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Original scientific paper

NIPHARGUS HVARENSIS S. KARAMAN, 1952, Complex (FAMILY NIPHARGIDAE) AT THE EASTERN COAST OF THE ADRIATIC SEA (CONTRIBUTION TO THE KNOWLEDGE OF THE AMPHIPODA 338)

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The subterranean species *Niphargus hvarensis* S. Karaman 1952a, from localities on the eastern coast of the Adriatic Sea is studied and variability of morphological characters of specimens from various localities is mentioned. The peculiar population of this species from spring Zavrelje, Hum, Župa Dubrovačka (Croatia) is described and figured.

The male from type-locality of similar species *Niphargus miljeticus* Straškraba 1959 (Mljet Island, Croatia) is redescribed and figured, and position of this species regarding *N. hvarensis* is discussed, based on morphological, ecological and zoogeographical position and characters.

Key words: Amphipoda, Niphargidae, *Niphargus hvarensis*, *miljeticus*, subterranean, taxonomy, eastern coast of Adriatic Sea

INTRODUCTION

Stanko Karaman first collected and described a new subterranean species of the family Niphargidae, *Niphargus hvarensis* sp. nov., from wells in the town of Hvar (Hvar Island, Croatia) [1]. In a subsequent publication later that year [2], S. Karaman reported *N. hvarensis* from additional localities, including the spring of Rijeka Dubrovačka (= Ombla River) near Dubrovnik, the spring in Trsteno near Dubrovnik, and the spring Veprić near Makarska (Croatia). In his discussion on the species' distribution (p. 50), he hypothesized its potential presence on the Pelješac Peninsula and the islands of Korčula, Lastovo, and Mljet.

In a later study, S. Karaman [3] cited and partially illustrated specimens from Ostaševica Cave on Mljet Island (Croatia), assigning them to *N. hvarensis*. However, Straškraba [4] subsequently described specimens from the same locality, Ostaševica Cave, as a new species, *Niphargus miljeticus*, despite their morphological similarity to *N. hvarensis.*

I have had the opportunity to collect *Niphargus hvarensis* from various localities, some of which are no longer accessible due to significant human activities related to tourism, transportation, and urban development. Thanks to samples provided by Stanko Karaman, as well as those collected by Roman Ozimec, renowned speleologist, biologist, and researcher of cave fauna from Zagreb, Croatia, I was able to examine additional specimens of *N. hvarensis.* These included distinctive specimens from the Zavrelje spring in the Župa Dubrovačka region, Croatia, which are described in this study, along with specimens from Ostaševica Cave on Mljet Island, morphologically similar to *N. hvarensis.*

As *N. miljeticus* has never been described in detail, this work provides a redescription of the species based on an adult male from its type locality.

MATERIAL AND METHODS

The collected material was preserved in the 70 % ethanol. The specimens were dissected in the mixture of glycerin and water, and studied using a

WILD M20 microscope, and drawn using camera lucida attachment. After the study, the same body-parts were submersed in Liquid of Faure and covered by thin cover glass making definitive microscopic slides. All illustrations were inked manually.

Some setal formulae follow G. Karaman`s terminology [5] for the third mandibular palpus article [A= A-setae on outer face; B= B-setae on inner face; C= additional C-setae on outer face; D= lateral marginal D-setae; E= distal long E-setae], and for propodus of gnathopods 1-2 [6] [S= corner S-spine; L= slender serrate lateral L-spines; M= corner facial M-setae on outer face; R= subcorner R-spine on inner face].

The terms "setae" and "spines" are used based on its shape, not origin. The investigations are provided based on morphological, ecological and zoogeographical studies.

In References are mentioned the presence and number of figures in various papers, very important and helpful in taxonomical determination of these species.

TAXONOMICAL PART

Order AMPHIPODA Latreille, 1816 [7]
Suborder SENTICAUDATA Lowry & Myers, 2013 [8]
Family NIPHARGIDAE

Genus *NIPHARGUS* Schiödte, 1849 [9]
Typus generis: *Niphargus stygius* (Schiödte, 1847) [10].

NIPHARGUS MILJETICUS Straškraba, 1959

Figures 1–5

Niphargus virei (nec Chevreux) Schäferna, 1922: 87 [11].

Niphargus orcinus virei Schellenberg, 1937: 167, Fig. 4; S. Karaman, 1952a: 42; [12, 1].

Niphargus miljeticus Straškraba, 1959: 310, Figs. 6–10; G. Karaman, 1972: 5; G. Karaman, 1974: 21; Barnard, J. L & Barnard, C. M., 1983: 693; G. Karaman & Ruffo, 1986: 528; Balázs et al., 2023: tabs. 1, 2; [2, 13–17].

Niphargus hvarensis (part.) S. Karaman, 1952b: 50; S. Karaman, 1958: 14, Figs. 13–17 [2, 3] (for Mljet Island); Fišer et al., 2006: 2301 [18]

MATERIAL EXAMINED:

Sp. 387 = Ostaševica Cave on Mljet island, Croatia, 1951, 1 exp. (leg. B. Djulić)

S-6164 = Mljet island (= Meleda), Adriatic Sea, Croatia, Babino Polje, "grotta Vosvaschevitza" (= Ostaševica Cave), 1969, 1 exp. (leg. A. Vigna-Taglianti);

R-104 = Ostaševica Cave, Babino Polje, Mljet Island, 17.6.2001, 3 exp. (leg. R. Ozimec).

DESCRIPTION: MALE 19.0 mm from type-locality (S-6164):

Body moderately long and stout, mesosomal segments naked; metasomal segments 1–3 with 6–10 dorsoposterior marginal setae (Fig. 3A); urosomal segment 1 on each dorsolateral side with one spine and one seta; urosomal segment 2 with 1–3 spines and 0–2 setae on each dorsolateral side, urosomal segment 3 naked.

Epimeral plates 1–3 quadrate, with only slightly pointed ventroposterior corner and several setae along posterior margin; epimeral plates 2–3 with 2–3 subventral spines each (Fig. 3A, B).

Head with short rostrum and subrounded lateral cephalic lobes, ventroanterior sinus well developed, eyes absent (Fig. 1A).

Antenna 1 reaching nearly half of body-length, peduncular articles progressively shorter (ratio: 65:47:24), scarcely setose, all setae much shorter than diameter of articles (Fig. 1B); main flagellum consisting of 31 short articles very scarcely setose [many articles with one short aesthetasc). Accessory flagellum 2-articulate, rather exceeding half of peduncular article 3 (Fig. 1C), bearing several setae.

Antenna 2 moderately slender; peduncular article 3 short, with distoventral bunch of setae; peduncular article 4 rather longer than article 5 (ratio: 57:50), bearing 3 ventral bunches of setae (the longest setae exceeding diameter of article itself), and several short setae at dorsal margin; article 5 along ventral and dorsal margin with several bunches of setae shorter or longer than diameter of article itself; flagellum moderately slender, longer than last peduncular article, consisting of 15 articles bearing short setae; antennal gland cone short (Fig. 1D).

Mouthparts well developed. Labrum broader than long (ratio: 52:32), with almost straight distal margin (Fig. 5A). Labium broader than long (ratio: 77:41), inner lobes well developed, outer lobes subrounded distally (Fig. 5B).

Right mandible: incisor with 4 teeth, lacinia mobilis bifurcate, serrate, accompanied by 9 rakers (Fig. 2A). Left mandible: incisor with 5 teeth, lacinia mobilis with 4 teeth accompanied by 8 rakers. Mandibular palpus 3-articulated: first article naked, second article with 14 strong setae; article 3 subfalciform, rather longer than article 2 (ratio: 90:80), on outer face with bunch of facial A-setae (Fig. 1F), on inner (mesial) margin with 10–12 B-setae sitting in 4–5 groups (Fig. 1E), along ventral margin with nearly 30 D-setae, at tip with 5-6 distal E-setae.

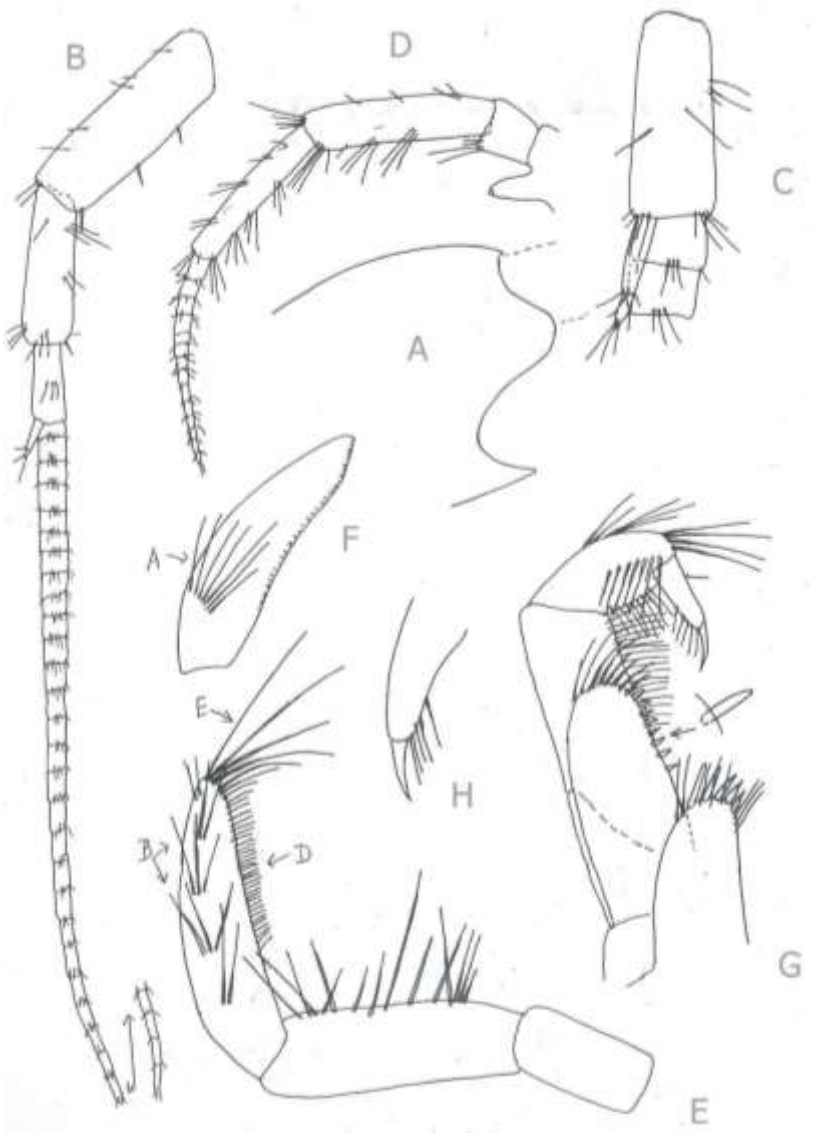

Figure 1. *Niphargus miljeticus* Straškraba, 1959, S-6164= Ostaševica Cave, Mljet Island, male 19.0 mm: A= head; B= antenna 1; C= accessory flagellum; D= antenna 2; E= mandibular palpus, inner (mesial) face (B= facial B-setae; D= marginal D-setae; E= distal E-setae); F= mandibular palpus article 3, outer face (A= facial A-setae); G= maxilliped; H= maxilliped palpus article 4.

