

Lauriea siagiani Baba, 1994 (Crustacea, Decapoda, Anomura, Galatheidae) from Hachijo-jima Island, the Izu Islands, Japan

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Abstract. *Lauriea siagiani* Baba, 1994 is recorded for the first time from Japanese waters based on a specimen collected from Hachijo-jima Island, the Izu Islands, Japan. This is the second reliable record of the galatheid, and extends its geographical distribution northwards to the latitude of 33°N. In addition to the characters discussed in the original description, this species can be distinguished from *L. gardineri* (Laurie, 1926) by the presence of long plumose setae on the carapace.

Key words: Crustacea, Decapoda, Galatheidae, *Lauriea siagiani*, new record, Japan.

Introduction

Lauriea siagiani Baba, 1994 was described as the second species of the genus *Lauriea* Baba, 1971 from Bali, Indonesia (Baba, 1994). Color pictures of this species inhabiting the surface of a sponge have been occasionally shown in several guidebooks for coral reef animals or marine crustaceans (*e. g.* Gosliner *et al.*, 1996; Debelius, 1999; Minemizu, 2000). Allen & Steene (1994: 152) informally called the galatheid (as *Lauriea* sp.) “pink squat lobster”.

Kato & Okuno (2001: 89) provided a color picture of “*Lauriea* sp.” taken at Hachijo-jima Island in the Izu Islands, Japan. To these authors, the specimen in the picture seemed to closely resemble *L. siagiani*, but they hesitated to assign a specific identification because the specimen had longer setae on the carapace and slenderer chelipeds than those of Baba’s (1994) specimens from Bali. Kato & Okuno’s spec-

imen was collected, and a close comparison with the paratypes of *L. siagiani* revealed that the Japanese and Bali specimens are conspecific. The present paper provides the first reliable record of *L. siagiani* from Japanese waters, and includes notes on habitat and armature of the long setae on the carapace of this species.

The measurements given under the heading “Material examined” indicate postorbital carapace length (cl), the distance between the orbital margin and the posterior margin of the carapace in midline. The specimens examined are deposited in the Coastal Branch of the Natural History Museum and Institute, Chiba (CMNH, with code of ZC), and in the National Science Museum, Tokyo (NSMT, with code of Cr).

Taxonomic account

Lauriea siagiani Baba, 1994

(New Japanese name: Sakura-koshioriebi)

(Figs 1, 2)

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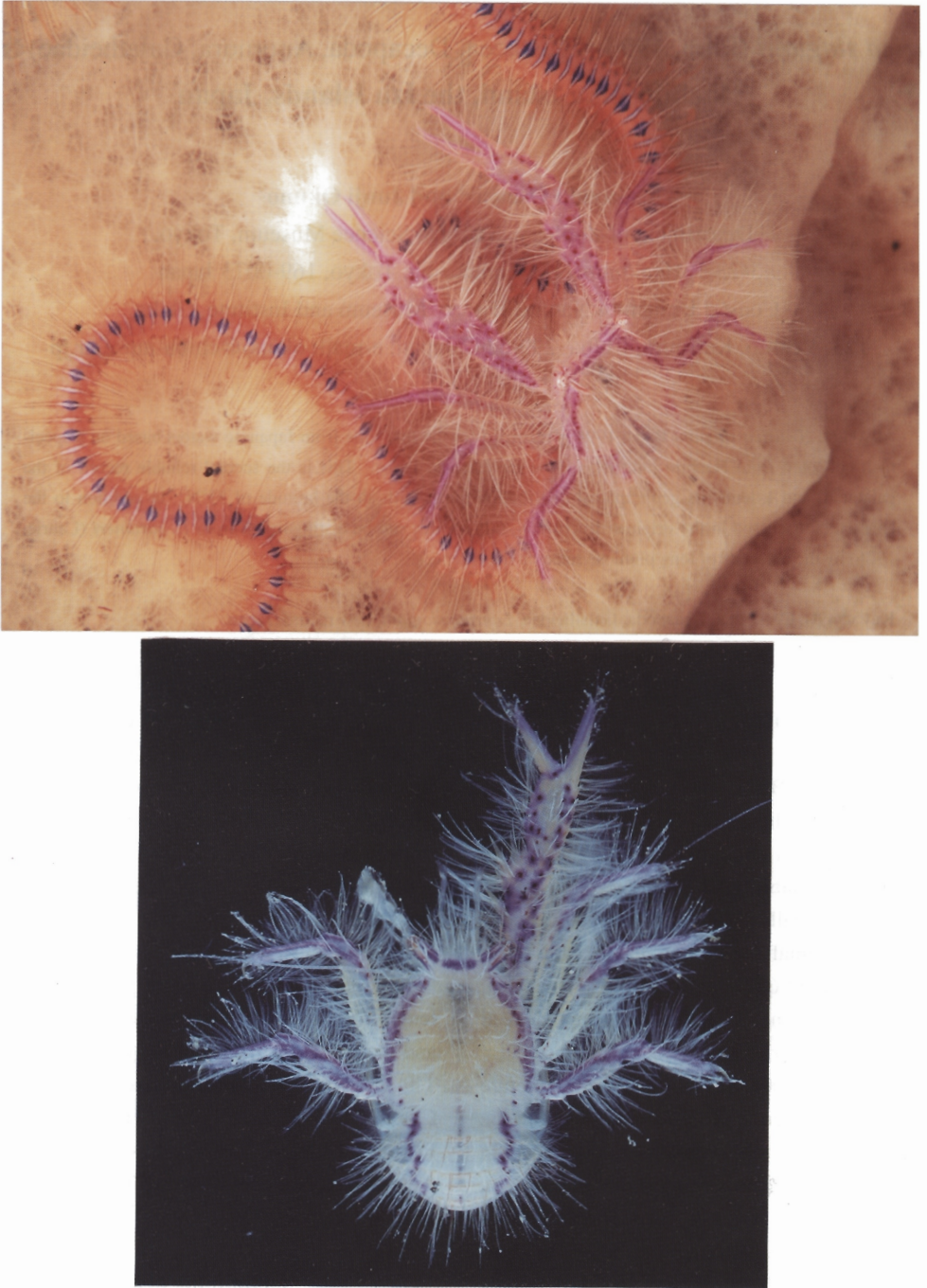


