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CONTRIBUTION TO THE KNOWLEDGE OF THE AMPHIPODA  
128. A NEW SUBTERRANEAN SPECIES FROM YUGOSLAVIA,  
*NIPHARGUS LATTINGERAE*, N. SP. (FAM. GAMMARIDAE).

**Abstract**

A new subterranean amphipod from Yugoslavia is described, *Niphargus lattingerae*, n. sp. (Amphipoda, Gammaridae), discovered in the subterranean warm waters of torrent Dolje near Zagreb (foot of Medvednica Mt., Croatia). This species is rather similar to the *Niphargus kochianus* group (shape of gnathopods, telson) and to the *N. aquilex* group (shape of pereopods, epimeral plates).

**Introduction**

During the study of *Amphipoda* -material collected by prof. R. Lattinger from the subterranean waters in region of Zagreb (Croatia), one new species of genus *Niphargus* was discovered in the material from the thermal subterranean waters (spring) in the bed of torrent Dolje (foot of Medvednica Mt., N. of Zagreb). This is one of the smallest known *Niphargus* species from Yugoslavia (adult ovigerous female is only 2.7 mm long) very close to the *Niphargus kochianus* group of species except the shape of pereopods.

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**NIPHARGUS LATTINGERAE n. sp.**

figs.: I-IV

Description: Ovig. female 2.7 mm long with one egg in marsupium: Body slender, mesosom- und metasomsegments smooth, urosomite 1 bearing one, rarely 2 setae on each dorsolateral side; urosomite 2 with 1-2 spines on each side (fig. I, 6).

Head normal, without rostrum (fig. I, 1), lateral cephalic lobes shallow, subrounded, ventroanterior sinus present.

Antennae moderately long. Antenna 1 reaching nearly half of body, peduncular segments of antenna 1 normal, without shield, progressively shorter toward segment 3, ped. segment 3 exceeding half of ped. segment 2; main flagellum up to 14-articulate, each article (almost) bearing one aesthetasc shorter than the length of article itself (fig. II, 3); accessory flagellum 2-articulate, short (fig. II, 3).

Antenna 2 short, peduncular segments 4 and 5 subequal, flagellum 5-articulate, antennal gland cone short (fig. II, 5).

Mouthparts normal. Labrum entire, labium with well developed inner lobes. Mandible normal, incisor toothed, molar tritritative, palp 3-segmented, third segment slightly longer than second one, all poorly setose (fig. IV, 8): one A-seta, 4 D-setae and 2 E-setae.

Maxilla 1: inner plate with 1 seta (fig. II, 4), outer plate with 7 spines (6 spines bearing 1 lateral tooth each, inner spine with several lateral teeth), palp 2-articulate, with 4 distal setae.

Maxilla 2 normal, inner plate without dorsal oblique row of setae. Maxilliped: inner plate short, bearing 3 distal spines (fig. II, 2), outer plate not reaching the tip of second palp segment, bearing a row of distolateral inferior spines; palp normal, nail shorter than the remaining part of segment 4, bearing one seta at inner margin and one seta at outer margin (fig. II, 2).

Coxae relatively short (fig. II, 1), coxa 2 nearly as long as broad, coxae 1,3 and 4 broader than long (fig. I, 2, 4; III, 1, 3), coxa 5 as long as coxa 4 (fig. II, 1), coxa 4 unlobed. Coxae 1-4 much shorter than the height of the thoracopodites themselves (fig. II, 1).

Gnathopods 1-2 relatively small, slender, slightly *kochianus*-type, gnathopod 2 is slightly larger than gnathopod 1.

Gnathopod 1: segment 2 stout, segment 5 longer than segment 6 (fig. III, 1), slightly dilated posteriorly; segment 6 slightly longer than broad, trapezoid, with 1 group of setae at posterior margin. Palm convex, inclined 1/4 of segment 6-length, finely

serrate, bearing on outer face in corner one long and one short corner spine, and on inner face 1 slender short subcorner spine (fig. III, 2), dactyl reaching the ventroposterior tip of segment 6, bearing one seta at outer margin, nail relatively long, exceeding half of the remaining part of dactyl (fig. III, 2).

