

ЦРНОГОРСКА АКАДЕМИЈА НАУКА И УМЈЕТНОСТИ
ГЛАСНИК ОДЈЕЉЕЊА ПРИРОДНИХ НАУКА, 5, 1986.

ЧЕРНОГОРСКАЯ АКАДЕМИЯ НАУК И ИСКУССТВ
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Gordan S. Karaman*

**SEVERAL POORLY KNOWN OR NEW SPECIES OF FAMILIES
SYNOPIIDAE AND PHOXOCEPHALIDAE FROM
THE MEDITERRANEAN SEA
(CONTRIBUTION TO THE KNOWLEDGE
OF THE AMPHIPODA 158)**

NEKOLIKO SLABO POZNATIH ILI NOVIH VRSTA IZ FAMILIJA
SYNOPIIDAE I PHOXOCEPHALIDAE IZ SREDOZEMNOG MORA
(158, PRILOG POZNAVANJU AMPHIPODA)

Abstract

The species of the family Synopiidae: *Bruzelia typica* Boeck 1871, *Ilemaustroae ilergetes* (J. L. Barnard 1964), *Syrrhoe angulipes* Ledoyer 1977, *Syrrhoe affinis* Chevreux 1908, *Pseudotiron bouvieri* Chevreux 1895 and *Syrrhoites pusilla* Enequist 1950, are partially redescribed and figured based on the material from the Mediterranean Sea, and their taxonomic characters and variability are discussed.

The species *Syrrhoe affinis* Chevr. and *Bruzelia typica* Boeck are discovered at the first time in the Adriatic Sea (off Ancona).

The new species of the family Phoxocephalidae, *Metaphoxus gruneri*, n.sp. is described from the sea near Malta island.

Izvod

Vrste iz familije Synopiidae: *Bruzelia typica* Boeck 1871, *Ilemaustroae ilergetes* (J. L. Barnard 1964), *Syrrhoe angulipes* Ledoyer 1977, *Syrrhoe affinis* Chevreux 1908, *Pseudotiron bouvieri* Chevreux 1895 i *Syrrhoites pusilla* Enequist 1950, su djelimično ponovo opisani

* Gordan S. Karaman, Biological Institute, Titograd.

i nacrtani na osnovu materijala iz Sredozemnog mora, i njihovi taksonomski karakteri i varijabilnost su analizirani.

Vrste *Syrrhoe affinis* Chevreux i *Bruzelia typica* Boeck su nađeni po prvi put u Jadranskom moru (ispred Ankone).

Opisana je nova vrsta za nauku iz familije *Phoxocephalidae*, *Metaphoxus gruneri*, n.sp., iz mora kod otoka Malte.

INTRODUCTION

The members of the family *Synopiidae* are still unsatisfactorily known from the Mediterranean Sea (including Adriatic Sea) because they settle deeper parts of the sea bottom under 100 meters depth, and were found in the Mediterranean Sea up to 4690 m depth. For that reason, most of known species of that family have been discovered only recently, during the oceanographic investigations of various scientific expeditions throught the Mediterranean Sea, mainly by french and american scientific ships.

The first species of Synopiids in the Mediterranean Sea, discovered and described Chevreux (1895), *Pseudotiron bouvieri* Chev., from 170 meters depth.

Later J. L. Barnard described (1964) a new species *Austrosyrrhoe ilergetes*, n.sp. from 1938 meters depth, later removed by him (1972) to the new genus *Ilerastroe* J. L. Barnard.

Ledoyer (1977) described a new species, *Syrrhoe angulipes*, n.sp. from 160—400 meters depth.

Bellan-Santini described two other new species (1985), *Syrrhoites capricornia*, n.sp. from 2720 meters depth, and *S. cornuta*, n.sp. from 2520—2626 meters depth.

G. Karaman described (1986) a new species, *Syrrhoites barnardi*, n.sp. from Napoli Bay (unknown depth) and presented a key to the species of that genus in the Mediterranean Sea, and recently (1986) one other deep-sea amphipod from 200—360 meters depth, *Arculfia trago mediterranea*, n.ssp. (fam. *Pardaliscidae*),

By this way, the known species of family *Synopiidae* elevated to nine species, most of them endemic for the Mediterranean Sea.

Many of known species of family *Synopiidae* have been relatively poorly described with unknown many taxonomic characters (including some mouthparts, pleopods, etc.) important for modern taxonomy.

During our study of the amphipods from the Mediterranean Sea, we have an opportunity to study numerous samples of that family collected by Ledoyer, Bellan-Santini, Schiecke and other scientists, and we decided to partially redescribed and figured some of these species, especially their unknown or poorly known characters, important for establishing of their exact taxonomic position.

Within the family *Phoxocephalidae*, we described one new species, *Metaphoxus gruneri*, n.sp. from the vicinity of Malta Island.

Acknowledgments: I am indebted to Dr. Sandro Ruffo from the Museum of Natural History in Verona (Italy), to Dr. Michel Ledoyer and Dr. Denise Bellan-Santini from the Oceanographic Institute in Marseille (France), for the loan of material used in this study.

TAXONOMIC PART

Family SYNOPIIDAE

Key to the Genera:

1. Gnathopods 1 and 2 distinctly simple. Head with blunt anterior tip — — — — — PSEUDOTIRON
- One or both gnathopods distinctly subchelate. Head with non blunt anterior tip — — — — — 2
2. Segment 6 of gnathopods 1 and 2 with nearly transverse palm. Mandibular molar small (telson deeply incised) — SYRRHOE
- Segment 6 of gnathopods 1 and 2 with oblique palm. Mandibular molar large — — — — — 3
3. Telson entire or incised less than 1/8 of its length — — — 4
- Telson incised 1/4 or more of its length — — SYRRHOITES
4. Coxa 4 without posterior tooth, reniform, small. Telson incised distally. Outer plate of maxilla 1 with 9 spines ILERAUSTROE
- Coxa 4 with strong posterior tooth, large. Telson entire, excavated distally. Outer plate of maxilla 1 with 11 spines BRUZELIA

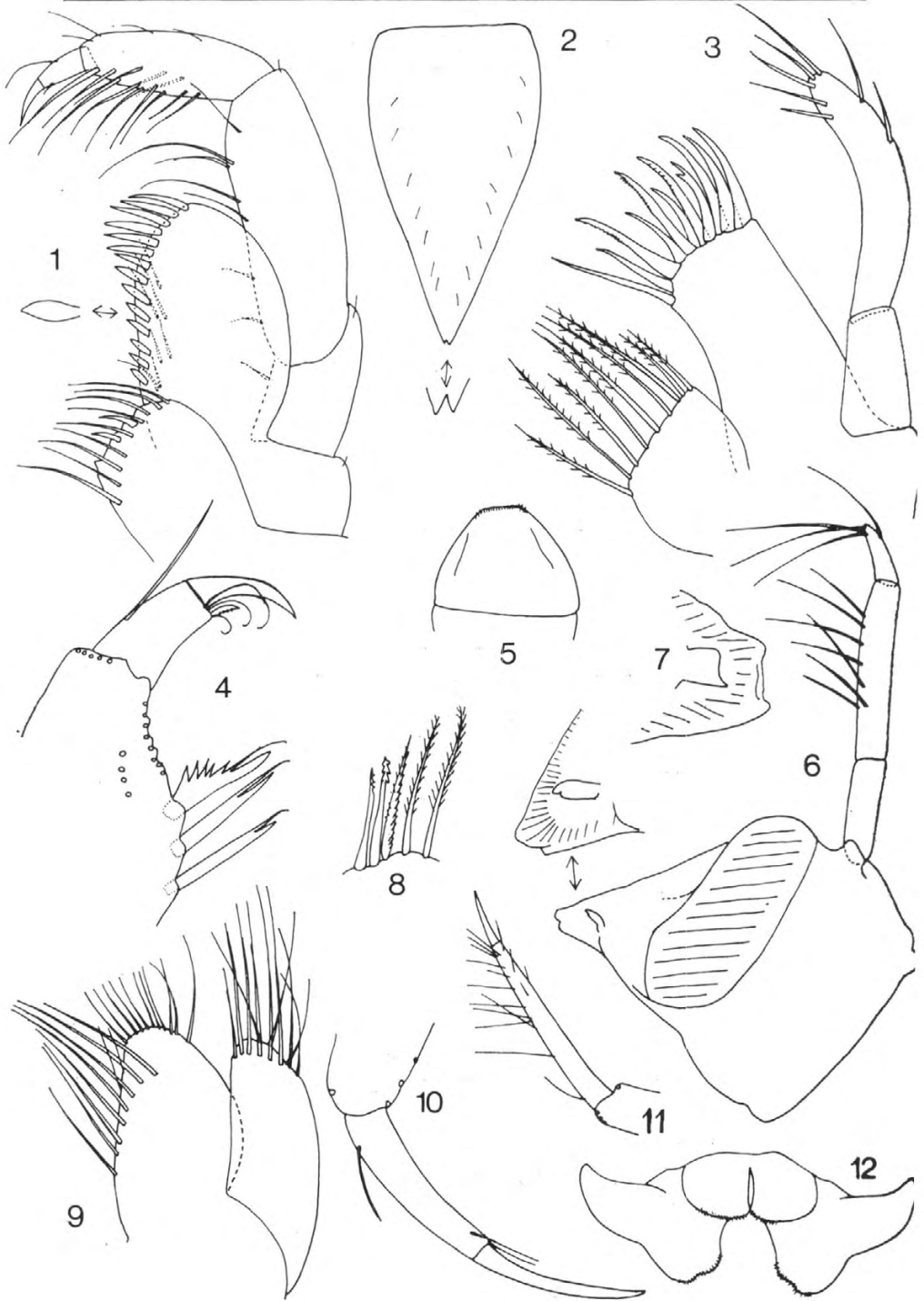
BRUZELIA TYPICA Boeck 1871

fig. I

Bruzelia typica Boeck 1871: 150; Boeck 1876: 478, pl. 10, fig. 3;
Sars 1895: 395, pl. 138, 139, fig. 1; Reys 1960: 82, fig. I, 2;
J. L. Barnard 1964: 29; J. L. Barnard 1972: 29, fig. 10, 11;
Ledoyer 1977: 409; Bellan-Santini 1985: 298.

Material examined: ADRIATIC SEA: — off Ancona (A-105), 3 spec. (Coll. Verona Museum);

MEDITERRANEAN SEA: off France: — Canyon de Planier, depth 300—320 m, March 7, 1975, 3 spec. (leg. M. Ledoyer) (F. V. P. st. 16) (CVM);



— Canyon de Cassidaigne, depth 200—400 m, May 28, 1976, 3 spec. (leg. M. Ledoyer) (F. V. P. st. 47) (CVM).

Description: Female ovig. 4.9 to 6 mm long. Body stout, broad, mesosomal segments with 2 longitudinal dorsal carinae, metasomsegments 1—3 keeled mediodorsally, metasomsegment 3 with dorsoposterior medial tooth. Urosomites 1—3 smooth, free.

Rostrum of head well developed, lateral cephalic lobes broadly subrounded, eyes absent.

Antennae 1—2 short, peduncular segment 1 of antenna 1 short and inflated, without distal tooth, ped. segments 2—3 slender, segment 3 shorter than 2; main flagellum with up to 9 articles, accessory flagellum 2-segmented.

Antenna 2 slightly longer than antenna 1, normal, flagellum shorter than peduncle, 7-segmented. Labrum entire, tapering distally (fig. I, 5), labium short and broad, with well developed inner and outer lobes (fig. I, 12).

Mandibular molar greatly expanded, triturate (fig. I, 6), incisor poorly and irregularly toothed, lacinia mobilis of left and right mandible small, dislike to each other (fig. I, 6, 7), palp linear, longer than mandible, 3-segmented, third segment is shorter than first one, second segment is the longest one (fig. I, 6).

Maxilla 1: inner plate triangular, with row of distolateral plumose setae (fig. I, 3), outer plate with 11 smooth and serrate spines; palp 2-segmented, reaching tip of spines of outer plate, with distal setae (fig. I, 3). Maxilla 2: outer plate narrower than inner one, inner plate with marginal and facial oblique row of setae (fig. I, 9).

Maxilliped short and broad, exceeding outer tip of first palp segment, bearing a row of setae and 2 distal slender spines (fig. I, 1), outer plate slightly exceeding half of second palp segment, bearing row of distolateral smooth spines; palp 4-segmented, last segment much shorter than third one, with nail (fig. I, 1).

Coxae 1—3 longer than broad, with parallel lateral margins or hardly dilated ventrally. Coxa 1 with obtuse ventroanterior corner; coxae 2—3 with sharply pointed ventroanterior corner and concave anterior margin; coxa 4 with excavated proximoposterior part.

Fig. I. *Bruzelia typica* Boeck 1871, off Ancona, female 4.9 mm: 1 = maxilliped; 2 = telson; 3 = maxilla 1; 4 = gnathopod 1; 5 = labrum; 6 = right mandible; 7 = tip of left mandible; 8 = retinacula; 9 = maxilla 2; 10 = pereopod 3; 11 = pereopod 7; 12 = labium.

Sl. I. *Bruzelia typica* Boeck 1871, ispred Ankone, ženka 4.9 mm: 1 = maksiliped; 2 = telzon; 3 = maksila 1; 4 = gnatopod 1; 5 = labrum; 6 = desna mandibula; 7 = vrh lijeve mandibule; 8 = retinacule; 9 = maksila 2; 10 = pereopod 3; 11 = pereopod 7; 12 = labium.

Gnathopods 1—2 slender, subchelate, segment 5 much longer than 6, unlobed; palm of segment 6 of both gnathopods slightly oblique, defined by one strong toothed spine accompanied by 2 slender smooth spines (fig. I, 4), dactyl with 1 seta at outer margin.

Pereopods 3—4 linear, with short segment 4, segments 5—6 with posterior setae, dactyl reaching nearly half of segment 6, bearing one seta at outer margin and seta at inner margin (fig. I, 10).

Pereopods 5—7 with segment 2 ovoid, narrowed, with crenellated posterior margin bearing short setae and with distinct ventro-posterior lobe; segment 4 dilated, dactyl short, slender, setose at outer margin (fig. I, 11), nail short.

Pleopods normal, each with 2 retinacula accompanied by 2—3 setae (fig. I, 8). Epimeral plate 1 nearly subrounded, epimeral plates 2—3 with sharp ventroposterior tooth and excavated smooth posterior margin.

Uropods 1—2 lanceolate, with outer ramus shorter than inner one. Uropod 3 lanceolate, not exceeding tip of uropods 1—2, inner ramus poorly longer than outer one, outer ramus with short second segment.

Telson very long, triangular, entire with poorly excavated tip (fig. I, 2). Oostegys occur on pereonites 2—5, narrow.

Male: slightly differs from female by: urosomite 2 with mediodorsal tooth, urosomite 3 with small dorsal transversal elevation. Antenna 1 with elongated and heavily plumose first segment of main flagellum, accessory flagellum 3-segmented. Antenna 2 elongated, with long and very slender flagellum. Rami of uropod 3 bearing row of lateral plumose setae.

Localities cited in the Mediterranean Sea: Bay of Lion, in stomach of fish *Trigla pini* (42° 59'N, 4° 57'E, 270—310 m depth (REYS 1960); 32° 28'N, 29° 46'E, 1938 m depth (J. L. BARNARD 1964); off Oran (Algeria): 36° 10'N, 01° 35'W, 2070 m depth (J. L. BARNARD 1972); off France: Canyon of Cassidaigne, 200—400 m depth; Canyon of Planier, 240—370 m depth (LEDOYER 1977); 38° 27'0" N, 04° 08'0" E, 2447 m depth; 39° 06'2" N, 06° 26'1" E, 2857 m depth; 39° 37,8' N, 23° 16,8' E, 466 m depth; 39° 43'9" N, 04° 42'3" E, 2535—2854 m depth; 41° 47' N, 07° 33' E, 2720 m depth; 41° 49' N, 06° 24' E, 2600 m depth; 42° 14,5' N, 07° 37,5' E, 2700 m depth; 42° 15'0" N, 04° 28'5" E, 2090 m depth; 42° 25' N, 07° 04'E, 2660 m depth; 42° 40' N, 06° 46,5' E, 2520 m depth; 42° 53' N, 06° 10,5' E, 1500 m depth (BELLAN-SANTINI 1985);

Adriatic Sea: of Ancona (new data).

Loc. typ.: Christianiafjord, coast of Norway.

General distribution: NE. Atlantic, Mediterranean Sea.

ILERAUSTROE ILERGETES (J. L. Barnard 1964)

ILERAUSTROE ILERGETES ILERGETES (J. L. Barnard 1964)

figs.: II—V

Austrosyrrhoë ilergetes J. L. Barnard 1964: 27, fig. 21.*Ileraustroë ilergetes* (part.) J. L. Barnard 1972: 35, fig. 13—15.

