

A New Species of Genus *Ceratocephale* (Polychaeta: Nereididae) from Wakasa Bay, The Sea of Japan

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Abstract A new species of *Ceratocephale* is described from Wakasa Bay, Sea of Japan. Among 10 *Ceratocephale* species ever described world-wide the present species is closest to *C. pacifica* (Hartman, 1960) or *C. pacifica* (*sensu* Hutchings and Reid, 1990) in lacking mid-dorsal papillae in median body region and any falcigers and having double neuropodial cirri from setiger 1 and sesquigomph spinigers. But the present species differs from the latter two in having two pairs of distinct eyespots on the prostomium. While the present species is from the continental shelf area, the latter two are abyssal dwellers. This is the first record of this genus from Northwest Pacific region.

Keywords: Polychaeta, Nereididae, *Ceratocephale*, Taxonomy, Japan.

On examining nereidid polychaetes which were collected by Hayashi and his co-workers from Wakasa Bay located in the central part of the Japanese Main Island, Honshu, in the Sea of Japan (Fig. 1) during the past two decades up to 1991, we found several specimens referable to the genus *Ceratocephale*. Despite repeated reviewing of Nereididae in the Northwest Pacific area (Imajima, 1972; Wu *et al.*, 1985), this genus has never been reported from this area except for the record of *Tylorrhynchus heterochaetus*, which was incorrectly placed in this genus by Izuka (1903).

Through careful comparisons of our specimens with all other described *Ceratocephale* species from other localities, we conclude that our specimens should be new to science.

Ceratocephale wakasaensis sp. nov.

(Fig. 2 a–g)

Materials examined. Six specimens collected from various areas in Wakasa Bay (Fig. 1); holotype (NSMT-Pol. H Pol. H. 450) from 35°55'N, 135°55'E, 127 m deep, July 23, 1990 and one paratype (OMNH–Iv 1810) from 35°47'N, 135°53'E, 89 m deep, July 24, 1990. Collecting dates and sites of remaining 4 specimens as fol-

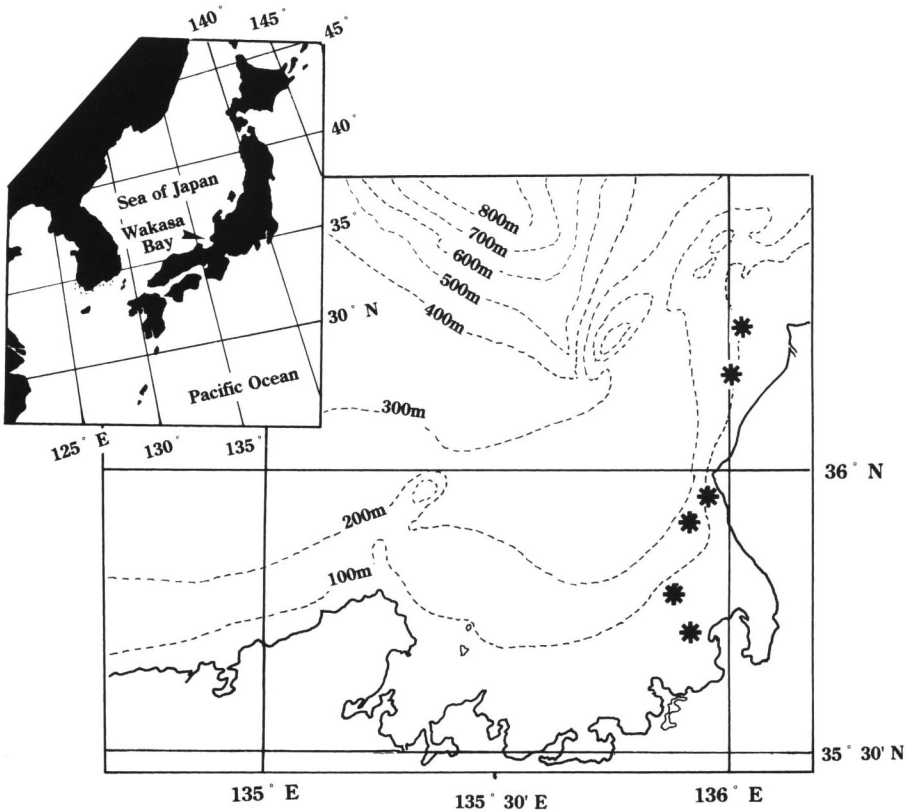


Fig. 1. *Ceratocephale wakasaensis* sp. nov. Location of collecting sites. Asterisks show the sites where the specimens examined in this study were collected.

lows; 35°43'N, 135°55'E, 76 m deep, March 8, 1982 (OMNH-Iv 1811), 36°15'N, 136°02'E, 86 m deep, July 31, 1989 (OMNH-Iv 1812), 35°57'N, 135°57'E, 84 m deep, July 23, 1990 (OMNH-Iv 1813) and 36°10'N, 136°00'E, 99 m deep, July 31, 1989. All specimens anterior fragments only. Both holotype and paratype mature females. Holotype with anterior 42 setigers measuring 10.4 mm in length and 1.5 mm in width including parapodia. Paratype with anterior 36 setigers measuring 9.8 mm in length and 1.4 mm in width including parapodia. Other four specimens with anterior 22 to 56 setigers each measuring 3.2 to 9.1 mm in length and 0.6 to 1.2 mm in width including parapodia.

