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## Two New Idoteid Isopoda from Otsuchi Bay, Northern Japan\*

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### 岩手県大槌湾から発見されたヘラムシ科等脚目の2新種

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岩手県大槌湾で採集されたヘラムシ科等脚目の次の2新種を記載した。

*Synidotea acuta*, n. sp. トガリワラジヘラムシ (新称)

*Symmius planus*, n. sp. ヒラタヤリボヘラムシ (新称)

このうち、*Synidotea acuta* は、北米アラスカ南岸から知られている *Synidotea laevis* BENEDICT に類似しているが、(1)頭部に突起がないこと、(2)前方の胸節間の隙間のないこと、(3)第2触角の長いこと、(4)腹尾節後端が鋭く尖ることなどによって区別される。

また *Symmius planus* は、わが国沿岸に分布する *Symmius caudatus* と類似するが、(1)体が短いこと、(2)各胸肢が太いこと、(3)体色が黒いことなどによって区別される。

なお、両種とも完模式標本は富山市科学文化センターに保管される。

In both May and August, 1983, I had chances to collect many isopod crustaceans in Otsuchi Bay and its neighbouring water, Iwate Prefecture, Northern Honshu. It happened that Mr. Hiroshi Hoshikawa of the Hokkaido University also carried out sampling of marine animals in the same place in June, 1983, and he was kind enough to place his isopod specimens at my disposal for study. Among these collections, 2 new species of the family Idoteidae have been found and will be described in the present paper. The enumeration of all the isopod species contained in these collections will be made in a paper to be published later.

Before going further, I wish to express my thanks to Professor Saburo Nishimura of the Kyoto University for his kindness in reading manuscript, to Mr. Hiroshi Hoshikawa of the Hokkaido University for his liberality in giving me the chance to study his specimens, Thanks are also due to Professor Masuoki Horikoshi and the scientists and students of the Ocean Research Institute, University of Tokyo for giving me many useful suggestions and helps.

### *Synidotea acuta*, n. sp.

(Jap. name: Togari-waraji-heramushi)

Figs. 1 and 2

*Material examined*: 1 ♂ (23.7 mm in body length), mouth of Otsuchi Bay, coll. Hiroshi

\* Contributions from the Toyama Science Museum, No.35

Hoshikawa, June 15, 1983. Type specimen is deposited at the Toyama Science Museum (TOYA-Cr-2364).

*Description* : Body oblong, about 3.0 times as long as wide. Cephalon rectangular, anterior border straight. Body colour dull yellow with brownish spots on dorsal surface, especially densely pigmented along both marginal parts and medial part.

Eyes big, situated laterally each with about 700 small ocelli. Coxal plate invisible in

