J. Nat. Hist. Mus. Inst., Chiba Vol. 5 No. 1: 29–34, March 1998

Discovery of *Euthalenessa festiva* (Grube) (Polychaeta: Sigalionidae) from Katsuura, Boso Peninsula, Central Japan

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Abstract *Euthalenessa festiva* (Grube) (Polychaeta: Sigalionidae) is recorded based on two immature specimens from the subtidal sandy bottom of Katsuura, Pacific side of Boso Peninsula, central Japan. This species is characterized by the colorless body, transparent elytra with brown pigments, the elytral fringe with 5 to 7 branched papillae, and an undeveloped neuropodial ligule.

Key words: Sigalionidae, Polychaeta, *Euthalenessa festiva*, Katsuura, Boso Peninsula.

Sigalionid polychaetes from Japan and its adjacent areas have been studied only by Imajima and Hartman (1964) and Uchida (1988). The genus *Euthalenessa* contains 8 species, of which only *E. festiva* (Grube) was reported from the temperate region around Japan under the various names, e.g. *Sigalion oculatum* Peters and *Thalenessa oculata* McIntosh. The genus was revised by Pettibone (1970), but only 4 specimens of the *E. festiva* collected by the Albatross Expedition were available to her. I was able to examine some sigalionid specimens of *Sigalion* sp. and *Euthalenessa festiva* (Grube) captured from subtidal sandy bottom around *Thalassia* beds of Katsuura. The body lengths of the species examined were considerably smaller than those previously recorded, and some morphological characters represented the minor differences from the specimens described by Pettibone (1970). This might be due to geographical variation or immature specimens. They are here described and illustrated in detail.

Materials and Methods

Materials were collected from subtidal sandy bottom at Katsuura, Boso Peninsula, Chiba Prefecture, on May 15, 1996. Near the Katsuura Kaichu-Koen Center, among seagrass *Thalassia* beds, sandy bottoms were dug gently, then sieved with 0.5 mm mesh to collect the worms; all the worms were fixed in the 10% neutralized formaldehyde, then preserved in 70% ethanol. All specimens are deposited in the Natural History Museum and Institute, Chiba (CBM-ZW). Some parapodia were cut with scissors and transferred to 90% to 100% alcohol, then air-dried, coated with paradium and Pt, then viewed with a scanning electron microscope (Hitachi S-800) for observation and identification.

Family Sigalionidae
Genus *Euthalenessa* Darboux
Euthalenessa festiva (Grube, 1875)

Figs. 1–3

Leanira festiva Grube, 1875, p. 78.
Thalenessa oculata McIntosh, 1885, p. 142, pl. 21; Izuka, 1912, p. 86, pl. 10, figs. 11–12 (Misaki, Miura Peninsula).
Euthalenessa oculata. Okuda, 1939, p. 226 (Izu Peninsula).
Euthalenessa festiva. Pettibone, 1970, p. 12–19, figs. 6–11.
See Pettibone, 1970, for full synonymies.

Materials examined. CBM-ZW 800 (one worm separated into two parts and elytra separated from the body) and -ZW 801 (complete without some elytra), Katsuura, Boso Peninsula, Chiba Prefecture, subtidal sandy bottom, May 15, 1996, leg. Nishi, by hand with scuba gear.