One specimen without sample number was provided for SEM observation but no clear pictures could be obtained due to serious damage of material during processing.

Description. Holotype partly damaged. Body subcylindrical and creamy white in color without any pigment patterns in preserved condition. Prostomium incised

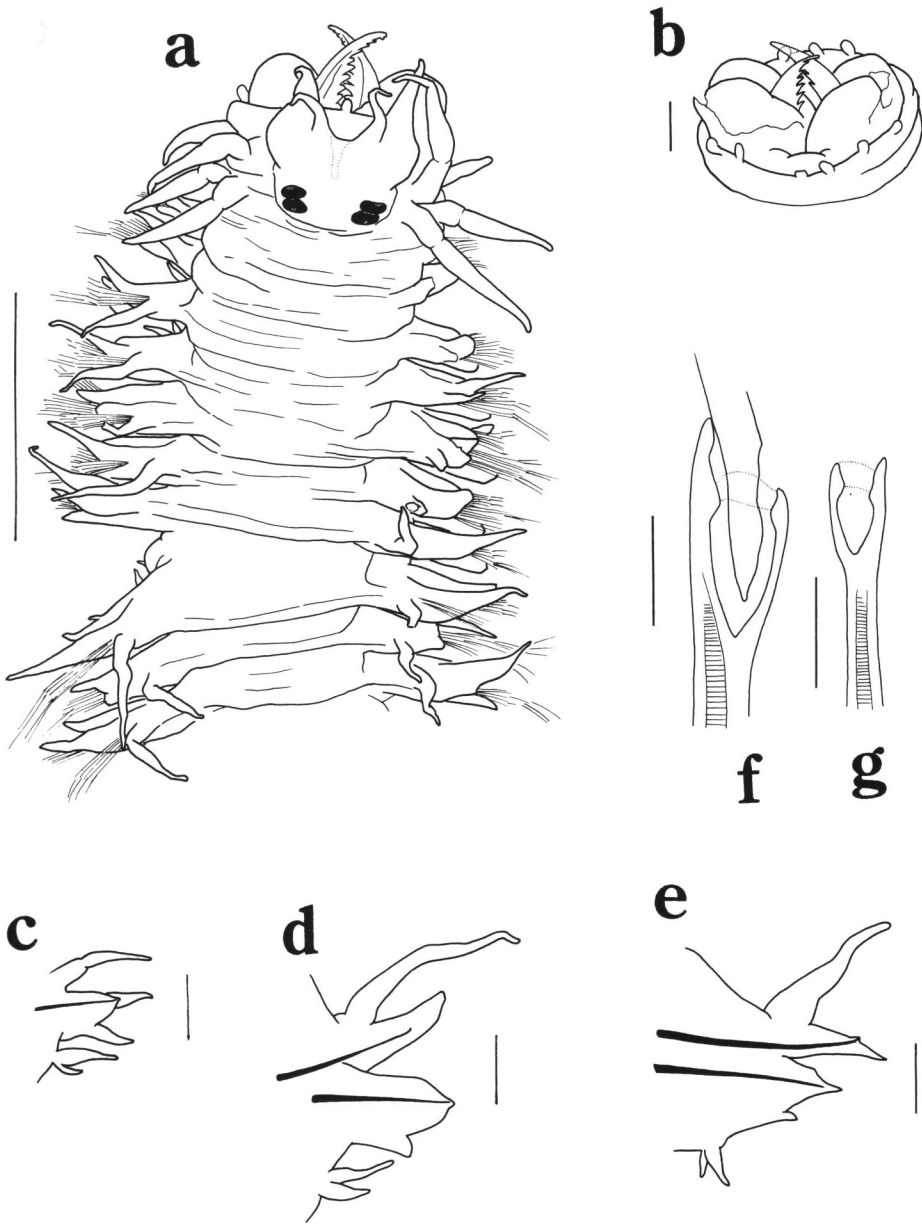


Fig. 2. *Ceratocephale wakasaensis* sp. nov. a; Anterior end of holotype, dorsal view, b; proboscis, ventral view; c; first parapodium of right side, posterior view, d; 13th parapodium of right side, posterior view, e; 23rd parapodium of right side, posterior view, f; sesquigomph spiniger, g; homogomph spiniger. a–b; holotype, c–g; paratype. Bars show 0.5 mm (a), 0.1 mm (b–e) and 10 μ m (f–g), respectively.

and both distal ends bulbous with long, slender palps (Fig. 2 a). A pair of long antennae attached to the inner lateral sides of bulbous distal ends of prostomium (Fig. 2 a). Two pairs of eyes reddish brown and arranged diagonally; anterior pair elliptical and posterior pair almost spherical in shape (Fig. 2 a).

