Cah. Biol. Mar. (1992), **33** : 263-267
Roscoff

Halacarsantia kussakini n.sp. from a coral reef in French Polynesia (Isopoda : Asellota : Santiidae).

H.G. Müller
Pfaffenmühlerweg 2, D-6331 Waldsolms-Brandoberndorf, Germany (present address)
Centre de l'Environnement, Antenne Museum (École Pratique des Hautes Études, EPHE)
BP 1013, Papetoai, Moorea, Polynésie Française

Abstract : *Halacarsantia kussakini* n.sp., from a coral reef at Moorea, Society Islands is described and compared with the two other species of the genus known up to now.

Résumé : *Halacarsantia kussakini* n.sp. d'un récif corallien de Moorea et des Iles de la Société est décrite et comparée avec les deux autres espèces du genre, connues jusqu'ici.

INTRODUCTION

Only two other members of the marine isopod genus *Halacarsantia* were known up to now : *Halacarsantia uniramea* (Menzies & Miller, 1955) from Wellington, New Zealand and *H. justi* Wolff, 1989 from the vicinity of the Marine Biological Center at Phuket Island, Thailand.

The author's fieldwork at the Society Islands in 1988 yielded a third species new to science which is described herein. This considerably extends the known range of the genus to the eastern Pacific.

However, the distribution of *Halacarsantia* is not only restricted to the Indopacific region. A fourth species was recently found during the author's survey of marine isopods at the Caribbean coast of Colombia. Some features of this undescribed Caribbean species were included in a key to the species of *Halacarsantia* by Wolff (1989 : 184). It will be published later in a paper dealing with miscellaneous janiroid families from Colombia.

Species of *Halacarsantia* are very small, with a total length of less than one millimeter. Moreover, specimens are often covered with debris entangled between the spines at the dorsolateral surface of the body. All this makes them difficult to detect in samples.

The specimens are deposited in the Museum National d'Histoire Naturelle, Paris, France (MNHN) and in the Senckenberg Museum, Frankfurt, Germany (SMF).

SYSTEMATIC ACCOUNT

Halacarsantia Wolff, 1989

Halacarsantia kussakini n.sp. (Figs. 1-16)

Holotype : ovigerous ♀ (SMF), Moorea ; coral slope of fringing reef near Afareaitu, 1-2 m, 26 March 1988.
Paratypes : 1 ♂ (SMF), 1 ♀ (MNHN), collected together with holotype.

Derivatio nominis : The new species is dedicated to Prof. Dr. Oleg Kussakin, Institute of Marine Biology in Vladivostok, USSR, for his extensive contributions on Pacific marine isopods.