Maxilla 1: inner narrow plate with 7 setae; outer plate with 7 spines [inner spine with 2 teeth, 6 spines with one strong lateral tooth); palpus 2-articulate, not reaching distal tip of outer plate-spines, bearing 8 marginal setae (Fig. 5C).

Maxilla 2: both plates narrow, inner plate rather shorter than outer one, both plates with numerous marginal setae (Fig. 5D).

Maxilliped: inner plate moderately short, with 4–5 distal spines mixed with several setae, outer plate only rather exceeding half of palpus article 2 and bearing a row of mesial short marginal spines and distal setae (Fig. 1G); palpus article 4 at inner (mesial) margin with 5 setae near basis of the nail (Fig. 1H).

Coxae 1–4 of moderate size. Coxa 1 nearly as long as broad, with convex ventroanterior corner and with numerous marginal short setae (Fig. 2B).

Coxa 2 longer than broad (ratio: 63:50), at ventral margin with numerous short setae (Fig. 2E).

Coxa 3 longer than broad (ratio: 60:45), with row of short marginal setae (Fig. 3C).

Coxa 4 only rather longer than broad (59:55), with row of short marginal setae, ventroposterior lobe developed, shallow (Fig. 3D).

Coxa 5 shorter than coxa 4, bilobed, broader than long (ratio: 60:36), anterior lobe with marginal setae, subrounded; posterior lobe more angular, with several marginal setae (Fig. 4A).

Coxa 6 smaller than coxa 5, bilobed, broader than long (ratio: 50:35), posterior lobe more angular (Fig. 4B). Coxa 7 shallow, entire, much broader than long (ratio: 45:20), with more subrounded tapering posterior part (Fig. 4D).

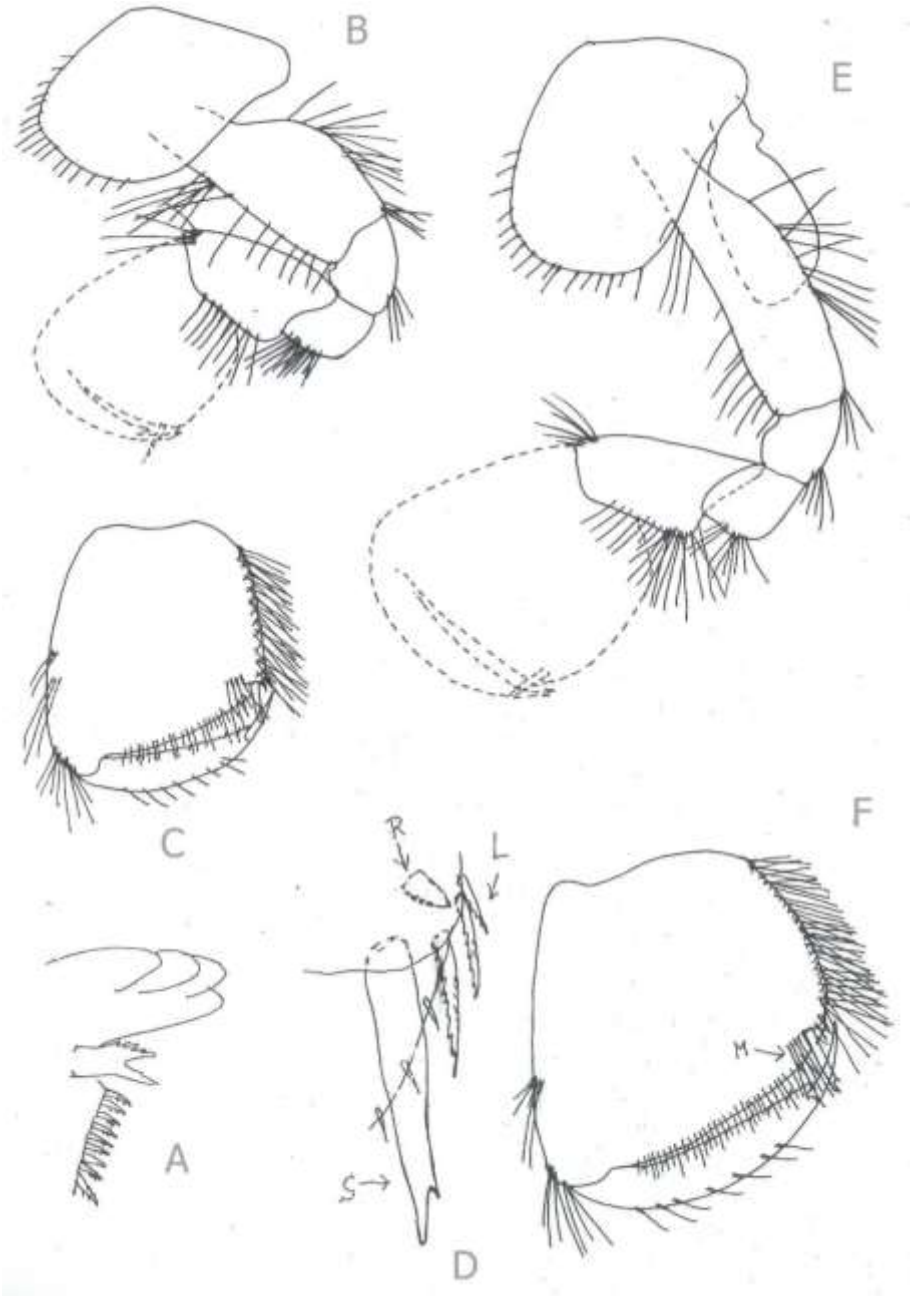

Figure 2. *Niphargus miljeticus* Straškraba 1959, S-6164= Ostaševica Cave, Mljet Island, male 19.0 mm: A= right mandible (incisor, lacinia mobilis, rakers); B-C= gnathopod 1, outer face; D= distal corner of gnathopod 1-propodus, outer face (S= corner S-spine; L- lateral L-spines; R= subcorner R-spine, inner face), E-F= gnathopod 2, outer face (M= corner facial M-setae).

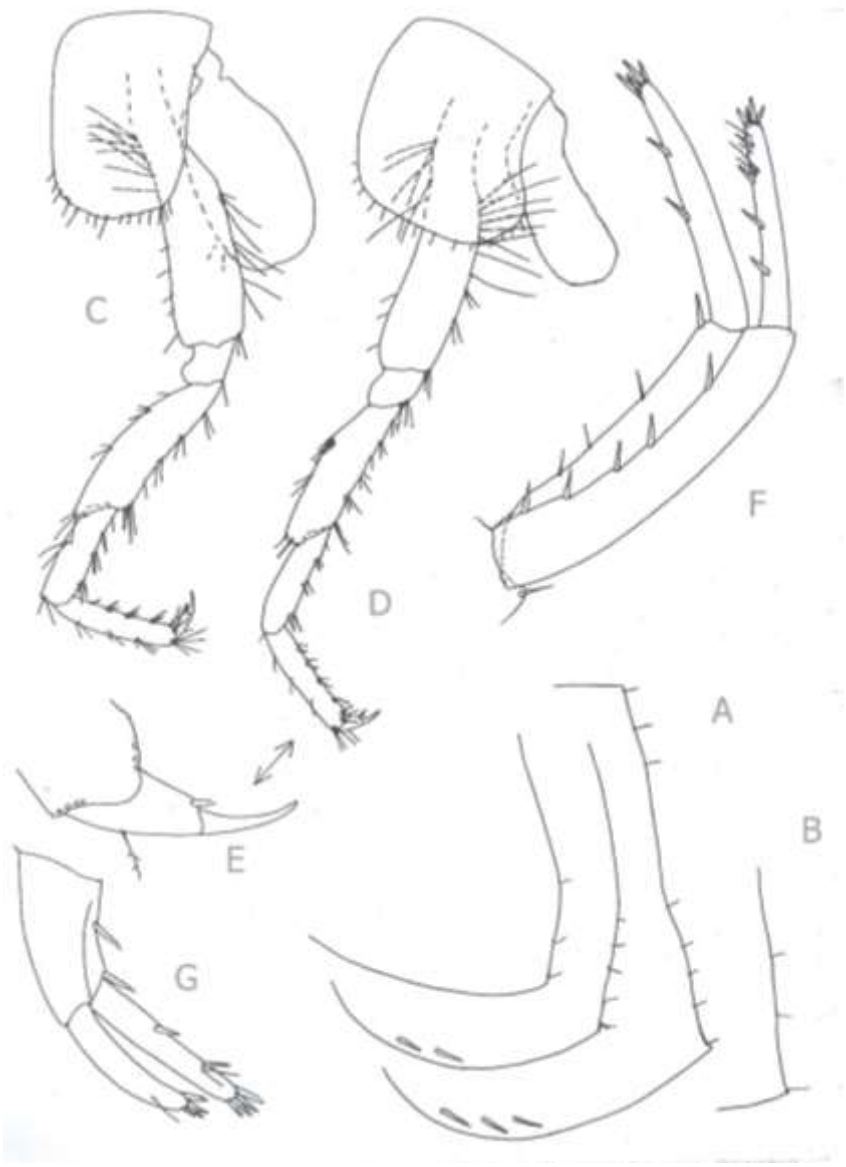

Figure 3. *Niphargus miljeticus* Straškraba 1959, S-6164= Ostaševica Cave, Mljet Island, male 19.0 mm: A-B= epimeral plates; C= pereopod 3; D-E= pereopod 4; F= uropod 1; G= uropod 2.

Gnathopods 1–2 of moderate size, with propodus nearly as large as corresponding coxa. Gnathopod 1: article 2 along anterior and posterior margin with numerous setae. Article 3 of left gnathopod 1 with 2 groups of posterior marginal setae, article 3 of right gnathopod 1 with one posterior group of setae. Article 5 almost as long as propodus (=article 6) (ratio: 45:47) at anterior margin with distal bunch of setae (Fig. 2B). Propodus trapezoid, rather longer than broad (ratio: 65:57), along posterior margin with 11 transverse rows of setae (Fig. 2C); palm slightly convex, inclined almost to the half of propodus-length, defined on outer face by corner S-spine accompanied laterally by 2 slender L-spines and 4 corner facial M-setae, on inner face by one subcorner R-spine (Fig. 2D). Dactylus reaching posterior margin of propodus, with row of 8 single outer marginal setae, and several short setae along inner (mesial) margin (Fig. 2C).