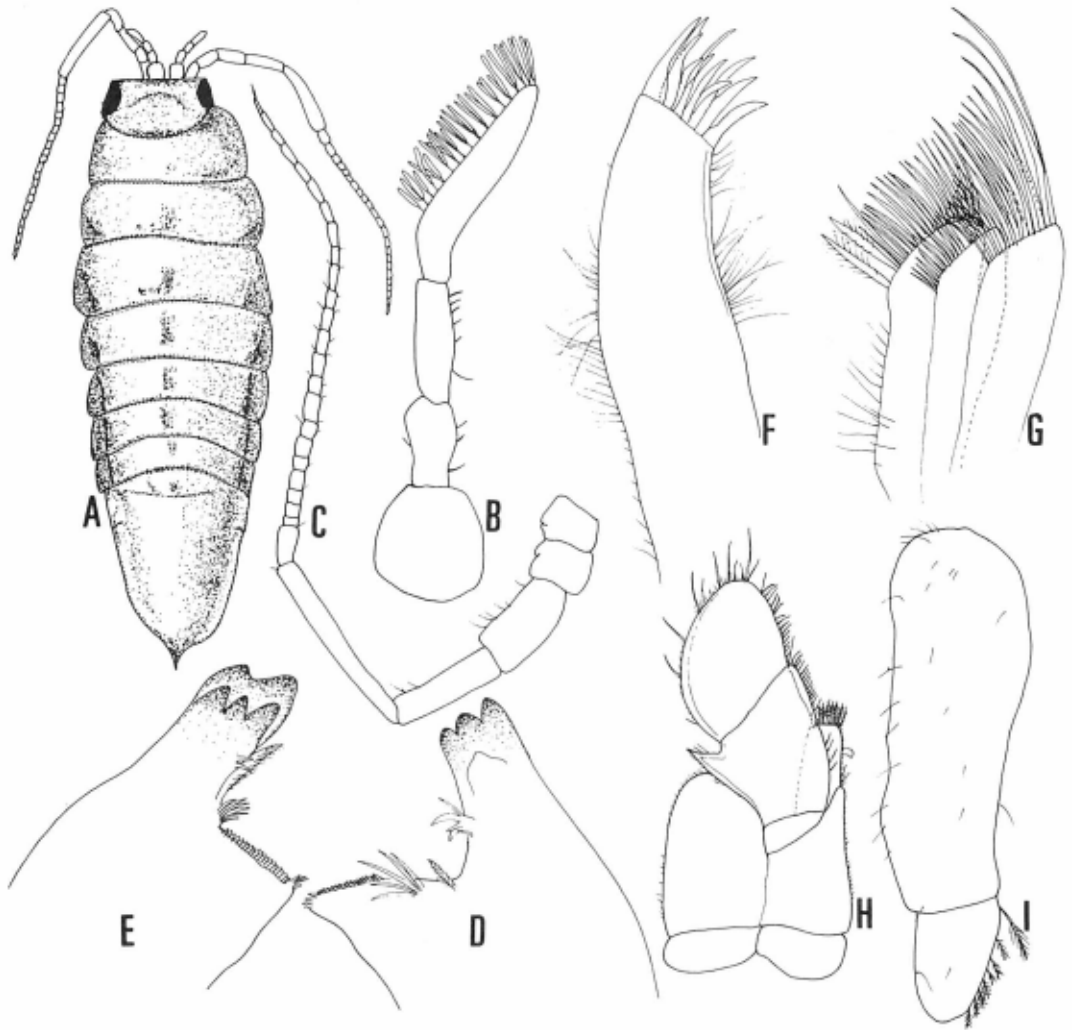


Fig. 1. *Synidotea acuta*, n. sp.

A. Dorsal view ; B. First antenna ; C. Second antenna ; D. Right mandible ; E. Left mandible ; F. Outer lobe of first maxilla ; G. Second maxilla ; H. Maxilliped ; I. Uropod. (All : Holotype male).

dorsal view.

First antenna (Fig. 1 B) composed of 4 segments; first segment large and round; second and third segments rectangular; terminal segment, about twice as long as the third and with 17~18 pairs of aesthetascs on the margin.

Second antenna (Fig. 1 C) long, reaching the fourth peraeonal somite; first and second peduncular segments short, third and fourth segments 3 times as long as the second, fifth segment about 1.5 times as long as wide. Flagellum composed of 23 segments.

Right mandible (Fig. 1 D) stout. Pars incisiva composed of 3 teeth; lacinia mobilis not chitinized; a penicil between lacinia mobilis and processus molaris; processus molaris wide and with a group of setae at distal margin.

Left mandible (Fig. 1 E) stout. Pars incisiva composed of 2 teeth; lacinia mobilis composed of 3 teeth; a penicil between lacinia mobilis and processus molaris; processus molaris wide and with a group of setae at distal margin.

First maxilla (Fig. 1 F). Outer lobe with 10~11 teeth at the tip.

