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Title	The Fauna of Akkeshi Bay : XXII. Phoronidea (With 2 text-figures and 1 Plate)
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Citation	Publications from the Akkeshi Marine Biological Station, 5, 2-3
Issue Date	1955-02
Doc URL	https://hdl.handle.net/2115/68002
Type	departmental bulletin paper
File Information	Akkeshi_No05.pdf





No. 5

PUBLICATIONS
FROM
THE AKKESHI MARINE BIOLOGICAL STATION

The Fauna of Akkeshi Bay
XXII. Phoronidea

By
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SAPPORO, JAPAN

The Fauna of Akkeshi Bay

XXII. Phoronidea

By

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(With 2 text-figures and 1 Plate)

Just below the tidal line of Tsukushikoi in the vicinity of the Akkeshi Marine Biological Station, there can be easily found the sheet of large colonies of phoronids in muddy sand. These phoronids agree in general with *Phoronis hippocrepeia* Wright which is widely distributed in North Sea and Mediterranean Sea. The phoronids forming the colonies are lying horizontally, with the oral portion upward, interweaving each other in complicated groups. The tube in which the species dwells is transparent and bears sand granules, small fragments of shells etc. on the wall. The tube is secreted by the animal itself and covers the whole body except the two terminal portions. The body, pale reddish yellow in colour and sometimes attaining 70 mm in length, begins with the lophophore and terminates with a slightly swollen end. The lophophore is provided with about 100-150 tentacles which extend over 3 mm and are arranged in two circlets, the outer one being larger than the inner one.

The spawning season of the species begins from the beginning of July and lasts for a few weeks. In the season most of them are found to bear the eggs in the pouch encircled by the inner circlet of tentacles. The eggs are grouped into two, one on each lateral side of the pouch; they are various in development, some in the process of cleavage and some just before the liberation as free-swimming larvae. The actinotrocha agrees in general with those described in the European species, especially in the episphere and lobes as seen in the figures here given.

Among the colonies of the species one can hardly observable naked-eyed animals of other species, but there are found the following animals of other species near by; the hydroid (*Companularia volubilis*), the actinian (*Anthopleura xanthogrammica*), the nemertean (*Tetrastemma stigmatum*), polychaetes (*Nereis ezoensis*, *Hydroides ezoensis*), crustaceans

(*Cymodoce japonica*, *Caprella* sp., *Orchestia* sp.).

Remarks. The Pacific phoronid seems to be slightly larger in body and more in tentacle number than the European species, but judging

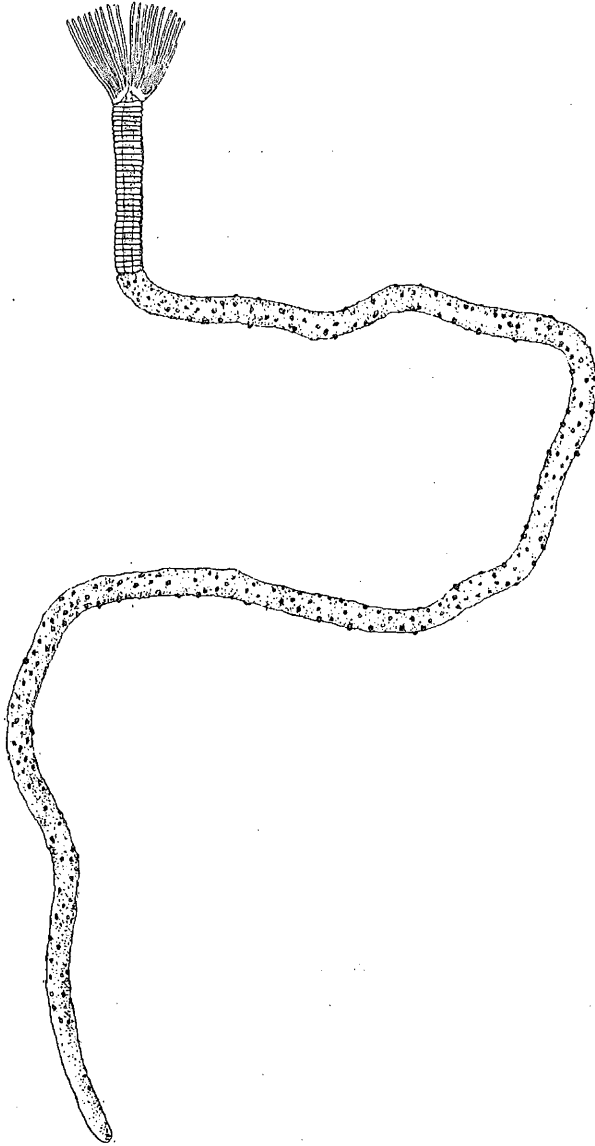


Fig. 1. *Phoronis hippocrepi* Wright, 67 mm in living state, Yamada del. after Okuda's sketch.

from the general resemblance of the form and the larva it seems to be united to the European species, *Phoronis hippocrepi*. In Japan Oka

(1897) reported *Phoronis ijimai* from Misaki. Ikeda (1901) describing the development of the species in detail pointed out that, "I am at present unable to discover points by which *Phoronis australis*, *P. hippocrepia*, and our *Phoronis* can be differently diagnosed." Cori (1937)

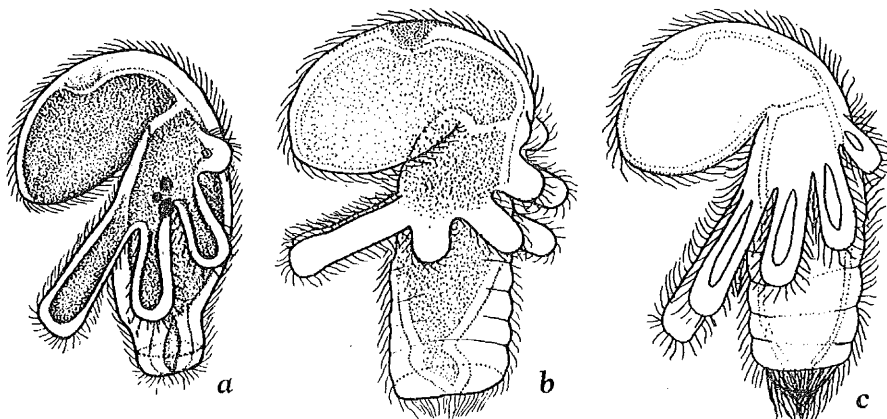


Fig. 2. *Actinotrocha*, a, b, c arranged in developmental stages;
a $\times 150$, b & c $\times 120$.

described in his monograph *Ph. ijimai* as a synonym of *Ph. hippocrepia*. In Europe the latter species is widely distributed both in cold waters of North Sea and in warm waters of Mediterranean Sea. It is also possible in the Pacific it dwells in Akkeshi and also in Misaki.

Literature

- Cori, C. I. 1932. Phoronidea. Die Tierwelt der Nord- und Ostsee, VII. C₂ p. 101-132.
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 Ikeda, I. 1901. Observations on the development, structure and metamorphosis of *Actinotrocha*. Jour. Coll. Sci., Imp. Univ., Tokyo, vol. 13, pt. 4, p. 507-592, pl. 25-30.
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Explanation of Plate I.

- A. Colony of *Phoronis hippocrepia* Wright $\times 6$.
- B. Whole body $\times 6$.
- C. Lophophore in oral view, showing arrangement of tentacles $\times 18$.
- D. Lophophore in side view, carrying eggs and embryos $\times 18$.