Gnathopod 2 rather larger than gnathopod 1; article 2 with long setae along anterior and posterior margin; article 3 with one distoposterior bunch of setae; article 5 only rather shorter than propodus (ratio: 50:55), at anterior margin with distal bunch of setae (Fig. 2E). Propodus trapezoid, nearly as long as broad, along posterior convex margin with numerous (nearly 20) transverse rows of setae; palm inclined nearly half of propodus-length, defined on outer face by corner S-spine accompanied laterally by 2 L-spines and 4 corner facial M-setae, on inner face by one subcorner R-spine (Fig. 2F).

Dactylus reaching posterior margin of propodus, along outer margin with row of 7 single median setae, along inner margin with several short setae. (Fig. 2F).

Pereopods 3–4 moderately strong. Pereopod 3: article 2 at anterior and posterior margin with proximal long and distal short setae. Articles 4–7 of different length (ratio: 48:33:39:17); article 4 along both margins with groups of short setae; article 5 at posterior margin with 4 groups of spines and/or short setae; article 6 at posterior margin with 5 groups of short spines mixed with single short setae, along anterior margin with 4 groups of short setae (Fig. 3C). Dactylus strong, at inner margin with spine near basis of the nail, at outer margin with one median seta.

Pereopod 4 rather similar to pereopod 3; article 2 with long setae at proximal anterior and posterior margin, distal part of both margins with short setae (Fig. 3D). Articles 4–7 of different length (ratio: 45:31:35:13); article 4 along anterior margin with 3 bunches of setae, along posterior margin with 6 groups of short setae; articles 5 and 6 along posterior margin with 4 and 5 groups of short spines and/or setae, respectively. Dactylus strong, at outer margin with one median seta, at inner margin with one strong spine; nail rather shorter than pedestal (ratio: 30:42) (Fig. 3E).

Pereopod 5 remarkably shorter than pereopods 6 and 7 (Fig. 4A), with dilated article 2 rather longer than broad (ratio: 67:48), along anterior convex margin with nearly 10 short spine-like setae; posterior margin less convex, provided with 21 short setae, ventroposterior lobe not distinctly developed; article 3 with distoanterior group of setae. Articles 4–7 of different length (ratio: 40:50:53:17), articles along both margins very scarcely setose, often mixed with single short spines; article 2 rather longer than article 6 (ratio: 67:53). Dactylus at inner margin with one spine, at outer margin with one median plumose seta.

Pereopod 6; article 2 dilated, longer than broad (ratio: 82:55), anterior margin less convex than that of pereopod 5, provided with 8 spine-like setae; posterior margin rather less convex than anterior one, provided with 19 short setae, ventroposterior lobe not developed (Fig. 4B); article 3 with distoanterior group of short spine-like setae. Articles 4-7 of different length (ratio: 50:70:83:22), along anterior and posterior margin with several groups of short spines mixed with short setae. Article 2 nearly as long as article 6. Dactylus short and strong, at inner margin with one strong spine near basis of the nail, at outer margin with one median plumose seta (Fig. 4C).

Pereopod 7: article 2 longer than broad (ratio: 85:58), along anterior rather convex margin with 8 spine-like setae, along posterior rather convex margin with 18–19 short setae, ventroposterior lobe not distinctly developed (Fig. 4D); article 3 with distoanterior group of short slender spines; article 4 along both margins with groups of short spines; articles 5–7 missing.

Pleopods 1–3 with 2 retinacula. Peduncle of pleopod 1 with 5 setae at anterior margin (Fig. 5E); peduncle of pleopod 2 with one distoanterior seta (Fig. 5F); peduncle of pleopod 3 with 4 setae along posterior margin (Fig. 5G).

Uropod 1: peduncle longer than rami, with dorsoexternal row of spines and dorsointernal row of setae (except distal spine) (Fig. 3F); inner ramus rather longer than outer ramus, with 2 lateral and 4 distal short spines; outer ramus with 4 lateral and 4 distal short spines, as well as 2 groups of short setae in distal part.

Uropod 2: peduncle nearly as long as inner ramus, with lateral and distal spine; inner ramus distinctly longer than outer one, laterally with 2 spines and 2 short setae, at tip with 4 short spines (Fig. 3G); outer ramus slightly curved, with one lateral simple seta and distal 4 short spines.

Uropod 3 long, peduncle longer than broad, with single lateral and distal spine; inner ramus scale-like, shorter than peduncle, with 3 distal spines and one seta (Fig. 5H); outer ramus 2-articulated, long; first article along both margins with groups of very short spines; second article rather exceeding half of first article, along both margins and tip with groups of short simple setae.

Telson nearly as long as broad, broadly incised nearly ¾ of telson-length, each lobe with 4 short distal spines and various number of outer marginal and inner marginal short single or paired spines, as well as with some facial short spines; a pair of short plumose setae appears in the middle of outer margin of each lobe (Fig. 5 I).

Coxal gills relatively short (Figs. 2E, 3C, D; 4A, B).

FEMALE not redescribed here.

VARIABILITY:

Male of 19.2 mm with well-developed pereopod 7: article 2 rather more narrow than that of male 19.0 mm (Fig. 4E), longer than broad (ratio: 80:47), along anterior poorly convex margin with 7 spine-like setae, along posterior slightly convex margin with 17 short setae, ventroposterior lobe not distinctly developed; article 3 with 1–2 distoanterior spines. Articles 4–7 of different length (ratio: 46:56:81:19), along both margins

with groups of short spines mixed sometimes with single short seta. Article 2 nearly as long as article 6; dactylus at inner margin with one strong spine, at outer margin with 2 median plumose setae, nail remarkably shorter than pedestal (Fig. 4F).

The size of various specimens is up to 21.2 mm (22 mm fide) [4].

It is very interesting the presence of 1–2 posterior marginal groups of setae on one or both gnathopods 1 article 3 in some specimens of *N. miljeticus* and *N. hvarensis.* The most *Niphargus* species are with one group of these setae. The presence of 2 groups of setae is stable character in a few *Niphargus* species (*Niphargus spinulifemur* S. Karaman, 1954) [19], etc., but here it appears as unstable character.

Dactylus of pereopod 7 with 1–2 outer marginal plumose setae. Urosomal segment 1 on each dorsolateral side with 1–2 spines and 0–1 seta.

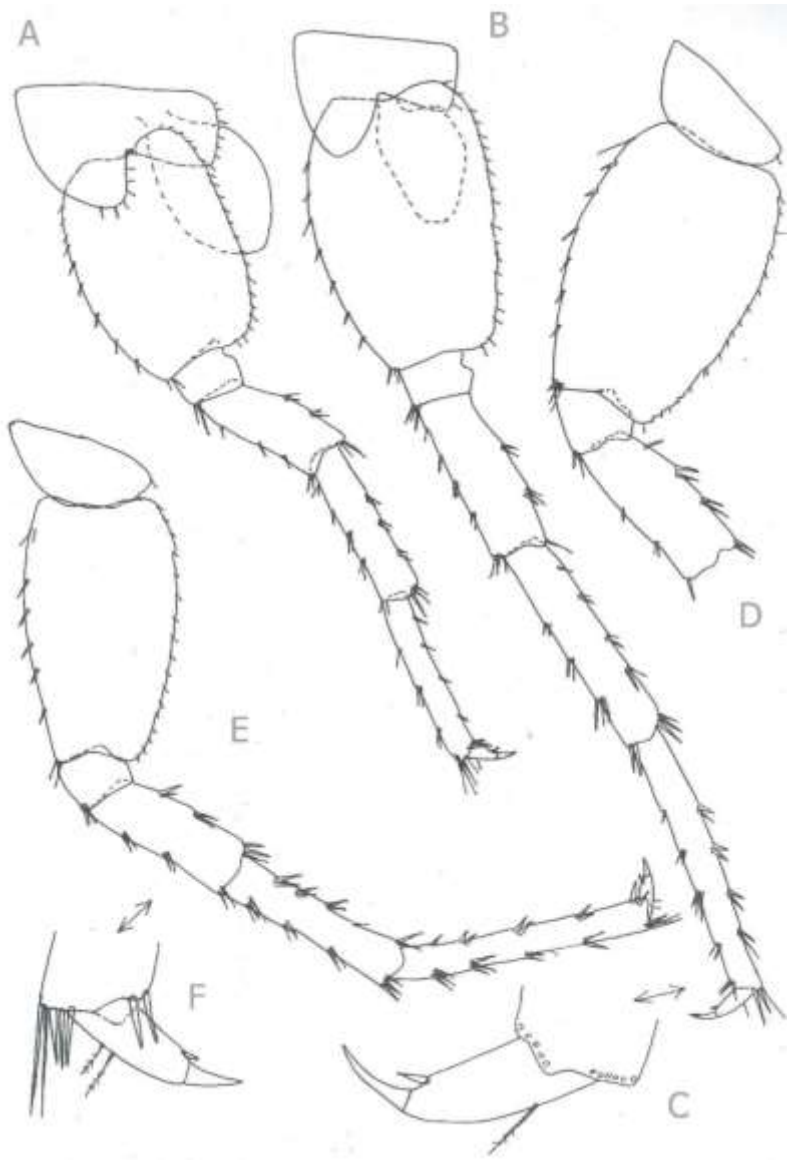

Figure 4. *Niphargus miljeticus* Straškraba 1959, S-6164= Ostaševica Cave, Mljet Island, male 19.0 mm: A= pereopod 5; B-C= pereopod 6; D= pereopod 7; E-F= pereopod 7, **male 19.2 mm**.