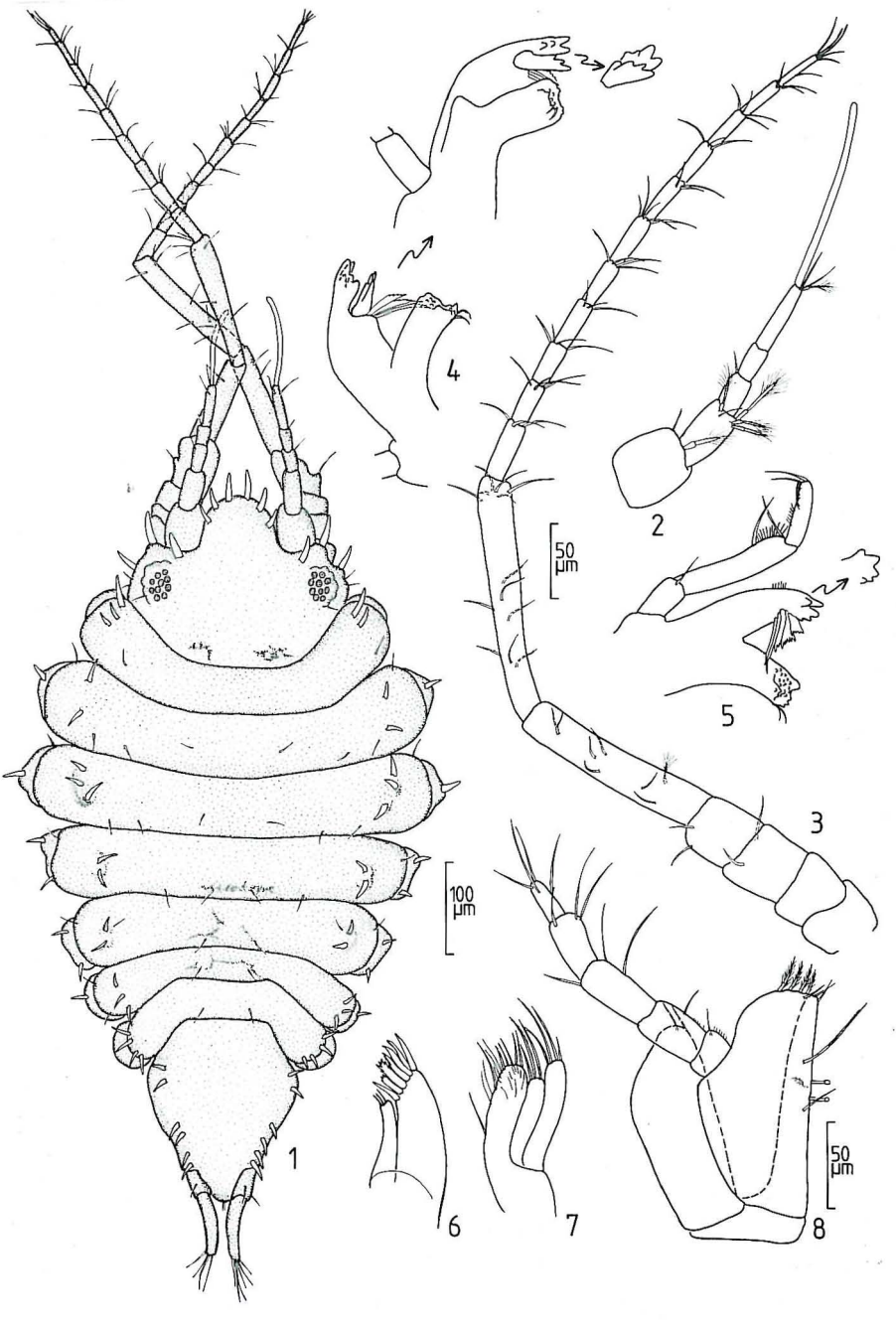
Description, ovigerous ♀, holotype : Total length 0.82 mm, maximum width (across pereonite 3) 0.46 mm. Posterior part of cephalon and midpart of pereonites 4-6 with few indistinct brownish pigment reticulations.

Cephalon 1.3 times wider than long, with broadly rounded rostrum this 1.3 times wider than long ; rostrum in distal half with row of 6 stout marginal spines, the two distal spines being largest ; lateral part of cephalon with 3 pairs of robust spines ; one pair dorsodistally, above articulation of antenna 1 ; one pair distally, situated near outer margin of antenna 2 peduncle ; finally one pair laterally, situated adjacent to the eyes. Lateral eyes relatively large and well pigmented, composed of 10 ommatidia.