Gnathopod 2: all segments slightly more elongated than these in gnathopod 1, segment 5 much longer than segment 6, poorly dilated ventroposteriorly (fig. III, 3). Segment 6 remarkably longer than broad, egg-shaped (fig. III, 4), dilated distally, bearing 3 groups of setae at posterior margin. Palm convex, finely serrate, inclined 1/4 of segment 6-length, bearing at corner on outer face one strong and 1 short slender corner spine, and on inner face one short subcorner spine (fig. III, 4), dactyl like that of gnathopod 1.

Pereopods 3-4 normal, similar to each other, with dactyl shorter than half of segment 6-length, nail shorter than the remaining part of dactyl, bearing one spine and one seta on inner margin and one plumose seta on outer margin (fig. I, 2-5).

Pereopods 5-7 moderately long, their segment 2 dilated but not ovoid, nearly 1.5 times as long as broad, with poorly lobed ventroposterior corner (fig. IV, 1, 3, 5), posterior margin slightly convex. Pereopod 7 moderately longer than pereopod 5. Dactyl of pereopod 5 reaching half of segment 6-length (fig. IV, 1, 2), nail nearly half as long as the remaining part of dactyl, bearing one spine and one seta on inner margin and one seta on outer margin (fig. IV, 2). Dactyl of pereopods 6 and 7 shorter than the half of segment 6, its nail shorter than the remaining part of dactyl, with one seta on outer margin and one spine and one seta on inner margin (fig. IV, 4, 6).

Pleopods normal, bearing 2 retinacula each. Epimeral plates 1-2 angular, epimeral plate 3 slightly produced, angular (fig. II, 6), epimeral plates 2 and 3 each with 1 subdistal spine.

Uropods 1-2 stout. Near the basis of uropod 1 appears one strong spine reaching 1/3 to 2/5 of peduncle-length (fig. I, 6). Peduncle of uropod 1 without ventrofacial spine, inner ramus hardly longer than outer one, with short lateral and distal spines, distal spines not reaching half of rami-length (fig. I, 6), outer ramus without lateral spines.

Uropod 2: rami longer than peduncle, inner ramus slightly longer than outer one, both rami with short distal spines only (fig. I, 6).

Uropod 3 short, second segment of outer ramus short, both margins of outer ramus with spines (fig. IV, 7).

Telson exceeding distal tip of peduncle of uropod 3 (fig. I, 6), deeply incised, longer than broad, each lobe with 3 short distal

spines (fig. I, 7), lateral or dorsal spines absent; a pair of short plumose setae appears in the middle of each lobe.

Coxal gills moderate, occur on thoracopodites 2-6. Oostegites very large, especially that of gnathopod 2 (fig. III, 3), setose marginally, appears on thoracopodites 2-5.

Males unknown.

**Variability:** The armature of urosomal segments 1-2 is variable. The stable characters are the presence of long spine near the basis of peduncle of uropod 1, shape of gnathopods 1-2, pereopods 5-7, absence of lateral and dorsal spines on telson, short plumose setae on telson-lobes etc.

**Material examined:** Croatia (Hrvatska): warm subterranean thermal waters (spring) in the bed of torrent Dolje on the foot of Medvednica Mt. near Zagreb (Sutlinska vrela, t° 24°C) 9 spec. (leg. R. Lattinger), 21 Sept., 1976. (D 11); Podsused, 25 Sept., 1979, 2 spec. accompanied by *N. longidactylus*, *N. labacensis* and *N. multipennatus* (leg. Kerovec).

**Holotype:** ovig. female 2.7 mm long. Holotype and paratypes are deposited in Karaman's Collection in Titograd.

**Remarks.** In torrent Dolje in the same locality (D 11) there were collected several times other *Niphargus* species belonging to the *N. kochianus* group of species, as well as *Gammarus fossarum* Koch, but *N. lattingerae* was collected only once.