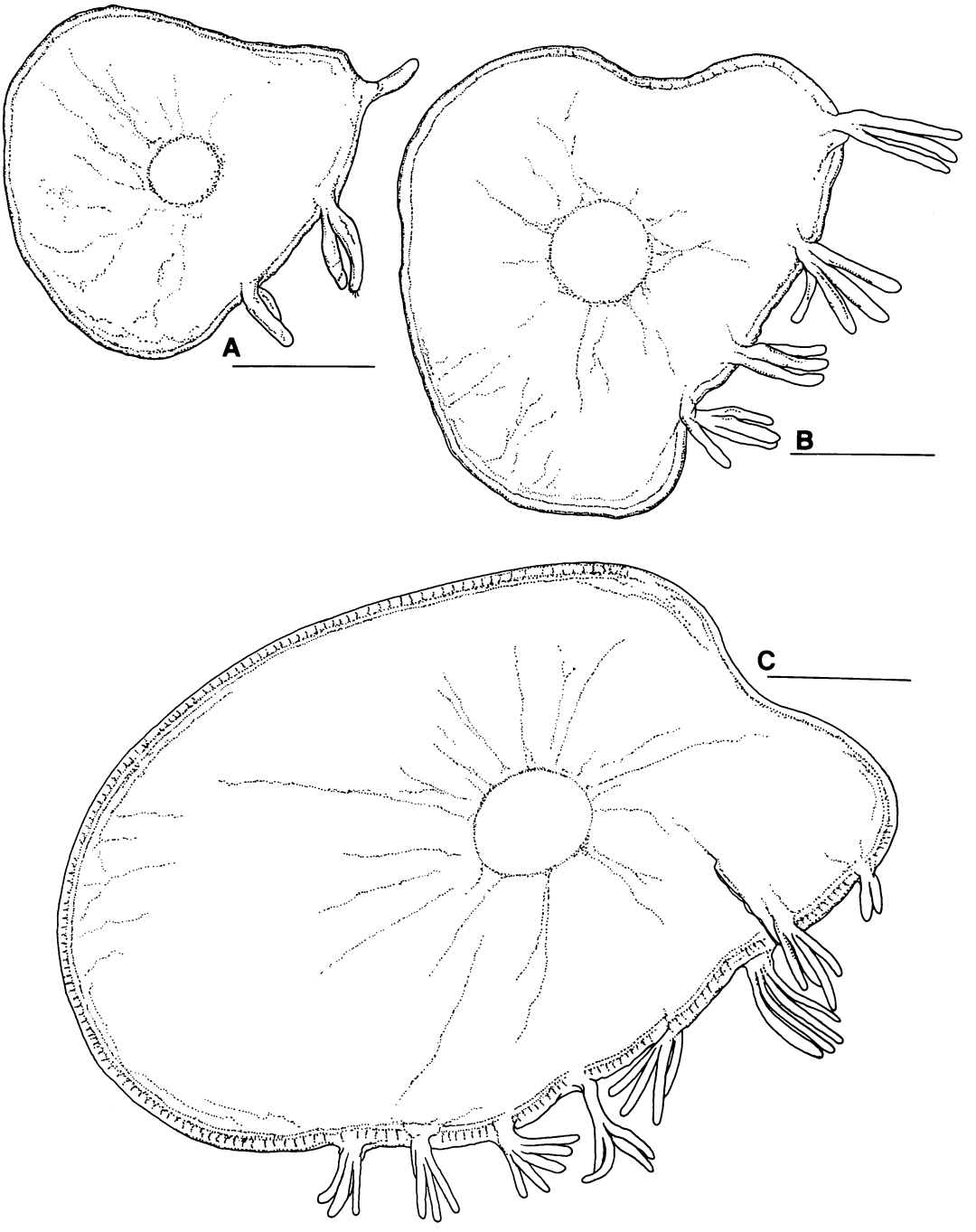

Fig. 1. *Euthalenessa festiva* (CBM-ZW 800). A, right second elytron; B, right third elytron; C, right 10th elytron. Scales show 0.2 mm.

Description. The body has a length about 12 mm, width including chaetae, 2–3 mm, with numerous segments (40 in -ZW 800, 38 in -ZW 801). The body is without pigmentation. The elytra of middle and posterior segments show mottled pigmentation in the form of brown areolate, with greater concentration on the anterior inner borders (Fig. 1C), elytra of anterior segments lack any colors (Fig. 1A, B). The elytra change in size

and shape. At first, they are small and oval or pear-shaped, then larger and subtriangular or heart-shaped (Fig. 1A-C). The 1st pair of elytra lack papillae. The anterior elytra have fringes of papillae extending along most of their lateral borders, with 5 to 10 papillae; more posteriorly, the papillae are confined to the anterior halves of the lateral elytral borders, with about 10 papillae. Most of the papillae are irregularly palmately or dichotomously branched, with 2 to 10 filaments per papilla.