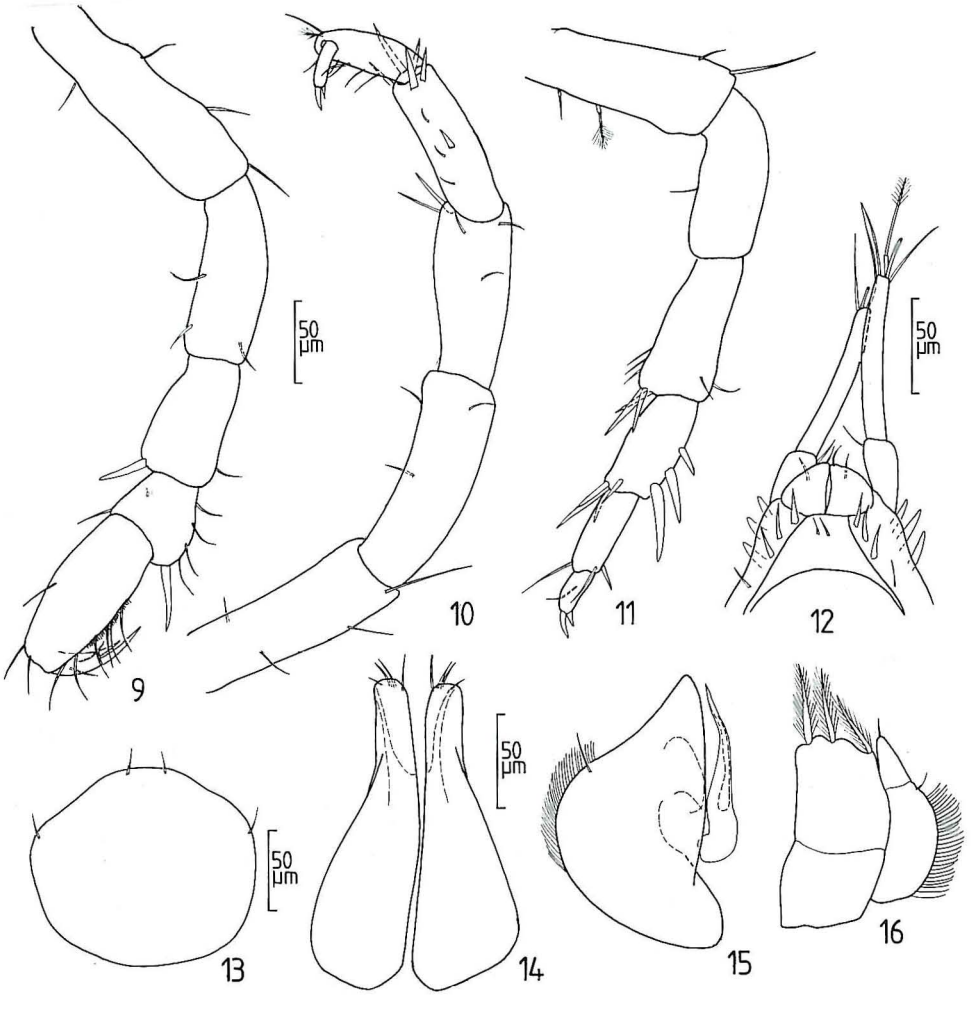
Pereonites 2-4 longest and subequal in length ; pereonite 1, 0.7 times length of pereonites 2-4 ; pereonites 6-7 shortest, about half length of pereonites 2-4 ; pereonites laterally rounded, dorsal surface bearing few short setae ; dorsolateral surface of pereonites 1-7 bearing some short, robust spines in the formula 3 : 2 : 3 : 2 : 2 : 3 : 4 ; lateral spines at pereonites 3-5 situated on shallow tubercles. Rounded coxae of all pereonites visible in dorsal view, partly bearing spines on the outer lateral margin in formula 0 : 1 :1 : 2 : 2 : 1 : 0. Pleotelson subequal in length to cephalon, 1.2 times longer than wide, with narrowly rounded distal margin ; dorsal surface of pleotelson near lateral margin with 6 spines in groups of 2 (anteriorly) and 4 (posteriorly), respectively ; ventrolateral part of pleotelson with 3 pairs of short spines in posterior third.

Antenna 1, first article twice wider and subequal in length to second article ; articles 2 and 4 shortest, subequal in length, half length of first article ; fifth article most slender and subequal in length to first article, bearing large terminal aesthetasc. Antenna 2 very long, peduncle of 6 articles ; 4 proximal articles short ; articles 1-2 1.5 times wider than long, articles 3-4 as long as wide ; two distal peduncular articles slender, with several short setae ; 5th peduncular article 1.3 times length of 4th ; flagellum of 11 slender, setose articles.

Incisor and lacinia mobilis of left mandible 4-cuspidate, spine row of 4 serrate spines ; molar relatively slender, apex truncate, with several denticles and 2 short setae ; right mandible, incisor 4-cuspidate, spine row of 5 denticulate spines ; mandibular palp 3-articulated ; second article longest, 2.5 times longer than first and 1.7 times longer than distal article ; first palp article with single distal seta ; second article with 2 slender setae and several setules in distal third ; terminal article with 2 distal setae and several setules. Maxilla 1, slender inner lobe with 3 short, distal setae ; outer lobe with 7 distal, partly denticulate spines. Maxilla 2, inner ramus distally rounded, with 7 slender setae and several setules along inner and distal margin, inner lobe of outer ramus with 3, outer lobe of outer ramus with 4 setae of different lengths. Endite of maxilliped distally subtruncate, with 4 plumose and 3 simple setae distally, 2 slender setae near medial margin and with 2 coupling hooks ; epipodite narrowing to rounded distal margin ; distal margin of epipodite with 2 slender



Figs. 1-8 : *Halacarsantia kussakini* n.sp., ovigerous ♀, holotype : 1. dorsal view ; 2. antenna 1 ; 3. antenna 2 ; 4. left mandible, viewed from different angles, two distal palp articles omitted ; 5. right mandible ; 6. maxilla 1 ; 7. maxilla 2 ; 8. maxilliped.