Material examined: MEDITERRANEAN SEA: off France: Canyon de Planier, depth 240—360 m, May 2, 1975, 3 males intermixed with *Syrrhoites pusilla* (leg. M. Ledoyer) (F. V. P. st. 31) (CVM).

Description: Male 3 mm. As the male of this species was unknown, we present one more detailed description of male. Last mesosomal and all three metasomal segments each with one dorso-median marginal tooth (fig. V, 1), urosomite 1 with strong tooth (fig. V, 2), urosomite 2 with one long horizontal dorsoposterior tooth (fig. V, 2), urosomite 3 with elevated posterior margin bearing transverse row of setae (fig. V, 2).

Head with long recurved rostrum, lateral cephalic lobes subangular, ventroanterior sinus absent, eyes absent (fig. II, 2).

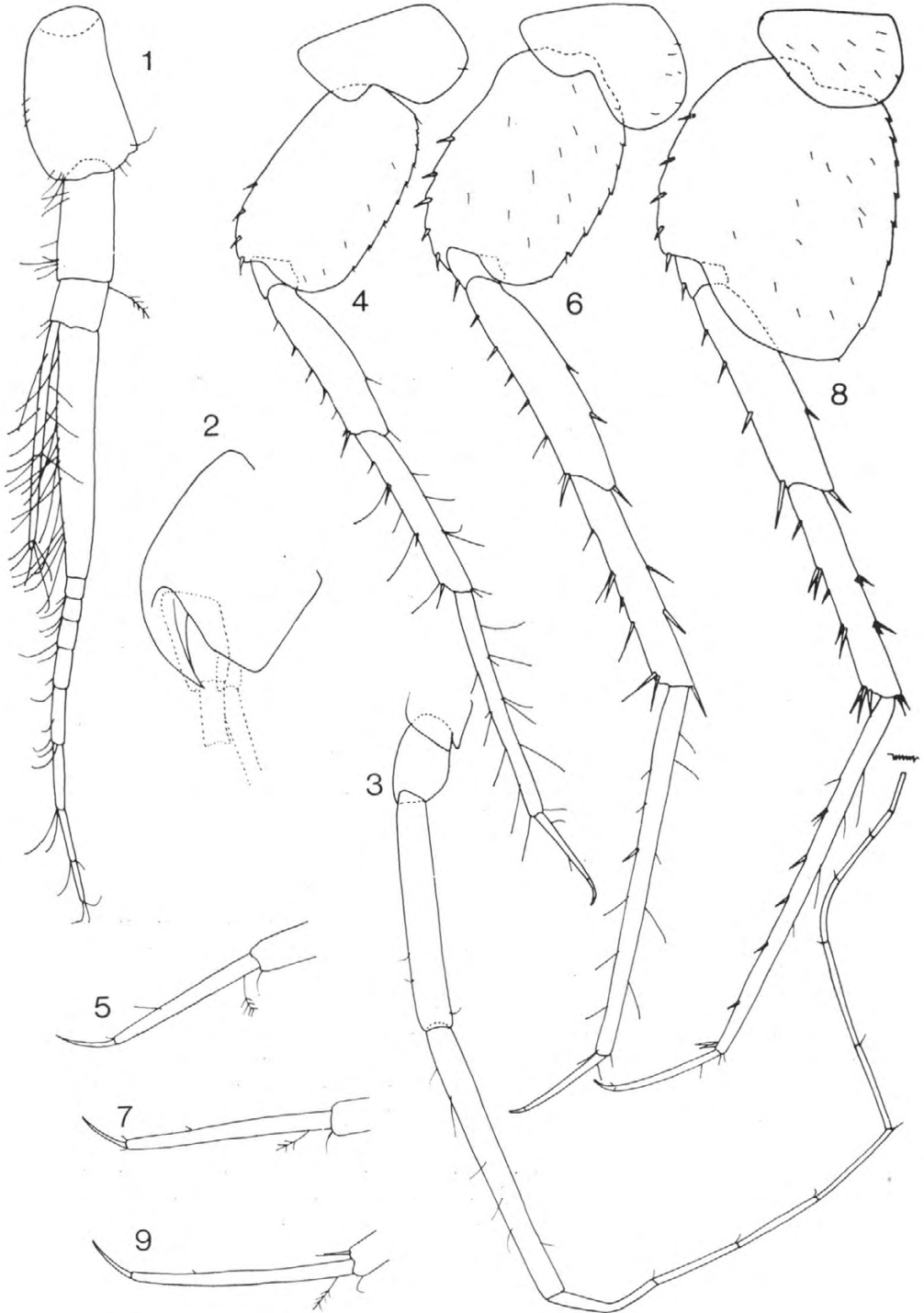
Antenna 1 reaching nearly half of body, peduncular segment 1 stout, segment 2 slender, slightly shorter than segment 1 (fig. II, 1), segment 3 shorter than 2, all segments poorly setose (fig. II, 1); main flagellum much longer than peduncle, first segment long and inflated, bearing numerous setae along inner margin, other flagellar segments (8 segments) short and narrow, poorly setose (fig. II, 1). Accessory flagellum 3-segmented, slender, only poorly shorter than first main flagellar segment (fig. II, 1).

Antenna 2 is longer than antenna 1, peduncular segment 3 short, peduncular segment 5 is slightly longer than segment 4, both poorly setose (fig. II, 3), flagellum very slender, plurisegmented, much longer than peduncle; antennal gland cone short (fig. II, 3).

Labrum slightly broader than long, symmetric, incised distally (fig. IV, 1). Labium shallow, outer lobes short, entire, with long lateral parts (fig. V, 4), inner lobes short.

Mandibles strong, with molar large, nearly triturative, almost dominating mandible (fig. III, 3); incisor poorly toothed, with undistinct number of teeth (fig. III, 3, 4), left lacinia mobilis with 5 teeth (fig. III, 3), right lacinia mobilis with 4 teeth (fig. III, 4). Mandibular palp strong, longer than mandible, 3-segmented, first and third segment short, second segment long (fig. III, 3).

Maxilla 1: inner plate triangular, with row of distolateral plumose setae (fig. V, 6), outer plate with 9 spines: several of these spines with numerous fine lateral teeth, other spines almost smooth (fig. V, 6), palp 2-segmented, with 5 distal spine-like setae.



Maxilla 2: inner plate larger than outer one, bearing lateral and oblique facial row of setae (fig. V, 7), outer plate with distal setae only.

Maxilliped: short inner plate not exceeding tip of first palp segment and with irregular distal margin bearing 3—4 distal spine-like setae (fig. IV, 4), outer plate broad, reaching nearly half of second palp segment, bearing only several lateral smooth spines and distal setae (fig. IV, 4), palp segment 2 long, segment 3 unlobed, segment 4 short, with long nail (fig. IV, 4).

Coxae 1—3 longer than broad, with almost transverse ventral margin, coxae 1—2 dilated ventrally (fig. III, 1, 2), coxa 3 with pointed ventroanterior corner and with proximoposterior excavation (fig. IV, 2), coxa 4 much shorter than 3, reniform (fig. IV, 3), coxae 5—6 bilobe, with posterior lobe much larger than anterior one (fig. II, 4, 6), coxa 5 is hardly smaller than 6 (fig. II, 4, 6), coxa 7 is entire, smaller than 6 (fig. II, 8).

Gnathopods 1—2 slightly subchelate, linear, gnathopod 2 is longer than 1 (fig. III, 1—2). Gnathopod 1: segment 2 linear, poorly setose at both margins (fig. III, 1), segments 3—4 short, segment 5 long and large, dilated posteriorly, bearing serrate posterior spine-like setae (fig. III, 1); segment 6 narrower than 5, longer than broad, palm oblique and poorly defined by one large serrate and one small simple spine (fig. III, 1), dactyl reaching 2/3 of segment 6-length, with 1 spine and 2 setae at inner margin, nail nearly as long as peduncle.

Gnathopod 2: segment 5 long and linear, unlobed (fig. III, 2); segment 6 nearly as broad as 5 but reaching half of segment 5-length, linear, palm oblique and defined by large serrate and 1 short almost smooth spine (fig. III, 2), dactyl hardly shorter than half of segment 6, nail recurved.

Pereopods 3—4 similar to each other, long and linear, segments 2—4 poorly setose, segment 6 slightly inflated, with row of simple long setae along posterior margin (fig. IV, 2, 3), dactyl exceeding half of segment 6, narrow, nail slightly shorter than peduncle, peduncle with 1 very short seta at inner margin and 1 seta at outer margin (fig. IV, 2, 3).

Fig. II. — *Ilerastroe ilergetes ilergetes* (J. L. Bar. 1964), Mediterr. Sea of France (F. V. P. st. 31), male 3 mm: 1 = antenna 1; 2 = head; 3 = antenna 2; 4—5 = pereopod 5; 6—7 = pereopod 6; 8—9 = pereopod 7.

Sl. II. *Ilerastroe ilergetes* (J. L. Bar. 1964), Sredozemno more ispred Francuske (F. V. P. st. 31), mužjak 3 mm: 1 = antena 1; 2 = glava; 3 = antena 2; 4—5 = pereopod 5; 6—7 = pereopod 6; 8—9 = pereopod 7.



Pereopods 5—7 long, pereopod 5 slightly shorter than 6 and 7 (fig. II, 4, 6, 8); segment 2 of pereopods 5—7 progressively larger and broader, always with well developed ventroposterior lobe and serrate posterior margin (fig. II, 4, 6, 8); anterior margin of segment 2 in pereopod 5 and partially in 6 strongly convex in distal part (fig. II, 4, 6); segment 6 of pereopods 5—7 is remarkably longer than segment 5; dactyl slender, shorter than half of segment 6, bearing 2 setae along inner margin and 1 plumose seta at outer margin, nail short (fig. II, 5, 7, 9).

Pleopods 1—3 with strong stout peduncle bearing 2 retinacula accompanied by 2 simple setae (fig. IV, 5).

Epimeral plates 1—2 with slightly sinusoid posterior margin and with slightly pointed ventroposterior corner (fig. V, 8), epimeral plate 3 with sharp ventroposterior tooth and ovoid subdistal excavation at posterior margin bearing one medial seta (fig. V, 8); ventral margin of epimeral plate 2 with 2—3 spines and 2 facial spine-like setae, epimeral plate 3 with 3—4 ventral spines (fig. V, 8).

Urosomite 1 near basis of peduncle of uropod 1 without spine (fig. V, 2). Uropod 1: peduncle without ventrofacial spines or setae (fig. V, 2) and with distal short tooth, inner ramus nearly twice longer than outer one, both rami with short lateral spines, distal spines absent (fig. II, 2).

Uropod 2 hardly exceeding tip of uropod 1, peduncle shorter than inner ramus, inner ramus twice longer than outer one, both rami with short lateral spines only (fig. V, 2).

Uropod 3 nearly reaching tip of uropod 2, peduncle slightly longer than rami (6.5 : 5.5), peduncle with short distal tooth (fig. V, 5), rami lanceolate, nearly subequal long, outer ramus narrower than inner one, 2-segmented; both rami finely serrate marginally, without distal spine (fig. V, 5).

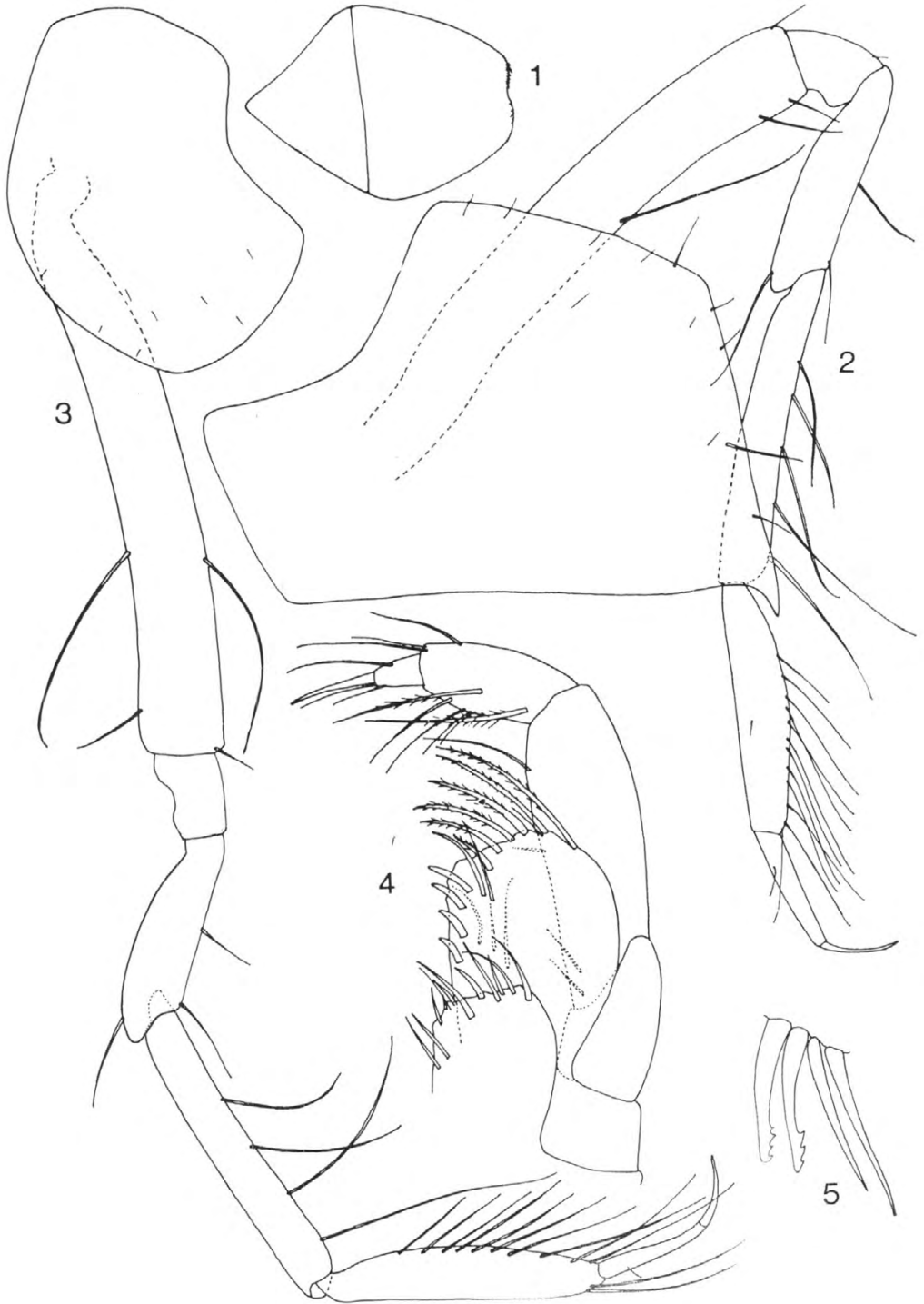
Telson very long, hardly shorter than uropod 3, tapering distally, with incision reaching only 1/11 of telson-length (fig. V, 3), each lobe notched distally, with one seta in each notch (fig. V, 3).

Coxal gills ovoid, occur on pereonites 2—7.

Female: it is described by J. L. Barnard (1964) as unknown sex. Female like males except antennae 1—2. Antenna 1:

Fig. III. *Ilerastroe ilergetes ilergetes* (J. L. Bar. 1964), Mediterr. Sea off France (F. V. st. 31), male 3 mm: 1—2 = gnathopods 1—2; 3 = left mandible; 4 = right mandible.

Sl. III. *Ilerastroe ilergetes ilergetes* (J. L. Bar. 1964), Sredozemno more ispred Francuske (F. V. P. st. 31), mužjak 3 mm: 1—2 = gnatopodi 1—2; 3 = lijeva mandibula; 4 = desna mandibula.



peduncular segment 2 nearly as long as segment 1, peduncular segment 3 distinctly shorter than 2; main flagellum nearly as long as peduncle, consisting of 7 slender, relatively short articles; accessory flagellum short, 2-segmented. Antenna 2: flagellum shorter than peduncle, consisting of 5 articles only.

Localities cited in the Mediterranean Sea: known from type-locality (J. L. BARNARD 1964), and from Canyon de Planier (present data).

Loc. typ.: Mediterranean Sea: 32° 28' N, 29° 46' E, depth 1938 m.

Ecology: Deep sea bottom species, on 240 — 1938 meters depth in the Mediterranean Sea, found together with *Syrrhoites pusilla*.

Remarks and Affinities: Barnard (1964) described this subspecies based on small specimen of 2.7 mm from eastern part of the Mediterranean Sea, and now is clear that it was one female.

Barnard (1972) redescribed *Ileraustroe ilergetes* based on material from Pacific Ocean, but without designation of the subspecific name, because the males of type subspecies from the Mediterranean Sea were unknown. Present discovery of males of *I. ilergetes ilergetes* from the Mediterranean Sea suggested that the Pacific specimens differs slightly from these of Mediterranean Sea (see subsp. *inconstans*).