Fig. 1. *Lauriea siagiani* Baba, 1994, female (cl 5.4 mm, CMNH-ZC 1476), Nazumado, Hachijo-jima Island, Izu Islands, Japan. Top: live specimen, inhabiting extensor surface of *Callyspongia elegans* (photographed by S. Kato). Bottom: fresh specimen, dorsal, left cheliped missing (photographed by J. Okuno).

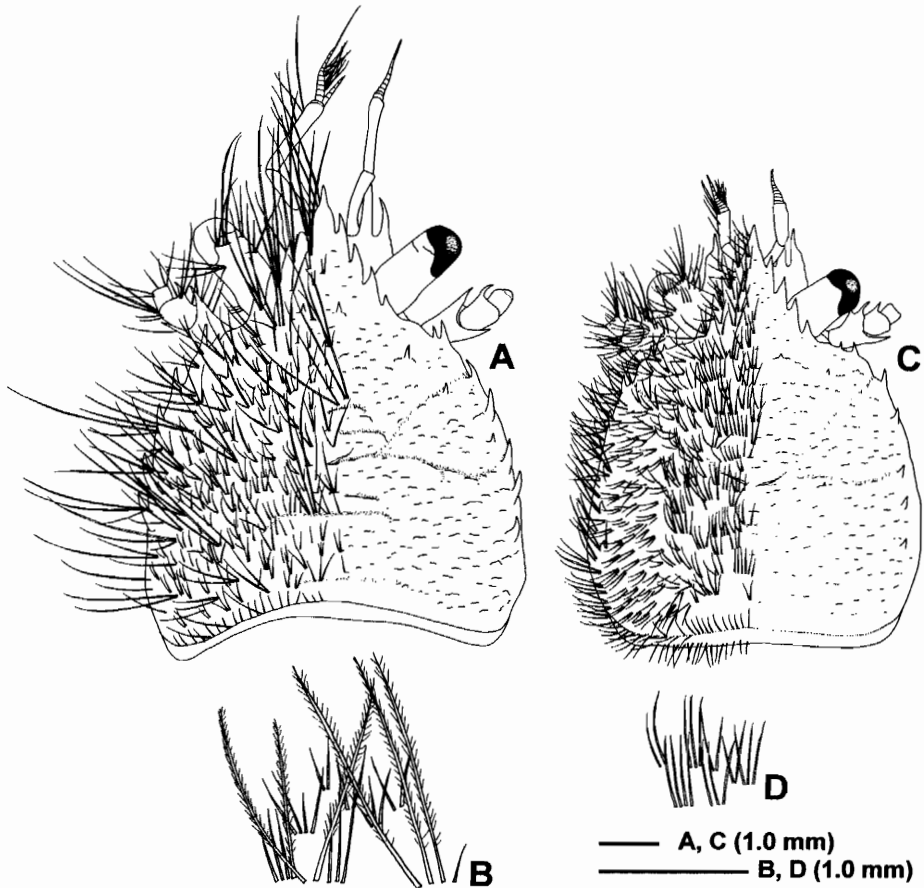


Fig. 2. *Lauriea siagiani* Baba, 1994, female (cl 5.4 mm, CMNH-ZC 1476), Nazumado, Hachijo-jima Island, Izu Islands, Japan (A, B); *Lauriea gardineri* (Laurie, 1926), ovigerous female (cl 5.0 mm, CMNH-ZC 1479), Nazumado, Hachijo-jima Island, Izu Islands, Japan (C, D). A, C: carapace and cephalic appendages, dorsal (setae omitted from right side). B, D: setae on left gastric region, dorsal.

Galathaea sp.: Steene, 1990: 82, unnumbered fig., 314.

Lauriea sp.: Allen & Steene, 1994: 152, unnumbered fig.; Kato & Okuno, 2001: 89, unnumbered fig.

Lauriea siagiani Baba, 1994: 40, fig. 1; Gosliner *et al.*, 1996: 226, fig. 823; Debelius, 1999: 242, unnumbered fig.; Minemizu, 2000: 169, unnumbered fig.; Minemizu, 2002: 169, unnumbered fig.

Material examined. Japan: Nazumado, Hachijo-jima Island, Izu Islands, 46 m, on *Callyspongia elegans*, 4 September 2000, coll. J. Okuno & K.

Tanaka, 1 ♀ (cl 5.4 mm), CMNH-ZC 1476. Indonesia: Tulambon, north coast of Bali Island, 12 m, on sponge, 18 February 1993, coll. W. Siagian, paratypes 2 ♀ (cl 4.4, 6.1 mm), NSMT-Cr 11438.

