ZOOLOGICAL SCIENCE **24**: 287–326 (2007)

[REVIEW]

A Taxonomic Catalogue of Japanese Nemerteans (Phylum Nemertea)

Hiroshi Kajihara*

Department of Natural History Sciences, Faculty of Science, Hokkaido University, Sapporo 060-0810, Japan

A literature-based taxonomic catalogue of the nemertean species (Phylum Nemertea) reported from Japanese waters is provided, listing 19 families, 45 genera, and 120 species as valid. Applications of the following species names to forms previously recorded from Japanese waters are regarded as uncertain: *Amphiporus cervicalis*, *Amphiporus depressus*, *Amphiporus lactifloreus*, *Cephalothrix filiformis*, *Cephalothrix linearis*, *Cerebratulus fuscus*, *Lineus vegetus*, *Lineus bilineatus*, *Lineus gesserensis*, *Lineus grubei*, *Lineus longifissus*, *Lineus mcintoshii*, *Nipponnemertes pulchra*, *Oerstedia venusta*, *Prostoma graecense*, and *Prostoma grande*. The identities of the taxa referred to by the following four nominal species require clarification through future investigations: *Cosmocephala japonica*, *Dicelis rubra*, *Dichilus obscurus*, and *Nareda serpentina*. The nominal species established from Japanese waters are tabulated. In addition, a brief history of taxonomic research on Japanese nemerteans is reviewed.

Key words: checklist, Pacific, classification, ribbon worm, Nemertinea

INTRODUCTION

The phylum Nemertea comprises about 1,200 species (Gibson, 1995). Nemerteans are distributed worldwide, mostly in marine benthic habitats, though some species have adapted to live in pelagic, freshwater, and land habitats. Nemerteans are basically carnivorous, feeding on small crustaceans, polychaetes, and mollusks (McDermott and Roe, 1985). They are distinct from other metazoans by possessing a unique organ, the proboscis, which is housed in a fluid-filled cavity, the rhynchocoel, and eversible when used in prey capture. The phylum is currently regarded as the sister taxon to the Neotrochozoa (comprising the Annelida, Echiura, Mollusca, and Sipuncula) (Jenner, 2004). Morphological characters supporting the close relationship between the Nemertea and Neotrochozoa include: 1) modified coelomic cavities derived by schizocoely (Turbeville, 1986) and lined by mesothelium, with at least some cells bearing rudimentary cilia (Turbeville and Ruppert, 1985; Turbeville, 1991, 2002); 2) a gliointerstitial cell system (Turbeville and Ruppert, 1985; Turbeville, 1991, 2002); and 3) the prototroch, a transitory larval structure consisting of a preblastoporal belt of specialized cells derived from the trochoblast cell lineage (Maslakova *et al*., 2004a, b).

Despite considerable efforts by previous researchers, a number of undescribed nemerteans remain in Japanese waters, especially those in the southwestern part (Kajihara, 2001). The only recent listing of previously described Japanese species is the checklist of Crandall *et al*. (2002), but the relevant literature is scattered. The present catalogue, identifying 19 families, 45 genera, and 120 species so far reported from Japanese waters as valid, has been compiled to integrate this scattered nemertean literature and to point out taxonomic issues to be resolved for the species already described, in order to offer a perspective for future studies.

Generally, the ideal situation for taxonomic studies is that name-bearing type specimens for every nominal species are extant and available. The present study revealed, however, that type specimens are either unavailable or unlocated for 45 out of 101 nominal species established from Japanese waters (Tables 1, 2).

While modern nemertean taxonomy depends upon the examination of internal structures from serially sectioned material (Gibson, 1985), virtually all of the original descriptions made by Stimpson and Takakura lack such information (Stimpson, 1855, 1857; Takakura, 1898). Fortunately, most of these species can be identified by their external features, but their systematic position requires reappraisal based on their internal morphology. Since most of the type material of early researchers, viz., Stimpson, Takakura, and Yamaoka, is unavailable (Nishimura, 1992; Kajihara, 2004; see the following section, “Brief History…”), re-collection of the species established by them is essential to correctly determine taxonomic identity.

Throughout the text and tables, “Code” and “ICZN” refer to the International Code for Zoological Nomenclature and the International Commission on Zoological Nomenclature, respectively.

* Corresponding author. Phone: +81-11-706-2755;
Fax : +81-11-746-0862;
E-mail: kazi@sci.hokudai.ac.jp
doi:10.2108/zsj.24.287

Table. 1. List of the nominal species established from Japanese waters arranged by their type locality from north to south. *Type specimen depository: FI Dr. Iwata's collection; LBM Lake Biwa Museum, Shiga, Japan; NHMW-EV Naturhistorisches Museum Wien, Evertebrata-Varia, Wien, Austria; U unavailable; ZIHU Hokkaido University Museum, Sapporo, Japan; ? unlocated.

Locality	Nominal species	Type specimen*	Further detailed locality and comments.
HOKKAIDÔ			
Rishiri Island			
	Lineus fulvus Iwata, 1954	FI	
	**Oerstedia venusta* Iwata, 1954	FI	Also based on the material from Muroran; a *nomen dubium*.
Akkeshi			
	Amphiporus antifuscus Iwata, 1954	FI	
	Amphiporus parvus Yamaoka, 1940	U	
	Cephalothrix notabilis Iwata, 1954	FI	
	Lineus spatiosus Iwata, 1954	FI	
	Micrura akkeshiensis Yamaoka, 1940	U	Also based on the material from Abashiri.
	Micrura magna Yamaoka, 1940	U	Daikokujima Island.
	Nemertellina yamaokai Kajihara *et al*., 2000	ZIHU-1260	
	Oerstedia polyorbis Iwata, 1954	FI	
	Tetrastemma pinnatum Iwata, 1954	FI	
	Tetrastemma stimpsoni Chernyshev, 1992	U	Also based on the material from Abashiri.
	Tubulanus ezoensis Yamaoka, 1940	U	Daikokujima Island.
	Zygonemertes glandulosa Yamaoka, 1940	U	
	Zygonemertes jamsteci Kajihara, 2002	ZIHU-1928	
Abashiri			
	Micrura akkeshiensis Yamaoka, 1940	U	Also based upon the material from Akkeshi.
	Tetrastemma stimpsoni Chernyshev, 1992	U	Also based upon the material from Akkeshi.
Oshoro			
	Amphiporus musculus Iwata, 1954	FI	
	Tetrastemma yamaokai Iwata, 1954	FI	
	Tetrastemma verinigrum Iwata, 1954	FI	
	Zygonemertes shintai Kajihara, 2002	ZIHU-1296	
Shizunai			
	Potamostoma shizunaiense Kajihara *et al*., 2003	ZIHU-2037	The mouth of the River Shizunai.
Muroran			
	Amphiporus regius Iwata, 1954	FI	
	Micrura uchidai Yamaoka, 1940	U	Now ***Nipponomicrura uchidai***.
	**Oerstedia venusta* Iwata, 1954	FI	Also based on the material from Rishiri; a *nomen dubium*.
Hakodate			
	Tatsnoskia depressa Stimpson, 1857	U	A *nomen dubium*.
	Tetrastemma stigmatum Stimpson, 1857	U	
Further detail of locality not specified			
	Cerebratulus bellus Stimpson, 1857	U	Now ***Micrura bella***.
	Cerebratulus fasciatus Stimpson, 1857	U	
HONSHÛ			
AOMORI PREFECTURE			
	Emplectonema kandai Kato, 1939	U	Asamushi.
IWATE PREFECTURE			
	Diopsonemertes acanthocephala Kajihara *et al*., 2001	ZIHU-1290	Ôtsuchi.
	Ototyphlonemertes dolichobasis Kajihara, 2007	ZIHU-3200	Ôtsuchi.
IBARAKI PREFECTURE			
	Hinumanemertes kikuchii Iwata, 1970	FI	Lake Hinuma.
	Sacconemertella lutulenta Iwata, 1970	FI	Lake Hinuma.
	Sacconemertopsis olivifera Iwata, 1970	FI	Lake Hinuma.
CHIBA PREFECTURE			
	Carcinonemertes mitsukurii Takakura, 1910	U	Among egg masses of *Eriocheir japonicus* (Decapoda) at the mouth of the River Minatogawa.
	Coeia ijimai Takakura, 1922	U	Tateyama; now ***Hubrechtella ijimai***.
	Lineus fuscoviridis Takakura, 1898	U	Sunosaki, Tateyama, also based on the material from Misaki.
	**Lineus mitellatus* Takakura, 1898	U	Sunosaki, Tateyama, also based on the material from Misaki; now ***Notospermus geniculatus***.
	Malacobdella japonica Takakura, 1897	U	Kujûkuri, in the mantle cavity of *Mactra sachalinensis* (Bivalvia).
KANAGAWA PREFECTURE			
Misaki and its vicinity			
	Carinella punctata Takakura, 1898	U	Now ***Tubulanus punctatus***.
	Cerebratulus carnosus Takakura, 1898	U	
	Cerebratulus communis Takakura, 1898	U	
	Lineus alborostratus Takakura, 1898	U	
	Lineus bipunctatus Takakura, 1898	U	
	Lineus caputornatus Takakura, 1898	U	
	Lineus fuscovirifis Takakura, 1898	U	Also based on the material from Tateyama.
	**Lineus mitellatus* Takakura, 1898	U	Also based on the material from Tateyama; now ***Notospermus geniculatus***.
	Lineus subcingulatus Takakura, 1898	U	
	Micrura dorsovittata Takakura, 1898	U	
	Micrura festiva Takakura, 1898	U	Now ***Micrura bella***.
Sagami Bay			
	Amphiporus nagaiensis Iwata, 1957	FI	Now ***Sagaminemertes nagaiensis***.
	Amphiporus parmiornatus Iwata, 1957	FI	Now ***Kameginemertes parmiornata***.

To be continued.

Tabel. 1. continued.

	Amphiporus reduncus Iwata, 1957	FI	
	Amphiporus retrotumidus Iwata, 1957	FI	
	Cephalomastax brevis Iwata, 1957	FI	
	Cerebratulus albocirculus Iwata, 1957	FI	
	Cerebratulus formosus Iwata, 1957	FI	
	Cerebratulus macroren Hubrecht, 1887	?	
	Cerebratulus penniger Iwata, 1957	FI	
	Cerebratulus superniger Iwata, 1957	FI	
	Drepanophorus longiceps Iwata, 1957	FI	
	Euborlasia proteres Iwata, 1957	FI	
	Eupolia nipponensis Hubrecht, 1887	?	Now ***Baseodiscus nipponensis***.
	Micrura multinotara Iwata, 1957	FI	
	Nectonemertes japonica Foshay, 1912	?	
	Paranemertes plana Iwata, 1957	FI	
	Pelagonemertes moseleyi Bürger, 1895	?	
	Tetramys ramicerebrus Iwata, 1957	FI	
SHIZUOKA PREFECTURE			
Shimoda			
	Amphiporus ogumai Yamaoka, 1947	U	Now ***Nipponnemertes ogumai.***
	Cosmocephala japonica Stimpson, 1857	U	Now *Amphiporus japonicus*, a *nomen dubium*.
	Emplectonema mitsuii Yamaoka, 1947	U	
	Paranemertes katoi Yamaoka, 1947	U	
	Polina cervicalis Stimpson, 1857	U	A *nomen dubium*.
	Prostoma roseocephalum Yamaoka, 1947	U	Now ***Tetrastemma roseocephalum***.
Lake Hamanako			
	Callinera nishikawai Kajihara, 2006	ZIHU-3133	
	Carinina plecta Kajihara, 2006	ZIHU-3123	
	Hubrechtella kimuraorum Kajihara, 2006	ZIHU-3127	
MIE PREFECTURE			
	Uchidana parasita Iwata, 1967	FI	In mantle cavities of *Mactra sulcataria* in muddy sand at the mouth of Aikawa River.
WAKAYAMA PREFECTURE			
	Amphiporus insolitus Iwata, 1954	FI	Kushimoto.
	Lineus cancelli Iwata, 1954	FI	Shirahama.
	Nemertopsis mitellicola Kajihara, 2007	ZIHU-3204	Shirahama.
SHIGA PREFECTURE			
	Prostoma ohmiense Chernyshev *et al*., 1998	LBM	Lake Biwa.
HIROSHIMA PREFECTURE			
	Paralineopsis taki Iwata, 1993	FI	Mukaishima.
	Stichostemma grandis Ikeda, 1913	U	Hiroshima, a *nomen dubium*.
KYÛSHÛ and OKINAWA			
KUMAMOTO PREFECTURE			
Tomioka			
	****Micrura japonica*** Iwata, 1952	FI	Also based on the material from Fukue.
	Paranemertes incola Iwata, 1952	FI	
	Procephalothrix fasciculus Iwata, 1952	FI	Now ***Cephalothrix fasciculus***.
	****Tetrastemma insolens*** Iwata, 1952	FI	Also based on the material from Fukue.
NAGASAKI PREFECTURE			
Fukue			
	Carinesta uchidai Iwata, 1952	FI	
	Euborlasia gotoensis Iwata, 1952	FI	
	****Micrura japonica*** Iwata, 1952	FI	Also based on the material from Tomioka.
	Procephalothrix simula Iwata, 1952	FI	Now ***Cephalothrix simula***.
	****Tetrastemma insolens*** Iwata, 1952	FI	Also based on the material from Tomioka.
	Tubulanus lucidus Iwata, 1952	FI	
KAGOSHIMA PREFECTURE			
Kagoshima Bay			
	Diplopleura japonica Stimpson, 1857	U	Kagoshima Bay.
Tanegashima			
	Dicelis rubra Stimpson, 1857	U	Tanegashima, a *nomen dubium*.
Nakanoshima			
	Lineus nigrostriatus Iwata, 1954	FI	Nakanoshima, Tokara Islands.
Amamiôshima			
	Cerebratulus nigrofuscus Stimpson, 1857	U	Amamiôshima, now ***Lineus nigrofuscus***.
	Dichilus obscurus Stimpson, 1857	U	Amamiôshima, a *nomen dubium*.
	Taeniosoma aequale Stimpson, 1857	U	Amamiôshima, now ***Baseodiscus quinquelineatus***.
Kikaijima			
	Meckelia piperata Stimpson, 1855	U	Kikaijima, now ***Iwatanemertes piperata***.
OKINAWA PREFECTURE			
	Meckelia albovittata Stimpson, 1855	U	Now ***Lineus albovittatus***.
	Meckelia subacuta Stimpson, 1857	U	Naha, a *nomen dubium*.
	Nareda serpentina Stimpson, 1855	U	A *nomen dubium*.
	Prostoma specutaculum Yamaoka, 1940	U	Naha and Chinen; now ***Pantinonemertes specutacula***.
TYPE LOCALITY UNKNOWN			
	Lineus nipponensis Senz, 2001	NHMW-EV 17026/3990	
	Tubulanus roretzi Senz, 1997	NHMW-EV 3565/1886	