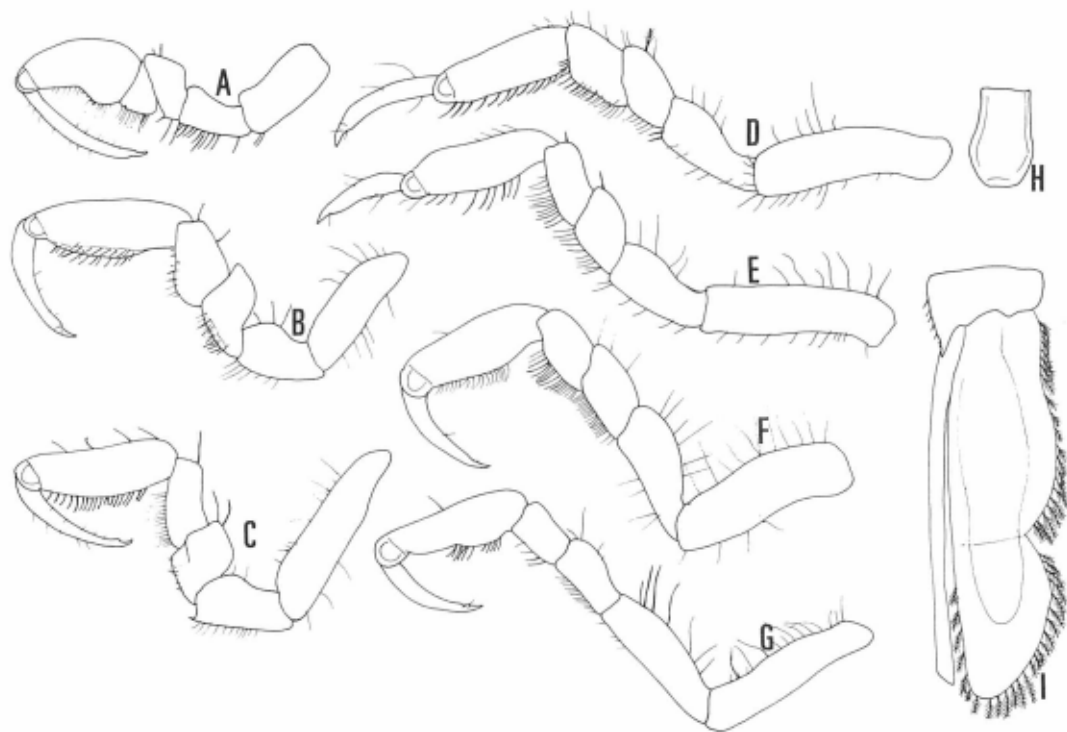


Fig. 2. *Synidotea acuta*, n. sp.

A-G. Peraeopods I-VII; H. Penes; I. Pleopod II in male (All: Holotype male).

Second maxilla (Fig. 1 G). Outer lobes subequal in length and breadth, both having 15~18 long spines; inner lobe as long as outer one, and having 20 spines and 2 stout plumose setae.

Maxilliped (Fig. 1 H). Exopod ellipsoid; endite small with 8 plumose setae on distal margin and a coupling hook in inner margin. Palp wide and 3-segmented; first segment short, second segment rectangular and with an acute projection and deep concavity outer distal part, terminal segment round and fringed with many setae.

Peraeopod I (Fig. 2 A). Basis rectangular but relatively short; ischium as long as basis and with 11 setae on inner margin; merus triangular; carpus triangular with about 10 setae on inner margin; propodus with swollen basal part and narrower distal part; dactylus long.

Peraeopods II-III (Fig. 2 B-C). Basis oblong; ischium rectangular with 6~11 setae on the margin; merus almost square; carpus rectangular with 10~16 setae on the margin; propodus oblong with about 20 setae on the inner margin; dactylus oblong.

Peraeopods IV-VI (Fig. 2 D-F) similar in shape. Basis oblong; ischium three-fifths as long as the basis; merus and carpus subequal in shape and each two-thirds the length of the ischium, with many setae on the margin; propodus twice as long as carpus; dactylus long.

Peraeopod VII (Fig. 2 G) almost similar to the preceding three peraeopods, but ischium of the peraeopod VII longer than that of peraeopod VI.

Penes (Fig. 2 H) almost rectangular.

Male second pleopod (Fig. 2 I). Stylus as long as the endopod.

Endopod of uropod (Fig. 1 I) 2-segmented, terminal segment with about 8 plumose setae on the margin. Pleotelson triangular with a pointed posterior end.

*Remarks:* The present new species is most closely allied to *Synidotea laevis* BENEDICT from Southern Alaska, but the former is separated from the latter in the following features: (1) lack of projection on cephalon, (2) lack of emargination between peraeonal somites; (3) shorter second antenna, (4) acuter posterior end of pleotelson and (5) presence of an acute projection on second palpal segment of maxilliped.

### ***Symmius planus* n. sp.**

(Jap. name: Hirata-yaribo-heramushi, new)

Figs. 3 and 4

*Material examined:* 1 ♀ (paratype, 8.2 mm in body length), Otsuchi Bay, 10 m in depth, coll. Hiroshi Hoshikawa, June 15, 1983; 10 ♂♂ (1 ♂ holotype, 12.3 mm in body length, and 9 ♂♂ paratypes, 8.2~11.6 mm in body length) and 11 ♀♀ (1 ♀ allotype, 12.1 mm in body length and 10 ♀♀, 9.2~12.2 mm in body length) Otsuchi Bay, 4~5 m in depth, coll. Noboru Nunomura *et al.*, Aug. 20, 1983. Type series is deposited as follows: holotype (TOYC-Cr-2378), allotype (TOYA-Cr-2379) and 3 paratypes (TOYA-Cr-2380~2382) at the Toyama Science Museum, 4 paratypes at the Ocean Research Institute of Tokyo University; 4 paratypes (NSMT-Cr-8973) at the National Science Museum, Tokyo, 4 paratypes (OMNH-Ar-2911~2914) at the Osaka Museum of Natural History, and 4 paratypes (YCM-CI-860~863) at the Yokosuka City Museum,

and 5 paratypes at the Ocean Research Institute, University of Tokyo.

