豊橋市自然史博研報　Sci. Rep. Toyohashi Mus. Nat. Hist., No. 6, 1-4, 1996

Two species of decapod crustaceans from the Middle Pleistocene Atsumi Group, Japan

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中部更新統渥美層群より産した２種の十脚甲殻類

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(Abstract)

"Neocallichirus" grandis sp. nov. (Callianassidae) and *Leucosia haematosticta* Adams and White (Leucosiidae) are described and figured from the Atsumi Group (Middle Pleistocene) of Aichi Prefecture, central Japan. *Leucosia haematosticta* extends its stratigraphic range to the Middle Pleistocene age.

Introduction

Karasawa and Tanaka (1994) recorded thirteen species in ten genera of fossil decapod crustaceans from the Takamatsu Silty Sandstone, Toyohashi Formation, Atsumi Group (Middle Pleistocene) in Takamatsu, Akabane-cho, Aichi Prefecture. The purpose of this paper is to describe a new species of a callianassid and *Leucosia haematosticta* Adams and White (Leucosiidae) from the Atsumi Group, based on newly obtained materials.

All the described specimens are housed in the Toyohashi Museum of Natural History.

Systematic descriptions

Family Callianassidae Dana, 1852
Genus *Neocallichirus* Sakai, 1988

"Neocallichirus" grandis sp. nov.

(Figs. **1**, 1a-8)

Callianassa sp., Kato and Koizumi, 1992, p. 49, fig. 3-3.
Calliax sp., Karasawa and Tanaka, 1994, p. 12, figs. 2-1-12.
Neocallichirus sp., Karasawa, Nohara and Shimoji 1995, in press.

Materials : TMNH02502 (holotype), 02503-02509 (paratypes).

Type locality : Takamatsu, Akabane-cho, Aichi Prefecture. Takamatsu Silty Sandstone, Toyohashi Formation, Atsumi Group (Middle Pleistocene, 0.44 ± 0.18 Ma by ESR-dating, Shimamoto et al., 1994).

Diagnosis : Large sized chelipeds. Chelipeds unequal, dissimilar. Dactylus of major cheliped with large, molariform basal tooth on occuldent margin ; fixed finger acutely triangular in lateral view, occuldent margin with large, broadly triangular tooth on proximal third ; palm slightly longer than

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Manuscript received Jan. 10, 1996.
原稿受付　1996 年 1 月 10 日
Key words : Crustacea, Decapoda, Callianassidae, Leucosiidae, Atsumi Group, Middle Pleistocene, Japan.
キーワード：甲殻門, 十脚目, スナモグリ科, コブシガニ科, 渥美層群, 中期更新世, 日本.

dactylus without ventral dentitions, distal margin serrated medially ; carpus slightly shorter than palm ; merus with convex, dentate ventral margin, lacking meral hook ; ischium as long as merus, ventral margin dentate. Propodus of minor cheliped 1/2 times longer than high ; fingers slender, longer than palm ; carpus slightly shorter than palm ; merus long, about 1.4 times as long as carpus, lacking ventral spine.

Etymology : From the Latin, *grandis*, meaning large.

Description : Chelipeds large in size, unequal, dissimilar.

Dactylus of major cheliped curved ventrally ; tip acutely pointed, hooking over mesial surface of fixed finger ; occuldent margin bearing large, molariform basal tooth, deep notch about midlength, and serrated edge on distal half ; ventrolateral surface with 5-6 setal pits, dorsal surface with 6-8 setal pits, mesial surface with 3 setal pits. Fixed finger about 3/4 times as long as dactylus, acutely triangular in lateral view, pitted on lateral and mesial surfaces, and ventral margin ; cutting edge bearing large, broadly triangular tooth on proximal third and serrated on distal half. Palm rectangular in lateral view, slightly longer than high, slightly longer than dactylus ; dorsal and ventral margins with setal pits ; distal margin convex, serrated medially. Carpus subrectangular in lateral view, slightly higher than long, slightly shorter than palm, tapering proximally, with setal pits on dorsal and ventral margins. Merus much narrower than but as long as carpus, tapering distally ; ventral margin convex, dentate, lacking ventral hook. Ischium as long as merus, ventral margin dentate.