Table. 2. List of the nominal species established from Japanese waters arranged taxonomically. *Type specimen depository: FI Professor Fumio Iwata's collection; LBM Lake Biwa Museum, Shiga, Japan; NHMW-EV Naturhistorisches Museum Wien, Evertebrata-Varia, Wien, Austria; U unavailable; ZIHU Hokkaido University Museum, Sapporo, Japan; ? unlocated.

Higer Taxa	Nominal species	Type specimen*	Type locality and comments.
PALAEONEMERTEA			
	Callinera nishikawai Kajihara, 2006	ZIHU-3133	Lake Hamanako, Shizuoka Prefecture.
	Carinella punctata Takakura, 1898	U	Misaki, Kanagawa Prefecture; now ***Tubulanus punctatus***.
	Carinesta uchidai Iwata, 1952	FI	Fukue, Nagasaki Prefecture.
	Carinina plecta Kajihara, 2006	ZIHU-3123	Lake Hamanako, Shizuoka Prefecture.
	Cephalothrix notabilis Iwata, 1954	FI	Akkeshi, Hokkaidô Prefecture.
	Procephalothrix fasciculus Iwata, 1952	FI	Tomioka, Kumamoto Prefecture; now ***Cephalothrix fasciculus***.
	Procephalothrix simula Iwata, 1952	FI	Fukue, Nagasaki Prefecture; now ***Cephalothrix simula***.
	Tubulanus ezoensis Yamaoka, 1940	U	Daikokujima Island, Akkeshi, Hokkaidô Prefecture.
	Tubulanus lucidus Iwata, 1952	FI	Fukue, Nagasaki Prefecture.
	Tubulanus roretzi Senz, 1997	NHMW-EV 3565/1886	Precise type locality unknown.
PILIDIOPHORA			
	Cephalomastax brevis Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Cerebratulus albocirculus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Cerebratulus bellus Stimpson, 1857	U	Hokkaidô; now ***Micrura bella***.
	Cerebratulus carnosus Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Cerebratulus communis Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Cerebratulus fasciatus Stimpson, 1857	U	Hokkaidô.
	Cerebratulus formosus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Cerebratulus macroren Hubrecht, 1887	?	Sagami Bay, Kanagawa Prefecture.
	Cerebratulus nigrofuscus Stimpson, 1857	U	Amamiôshima, Kagoshima Prefecture; now ***Lineus nigrofuscus***.
	Cerebratulus penniger Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Cerebratulus superniger Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Coeia ijimai Takakura, 1922	U	Tateyama, Chiba Prefecture; now ***Hubrechtella ijimai***.
	Diplopleura japonica Stimpson, 1857	U	Kagoshima Bay, Kagoshima Prefecture.
	Euborlasia gotoensis Iwata, 1952	FI	Fukue, Nagasaki Prefecture.
	Euborlasia proteres Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Eupolia nipponensis Hubrecht, 1887	?	Sagami Bay, Kanagawa Prefecture; now ***Baseodiscus nipponensis***.
	Hinumanemertes kikuchii Iwata, 1970	FI	Lake Hinuma, Ibaraki Prefecture.
	Hubrechtella kimuraorum Kajihara, 2006	ZIHU-3127	Lake Hamanako, Shizuoka Prefecture.
	Lineus alborostratus Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Lineus bipunctatus Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Lineus cancelli Iwata, 1954	FI	Shirahama, Wakayama Prefecture.
	Lineus caputornatus Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Lineus fulvus Iwata, 1954	FI	Rishiri Island, Hokkaidô Prefecture.
	Lineus fuscoviridis Takakura, 1898	U	Sunosaki, Tateyama, Chiba Prefecture; Misaki, Kanagawa Prefecture.
	Lineus mitellatus Takakura, 1898	U	Sunosaki, Tateyama, Chiba Prefecture; Misaki, Kanagawa Prefecture; now ***Notospermus geniculatus***.
	Lineus nigrostriatus Iwata, 1954	FI	Nakanoshima, Tokara Islands, Kagoshima Prefecture.
	Lineus nipponensis Senz, 2001	NHMW-EV 17026/3990	Precise type locality unknown.
	Lineus spatiosus Iwata, 1954	FI	Akkeshi, Hokkaidô Prefecture.
	Lineus subcingulatus Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Meckelia albovittata Stimpson, 1855	U	Okinawa; now ***Lineus albovittatus***.
	Meckelia piperata Stimpson, 1855	U	Kikaijima, Kagoshima Prefecture; now ***Iwatanemertes piperata***.
	Meckelia subacuta Stimpson, 1857	U	Naha, Okinawa; *nomen dubium*.
	Micrura akkeshiensis Yamaoka, 1940	U	Abashiri and Akkeshi, Hokkaidô Prefecture.
	Micrura dorsovittata Takakura, 1898	U	Misaki, Kanagawa Prefecture.
	Micrura festiva Takakura, 1898	U	Misaki, Kanagawa Prefecture; now ***Micrura bella***.
	Micrura japonica Iwata, 1952	FI	Tomioka, Kumamoto Prefecture; Fukue, Nagasaki Prefecture.
	Micrura magna Yamaoka, 1940	U	Daikokujima Island, Akkeshi, Hokkaidô Prefecture.
	Micrura multinotara Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Micrura uchidai Yamaoka, 1940	U	Muroran, Hokkaidô Prefecture; now ***Nipponomicrura uchidai***.
	Paralineopsis taki Iwata, 1993	FI	Mukaishima, Hiroshima Prefecture.
	Taeniosoma aequale Stimpson, 1857	U	Amamiôshima, Kagoshima Prefecture; now ***Baseodiscus quinquelineatus***.
	Tetramys ramicerebrus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Uchidana parasita Iwata, 1967	FI	Mouth of Aikawa River, Mie Prefecture.
HOPLONEMERTEA			
	Amphiporus antifuscus Iwata, 1954	FI	Akkeshi, Hokkaidô Prefecture.
	Amphiporus insolitus Iwata, 1954	FI	Kushimoto, Wakayama Prefecture.
	Amphiporus musculus Iwata, 1954	FI	Oshoro, Hokkaidô Prefecture.
	Amphiporus nagaiensis Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture; now ***Sagaminemertes nagaiensis***.
	Amphiporus ogumai Yamaoka, 1947	U	Shimoda, Shizuoka Prefecture; now ***Nipponnemertes ogumai***.
	Amphiporus parmiornatus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture; ***now Kameginemertes parmiornata***.

To be continued.

Table. 2. continued.

	Amphiporus parvus Yamaoka, 1940	U	Akkeshi, Hokkaidô Prefecture.
	Amphiporus reduncus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Amphiporus regius Iwata, 1954	FI	Muroran, Hokkaidô Prefecture.
	Amphiporus retrotumidus Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Carcinonemertes mitsukurii Takakura, 1910	U	Mouth of River Minatogawa, Chiba Prefecture.
	Cosmocephala japonica Stimpson, 1857	U	Shimoda, Shizuoka Prefecture; *nomen dubium*.
	Dicelis rubra Stimpson, 1857	U	Tanegashima Island, Kagoshima Prefecture; *nomen dubium*.
	Diopsonemertes acanthocephala Kajihara *et al*., 2001	ZIHU-1290	Ôtsuchi, Iwate Prefecture.
	Drepanophorus longiceps Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Emplectonema kandai Kato, 1939	U	Asamushi, Aomori Prefecture.
	Emplectonema mitsuii Yamaoka, 1947	U	Shimoda, Shizoka Prefecture.
	Malacobdella japonica Takakura, 1897	U	Kujûkuri, Chiba Prefecture.
	Nareda serpentina Stimpson, 1855	U	Okinawa Prefecture; *nomen dubium*.
	Nectonemertes japonica Foshay, 1912	?	Sagami Bay, Kanagawa Prefecture.
	Nemertellina yamaokai Kajihara *et al*., 2000	ZIHU-1260	Akkeshi, Hokkaidô Prefecture.
	Nemertopsis mitellicola Kajihara, 2007	ZIHU-3204	Shirahama, Wakayama Prefecture.
	Oerstedia polyorbis Iwata, 1954	FI	Akkeshi, Hokkaidô Prefecture.
	Oerstedia venusta Iwata, 1954	FI	Rishiri Island and Muroran, Hokkaidô Prefecture; *nomen dubium*.
	Ototyphlonemertes dolichobasis Kajihara, 2007	ZIHU-3200	Ôtsuchi, Iwate Prefecture.
	Paranemertes incola Iwata, 1952	FI	Tomioka, Kumamoto Prefecture.
	Paranemertes katoi Yamaoka, 1947	U	Shimoda, Shizoka Prefecture.
	Paranemertes plana Iwata, 1957	FI	Sagami Bay, Kanagawa Prefecture.
	Pelagonemertes moseleyi Bürger, 1895	?	Sagami Bay, Kanagawa Prefecture.
	Polina cervicalis Stimpson, 1857	U	Shimoda, Shizoka Prefecture; *nomen dubium*.
	Potamostoma shizunaiense Kajihara *et al*., 2003	ZIHU-2037	The mouth of the River Shizunai, Hokkaidô Prefecture.
	Prostoma ohmiense Chernyshev *et al*., 1998	LBM	Lake Biwa, Shiga Prefecture.
	Prostoma roseocephalum Yamaoka, 1947	U	Shimoda, Shizoka Prefecture; now ***Tetrastemma roseocephalum***.
	Prostoma specutaculum Yamaoka, 1940	U	Naha and Chinen, Okinawa; now ***Pantinonemertes specutacula***.
	Sacconemertella lutulenta Iwata, 1970	FI	Lake Hinuma, Ibaraki Prefecture.
	Sacconemertopsis olivifera Iwata, 1970	FI	Lake Hinuma, Ibaraki Prefecture.
	Stichostemma grandis Ikeda, 1913	U	Hiroshima Prefecture; *nomen dubium*.
	Tatsnoskia depressa Stimpson, 1857	U	Hakodate, Hokkaidô Prefecture; *nomen dubium*
	Tetrastemma insolens Iwata, 1952	FI	Tomioka, Kumamoto Prefecture; Fukue, Nagasaki Prefecture.
	Tetrastemma pinnatum Iwata, 1954	FI	Akkeshi, Hokkaidô Prefecture.
	Tetrastemma stigmatum Stimpson, 1857	U	Hakodate, Hokkaidô Prefecture.
	Tetrastemma stimpsoni Chernyshev, 1992	U	Abashiri and Akkeshi, Hokkaidô Prefecture.
	Tetrastemma yamaokai Iwata, 1954	FI	Oshoro, Hokkaidô Prefecture.
	Tetrastemma verinigrum Iwata, 1954	FI	Oshoro, Hokkaidô Prefecture.
	Zygonemertes glandulosa Yamaoka, 1940	U	Akkeshi, Hokkaidô Prefecture.
	Zygonemertes jamsteci Kajihara, 2002	ZIHU-1928	Akkeshi, Hokkaidô Prefecture.
	Zygonemertes shintai Kajihara, 2002	ZIHU-1296	Oshoro, Hokkaidô Prefecture.
INCERTAE CEDIS			
	Dichilus obscurus Stimpson, 1857	U	Amamiôshima, Kagoshima Prefecture; *nomen dubium*.