ILERAUSTROE ILERGETES INCONSTANS J. L. Barnard 1967

Austrosyrrhoë ilergetes inconstans J. L. Barnard 1967: 155, fig. 77.

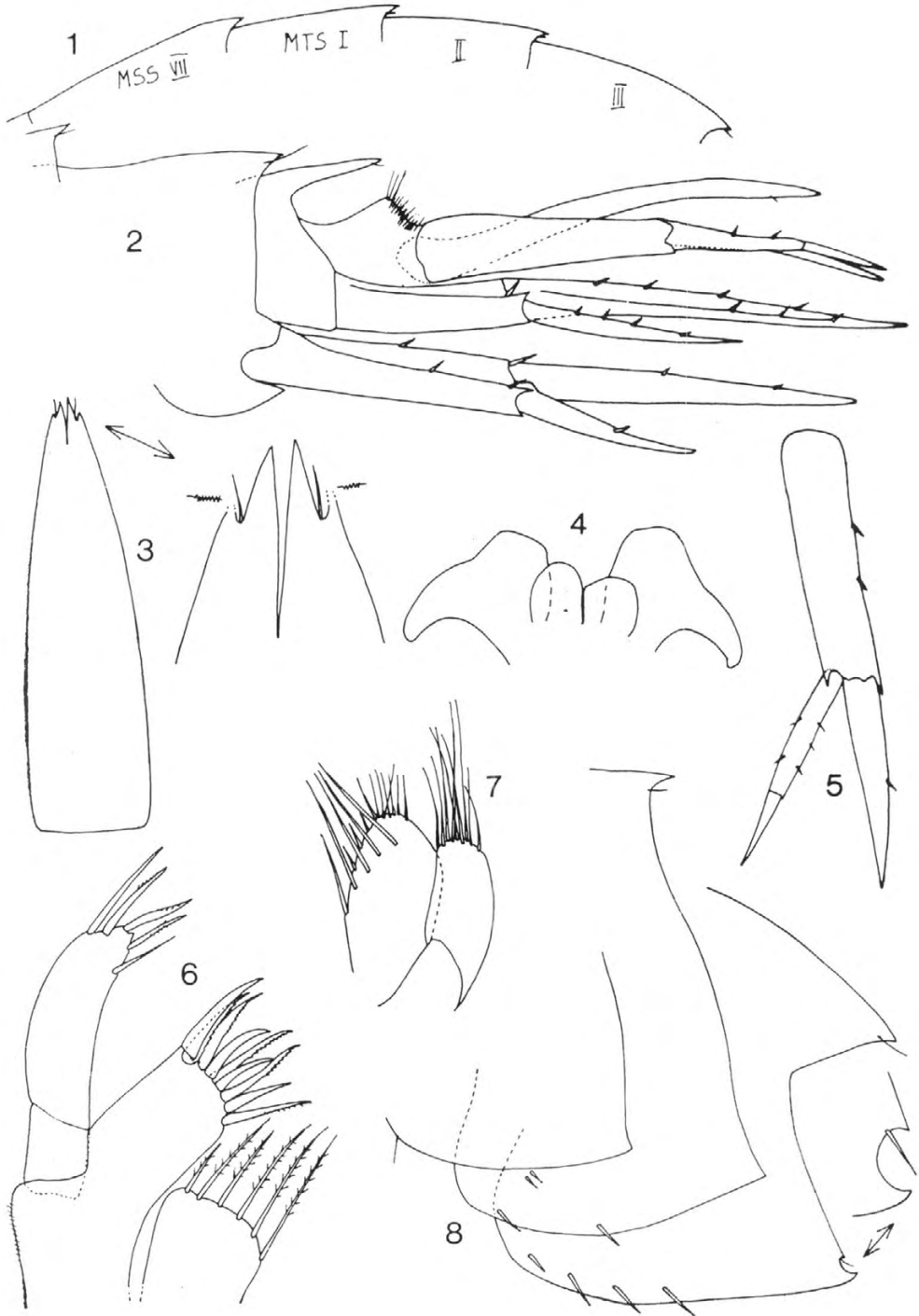
? *Ileraustroe ilergetes* (part.) J. L. Barnard 1972: 35.

Loc. typ.: PACIFIC OCEAN: off California: 27° 54'25" N, 115° 40'00" W, depth 1720—1748 meters.

Remarks and Affinities: Base on relatively scarce description and figures of this subspecies given by Barnard

Fig. IV. *Ileraustroe ilergetes ilergetes* (J. L. Bar. 1964), Mediterr. Sea off France (F. V. P. st. 31), male 3 mm: 1 = labrum; 2—3 = pereopods 3—4; 4 = maxilliped; 5 = retinacula.

Sl. IV. *Ileraustroe ilergetes ilergetes* (J. L. Bar. 1964), Sredozemno more ispred Francuske (F. V. P. st. 31), mužjak 3 mm: 1 = labrum; 2—3 = pereopodi 3—4; 4 = maksiliped; 5 = retinakule.



(1967), this subspecies differs from ssp. *ilergetes ilergetes* by acute subdistal posterior excavation on third epimeral plate, by short both rami of uropod 3 regarding the corresponding peduncle, by narrow segment 6 of pereopods 3—4, slightly narrower segment 2 of pereopods 5—7. Unfortunately, Barnard doesn't mentioned shape of peduncle of antenna 1 in female, and we can suppose that it likes to that of typical subspecies.

Based on all these remarks, for the moment we left ssp. *inconstans* as a distinct subspecies.

As we mentioned before, J. Barnard described (1972) and figured the specimens of *Ilerastroe ilergetes* (female and males) also from other localities in Pacific Ocean: off Pacific Nicaragua ($12^{\circ} 11' N$, $89^{\circ} 34' W$, 5680—5690 meters depth); off Ecuador ($01^{\circ} 30' S$, $82^{\circ} 19' W$, 1363—1369 meters depth); off Chile ($31^{\circ} 10' S$, $71^{\circ} 56' W$, 1932—3142 meters depth). These specimens differ from *I. ilergetes ilergetes* by evenly rounded but weak subdistal posterior sinus on third epimeral plate, by non acute ventroposterior corner of epimeral plates 1—2, by narrow segment 6 of pereopods 3—4, by unnotched distal tip of telsonic lobes, by shorter segment 5 of gnathopod 2, by densely setose segment 2 of gnathopods 1—2.

In female, peduncular segment 2 of antenna 1 is longer than ped. segment 1, segment 3 is long, only slightly shorter than 2. Based on these taxonomic characteristics, the specimens from Pacific mentioned by Barnard (1972) are not identic with these of the Mediterranean Sea. But, as the subspecies *inconstans* is poorly described, it is not possible to establish the exact differences between it and other Pacific populations; for the moment, the single known difference is the shape of subdistal posterior excavation of epimeral plate 3. If peduncle of antenna 1 in female of ssp. *inconstans* is similar to that of ssp. *ilergetes ilergetes*, the populations mentioned by Barnard (1972) from Pacific must be removed to the other new subspecific rank.

Fig. V. *Ilerastroe ilergetes ilergetes* (J. L. Bar. 1964), Mediterr. Sea off France, (F. V. P. st. 31), male 3 mm: 1 = metasomal segments 1—3; 2 = urosome with uropods; 3 = telson; 4 = labium; 5 = uropod 3; 6 = maxilla 1; 7 = maxilla 2; 8 = epimeral plates 1—3.

Sl. V. *Ilerastroe ilergetes ilergetes* (J. L. Bar. 1964), Sredozemno more ispred Fracuske (F. V. P. st. 31), mužjak 3 mm: 1 = metazomalni segmenti 1—3; 2 = urozom sa uropodima; 3 = telzon; 4 = labium; 5 = uropod 3; 6 = maksila 1; 7 = maksila 2; 8 = epimeralne ploče 1—3.

SYRRHOE ANGULIPES Ledoyer 1977

fig.: VI—VII

Syrrhoë angulipes Ledoyer 1977: 411, fig. 31.

Material examined: MEDITERRANEAN SEA: Off France: Canyon de Planier, depth 160—240 m, March 7, 1975, one spec. (F. V. P. st. 15) (CVM);

— Canyon de Cassidaigne, depth 170—400 m, June 26, 1975, one spec. (leg. M. Ledoyer) (F. V. P. st. 36).

Description: Ledoyer gave short description of this species, and we tried to present some details and unknown characters.

Eyes poorly visible in our specimens, mesosomal segments smooth, metasomsegments 1—3 each with small dorsomedian posterior tooth, urosomites 1—3 without tooth, but with short dorso-medial seta (fig. VII, 9). Rostrum of head well developed, reaching half of first peduncular segment of antenna 1 (fig. VI, 2), lateral cephalis lobes short, angular (fig. VI, 2).

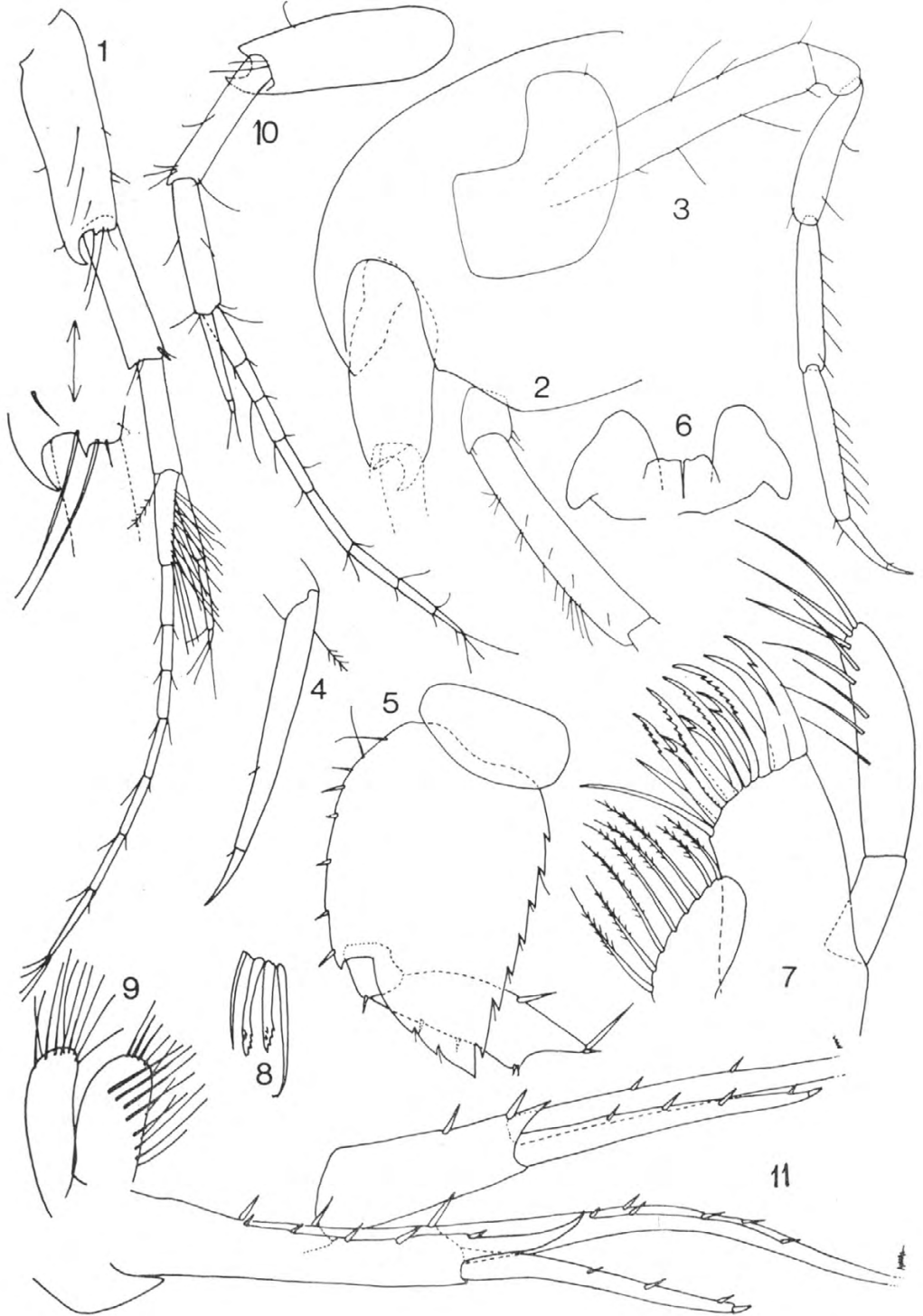
Antenna 1 in males (male 3.4 mm) with peduncular segments 1—3 progressively shorter (fig. VI, 1), first peduncular segment with ventrodistal inferior hook (fig. VI, 1), main flagellum hardly longer than peduncle, consisting of 8 articles: first article short and narrow, bearding numerous long setae along inferior surface, other flagellar segments poorly setose (fig. VI, 1). Accessory flagellum slender, 3-segmented, twice longer than first segment of main flagellum.

Antenna 1 in female like that in male but peduncular segment 3 nearly as long as peduncular segment 2 (fig. VI, 10); main flagellum consisting of 8 slender and poorly setose articles, accessory flagellum 2-segmented, shorter than last peduncular segment (fig. VI, 10).

Antenna 2 in males with third peduncular segment short, peduncular segment 4 normal (fig. VI, 2), other segments missing. Antenna 2 in female undescribed.

Fig. VI. *Syrrhoë angulipes* Led. 1977, Mediterr. Sea off France (F. V. P. st. 15), male 3.4 mm: 1 = antenna 1; 2 = head; 3 = pereopod 4; 4—5 = pereopod 7; 6 = labium; 7 = maxilla 1; 8 = retinacula; 9 = maxilla 2; 10 = antenna 1, female 3.5 mm (F. V. P. st. 36); 11 = uropods 1—2, female 3.5 mm (F. V. P. st. 36).

Sl. VI. *Syrrhoë angulipes* Led. 1977, Sredozemno more ispred Francuske, (F. V. P. st. 15), mužjak 3.4 mm: 1 = antena 1; 2 = glava; 3 = pereopod 4; 4—5 = pereopod 7; 6 = labium; 7 = maksila 1; 8 = retinakule; 9 = maksila 2; 10 = antena 1, ženka 3.5 mm (F. V. P. st. 36); 11 = uropodi 1—2, ženka 3.5 mm (F. V. P. st. 36).



Labrum entire, labium shallow, with entire outer lobes and short notched inner lobes (fig. VI, 6).

Mandible strong, with irregularly toothed incisor, accompanied on left mandible by 5-teethed lacinia mobilis (fig. VII, 5), on right mandible with small spine (fig. VII, 4); molar moderately large, triturative; palp much longer than mandible, 3-segmented, first segment short, third segment shorter than first one, second segment long (fig. VII, 4).

Maxilla 1: inner plate triangular, with row of distolateral plumose setae (fig. VI, 7), outer plate with 11 spines (2 slender smooth spines, 4 pluritoothed spines, other spines with 0—1 tooth); palp slender, 2-segmented, with distolateral spine-like setae.

Maxilla 2: inner plate larger than outer one, bearing distal, lateral and oblique row of facial setae (fig. VI, 9).

Maxilliped like that of *S. affinis*. Coxae 1—3 long, coxae 1—2 much longer than broad, narrow, slightly recurved, with transverse ventral margin and obtuse ventroanterior corner and notched ventroposterior corner (fig. VII, 1, 2), coxa 3 distally extremely dilated, with pointed ventroanterior corner and cuted posterior margin. Coxa 4 much smaller than coxa 3, reniform (fig. VI, 3).

Gnathopods 1—2 slender and long. Gnathopod 1: segment 5 long, slightly dilated but not lobed (fig. VII, 1), segment 6 reaching nearly half of segment 5, with almost transverse palm defined by one strong dilated toothed corner spine accompanied at outer margin with 2 slender spine-like setae, dactyl with 1 seta at outer margin.

