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Discovery of *Eurydice akiyamai* (Isopoda, Cirolanidae) from Giki-gawa stream, Okinawa Island, Ryukyu Archipelago*

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沖縄島の小河川から発見されたヒガタスナホリムシ

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沖縄島名護市嘉陽のギキ川下流,河口から100mさかのぼった地点から絶滅危惧種に指定されているヒガタスナホリムシが発見された。本種は千葉県一宮川の河口干潟産の標本をもとに1981年に記載され，模式産地から発見されなくなり，その後まったく記録が無かったが，2005年に沖縄島北部の淡水域から発見された。また今回の標本には原記載との若干の形態差が見られたので報告する。

キーワード：ヒガタスナホリムシ，形態，沖縄，淡水，絶滅危惧種
Key words：Eurydice akiyamai, morphology, Okinawa, freshwater, (endangered species)

During an ecological survey at Gikigawa-stream, Kayô Nago-shi, Okinawa (Fig. 1). The junior author happened to find a strange small isopod. He sent them to the senior author for the identification of the specimens. At his closer examination, they proved to represent an endangered species *Eurydice akiyamai* that was only discovered from the estuary of Ichinomiya River, Chiba Prefecture (Nunomura, 1981, 2006).

Eurydice akiyamai Nunomura, 1981
(Jap. name: Higata-sunahorimushi)

Figs. 2 -3

Nunomura, 1981b, p. 7, figs. 1-2 (mudflat near high tide line in the estuary of Ichinomiya River, Chosei-mura, Chiba Pref.).

Material examined: 3♂♂ (2.7-3.2 mm in body length), 3♀♀ (3.5-4.5 mm in body length), a shallow stream of Giki-gawa (about 100m from the river mouth), Kayo, Nago-shi, 25, May, 2005, coll. Okinawa Island, Masanori

*Contributions from the Toyama Science Museum, No.363

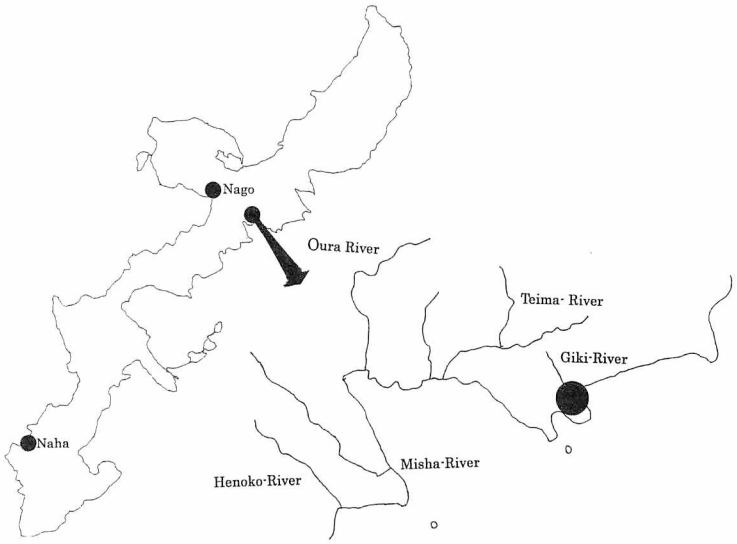

Fig. 1 Map showing the sampling site of *Eurydice akiyamai.*

Nunokawa. The specimens will deposited at the Toyama Science Museum (TOYA Cr-17311～17314) and (OPM Cr-220) at the Okinawa Prefectural Museum.

Description of male: Color dull yellow in alcohol. Body 2.3 times as long as wide. Body widest at 5th pereonal somite. Cephalon with an acute rostral point. Pereonites 1-4 subequal in length. Pereonites 5 longer than other somites. Pereonite 6 only a little longer than pereonal somite 5. Pleonites 7 shorter and smaller than pereonal somite 6, with only a slightly protruded posterolateral margin. Posterior margin of pleotelson, slightly indented, provided with a shallow concavity, and 4 longer setae and 2 shorter and stouter setae.