The pharynx was not fully extended on two specimens. The fused prostomium and tentacular segments are withdrawn within the anterior few setigers (Fig. 2A). The 2 pairs of eyes are large, closely approximated, located on more or less inflated, raised ocular areas, the anterior pair being larger than the posterior pair; the posterior two-thirds of the prostomium is covered dorsally by setigers 2–4. The ceratophore of the median antenna extends from a wider median area between the anterior pair of eyes, narrowing slightly more distally where it is fused to the dorsal sides of the fused tentacular parapodia. The ceratophore of the lateral antennae, which are also fused to the dorsal sides of the tentacular parapodia, overreaching the level of the median ceratophore; the 3 free antennal styles are subequal in size, short, and subulate. The long palps extend posteriorly to about setigers 10–12. The dorsal tentacular cirri are short and tapered; the ventral tentacular cirri are about twice as long as the dorsal ones. The inner dorsal tentacular ridges are found on the distal third of the tentacular lobes, with 2 groups of capillary setae emerging laterally from near both ends of ridges; the setae are few in number or may be absent. The bulbous facial tubercle is visible ventrally between the lateral lips and the inner palpal sheath; a pair of small labial ctenidia are found on the lateral lips.

The parapodia of setigers 2–5 are greatly modified, with well-developed bracts (Fig. 2B). The anterior and posterior notopodial bracts encircle the compact bundles of notosetae; the bracts are variously slashed with 2–3 anterior and 1–4 posterior stylodes. The neuropodial bracts are as follows: (1) lower-anterior-ventral bracts, greatly enlarged and flaring; they are longest on setigers 2 and 3, becoming shorter on setigers 4 and 5; (2) upper-anterior bracts, shorter and wider; their lower distal parts form more or less distinct rounded lobes or ligules, which are directed ventrally; (3) lower-posterior bracts, subconical and directed dorsally; and (4) upper posterior bracts formed of digitiform stylodes 6–9 in number. In the following transitional setigers, the lower-anterior and upper-anterior bracts become shorter and rounded, with a notch between them (Fig. 2C). The lower-posterior bracts become shorter and oval; upper-posterior stylodes are fewer in number. By setigers 7–8, the stylodes have disappeared and the posterior bract is continuous. The long slender compound neurosetae of the anterior setigers have multiarticulate blades with 4–6 articles; some of the neurosetae are stouter, their blades shorter with 2 articles; the stems are smooth. The dorsal cirri on setiger 3 are short, subulate.

The branchiae begin on setigers 4–7. The parapodial ctenidia are large, cup-shaped, 3 per parapodium. The parapodia of the anterior segments have small club-shaped notopodia and larger neuropodia (Figs. 2C, 3I). The notopodial bracts have a single posterior and 1–2 anterior stylodes. The notosetae form small bundles; they are slender, spinous, tapering to capillary tips. The neuropodial acicular lobes are enclosed in anterior and posterior bracts. The C-shaped posterior bracts are diagonally truncate and enclose the C-shaped rows of neurosetae. The smaller lower-anterior bracts are truncate and enclose the lower diagonal rows of neurosetae. The larger upper-anterior bracts are rounded, with distinctly rounded lobes or ligules on their lower borders; the ligules are directed ventrally below the tips of the acicular lobes; the upper borders of the bracts curve around the upper diagonal rows of neurosetae. The compound neurosetae are moderately stout; the distal tips of the enlarged stems have few faint to distinct spinous rows; the blades are short to moderately long, the lower ones being 2–3 articled (Fig. 3 C–E). The ventral cirri are slender, tapering, reaching or slightly reaching the level of the distal tips of the neuropodia.