Comparative material of *Lauriea gardineri* (Laurie, 1926). Japan: Hirane, Hasama, Tateyama, Boso Peninsula, 17 m, on unidentified sponge, 6 December 2001, coll. H. Tachikawa *et al.*, 1 ♂ (cl 3.1 mm), CMNH-ZC 699; Matsune, Banda, Tateyama, Boso Peninsula, 18 m, on *Callyspongia elegans*, 4 July 2001, coll. J. Okuno, 1 ovigerous ♀ (cl 4.3 mm), CMNH-ZC 1480; Nakanomama, Hachijo-jima

Island, Izu Islands, 15 m, on *Xestospongia* sp., 25 October 1999, coll. J. Okuno & K. Tanaka, 1 ♀ (cl 4.2 mm), CMNH-ZC 1477; Nazumado, Hachijo-jima Island, Izu Islands, 40 m, on *Callyspongia elegans*, 26 October 1999, coll. J. Okuno, 1 ovigerous ♀ (cl 5.0 mm), CMNH-ZC 1479.

Color (Fig. 1). The background color and pattern of the marks on the carapace and appendages generally agree with the description by Baba (1994: 41), but the coloration of setae on the body is somewhat different in the specimen from Hachijo-jima Island. The long setae on the carapace and appendages are pale yellow and those on the transverse ridges of the abdominal segments are reddish in the Hachijo-jima specimen, but they are cited as pale pink in the Bali specimens. In the field, the setae are probably visible as pale pink when *L. siagiani* is observed on the reddish-colored surface of the sponge (see Gosliner *et al.*, 1996: 226, fig. 823; Minemizu, 2000: 169, unnumbered fig.).

The picture of the fresh specimen (Fig. 1, bottom) shows that the marks on the carapace, abdominal segments, and appendages look purple rather than purplish red cited by Baba (1994) for the type specimens. However, this difference in coloration is simply due to the influence of color of lamps when the specimen was photographed. The marks of the specimen in life were purplish red in the field (Fig. 1, top).