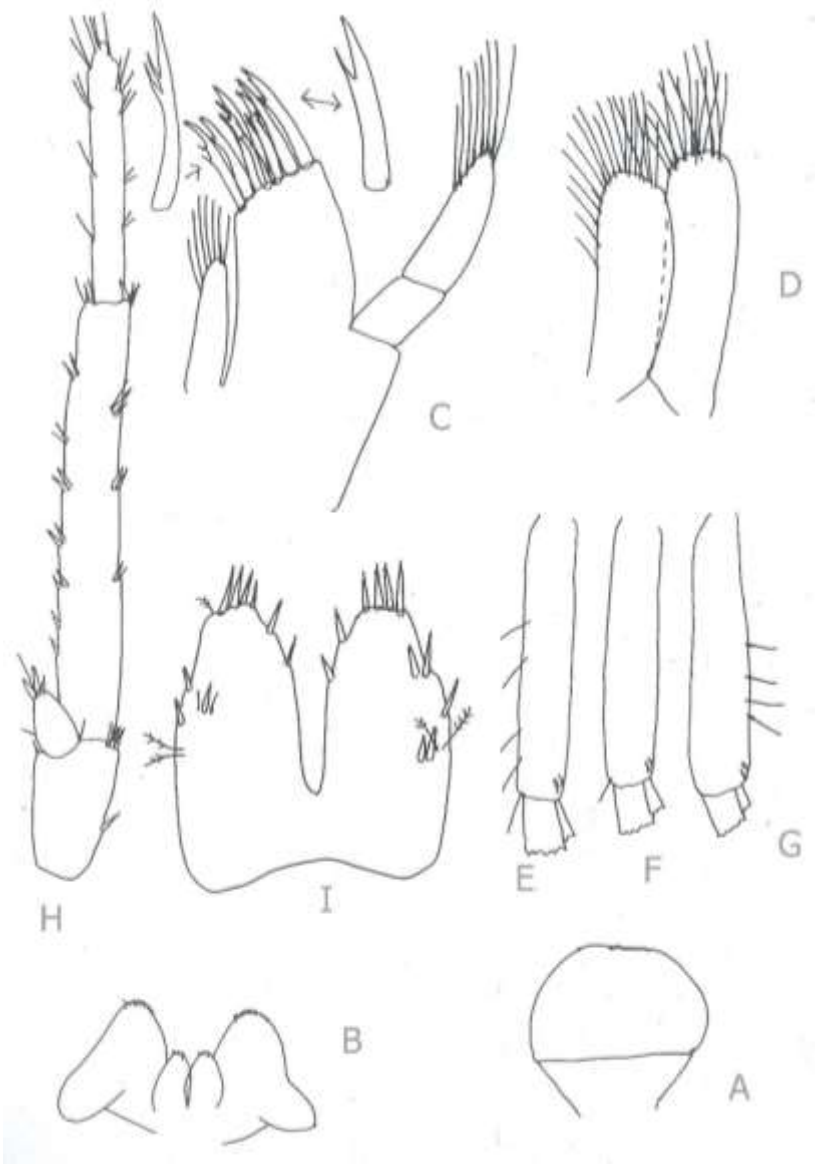

Figure 5. *Niphargus miljeticus* Straškraba 1959, S-6164= Ostaševica Cave, Mljet Island, male 19.0 mm: A= labrum; B= labium; C= maxilla 1; D= maxilla 2; E-F-G= peduncle of pleopods 1-3; H= uropod 3; I= telson.

LOCALITIES CITED;

Ostaševica Cave, Mljet Island: [11, 12, 3, 4]

Vodice, cistern (without morphological data) [17].

LOCUS TYPICUS: Ostaševica Cave, Babino Polje Valley, Mljet Island, Croatia.

REMARKS. From the morphological point of view, there are no distinct differences between *N. miljeticus* and *N. hvarensis*. S. Karaman [3] considered that specimens from Ostaševica belong to *N. hvarensis*. Straškraba [4] describing *N. miljeticus* from Ostaševica, mentioned several small differences regarding *N. hvarensis* [unequal rami of uropod 1 in male, higher number of transverse rows of setae on propodus of gnathopods, outer marginal setae on dactylus of gnathopod 2 sitting in group, and by stronger dactylus with shorter stronger nail bearing strong spine at inner margin near the nail]. All these mentioned different morphological characters are present as variability among specimens of various localities of *N. hvarensis*.

The most significant difference mentioned by Straškraba [4] was rather unequal rami of uropod 1 in male (equal rami mentioned by S. Karaman for *N. hvarensis*). But, various specimens within one locality or between specimens of various localities of *N. hvarensis* are with equal or rather unequal rami of uropod 1 in males; for example, in some males of R-246A (=Spring of Ljuta, Konavle, male 18.3 mm) (Fig. 12K).

Coxa 4 with more or less shallow ventroposterior lobe (Fig. 3D; Fig. 9 of Straškraba [4]). Max-

illiped palpus article 4 with several single setae along mesial margin near the nail, like these in *N. hvarensis* (not mentioned in Straškraba`s description).

Epimeral plates like these in specimens of *N. hvarensis*, as well as number of outer marginal setae on dactylus of gnathopods 1-2.

By this way, there are no distinct morphological differences between adult specimens of *N. miljeticus* and *N. hvarensis*, indicating possibility of fusion of *N. miljeticus* with *N. hvarensis* based on morphological characters. The further molecular, genetic and other studies of both species can resolve this problem on specific level.

NIPHARGUS HVARENSIS S. Karaman, 1952a

Figures 6–12

Niphargus orcinus juv. S. Karaman, 1932: 227; [20]

Niphargus hvarensis S. Karaman 1952a: 39, Figs. 1–9; S. Karaman, 1952b: 49, Figs. 11–15; G. Karaman, 1967: 7; G. Karaman, 1972: 5; G. Karaman, 1974: 18; Barnard, J. L. & Barnard, C. M., 1983: 692; G. Karaman & Ruffo, 1986: 526; Fišer et al., 2006: 2313; Balázs et al, 2023: tabs. 1, 2. [1, 2, 21, 13, 14, 15, 16, 17]

Niphargus hvarensis (part.) S. Karaman, 1958: 14 (except for the Mljet locality) [3].

LOCUS TYPICUS:

MATERIAL EXAMINED:

CROATIA:

Sp. 187 = Well in Hvar town, Hvar Island, 3 April 1949, 3 specimens (leg. Stanko Karaman) (paratypes);

Sp. 199 = Ombla River (Rijeka Dubrovačka), near Dubrovnik, October 1949, 20 specimens (leg. S. Karaman);

Sp. 233 = Spring of Ombla River (= Rijeka Dubrovačka), near Dubrovnik, 28 July 1956, 15 specimens (leg. T. Petkovski & M. Georgievski);

Sp. 245 = Trsteno, near Dubrovnik, 8 June 1924, 3 specimens (leg. S. Karaman);

Sp. 614 = Trsteno, near Dubrovnik, June 1963, many specimens (leg. G. Karaman);

A-541 = Spring Veprić, near Makarska, 18 April 1934, 3 specimens (leg. S. Karaman);

Br 3 = "Jama na pisanom dolcu" Cave, Ponikve, Pelješac Peninsula, 20 November 2011, 5 specimens (leg. Damir Basara);

X-703 = Spring in Trsteno, near Dubrovnik, 1 May 1966, 5 specimens (leg. G. Karaman);

X-704 = Spring near Cavtat, on the road towards Robinson Beach, 2 May 1966, many specimens (leg. G. Karaman);

S-1643 = Spring in village Smokvov Vijenac, near Cavtat, 15 August 1965, 10 specimens (leg. G. Karaman);

S-3838 = Spring in Trsteno, near Dubrovnik, 1 October 1979, many specimens mixed with *Echinogammarus veneris* (leg. G. Karaman);

S-7432 = Gruda, Tunnel Kaverna 781 (Dubrovnik region), 29 September 2023, 25 specimens (leg. Ivo Karaman);

R-60 = Spring Smokvan, Bast, Makarska, 27 July 2024, 3 specimens, up to 21 mm male (leg. R. Ozimec);

OR-208 = Kaverna in tunnel, Ćilipi, Donje Konavle, Konavle, 3 April 2010, 1 specimen (leg. R. Ozimec);

OR-210 = Spring in HE Plat, Župa, Dubrovnik, 29 August 2012, 4 specimens (leg. R. Ozimec);

OR-212-OR-216 = Tunnel Blato, Blato, Korčula Island, 17 and 18 November 2013, 15 specimens (leg. R. Ozimec & D. Basara);

OR-217 = Tunnel Blato, Blato, Korčula Island, 18 November 2013, 1 specimen (leg. Lana Baričević);

OR-229, OR-235 = Tunnel Mihanići 1, Mihanići, Konavle, 21 September 2014, 2 juvenile specimens (leg. Hrvoje Cvitanić);

OR-232 = Vranja Cave, Točionik, Dubrovnik, 25 August 2014, 1 specimen (leg. D. Basara);

OR-237 = Spring of Ljuta, Gruda, below the main source, Konavle (Dubrovnik region), 21 September 2014, 1 specimen (leg. R. Ozimec);

OR-242, OR-243 = Kaverna in tunnel Konavle, Gruda, Konavle, 9 November 2014, 1 specimen (leg. Nikola Hanžek, R. Ozimec);

OR-246A, OR-248A = Spring of Ljuta, Gruda, Konavle, 15 and 17 January 2015, 5 specimens (leg. R. Ozimec);

OR-247A, OR-253 = Zavrelje Spring, Hum, Župa Dubrovačka, 15 January 2015, 7 specimens (leg. R. Ozimec);

OR-251A = Kaverna 781, Gruda, Konavle, 15 January 2015, 1 specimen (leg. Nikola Hanžek);

OR-252A = Spring Kosović, Duba, Konavoska Snježnica, 15 January 2015, 2 specimens (leg. R. Ozimec).

NOTICE

Niphargus hvarensis was described by S. Karaman [1,2]. The morphological characters of this species correspond mainly with these of *N. miljeticus* (redescribed here), and with description of specimens from Zavrelje (described here) where

among normal specimen with one spine on pereopod 7-dactylus, appear several specimens with additional number of spines at inner margin of pereopod 7 dactylus.

DESCRIPTION: **MALE 16.5 mm**
(OR-247, spring Zavrelje, Hum)**:**

Body relatively strong, metasomal segments 1–3 with up to 10 dorsoposterior marginal setae each (Fig. 10C). Epimeral plates 1–3 rather pointed, epimeral plates 2 and 3 with 2 subventral spines each (Fig. 10C). Urosomal segment 1 with 2 setae on each dorsolateral side; urosomal segment 2 on each dorsolateral side with 3 setae, urosomal segment 3 naked (Fig. 6H); Urosomal segment 1 at each ventroposterior corner with one spine (Fig. 6H).

Head with short rostrum and subrounded lateral cephalic lobes, ventroanterior excavation present, eyes absent (Fig. 6A).

Antenna 1 reaching nearly half of body, peduncular articles 1–3 progressively shorter (ratio: 63: 52:23), covered by several very short setae only (Fig. 6B); main flagellum consisting of 36 articles (many of them with one short aesthetasc). Accessory flagellum short, 2-articulated (Fig. 6B).

Antenna 2 moderately slender, peduncular article 3 short, with distoventral bunch of setae up to as long as article itself; peduncular article 4 rather longer than article 5 (ratio: 75:65), at ventral margin with 4 bunches of setae (the longest setae exceeding diameter of article itself), along dorsal margin with several groups of short setae (Fig. 6C); article 5 with 3 bunches of ventral setae (the longest setae exceeding diameter of article itself), at dorsal margin with 4 groups of short setae; flagellum distinctly longer than last peduncular article, moderately slender and consisting of 15 articles bearing short setae. Antennal gland cone short (Fig. 6C).

