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Nikoides multispinatus sp. nov., a New Processid Shrimp
from the Pacific Ocean

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With 3 Text-figures

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ABSTRACT A new species of the processid genus *Nikoides* from the Great Barrier Reef, Australia and Ishigakijima Island, Japan, is described and illustrated. The new species, *N. multispinatus* sp. nov., is distinguishable at first sight from other species of this genus by the presence of more than four spines on either side of the telson, a character which is unique in the family Processidae. Other characteristics are also presented and compared with those of the related species.

INTRODUCTION

After having published the paper on the Indo-West Pacific Processidae (HAYASHI, 1976), I received some further interesting specimens of this family from several localities. Three male specimens collected from coral reefs in the Great Barrier Reef, Australia and in Ishigakijima Island, Japan, are referred to an undescribed species of the genus *Nikoides*. This species differs markedly from the six known species of the genus in many morphological features. Its most striking character is the numerous dorsal spines, four to six in number, on either side of the telson, in contrast to the two pairs present in all the other known species of this family.

SYSTEMATICS

Nikoides multispinatus sp. nov.

(Figs. 1-3)

Material examined. Heron Island, Great Barrier Reef, Australia, depth 35 ft., July 30, 1976, night, A. J. BRUCE leg.—1♂ (holotype, preserved at the Australian Museum, Sydney, P30717).

Kabira Bay, Ishigakijima Island, seaward side of outer reef, July 21, 1976, T. FUJINO leg.—1♂ (paratype, preserved at the National Science Museum, Tokyo, Cr-6436); July 27, 1976, T. FUJINO leg.—1♂ (paratype, preserved at the Zoological La-

boratory, Kyushu University, Fukuoka).

Diagnosis. Rostrum short, apex bifid. Pleuron of fifth abdominal somite acutely pointed. Telson with four to six dorsal spines on either side, apex pointed. Stylocerite strongly sloping laterally, inner distal angle bluntly pointed. Outer spine of antennal scale as long as end of lamella. Basicerite without process. First pair of pereiopods with long exopods. Right second pereiopod with 21–29 meral and 55–70 carpal joints, left second pereiopod 8–10 meral and 27–32 carpal joints. Ischium of third pereiopod with two spines, fourth pereiopod with one spine. Meri of third and fourth pereiopods with four spines. Propodus of fifth pereiopod with five spines on posterior margin.

Description. Small and slender shrimp, 3.1–4.3 mm in carapace length. Rostrum straight and short, not reaching cornea; apex bifid, upper tooth much shorter than lower tooth. Carapace 3.6–4.5 times as long as rostrum; antennal spine well developed, suborbital angle ill-defined, pterygostomial angle largely rounded. Pointed process present below middle of rostrum.

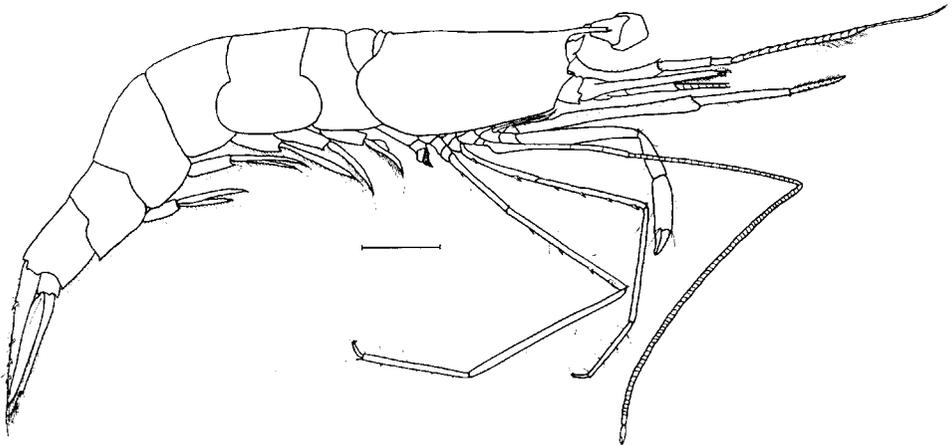


Fig. 1. *Nikoides multispinatus* sp. nov., holotype from the Great Barrier Reef. Scale represents 2.0 mm.

First four abdominal pleura rounded; pleura of fifth and sixth somites acutely pointed; lateral plate of sixth somite variable in shape, but not sharply pointed. Telson with four to six dorsal spines on either side, which do not form regular pairs in any specimen; posterior margin of telson pointed at middle, flanked by three pairs of spines.