*Niphargus lattingerae* is one of the smallest known *Niphargus* species from Yugoslavia. Taxonomical position of this species is between *N. labacensis* and *N. minor*.

Sket described (1971) four new aberrant *Niphargus* species from Yugoslavia, with *kochianus*-type of gnathopods, but all these species are with strong ventroposterior lobe on segment 2 of pereopods 5-7.

G. Karaman described (1972) *N. asper*, n. sp. from vicinity of Titograd, one species with *kochianus*-type of gnathopods, but this species differs from *N. lattingerae* by very produced epimeral plates, shape of telson, shape of pereopods etc.

*Niphargus pupetta* (Sket) and *N. transitivus* Sket, known from Yugoslavia and Italy are also with long segment 5 of gnathopods 1-2 and aberrant shape of segment 6, but produced epimeral plates and telson differ them from *N. lattingerae* remarkably. On the other hand, the members of *N. aquilex* group are with different shape of gnathopods 1-2.

Unfortunately, the males of this species (*N. lattingerae*) is not known, so that the more detailed position of this species within genus *Niphargus* is not possible to establish for the moment.

I dedicated this species to Prof. *Romana Lattinger* from the University of Zagreb, who collected this species and kindly sent me it for study.

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#### Rezime

128. PRILOG POZNAVANJU AMPHIPODA. NOVA PODZEMNA VRSTA IZ JUGOSLAVIJE, NIPHARGUS LATTINGERAE, N. SP. (FAM. GAMMARIDAE).

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U radu je opisana jedna nova vrsta podzemnih *Amphipoda* iz familije *Gammaridae* iz podzemnih toplih voda u koritu potoka Dolje u podnožju planine Medvednice kod Zagreba (Sutlinska vre-

la, t° 24°C) i Podsuseda. Nova vrsta, nazvana *Niphargus lattingerae*, n. sp. je jedna od do sada najmanjih poznatih vrsta iz roda *Niphargus* u Jugoslaviji: veličina odrasle ženke koja je nosila u marsupiju- mu i jedno jaje, je bila svega 2.7 mm. Ukupno je otkriveno 11 primjeraka ove vrste. Interesantno je da je na istom lokalitetu u više navrata nađena druga vrsta iz roda *Niphargus*, kao i površinska vrsta *Gammarus fossarum*.

Vrsta *Niphargus lattingerae* je veoma slična grupi *N. kochianus* po obliku gnatopoda i telzona, dok je po obliku epimera i pereopoda blizka grupi *N. aquilex*. Međutim, ova vrsta se odlikuje nizom karaktera od svih poznatih vrsta roda *Niphargus*, kojih na teritoriji Jugoslavije ima preko 100 vrsta i podvrsta.

Glavne odlike vrste *N. lattingerae*: kokse 1-4 vrlo kratke, koksa 2 četvrtasta, kokse 1, 3, i 4 su šire od dužine, koksa 4 bez stražnjeg lobusa. Unutrašnja lobus prve maksile nosi jednu dlaku, vanjski lobus nosi 7 trnova od kojih 6 trnova nosi po jedan lateralni zubac, a jedan unutrašnji trn nosi nekoliko lateralnih zubaca.

Gnatopodi 1 i 2 relativno maleni, sa dugim petim segmentom, šesti segment nešto duži od svoje širine, proširen distalno, daktilus nosi jednu dlaku na vanjskom rubu. Segment 2 kod pereopoda 5, 6, i 7 je proširen ali nije ovalnog, već izduženog oblika, sa vrlo slabo razvijenim stražnjim lobusom. Daktilusi su relativno dugi, sa kratkim noktom. Pleopodi nose po 2 retinakule svaki. Epimeralne ploče su uglaste, treća ploča je nešto izvučena i kosa. Uropodi 1 i 2 su zdepasti; jedan jaki trn se nalazi kod baze prvog uropoda. Treći uropod je kratak. Telzon prelazi dužinu drške trećeg uropoda, svaki njegov lobus nosi po 3 kratka distalna trna i po jedan par kratkih perastih dlaka u sredini lobusa. Oostegiti su veoma veliki. Mužjak je nepoznat.

