substantial submarginal or fully facial rows perpendicular to margins; long setae also occur on "filter" feeders such as Ampeliscidae.

Gnathopod. One member of the first two pairs of free thoracic appendages; these appendages differ in function and usually in appearance from following pereopods; often called pereopods.

Incisor. The anterior apical part of the mandible usually formed into a toothed chewing edge or untoothed chopping plate.

Ischium. Article 3 of a pereonal appendage.

Lacinia mobilis. An articulated accessory plate proximal to the mandibular incisor, often absent or missing on either left or right mandibles, occasionally indistinguishable from a spine of the spine rows.

Lanceolate. Shaped like a lance; narrow but tapering apical, occasionally tapering basal.

Lower lip (labium). A fleshy complex posterior to the mandibles, always composed of at least one pair of lobes (outer), often with a medio-proximal pair of inner lobes; the lateroproximal ends of the outer lobes are often attenuated as alae and are denoted as mandibular lobes.

Mandible. The anterior movable appendage of the buccal group; usually composed of a body bearing a distal incisor, a lacinia mobilis, spine row, molar, and 3-articulate palp.

Maxilla 1. A pair of cephalic appendages posterior to the lower lip; for taxonomic purposes only three parts of each member named: the medial lobe (plate) usually bearing marginal setae, the lateral and larger lobe (plate) bearing terminal spines, and, attached to the outer lobe, a palp usually composed of two articles but occasionally absent.

Maxilla 2. A pair of cephalic appendages posterior to maxilla 1; for taxonomic purposes each member recognized as a pair of lobes (plates) medial and lateral, usually strongly setose.

Maxillipeds. The posteriormost pair of "cephalic" appendages, representing the primitive first thoracic segment now amalgamated with the head but in amphipod taxonomy not included in the sequential numbering of thoracic appendages; for taxonomic purposes recognized as a pair of basally amalgamated appendages, each member composed of a proximal (inner) plate, a distal (outer) plate, and a palp of four articles, rarely reduced to 3 or 2 articles or absent.

Merochelate. Immovable freely projecting finger of prehensile appendage occurring on merus (article 4); exsample; gnathopod 1 of *Aora*. Projection along face of carpus disregarded

Merus. Article 4 of a pereonal appendage.

Molar. A process of the mandible, located on the midmedial margin; when typically developed it is a medium-sized, subcylindrical body with a surface of ridges and teeth used for grinding (tritulative). It evolves in 2 directions: becoming larger, less tritulative and finally smooth and pubescent; becoming smaller, less tritulative and finally smooth or pubescent or spiny and finally disappearing.

Palm. A posterior surface or margin of article 6 of a gnathopod or pereopod on which article 7 (dactyl) closes for the purpose of prehension; usually recognizable because of expansion of article 6 or by occurrence of special spines or ornamentation and usually with a proximal defining limit marked by a change in marginal slope or occurrence of special spines.

Palp. Terminal articles of a buccal appendage, in Amphipoda occurring only on mandibles, first maxillae, and maxillipeds as the stenopodous terminal articles distal to the expanded outer plates or main body.

Parachelate. A rarely used in Amphipoda applied to propodoche-late gnathopods and pereopods in which the immovable finger is distinct, but article 6 is otherwise unexpanded or nonpalmate; occasionally, the

dactyl strongly overlaps the apex of the immovable finger; gnathopods of various Eophliantidae are good examples but the term may also be applied to numerous other cases, such as those linear, chelate gnathopods of Sebidae, *Didymochelia* and various second gnathopods of Lysianassidae.

Parviramous. Uropod 3 with scale-like inner ramus shorter than one third of outer ramus.

Peduncle. The basal articles of a fundamentally biramous appendage; in Amphipoda applied to antennae, pleopods, and uropods; antenna 1 with three peduncular articles, antenna 2 with five peduncular articles (But appendage not biramous); pleopods with one definitive peduncular article but remains of others occurring proximally; uropods each with one peduncular article.

Pereon. The complex of seven three thoracic segments bearing gnathopods and pereopods, not including the maxillipeds.

Pereonite. A segment of the pereon.

Pereopod. A walking, grasping, standing, or feeding appendage attached to a pereonite; normally composed of seven articles, including coxa; in Amphipoda the first two pairs are often termed gnathopods and only the last five pairs of thoracic legs are called pereopods.