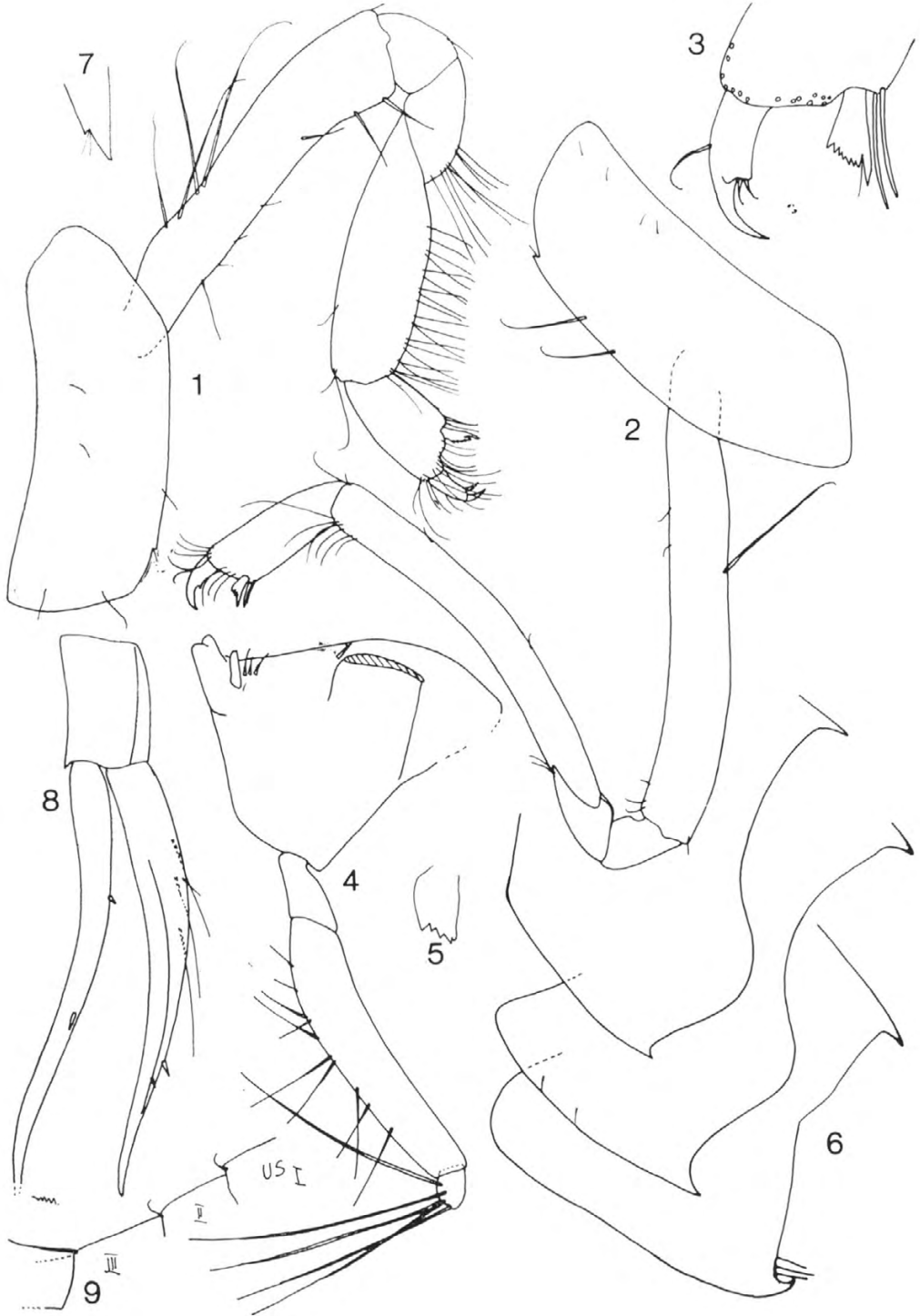
Gnathopod 2: segment 2 poorly setose, long; segment 5 very long and narrow, bearing several setae at distoposterior margin (fig. VII, 2), segment 6 nearly 2.5 times shorter than segment 5, with palm like that of gnathopod 1 (fig. VII, 2, 3).

Pereopods 3—4 slender and linear, segment 4 only slightly shorter than segment 5, dactyl exceeding half of segment 6, bearing nail shorter than peduncle and without inferior medial seta (fig. VI, 3).

Pereopods 5—7 with large segment 2 serrate posteriorly and with pointed ventroposterior lobe; dactyl slender, with one medial short seta at inner margin and one seta near nail (fig. VI, 4, 5).

Fig. VII. *Syrrhoe angulipes* Led. 1977, Mediterr. Sea off France (F. V. P. st. 15), male 3.4 mm: 1 = gnathopod 1; 2—3 = gnathopod 2; 4 = right mandible; 5 = left lac. mobilis; 6 = epimeral plates 1—3; 7 = tip of telson; 8 = uropod 3, female 3.5 mm (F. V. P. st. 36); 9 = urosomites 1—3, female 3.5 mm (F. V. P. st. 36).

Sl. VII. *Syrrhoe angulipes* Led. 1977, Sredozemno more ispred Francuske (F. V. P. st. 15), mužjak 3.4 mm: 1 = gnatopod 1; 2—3 = gnatopod 2; 4 = desna mandibula; 5 = lijeva lac. mobilis; 6 = epimeralne ploče 1—3; 7 = vrh telzona; 8 = uropod 3, ženka 3.5 mm (F. V. P. st. 36); 9 = urozomiti 1—3, ženka 3.5 mm (F. V. P. st. 36).



Epimeral plates 1—2 pointed, with sinusoid posterior margin, epimeral plate 3 sharply pointed, with excavated posterior margin bearing 2—3 subdistal posterior setae (fig. VII, 6).

Pleopods with 2 retinacula accompanied by 1—2 lateral setae (fig. VI, 8). Urosomite 1 near basis of peduncle of uropod 1 without spine (fig. VI, 11). Uropod 1: peduncle without ventrofacial spines or setae, with strong outer distal tooth, outer ramus much shorter than inner one, with short distal spine (fig. VI, 11).

Uropod 2: peduncle with short distal outer tooth, outer ramus shorter than inner one, with short distal spine (fig. VI, 11).

Uropod 3 with short peduncle, rami almost subequal long, lanceolate (fig. VII, 8). Telson remarkably shorter than uropod 3, deeply incised, narrow, each lobe poorly notched distally bearing 2 setae in the notch.

Female like males except antenna 1 (fig. VI, 1, 10). Antenna 2 in females unknown.

Variability: Ledoyer's figure of this species (1977) showed coxae 1—2 with more subrounded ventral margins, but it depends of the pressure of the glass during the study of the coxae.

Localities cited in the Mediterranean Sea: off France: Canyon de Planier, 160—240 m; Canyon de Cassidaigne, 170—400 m; S. of Embiez, 320—360 m (LEDOYER 1977).

Loc. typ.: S. of Embiez, off France, Mediterranean Sea, 320—360 m depth.

Distribution: Mediterranean endemic species.

SYRRHOE AFFINIS Chevreux 1908

fig.: VIII—X, XI, 1—2.

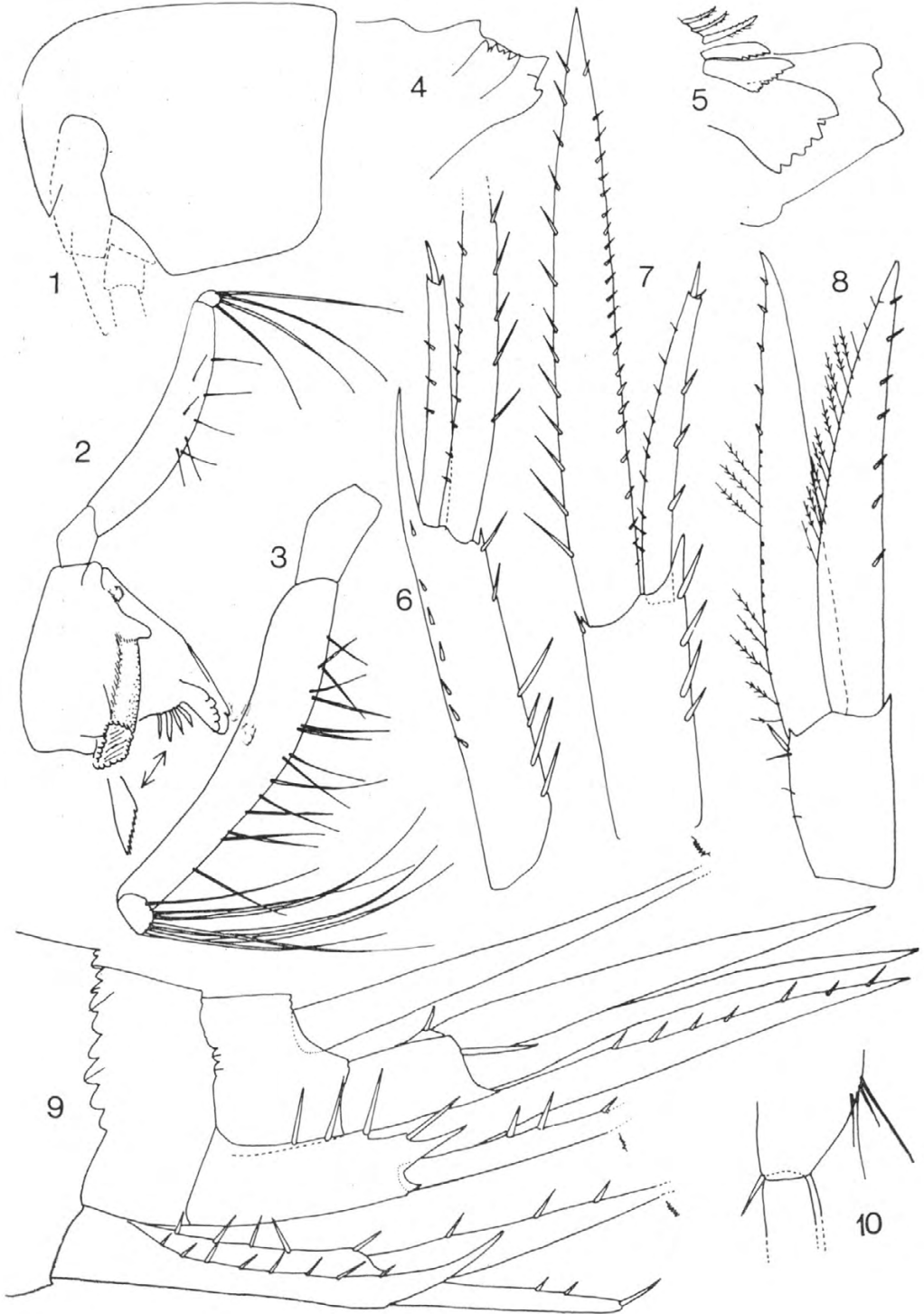
Syrrhoe affinis Chevreux 1908: 7, fig. 4; Sexton 1911: 202, pl. III, fig. 1—8; Chevreux 1920: 574; Chevreux 1927: 86, pl. 7, fig. 27; J. L. Barnard 1972: 53; Ledoyer 1977: 411, fig. 30.

Syrrhoe (?) affinis J. L. Barnard 1961: 80, fig. 49.

Material examined: MEDITERRANEAN SEA: off France: Canyon de Plannier, 180—360 m depth, 3 spec. (leg. M. Ledoyer) (F. V. P. st. 32) (CVM);

Fig. VIII. *Syrrhoe affinis* Chevreux 1908, off Ancona, male 7 mm: 1 = head; 2—3 = left mandible; 4—5 = right mandible; 6—8 = uropods 1—3; 9 = urosome with uropods; 10 = pleopod 3.

Sl. VIII. *Syrrhoe affinis* Chevreux 1908, ispred Ankone, mužjak 7 mm: 1 = glava; 2—3 = lijeva mandibula; 4—5 = desna mandibula; 6—8 = uropodi 1—3; 9 = urozom sa uropodima; 10 = pleopod 3.



ADRIATIC SEA: off Ancona (A-109), one spec. (CVM)

Description: Male 7 mm: Body laterally compressed, first six mesosomal segments smooth, last mesosomal and 3 metasomal segments each with crenellated dorsolateral posterior margin (fig. VIII, 9; XI, 2); urosomite 1 with crenellated dorsal and lateral posterior margin (fig. VIII, 9); urosomites 2—3 not distinctly dorsally crenellated, urosomite 2 on each side with 2—3 teeth only (fig. VIII, 9).

Head poorly protuberanted, with strong recurved rostrum reaching or exceeding half of first peduncular segment of antenna 1 (fig. VIII, 1), eyes undistinct in our specimens, but Ledoyer mentioned uncolored subcuticular granules; lateral cephalic lobes short, subangular (fig. VIII, 1), ventroanterior sinus absent.

Antennae 1—2 short, antenna 1 shorter than 2. Antenna 1: peduncular segment 1 inflated, at distoinferior tip with hook (fig. X, 1), peduncular segment 2 hardly shorter than 1, narrow; peduncular segment 3 shorter than 2 (fig. X, 1); main flagellum much longer than peduncle, consisting of 17 articles: first article inflated and long, but without lateral setae (fig. X, 1) (maybe non adult?), other flagellar articles narrow, most of them bearing one long slender aesthetasc each. Accessory flagellum long, 3-segmented (fig. X, 1).

Antenna 2: peduncular segment 3 short, segment 5 longer than 4; flagellum longer than peduncle, consisting of over 24 articles (fig. X, 2), antennal gland cone short.

Labrum entire (fig. X, 5), labium with well developed entire inner lobes, outer lobes with 2 distal small spines each (fig. IX, 8).

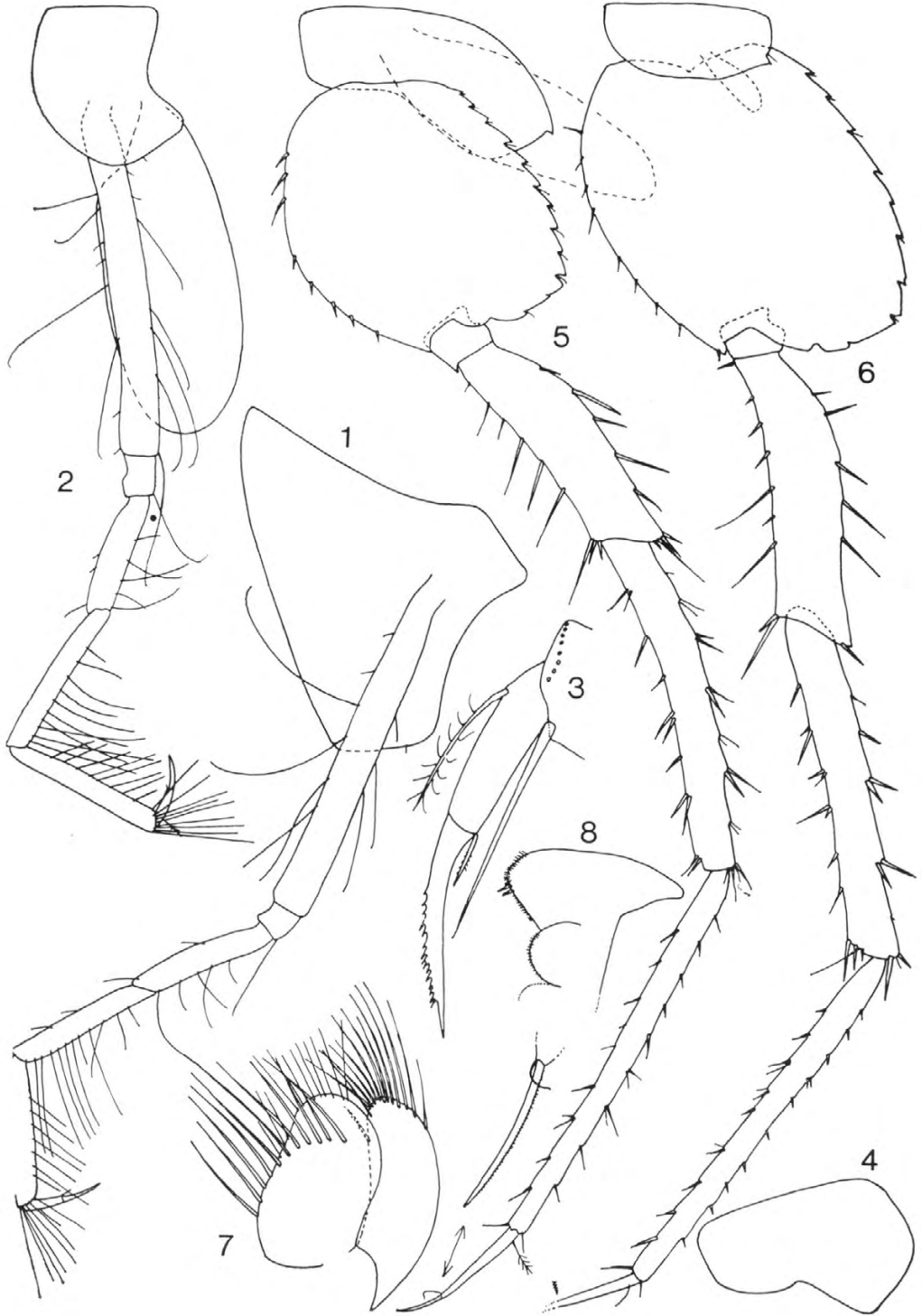
Mandible with relatively small, but well developed triturative molar, incisor irregularly toothed, left lacinia mobilis with 5 teeth, right lacinia mobilis with 6—7 teeth (fig. VIII, 2—5); palp strong, 3-segmented, third segment shorter than 1, segment 2 elongated (fig. VIII, 2, 3).

Maxilla 1: inner plate triangular, with row of lateral plumose setae, outer plate with 11 spines (2 naked spines, 3 pluritoothed spines, other spines with 1—3 teeth each), palp 2-segmented, narrow, with 3 slender distal spines and several distolateral setae.