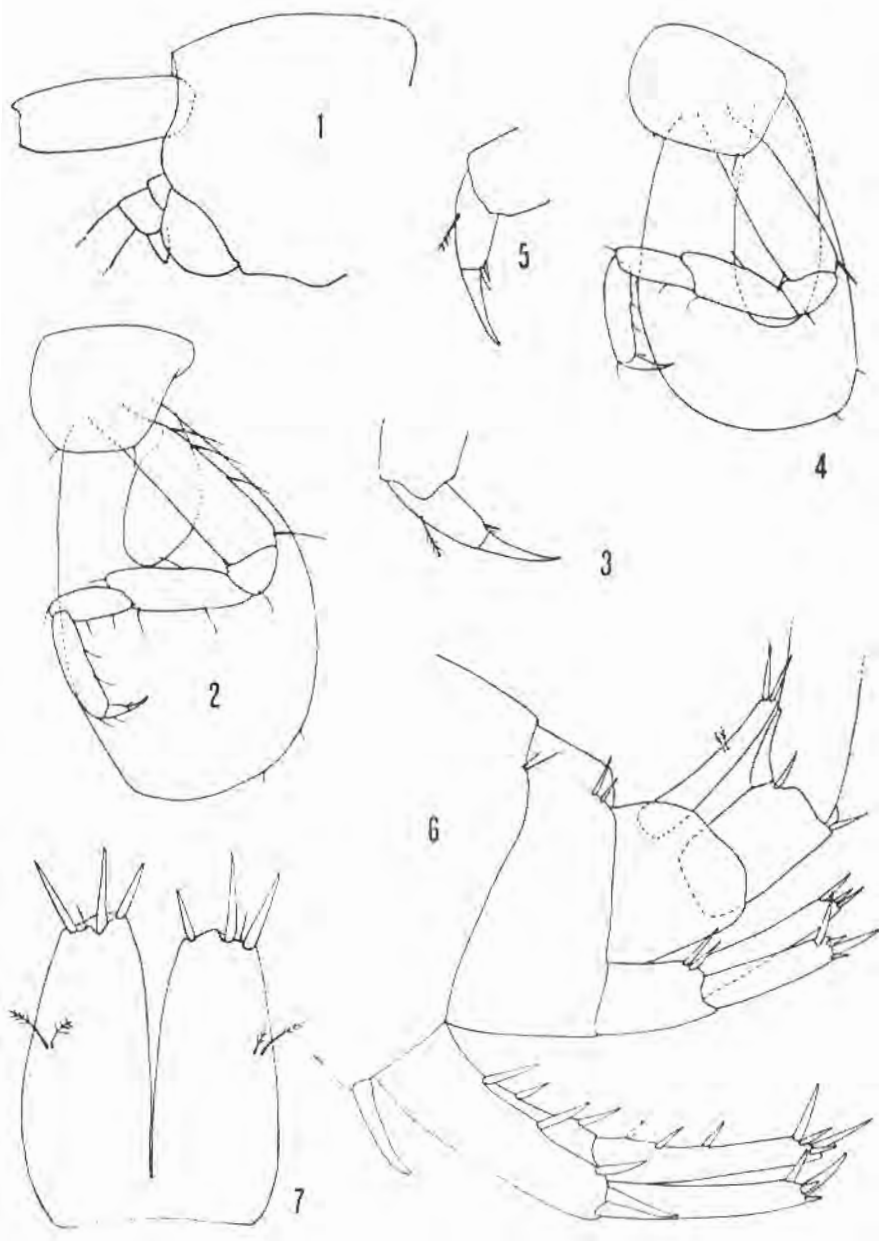


Fig. 1. *Niphargus lattingeræ*, n. sp., torrent Dolje near Zagreb, female 2.7 mm: 1 = head; 2-3 = pereopod 3; 4-5 = pereopod 4; 6 = urosome with uropods 1-2; 7 = telson.