Pleopod. A biramous swimming appendage on pleonites 1-3, one pair for each pleonite.

Pleon. The abdomen (of six tree segments in Gammaridea, rarely with some segments coalesced).

Pleonite. A segment of the pleon.

Prebuccal complex. The labrum and epistome together.

Propodochelate. Synonymus with chelate.

Propodus. Article 6 of a pereonal appendage.

Scale, scale-like. Terms applied to the accessory flagellum when forming a small lamella immovably fused to article 3 of antenna 1; and to the inner ramus of uropod 3 when strongly reduced and plate-like.

Seta. A bristle; a weakly articulate chitinous extension supplied with nerve canal; in amphipods word restricted to such projections which are flexible.

Simple. Used in Amphipod taxonomy to denote the absence of spines or setae on appendages; or the occurrence of but a single article in the ramus of a uropod; or especially to the absence of a palm on a gnathopod or pereopod. Distinction between subchelate and simple is often weak.

Spine. A thick inflexible seta. Not used in amphipods in same way as a Decapoda where spine refers to what is called tooth or denticle in amphipods.

Subchelate. Article 6 of gnathopod or pereopod having a distal palm against which article 7 closes; a prehensile condition in which the palm is not produced to form a finger; intermediate in condition between chelate and simple. Often marked by presence of defining spine or tooth at proximal end of palm. Complexy subchelate or complexy chelate are terms referring to the formation of a false chela by protrusion of teeth, cusps, or lobes from articles other than the sixth and upon which article 7 impinges to form aprehensile condition; occurring especially in Aoridae, Corophiidae and Leucothoidae.

Telson. A flap dorsal to the anus attached to pleonite 6, primitively bilobed in our concept of the basic amphipod, but usually in Amphipoda with bases coalesced and often with lobes completely coalesced to form a single plate.

Tooth. A non-articulated extension of a margin. Plural = "teeth". Often misapplied to tooth-like spines.

Triturative. Descriptive of the rasp-like surface of a mandibular molar, composed of teeth, ridges, and cusps.

Unguiform. Claw-like. Especially applicable to dactyls of maxillipedal palps being in the form of a talon (inguiform) or in the alternative form of a stubby, uncurved, blunt body.

Upper lip (labrum). A fleshy lobe attached to the anterior cephalic margin in front of the mandibles; occasionally the anterior surface of the labrum protrudes as a lobe or cusp; often the cephalic area to which the labrum is attached is recognizable as an "epistome" and may also be lobed; or both labrum and epistome may be indistinguishable and

produced together as a single lobe.

Uropod. One member of the three pairs terminal pleonal appendages, each formed of a peduncle and two rami.

Urosome. The complex of pleonites 4, 5, 6, carrying uropods, and telson.

Urosomite. A segment of the urosome

Variramous. Uropod 3 with inner ramus shorter than outer but longer than one third; both rami differ on setation pattern; this condition more precisely defined than "Dispariramous".

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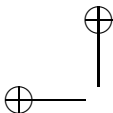
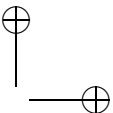
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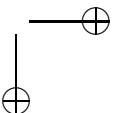
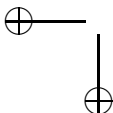
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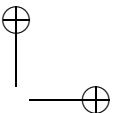
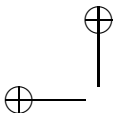
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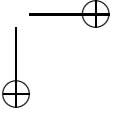
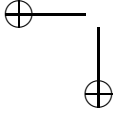
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Для зоологов, систематиков, таксономистов, морских биологов а также преподавателей и студентов различных учебных заведений.

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В визначнике представлені морфологічні, таксономічні та екологічні особливості амфіпод, які населяють Чорне море. Для кожного виду виписані таксономічні ключі, а також синоніми видів, дані ілюстрації, описано їх розповсюдження.

Для зоологів, систематиків і таксономістів, морських біологів, а також для викладачів і студентів різних учбових закладів.



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FROM THE BLACK SEA**

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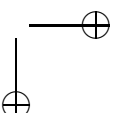
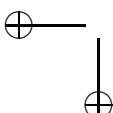
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