Propodus of minor cheliped about 3/4 times as long as that of major cheliped, 1/2 times longer than high. Dactylus slender, ovate in cross section, curved ventrally ; tip acutely pointed, hooking over mesial surface of fixed finger ; cutting edge finely dentate ; number of setal pits 8-9 on ventrolateral surface, 8-9 on dorsal, and 3-6 on dorsomesial. Dactylus acutely triangular in lateral view, pitted on lateral surface, with finely serrated cutting edge. Palm slightly shorter than dactylus. Carpus slightly shorter than palm, tapering proximally. Merus about 1.4 times as long as carpus, about two times longer than high, lacking ventral spine. Ischium as long as merus.

Discussion : The present species was assigned to *Callianassa* Leach, 1814 by Kato and Koizumi (1992) and to *Calliax* de Saint Laurent, 1973 by Karasawa and Tanaka (1994). Although the generic assignment of this species is uncertain, Karasawa, Nohara and Shimoji (1995) removed it to *Neocallichirus* Sakai, 1988 by having unequal, dissimilar chelipeds without a meral hook.

Neocallichirus indicus (de Man, 1905), a recent Japanese species, is only recorded from Tonaki Island, Ryukyu Islands (Sakai, 1987, 1988). This new species differs from *N. indicus* by having large sized major cheliped with a short carpus and with a large tooth on the cutting edge of the fixed finger, and without a dentate ventral margin of the palm. The major cheliped with a short carpus and an acutely triangular fixed finger, and without a meral hook readily distinguishes *N. grandis* from two common Japanese species, *Trypaea japonica* (Ortmann, 1891) and *Trypaea petalura* (Stimpson, 1860).

The species is abundant in the Takamatsu Silty Sandstone, associated with *Ophiomorphalike* burrows. It is also known from the Upper Pleistocene Shimosueyoshi Formation (Kato and Koizumi, 1992) and the Pleistocene Ryukyu Group (Karasawa *et al.*, 1995). Their remains are found in the Seto Island Sea, off Hakatajima, Hakata-cho, Ehime Prefecture.

Family Leucosiidae Samouelle, 1819
Genus *Leucosia* Weber, 1795

Leucosia haematosticta Adams and White, 1848

(Figs. **2,** a-c)

Leucosia haematosticta Adams and White, 1848, p. 54, pl. 12, fig. 12.

Material : TMNH02510.

Remarks : The specimen agrees with the living *L. haematosticta* from the Indo West-Pacific, but the thoracic sinus has small granules above the chelipeds. Only three other species of *Leucosia* have been recorded from the Japanese Pleistocene deposits : *Leucosia anatum* (Herbst, 1793) (Karasawa and Tanaka, 1994), *Leucosia takamii* Karasawa, 1993 and *Leucosia* sp. (Karasawa, 1993). *L. anatum*