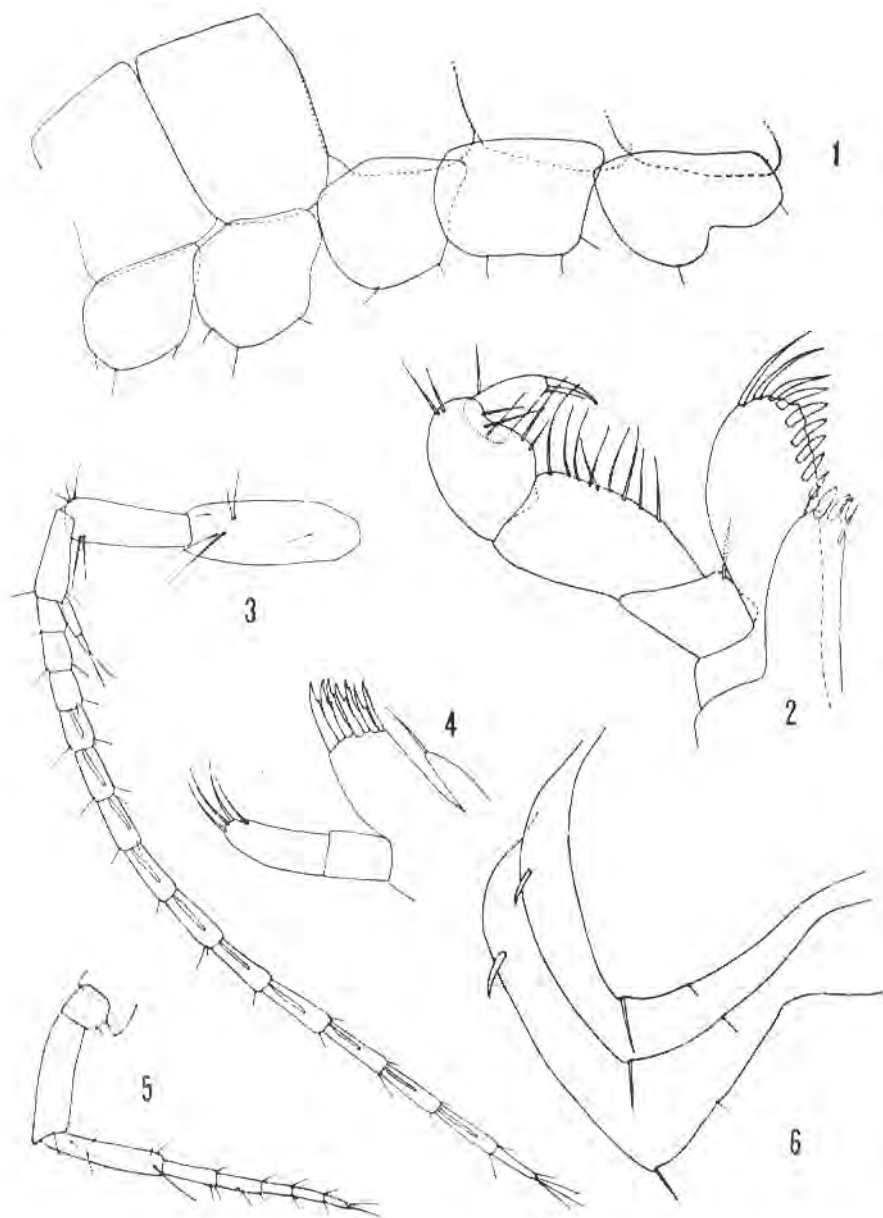


Fig. II. *Niphargus lattingerae*, n. sp., torrent Dolje near Zagreb, female 2.7 mm: 1 = coxae 1-5; 2 = maxilliped; 3 = antenna 1; 4 = maxilla 1; 5 = antenna 2; 6 = epimeral plates 1-3.