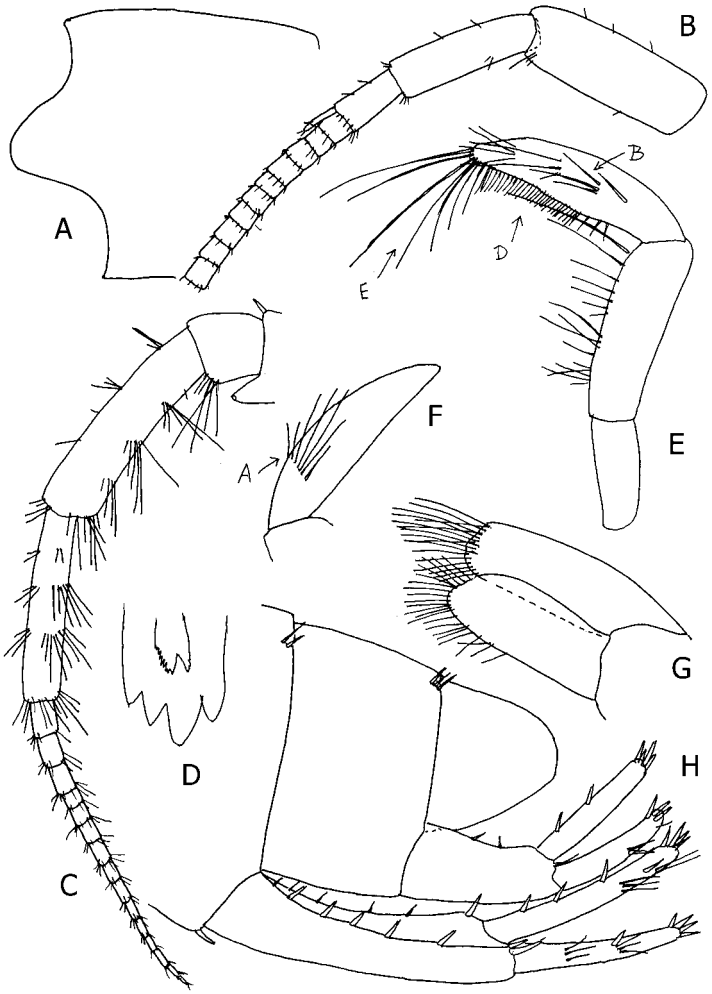

Figure 6. *Niphargus hvarensis* S. Karaman 1952a, OR-247A: spring Zavrelje, Župa Dubrovačka, male 16.5 mm: A= head; B= antenna 1; C= antenna 2; D= right mandibular incisor and lacinia mobilis; E= mandibular palpus, inner face (B= facial B-setae; D= marginal D-setae; E= distal E-setae); F= distal palpus mandibular articles, outer face (A= facial A-setae); G= maxilla 2; H= urosome with uropods 1–2.

Labrum much broader than long, with poorly convex distal margin (Fig. 10A).

Labium broader than long, inner lobes well developed, outer lobes with entire convex distal margin (Fig. 7A).

Mandible well developed, with triturative molar. Right mandible: incisor with 4 teeth, lacinia mobilis serrate (Fig. 6D). Left mandible: incisor with 5 teeth, lacinia mobilis with 4 teeth. Palpus mandibulae 3-articulated: first article naked, second article with 16 setae; third article subfalciform, rather longer than article 2, with nearly 32 marginal D-setae and 7 distal E-setae, on inner face with 4 groups of B-setae (Fig. 6E), on outer face with group of 7 A-setae (Fig. 6F).

Maxilla 1: inner plate with 7 setae, outer plate with 7 spines (6 spines with one strong lateral tooth, inner spine with 3 lateral teeth; palpus 2-articulated, not reaching distal tip of outer plate spines and provided with 8 setae (Fig. 10B).

Maxilla 2 with nearly equal plates, both with numerous distal setae, inner plate with several distomesial setae (Fig. 6G).

Maxilliped: inner plate short, with 6 distal spines mixed with single setae; second article not exceeding half of second palpus article and provided with row of nearly 12 mesial smooth spines and some distal setae; palpus article 3 at outer margin with 2 bunches of strong setae (Fig. 8A); article 4 with moderately short nail and 7 setae at mesial margin near the nail (Fig. 8B).

Coxae moderately long. Coxa 1 poorly broader than long (ratio: 50:43), with subrounded ventroanterior corner, provided with nearly 18 marginal setae (Fig. 7B). Coxa 2 poorly longer than broad (ratio: 57:53), along convex ventral margin with nearly 16 setae (Fig. 7E). Coxa 3 rather longer than broad (ratio: 62:57), bearing nearly 16 marginal setae (Fig. 8C).

Coxa 4 nearly as long as broad, with nearly 17 marginal setae, ventroposterior lobe very shallow (Fig. 8E).

Coxa 5 bilobed, much broader than long (ratio: 68:38), anterior lobe almost as long as coxa 4, bearing several short marginal setae (Fig. 9A).

Coxa 6 bilobed, broader than long (ratio: 55:33), with 4-6 short marginal setae (Fig. 9C). Coxa 7 entire, broader than long (ratio: 51:25) (Fig. 9E).

Gnathopods 1–2 moderately large, with propodus nearly as large as corresponding coxa. Gnathopod 1 rather smaller than gnathopod 2, article 2 with long setae along anterior and posterior margin; article 3 with one distoposterior bunch of setae (Fig. 7B); article 5 almost triangular, distinctly shorter than propodus, along anterior margin with distal bunch of setae, at posterior margin with bunch of longer setae. Propodus trapezoid, only slightly longer than broad (ratio: 82:72), along posterior margin with 10–11 transverse rows of setae (Fig. 7C). Palm inclined nearly to the half of propodus-length, slightly convex, defined on outer face by corner S-spine accompanied laterally by 2 serrate L-spines and ~~4~~–5 corner facial M-setae, on inner face by one subcorner R-spine (Fig. 7D). Dactylus reaching posterior margin of propodus, along outer margin with row of 10 median setae, at inner margin with several short submarginal setae.

Gnathopod 2: article 2 with long setae at anterior and posterior margin; article 3 with one distoposterior bunch of setae (Fig. 7E). Article 5 rather shorter than propodus (ratio: 45:55), at anterior margin with distal bunch of setae, at posterior margin with bunch of long setae. Propodus trapezoid, only slightly longer than broad (ratio: 90:85), along posterior margin with 13 transverse rows of setae (Fig. 7F). Palm slightly convex, inclined nearly to the half of propodus-length, defined on outer face by corner S-spine accompanied laterally by 2 L-spines, and 5 corner facial M-setae, on inner face by one subcorner R-spine (Fig. 7G), Dactylus reaching posterior margin of propodus, along outer margin with 11 single median setae, at inner margin with several short submarginal setae.

Pereopods 3–4 moderately strong, rather similar to each other. Pereopod 3: article 2 with short setae at anterior margin and long setae at posterior margin. Article 3 with one distoposterior bunch of setae (Fig. 8C). Articles 4–7 of different length (ratio: 60:36:45:18); article 4 at posterior margin with 6 groups of setae (the longest setae nearly reaching diameter of article itself), along anterior margin with 4 groups of strong setae; article 5 at posterior margin with 3 groups of spines and short setae; article 6 at posterior margin with 6–7 spines accompanied by single short setae, along anterior margin with 3 bunches of setae. Dactylus strong, with one strong spine near basis of the nail, and one short median plumose seta at outer margin (Fig. 8D), nail shorter than pedestal (ratio: 26:31).

Pereopod 4 pilosity rather shorter than that in pereopod 3 (Fig. 8E). Articles 4–7 of different length (ratio: 55:35:44:18). Dactylus short and strong, at inner margin with one strong spine near basis of the nail, at outer margin with one median plumose seta (Fig. 8F), nail rather shorter than pedestal (ratio: 30:33).

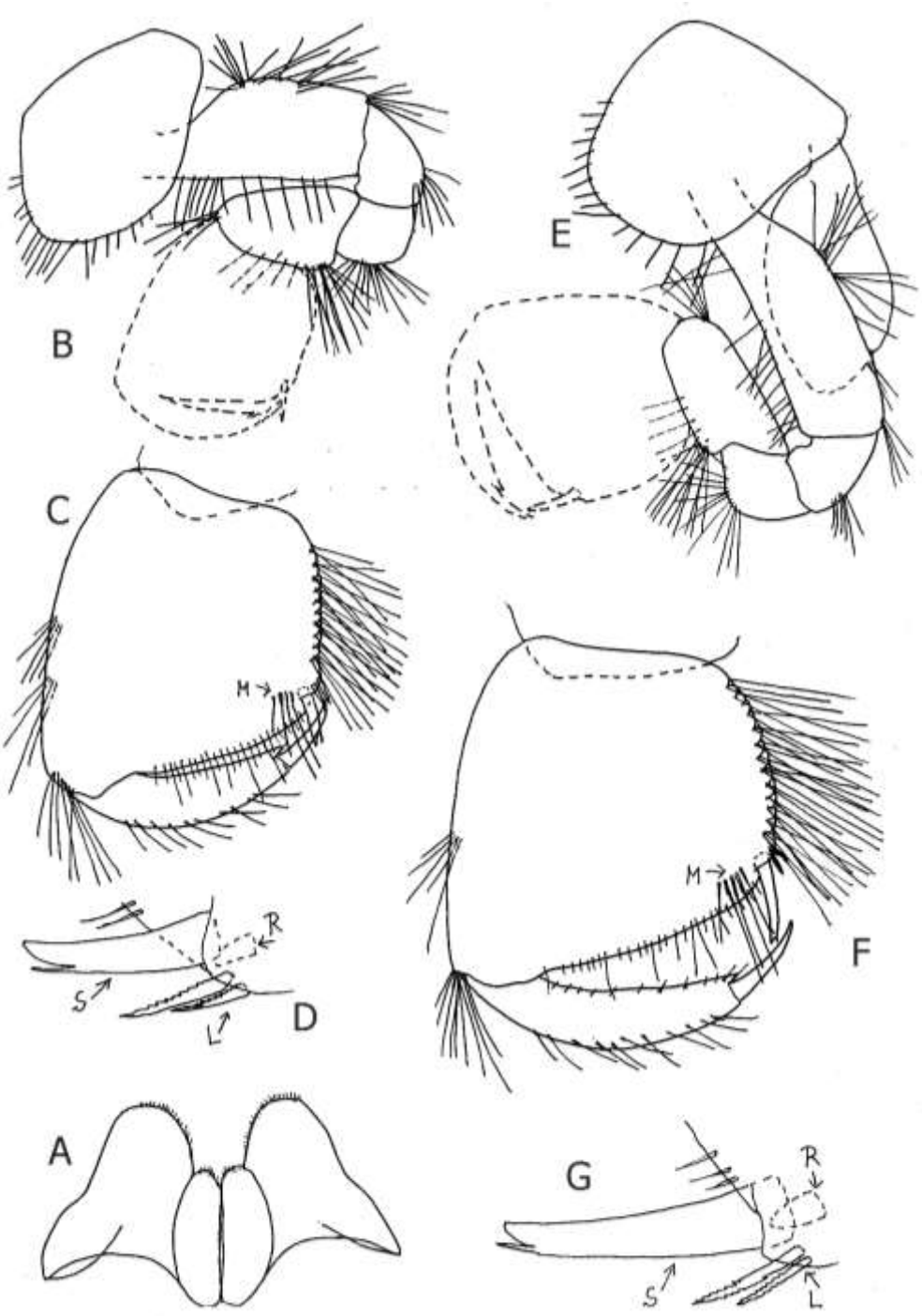

Figure 7. *Niphargus hvarensis* S. Karaman 1952a, OR-247A: spring Zavrelje, Župa Dubrovačka, male 16.5 mm: A= labium; B–C= gnathopod 1, outer face; D= distal corner of propodus, outer face (S= corner S-spine; L= lateral L-spines; M= corner facial M-setae; R= subcorner R-spine, inner face); E-F= gnathopod 2, outer face; G= distal corner of propodus, outer face (S= corner S-spine; L= lateral L-spines; M= corner facial M-setae; R= subcorner R-spine, inner face).