Figs. 9-16 : *Halacarsantia kussakini* n.sp. - ovigerous ♀, holotype : 9. pereopod 1 ; 10. pereopod 2 ; 11. pereopod 7 ; 12. posteroventral part of pleon and uropods ; 13. operculum. - ♂ paratype : 14. first pleopods ; 15. second pleopod ; 16. third pleopod.

setae, apex reaching beyond proximal half of second palp article ; maxillipedal palp of 5 setose articles ; first article shortest, wider than long ; distal article most slender.

Pereopod 1 subequal in size to other pereopods. propodus more robust ; dactylus of 2/3 propodus length, upper claw twice as long as lower claw ; posterior margin of propodus with row of many spinules and 6 slender, curved setae ; posterodistal margin of carpus and anterodistal margin of merus with robust spine. Propodus of pereopod 2 shorter than carpus ; dactylus half length of propodus, with 2 short claws ; carpus with 5 robust distal spines and a single spine at midlength of inner margin. Pereopods 2-7 similar among one

another ; propodus slender, 4/5 length of carpus, with small spine at posterodistal margin ; carpus 7/10 length of merus, with 3 very robust spines along posterior margin (increasing in size distally) and three more slender spines at anterodistal margin ; merus with 3 slender, anterodistal spines.

Operculum roughly oval, distal margin with 4 short setae.

Exopodite of uropod totally reduced ; peduncle twice longer than wide ; uropodal endopodite slender, 8 times longer than wide, distally with few simple setae and a feathered sensory seta.

♂ : in general habitus and size as ♀. Pleopod 1 in proximal third 3 times wider than in distal third ; distal margin subtruncate, with 4 short setae. Sympodite of second pleopod 1.8 times longer than wide, rounded outer margin bearing fringe of many setules and a short seta ; endopodite relatively robust, almost reaching to apex of sympodite. Biarticulated endopodite of third pleopod with 3 distal plumose setae ; biarticulated and more slender exopodite with only a short distal seta.

Remarks : *Halacarsantia justi* Wolff, 1989 from Thailand and *H. uniramea* from New Zealand (Menzies & Miller, 1955) are very similar among one another in their general features and differ considerably in certain features from *H. kussakini* n.sp. The spines at the rostrum and lateral margins of the pleotelson are more numerous and longer in both *H. justi* and *uniramea*. Moreover, the second antennae, pereopods and uropodal endopodites (exopodites totally reduced) of these species are shorter than in the new species from Polynesia. Therefore the affinities of *H. kussakini* n.sp. remain obscure. In the presence of a mandibular palp the new species is more similar to *H. uniramea*.

Like *H. justi* Wolff, 1989, *H. kussakini* was found associated with dead coral substratum, unlike *H. uniramea* which was collected on a sea cucumber.

Distribution : Moorea, Society Islands.

ACKNOWLEDGMENTS

The present study has been mainly carried out at the Antenne Museum in Moorea (director : Dr. René Galzin) and the Centre de Biologie et d'Écologie Tropicale et Méditerranéenne in Perpignan, France (director : Dr. Bernard Salvat). My thanks are due to Dr. Salvat and Dr. Galzin for their help to organize the fieldwork and for making available the laboratory facilities of their institutes.

REFERENCES

MENZIES, R.J. & M.A. MILLER, 1955. Marine asellote isopods of the genus *Antias* with the description of a new species from New Zealand. *Trans. Roy. Soc. N.Z.* 83 : 383-389.

WOLFF, T., 1989. The genera of Santiidae Kussakin, 1988, with the description of a new genus and species (Crustacea, Isopoda, Asellota). *Steenstrupia* 15 : 177-191.