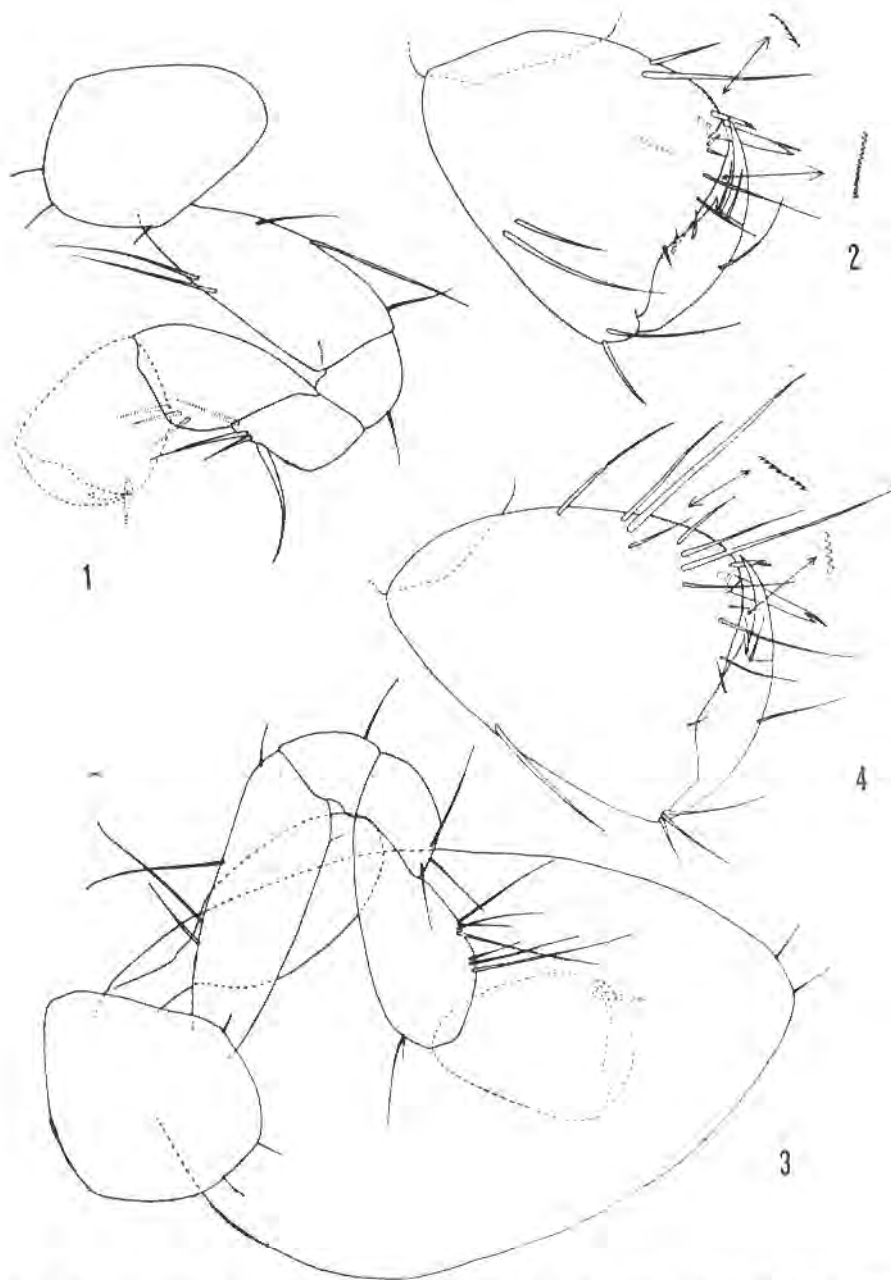


Fig. III. *Niphargus lattingeriae*, n. sp., torrent Dolje near Zagreb, female 2.7 mm: 1-2 = gnathopod 1; 3-4 = gnathopod 2.