Maxilla 2: both plates short, inner plate with facial oblique row of setae (fig. IX, 7).

Fig. IX. *Syrrhoe affinis* Chevreux 1908, off Ancona, male 7 mm: 1 = pereopod 3; 2—3 = pereopod 4; 4 = coxa 5; 5—6 = pereopods 6—7; 7 = maxilla 2; 8 = labium.

Sl. IX. *Syrrhoe affinis* (Chevreux 1908), ispred Ankone, mužjak 7 mm: 1 = pereopod 3; 2—3 = pereopod 4; 4 = koksa 5; 5—6 = pereopodi 6—7; 7 = maksila 2; 8 = labium.



Maxilliped: inner plate short, with 2 short distal recurved spines and several setae (fig. XI, 1), outer plate exceeding 1/2 of second palp segment, bearing a row of distolateral slender naked spines; palp segment 4 with nail slightly longer than peduncle (fig. XI, 1).

Coxae 1—3 long, coxa 1 dilated distally, with angular both corners (fig. X, 3), coxa 2 tapering distally (fig. X, 4), coxa 3 extremely dilated distally, with pointed ventroanterior corner (fig. IX, 1), coxa 4 small, recurved (fig. IX, 2).

Gnathopods 1—2 slender, subchelate. Gnathopod 1: segment 2 with proximoposterior lobe (fig. X, 3); segment 5 long, unlobed, setose posteriorly (fig. X, 3); segment 6 twice shorter than segment 5, palm nearly transverse, defined by one dilated pectinate spine accompanied at outer side by one short simple spine (fig. X, 3), dactyl with 1 seta at outer margin.

Gnathopod 2: segment 2 without posterior lobe (fig. X, 4), segment 5 very slender, setose in distoposterior part only (fig. X, 4), segment 6 more than twice shorter than segment 5, palm and dactyl like these of gnathopod 1.

Pereopods 3—4 slender, subequal, segment 4 of pereopod 4 is slightly shorter than that of pereopod 3 (fig. IX, 1, 2), segment 6 longer than 4, segments 5—6 with long posterior setae; dactyl narrow, with nail serrate at outer margin (fig. IX, 3).

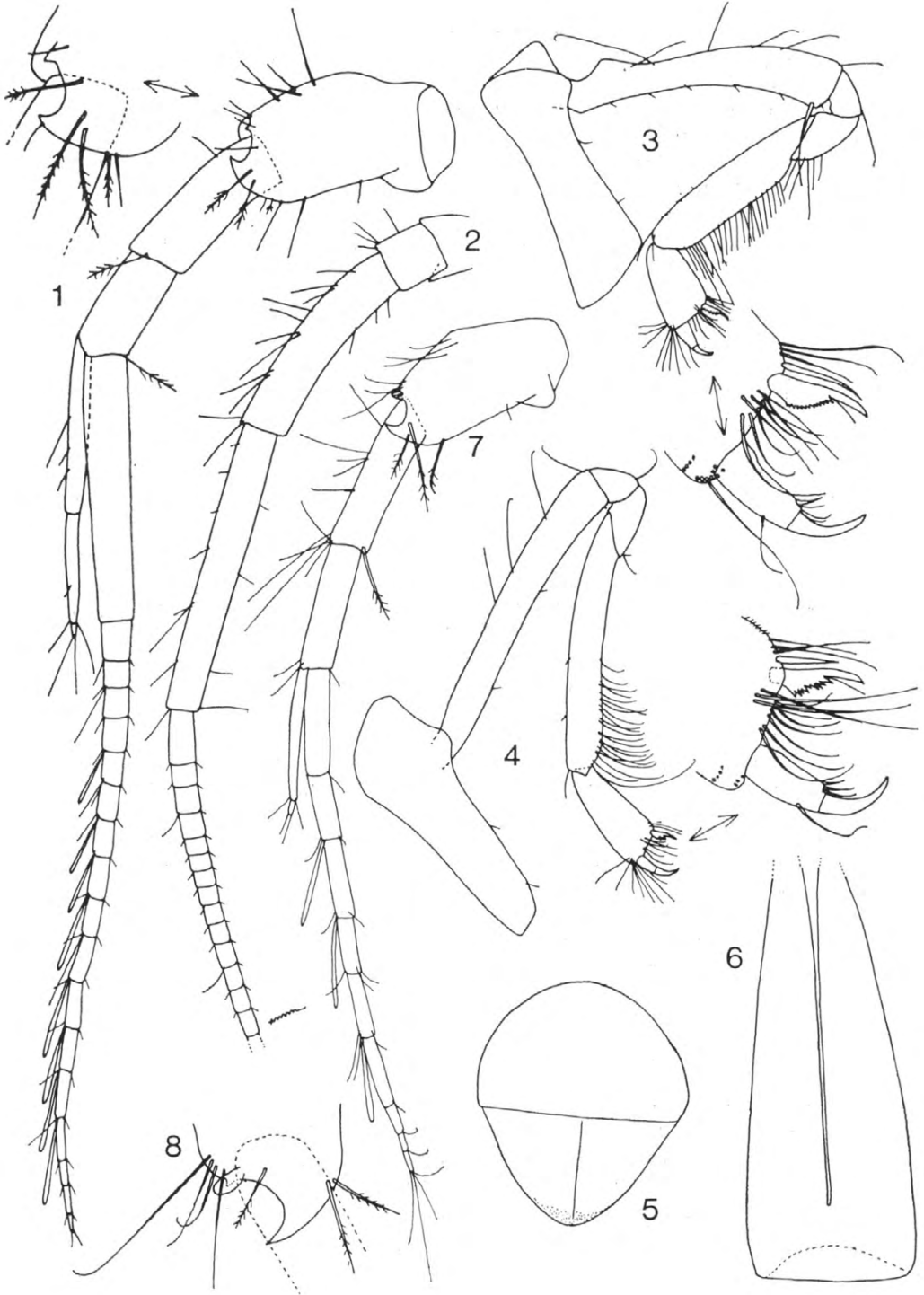
Pereopod 5 missing. Pereopods 6—7 with ovoid, large segment 2 serrate at posterior margin and with well developed ventroposterior lobe (fig. IX, 5, 6); segments 4—6 progressively longer, dactyl short, with nail shorter than peduncle, serrate along outer margin (fig. IX, 5). Epimeral plates 1—2 with pointed ventroposterior corner and short medioposterior lobe (fig. XI, 2), epimeral plate 3 with convex posterior margin strongly serrate (fig. XI, 2).

Pleopods 1—3 with 2 retinacula each. Peduncle of pleopod 1 with distoposterior lobe (visible as lateral projection), that lobe is less developed in pleopod 2 and absent in pleopod 3 (fig. VIII, 10). One distoposterior spine appears on peduncle of pleopods 2 and 3, posterior margin of pleopod 3-peduncle with setae (fig. VIII, 10).

Urosomite 1 near basis of peduncle of uropod 1 without spine (fig. VIII, 9). Uropod 1: peduncle without ventrofacial spines, but with long distoexternal tooth (fig. VIII, 9), inner ramus missing distally, outer ramus much shorter than inner one, with strong short distal spine (fig. VIII, 6, 9).

Fig. X. *Syrrhoe affinis* Chevreux 1908, off Ancona, male 7 mm: 1—2 = antennae 1—2; 3—4 = gnathopods 1—2; 5 = labrum; 6 = telson; 7—8 = antenna 1, female 6 mm (F. V. P. st. 32).

Sl. X. *Syrrhoe affinis* Chevreux 1908, ispred Ankone, mužjak 7 mm: 1—2 = antene 1—2; 3—4 = gnatopodi 1—2; 5 = labrum; 6 = telzon; 7—8 = antena 1, ženka 6 mm (F. V. P. st. 32).



Uropod 2 with short distal tooth (fig. VIII, 7), inner ramus almost twice longer than outer one, without distal spine (fig. VIII, 7), outer ramus much shorter and narrower than inner one, with distal short spine. Uropod 3 shorter than uropod 2, lanceolate, peduncle short with small distoexternal tooth (fig. VIII, 8), rami almost subequal long, without distal spine, outer ramus undistinctly 2-segmented (?), both rami at one margin with row of plumose setae (fig. VIII, 8).

Telson very long and narrow, incised almost to the basis, with missing distal tip (fig. X, 6), no setae or spine on existing part of telson.

Coxal gills simple, ovoid, occur on pereonites 2—7.

Female: Chevreux (1908) and Ledoyer (1977) gave description of female, but without many details. Female is similar to males except antenna 1: first peduncular segment at inferior face with distal hook accompanied by one short lamelliform part (fig. X, 7, 8), second segment as long as first one, third segment slightly shorter than second one (fig. X, 7), main flagellum with 9 slender articles, most of them with one long aesthetasc each; first flagellar segment is short. Accessory flagellum 2-segmented, long (fig. X, 7).

Variability: The small lamelle on tip of peduncle of antenna 1 near distal hook appears in single female in hand only, the 2 males in hand were without that lamelle (occasionally or always?). Pereopod 5 is similar to pereopods 6—7 but shorter, with more convex anterior margin of segment 2.

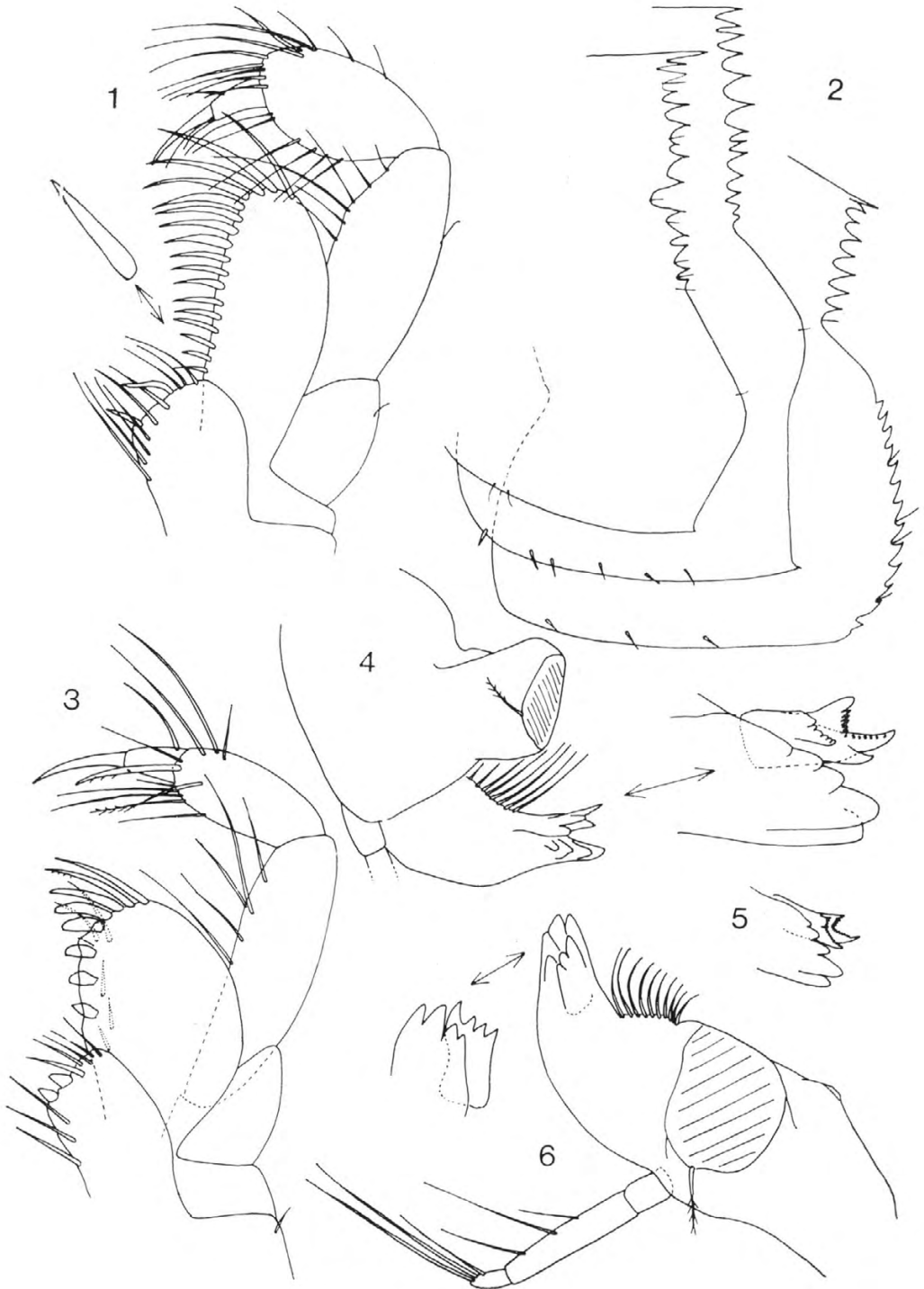
J. L. Barnard (1961) described one female of *S. affinis* from Tasman Sea, and he mentioned and figured one long lamelle on external side of distal hook of peduncular segment 1 in antenna 1 (lamelle in our female from Mediterranean Sea is shorter and appears at inner side of distal hook); antenna 2 with shorter peduncular segment 5 regarding segment 4; posterior dorsal margin of urosomite 1 smooth (strongly serrate in our specimens from Medit. Sea); coxa 1 with subrounded ventral anterior and posterior margin (subangular in our specimens); gnathopod 2 with rather longer segment 5; segment 6 of gnathopod 2 is shorter, with nail longer than peduncle of dactyl; segment 6 of gnathopod 2 with long simple spine near large pectinate corner spine on palm (short simple spine in our

Fig. XI. *Syrrhoe affinis* Chevreux 1908, off Ancona, male 7 mm: 1 = maxilliped; 2 = epimeral plates 1—3.

Pseudotiron bouvieri Chevreux 1895, Mediterr. Sea off France (F. V. P. st. 31), male 4.9 mm: 3 = maxilliped; 4—5 = right mandible; 6 = left mandible.

Sl. XI. *Syrrhoe affinis* Chevreux 1908, ispred Ankone, mužjak 7 mm: 1 = maksiliped; 2 = epimeralne ploče 1—3.

Pseudotiron bouvieri Chevreux 1895, Sredozemno more ispred Francuske, (F. V. P. st. 31), mužjak 4.9 mm: 3 = maxiliped; 4—5 = desna mandibula; 6 = lijeva mandibula.



specimens); rostrum is longer, reaching tip of first peduncular segment of antenna 1 (not reaching tip in our specimens from Mediterranean Sea).

Based on all these established differences between Mediterranean and Tasman Sea specimens (based on literature only), it was not possible to establish if Tasman Sea specimens represent a distinct other species or not, and we left it for the moment under the same taxon.

Localities cited for Mediterranean Sea: off Morocco, 3° 59'30" N, 8° 12'45" W, depth 851 m (CHEVREUX 1908); off France, Canyon de Planier, 180—360 m (LEDOYER 1977, present data);

ADRIATIC SEA: off Ancona (new record).

TASMAN SEA: (Pacific): 42° 10' S, 170° 10' E, 610 m (J. L. BARNARD 1961).

Loc. typ.: off Morocco, 33° 59'30" N, 8° 12'45" W, 851 m.

General distribution: N. Atlantic, Pacific (Tasman Sea), Mediterranean Sea.

PSEUDOTIRON BOUVIERI Chevreux 1985

fig.: XI, 3—6; XII, XIII

Pseudotiron Bouvieri Chevreux 1895: 166, fig. 1—14.

Pseudotiron bouvieri Stebbing 1906: 284; J. L. Barnard 1964: 29, fig. 24; Ledoyer 1977: 411, fig. 29; Bellan-Santini 1985: 299.

Material examined: MEDITERRANEAN SEA: — off France, Canyon de Planier, depth 300—320 m, March 7, 1975, 3 spec. (leg. M. Ledoyer) (S. V. P. st. 16) (CVM).

— off France, *ibid*, depth 240—360 m, May 2, 1975, several spec. (F. V. P. st. 31) (leg. Ledoyer) (CVM);

— Golfo di Napoli, Secca Lo Bianco (Ischia), depth 140—150 m one spec. (leg. U. Schiecke) (no data) (CVM).

Short description: Male 4.9 mm: Mesosomal segments smooth, metasomsegments 1—3 each with several dorsoposterior marginal teeth (fig. XII, 5); urosomites 1—2 each with 2 posterior dorsomarginal teeth each (fig. XII, 4), dorsoposterior tooth on urosomite 3 with distal spine (fig. XII, 4).

Fig. XII. *Pseudotiron bouvieri* Chevreux 1895, Mediterr. Sea off France (F. V. P. st. 31), male 4.9 mm: 1—2 = gnathopods 1—2; 3 = retinacula; 4—5 = urosome with uropods.

Sl. XII. *Pseudotiron bouvieri* Chevreux 1895, Sredozemno more ispred Francuske (F. V. P. st. 31), mužjak 4.9 mm: 1—2 = gnatopodi 1—2; 3 = retinakule; 4—5 = urozom sa uropodima.