Antennule (Fig. 2B): peduncle three-segmented, segments 1-2 subequal in length, segment 3 slightly longer than the second. Flagellum 5-segmented, segment 1 being 3 times as long as wide; segments 2 and 3 as long as segment 1; terminal 3 segments short. Antenna (Fig. 2C), extending to the posterior margin of second pereonal somite; flagellum 11-segmented. Right mandible (Fig. 2D): pars incisiva with 3 teeth; lacinia mobilis not chitinzed; processus molaris wide palp three-segmented, segment 2 longest, terminal segment relatively short, with 3 setae at the tip. Left mandible: pars incisiva with 2 teeth; lacinia mobilis chitinzed and 3 teeth; processus molaris wide palp three-segmented, segment 2 longest, terminal segment relatively short, with 3 setae at the tip. Maxillula: inner lobe (Fig. 2E) with 3 plumose lobes; outer lobe (Fig. 2F) with 10 setae and a thin seta on outer margin. Maxilla (Fig. 2G): inner lobe with 6 setae, including 3 inner plumose ones; inner ramus of outer lobe with 7 setae, and outer ramus with 3 setae. Maxilliped (Fig. 2H): endite rectangular; palp 5-segmented; segment 1 rectangular; segment 2 triangular, with a seta on outer margin; segment 3 biggest, with 6-7 setae on inner margin; segment 4 rectangular, with 3 setae on distal half of inner margin; segment 5 with 3 setae on distal margin and a seta on outer margin.

Pereopod 1 (Fig. 3A): basis stout, 2.8 times as long as wide, with 5 setae at inner distal angle; ischium times as long as basis; merus short, with 2 stout setae and a seta, and 2 long setae at outer distal angle; carpus short, almost as long as merus, with a stout and a longer seta ad 3 long setae at outer distal angle; propodus 5 stout setae a bigger serrated near inner distal angle; dactylus half the length of propodus, with a small projection on inner margin.

Pereopod 2 (Fig. 3B): basis stout, 2.9 times as long as wide with 5-6 setae at inner distal angle; ischium triangular, with 2 stout setae on inner distal area and 12-13 setae on medial area of distal margin and 4 setae on outer distal area; merus rectangular, with 5 stout setae on inner margin, and 5-6 setae at outer distal angle; carpus triangular, with 2 stout setae on inner margin; propodus subchelate, with 3 stout setae including a serrated one on inner margin.

Pereopod 3 (Fig. 3C): basis 3.4 times as long as wide, with 8 long setae on inner distal area and a seta on outer margin; ischium with 3 long setae on inner margin and 8-9 setae on distal area; merus less than half the length of