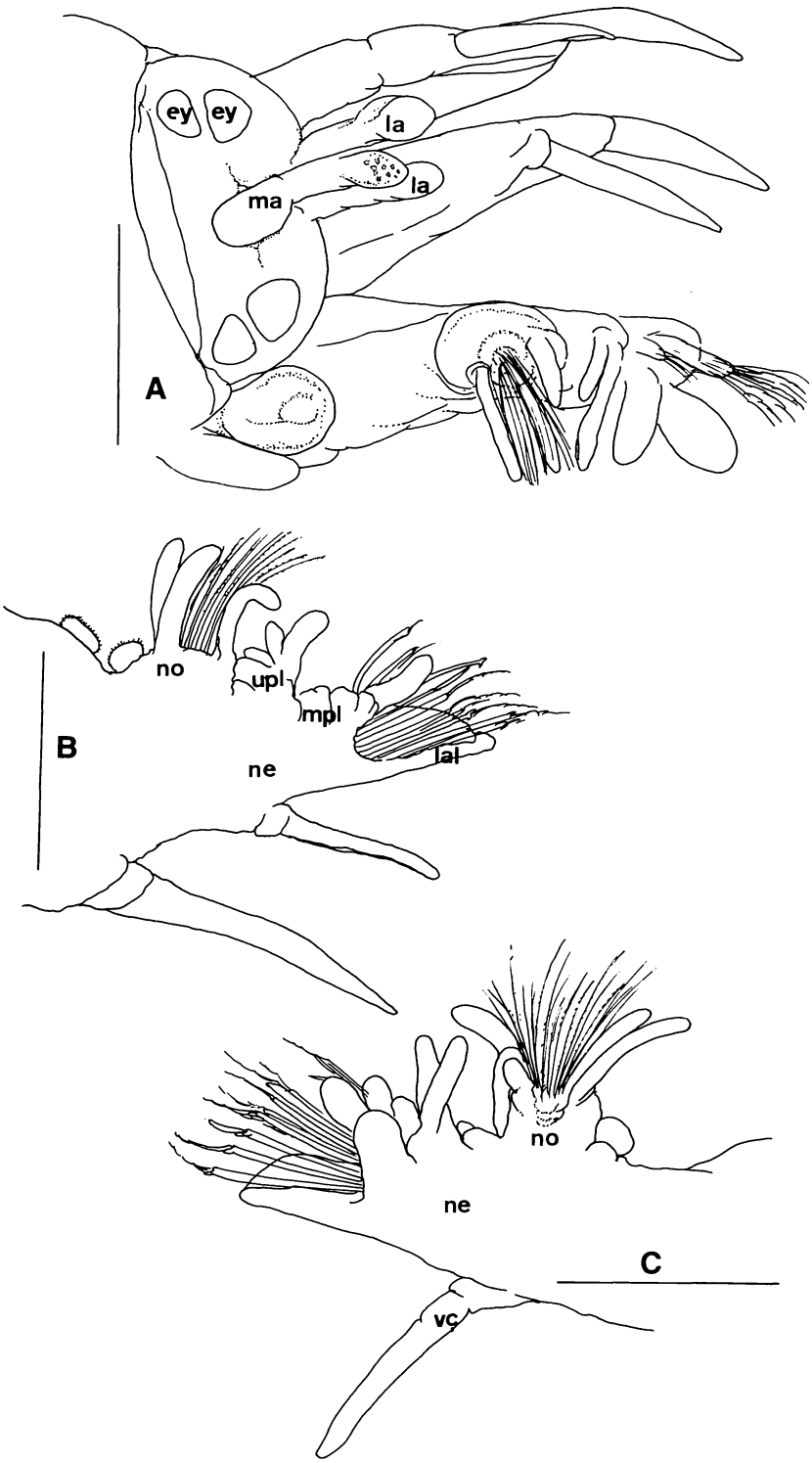

Fig. 2. *Euthalenessa festiva* (CBM-ZW 800). A, anterior end, dorsal view. B, right 3rd parapodium, posterior view; C, right 7th parapodium, anterior view. ey, eye; la, lateral antennae; lal, lower-anterior lobe; ma, median antennae; mpl, middle-posterior lobe; ne, neuropodium; no, notopodium; upl, upper-posterior lobe; vc, ventral cirri. Scales show 0.5 mm.