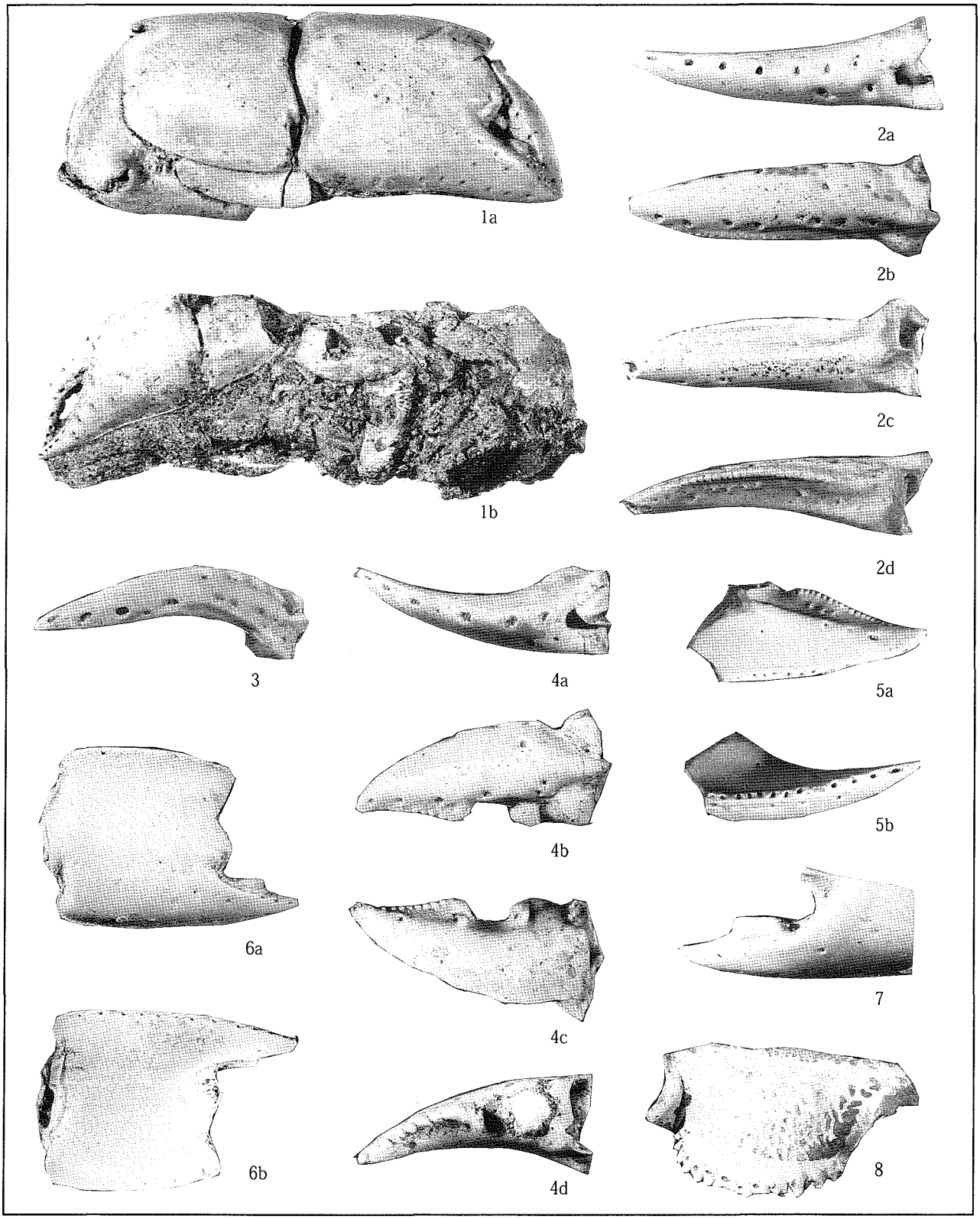

Fig. 1. *"Neocallichirus" grandis* sp. nov. 1a, b. TMNH02502 (Holotype), × 1.5, a, lateral view of major cheliped ; b, lateral view of minor cheliped. 2a-d. TMNH02503 (Paratype), × 2.5, dactylus of minor cheliped, a, dorsal ; b, lateral ; c, mesial ; d, ventral view. 3. TMNH02504 (Paratype), × 2.5, dactylus of minor cheliped, lateral view. 4 a-d. TMNH02505 (Paratype, × 2.5, dactylus of major cheliped, a, dorsal ; b, lateral ; c, mesial ; d, ventral view. 5 a, b. TMNH02506 (Paratype) , × 2.5, fixed finger of minor cheliped, a, mesial ; b, ventral view. 6a, b. TMNH02507 (Paratype), × 2.5, propodus of major cheliped, a, lateral ; b, mesial view. 7. TMNH02508 (Paratype), × 2.5, fixed finger of major cheliped, lateral view. 8. TMNH02509 (Paratype), × 2.5, merus of major cheliped, mesial view.

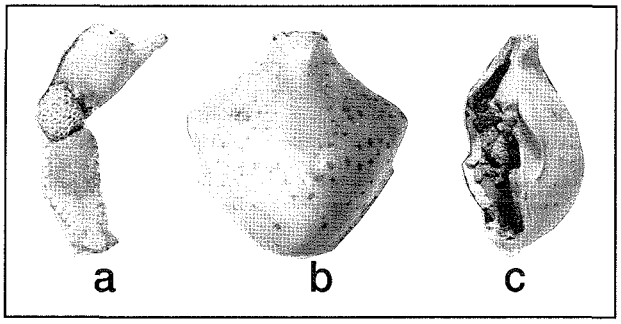

Fig. 2. *Leucosia haematosticta* Adams and White, TMNH 02510, × 2.0, a, mesial view of left cheliped ; b, dorsal view of carapace ; c, lateral view of carapace.

is the extant species and *L. takamii* is only known from the Kakegawa Group (Upper Pliocene-Lower Pleistocene) in Shizuoka Prefecture.

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（要　旨）

柄沢宏明・合田隆久：中部更新統渥美層群より産した２種の十脚甲殻類.

愛知県赤羽根町高松海岸に分布する中部更新統渥美層群豊橋層高松部層より産した２種の十脚甲殻類化石を記載する．スナモグリ科の *"Neocallichirus" grandis* を新種として記載した．この種は，同地の高松部層を特徴づける種である．*Leucosia haematosticta* の産出は，この種の生存期間が中期更新世まで遡ることを示す.