Brief History of Taxonomic Research on Japanese Nemerteans

William Stimpson (1832–1872) first reported nemerteans from Japanese waters (Stimpson, 1855). During the cruise of the North Pacific Exploring Expedition (1852–1856), in which Stimpson participated as a naturalist in zoology at the age of 21, he established 15 nominal species of nemerteans from Naha (Okinawa), Kikaishima (Kagoshima), Amamiôshima (Kagoshima), Shimoda (Shizuoka), and Hakodate (Hokkaidô) (Stimpson, 1855, 1857). Regrettably, his nemertean samples were lost in the Great Chicago Fire of 1871, together with his manuscripts, drawings, and other invertebrate collections obtained by the expedition (Nishimura, 1992). Even though Stimpson's descriptions are brief and composed of only a few lines, eight of 15 species of nemerteans he described from Japanese waters are still regarded as valid.

Dr. Albrecht von Roretz (1846–1884), a medical doctor who graduated from the University of Wien, came to Japan towards the end of 1874 as Consultats-Arzt for the Austro-Hungarian embassy in East Asia. From 1875 to 1882, when Roretz returned to Austria, he made sampling trips to the four major islands in Japan, namely Hokkaidô, Honshû, Shikoku, and Kyûshû. Roretz's Japanese animal collection, now deposited in the Naturhistorisches Museum Wien, Austria, consists of more than 1,450 individuals ranging from sponges to mammals and comprises about 360 species (Nishikawa and Sattmann, 2001). Senz (1997a, 2001) recently described two new species based on nemertean specimens in Roretz's collection.

In 1875 the British Naval research vessel H.M.S. *Challenger* dropped into Japanese harbors in the course of her round-the-world scientific voyage, making collections at about 10 locations in Japanese waters (Tizard *et al*., 1885). Ambrosius Arnold Willem Hubrecht (1853–1915), Professor of Zoology at Utrecht University, reported the nemerteans obtained during the cruise; his report includes two species of nemerteans collected from Japanese waters (Hubrecht, 1887). One of the major zoological findings made by the *Challenger* expedition is the discovery of bathypelagic nemerteans. The first specimen was found on 7 March 1874 near the southern verge of the South-Australian current and

named *Pelagonemertes rollestoni* by Moseley (1875a). A second specimen, collected on 5 June 1875 off Sagami Bay, was first considered to be a young individual of the same species (Moseley, 1875b), but was later deemed to represent a different species and named *Pelagonemertes moseleyi* by Bürger (1895).

In 1906 the United States Fisheries Commission Steamer *Albatross* visited Japanese waters, with the ichthyologist Charles Henry Gilbert as the Naturalist-in-Charge. The nemerteans among the numerous specimens collected were studied by Coe (1944) and included several new locality records for species already known.

In the same year, 1906, Dr. Harold Heath secured from Mr. Alan Owston six specimens of pelagic nemertean species, which Foshay (1912) later described as *Nectonemertes japonica*.

Usamaro Takakura (1867–1944), Professor of Zoology first at the Higher Normal School (later renamed Tokyo Higher Normal School), then concurrently at Tokyo University of Literature and Science, was the first Japanese expert on nemerteans. Takakura reported 25 species and established 14 new species and one new genus, based primarily upon material from the Pacific coast of Honshû (Takakura, 1897, 1898, 1910, 1922, 1933). Takakura's principal work is his 1898 paper, which contains descriptions of 21 anoplan nemerteans from the vicinity of Misaki. Takakura's nemertean collection appears to have been lost during the relocation of Tokyo University of Education from Tokyo to Tsukuba (Kajihara, 2004).

Teiichi Yamaoka (ca. 1918–1945?) carried out taxonomic studies on nemerteans in his graduate studies under the guidance of Professor Tohru Uchida at Hokkaido Imperial University. After graduating in 1939, he became a researcher at Mitsui Marine Biological Station at Izu before he moved to the capital of Manchuria as a teacher at Shinkyô First Junior High School in 1940. Before he moved to Manchuria, he published two papers in which he reported 23 species (including seven new species) of nemerteans from Japanese waters (Yamaoka, 19040a, b). In addition, he reported two species from Taiwan, of which one was new to science, based on the specimens obtained by Dr. Shirô Okuda (Yamaoka, 1939). Yamaoka also published a paper on the entocommensal species *Malacobdella japonica* Takakura, 1897 in collaboration with Saburô Kawai (Kawai and Yamaoka, 1940) and wrote a chapter on nemerteans in a treatise on systematic zoology (Yamaoka, 1943). When Yamaoka had been a researcher at Mitsui Marine Biological Station, he prepared a manuscript that contained descriptions of several 'new' species, but the manuscript was not published before his death. Later, Dr. Okuda included four of these 'new' species in the *Revised Edition Illustrated Encyclopedia of the Fauna of Japan* (*Exclusive of Insects*), with each of the four entries accompanied by a brief description. Crandall *et al*. (2001) argued that these four names are available in terms of the Code (ICZN, 1999), with Yamaoka as the naming authority and the date of publication 1947, the date when the *Encyclopedia* was published. Crandall *et al*. (2001) provided additional information on these four species in Yamaoka's unpublished manuscript, which had been in the care of Dr. Fumio Iwata. Quite recently, the manuscript was posthumously published (Yamaoka, 2005), submitted by Professor Iwata.

Much of our knowledge of the Japanese nemertean fauna depends upon the works by Dr. Fumio Iwata (b. 1925), Professor Emeritus of Hokkaido University. As with Yamaoka, Fumio Iwata began his nemertean studies under the guidance of Professor Uchida at Hokkaido University. After graduation in 1950, he was appointed as Assistant Professor at Akkeshi Marine Biological Station (Moriyama, 1995). He energetically investigated the nemertean fauna in various regions of Japan, as well as engaged in embryological studies on nemerteans. He published nine nemertean papers (Iwata, 1951, 1952, 1954a, b, c, 1957a, b, 1958, 1960a) before obtaining his doctorate in 1959 with a dissertation on the comparative embryology of nemerteans (Iwata, 1960b), in which he proposed the new order Archinemertea that he considered to be the most primitive group in the phylum. Although adopted by some researchers (*e.g*., Gibson, 1994), Iwata's (1960b) hypothesis was later questioned by Sundberg and Hylbom (1994), who found no morphological support for the Archinemertea. This group has lost acceptance among other nemertean researchers, since it is now regarded to be a group within the palaeonemerteans (Thollesson and Norenburg, 2003). However, Iwata's (1960b) embryological observations themselves are highly valued and frequently cited by modern researchers (*e.g*., Maslakova *et al*., 2004a, b; Nielsen, 2005). After receiving an Associate Professorship in Sapporo in 1963, Iwata wrote the chapter on nemerteans in a treatise on systematic zoology (Iwata, 1965a), descriptions of a parasitic nemertean in bivalves (Iwata, 1967) and three brackish-water nemerteans (Iwata, 1970a), another embryological paper (Iwata, 1972), and the chapter on nemerteans in a treatise on freshwater biology (Iwata, 1973). He was appointed to a Professorship in 1974. Iwata has attended all the international meetings on nemertean biology, held in 1983 (Philadelphia, USA), 1986 (Tjärnö, Sweden), 1991 (Bangor, UK), 1995 (Asilomar, California, USA), 2000 (Alcalá de Henares, Spain), and 2004 (Ogden, Utah, USA), and presented papers (Iwata, 1985, 1988, 1993, 2006). Even after retiring in 1988, Dr. Iwata is still quite active in research (Iwata, 2001).

Other taxonomic works on Japanese nemerteans include papers on freshwater nemerteans by Ikeda (1913), Ishizuka (1933), Sudzuki (1953), and Chernyshev *et al*. (1998); a report on the pelagic species *Pelagonemertes moseley* Bürger, 1895 by Kato and Tanaka (1938); Kato's (1939) description of the luminescent nemertean *Emplectonema kandai* Kato, 1939; Oki *et al*.'s (1987) report on the land nemertean *Geonemertes pelaensis* Semper, 1863; and reports on some marine benthic (Kajihara, 2002, 2006, 2007a, b; Kajihara *et al*., 2000, 2001) and a brackish-water (Kajihara *et al*., 2003) species.

Classification and Checklist of the Valid Japanese Nemertean Species

The higher classification system adopted here is based on Gibson (1982a, b, 1994), Chernyshev (1995, 2003), and Thollesson and Norenburg (2003).

Phylum NEMERTEA

1) Class PALAEONEMERTEA Hubrecht, 1879

1) Family CALLINERIDAE Bergendal, 1901

1) *Callinera nishikawai* Kajihara, 2006
2) Family CEPHALOTRICHIDAE McIntosh, 1874
2) *Cephalothrix fasciculus* (Iwata, 1952)
3) *Cephalothrix notabilis* Iwata, 1954
4) *Cephalothrix simula* (Iwata, 1952)
3) Family TUBULANIDAE Bürger, 1904 (1874)
5) *Carinesta uchidai* Iwata, 1952
6) *Carinina plecta* Kajihara, 2006
7) *Tubulanus capistratus* (Coe, 1901)
8) *Tubulanus ezoensis* Yamaoka, 1940
9) *Tubulanus lucidus* Iwata, 1952
10) *Tubulanus punctatus* (Takakura, 1898)
11) *Tubulanus roretzi* Senz, 1997
2) Class PILIDIOPHORA Thollesson and Norenburg, 2003
4) Family HUBRECHTELLIDAE Chernyshev, 2003
12) *Hubrechtella ijimai* (Takakura, 1922)
13) *Hubrechtella kimuraorum* Kajihara, 2006
14) *Tetramys ramicerebrus* Iwata, 1957
5) Family LINEIDAE McIntosh, 1874
15) *Cerebratulus albocirculus* Iwata, 1957
16) *Cerebratulus carnosus* Takakura, 1898
17) *Cerebratulus communis* Takakura, 1898
18) *Cerebratulus fasciatus* Stimpson, 1857
19) *Cerebratulus formosus* Iwata, 1957
20) *Cerebratulus longiceps* Coe, 1901
21) *Cerebratulus macroren* Hubrecht, 1887
22) *Cerebratulus marginatus* Renier, 1804
23) *Cerebratulus montgomeryi* Coe, 1901
24) *Cerebratulus penniger* Iwata, 1957
25) *Cerebratulus subacutus* (Stimpson, 1857)
26) *Cerebratulus superniger* Iwata, 1957
27) *Cerebratulus zebra* Punnett and Cooper, 1909
28) *Diplopleura japonica* Stimpson, 1857
29) *Euborlasia gotoensis* Iwata, 1952
30) *Euborlasia proteres* Iwata, 1957
31) *Hinumanemertes kikuchii* Iwata, 1970
32) *Iwatanemertes piperata* (Stimpson, 1855)
33) *Lineus alborostratus* Takakura, 1898
34) *Lineus albovittatus* (Stimpson, 1855)
35) *Lineus bipunctatus* Takakura, 1898
36) *Lineus cancelli* Iwata, 1954
37) *Lineus caputornatus* Takakura, 1898
38) *Lineus fulvus* Iwata, 1954
39) *Lineus fuscoviridis* Takakura, 1898
40) *Lineus nigrofuscus* (Stimpson, 1857)
41) *Lineus nigrostriatus* Iwata, 1954
42) *Lineus nipponensis* Senz, 2001
43) *Lineus spatiosus* Iwata, 1954
44) *Lineus subcingulatus* Takakura, 1898
45) *Lineus torquatus* Coe, 1901
46) *Micrura akkeshiensis* Yamaoka, 1940
47) *Micrura alaskensis* Coe, 1901
48) *Micrura bella* (Stimpson, 1857)
49) *Micrura dorsovittata* Takakura, 1898
50) *Micrura japonica* Iwata, 1952
51) *Micrura magna* Yamaoka, 1940
52) *Micrura multinotara* Iwata, 1957
53) *Nipponomicrura uchidai* (Yamaoka, 1940)
54) *Notospermus geniculatus* (Delle Chiaje, 1828)
55) *Paralineopsis taki* Iwata, 1993
56) *Uchidana parasita* Iwata, 1967
6) Family VALENCINIIDAE Hubrecht, 1879
57) *Baseodiscus curtus* (Hubrecht, 1879)
58) *Baseodiscus delineatus* (Delle Chiaje, 1825)
59) *Baseodiscus hemprichii* (Ehrenberg, 1831)
60) *Baseodiscus nipponensis* (Hubrecht, 1887)
61) *Baseodiscus princeps* (Coe, 1901)
62) *Baseodiscus quinquelineatus* (Quoy and Gaimard, 1833)
63) *Cephalomastax brevis* Iwata, 1957
3) Class HOPLONEMERTEA Hubrecht, 1879
1) Subclass MONOSTILIFERA Brinkmann, 1917
7) Family AMPHIPORIDAE McIntosh, 1874
64) *Amphiporus antifuscus* Iwata, 1954
65) *Amphiporus formidabilis* Griffin, 1898
66) *Amphiporus gelatinosus* Coe, 1905
67) *Amphiporus imparispinosus* Griffin, 1898
68) *Amphiporus insolitus* Iwata, 1954
69) *Amphiporus musculus* Iwata, 1954
70) *Amphiporus parvus* Yamaoka, 1940
71) *Amphiporus reduncus* Iwata, 1957
72) *Amphiporus regius* Iwata, 1954
73) *Amphiporus retrotumidus* Iwata, 1957
74) *Potamostoma shizunaiense* Kajihara, Gibson and Mawatari, 2003
75) *Zygonemertes glandulosa* Yamaoka, 1940
76) *Zygonemertes jamsteci* Kajihara, 2002
77) *Zygonemertes shintai* Kajihara, 2002
8) Family CARCINONEMERTIDAE Sumner, Osburn and Cole, 1913
78) *Carcinonemertes mitsukurii* Takakura, 1910
9) Family CRATENEMERTIDAE Friedrich, 1968
79) *Nipponnemertes bimaculata* (Coe, 1901)
80) *Nipponnemertes ogumai* (Yamaoka, 1947)
81) *Nipponnemertes punctatula* (Coe, 1905)
10) Family EMPLECTONEMATIDAE Bürger, 1904
82) *Emplectonema buergeri* Coe, 1901
83) *Emplectonema gracile* (Johnston, 1837)
84) *Emplectonema kandai* Kato, 1939
85) *Emplectonema mitsuii* Yamaoka, 1947
86) *Nemertopsis mitellicola* Kajihara, 2007
87) *Nemertopsis quadripunctata* (Quoy and Gaimard, 1833)
88) *Paranemertes incola* Iwata, 1952
89) *Paranemertes katoi* Yamaoka, 1947
90) *Paranemertes peregrina* Coe, 1901
91) *Paranemertes plana* Iwata, 1957
11) Family MALACOBDELLIDAE Blanchard, 1847
92) *Malacobdella japonica* Takakura, 1897
12) Family OTOTYPHLONEMERTIDAE Bürger, 1895
93) *Ototyphlonemertes dolichobasis* Kajihara, 2007
94) *Ototyphlonemertes martynovi* Chernyshev, 1993
95) *Ototyphlonemertes nikolaii* Chernyshev, 1998
13) Family POSEIDONEMERTIDAE Chernyshev, 2002
96) *Diopsonemertes acanthocephala* Kajihara, Gibson and Mawatari, 2001
14) Family PROSORHOCHMIDAE Bürger, 1895
97) *Geonemertes pelaensis* Semper, 1863
98) *Pantinonemertes spectacula* (Yamaoka, 1940)