*Description* : Body elongate and depressed, about 2.8 times as long as wide, and broadest at third pereaeonal somite. Body colour blackish with many irregular paler patterns on dorsal surface. Pleon with 2 distinct somites. Pleotelson triangular and long, exceeding one-third of body length. Cephalon with lateral parts expanded. Eyes small, each composed of 4 ocelli, and

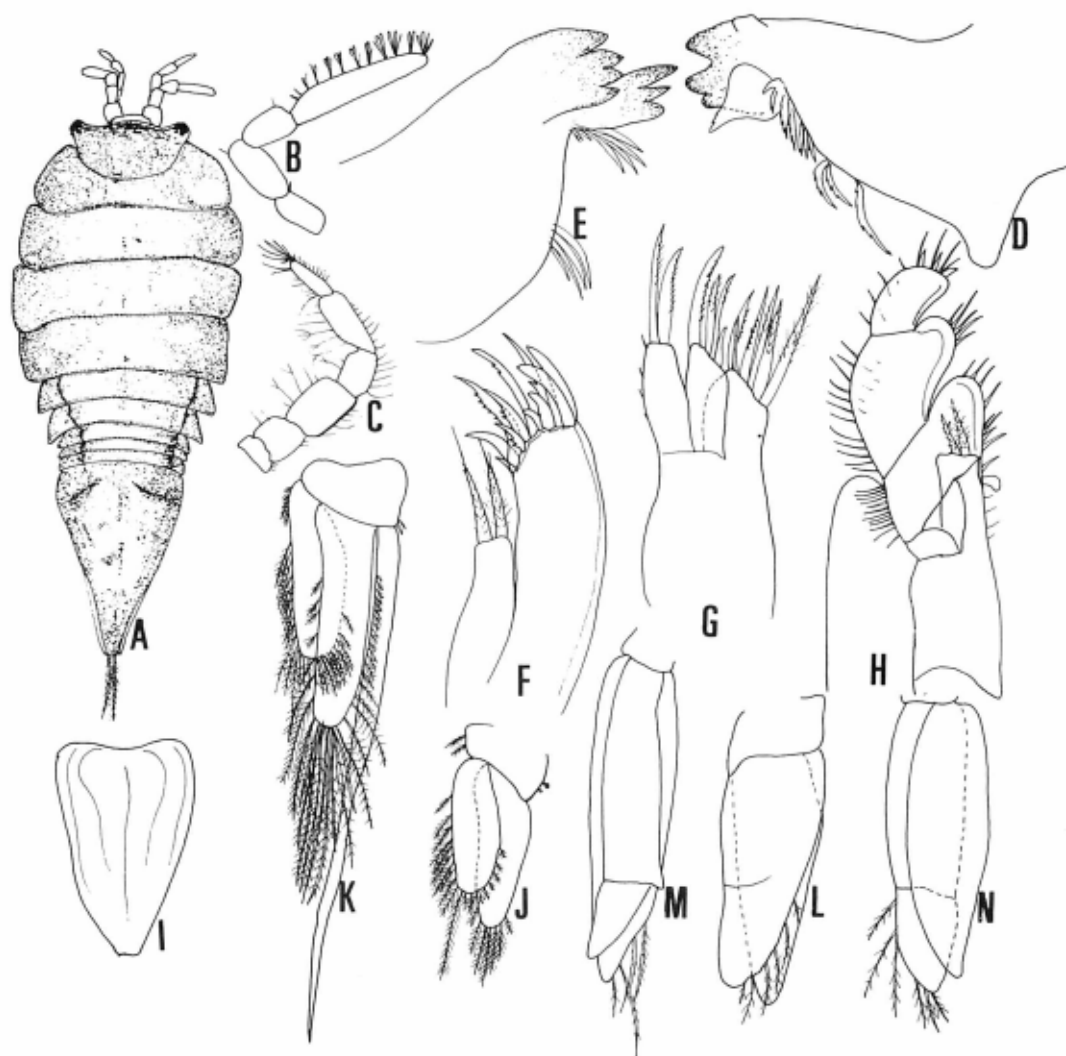


Fig. 3. *Symmus planus*, n. sp.