Head with vorehead rostrum, lateral cephalic lobes short, subrounded, eyes not visible. Antenna 1 with peduncular segments 1—3 progressively shorter, poorly setose (fig. XIII, 1), main flagellum remarkably shorter than body, consisting of 10—11 articles; first flagellar article inflated and elongate, bearing numerous lateral setae; accessory flagellum 3-segmented, nearly as long as first segment of main flagellum (fig. XIII, 1).

Antenna 2 long, third peduncular segment short, peduncular segments 4—5 long, flagellum plurisegmented. Labrum incised distally (fig. XIII, 8), epistome prominent (fig. XIII, 7). Labium with small but well developed inner lobes, outer lobes entire (fig. XIII, 9).

Mandible strong, molar cylindric, long, tritulative (fig. XI, 4), incisor of left mandible with 4 teeth, lacinia mobilis with 4 teeth (fig. XI, 6), accompanied by row of 10 strong setae. Incisor of right mandible with 5 teeth, lacinia mobilis with 4 serrate parts accompanied by about 8 setae (fig. XI, 4, 5); palp linear, very slender, shorter than mandible, 3-segmented, first and third segment short (fig. XI, 6).

Maxilla 1: inner plate triangular, with row of lateral plumose setae, outer plate with 9 toothed spines, palp strong, 2-segmented, with distal spines (fig. XIII, 6).

Maxilla 2 inner plate with facial oblique row of setae (fig. XIII, 10). Maxilliped: inner plate short, with 2 short distal spines and setae (fig. XI, 3), outer plate large, with only several very strong and stout distolateral spines, palp segment 4 with nail longer than peduncle itself (fig. XI, 3).

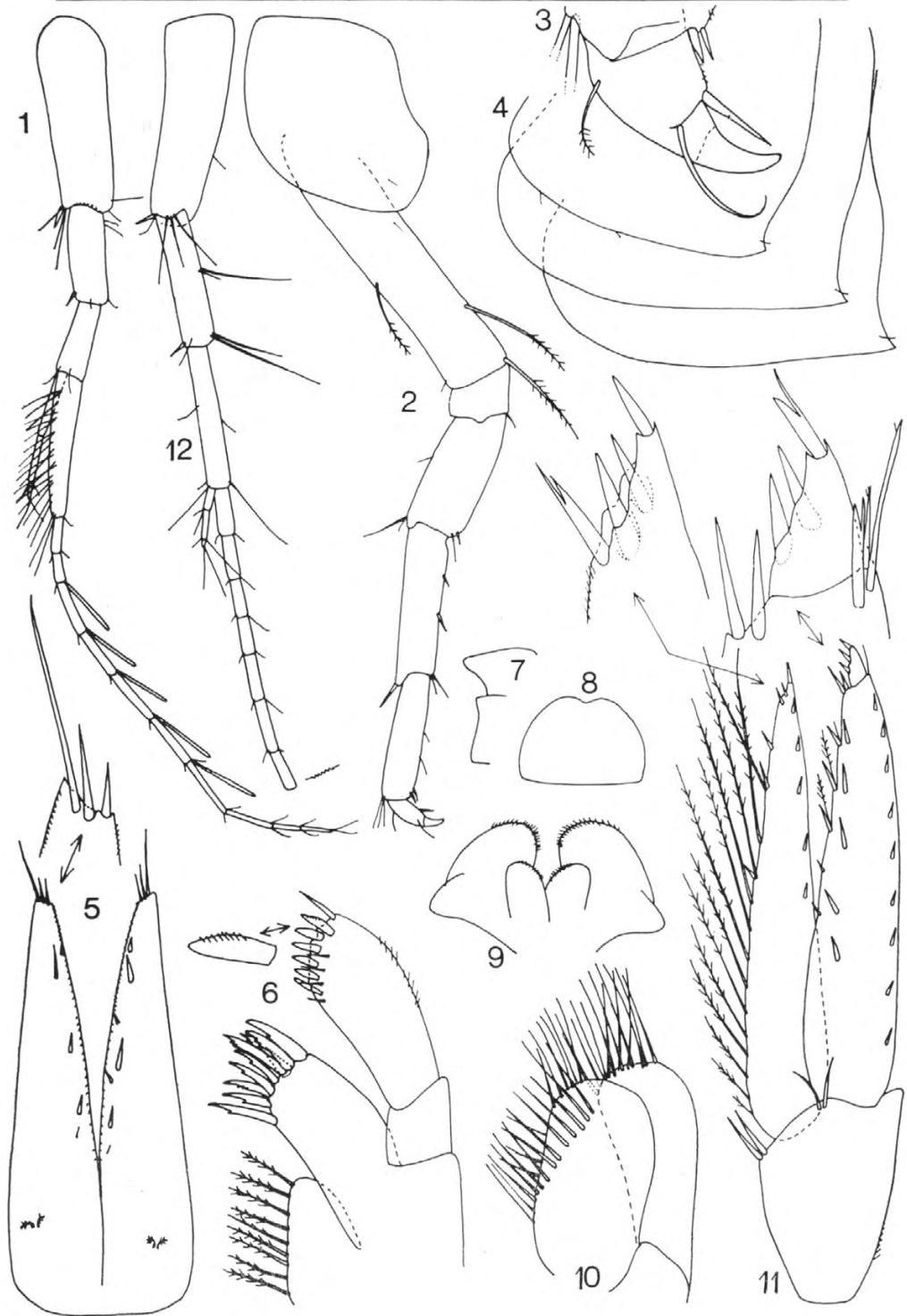
Coxae large, coxa 1 dilated distally and with 4 inferior facial plumose setae, coxa 2 with angular ventroposterior corner, coxae 1—2 with notched ventroposterior corner (fig. XII, 1, 2). Coxa 3 extremely dilated ventrally, with subrounded both ventral corners, coxa 4 small, subrounded ventrally (fig. XIII, 2).

Gnathopods 1—2 simple, linear, with elongated narrow segment 5; segment 6 narrow, shorter than segment 5, simple (fig. XII, 1, 2), dactyl slender, with long nail and 2 longer setae at inner margin (fig. XII, 1—2).

Pereopods 3—4 similar to each other, with short segments 4—6 and stout short dactyl bearing one spine at inner margin and one plumose seta at outer margin, nail short (fig. XIII, 2, 3).

Fig. XIII. *Pseudotiron bouvieri* Chevreux 1895, Mediterr. Sea off France (F. V. P. st. 31), male 4.9 mm: 1 = antenna 1; 2—3 = pereopod 4; 4 = epimeral plates 1—3; 5 = telson; 6 = maxilla 1; 7—8 = epistome with labrum; 9 = labium; 10 = maxilla 2; 11 = uropod 3; 12 = antenna 1, female 4.7 mm.

Sl. XIII. *Pseudotiron bouvieri* Chevreux 1895, Sred. more ispred Francuske (F. V. P. st. 31), mužjak 4.9 mm: 1 = antena 1; 2—3 = pereopod 4; 4 = epimere 1—3; 5 = telzon; 6 = maksila 1; 7—8 = epistom sa labrumom; 9 = labium; 10 = maksila 2; 11 = uropod 3; 12 = antena 1, ženka 4.7 mm.



Pereopods 5—7 with large ovoid segment 2 bearing well developed ventroposterior lobe; segments 4—6 progressively shorter, dactyl short and stout.

Pleopods 1—3 each with 2 retinacula accompanied by one seta. Peduncle of pleopod 3 with 2 long plumose setae at anterior and at posterior margin.

Epimeral plates 1—3 with pointed ventroposterior corner and smooth posterior margin (fig. XIII, 4). Urosomite 1 near basis of peduncle of uropod 1 without spine (fig. XII, 5).

Uropods 1—2 lanceolate, inner ramus of uropod 1 poorly longer than outer one, both rami with short distal spines (fig. XII, 5).

Uropod 2: outer ramus remarkably shorter than inner one, both rami with short distal spine (fig. XII, 5). Uropod 3 much exceeding tip of uropods 1—2, lanceolate, outer ramus hardly longer than inner one, 2-segmented, both rami with short distal spine (fig. XIII, 11).

Telson long, but not reaching tip of uropod 3, deeply incised almost to the basis, each lobe with row of short facial spines and 3 distal spine-like setae (fig. XIII, 5).

Coxal gills occur on pereonites 2—7.

Female like males but antennae 1—2 slightly more setose. Peduncular segments 2—3 of antenna 1 elongated, but segment 3 longer than 2 (fig. XIII, 12); main flagellum plurisegmented, poorly setose, accessory flagellum consisting of 2—3 articles (fig. XIII, 12). Oostegys long and narrow, setose.

Variability: The marginal and distal spines on rami of uropod 3 often are missing and on its place appears one hole, figured very well by Ledoyer (1977: 410, fig. 29 U3). Ledoyer erroneously figured subrounded epimeral plates 1—2 and absence of second segment of outer ramus in uropod 3.

Distribution in the Mediterranean Sea: 32° 28' N, 29° 46' E, depth 1938 m (J. L. BARNARD 1964); loc. typ. (CHEVREUX 1895); off France: Canyon de Planier, Sw of Marseille, 180—370 m; Banc des Blauquieres, 180—300 m, S. of Ciotat (LEDOYER 1977); 35° 49,8' N, 22° 20,7' E, 4690 m; 36° 11,8' N, 22° 24,6' E, 3174 m; 36° 19,5' N, 22° 39,8' E, 1664 m; 38° 27'0" N, 04° 08'0" E, 2447 m; 41° 47' N, 07° 33' E, 2720 m; 41° 48' N, 08° 16' E, 2000 m; 42° 15'0" N, 04° 28'5", 2090 m; 42° 25' N, 07° 04' E, 2660 m; 42° 40' N, 06° 46,5' E, 2520 m; 42° 53' N, 06° 10,5' E, 1500 m depth (BELLAN-SANTINI 1985);

Golfo di Napoli, 140—150 m (new record).

General distribution: Mediterranean endemic species.

Loc. typ.: off Tunis, Mediterranean Sea, between cap Serrat and Galite Island, depth 170 m.

SYRRHOITES PUSILLA Enequist 1950

fig.: XIV, XV

Syrrhoites pusillus Enequist 1950: 338, fig. 57—60.*Syrrhoites pusilla* J. L. Barnard 1972: 76; Ledoyer 1977: 414, fig. 32; G. Karaman 1986: (in key).

Material examined: MEDITERRANEAN SEA: off France: — Canyon de Planier, 320—370 m depth, September 13, 1974, several spec. (leg. M. Ledoyer) (F. V. P. st. 8) (CVM);

— Ibid, 240—360 m depth, May 2, 1975, several spec. (leg. M. Ledoyer) (F. V. P. st. 31) (CVM).

Short description: This species has been described by Enequist (1950) and Ledoyer (1977) regarding main characters, but many other characters remain undescribed or unknown, and we tried to complete description of this species with these characters.

Female up to 4 mm long. Body carinate, laterally compressed, last two mesosomal and two first metasomal segments each with one dorsomedian posterior tooth. Last metasomal segment with small upwards recurved dorsoposterior marginal tooth. Urosomites 1—2 each with one dorsoposterior medial marginal tooth (tooth on urosomite 2 is longer than that of urosomite 1), urosomite 3 slightly elevated.

Rostrum of head long and recurved, eyes absent, lateral cephalic lobes subrounded, without ventroanterior sinus.

Antennae 1—2 relatively short, antenna 1 slightly longer than 2. Antenna 1: peduncular segments 1—3 progressively shorter, first segment slightly inflated, long, bearing distal bifurcate hook at inner face (fig. XV, 1); peduncular segment 3 remarkably exceeding half of second ped. segment, poorly setose (fig. XV, 1); main flagellum shorter than peduncle, consisting of 7—8 articles usually with 1 long aesthetasc each; accessory flagellum 2-segmented, as long as first flagellar segment (fig. XV, 1).

Antenna 2 with short third peduncular segment, peduncular segment 5 slightly shorter than segment 4, both with hairy setose dorsal margin (fig. XV, 2); flagellum much shorter than peduncle, consisting of 5—6 stout segments (fig. XV, 2), antennal gland cone short.

Labrum entire (fig. XV, 7); labium shallow, with incised outer lobes and narrow small inner lobes (fig. XV, 9).

Mandibles strong, almost symmetric to each other, with molar extremely developed, dominating mandible, smooth, tritritative (fig. XV, 5, 6); incisor strong, subrounded distally, bearing one spine-like lacinia mobilis broader in left than in right mandible (fig. XV, 5, 6); palp feeble, shorter than mandible, 3-segmented, linear, with first and third segment short, second segment long (fig. XV, 5, 6).



Maxilla 1: inner plate triangular, with row of distolateral plumose setae, outer plate with 11 spines (2 spines pluritoothed, other spines smooth or with one lateral tooth), palp 2-segmented, with distal and lateral setae (fig. XIV, 6).

Maxilla 2 with inner plate larger than outer one, inner plate with facial oblique row of setae (fig. XIV, 5), outer plate with distal setae only.

Maxilliped strong, inner plate short and broad, with distoinferior corner and bearing row of distal plumose setae only (fig. XV, 4); outer plate exceeding 2/3 of second palp segment, bearing several very large entire spines (fig. XV, 4); palp 4-segmented, palp segment 3 narrow, unlobed, segment 4 slightly shorter than 3, with nail shorter than peduncle and bearing 2 setae at inner margin and 1 medial seta at outer margin (fig. XV, 4).

Coxae 1—3 much longer than broad, with almost parallel lateral margins and bearing several distal setae each. Coxa 4 triangular, with obtuse distal tip and with proximoposterior notch (fig. XIV, 3).

Gnathopods 1—2 poorly subchelate, slender, gnathopod 2 is larger than 1. Gnathopod 1: segment 2 long, segments 3—4 short, segment 5 long, slightly dilated medially but unlobed, bearing numerous posterior setae; segment 6 tapering distally, remarkably shorter than 5, palm very oblique, poorly defined by one strong simple spine (fig. XIV, 1), dactyl with one seta at outer margin and 1 spine and 2 setae at inner margin, nail much longer than peduncle (fig. XIV, 1).

Gnathopod 2: segment 5 longer and more narrow than that in gnathopod 1, segment 6 shorter than 5, palm very oblique, setose, defined by 1 simple corner spine, dactyl like that in gnathopod 1 (fig. XIV, 2).

Pereopods 3—4 slender, with segments 4—6 almost subequal long, dactyl almost as long as segment 6, very slender, with one short seta at inner margin and 1 seta at outer margin, nail much longer than peduncle (fig. XIV, 3).

Pereopods 5—7 with dilated serrate segment 2 strongly lobed in pereopod 7; segment 2 is progressively larger towards pereopod 7; anterior margin of segment 2 convex strongly; dactyl slender, finely serrate along inner margin, nail short (fig. XIV, 4).

Fig. XIV. *Syrrhoites pusilla* Enequist 1950, *Medit. Sea off France* (F. V. P. st. 8), female 3.5 mm: 1—2 = gnathopods 1—2; 3 = pereopod 4; 4 = pereopod 7; 5 = maxilla 2; 6 = maxilla 1; 7 = urosomites 1—3, male 3.5 mm.

Sl. XIV. *Syrrhoites pusilla* Enequist 1950, *Sredoz. more ispred Francuske* (F. V. P. st. 8), ženka 3.5 mm: 1—2 = gnatopodi 1—2; 3 = pereopod 4; 4 = pereopod 7; 5 = maksila 2; 6 = maksila 1; 7 = urozomiti 1—3, mužjak 3.5 mm.



Pleopods 1—3 each with 2 retinacula accompanied by 2 setae. Epimeral plates 1—2 angular, epimeral plate 3 with strong ventroposterior tooth and excavated posterior margin.

Uropods 1—2 lanceolate, peduncle with distal tooth, outer ramus is remarkably shorter than inner one, tip of both rami of uropods without distal spine.

Uropod 3 hardly exceeding tip of uropods 1—2, peduncle long, with distal short tooth (fig. XV, 3) at outer margin, inner ramus stronger and hardly longer than outer one; both rami 1-segmented, without distal spine or seta.

Telson long, but slightly shorter than uropod 3, incised almost 2/3 of its length, each lobe tapering and notched distally, with one short seta in each notch (fig. XV, 10); a pair of short plumose setae appears in lower half of telson-lobes.

Coxal gills ovoid, simple.

Males are similar to females, but urosomites 1—2 are with slightly longer distoposterior tooth (fig. XIV, 7), urosomite 3 with dorsal transverse elevation bearing numerous setae (fig. XIV, 7). Antenna 1 with peduncular segment 1 bearing distoinferior bifurcate hook (fig. XV, 11), peduncular segment 3 short; main flagellum hardly longer than peduncle, with inflated and long first segment bearing numerous inferior lateral long setae (fig. XV, 11), other 7—8 flagellar segments narrow and short, prevalently with 1 aesthetasc each. Accessory flagellum 2—3 segmented, long (fig. XV, 11).