15) Family TETRASTEMMATIDAE Hubrecht, 1879
99) *Nemertellina yamaokai* Kajihara, Gibson and Mawatari, 2000
100) *Oerstedia dorsalis* (Abildgaard, 1806)
101) *Oerstedia polyorbis* Iwata, 1954
102) *Prostoma ohmiense* Chernyshev, Timoshkin and Kawakatsu, 1998
103) *Quasitetrastemma nigrifrons* (Coe, 1904)
104) *Quasitetrastemma stimpsoni* (Chernyshev, 1992)
105) *Sacconemertella lutulenta* Iwata, 1970
106) *Sacconemertopsis olivifera* Iwata, 1970
107) *Tetrastemma candidum* (Müller, 1774)
108) *Tetrastemma insolens* Iwata, 1952
109) *Tetrastemma melanocephalum* (Johnston, 1837)
110) *Tetrastemma pinnatum* Iwata, 1954
111) *Tetrastemma pseudocoronatum* Chernyshev, 1998
112) *Tetrastemma roseocephalum* (Yamaoka, 1947)
113) *Tetrastemma stigmatum* Stimpson, 1857
114) *Tetrastemma verinigrum* Iwata, 1954
115) *Tetrastemma yamaokai* Iwata, 1954

2) Subclass POLYSTILIFERA Brinkmann, 1917
1) Order REPTANTIA Brinkmann, 1917
16) Family DREPANOPHORIDAE Verrill, 1892
116) *Drepanophorus longiceps* Iwata, 1957
117) *Kameginemertes parmiornata* (Iwata, 1957)
17) Family SAGAMINEMERTIDAE Chernyshev, 2003
118) *Sagaminemertes nagaiensis* (Iwata, 1957)
2) Order PELAGICA Brinkmann, 1917
18) Family NECTONEMERTIDAE Verrill, 1892
119) *Nectonemertes japonica* Foshay, 1912
19) Family PELAGONEMERTIDAE Moseley, 1875
120) *Pelagonemertes moseleyi* Bürger, 1895

Taxonomic Catalogue of Japanese Nemerteans

The entries in the synonymy for each species are arranged chronologically. For convenience, each authority in the synonymy is indicated in bold letters. Bibliographic information is given in the synonymy for both primary and secondary literature. For primary literature, such information as locality, habitat, and date of collection are also provided. The prefecture of each locality is given, to facilitate relocation and avoid confusion by synonymy of place names. Where applicable, a long vowel in place names is marked by a macron (*e.g*., Ê, â), to avoid confusion between, *e.g*., "Ôshima" and "Oshima." The literature covered includes not only taxonomic papers, but also those on ecology and biochemistry, pictorial books, faunal reports, and field guides. Japanese common names that have previously been assigned are indicated for a number of species, but no attempt has been made to create new Japanese names for the remaining species. The following abbreviations are used to indicate museum depositories of specimens:

NHMW-EV: Naturhistorisches Museum Wien, Evertebrata-Varia, Wien, Austria.
USNM: National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.
ZIHU: Hokkaido University Museum, Sapporo, Japan.

Phylum NEMERTEA
Class PALAEONEMERTEA Hubrecht, 1879
Family CALLINERIDAE Bergendal, 1901
Genus *Callinera* Bergendal, 1900

Callinera Bergendal, 1900: 313.
TYPE SPECIES: *Callinera buergeri* Bergendal, 1900, by monotypic designation.

Callinera nishikawai Kajihara, 2006

Callinera nishikawai **Kajihara**, 2006: 17–27, figs. 11–14; sandy to muddy tidal flat, 34°41'04''N, 137°35'59''E, Ikarise, Hamanako Lake, Shizuoka Prefecture.
TYPE MATERIAL: Holotype, ZIHU-3133, 12 May 2002, collected by Taeko Kimura, Sho-ichi Kimura, and Teruaki Nishikawa, female, 6-µm serial transverse sections of an anterior body fragment about 1.5 cm in length and 0.8–1.0 mm in width, fixed in Bouin's fluid without anaesthetization.
NOTE: The species was described on the basis of a fixed anterior fragment of the body, and the shape of the living animal is unknown.

Family CEPHALOTRICHIDAE McIntosh, 1874

NOTE: Although the family name was incorrectly spelled as "Cephalothricidae" when established, the correct spelling of the family name should be "Cephalotrichidae" under Article 29.3 of the Code (ICZN, 1999), for the name of its type genus *Cephalothrix* gives the genitive singular "Cephalotrichos," and thus the stem "Cephalotrich-." Article 29.5 of the Code (ICZN, 1999) is not applicable, since the correct spelling has been widely used, *e.g*., by Bürger (1895: 533, 1904: 16), Wijnhoff (1913: 294), Coe (1930: 97, 1940: 257), Yamaoka (1940a: 215), Hylbom (1957: 553, 1993: 173), Moretto (1974: 9), Chernyshev (2004a: 152) and Tanu *et al*. (2004: 515).

Genus *Cephalothrix* Örsted, 1843

Cephalothrix Örsted, 1843: 573.
Procephalothrix Wijnhoff, 1913: 294; synonymized by Sundberg *et al*. (2003).
Cephalotrichella Wijnhoff, 1913: 298; synonymized by Sundberg *et al*. (2003).
TYPE SPECIES: *Cephalothrix coeca* Örsted, 1843, now regarded as a junior synonym of *Planaria linearis* Rathke, 1799 (Bürger, 1904), by subsequent designation.
NOTE: Gibson's (1995) assignment and Sundberg *et al*.'s (2003) statement of *Cephalothrix linearis* (Rathke, 1799) as the type species of the genus are irrelevant in terms of Articles 67.1.2 and 67.2 of the Code (ICZN, 1999), because the genus *Cephalothrix* contained only two nominal species, *Cephalothrix bioculata* and *Cephalothrix coeca*, when it was originally established.

Cephalothrix fasciculus (Iwata, 1952)

Procephalothrix fasciculus **Iwata**, 1952: 130, figs. 2, 8; under stones on stony beach near low-water level, Tomioka, Amakusa, Kumamoto Prefecture.
Procephalothrix fasciculasic [sic]: **Crandall *et al***., 2002: 14, 16, 29, 36, 41.
NOTE: The species was originally classified in the genus *Procephalothrix*, which has been synonymized with *Cephalothrix* by Sundberg *et al*. (2003: 292); now it should be

known as *Cephalothrix fasciculus*. The species is characterized by the posterior end of its rhynchocoel reaching the hind end of the body. This character state is absent among its congeners and has only been recorded in this species. At the same time, however, this character state can be erroneously identified by misinterpretation of a body fragment as an intact specimen. If the anus cannot be confirmed in the holotype specimen, the name of the nominal species *Procephalothrix fasciculus* should be regarded as a *nomen dubium*.

Cephalothrix notabilis Iwata, 1954

[Japanese name: shirayuki-himomushi or kita-hoso-himomushi]

Cephalothrix notabilis **Iwata**, 1954a: 8, fig. 1C, E, F; under stones near low-water level on stony beach, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 65. **Uchida *et al.***, 1963: 17. **Iwata**, 1965a: 201. **Iwata**, 1992: 196, fig. 7-2A. **Iwata**, 1997: 55. **Crandall *et al.***, 2002: 10, 16, 26, 33.

Cephalothrix simula (Iwata, 1952)

[Japanese name: akahana-himomushi]

Procephalothrix simulus [sic] **Iwata**, 1952: 132; under stones near low-water level, Fukue, Gotô Islands, Nagasaki Prefecture; n*on Procephalothrix simula sensu* Iwata (1954a), *nec Cephalothrix linearis sensu* Yamaoka (1940).

NOTE: The species was originally classified in the genus *Procephalothrix*, which was synonymized with *Cephalothrix* by Sundberg *et al*. (2003: 292); now it should be known as *Cephalothrix simula*. Iwata (1954a) synonymized *Cephalothrix linearis sensu* Yamaoka (1940) and *Procephalothrix simula sensu* Iwata (1954a) with *Procephalothrix simula sensu* Iwata (1952). *Cephalothrix* (=*Procephalothrix*) *simula sensu* Iwata (1952) is characterized by the absence between the rhynchocoel and alimentary canal of a longitudinal muscle plate (Iwata, 1952), which, however, is present in *Cephalothrix linearis sensu* Yamaoka (1940a) and *Procephalothrix simula sensu* Iwata (1954a). Therefore, I hesitate to apply the name *Cephalothrix simula* to the taxon to which the latter two authors referred. See NOTE under *Cephalothrix linearis*.

Family TUBULANIDAE Bürger, 1904 (1874)

NOTE: In response to Melville's (1986) proposal, ICZN (1988) ruled under Article 40b of the third edition of the Code (ICZN, 1985) that the name Tubulanidae has precedence over, but takes the date of, its senior subjective synonym Carinellidae. In his proposal, Melville (1986) stated that the name *Carinella trilineata* "has been regarded as a synonym of *Tubulanus polymorphus* since at least 1905," referring to Bürger (1897–1907), and that the family Tubulanidae "should be cited with the date '1905 (1874).'" The ICZN's ruling, basically following Melville's proposal, states that "the name Tubulanidae Bürger, 1905 (1874) ... is hereby placed on the Official List of Family-Group Names in Zoology." Bürger's (1897–1907) book was published in six different parts, and Melville (1986) was quite correct in that the relevant part about the replacement of Carinellidae with Tubulanidae was published in 1905 (pp. 401, 402, 405). However, the name Tubulanidae had already appeared prior to 1905 in Bürger (1904). Thus the family name should be cited as "Tubulanidae Bürger, 1904 (1874)," with the date of priority being enclosed in parentheses in accordance with Recommendation 40A of the Code (ICZN, 1985, 1999).