Peristomium narrower than following setigers (Fig. 2 a). Four pairs of tentacular cirri of subequal length and the longest pair extending back to setiger 3. Cirrophores not well developed, less than one-third length of distal cirri.

Pharynx of holotype almost entirely everted with pair of yellowish serrated jaws equipped with 11 teeth each (Fig. 2 a, b). Proboscis with soft conical papillae on oral ring; Areas V=1, VI=1+1, VII+VIII=6 in single row (Fig. 2 b). But one more papilla possibly being located most ventrally in the right side of Area VII or VIII judging from the location of other papillae (Fig. 2 b).

Dorsal ridge visible from setiger 5 without any mid-dorsal papillae. Setigers 1 and 2 uniramous (Fig. 2 c) and following setigers biramous. Dorsal cirri digitiform attached to slightly vascularized cirrophores (Fig. 2 d, e). Ventral cirri branching from setiger 1 (unknown on the left side of the holotype due to partial damage of parapodium). Lower lobe of each branching ventral cirrus occurring as a tiny process in first 2 setigers (Fig. 2 c), then getting longer thereafter reaching maximum in length on around setiger 15 where lower lobes more than two-thirds length of upper lobes (Fig. 2 d). The lower lobes then getting reduced in length but present up to setiger 25 (Fig. 2 e).

Parapodia with dark brown acicula. Notopodial acicula bending upward distally throughout the fragment (Fig. 2 d, e). Presetal notopodial ligules from setiger 3 and getting longer posteriorly up to setiger 10 reaching longer than two-thirds of dorsal cirri, then decreasing in length thereafter; tiny pointed processes on the posterior setigers of fragment. Presetal neuropodial ligules from setiger 1 and developing posteriorly up to setiger 10 showing broad triangular lobes then suddenly reducing to thin pointed processes (Fig. 2 e). Much reduced presetal neuropodial ligules on first 2 setigers in holotype. Neuropodial subpodal ligules present from setiger 1 up to setiger 20 and becoming low conical lobes thereafter (Fig. 2 e).

Homogomph and sesquigomph spinigers present (Fig. 2 f, g). Both spinigers including two types, i.e. one with short distal blade and the other with long distal blade, respectively; the short blade being one-third as short as the proximal shaft while the long one almost as same as the proximal shaft in length. No falcigers found at least in anterior setigers.

The holotype is deposited in the National Science Museum, Tokyo, Japan (NSMT) and the paratype and other 3 specimens labeled with OMNH numbers are placed in the Osaka Museum of Natural History, Osaka, Japan.

Remarks. de Leon-Gonzalez and Gongora-Garza (1992) recognize 10 species of this genus including their one new species (*C. papillata*). Among these 10 species the present species most closely resembles *C. pacifica* (Hartman, 1960) and *C. pacifi-*

ca sensu Hutchings and Reid, 1990 in that all lack mid-dorsal papillae and falcigers in the anterior setigers but have bifid ventral cirri from setiger 1 and sesquigomph spinigers. But the most clear difference between the present species and the latter two is that the former has two pairs of distinct eyespots instead of lacking them. Although the pigmentation of eyespots may be variable among specimens like in *C. andaman* (Hylleberg and Nateewathana, 1988), this does not seem to be the case in *C. wakasaensis*; all specimens examined have distinct eyespots without exception. The localities from which *C. wakasaensis* and other two (*C. pacifica* and *C. pacifica sensu* Hutchings and Reid) were collected are also entirely different; while the former from around 100 m deep in the Sea of Japan, Northwest Pacific (Fig. 1), the latter two from abyssal region deeper than 1000 m deep from either the Bass Strait off Southern Australia or Cortes Basin off southern California, respectively.

We could distinguish only 6 specimens of this species among a bulk of collection obtained from Wakasa Bay during around 20 years. This fact strongly suggests that this species should have been one of the rarest polychaete species occurring in this bay. As quite obvious from Fig. 1, the distribution of this species is also impressive being strictly restricted to around 100 m deep area of the eastern coastal region of the bay. It is still unknown whether there are any other species showing the same distribution pattern as this species in this bay.

Etymology. This species is named for the locality where the holotype was collected.

Distribution. Wakasa Bay, Sea of Japan, Japan.

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