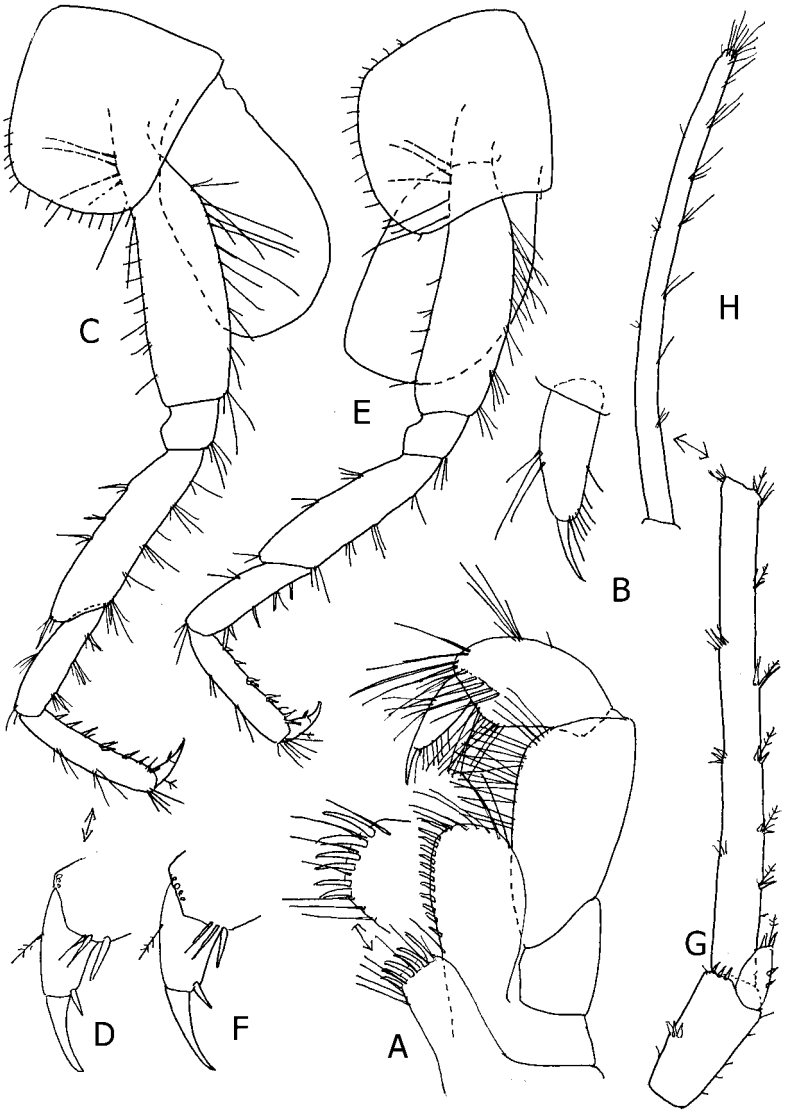

Figure 8. *Niphargus hvarensis* S. Karaman 1952a, OR-247A: spring Zavrelje, Župa Dubrovačka, male 16.5 mm: A= maxilliped; B= distal article of maxilliped palpus; C-D= pereopod 3; E-F= pereopod 4; G= uropod 3.

Pereopods 5–7 moderately long, strong. Pereopod 5 shorter than pereopods 6 and 7: article 2 longer than broad (ratio: 72:47), anterior rather convex margin provided with nearly 9 short spines and distal several setae, along posterior medially almost straight margin appear 22 short setae, ventroposterior lobe not fully developed (Fig. 9A). Articles 4–7 of different length (ratio: 45:51:52:19), articles 4–6 along both margins with several bunches of short spines mixed with single short setae. Dactylus short and strong, at inner margin with one strong spine near basis of the nail, and one short median seta at outer margin, nail shorter than pedestal (ratio: 44:28) (Fig. 9B).

Pereopod 6: article 2 longer than broad (ratio: 85:51), along anterior slightly convex margin with 8 single or paired short spines, posterior margin straight in the middle, bearing 16 setae, ventroposterior lobe not distinct (Fig. 9C). Articles 4-7 of different length (ratio: 55:70:83:26), along anterior and posterior margin with several bunches of short spines mixed sometimes with 1-2 short setae. Dactylus short and strong, at inner margin with one strong spine near basis of the nail, at outer margin with one median plumose seta (Fig. 9D); nail shorter than pedestal (ratio: 34:60).

Pereopod 7 slightly longer than pereopod 6; article 2 remarkably longer than broad (ratio: 90:52), rather tapering distally, along anterior poorly convex margin with 6–7 single or pairs of short spines and distal 3–4 setae, along posterior slightly convex margin with nearly 17 short setae, ventroposterior lobe not well developed (Fig. 9E). Articles 4–7 of different length (ratio: 55:69:92:28); articles 4–6 along

both margins with several bunches of short spines, sometimes mixed with 1–2 short setae. Dactylus of right pereopod 7 at inner margin with 3 strong spines, at outer margin with 2 median plumose setae, nail shorter than pedestal (ratio: 32:56) (Fig. 9G). Dactylus of left pereopod 7 similar to that of right pereopod, but at inner margin with 2 strong spines, at outer margin with one median plumose seta (Fig. 9F), nail shorter than pedestal (ratio: 37:73).

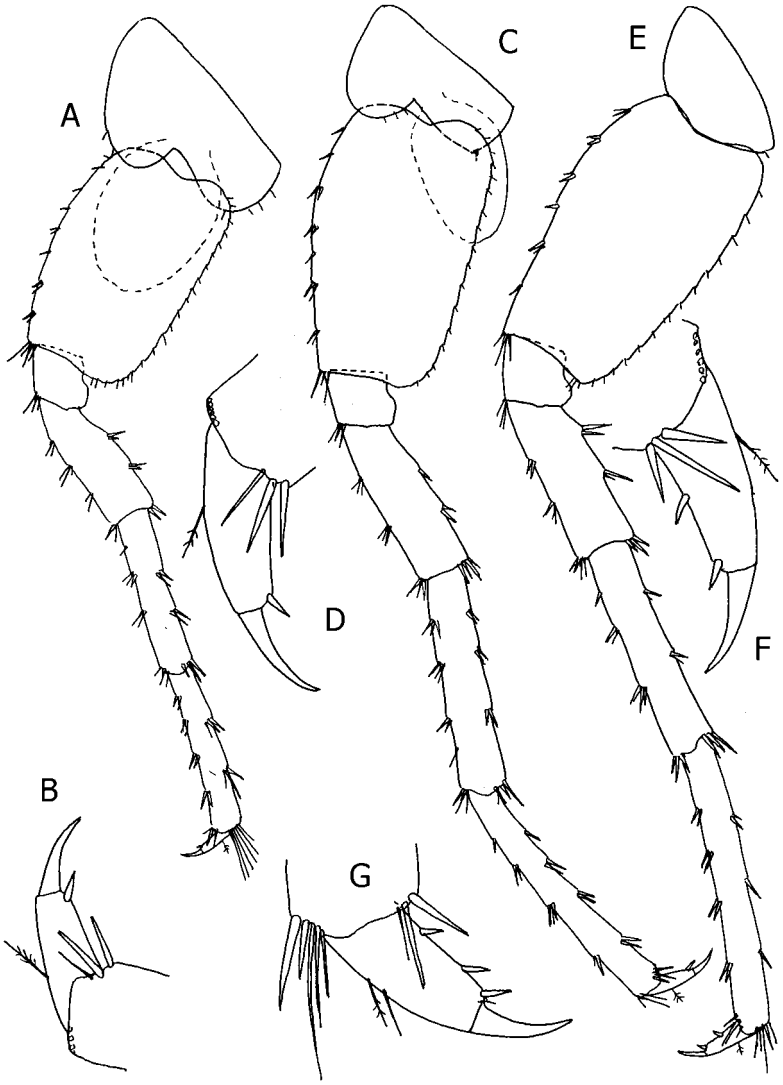

Figure 9. *Niphargus hvarensis* S. Karaman 1952a, OR-247A: spring Zavrelje, Župa Dubrovačka, male 16.5 mm: A-B= pereopod 5; C-D= pereopod 6; E-F= left pereopod 7; G= dactylus of right pereopod 7.

Pleopods 1–3 with 2 retinacula. Peduncle of pleopod 1 along anterior margin with 6 setae (Fig. 10D), pleopod 2 at anterior margin with 2 setae (Fig. 10E); peduncle of pleopod 3 at anterior margin with one distal seta, along posterior margin with 2 strong setae (Fig. 10F).

Uropod 1: peduncle longer than rami, with dorsoexternal row of spines an dorsointernal row of setae (except distal spine) (Fig. 6H); inner ramus at dorsal margin with 3 single spines and distal group of 4 unequal short spines (spines usually not exceeding diameter of the ramus), at ventral margin with 2 groups of setae in distal part of ramus. Outer ramus rather but distinctly shorter than inner ramus, at margin with 2 bunches of median setae and one spine, as well as with 4 distal short spines.

Uropod 2: inner ramus with 2 lateral and 4 distal short spines (Fig. 6H); outer ramus rather but distinctly shorter than inner ramus, with one lateral spine and seta, as well as with 4 distal short spines.

Uropod 3 well developed, long; peduncle twice as long a broad, with several short facial and distal spines and single short setae; inner ramus

short, scale-like, as long as diameter of peduncle, bearing 2 short lateral setae and short spine, distal 2 spines and one longer plumose seta. Outer ramus 2-articulated, narrow, articles of nearly equal length or second article poorly shorter; first article along outer margin with 4 bunches of short setae, along inner (mesial) margin with 6–7 groups of single or paired short spines mixed usually with one short plumose seta (Fig. 8G); second article along outer margin with 4 groups of very short setae, along inner margin with 7 groups of longer simple setae, including bunch of distal setae (Fig. 8H).

Telson longer than broad (ratio: 98:78), incised rather over 2/3 of telson-length, lobes tapering distally, bearing 3 short distal spines, one mesial spine, 2 outer marginal spines and 2–3 short setae, as well as one short facial spine and 2 short setae; a pair of short plumose setae are attached in the middle of outer margin (Fig. 10H).

Coxal gills relatively short, ovoid, not reaching ventral tip of corresponding article 2 of pereopods; gills on gnathopod 2 and pereopods 3–4 are larger than these of pereopods 5-6 (Figs. 7E, 8C, E; 9A, C).