A. Dorsal view ; B. First antenna ; C. Second antenna ; D. Right mandible ; E. Left mandible ; F. First maxilla ; G. Second maxilla ; H. Maxilliped ; I. Penes ; J-N. Pleopods I-V in male. (A-C, F-H : Holotype male, D-E, I-N. Paratype male).

situated dorso-laterally.

First antenna (Fig. 3 B) composed of 4 segments; first to third segments almost square, fourth segment long and with 12 pairs of aesthetascs on the margin.

Second antenna (Fig. 3 C) almost equal in length to first antenna, and composed of 6 segments; first segment very short, second to fourth segments almost square, fifth and sixth segments rectangular.

Right mandible (Fig. 3 D). Pars incisiva with 4 teeth; lacinia mobilis not chitinized and forms a single laminal plate; 6~7 penicils between lacinia mobilis and processus molaris; processus molaris represented in 3 serrated setae.

Left mandible (Fig. 3 E). Pars incisiva composed of 3 teeth; lacinia mobilis composed of 4 teeth; about 7 penicils behind lacinia mobilis; processus molaris represented in 4 setae.

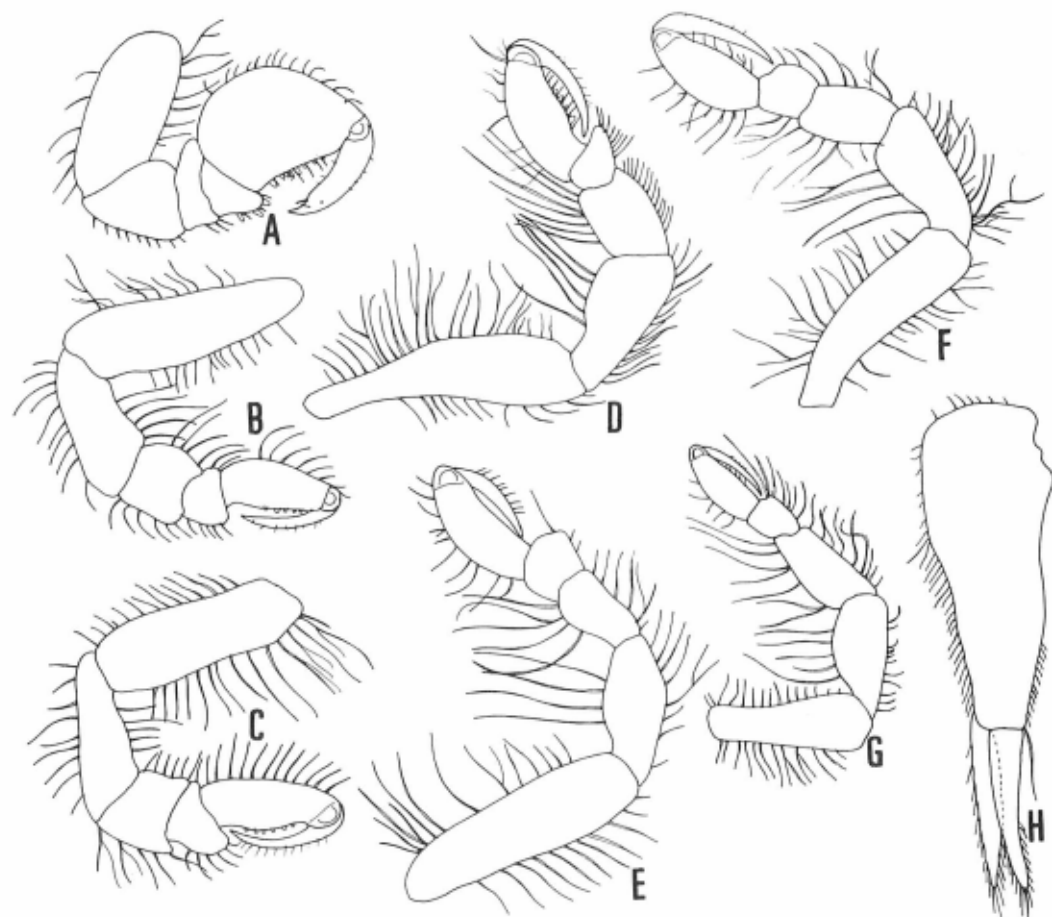


Fig. 4. *Symmus planus*, n. sp.