Genus *Carinesta* Punnett, 1900

Carinesta Punnett, 1900: 569.

TYPE SPECIES: *Carinesta orientalis* Punnett, 1900 by monotypic designation.

Carinesta uchidai Iwata, 1952

[Japanese name: kensaki-himomushi]

Carinesta uchidai **Iwata**, 1952: 128, fig. 7; under stones near low-water level, Fukue, Gotô Islands, Nagasaki Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 2. **Iwata**, 1965a: 201. **Iwata**, 1965b: 391, figs. a, b. **Iwata**, 1992: 197. **Crandall *et al.***, 2002: 10, 16, 26, 33.

NOTE: Sundberg and Hylbom's (1994) cladistic analysis based on morphological characters shows that the genus *Carinesta* is a polyphyletic group and that *Carinesta uchidai* comprises a monophyletic group together with members of the family Cephalotrichidae. The generic placement of this species, as well as the taxonomic status of the genus *Carinesta*, requires reassessment.

Genus *Carinina* Hubrecht, 1885

Carinina Hubrecht, 1885: 830.

Procarinina Bergendal, 1902: 422; synonymized by Hylbom (1957).

TYPE SPECIES: *Carinina grata* Hubrecht, 1887, by monotypic designation; Hubrecht (1885) did not designate the type species when he erected the genus *Carinina*.

Carinina plecta Kajihara, 2006

Carinina plecta **Kajihara**, 2006: 5–16, figs. 3–10; sandy to muddy tidal flat, 34°41'04''N, 137°35'59''E, Ikarise, Hamanako Lake, Shizuoka Prefecture.

TYPE MATERIAL: Holotype, ZIHU-3123, 31 July 2003, female; serial transverse (6 μm thick) and longitudinal (10 μm thick) sections of a fragment containing the head; total 116 slides.

Genus *Tubulanus* Renier, 1804

Tubulanus Renier, 1804: 20.

Carinella Johnston, 1833: 232; synonymized by Bürger (1904).

TYPE SPECIES: *Tubulanus polymorphus* Renier, 1804 by monotypic designation.

Tubulanus capistratus (Coe, 1901)

Tubulanus capistratus: **Coe**, 1944: 27, "One specimen nearly a meter in length was collected by the *Albatross* in 1906 near Hakodate, Japan." **Crandall *et al.***, 2002: 15, 16, 30, 37, 42.

NOTE: Originally described as *Carinella capistrata* by Coe (1901: 16) from Orca and Virgin Bay in Prince William Sound, Alaska; transferred to the genus *Tubulanus* by Coe (1940: 255). Apart from the record from Japan, the species is known to be distributed along the Pacific coast of North America (Gibson, 1995: 316).

Tubulanus ezoensis Yamaoka, 1940
[Japanese name: ezo-himomushi]

Tubulanus ezoensis **Yamaoka**, 1940a: 212–215, pl. XIV, figs. 3, 4, text figs. 3, 4; lower intertidal under stones, Daikokujima, Akkeshi, Hokkaidô Prefecture. **Okuda**, 1947: 1474, fig. 4158. **Iwata**, 1954a: 6. **Yamaguchi and Yamada**, 1955: 64. **Uchida *et al*.**, 1963: 17. **Okuda and Iwata**, 1965: 390; figs. a–c. **Crandall *et al*.**, 2002: 15, 16, 30, 37, 42.

NOTE: *Tubulanus ezoensis* has long been known only by Yamaoka's (1940) original description (Iwata, 1954a). Although the type material appears to have been lost (see "Brief History..."), some additional specimens referable to *T. ezoensis* were recently collected from the type locality (Kajihara, pers. obs.).

Tubulanus lucidus Iwata, 1952

Tubulanus lucidus **Iwata**, 1952: 126–128, figs. 1, 6; lower intertidal under stones, Fukue Island, Gotô Islands, Nagasaki Prefecture. **Crandall *et al*.**, 2002: 15, 16, 30, 37.

NOTE: Sundberg and Hylbom's (1994) cladistic analysis based on morphological characters indicates that this species is the sister taxon to hubrechtids, appearing in a clade which is different from that containing other *Tubulanus*, including the type species. The generic placement of this taxon thus needs reassessment.

Tubulanus punctatus (Takakura, 1898)
[Japanese name: kurige-himomushi or kugi-himomushi]

Carinella punctata **Takakura**, 1898: 117–118, fig. 3; sublittoral from 2–3 fathoms depth, Jôgashima, Kanagawa Prefecture.

Tubulanus punctatus: **Kaburaki**, 1927: 1662, fig. 3180. **Yamaoka**, 1940a: 208–212, pl. XIV, figs. 1, 2, text figs. 1, 2; from lower intertidal under stones and in rock crevices to sublittoral among mud, Hokkaidô Prefecture (Akkeshi, Ochiishi, Nemuro, Abashiri, Usu and Muroran). **Kaburaki**, 1947: 1474, fig. 4157. **Iwata**, 1954a: 5; lower intertidal under stones, Hokkaidô Prefecture (Akkeshi, Muroran, Oshoro, Rishiri Island and Monbetsu). **Iwata**, 1954b: 34; habitat not recorded, northern coast near the Seto Marine Biological Laboratory, Wakayama Prefecture. **Yamaguchi and Yamada**, 1955: 64. **Utinomi**, 1956: 31; pl. 16, fig. 1. **Iwata**, 1960a: 96, fig. 2. **Iwata**, 1960b: 19–25, figs. 62–91; intertidal, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 1. **Utinomi**, 1960: 31, pl. 16, fig. 1. **Satô and Itô**, 1961: 187, fig. 7.1.1. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 201. **Iwata**, 1965b: 390, one figure. **Shiino**, 1969: 94, fig. 9-3A. **Utinomi**, 1969: 31, pl. 16, fig. 1. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 62. **Kito**, 1975: 149; among the holdfasts of *Sargassum confusum*, Oshoro, Hokkaidô Prefecture. **Honma and Kitami**, 1978: 14; Sado Island, Nîgata Prefecture. **Iwata**, 1983: 181, 182, figs. 8-5g, h, i, 8-13b. **Hieda and Takahashi**, 1986: 41, with two color photographs of a specimen taken in Yakumo, Hokkaidô Prefecture. **Inaba**, 1988: 225; lower intertidal to shallow sublittoral, under stones on gravelly to rocky shores, found rarely in the Inland Sea of Seto. **Miyazawa *et al*.**, 1988: 867–874; intertidal, habitat unknown, Hiroshima Prefecture (Iwashijima and Mukaishima), Yugeshima, Ehime Prefecture, identified by Dr. T. Hoshino, Mukaishima Marine Biological Station, Hiroshima University. **Iwata**, 1992: 196, pl. 44-1, fig. 7-2B. **Iwata**, 1997: 53 (with a color photograph take in life by Fumio Iwata), 55. **Shimomura *et al*.**, 2001: 46; dredged sublittorally from two sites in Ôtsuchi Bay, Iwate Prefecture; 39°21'01''N, 141°58'31''E, 58.7 m depth, mixture of sand and shell debris; 39°20'43''N, 141°57'43''E, 49.0 m depth, muddy sand. **Crandall *et al*.**, 2002: 15, 16, 30, 37, 42.

NOTE: Apart from the records from Japanese waters, *Tubulanus punctatus* is also known from Posjet Bay (Peter the Great Bay) (Korotkevitsch, 1971), Sakhalin, the Kuril Islands and Kamchatka Penninsula (Korotkevitsch, 1982), Vostok Bay (Kulikova, 1988), and Shandon Province (Qingdao, Huangdao, and Jiaonan), China (Yin *et al*., 1988).

Tubulanus roretzi Senz, 1997

Tubulanus roretzi **Senz**, 1997a: 424–430, figs. 1-4; locality and habitat unknown.

TYPE MATERIAL: Holotype, NHMW-EV 3565/1886; paratype, NHMW-EV 3566–3573.

NOTE: The material was collected by Dr. Albrecht von Roretz during his stay in Japan from 1874–1882.

Class PILIDIOPHORA Thollesson and Norenburg, 2003
Family HUBRECHTELLIDAE Chernyshev, 2003
Genus *Hubrechtella* Bergendal, 1902

Hubrechtella Bergendal, 1902: 9.

Coeia Takakura, 1922: 419; synonymized by Kajihara (2006).

TYPE SPECIES: *Hubrechtella dubia* Bergendal, 1902, by monotypic designation.

Hubrechtella ijimai (Takakura, 1922)
[Japanese name: îjima-himomushi]

Coeia ijimai **Takakura**, 1922: 419–422, two figs.; among sandy gravel on beach, Enoura Bay, Shizuoka Prefecture and Tateyama Bay, Chiba Prefecture. **Crandall *et al*.**, 2002: 10, 16, 27, 34.

Coia [sic] *ijimai*: **Iwata**, 1960c: 166, pl. 83, fig. 3. **Iwata**, 1965a: 201. **Iwata**, 1965b: 391, figs. 6a, b; under stones on sandy beach in Asamushi, Aomori Prefecture, Onagawa, Miyagi Prefecture, Usa, Kôchi Prefecture, and Fukue, Nagasaki Prefecture. **Tsuchiya**, 1979: 82; intertidal, Hadakajima Island, Asamushi Aomori Prefecture. **Iwata**, 1992: 197, fig. 7-3B.

Hubrechtella ijimai: **Kajihara**, 2006: 28–37, figs. 15–19; sandy to muddy tidal flat, 34°41'04''N, 137°35'59''E, Ikarise, Hamanako Lake, Shizuoka Prefecture.

Hubrechtella kimuraorum Kajihara, 2006

Hubrechtella kimuraorum **Kajihara**, 2000: 37–43, figs. 20–23; sandy to muddy tidal flat, 34°41'04''N, 137°35'59''E, Ikarise, Hamanako Lake, Shizuoka Prefecture.

TYPE MATERIAL: Holotype, ZIHU-3127, male, 1 August 2003, 72 slides, 6-µm serial transverse sections of the body except in the middle portion.

Genus *Tetramys* Iwata, 1957

Tetramys Iwata, 1957a: 2.

TYPE SPECIES: *Tetramys ramicerebrus* Iwata, 1957 by monotypic designation.

NOTE: Cladistic analyses by Sundberg and Hylbom (1994) and Sundberg *et al*. (2003) based on morphological characters indicate that the genus appears to be synonymous with *Hubrechtella*.

Tetramys ramicerebrus Iwata, 1957
[Japanese name: miura-himomushi]

Tetramys ramicerebrum [sic] **Iwata**, 1957a: 3–5, pl. I, fig.1, pl. II, figs. 1-6; dredged sublittorally from 20 m depth on 9 February 1955 by His Majesty Emperor Shôwa, sediment type not recorded, Higashiône, Sagami Bay, Kanagawa Prefecture. **Iwata**, 1965a: 201. **Iwata**, 1965b: 391, figs. a–d.

Tetramys ramicerebrus: **Crandall *et al*.**, 2002: 14, 16, 29, 41.

Family LINEIDAE McIntosh, 1874
Genus *Cerebratulus* Renier, 1804

Cerebratulus Renier, 1804: 21.

Meckelia Leuckart, 1828: 17; synonymized by Hubrecht (1879) (in part).

TYPE SPECIES: *Cerebratulus marginatus* by subsequent designation of Gibson (1995).

Cerebratulus albocirculus Iwata, 1957

Cerebratulus albocirculus **Iwata**, 1957a: 17–18, pl. I, fig. 7, pl. V, figs. 6, 7; "Mosaki at Kamezyo," dredged sublittorally from 10 m depth on 23 July 1956 by His Majesty Emperor Shôwa, Sagami Bay, off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 26, 38.

NOTE: The place indicated by the name "Mosaki at Kamezyo" in Iwata's (1957a) original description is uncertain. One possible candidate in Sagami Bay is "Kamegishô," a bank located at approximately 139°35'N, 35°12'E.

Cerebratulus carnosus Takakura, 1898

Cerebratulus L.C. *arnosus* [sic] **Takakura**, 1898: 426, fig. 23; mud, Misaki Harbour and Koajiro Bay, Kanagawa Prefecture.

Cerebratulus arnosus: **Crandall *et al*.**, 2002: 10, 17, 26, 33.

NOTE: The abbreviation "L.C.," most probably denoting "lower-case letters," was mistakenly inserted between the generic and specific names in the original publication, with the initial "*c*" dropped from "*carnosus*" (=Latin, meaning "fleshy"), which referrs to the body coloration of the species treated in the original description. The original spelling *arnosus* is incorrect, due to a printer's error, according to Article 32.5 of the Code (ICZN, 1999) (Crandall, pers. comm.).