Antennular peduncle long; basal segment longer than distal two segments combined; stylocerite short, only one-third the length of basal segment; distal margin strongly sloping, inner distal angle bluntly pointed. Outer flagellum slightly longer than peduncle, basal half or more swollen, short aesthetascs present on ventral side of

distal half of swollen part; inner flagellum slender, long, four times as long as antennular peduncle. Antennal scale slightly shorter than antennular peduncle, 5.2–7.2 times as long as broad; outer distal spine as long as lamella and separated from the latter by notch; basicerite without any distinct spine; carpo-cerite reaching distal third of scale.

Third maxilliped slender, exceeding antennular peduncle by ultimate and distal third or half of penultimate segment; antepenultimate segment slightly longer than distal two segments combined, with only exopod. Right first pereopod chelate, slender, just reaching the end of antennular peduncle. Fingers twist at tip, about a half as long as distal three segments combined. Left first pereopod not chelate, slender, exceeding antennular peduncle by dactylus or dactylus and a part of propodus; dactylus nearly one-fifth the length of propodus; carpus shorter than propodus, merus as long as that of right side, but slightly shorter than distal three segments combined. Second pereopods strongly unequal; right pereopod exceeding antennular peduncle by chela, entire carpus and a distal few joints of merus. Carpus with 55–70 joints, as long as merus and ischium combined; merus with 21–29 joints and ischium with 1–3 joints. Left second pereopod exceeding antennular peduncle by chela and distal three-fourths of carpus. Carpus with 27–32 joints, shorter than merus and ischium combined; merus with 8–10 joints, ischium not subdivided. Third pereopod exceeding antennular peduncle by distal two segments; ischium with four outer spines; merus 1.5 times as long as ischium, with four outer spines; carpus slightly longer than merus, propodus about a half as long as carpus; dactylus about one-fourth the length of propodus. Fourth pereopod longer than third one, exceeding antennular peduncle by nearly distal three segments; ischium as long as that of third, with a single outer spine on basal third; merus 1.8 times as long as ischium, with four outer spines; carpus 1.3 times as long as merus, propodus two-thirds the length of carpus; dactylus one-fifth the length of propodus. Fifth pereopod slightly longer than third pereopod; ischium shorter than those of preceding two pereopods, unarmed; merus more than twice as long as ischium; carpus shorter than merus, proximal four segments unarmed. Propodus slightly longer than carpus, with five spines on posterior margin. Dactylus one-fourth the length of propodus.

Endopod of first pleopod short, one-third the length of exopod; inner distal corner slightly produced with a few retinacula on rounded tip. Appendix interna on endopod of second pleopod short, a half as long as appendix masculina, with a few retinacula on tip; appendix masculina slender and long, nearly reaching the distal third of endopod; three simple setae on inner margin of distal half and four similar setae, two short and two long, on top. Uropod longer than telson, exopod longer than endopod. Fifth abdominal sternum with obscure keel in midline and small, blunt pre-anal spine on sixth sternum.

Remarks. The present new species is characterized by the following features: 1) The rostrum is straight and short, with a bifid apex, 2) the fifth abdominal somite is pointed, 3) the lateral plate of sixth somite is not acutely pointed, 4) the telson is

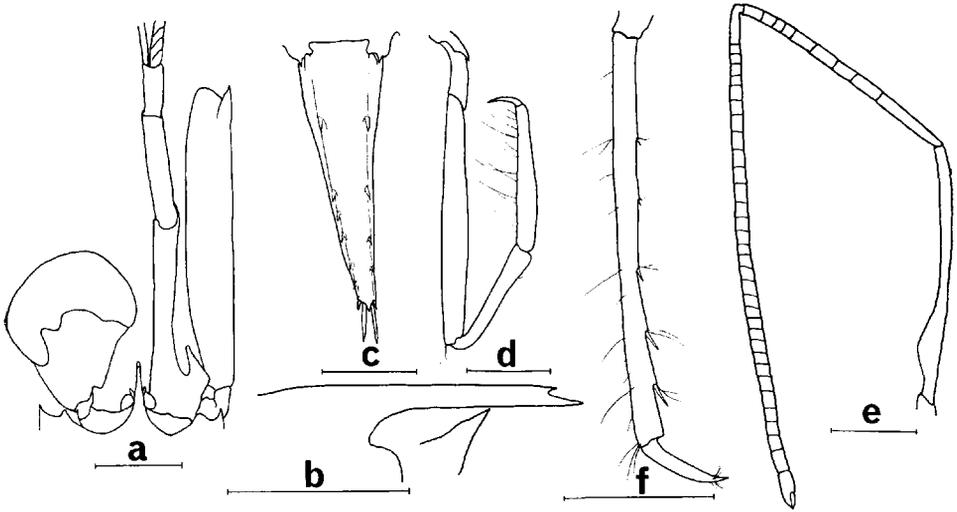


Fig. 2. *Nikoides multispinatus* sp. nov., holotype; a, anterior part of body in dorsal view, b, rostrum, c, telson, d, left first pereopod, e, left second pereopod, f, dactylus and propodus of fifth pereopod. Scales represent 1.0 mm.

armed with many spines on the dorsal surface, with pointed apex, 5) the distal margin of the stylocerite is markedly oblique, 6) the presence of two spines on outer surface of the ischium of third pereopod and a single one on the fourth pereopod, 7) the meri of third and fourth pereopods are armed with four spines and 8) the presence of five spines on the propodus of fifth pereopod.