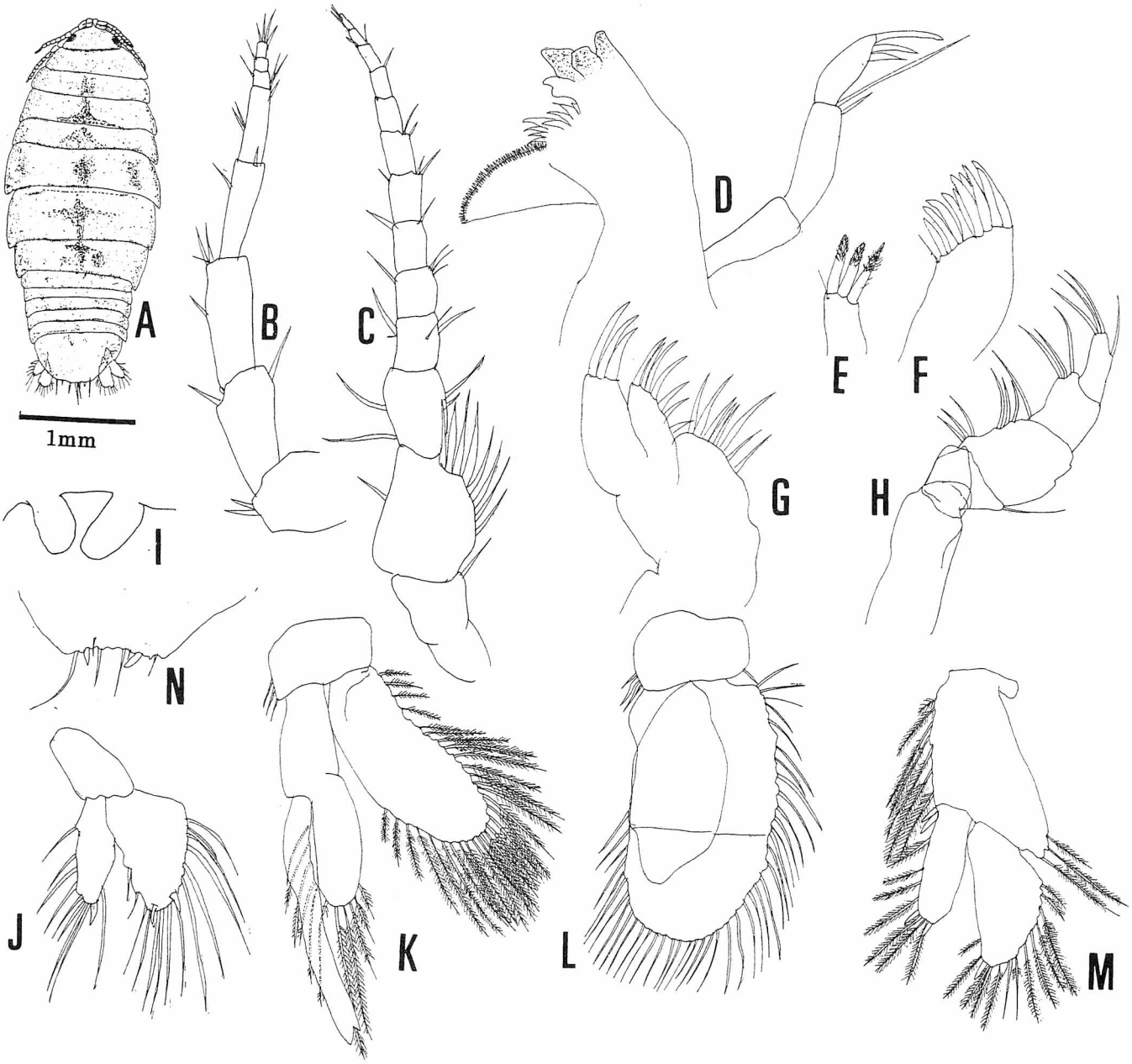

Fig. 2 *Eurydice akiyamai* Nunomura, 1981

A: Dorsal view; B: Antennule; C: Antenna; D: Right mandible; E: Inner lobe of maxillula; F: Outer lobe of the same; G: Maxilla; H: Maxilliped; I: Penes; J: Pleopod 1; K: Pleopod 2; L: Pleopod 3; M: Uropod; N: Posterior margin of Pleotelson (All: Male).

ischium, with 3 stout setae 6 stout setae on inner margin and a stout and 6-9 long setae at outer distal area; carpus triangular, with 4 stout setae on inner margin, and 2 stout setae at outer distal area; propodus with a serrated seta and 2 setae on inner margin.

Pereopod 4 (Fig. 3D): basis rather stout, with 2 setae at inner distal angle and 2 relatively long seta on lateral margin; ischium 0.8 times as long as basis, with 2 groups of 2 stout setae and 3 groups of 2 to 4 setae on inner margin, and 5 long and 2 stout setae at outer distal angle; merus 1/3 as long as basis, with s stout setae at the middle part of inner margin and 8 stout setae on distal margin; carpus 1.3 times longer than merus, with a big stout seta at inner distal angle and 3-4 stout setae at outer distal angle; propodus narrow; dactylus short.