Cerebratulus communis Takakura, 1898
[Japanese name: nami-himomushi]

Cerebratulus L.C. *ommunis* [sic] **Takakura**, 1898: 425, fig. 22 (originally numbered as fig. 20); intertidal in sandy mud, Misaki Harbour, Koajiro Bay, Bishamon Bay, and Matsuwa Bay, Kanagawa Prefecture.

Cerebratulus communis: **Kaburaki**, 1927: 1666, fig. 3189. **Kaburaki**, 1947: 1471, fig. 4149. **Iwata**, 1952: 140–141, fig. 5; lower intertidal among sandy mud, Tomioka, Amakusa, Kumamoto Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 6. **Iwata**, 1960c: 169, pl. 84, fig. 6; Asamushi, Aomori Prefecture. **Utinomi**, 1960: 31, pl. 16, fig. 6. **Inaba**, 1963: 228; lower intertidal on sandy to muddy shores or under stones on gravelly to rocky shore, commonly found in the Inland Sea of Seto. **Kikuchi**, 1968: 167; among *Zostera marina*, Tomioka Bay, Amakusa, Kumamoto Prefecture. **Utinomi**, 1969: 31, pl. 16, fig. 6. **Inaba**, 1988: 225; lower intertidal on sandy to muddy shores or under stones on gravelly to rocky shores, commonly found in the Inland Sea of Seto. **Crandall *et al*.**, 2002: 10, 17, 24, 26, 33.

Cerebratulus comunis [sic]: **Kaburaki and Iwata**, 1965: 395, with one figure.

NOTE: As in the case with *Cerebratulus arnosus*, a nomenclatural consideration is required as to the correct spelling of the species name. The species has been also recorded from Alaid Island, northern Kurile Islands (Takakura, 1933).

Cerebratulus fasciatus Stimpson, 1857

Cerebratulus fasciatus **Stimpson**, 1857: 161; obtained sublittorally from sandy to stony bottoms of about 7.4 m depth, Hokkaidô Prefecture. Originally recorded as "Apud oras insulae 'Jesso' Japoniae Borealis; in fundo arenoso-limoso profunditatis 4 orgyiarum" (near the region of Hokkaidô Island, northern Japan; in a bottom of muddy sand at a depth of 7.4 m). **Iwata**, 1954a: 14. **Yamaguchi and Yamada**, 1955: 67. **Crandall *et al*.**, 2002: 10, 17, 26, 38.

Cerebratulus formosus Iwata, 1957

Cerebratulus formosus **Iwata**, 1957a: 15–17, pl. I, fig. 4, pl, V, figs. 1–5; dredged sublittorally from 100 m depth on 13 December 1952 by His Majesty Emperor Shôwa, Nakafukari at Hayama, Sagami Bay, off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 26, 38.

Cerebratulus longiceps Coe, 1901

Cerebratulus longiceps: **Coe**, 1944: 29, obtained by the United States Bureau of Fisheries Steamer *Albatross*, 250 m depth, off Ôshima, the Metropolis of Tôkyô. **Crandall *et al*.**, 2002: 10, 17, 27, 38.

NOTE: *Cerebratulus longiceps* was originally described from Yakutat, Alaska, USA, by Coe (1901: 77). The species is so far only known from Coe's (1901, 1944) records.

Cerebratulus macroren Hubrecht, 1887

Cerebratulus macroren **Hubrecht**, 1887: 46–47, pl. I, figs. 13, 14, 18, 19, pl. X, figs. 8, 9, pl. XI, fig. 11, pl. XII, figs. 1, 2, 7, 8, pl. XIII, figs. 7-9, pl. XIV, figs. 7, 8, 11, pl. XV, figs. 2, 3, 19, text fig. 4; sublittoral from 345 fathoms (about 640 m) depth on green mud, collected on 12 May 1875 by H.M.S. *Challenger*, 35°11'00''N, 139°28'00''E, Sagami Bay, off Kanagawa Prefecture.

Cerebratulus marginatus Renier, 1804
[Japanese name: orochi-himomushi]

Cerebratulus marginatus: **Yamaoka**, 1940a: 222–224, pl. XV, figs. 6–8, text fig. 9; lower intertidal or sublittoral in soft mud or among fine sand under stones, Akkeshi, Hokkaidô Prefecture. **Coe**, 1944: 29. **Okuda**, 1947: 1472, fig. 4150. **Iwata**, 1954a: 14; sublittoral among soft mud, Hokkaidô Prefecture (Akkeshi, Kushiro and Nemuro); sublittoral among soft mud, Misaki, Kanagawa Prefecture. **Iwata**,

1954b: 37; sublittoral, obtained by trawling off the coast of the Kii Peninsula, Wakayama Prefecture. **Yamaguchi and Yamada**, 1955: 66. **Iwata** 1957a: 11–12, pl. I, fig. 6; dredged sublittorally from 200–280 m depth on 5 February 1955 by His Majesty Emperor Shôwa, "Southern Maruyamadashi at Aamadaiba" [sic], Sagami Bay, Kanagawa Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 5. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 201. **Satô and Itô**, 1961: 187, fig. 7.1.5. **Okuda and Iwata**, 1965: 385, figs. a, b. **Shiino**, 1969: 94, fig. 9-3B-D. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Iwata**, 1992: 198, fig. 7-2D. **Iwata**, 1997: 55. **Shimomura *et al*.**, 2001: 46; obtained from a sediment of mixed sand, mud, and shell debris at a depth of 64 m, 39°23.363'N, 141°58.971'E, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.**, 2002: 10, 17, 24, 27, 38.

NOTE: *Cerebratulus marginatus* Renier, 1804 was originally described from the Adriatic Sea, Italy (presumably Padua). Apart from the records in Japanese waters, the species is also reported from the Pacific coast of North America (Alaska to California), the western North Atlantic (Greenland, Labrador, and Cape Cod southwards under the offshore Arctic current), the Arctic (King Charles Land, Bremer Sound, Hinlopen Strait, Spitzbergen), Europe (Norway, the British Isles, the Mediterranean), and south to Madeira (Gibson, 1995: 340).

Cerebratulus montgomeryi Coe, 1901

Cerebratulus montgomeryi: **Coe**, 1944: 29; obtained by the United States Bureau of Fisheries Steamer *Albatross*, 600 m depth, off Hokkaidô. **Crandall *et al*.**, 2002: 10, 17, 24, 27, 34, 38.

NOTE: Originally described from Alaska by Coe (1901: 80), *Cerebratulus montgomeryi* is distributed along Pacific coast of North America, the Aleutian Islands, Bering Sea, coast of Siberia, Japan Sea coasts of Russia, and Japan (Kulikova, 1988; Gibson, 1995: 341).

Cerebratulus penniger Iwata, 1957

Cerebratulus penniger **Iwata**, 1957a: 13–14, pl. I, fig. 3, pl. IV, figs. 4–6; dredged sublittorally from 380 m depth on 28 September 1953 by His Majesty Emperor Shôwa, Nakafukari at Hayama, Sagami Bay, off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 27, 38.

Cerebratulus subacutus (Stimpson, 1857)

Meckelia subacuta **Stimpson**, 1857: 161; intertidal in mud, Naha, Okinawa Prefecture. Originally recorded as "In portu 'Napa' insulae 'Loo Choo;' littoralis in limo"; transferred to *Baseodiscus* by Bürger (1904: 120).

Cerebratulus subacutus: **Crandall *et al*.**, 2002: 10, 17, 30, 34.

Cerebratulus superniger Iwata, 1957

Cerebratulus superniger **Iwata**, 1957a: 14–15, pl. I, fig. 5, pl. IV, figs. 7, 8; collected by His Majesty Emperor Shôwa from a depth of 10 m on 10 January 1930, "Ithishiki at Hayama" [sic], off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 27, 39.

Cerebratulus zebra Punnett and Cooper, 1909

Cerebratulus zebra: **Iwata**, 1957a: 12–13; dredged sublittorally from 410 m depth on 16 July 1940 by His Majesty Emperor Shôwa, "Aamadaiba" [sic], Sagami Bay, off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 27, 39.

NOTE: *Cerebratulus zebra* was originally described from Sri Lanka (Punnett and Cooper, 1909: 11). The species is currently known only from the two localities, Sri Lanka and Japan.

Genus *Diplopleura* Stimpson, 1857

Diplopleura Stimpson, 1857: 162.

Langia Hubrecht, 1879: 220; synonymized by Verrill (1895: 528).

TYPE SPECIES: *Diplopleura japonica* Stimpson, 1857 by monotypic designation.

NOTE: The genus *Diplopleura*, currently containing five nominal species, was established only on the basis of external characters, in which the lateral margins of the body are dorsally curled up.

Diplopleura japonica Stimpson, 1857
[Japanese name: hida-himomushi]

Diplopleura japonica **Stimpson**, 1857: 162; shallow sublittoral in sandy bottom of 5 orgyia (=5 fathoms=9.3 m) depth, Kagoshima Bay, Kagoshima Prefecture. **Iwata**, 1965a: 201. **Crandall *et al*.**, 2002: 11, 17, 27, 39.

NOTE: *Diplopleura japonica* has not been reported since its original description. Stimpson's specimen was light yellowish chestnut in color, measured 1.5 "pollex" (=1.5 inch=3.8 cm) in length and 0.12 "pollex" (=0.12 inch=0.3 cm) in width.

Genus *Euborlasia* Vaillant, 1890

Euborlasia Vaillant, 1890: 616.

TYPE SPECIES: *Borlasia elizabethae* McIntosh, 1874 by monotypic designation.

Euborlasia gotoensis Iwata, 1952
[Japanese name: gotô-himomushi]

Euborlasia gotoensis **Iwata**, 1952: 133–134, figs. 3, 9, 10; lower intertidal under stones, Fukue, Gotô Islands, Nagasaki Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 8. **Iwata**, 1965a: 169, 201. **Iwata**, 1965b: 392, figs. a–c. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Iwata**, 1992: 198, pl. 44-3. **Crandall *et al*.**, 2002: 11, 17, 27, 34.

Euborlasia proteres Iwata, 1957

Euborlasia proteres **Iwata**, 1957a: 8–9, pl. I, fig. 2, pl. IV, figs. 1–3; dredged sublittorally from 380 m depth on 28 September 1953 by His Majesty Emperor Shôwa, Nakafukari at Hayama, Sagami Bay, off Kanagawa Prefecture. **Crandall *et al*.**, 2002: 11, 17, 27, 39.

Genus *Hinumanemertes* Iwata, 1970

Hinumanemertes Iwata, 1970a: 134.

TYPE SPECIES: *Hinumanemertes kikuchii* Iwata, 1970 by original designation.

Hinumanemertes kikuchii Iwata, 1970
[Japanese name: hinuma-himomushi]

Hinumanemertes kikuchii **Iwata**, 1970a: 136–142, fig. 1A–C,

pl. 1, figs. 1–8, pl. 2, figs. 9–17; obtained sublittorally in mud from a brackish-water lake, Lake Hinuma, Ibaraki Prefecture. **Iwata**, 1970b: 128. **Iwata**, 1973: 264. **Iwata**, 1992: 198, fig. 7-3E. **Crandall *et al*.**, 2002: 11, 17, 27, 43.

Genus *Iwatanemertes* Gibson, 1990

Iwatanemertes Gibson, 1990a: 75.

TYPE SPECIES: *Meckelia piperata* Stimpson, 1855 by original designation.

Iwatanemertes piperata (Stimpson, 1855)

[Japanese name: ryûkyû-himomushi]

Meckelia piperata **Stimpson**, 1855: 381; habitat not recorded, Kikaishima, Kagoshima Prefecture.

Lineus piperata [sic]: **Takakura**, 1898: 186–187, fig. 9; intertidal among algae, Enoshima and Misaki, Kanagawa Prefecture.

Lineus piperatus: **Stimpson**, 1857: 160; sublittoral between stones and among algae, Kikaishima, Kagoshima Prefecture; originally recorded as "In portu insulae 'Kikaishima' Japoniae Australis; sublittoralis inter lapillus et algas." **Yamaoka**, 1940b: 13–15, figs. 1, 2; habitat not recorded, Shitaru, Minami-Izu, Shizuoka Prefecture; habitat not recorded, Naha, Okinawa Island, Okinawa Prefecture. **Iwata**, 1954b: 34; intertidal under stones, Shirahama, Wakayama Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 1; Aikawa, Sado Island, Nîgata Prefecture. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Iwata**, 1965b: 394, with one figure.

Iwatanemertes piperata: **Crandall *et al*.**, 2002: 11, 17, 27, 31, 34, 39.

NOTE: Transferred to *Iwatanemertes* by Gibson (1990a: 75), based upon a study of material collected in Hong Kong. Apart from the records from Japanese waters, the species is also known from Hong Kong (Gibson, 1990a) and the Taiwan Straits (Sun, 1995).

Genus *Lineus* Soweby, 1806

Lineus Sowerby, 1806: 15.

Heterolineus Friedrich, 1935a: 310; synonymized by Corrêa (1963: 43).