Habitat. The specimen from Hachijo-jima Island was obtained from the external surface of a cup-shaped sponge, *Callyspongia elegans* (Thiele), at 46 m (Fig. 1, top; Kato & Okuno, 2001: 89, unnumbered fig.). The observations with SCUBA equipment in that island show that *Lauriea siagiani* also occurs among folds on the extensor base of a barrel sponge, *Xestospongia* sp. (K. Tanaka, *pers. comm.*). Besides *Lauriea siagiani*, two other galatheids, *Lauriea gardineri* (Laurie, 1926) and "*Galathea* sp. A", have been hitherto found on those sponges in Hachijo-jima Island (see Kato & Okuno, 2001: 87, 88). Although the photographed specimen of "*Galathea* sp. A" could not be collected, it is probably *Galathea spinosorostris* Dana, 1852 based on the possession

of white marks along the opposable margins of the fingers of the cheliped, which is the distinguishing character of this species in life (see Kawamoto & Okuno, 2003: 95, 156, unnumbered figs). *Galathea spinosorostris* was obtained from *Xestospongia* sp. (Off Yanene Port, Hachijo-jima Island, Izu Islands, 17 m, 25 November 1999, coll. J. Okuno, 1 ovigerous ♀, cl 2.8 mm, CMNH-ZC 650).

Lauriea siagiani has been occasionally photographed in shallow waters on the surface of *Xestospongia testudinaria* (Lamarck) around Indonesia (Bali, Sulawesi) and the Philippines (*e. g.* Gosliner *et al.*, 1996; Debelius, 1999; Minemizu, 2000).

Distribution. Bali, Indonesia (type locality). The specimen from Hachijo-jima Island represents the second reliable record of *L. siagiani*, greatly extending its known range northwards to the latitude of 33°N.

Remarks. Morphologically, the specimen from Hachijo-jima Island generally agrees with the original description of *Lauriea siagiani* by Baba (1994), although it has chelipeds somewhat shorter and slenderer than those of the type specimens from Bali. The chelipeds of the Japanese specimen are 2.6 times (in the Indonesian specimens, about three times) as long as the postorbital carapace, and the palm is 2.2 times (in the Indonesian specimens, 1.7–1.8 times) longer than wide. These can reasonably be included in the range of intraspecific variations.

As discussed by Baba (1994: 43), the characters of the eyestalk, sternal plastron, antennular and antennal peduncles, chelipeds, and walking legs distinguish *L. siagiani* from *L. gardineri*. The setation on the carapace also differs between the two species. The carapace is covered with short simple setae and considerably long plumose setae in *L. siagiani* (Figs 2A, B), whereas it has only short simple setae on the dorsal surface (setae laterally on the branchial regions are minutely plumed) in *L. gardineri* (Figs 2C, D). Although Baba (1994: 42, figs 1a, b) did not mention whether the long setae on the carapace of *L. siagiani* are simple or plumose, and illustrated those setae only as simple, reexamination of the two

paratypes disclosed that they are plumose as in the Japanese specimen. The thin setules arising from the shafts of the setae seem to be delicate since the setules of the two paratypes are somewhat damaged and less distinct than those of the more recently collected specimen from Hachijo-jima Island. The long plumose setae on the carapace are also somewhat fragile since most setae of the paratypes are broken distally, and shorter than those of the specimen from Hachijo-jima Island. These give the impression that the Hachijo-jima specimen is more setose than Bali specimens.

Lauriea appears closest to *Galathea* Fabricius, 1793 in general appearance, but differs from the latter in having the ordinary lateral margin of the endopod of the uropod posterior in position, no continuous transverse ridges on the carapace, biunguiculate dactyli of the walking legs, and no gonopods on the first abdominal segment in the male (Baba, 1971: 51, 1994: 41). The original description of *L. siagiani* did not refer to the number of epipods. Examination of specimens of *L. siagiani* revealed that they have no epipods on the pereopods as in *L. gardineri* (see Tirmizi & Javed, 1993: 25). The lack of continuous transverse striae on the carapace, and of epipods on the pereopods is shared by the two species of *Lauriea* and *Galathea kuboii* Miyake and Baba, 1967. However, *Lauriea* species differ from *G. kuboii* in the shape of the rostrum, basal segment of the antennular peduncle, and third and fourth thoracic sternites (see Miyake & Baba, 1967: 206, figs 2a, b, e; Baba, 1994: 42, 44, figs 1a–d, 2a–d).

Baba & de Saint Laurent (1996: 436) attempted to divide the family Galatheidae into two groups: one bearing gonopods on the first and second abdominal segments in the male, and the other lacking gonopods on the first abdominal segment. Among the genera of the latter group, the flattened, triangular rostrum is shared by *Lauriea*, *Phylladorhynchus* Baba, 1969, and *Coralliogalathea* Baba and Javed, 1974. However, *Lauriea* is immediately distinguished from the other two genera by having four distinct teeth including a supraocular tooth on each of the lateral margins of the rostrum and no continu-

ous transverse ridges on the carapace.

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