Antenna 2 with nearly subequal peduncular segments 4—5, flagellum very long and very slender, plurisegmented.

Variability: Coxa 4 with more or less obtuse distal tip. Rami of uropod 3 can be more or less setose. Third palp segment of mandible is of rather variable length (fig. XV, 5, 6). The presence of distal inferior hook on first peduncular segment of antenna 1 was overlooked by all scientists because of its poorly visibility.

Localities cited in the Mediterranean Sea: of France, SW. of Marseille (Canyon de Planier) (LEDOYER 1977; present work).

Loc typ.: Skagerrak (NE. Atlantic).

General distribution: N. Atlantic, Mediterranean Sea.

Fig. XV. *Syrrhoites pusilla* Enequist 1950, Medit. Sea off France (F. V. P. st. 8), female 3.5 mm: 1—2 = antennae 1—2; 3 = uropod 3; 4 = maxilliped; 5—6 = right and left mandible; 7 = labrum; 8 = retinacula; 9 = labium; 10 = telson; 11 = antenna 1, male 3.5 mm.

Sl. XV. *Syrrhoites pusilla* Enequist 1950, Sredoz. more ispred Francuske (F. V. P. st. 8), ženka 3.5 mm: 1—2 = antene 1—2; 3 = uropod 3; 4 = maksiliped; 5—6 = desna i lijeva mandibula; 7 = labrum; 8 = retinakule; 9 = labium; 10 = telzon; 11 = antena 1, mužjak 3.5 mm.

METAPHOXUS GRUNERI n.sp.*

figs.: XVI—XX

Material examined: Mediterranean Sea: of Malta island, Malta South near Grotta Blu, depth 4 m, 4 spec., April 24, 1974 (leg. U. Schiecke) (CVM).

Description: Female 2.8 mm, ovig. with 3 eggs: Body smoth, urosomite 1 elevated and laterally compressed, subangular in lateral projection, bearing 2 dorsomedian short setae (fig. XVI, 8), urosomites 2—4 low, smooth (fig. XVI, 8).

Head with well developed rostrum nearly reaching the end of first peduncular segment of antenna 1 (fig. XII, 4), eyes subrounded to ovoid, large (fig. XVI, 4, 5).

Antenna 1 very short, peduncular segments 1—3 progressively shorter (fig. XVI, 1, 2), main flagellum shorter than peduncle, consisting of 4 articles (2—3 of them with one narrow aesthetasc each); accessory flagellum 3-segmented (fig. XVI, 1, 2).

Antenna 2 slightly longer than 1, peduncular segment 3 is longer than broad, but shorter than segment 4, segment 4 with group of spines at dorsoanterior part (fig. XVI, 3), segment 5 shorter than 4, with dorsal spines; main flagellum 3-segmented, almost as long as last peduncular segment (fig. XVI, 3).

Labrum broader than long, entire (fig. XIX, 1), labium with entire outer lobes and partially fused inner lobes (fig. XX, 7).

Mandibles with broad, irregularly toothed incisor and undistinct nontrititative molar (fig. XVI, 4, 6); left lacinia mobilis broad and irregularly toothed, accompanied by 3 stout short spine-like setae (fig. XVI, 6). Right lacinia mobilis with irregularly toothed margin accompanied by 2 stout spine-like setae (fig. XVI, 4, 5); palp strong, 3-segmented: first segment short, second segment elongated, with 1—2 setae, third segment slightly clavate, shorter than 2, with about 8 distomarginal setae (fig. XVI, 5).

* This species is dedicated to Prof. Dr. Hans Eckhard Gruner from the Zoological Museum of Humboldt University, Berlin (GDR) for his numerous studies on the Crustacea.

Fig. XVI. *Metaphoxus gruneri*, n.sp., off Malta, female 2.8 mm: 1—2 = antenna 1; 3 = antenna 2; 4—5 = right mandible; 6 = left mandible; 7 = maxilliped; 8 = urosome with uropods 1—2; 9 = coxa 1, male 3 mm; 10 = pereopod 3, male 3 mm.

Sl. XVI. *Metaphoxus gruneri*, n.sp., ispred Malte, ženka 2.8 mm: 1—2 = antena 1; 3 = antena 2; 4—5 = desna mandibula; 6 = lijeva mandibula; 7 = maksiliped; 8 = urozom sa uropodima 1—2; 9 = koksa 1, mužjak 3 mm; 10 = pereopod 3, mužjak 3 mm.



Maxilla 1: inner plate large, ovoid, smooth (fig. XIX, 6), outer plate with 7 toothed spines (3 spines with several teeth, 4 spines with 1—4 teeth each), palp 1-segmented, narrow, reaching basis of spines of outer plate, bearing 3 distal long setae (fig. XIX, 6).

Maxilla 2 short, outer plate with 4, inner plate with 3 distal spine-like setae only (fig. XVIII, 3).

Maxilliped: inner plate narrow and short, with 2 distal long spine-like setae (fig. XVI, 7); outer plate narrow and short, not reaching outer tip of first palp segment, bearing 2 strong distolateral spines and 2 setae; palp 4-segmented, with spine-like setae along inner margin (fig. XVI, 7), dactyl (= article 4) with one stout short subdistal nail accompanied by 2 short setae (fig. XVI, 7).

Coxae 1—4 long and broad, with entire distal margin; coxae 1—3 with 3—4 subdistal setae at ventroposterior corner (fig. XVII, 1, 2; XVIII, 1, 2); coxa 1 only poorly dilated distally (fig. XVII, 1). Coxae 5—6 short, with posterior lobe much larger than anterior one (fig. XIX, 2, 3), coxa 7 entire (fig. XIX, 4).

Gnathopods 1—2 large, subchelate, slightly unequal. Gnathopod 1: segment 2 dilated in distal half, bearing row of setae along posterior margin (fig. XVII, 1), segments 3—5 short; segment 6 nearly twice longer than broad, with slightly concave posterior margin; palm transverse, convex, smooth, defined by corner obtuse tooth bearing one spine (fig. XVII, 1), dactyl with one seta at outer margin.

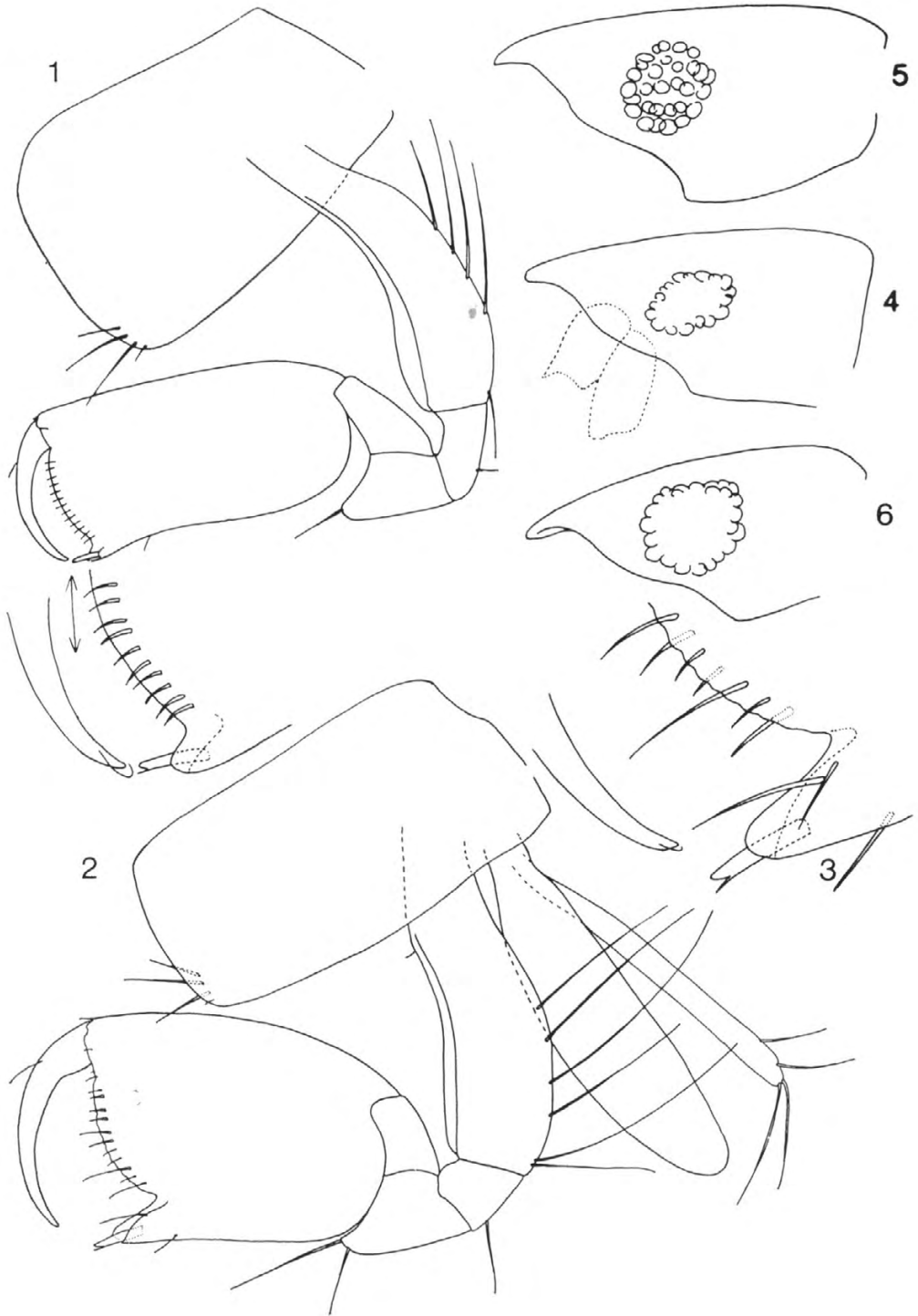
Gnathopod 2 slightly larger than 1; segment 2 with long setae along posterior margin; segments 3—5 short (fig. XVII, 2), segment 6 longer than broad, palm crenellated, slightly oblique, defined by one corner obtuse tooth provided with 1 spine and 2 setae, dactyl like that of gnathopod 1 (fig. XVII, 2).

Pereopods 3—4 similar to each other, segment 2 with row of posterior long setae, segment 5 much shorter than 4, bearing at distoposterior margin one strong spine exceeding half of segment 6-length (fig. XVIII, 1, 2); segment 6 longer than 5, bearing 2 short spines at distoposterior tip (fig. XVIII, 1, 2), dactyl short and stout, nearly reaching half of segment 6 (fig. XVIII, 1).

Pereopod 5: segment 2 ovoid, with moderate ventroposterior lobe (fig. XIX, 2), anterior margin of segments 3—6 with long setae, dactyl slender and short, reaching nearly half of segment 6 (fig. XIX, 2).

Fig. XVII. *Metaphoxus gruneri*, n. sp., off Malta, female 2.8 mm: 1 = gnathopod 1; 2—3 = gnathopod 2; 4 = head; 5 = head, female 2.9 mm; 6 = head, male 3 mm.

Sl. XVII. *Metaphoxus gruneri*, n. sp., ispred Malte, ženka 2.8 mm: 1 = gnathopod 1; 2—3 = gnathopod 2; 4 = glava; 5 = glava, ženka 2.9 mm; 6 = glava, mužjak 3 mm.



Pereopod 6 elongated, segment 2 with strongly convex anterior margin bearing several transverse rows of setae (fig. XIX, 3), and with well developed ventroposterior lobe; one seta appears in the middle of inner face of segment 2 (fig. XIX, 3); segments 4—6 nearly subequal long, poorly spinose and poorly setose; dactyl stout, nearly reaching half of segment 6-length.

Pereopod 7 short, with extremely large ovoid segment 2 having straight anterior margin poorly setose, and large ventroposterior lobe; segments 4—6 progressively shorter, dactyl slender and short, poorly exceeding half of segment 6 (fig. XIX, 4).

Pleopods well developed, having each 2 retinacula without accompanied setae (fig. XVIII, 5).

Epimeral plates 1—2 with subrounded ventroposterior corner and convex posterior margin, ep. plate 2 with 3 ventral marginal plumose setae (fig. XVIII, 4); epimeral plate 3 obtuse posteriorly, with inclined posterior margin, smooth (fig. XVIII, 4).

Urosomite 1 near basis of peduncle of uropod 1 with 2—3 very short setae (fig. XVI, 8), and without ventral spine. Uropod 1: peduncle longer than rami, without ventrofacial spine; outer ramus is slightly longer than inner one, both rami of the same shape, obtuse distally, outer ramus with one lateral spine only (fig. XVI, 8).

Uropod 2: peduncle longer than rami; outer ramus slightly longer than inner one, both rami smooth, obtuse distally (fig. XVI, 8).

Uropod 3 relatively short, peduncle slightly shorter than outer ramus, inner ramus reaching half of outer ramus, bearing one short distal seta only (fig. XVIII, 6); second segment of outer ramus short and narrow, with 2 short distal setae (fig. XVIII, 6).

Telson short, incised nearly to the basis, each lobe with one long slender distal spine accompanied by one plumose seta (fig. XIX, 5); a pair of plumose setae appears in the middle of each lobe.

Coxal gills simple, ovoid, occur on pereonites 2—6. Oostegys narrow, distally setose, occur on pereonites 2—5.

Males 3 mm: Like females but antennae longer. Antenna 1 with peduncular segments progressively shorter (fig. XX, 1), main flagellum consisting of 4 articles, distal article with distal seta much longer than flagellum itself (fig. XX, 1), first flagellar article with one ovoid calceola; accessory flagellum 3-segmented (fig. XX, 1).

Fig. XVIII. *Metaphoxus gruneri*, n. sp., off Malta, female 2.8 mm: 1—2 = pereopods 3—4; 3 = maxilla 2; 4 = epimeral plates 1—3; 5 = retinacula; 6 = uropod 3.

Sl. XVIII. *Metaphoxus gruneri*, n. sp., ispred Malte, ženka 2.8 mm: 1—2 = pereopod 3—4; 3 = maksila 2; 4 = epimeralne ploče 1—3; 5 = retinakule; 6 = uropod 3.



Antenna 2 as long as or longer than body, peduncular segment 4 slightly longer than 5; segment 5 with 2 calceola at dorsal margin (fig. XX, 2); flagellum consisting of 26 articles, most of them with one calceola, distal article with long seta (fig. XX, 2).

Eyes are slightly larger than these in females (fig. XVII, 6), subrounded. Gnathopods and coxae like these in females (fig. XVI, 9; XX, 6), as well as pereopods and epimeral plates (fig. XVI, 10). Urosomite 1 elevated, laterally compressed, subangular in lateral projection, bearing one dorsal field having small spine-teeth and one dorsomedian short seta (fig. XX, 5). Uropods 1—2 like these in females (fig. XX, 5). Uropod 3 biramous, inner ramus is only poorly shorter than outer one, with row of distal and outer marginal plumose setae (fig. XX, 4), and with one distoinferior seta; outer ramus 2-segmented, with plumose setae along inner margin; second segment short, with 2 short distal setae only (fig. XX, 4).

Telson incised nearly to the basis, each lobe with 3 distal slender spines accompanied by one plumose seta (fig. XX, 3).

Variability: Eyes more or less subrounded.

Holotype: Female 2.8 mm. Holotype and two paratypes are deposited in Museum of Natural History in Verona (Italy), one paratype in Karaman's Collection in Titograd (Yugoslavia).