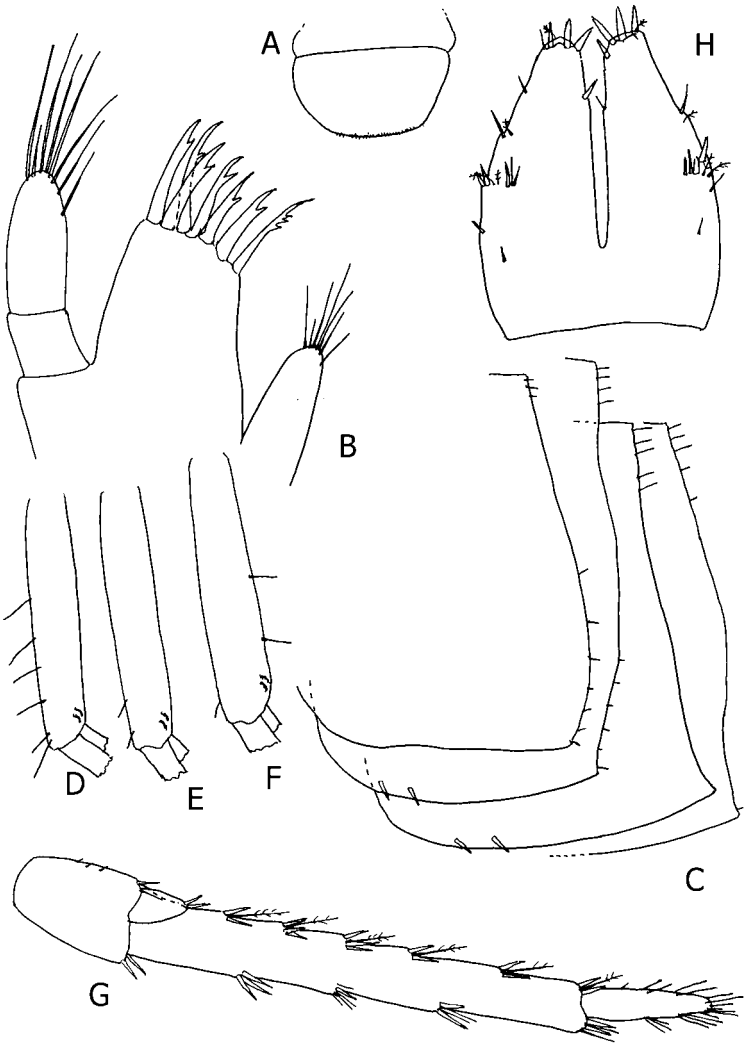

Figure 10. N*iphargus hvarensis* S. Karaman 1952a, OR-247A: spring Zavrelje, Župa Dubrovačka, male 16.5 mm: A= labrum; B= maxilla 1; C= epimeral plates 1-3; D= peduncle of pleopod 1; E= peduncle of pleopod 2; F= peduncle of pleopod 3; G= uropod 3. **Female 17.0 mm (OR-253)**: H= telson.

FEMALE ovig. 17.0 mm (OR-253):

Body similar to male but rather more stout. Metasomal segments 1–3 with up to 10 dorsoposterior marginal setae each (Fig. 11 H).

Urosomal segment 1 on each dorsolateral side with 2 spines, urosomal segment 2 with 2–3 spines on each dorsolateral side, urosomal segment 3 naked.

Epimeral plates 1–3 like these in male, slightly pointed, with posterior margin slightly inclined; plate 2 with 2 ventral spines, plate 3 with 3 ventral spines (Fig. 11 H).

Head like that in male. Antenna 1 not exceeding half of body, with pilosity likes that in male; main flagellum consisting of 32 articles (many of them with one short aesthetasc).

Antenna 2 like that in male, main flagellum with 16 articles.

Mouthparts: labrum, labium and maxilla 2 like these in male. Mandibular right and left molar triturative, with long distolateral seta each. Palpus article 1 naked, article 2 with 20 setae, distal article subfalciform, with one row of 7 A-setae, 6 groups of B-setae (2-3-3-3-3-3), 5-6 E-setae and nearly 39 D-setae.

Maxilla 1 inner plate with 5 setae, outer plate with 7 spines (6 spines with one strong lateral tooth, inner spine with 2 lateral teeth); palpus reaching basis of outer plate spines, with 8 setae.

Maxilla 2 inner plate with distomesial setae sitting nearly to half of plate-length.

Maxilliped: inner plate short, with 6 distal spines mixed with setae, outer plate reaching nearly half of second palpus article; palpus article 4 along inner (mesial) margin with 7 single setae, at outer margin with 1–2 median groups of setae.

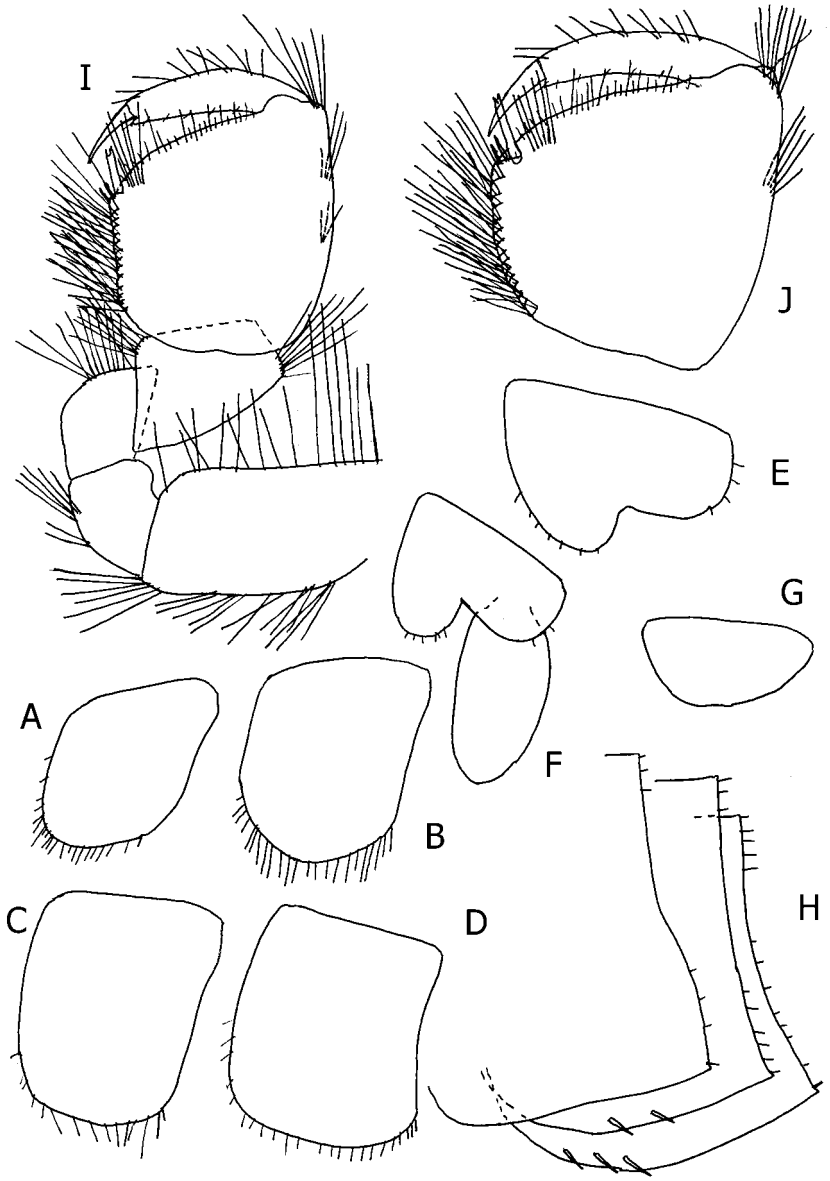

Figure 11. *Niphargus hvarensis* S. Karaman 1952 a , OR 253= spring Zavrelje, Župa Dubrovačka, female 17.0 mm: A= coxa 1; B= coxa 2; C= coxa 3; D= coxa 4; E= coxa 5; F= coxa 6; G= coxa 7; I= gnathopod 1-propodus, outer face; J= gnathopod 2-propodus, outer face. H= epimeral plate 3.

Coxae 1–4 rather longer than these in male. Coxa 1 rather longer than broad (ratio: 45:40), ventroanterior corner subrounded, bearing nearly 20 marginal setae (Fig. 11A); coxa 2 longer than broad (ratio: 60:47) with 2-3 marginal setae (Fig. 11B); coxa 3 rather longer than broad (ratio: 65:53), with 14 marginal setae (Fig. 11C); coxa 4 longer than broad (ratio: 65:56), with 2–3 shorter marginal setae, ventroposterior lobe not fully developed (Fig. 11D).

Coxa 5 rather shorter than coxa 4, broader than long (ratio: 68:45), with scarcely setose margins (Fig. 11E). Coxa 6 rather smaller than coxa 5, broader than long (ratio: 50:39), scarcely setose (Fig. 11F). Coxa 7 entire, broader than long (ratio: 50:25) (Fig. 11G).

Gnathopods 1–2 rather similar to these in male. Gnathopod 1: article 2 along both margins with numerous long setae (single setae along anterior and bunches of setae at posterior margin); article 3 at posterior margin with 2 bunches of setae (Fig. 11 I); article 5 at anterior margin with distal bunch of setae. Propodus trapezoid, rather longer than broad (ratio: 71:65), along posterior margin with 13 transverse rows of setae. Palm rather convex, inclined nearly half of propodus-length, defined on outer face by corner S-spine accompanied laterally by 2 strong serrate L- spines and corner group of 6 facial M-setae (Fig. 11 I), on inner face by subcorner R-spine; dactylus reaching posterior margin of propodus, along outer margin with 11 single or paired median setae, along inner margin with row of several short submarginal setae.

Gnathopod 2 larger than gnathopod 1, article 3 at posterior margin with 1 group of setae; articles 2–5 similar to these in male. Propodus trapezoid, poorly broader than long (ratio: 88:83), along posterior margin with nearly 14 transverse groups of setae (Fig. 11J). Palm convex, defined on outer face by corner S-spine accompanied laterally by 2 serrate L-spines and 6 facial corner M-setae, on inner face by subcorner R-spine. Dactylus along outer margin with 11 single or paired median setae, along inner margin with several short submarginal setae.

Pereopods 3–4 like these in male, dactylus with one strong spine at inner margin near basis of the nail, and one median plumose seta at outer margin.

Pereopods 5-7 like these in male. Pereopod 7: article 2 ovoid, longer than broad (ratio: 79:50), along anterior slightly convex margin with 6 single or paired setae, along posterior convex margin with 19 short setae, ventroposterior lobe not fully developed (Fig. 12A). Articles 4–7 of different length (ratio: 45:65:81:23), articles 4–6 along anterior and posterior margin with several groups of short spines sometimes mixed with single short seta. Dactylus of left and right pereopod with 3 strong spines at inner margin and 2 median plumose setae at outer margin (Fig. 12B, C).