Of these features, the occurrence of numerous spines on the telson is unique in the family Processidae as all the known species of this family are exclusively armed with two spines only. These spines are not regularly arranged in a series of pairs, but the spines themselves seem not to be abnormal.

Apart from the spinulation of the telson, the new species is closely related to *N. steinii* (EDMONDSON, 1935) showing the following features: small size, less than 4.5 mm in carapace length, short rostrum, pointed pleura of the fifth abdominal somite, strongly sloping and bluntly pointed stylocerite, smooth basicerite, etc. However, the rostrum is much shorter in *N. steinii* than in the present species. Furthermore, the new species differs from *N. steinii* in the annulation of the second pair of pereopods, spinulation of the ischium of the third pereopod and the meri of the third and fourth pereopods and the smooth lateral plate of the sixth abdominal somite.

Size. All the specimens examined are male; the holotype is selected as the largest one from the Great Barrier Reef, 4.3 mm in carapace length and 1.2 mm in rostrum length. The paratypes are 3.1–3.2 mm in carapace length and 0.7 mm in rostrum length.

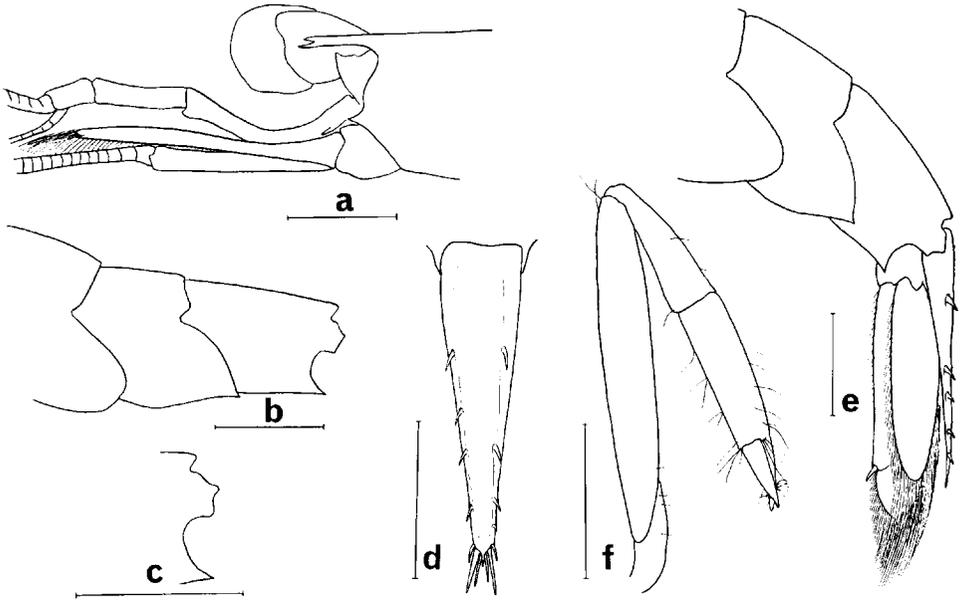


Fig. 3. *Nikoides multispinatus* sp. nov., paratypes from the Ishigakijima Island; a-d, male (3.1 mm in carapace length), e, f, male (3.2 mm in carapace length); a, anterior part of body in lateral view, b, fourth to sixth abdominal somites, c, posterior part of sixth abdominal somite, d, telson, e, posterior part of body, f, right first pereiopod. Scales represent 1.0 mm.

Distribution. Like *N. danae*, *N. gurneyi*, *N. maldivensis* and *N. steinii*, the new species is collected from coral reefs. In fact, one specimen is found in association with *Acropora* sp. at Ishigakijima Island. It is, however, unlikely that this is a true shallow-water species, because it was collected from a depth of 35 feet on the Great Barrier Reef, and in Ishigakijima Island it was found at seaward side of the outer reef. The species has been known from two widely separated localities, Heron Island, Great Barrier Reef, Australia, and Kabira Bay, Ishigakijima Island, Okinawa, Japan.

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