TYPE SPECIES: *Ascaris longissima* Gunnerus, 1770 by monotypic designation.

Lineus alborostratus Takakura, 1898

[Japanese name: takakura-himomushi]

Lineus alborostratus **Takakura**, 1898: 332, fig. 12; habitat not recorded, Misaki, Kanagawa Prefecture. **Yamaoka**, 1940a: 220–222, pl. XV, figs. 1–5, text fig. 8; lower intertidal under stones, Akkeshi and Ochiishi, Hokkaidô Prefecture. **Iwata**, 1951: 136–137, figs. 2, 3c; intertidal under stones, Mukaishima, Hiroshima Prefecture. **Iwata**, 1952: 138–139; lower intertidal under stones, Fukue, Gotô Islands, Nagasaki Prefecture. **Iwata**, 1954a: 12; lower intertidal under stones, Hokkaidô Prefecture (Akkeshi, Nemuro, Hiroo, Muroran, Monbetsu and Rishiri Island). **Yamaguchi and Yamada**, 1955: 66. **Iwata**, 1957c: 102. **Iwata**, 1960b: 26–27, figs. 92–96; intertidal, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 9. **Inaba**, 1963: 227; lower intertidal to shallow sublittoral under stones on rocky to gravelly shores, commonly found in the Inland Sea of Seto. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965b: 393, figs. a–c. **Iwata**, 1983: 182. **Inaba**, 1988: 225; lower intertidal to shallow sublittoral under stones on rocky to gravelly shores, commonly found in the Inland Sea of Seto. **Iwata**, 1992: 198, pl. 44-6. **Crandall *et al*.**, 2002: 11, 17, 27, 31, 34, 39.

NOTE: Apart from the records from Japanese waters, *Lineus alborostratus* is also known from Vostok Bay, Russia (Kulikova, 1988) and Shandong Province (Qingdao and Yantai), China (Yin *et al*., 1988). A similar-looking species, *Lineus hiatti* Coe, 1947, is known from Hawaii; the latter can be distinguished from *L. alborostratus* by the head having less distinct anterior white or colorless margins (Coe, 1947: 104).

Lineus albovittatus (Stimpson, 1855)

Meckelia albo-vittata [sic] **Stimpson**, 1855: 382; habitat not recorded, Okinawa Prefecture; originally recorded as "Loo Choo."

Cerebratulus albovittatus: **Stimpson** 1857: 160; intertidal among algae and in rock crevices, Okinawa Prefecture. *Non Cerebratulus albo-vittatus*: Bürger, 1890: 11, pl.1, fig. 1, pl. 2, figs. 1–8, pl. 8, figs. 153–154 (from Ambon, Indonesia).

Lineus albovittatus: **Iwata**, 1954c: 27–29, figs. 1A, 2; habitat not recorded, Nakanoshima, Tokara Islands, Kagoshima Prefecture. **Crandall *et al*.**, 2002: 11, 17, 27, 34, 39. *Non Lineus albo-vittatus* [sic]: Punnett, 1900: 578, pl. LXI, figs. 46–47 (from Lifou, New Caledonia, South Pacific); *nec Lineus albovittatus*: Punnett and Cooper, 1909: 7, 14, pl. 1, fig. 10, pl. 2, fig. 14 (from Salomon, Indian Ocean).

NOTE: Two forms have been known by the specific name of either *albovittatus* or *albo-vittatus*. These differ in the shape of the white line across the dorsal surface of the head. The transverse line in one form, reported from Japanese waters, is straight (Stimpson, 1855, 1857; Iwata, 1954c), while it is W-shaped in the other (Bürger, 1890; Punnett, 1900; Punnett and Cooper, 1909). The latter was synonymized with *Lineus tricuspidatus* (Quoy and Gaimard, 1833) by Gibson (1981: 206) and later transferred to *Notospermus* by Riser (1991: 435), and is now known as *Notospermus tricuspidatus*, a species that has not been reported from Japanese waters.

Lineus bipunctatus Takakura, 1898

Lineus bipunctatus **Takakura**, 1898: 335–336, fig. 18: Jôgashima, Kanagawa Prefecture; collected sublittorally among thecatid hydroids from 2–3 fathoms depth. **Crandall *et al*.**, 2002: 11, 17, 27, 34, 39.

Lineus cancelli Iwata, 1954

Lineus cancelli **Iwata**, 1954b: 34–35, fig. 1; intertidal under stones, Shirahama, Wakayama Prefecture. **Crandall *et al*.**, 2002: 11, 17, 27, 34, 39.

Lineus caputornatus Takakura, 1898

Lineus caputornatus **Takakura**, 1898: 334–335, fig.15; obtained sublittorally among thecate hydroids from 2–3 fathoms depth, Jôgashima, Kanagawa Prefecture. **Crandall *et al*.**, 2002: 11, 17, 27, 34, 39.

Lineus fulvus Iwata, 1954

Lineus fulvus **Iwata**, 1954a: 13, fig. 2C; intertidal among

laminarian holdfasts, Rishiri Island, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 66, fig. 17-3. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

Lineus fuscoviridis Takakura, 1898

[Japanese name: midori-himomushi or midori-hera-himomushi]

Lineus fuscoviridis **Takakura**, 1898: 332–333, fig. 13; intertidal under stones on muddy sand, sublittoral between rock crevices from 2–3 fathoms depth, Misaki and Jôgashima, Kanagawa Prefecture and Sunosaki, Tateyama, Chiba Prefecture. **Kaburaki**, 1927: 1665, fig. 3186. **Ohuye**, 1942: 187–191, figs. 1–3. **Kaburaki**, 1947: 1470, fig. 4146. **Ohuye**, 1950: 22. **Iwata**, 1952: 134–136; lower intertidal under stones, Tomioka, Amakusa, Kumamoto Prefecture. **Iwata**, 1954b: 36–37; habitat not recorded, Kada, Wakayama Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 5. **Iwata**, 1957a: 10–11; habitat not recorded, obtained by His Majesty Emperor Shôwa on 5 June 1928, Koajiro at Misaki, Kanagawa Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 11. **Utinomi**, 1960: 31, pl. 16, fig. 5. **Satô and Itô**, 1961: 187, fig. 7.1.6. **Inaba**, 1963: 228; sandy to muddy sediment or under stones on gravelly to rocky shores, lower intertidal to shallow sublittoral, commonly found in the Inland Sea of Seto; a specimen collected 21 May 1936 at Hakanjima, Hiroshima Prefecture, is deposited in Mukaishima Marine Biological Station, Hiroshima University, under registration number 70-1. **Iwata**, 1965a: 169, 201. **Kaburaki and Iwata**, 1965: 393, with one figure. **Shiino**, 1969: 93. **Utinomi**, 1969: 31, pl. 16, fig. 5. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Iwata. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Ochi**, 1979: 640. **Inaba**, 1988: 225; sandy to muddy sediment or under stones on gravelly to rocky shores, lower intertidal to shallow sublittoral, commonly found in the Inland Sea of Seto. **Miyazawa *et al*.** 1988: 867–874; intertidal, Iwashijima and Mukaishima, Hiroshima Prefecture; intertidal, Yugeshima, Ehime Prefecture; identified by Dr. T. Hoshino, Mukaishima Marine Biological Station, Hiroshima University. **Iwata**, 1992: 198, pl. 44-7. **Uchida**, 1994: 88, with a color photograph taken in life by Mr. Isamu Soyama in Ôsezaki, Shizuoka Prefecture. **Iwata**, 1997: 55. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

Lineus fuscoviridus [sic]: **Kikuchi**, 1968: 167; among *Zostera marina*, Tomioka Bay, Amakusa, Kumamoto Prefecture.

Lineus nigrofuscus (Stimpson, 1857)

Cerebratulus nigrofuscus **Stimpson**, 1857: 161; intertidal between stones, Amamiôshima, Kagoshima Prefecture. Originally reported as “Ad insulam ‘Ousima’ Japoniae Australis; littoralis inter lapillus”; transferred to *Lineus* by Bürger (1904: 102). **Crandall *et al*.**, 2002: 11, 27, 34, 39.

Lineus nigrostriatus Iwata, 1954

Lineus nigrostriatus **Iwata**, 1954c: 30, fig. 1B; habitat not recorded, Nakanoshima, Tokara Islands, Kagoshima Prefecture. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

Lineus nipponensis Senz, 2001

Lineus nipponensis **Senz**, 2001: 5–13, figs. 1–9; habitat and locality unknown.

TYPE MATERIAL: Holotype, NHMW-EV 17026/3990; paratype, NHMW-EV 17027/3991.

NOTE: The material was collected by Dr. Albrecht von Roretz during his stay in Japan from 1874–1882.

Lineus spatiosus Iwata, 1954

Lineus spatiosus **Iwata**, 1954a: 11–12, fig. 2B; lower intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 65, fig. 17-2. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

Lineus subcingulatus Takakura, 1898

[Japanese name: koajiro-himomushi]

Lineus subcingulatus **Takakura**, 1898: 335, fig. 16; intertidal among *Sargassum thunbergii*, Koajiro Bay, Kanagawa Prefecture. **Kaburaki**, 1927: 1665, fig. 3187. **Kaburaki**, 1947: 1471, fig. 4147. **Inaba**, 1963: 228; lower intertidal to shallow sublittoral, commonly occurring on algae, or on gravelly to rocky shores, the Inland Sea of Seto. **Kaburaki and Iwata**, 1965: 394. **Inaba**, 1988: 225; lower intertidal to shallow sublittoral, commonly occurring on algae, or on gravelly to rocky shores, the Inland Sea of Seto. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

Lineus torquatus Coe, 1901

[Japanese name: kasuri-himomushi or kasuri-hera-himomushi]

Lineus torquatus: **Yamaoka**, 1940a: 218–220, pl. XIV, figs. 9–14, text fig. 7; Hokkaidô Prefecture (Akkeshi, Ochiishi, and Nemuro), lower intertidal under stones. **Okuda**, 1947: 1471, fig. 4148 (1–3). **Iwata**, 1954a: 12; lower intertidal under stones or among laminarian holdfasts, Hokkaidô Prefecture (Akkeshi, Nemuro and Hiroo). **Yamaguchi and Yamada**, 1955: 66. **Utinomi**, 1956: 31, pl. 16, fig. 4. Iwata 1957b: 54–57, figs. 1–10; intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1957c: 102, figs. 5.1a–c, 5.2. **Iwata**, 1960b: 26. **Iwata**, 1960c: 166, pl. 83, fig. 13. **Utinomi**, 1960: 31, pl. 16, fig. 4. **Uchida *et al*.**, 1963: 17. **Okuda and Iwata**, 1965: 394, figs. a–c. **Utinomi**, 1969: 31, pl. 16, fig. 4. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 62. **Iwata**, 1983: 182, 183, 187, 189, figs. 8-1, 8-2, 8-6. **Crandall *et al*.**, 2002: 11, 18, 27, 35, 39.

NOTE: Originally reported from Alaska (Coe, 1901: 66); also known to occur in San Francisco Bay, USA (Corrêa, 1964: 528) and Santa Maria Basin, California, USA (Blake, 1993: 118), on the coasts around northern China (Sun and Pan, 1994: 328), and the Japan Sea coast of Russia (Korotkevitsch, 1955, 1971; Kulikova, 1988). Manchenko and Kulikova (1996a) demonstrated on the basis of allozyme analyses that the species is a mixture of at least two cryptic species, which have been recognized since the original description by Coe (1901) as brown and reddish color morphs. A nomenclatural procedure, such as neotypification, may be required in the future to make it clear to which taxon the name *torquatus* will be applied. Even if some syntypes were extant, designating a lectotype would not solve the problem, for the body color might have been changed or not preserved by fixation.

Genus *Micrura* Ehrenberg, 1831

Micrura Ehrenberg, 1831: 57.

TYPE SPECIES: *Micrura fasciolata* Ehrenberg, 1831, by

monotypic designation.

Micrura akkeshiensis Yamaoka, 1940
[Japanese name: akkeshi-himomushi]

Micrura akkeshiensis **Yamaoka**, 1940a: 227–228, pl. XV, figs. 11, 12, pl. XVI, fig. 1, text fig. 11; upper intertidal under stones on sandy beaches, Akkeshi and Abashiri, Hokkaidô Prefecture. **Okuda**, 1947: 1473, fig. 4153. **Iwata**, 1954a: 14–15; intertidal under stones, Akkeshi and Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 67. **Iwata**, 1957c: 106. **Iwata**, 1958: 104–127, figs. 1–60; in July 1955, intertidal, Daikokujima Island, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960a: 96, figs. 3, 4. **Iwata**, 1960b: 27. **Iwata**, 1960c: 169, pl. 84, fig. 2. **Satô and Itô**, 1961: 187, fig. 7.1.4. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 201. **Okuda and Iwata**, 1965: 395, figs. a, b. **Iwata**, 1983: 181, 182, 185, 191, figs. 8–12. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

NOTE: Apart from the records from Hokkaido, *Micrura akkeshiensis* is also known from Vostok Bay, Russia (Kulikova, 1988).