Pleopods with 2 retinacula. Peduncle of pleopod 1 with 7 setae along anterior margin (Fig. 12D); peduncle of pleopod 2 naked (Fig. 12E); peduncle of pleopod 3 with 2 setae along posterior margin (Fig. 12F).

Uropod 1 peduncle longer than rami, with dorsoexternal row of spines and dorsointernal row of setae (Fig. 12G); rami nearly o equal length or inner ramus scarcely longer than outer one; outer and inner ramus with row of short spines at dorsal margin and 4 distal spines, at ventral external margin with 2 groups of simple short setae.

Uropod 2: inner ramus distinctly longer than outer one, both rami with several lateral and 4 distal short spines (Fig. 12H)

Uropod 3 long; inner ramus short, scale-like, with 2 distal spines; outer ramus 2-articulated: first article long, along outer margin with 4 groups of spines mixed sometimes with single short seta, along inner (mesial) margin with 6 groups of short spines mixed with single plumose seta longer than spines (Fig. 10G); second segment remarkably shorter than first one (ratio: 42:148), both margins and tip with short simple setae.

Telson nearly as long as broad, deeply incised (Fig. 12 I), lobes tapering distally, with 4 short distal spines, 2–3 short spines along outer margin and 1 spine at mesial margin, as well as with 1–3 facial spines close to the outer margin of lobes; a pair of very short plumose setae is attached near the middle of outer margin of lobes.

Coxal gills like these in males, ovoid, not elongated (Fig. 11F).

Oostegites broad, with setose margins.

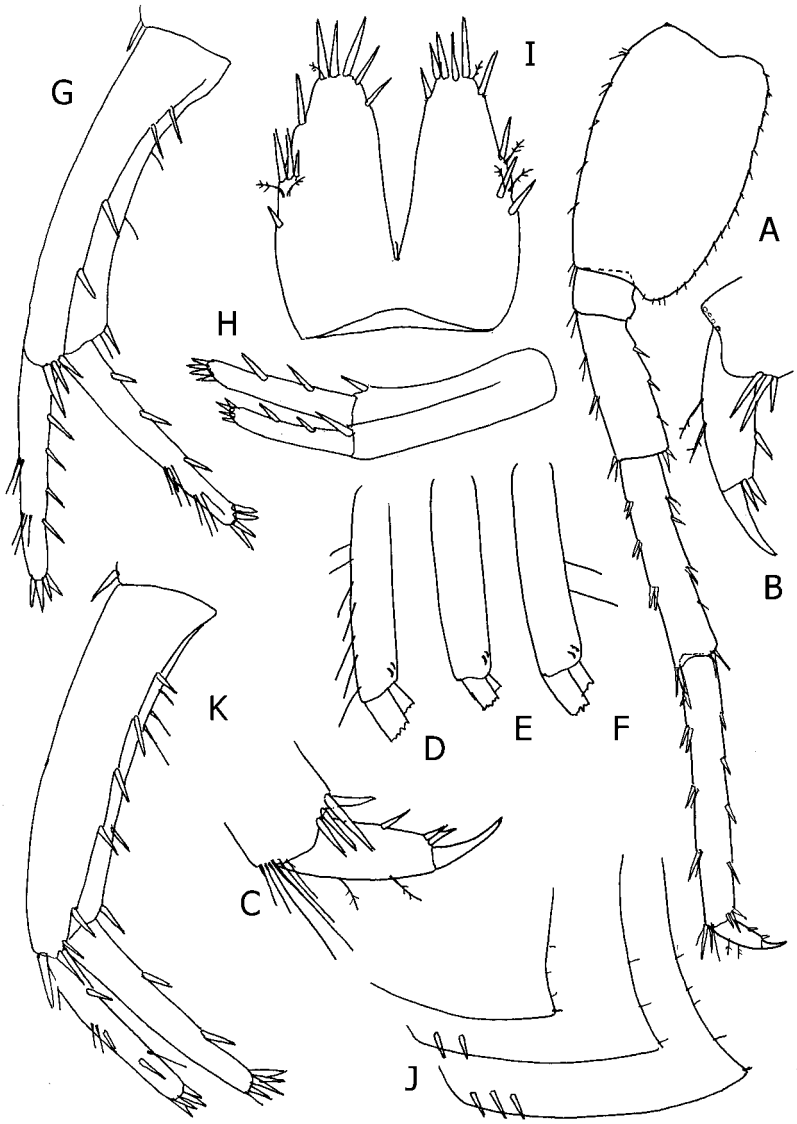

Figure 12. *Niphargus hvarensis* S. Karaman 1952a, OR 253= spring Zavrelje, Župa Dubrovačka, female 17.0 mm: A-B= left pereopod 7; C= dactylus of right pereopod 7; D= peduncle of pleopod 1; E= peduncle of pleopod 2; F= peduncle of pleopod 3; G= uropod 1; H= uropod 2; I= telson. **OR-246A= Spring of Ljuta, Konavle, male 18.3 mm:** J= epimeral plates 1-3; K= uropod 1.

VARIABILITY:

The one male 16.5 mm) and female 17.0 mm of Zavrelje) were with dactylus of pereopod 7 with 2 or 3 spines at inner margin, and other specimens of up to 13.5 mm were with one spine on pereopod 7 dactylus.

In the locality X-704 (Spring near Cavtat): one male 16.5 mm was with 2 spines on left pereopod 7 dactylus, and 1 spine on right pereopod 7; but all other specimens (over 15) were with 1 spine on pereopod 7-dactylus.

In the locality S-1643 (Smokvov vijenac near Cavtat): one male 19.5 mm was with left dactylus of pereopod 7 with 2 spines, and right one with 1 spine, other specimens with one spine only. Other samples of *N. hvarensis* in hands are with specimens bearing one spine on pereopod 7-dactylus.

The variability of various taxonomical characters of specimens from various localities is well visible: Size of specimens in hands were up to 21 mm (R-60), and ovigerous females started from 8.1 mm (Sp. 199).to 18.3 mm (OR-245A).

Number of metasomal dorsoposterior marginal setae is rather variable, from 6 (Blato) to 10 (Trsteno); and 14 (Hvar).

Urosomal segment 1 on each dorsolateral side usually with 1–3 spines, urosomal segment 2 with 2–4 spines; sometimes urosomal segment 1

with 0-1 spine mixed with winglet setae (male 18.3 mm, OR 246A).

Maxilla 1 inner plate with 3–6 setae; maxilliped inner plate with 4–5 spines, palpus article 4 with 3–7 single setae at mesial margin. Epimeral plates are rather variable, more or less pointed (Fig. 12J) to almost quadrate (Fig. 7) [1].

Coxa 4 with ventroposterior lobe more or less developed.

The outer marginal setae on gnathopods 1–2 dactylus are single or sitting in groups.

The number of posterior transverse rows of setae on propodus in gnathopods 1–2 is rather variable, but always relatively high.

Uropod 1 in males with rami of equal length or inner ramus is rather but distinctly longer than outer ramus (Fig. 12K.

Telson lobes usually with 3–4 distal, 1–3 outer and 0–1 inner (mesial) marginal spines, and with 1–3 short facial spines, rarely facial spines absent (Pelješac).

LOCALITIES CITED (CROATIA):

- Spring of Trsteno near Dubrovnik ("small specimens of Niph. orcinus") [20]
- Hvar City, Hvar Island, Croatia [1]
- Spring of Rijeka Dubrovačka (=Ombla), Dubrovnik; spring in Trsteno near Dubrovnik; spring Veprić near Makarska [2]
- From Hvar, Makarska to Dubrovn
- Konavle and Dubrovnik [21]
- Wells in Hvar Town, Hvar Island, Croatia [13]
- Type locality: Spring of Rijeka Dubrovačka River (=Ombla); spring near Cavtat; Trsteno near Dubrovnik; Veprić near Makarska [14]
- Trsteno; Mlini [18]
- Trsteno [17]
- G. Karaman (this paper): Various localities (see under Material Examined)

LOCUS TYPICUS: Well in Hvar Town, Hvar Island, Croatia.

ECOLOGY: In fresh and slightly brackish waters, including wells, caves, and springs, predominantly in localities near the sea coast.

REMARKS AND CONCLUSION

The challenge of identifying phenotypic characters in amphipod species has been addressed by numerous authors. We previously discussed [22] this issue in relation to *Gammarus balcanicus* Schäferna, 1922, in rivers of Northern Macedonia, Croatia, and Bosnia & Herzegovina [23], *Gammarus sketi* G. Karaman, 1989, from Northern Macedonia [23], and *Echinogammarus tibaldii* Pinkster & Stock, 1970 and *E. roco* G. Karaman, 1973, from Italy [24].

This issue has also been explored in the genus *Niphargus* by various authors, including Karaman [25], regarding *Niphargus kolombatovici* S. Karaman, 1950, from the western Balkans, and Fišer & Premate [26], who examined the genus as a whole.

From a morphological perspective, the presence of single specimens with additional spines on pereopod 7, in contrast to numerous specimens exhibiting the typical number of spines at a given locality, suggests these represent distinct phenotypes rather than separate subspecies or species.

This hypothesis is further supported by samples from localities X-704 and S-1643, where individual specimens exhibited 2 spines on one pereopod 7 dactylus (but not both).

However, it is important to note that genetic differences between morphologically identical or similar populations, even if they inhabit different or neighboring localities, do not automatically imply the existence of distinct taxa. Breeding experiments are necessary to determine their true taxonomic status. Further molecular, genetic, and other studies will ultimately clarify the real status of these specimens and taxa.

Acknowledgements: I thank Roman Ozimec, biologist, speleologist, and researcher of subterranean fauna from Zagreb, for providing part of the material used in this study.

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NIPHARGUS HVARENSIS S. KARAMAN, 1952, КОМПЛЕКСОТ (ФАМИЛИЈА NIPHARGIDAE) НА ИСТОЧНИОТ БРЕГ НА ЈАДРАНСКОТО МОРЕ (ПРИДОНЕС КОН ЗНАЕЊЕТО ЗА AMPHIPODA 338)

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Во трудот е проучен подземниот вид *Niphargus hvarensis* S. Karaman 1952a, од локалитети во источниот брег на Јадранско Море, при што е анализирана варијабилноста на морфолошките карактеристики на примероци од различни локалитети. Опишана и фигурирана е посебна популација на овој вид од изворите Завреље, Хум, Жупа дубровачка (Хрватска).

Мажјакот од типичниот локалитет на сличниот вид *Niphargus miljeticus* Straškraba 1959 (остров Мљет, Хрватска) е преопишан и фигуриран, така што е дискутирана позицијата на овој вид во однос на *Niphargus hvarensis*, врз основа на морфолошка, еколошка и зоогеографска положба и карактеристики.

Клучни зборови: Amphipoda, Niphargidae, *Niphargus hvarensis*, miljeticus, подземно, таксономија, источен брег на Јадранско Море