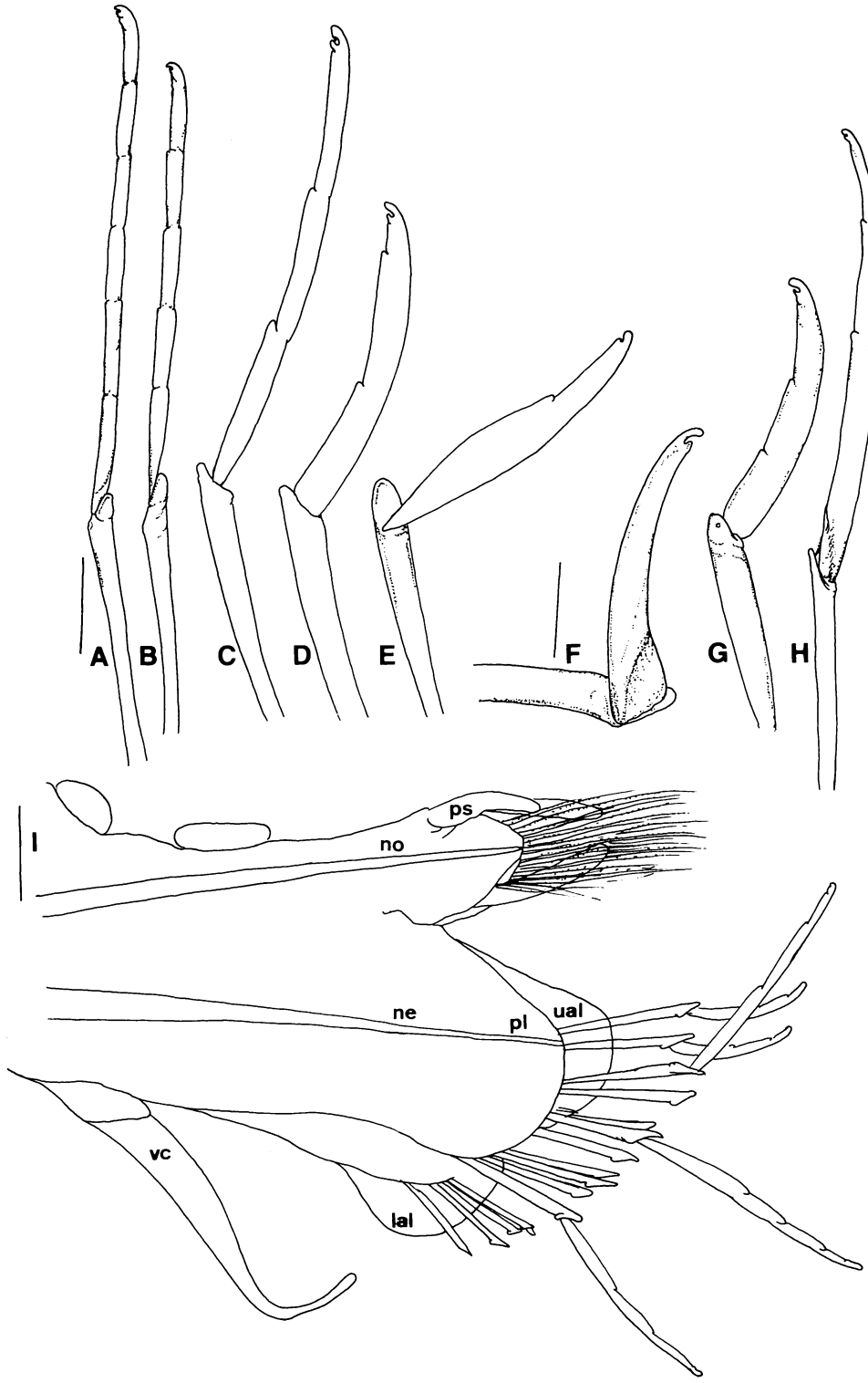

Fig. 3. *Euthalenessa festiva* (CBM-ZW 800). A–B, neurosetae from 2nd parapodium; C–E, neurosetae from 10th parapodium; F–H, neurosetae from 20th parapodium; I, right 20th segment parapodium, posterior view. lal, lower-anterior lobe; ne, neuropodium; no, notopodium; pl, posterior lobe; ps, posterior stylode; ual, upper-anterior lobe; vc, ventral cirri. Scales show 0.02 mm (A–H) and 0.2 mm (I).

The parapodia of the middle and posterior regions of the body are slightly modified (Fig. 3I). The notopodia are similar, having 0–1 posterior and 1–2 anterior stylodes. The neuropodia show more marked changes. The posterior bracts are more elongate and subconical. The upper-anterior bracts are smaller and indistinctly fused with the acicular lobes in the areas where the neurosetae are lacking; this includes their lower ligules, which are directed ventrally below the tips of the acicular lobes. The neurosetae are longer; their stems may have more numerous, distinct spinous rows; the blades are somewhat longer, those of the upper neurosetae have 2–3 articles and the lower more slender ones have 3–5 articles (Fig. 3F–H). The ventral cirri are longer and overreach the level or extend the distal tips of the neuropodia.

Distribution. Type locality, Phillipine (Grube, 1875), also known from various places of Indo-Pacific; Gulf of Iran, Japan, Philippine Islands, Malay Archipelago, New Guinea, Australia, New Zealand, Marshall Islands. Subtidal to 83 meters (Pettibone, 1970).