A-G: Peraeopods I-VII, H. Uropod. (A-G: Holotype male, H: Paratype male)

First maxilla (Fig. 3 F). Outer lobe with 9 setae at the tip, 5 of which is serrated; inner lobe somewhat shorter and narrower than the outer lobe, and with 2 long plumose setae at the tip.

Second maxilla (Fig. 3 G). Outer lobes subequal in length and breadth, with 2 and 4 teeth at the tip respectively; inner lobe shorter and wider than outer ones, having 6 hairy setae.

Maxilliped (Fig. 3 H). Endite elongate with 2 robust hairy setae at the tip and with a coupling hook on inner margin. Palp 5-segmented; first and second segments small, third and fourth segments large and protruded innerwards, terminal segment round. Epipodite ellipsoid, reaching the articulation of the third and fourth segments of palp.

Peraeopod I (Fig. 4 A) subchelate. Basis ellipsoid; ischium triangular; merus short; carpus small, triangular with 3 small protuberences and 3 setae on inner margin; propodus robust with 8 stout setae and several thinner setae on inner margin; dactylus long.

Peraeopods II-IV (Fig. 4 B-D) similar in shape. Basis oblong with many long setae; ischium rectangular; merus and capus almost square; propodus somewhat stout and 5 small projections on inner margin.

Peraeopods V-VI (Fig. 4 E-F) similar in shape. Basis oblong; ischium about half the length of basis; merus two-thirds the length of ischium; carpus three-fifths length of the merus; propodus as long as those of the peraeopod IV.

Peraeopod VII (Fig. 4-G) is similar to the peraeopod VI, but smaller in size.

Penes (Fig. 3 I) short and triangular.

Pleopod I (Fig. 3 J). Endopod ellipsoid with 18~20 plumose setae on the margin, and one of them is often long; exopod longer than the endopod, with 8~9 plumose setae on the margin.

Pleopod II (Fig. 3 K) in male. Stylus long, almost 3 times as long as exopod; basis rectangular with 2 hooks.

Pleopods III-V (Fig. 3 L-N) oblong. Both lami subequal in length and with sparsely setose.

Uropod (Fig. 4 H). Basis long and stout exopod and endopod oblong and similar in shape. Pleotelson triangular, tapering towards the tip, and with 2 long plumose setae at the tip.

*Remarks:* The present new species closely allied to *Symmius caudatus* RICHARDSON but the former differs from the latter in the following features: (1) shorter and wider body, especially of abdomen, (2) robust peraeopods, (3) shape of both antenna, and (5) darker body colour.

The new species and *S. caudatus* were both collected from the same bay; the new species tended, however, to be abundant in the shallower water, while *caudatus* were collected from deeper water.

## References

- BENEDICT, J., 1983. A revision of the genus *Synittothea*. Proc. Acad. Nat. Sci. Philad., 53, part 1: 389-404.
- BRUSCA, R. C. and B. R. WALLERSTEIN, 1979. The marine isopod crustaceans of the Gulf of



- California II. Idoteidae ; new genus and species, range extensions and comments on evolution and taxonomy within the family. Proc. Biol. Soc. Washington, 92 (2) : 253-271.
- COLLINGE, W. E., 1917., A revision of the British Idoteidae, a family of marine Isopoda. Trans. R. Soc. Edinb., 51 : 721-760.
- KUSSAKIN, O. G., 1955. K voprosu o sistematke nektro'ykh vidov *Idothea* Fabr. (Isopoda, Valvifera) dal nevostchnykh morei SSSR. Trud. Zool. Inst. Leningrad 28 : 219-227.
- , 1973 Peculiarities of the geographical and vertical distribution of marine isopods and the problem of dee-sea fauna origin. 23 : 19-34.
- NAYLOR, E., 1955. The comparative morphology and revised taxonomy of British species of Idotea, Jour. Mar. Biol. Ass. U. K. 34 : 407-497.
- RICHARDSON, H. 1904. Contributions to the Natural History of the Isopod. Proc. U. S. Nat. Mus., 27 : 1-113.
- , 1905. Monograph of the Isopod of North America. Bull.U.S.Nat. Mus., 54 : 1-727.
- SHINO, S. M. 1965. New Illustrated Encyclopedia of the Fauna of Japan 2 : 541. Hokuryukan (in Japanese).
- THIELEMANN, M. 1910. Beiträge zur Kenntnis der Isopodenfauna Ostasiens, K. B. Akademie der Wissenschaften, München, Suppl. 2 (3) : 1-110.