Pereopod 5 (Fig. 3E): basis 2.4 times as long as wide, with 3-5 setae on inner margin and 2 plumose and a setae

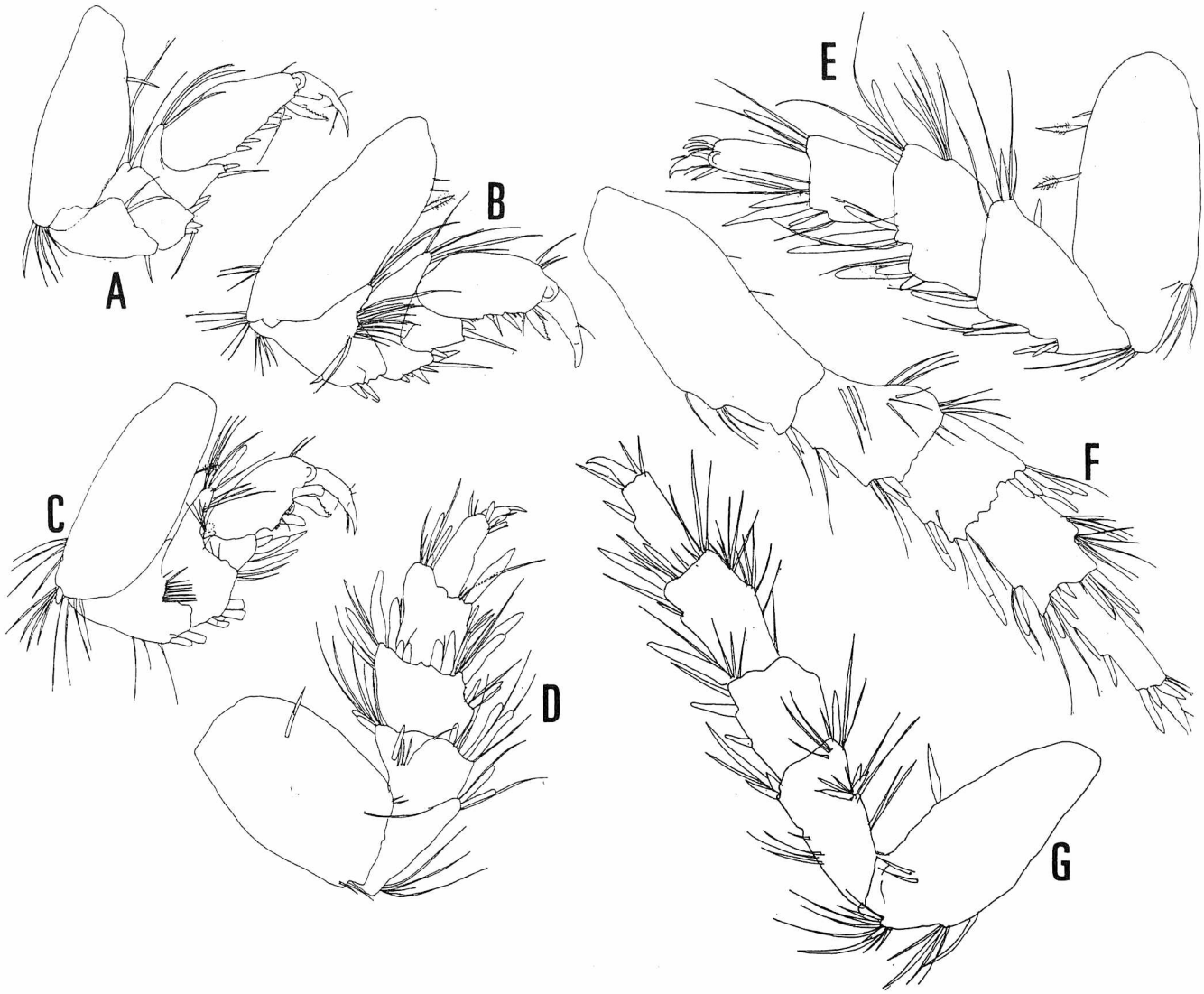

Fig. 3 ***Eurydice akiyamai*** **Nunomura, 1981**
A-G: Pereopods 1-7 (All: Male).