Remarks. The specimens of *E. festiva* collected from Katsuura, Boso Peninsula, are much smaller (about 12 mm long and 2–3 mm wide including setae) than the specimens from the other localities of Japan (55 mm long and 6.5 mm wide including setae), Sagami Bay, Misaki, Onagawa Bay, and the other Pacific region (up to 90 mm long, 4–6 mm wide including setae) (McIntosh, 1885; Izuka, 1912; Okuda, 1934). The present specimens from Katsuura have a smaller number of papilla on the outer part of elytra (3 to 10; Fig. 1A–C) than those of the other localities (6 to 15 papillae), and the filaments of the papillae are less numerous (2 to 6) than those of the other localities (2 to 9) (Pettibone, 1970). The specimens examined herein are considered as an immature stage on account of having only 38–40 segments and the long palps reaching about the 10th segment, whereas the specimens from the other Pacific areas have over 100 segments and the long palps reaching about the 17th segment.

Acknowledgment

I wish to thank Dr. Hannelore Paxton, McQuire University, for her linguistic corrections on the manuscript, and the staffs of the near-in-built marine laboratory, Natural History Museum and Institute, Chiba, for their help in collecting worms in field.

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(Accepted 28 October 1997)

房総半島勝浦で見つかった カツウラウロコムシ（新称） *Euthalenessa festiva* の記録

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千葉県房総半島勝浦近海の砂泥底からノラリウロコムシ科の多毛類，カツウラウロコムシ（新称）*Euthalenessa festiva* (Grube) の未成熟と思われる 2 個体が採集された．この種は半透明な体に薄い褐色の斑点のある鱗をもち，その鱗の縁には 5–7 個の突起を備え，腹側剛毛束先端の縁部の張り出しが発達しないことで，同属の他種から区別される．