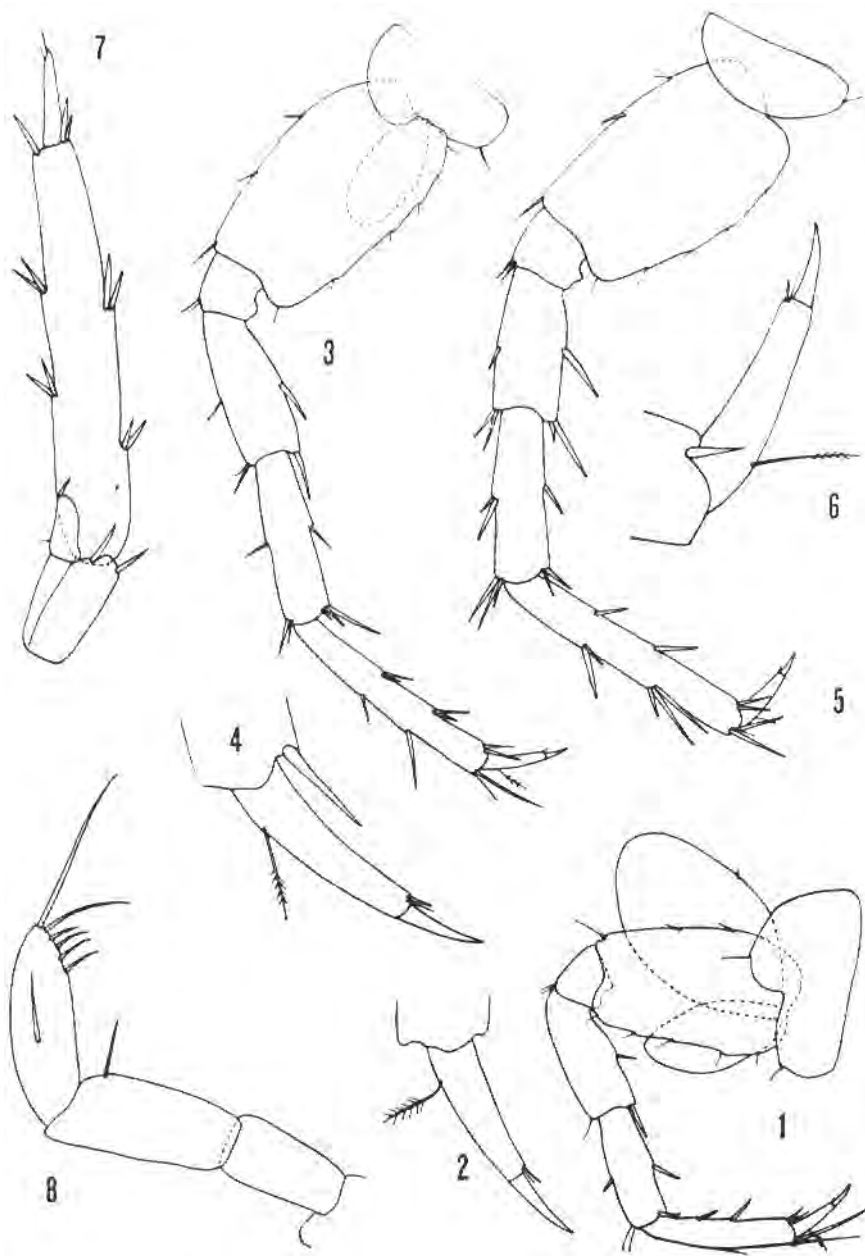


Fig. IV. *Niphargus lattingerae*, n. sp., torrent Dolje near Zagreb, female 2.7 mm: 1-2 = pereopod 5; 3-4 = pereopod 6; 5-6 = pereopod 7; 7 = uropod 3; 8 = mandibular palp.