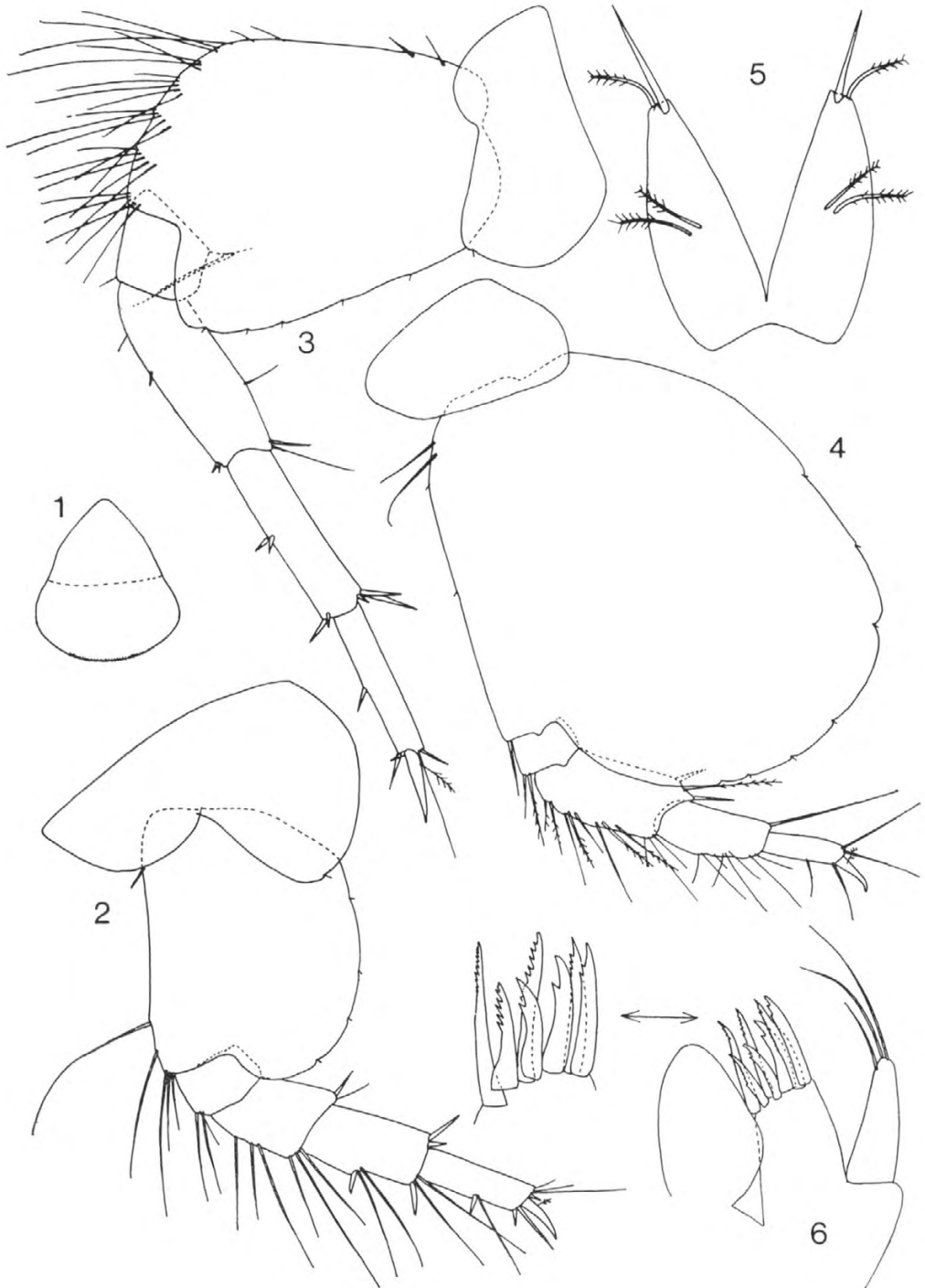
Loc. typ.: off Malta island, near Grotta Blu, 34 m depth.

Remarks and Affinities: *Metaphoxus gruneri*, n. sp. is very similar to other two known species of this genus known in the Mediterranean Sea, *M. fultoni* and *M. pectinatus*, but differs clearly from both of them by numerous characters.

Metaphoxus fultoni (Scott 1890) differs from *M. gruneri* by parachelate gnathopods 1—2, by smooth palm of gnathopod 2, by remarkably longer segment 5 of gnathopod 1, by more dilated coxa 1, by presence of 3 distoposterior long spines on segment 5 of pereopods 3—4, by presence of 2 long distoposterior spines on segment 6 of pereopods 3—4, by longer and more slender dactyl of all pereopods, by low urosomite 1 in males and females, by presence of one ventrofacial seta on peduncle of uropod 1, by more slender rami of uropods 1—2, by longer distal segment of outer ramus in uropod 3, etc.

Fig. XIX. *Metaphoxus gruneri*, n. sp., off Malta, female 2.8 mm: 1 = labrum; 2—4 = pereopods 5—7; 5 = telson; 6 = maxilla 1.

Sl. XIX. *Metaphoxus gruneri*, n. sp., ispred Malte, ženka 2.8 mm: 1 = labrum; 2—4 = pereopodi 5—7; 5 = telzon; 6 = maksila 1.



Metaphoxus pectinatus (Walker 1896) has similar segment 5 of gnathopod 1, but this species differs from *M. gruneri* by long and slender rami of uropods 1—2, by long dactyl of pereopods 3—7, etc.

Metaphoxus tulearensis Barnard and Drummond 1978, known from Madagascar, is very similar to *M. gruneri*, especially by presence of 2 short stout distal spines on posterior tip of segment 6 on pereopods 3—4, by absence of lateral spines on outer ramus of uropod 3, by shape of gnathopods, etc. *M. tulearensis* differs from our species by parachelate gnathopod 1, by narrower rami of uropods 1—2, by long segment 5 of gnathopod 1, etc.

Metaphoxus frequens J. L. Barnard 1960, known from California, is also very similar to our species (palm of gnathopods, short segment 5 of gnathopod 1, uropod 3, etc.) but it differs from *M. gruneri* by presence of only one distal seta on inner plate of maxilliped, by longer and more narrow rami of uropods 1—2, by long dactyl of pereopods 3—4, long second segment of outer ramus in uropod 3, etc.

CONCLUSIONS

The known fauna of marine family *Synopiidae* in the Mediterranean Sea is consisting of five genera and 9 species: *Bruzelia typica* Boeck 1871, *Ilerastroe ilergetes* (J. L. Barnard 1964), *Pseudotiron bouvieri* Chevr. 1895, *Syrrhoe angulipes* Ledoyer 1977, *Syrrhoe affinis* Chevreux 1908, *Syrrhoites barnardi* G. Karaman 1986, *Syrrhoites capricornia* Bellan-Santini 1985, *Syrrhoites cornuta* Bellan-Santini 1985 and *Syrrhoites pusilla* Enequist 1950. The key to the genera of family *Synopiidae* in the Mediterranean sea is presented.

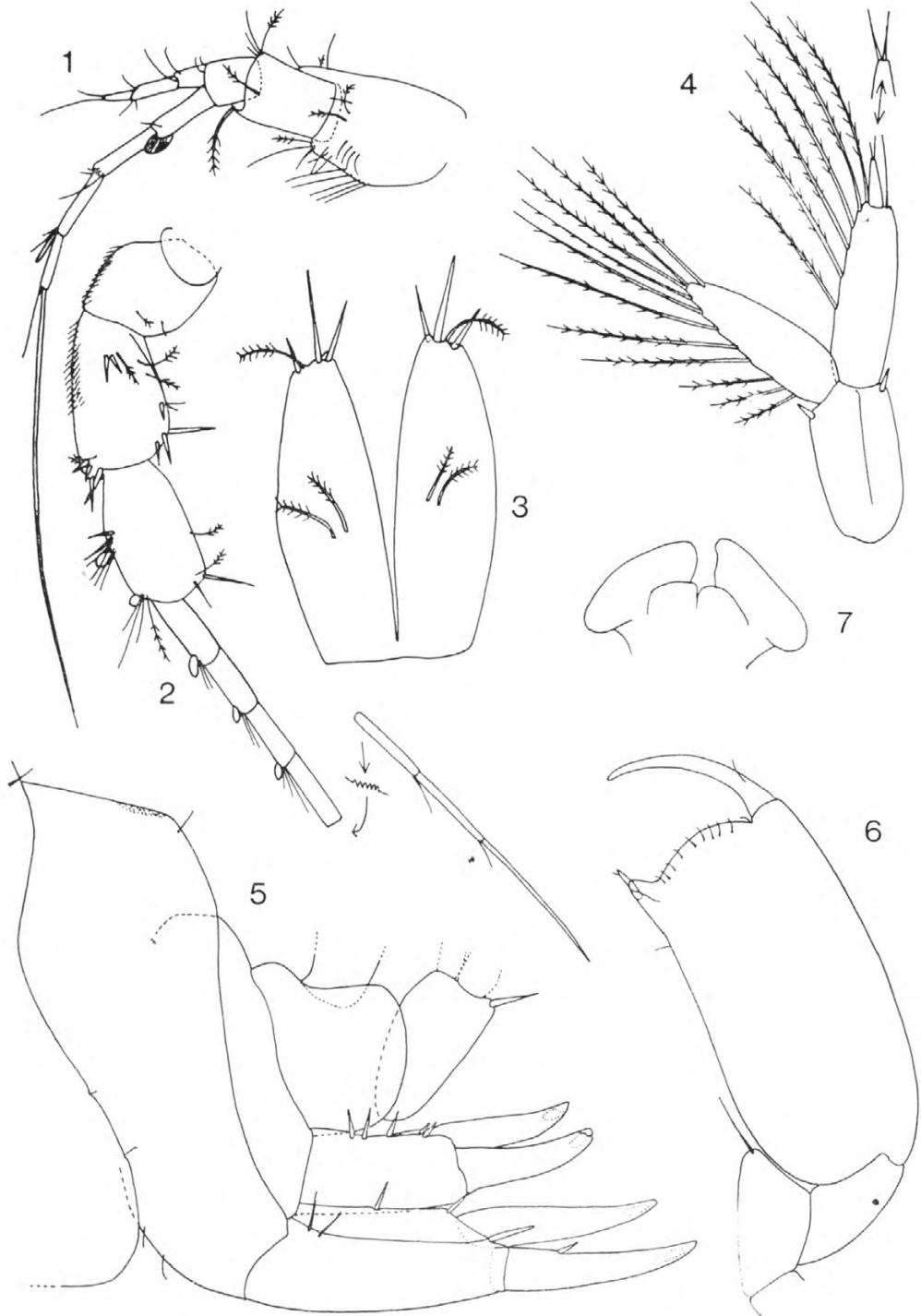
Six species of family *Synopiidae* from the Mediterranean and Adriatic Sea are partially redescribed and figured, especially their poorly known or still unknown body-parts, very important in the taxonomy of this group of animals.

All members of family *Synopiidae* in the Mediterranean Sea are living on the bottom under 100 meters depth, and some of them have been found up to 4690 meters depth in the Mediterranean Sea.

The male of type — subspecies, *Ilerastroe ilergetes ilergetes* are discovered and described for the first time, from the Mediterranean Sea, indicating that holotype of this subspecies of unknown sex, described by J. L. Barnard (1964) was the female.

Fig. XX. *Metaphoxus gruneri*, n.sp., off Malta, male 3 mm: 1—2 = antennae 1—2; 3 = telson; 4 = uropod 3; 5 = urosome with uropods; 6 = gnathopod 1; 7 = labium, ženka 2.8 mm.

Sl. XX. *Metaphoxus gruneri*, n.sp., ispred Malte, mužjak 3 mm: 1—2 = antene 1—2; 3 = telzon; 4 = uropod 3; 5 = urozom sa uropodima; 6 = gnathopod 1; 7 = labium, ženka 2.8 mm.



The subspecies *Ilerastroe ilergetes inconstans* J. L. Barnard 1967, described from Pacific Ocean (off California), differs slightly from the type subspecies, ssp. *ilergetes ilergetes*. The taxonomic position of other populations of *Ilerastroe ilergetes*, mentioned by J. L. Barnard from Pacific (off Chile, off Ecuador, off Nicaragua) is not clear and must be reexamined based on new material.

The genus *Bruzelia* with species *B. typica* Boeck 1871, and genus *Syrrhoe* with species *S. affinis* Chevr. 1908, are discovered at the first time in the Adriatic Sea.

The taxonomic characters of populations of *Syrrhoe affinis* Chevr. 1908, mentioned and described by J. L. Barnard (1961) from Tasman Sea (Pacific) differ slightly from these from N. Atlantic and Mediterranean Sea, but real taxonomic position of Tasman populations must be resolved after the study of new material.

We suppose that all members of family *Synopiidae*, known now in the Mediterranean Sea, exist also in the deeper parts of the Adriatic Sea.

The new species of the family *Phoxocephalidae*, *Metaphoxus gruneri*, n. sp. is discovered and described from Mediterranean Sea near Malta Island. This species differs remarkably from other two known species of genus *Metaphoxus* known from the Mediterranean Sea, *M. fultoni* (Scott 1890) and *M. pectinatus* (Walker 1896).

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Gordan S. Karaman

Re z i m e

NEKOLIKO SLABO POZNATIH ILI NOVIH VRSTA IZ FAMILIJA SYNOPIIDAE I PHOXOCEPHALIDAE IZ SREDOZEMNOG MORA (158. PRILOG POZNAVANJU AMPHIPODA)

Predstavnici rakova iz reda *Amphipoda* (Crustacea, Malacostraca) nase-ljavaju mora i oceane od njihovih obala pa sve do najvećih dubina i zastupljeni su velikim brojem familija, rodova i vrsta.

Jedna od morskih familija amfipoda, čiji predstavnici žive na većim dubinama, je i familija *Synopiidae*, koja je obrađena u ovom radu sa područja Sredozemnog mora. Predstavnici ove familije su zastupljeni u Sre-

dozemnom moru sa 5 rodova odnosno 9 vrsta: *Bruzelia typica* Boeck 1871, *Ilerastroe ilergetes* (J. L. Barnard 1964), *Pseudotiron bouvieri* Chevreux 1895, *Syrrhoe angulipes* Ledoyer 1977, *Syrrhoe affinis* Cevreux 1908, *Syrrhoites barnardi* G. Karaman 1986, *Syrrhoites capricornia* Bellan-Santini 1985, *Syrrhoites cornuta* Bellan-Santini 1985 and *Syrrhoites pusilla* Enequist 1950.

Svi predstavnici familije *Synopiidae* u Sredozemnom moru žive na dubinama većim od 100 metara, i nađeni su na dubinama sve do 4690 metara u srednjem dijelu Mediterana. S obzirom na velike teškoće u vezi sakupljanja materijala živog svijeta sa velikih dubina, često su sakupljeni primjerci oštećeni ili sakupljeni u malom broju primjeraka, pa su opisi tih vrsta dosta površni i bez datih mnogih taksonomsko važnih karaktera.

Prilikom naših proučavanja morskih Amphipoda iz Sredozemnog mora, imali smo prilike da proučimo i veliki broj dubokomorskih vrsta *Amphipoda* iz tog područja. U ovom radu smo dali opise i crteže 6 vrsta iz familije *Synopiidae* iz Sredozemnog mora (uključujući i Jadransko more), posebno obraćajući pažnju na one taksonomske odlike koje su do sada bile nedovoljno ili nisu bile uopšte poznate (na pr. broj retinakula na pleopodima, detaljna građa pojedinih usnih dijelova, i dr.).

U radu smo opisali i proučili slijedeće vrste: *Bruzelia typica* Boeck 1871, *Ilerastroe ilergetes ilergetes* (J. L. Barnard 1964), *Syrrhoe angulipes* Ledoyer 1977, *Syrrhoe affinis* Chevreux 1908, *Pseudotiron bouvieri* Chevreux 1895, i *Syrrhoites pusilla* Enequist 1950. Od svih ovih rodova i vrsta, rod *Bruzelia* sa vrstom *B. typica*, i rod *Syrrhoe* sa vrstom *S. affinis*, nađeni su po prvi put u Jadranskom moru.

Vrsta *Ilerastroe ilergetes ilergetes* (J. L. Barnard 1964) je bila poznata iz Sredozemnog mora samo po jednom malom primjerku neodređenog pola, sakupljenom na 1938 metara dubine u istočnom dijelu Sredozemnog mora. Sada smo utvrdili postojanje te vrste i u zapadnom dijelu Sredozemnog mora, i po prvi put opisali mužjaka ove tipične podvrste, i utvrdili da je opisan primjerak iz 1964 godine iz istočnog dijela Sredozemlja bila ustvari ženka.

Ostao je dosta nejasan taksonomski položaj populacija *Ilerastroe ilergetes* koje navodi J. L. Barnard (1972) za Pacifik ispred Nikaragve (sa 5680—5690 metara dubine), ispred Ekvadora (sa 1363—1369 metara dubine) i ispred Čilea (sa 1932—3142 metara dubine), budući da u opisu tih populacija nedostaju mnoge važne taksonomske odlike; položaj tih populacija će se moći odrediti tek nakon ponovnog proučavanja novog materijala iz Pacifika.

Sličan problem ostaje i kod vrste *Syrrhoe affinis* iz Tasmanijskog mora (Pacifik), jer se ta populacija znatno razlikuje od populacija iz sjevernog Atlantika i Sredozemnog mora.

Iz relativno pliće zone Sredozemnog mora, sa 34 metara dubine ispred južnog dijela otoka Malta kod Plave Pećine, opisali smo jednu novu vrstu za nauku iz familije *Phoxocephalidae*, *Metaphoxus gruneri*, n. sp. To je treći predstavnik iz roda *Metaphoxus* poznat iz Sredozemnog mora, i on se znatno i jasno razlikuje od druge dvije mediteranske vrste, *Metaphoxus fultoni* (Scott 1890) i *Metaphoxus pectinatus* (Walker 1896); ove dvije posljednje vrste smo već ranije (1973 godine) našli i u Jadranskom moru.

Vrsta *Metaphoxus gruneri* pokazuje dosta sličnosti i sa vrstama *M. tulearensis* Barnard i Drummond 1978, poznate ispred Madagaskara, i *M. frequens* J. L. Barnard 1960, poznate iz Pacifika ispred obala Kalifornije; međutim obe ove vrste se jasno razlikuju od *M. gruneri*.