on outer margin; ischium 55% as long as basis, with 2 groups of 2 stout setae, a few of simple setae on inner margin, and a stout seta and 2 long setae at outer distal angle; merus almost square, with 5 stout setae on inner margin, and 3 stouter and 2 longer setae on outer margin; carpus square, with 2 groups of 2 stout setae on inner margin and 3-4 setae on outer distal margin; propodus rectangular, with 3-5 setae on distal margin; dactylus small.

Pereopod 6 (Fig. 3F): basis 2.5 times as long as wide, with 4 setae on inner margin and 2 setae on outer margin; ischium 45% as long as basis, with 4 stout setae, a few of simple setae and 3-4 long setae on inner margin and 6-7 setae at outer distal angle; merus 0.7 times as long as ischium, with 2 stout setae on inner margin, a long seta at inner distal angle, 5 stout setae at outer distal angle, distal margin sinuate; carpus as long as ischium, with 2 stout setae on inner margin, and 6-7 stout setae and several longer setae on distal margin; propodus 1.2 times longer than carpus, with a stout seta on inner margin and 3 stout setae on distal margin.

Pereopod 7 (Fig. 3G): basis 2.4 times as long as wide, with 2 groups of 5-8 setae on inner margin; ischium half the length of basis, with 4 stout setae at inner distal angle, 2 groups of several setae including some stout ones on outer margin; merus 33% as long as basis, with 4 stout setae on inner margin; carpus a little longer than merus, with 8-9 setae on distal margin and 10 setae on outer margin; propodus as long as merus.

Penes (Fig. 2I) relatively short.

Pleopod 1 (Fig. 2J): endopod lanceolate, with a stout and 9 normal setae; exopod with 2-3 stout and 16-17 normal

setae.

Pleopod 2 (Fig. 2K): endopod rectangular; stylus stout and whose tip bifid; exopod with 31-32 setae.

Pleopod 3 (Fig. 2L): endopod lanceolate; exopod wide.

Uropod (Fig. 2M); basis rather short; endopod trapezoidal in shape.

The following environmental conditions were measured by the junior author and his colleagues. Environment of the present was measured at 12:50 Apr. 22, 2005 by the junior wither.

Habitat: Flow velocity:11.0-14.0cm/s
Wetted width: 1.0-2.5 m
Depth 2.5-5.5 cm
River width 1-2-3 m; Depth 5-10 cm,
Bottom sediment is sand mingled with gravel
EC 60.4 mS/m (at high tide, 9:12 Apr. 22, 2005)
EC 37.4 mS/m (at the time between high tide and low tide)

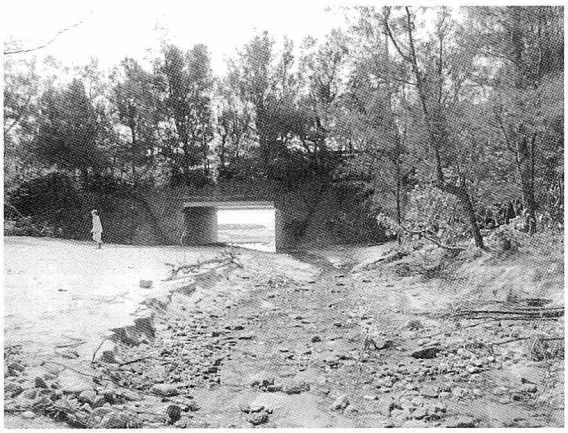

Fig. 4 An aspect of the sampling site.

Remarks: The specimens from Nago agree with the original description, but the present specimens are different in the following features: (1) shape of body, especially of wider pleonal somites, (2) longer and numerous setae on pereopods, especially on peropod 7, (3) shorter teeth of maxillula and (4) presence of shape shallower concavities on pleotelson.

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