Micrura alaskensis Coe, 1901

Micrura alaskensis: **Yamaoka**, 1940a: 225–226, pl. XV, figs. 9, 10, text fig. 10; intertidal under stones on beaches, Akkeshi, Hokkaidô Prefecture. **Coe**, 1944: 29. **Iwata**, 1954a: 14; lower intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 67. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

NOTE: Originally described from Alaska (at New Metlakahtla on Annette Island, Glacier Bay, Sitka, Yakutat, and at Orca and Virgin Bay in Prince William Sound) by Coe (1901: 71), *Micrura alaskensis* is also reported from San Pedro and Monterey Bay, California, USA (Coe, 1904: 118), British Columbia, Canada (Coe, 1940: 271), and Ensenada, Mexico (Coe, 1940: 271); the record from Santa Maria Basin, California, USA (Blake, 1993: 119), based on fixed fragments of bodies collected from depths of 297 m and 591 m, might represent different species.

Micrura bella (Stimpson, 1857)
[Japanese name: kuchibeni-himomushi]

Cerebratulus bellus **Stimpson**, 1857: 161; obtained from an empty shell from a muddy bottom, 11 m depth, Hokkaidô Prefecture; originally reported as “Prope oras insulae ‘Jesso;’ in conchis desertis e fundo limoso profunditatis sex orgyiarum.”

Micrura festiva **Takakura**, 1898: 336, fig. 20; sublittoral 2–3 fathoms (=3.7–5.6 m) depth, Jôgashima, Kanagawa Prefecture. **Kaburaki**, 1927: 1666, fig. 3188. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

Micrura bella: **Yamaoka**, 1940a: 230–232, pl. XV, figs. 13–15; on floating rotten wood perforated by the shipworm *Teredo hibicola*, Usu, Hokkaidô Prefecture; habitat not recorded, Muroran, Hokkaidô Prefecture; habitat not recorded, Kushimoto, Wakayama Prefecture. **Okuda**, 1947: 1472, fig. 4151. **Iwata**, 1954a: 14; lower intertidal under stones or among holdfasts of seaweeds, Muroran and Oshoro, Hokkaidô Prefecture, Misaki, Kanagawa Prefecture, and Kushimoto, Wakayama Prefecture. **Iwata**, 1954b: 37; intertidal under stones, Yuzaki, Shirahama, Wakayama Prefecture. **Yamaguchi and Yamada**, 1955: 67. **Utinomi**, 1956: 32, pl. 16, fig. 10. **Iwata**, 1960c: 169, pl. 84, fig. 3; habitat not recorded, Usa, Kôchi Prefecture and Aikawa, Sado Island, Nîgata Prefecture. **Utinomi**, 1960: 32, pl. 16, fig. 10. **Okuda and Iwata**, 1965: 395, figs. a, b. **Utinomi**, 1969: 32, pl. 16, fig. 10. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 62. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

NOTE: *Micrura bella* possesses a striking body color pattern, which is an off-white background with a deep vermilion tip of the head and a longitudinal dorsal band composed of broad purple rectangles separated by narrow spaces. There are at least three different names for similar-looking forms: *Lineus striatus* Griffin, 1898, *Micrura impressa* Stimpson, 1857, and *Micrura verrilli* Coe, 1901. Crandall *et al*. (2002) pointed out that the difference among these forms is whether or not the head marking encircles the tip. Crandall *et al*. (2002) suggested that the head marking is complete in the western-Pacific forms, while it is restricted to the dorsal half in the eastern-Pacific forms. Future assessment will be required to delineate these forms for the proper application of their names.

Micrura dorsovittata Takakura, 1898

Micrura dorsovittata **Takakura**, 1898: 337, fig. 21; habitat not recorded, Jôgashima, Kanagawa Prefecture. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

NOTE: *Micrura dorsovittata* is so far known only by its original description. It resembles *Micrura kulikovae* Chernyshev, 1992, a new name given to a form identified as *Micrura bella* by Kulikova and Kutishchev (1984), in which the color of the dorsal band is brownish.

Micrura japonica Iwata, 1952
[Japanese name: kuro-himomushi]

Micrura japonica **Iwata**, 1952: 139–140, figs. 4, 11, 12; lower intertidal under stones on sandy beaches, Fukue, Gotô Islands, Nagasaki Prefecture; upper intertidal under stones in tide pools on a rocky shore, Tomioka, Amakusa, Kumamoto Prefecture; habitat not recorded, Shimoda, Shizuoka Prefecture. **Utinomi**, 1956: 32, pl. 16, fig. 9. **Iwata**, 1957a: 18–19; collected intertidally on 18 January 1930 by His Majesty Emperor Shôwa, Samejima at Hayama, Kanagawa Prefecture. **Iwata**, 1960c: 169; pl. 84, fig. 4; habitat not recorded, Sakurajima, Kagoshima Prefecture; habitat not recorded, Aikawa, Sado Island, Nîgata Prefecture. **Utinomi**, 1960: 32, pl. 16, fig. 9. **Satô and Itô**, 1961: 187, fig. 7.1.3. **Iwata**, 1965b: 396, figs. a, b. **Utinomi**, 1969: 32, pl. 16, fig. 9. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Iwata. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Iwata**, 1992: 198–199, fig. 7-3F. **Crandall *et al*.**, 2002: 12, 18, 28, 35, 40.

NOTE: The distinction between *Micrura japonica* Iwata, 1952 and *Micrura formosana* Yamaoka, 1939 will require future verification; the latter species, described from the northeastern coast of Taiwan, differs from the former by having a rhynchocoel diverticulum protruding ventrally into the lumen of the foregut, a character state that can be

interpreted as an artifact induced during fixation. Yamaoka's (1939) illustration of the external appearance of the preserved specimen shows strong shrinkage on the surface of the body, which suggests that the specimen was not, or not adequately, anaesthetized before fixation. This would further argue for conspecificity of these two nominal species, reinforced by the close proximity of their localities. Furthermore, *M. japonica* and *M. formosana* might be synonymous with *Cerebratulus niger* (Stimpson, 1855), described from Hong Kong, which is similar in having a truncated anterior end, lateral cephalic slits extending back to the mouth region, black body coloration, and white margins around the mouth.

Micrura magna Yamaoka, 1940

Micrura magna **Yamaoka**, 1940a: 227–228, pl. XVI, figs. 2–4; lower intertidal under stones, Daikokujima, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1954a: 14. **Yamaguchi and Yamada**, 1955: 67. **Uchida *et al.***, 1963: 17. **Crandall *et al.***, 2002: 12, 18, 28, 35, 40.

NOTE: Besides its original description, *Micrura magna* is also known from Vostok Bay, Russia (Kulikova, 1988).

Micrura multinotara Iwata, 1957

Micrura multinotarum [sic] **Iwata**, 1957a: 19–20, pl. I, fig. 8, pl. V, figs. 8, 9; dredged from 30–40 m depth on 20 January 1949 by His Majesty Emperor Shôwa, Tateishi at Ogashima, Kanagawa Prefecture.

Micrura multinotara: **Crandall *et al.***, 2002: 12, 18, 28, 40.

Genus *Nipponomicrura* Chernyshev, 1995

Nipponomicrura Chernyshev, 1995: 15.

TYPE SPECIES: *Micrura uchidai* Yamaoka, 1940, by original designation.

Nipponomicrura uchidai (Yamaoka, 1940)
[Japanese name: uchida-himomushi]

Micrura uchidai **Yamaoka**, 1940a: 232–234, pl. XVI, figs. 5–7, text fig. 12; lower intertidal under stones, Muroran, Hokkaidô Prefecture. **Okuda**, 1947: 1472, fig. 4152 (1–3). **Iwata**, 1954a: 14. **Yamaguchi and Yamada**, 1955: 67. **Okuda and Iwata**, 1965: 396, figs. a–c.

Nipponomicrura uchidai: **Chernyshev**, 1995: 15. **Crandall *et al.***, 2002: 13, 18, 28, 35, 40.

NOTE: Besides the original record from Muroran, *Nipponomicrura uchidai* is also known from Vostok Bay, Russia (Kulikova, 1988).

Genus *Notospermus* Huschke, 1830

Notospermus Huschke, 1830: 682.

TYPE SPECIES: *Notospermus drepanensis* Huschke, 1830 (from Sicilia, Italy; now regarded as a junior synonym of *Polia geniculata* Delle Chiaje, 1828) by monotypic designation.

Notospermus geniculatus (Delle Chiaje, 1828)
[Japanese name: misaki-himomushi or kurohera-himomushi]

Lineus mitellatus **Takakura**, 1898: 333–334, fig. 14; intertidal under stones on muddy sand, sublittoral in rock crevices from 2–3 fathoms depth, Misaki and Jôgashima, Kanagawa Prefecture and Sunosaki, Tateyama, Chiba Prefecture. **Iwata**, 1952: 136–137, fig. 13; lower intertidal under stones, Tomioka, Amakusa, Kumamoto Prefecture.

Lineus geniculatus: **Iwata**, 1954b: 35–36; intertidal under stones, Kushimoto and Shirahama, Wakayama Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 3. **Iwata**, 1957a: 9–10; habitat not recorded, collected by His Majesty Emperor Shôwa on 16 July, 1939 Najima at Hayama, Kanagawa Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 10. **Utinomi**, 1960: 31, pl. 16, fig. 3. **Inaba**, 1963: 228; sandy to muddy sediment or under stones on gravelly to rocky shores, lower intertidal to shallow sublittoral, commonly found in the Inland Sea of Seto; a specimen collected on 20 June 1963 at Mukaishima, Hiroshima Prefecture, is deposited in Mukaishima Marine Biological Station, Hiroshima University, under registration number 70-2. **Iwata**, 1965b: 393, figs. a–c. **Utinomi**, 1969: 31, pl. 16, fig. 3. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Iwata. **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture. **Inaba**, 1988: 225; sandy to muddy sediment or under stones on gravelly to rocky shores, lower intertidal to shallow sublittoral, commonly found in the Inland Sea of Seto. **Iwata**, 1992: 198, pl. 44-4, 5. **Uchida**, 1994: 88–89, with a color photograph taken in life by Mr. Isamu Soyama at Ôsezaki, Shizuoka Prefecture.

?*Lineus genicalatus* [sic]: **Iwata**, 1997: 53, a color photograph taken in life by Eiichi Kurasawa, possibly depicting a species of the genus *Cerebratulus* that lost its tail.

Notospermus geniculatus: **Crandall *et al.***, 2002: 13, 18, 28, 35, 40. **Thollesson and Norenburg**, 2003: 408; Shirahama, Wakayama Prefecture.

NOTE: Iwata (1954b) synonymized *Lineus mitellatus sensu* Takakura (1898) and *sensu* Iwata (1952) with *Lineus geniculatus*, which was originally described as *Polia geniculata* by Delle Chiaje (1828: 177) from Naples, Italy. The species has been redescribed as *Notospermus geniculatus* by Riser (1991: 428–434). Outside Japanese waters it is also known from the Black Sea, Mediterranean (France, Italy, Greece, Malta), Canary Is., Gulf of Guinea (West Africa), Australia, New Zealand, and the western coasts of tropical America (Gulf of California, Panama, and Peru) (Gibson, 1995: 480).

Genus *Paralineopsis* Iwata, 1993

Paralineopsis Iwata, 1993: 186.

TYPE SPECIES: *Paralineopsis taki* Iwata, 1993, by original designation.

Paralineopsis taki Iwata, 1993

Zygeupolia littoralis: **Iwata**, 1951: 135–136; lower intertidal under stones on sand, Mukaishima, Hiroshima Prefecture. **Inaba**, 1963: 227. Mukaishima, Hiroshima Prefecture.

Zyreupolia littoralis [sic]: **Inaba**, 1988: 225. Mukaishima, Hiroshima Prefecture.

Paralineopsis taki **Iwata**, 1993: 186–199, figs. 1–6.

Paralinoepsis taki [sic]: **Crandall *et al.***, 2002: 13, 18, 28, 36.

NOTE: Iwata (1951) originally identified his material as *Zygeupolia littoralis* Thompson, 1900 on the basis of its external features. Later he thoroughly redescribed the taxon as a new genus and species (Iwata, 1993).

Genus *Uchidana* Iwata, 1967

Uchidana Iwata, 1967: 123.

TYPE SPECIES: *Uchidana parasita* Iwata, 1967 by original designation.

Uchidana parasita Iwata, 1967

[Japanese name: uchida-kisei-himomushi]

Uchidana parasita **Iwata**, 1967: 124–136, text fig. 1, pl. 1, figs. 1–8, pl. 2, figs. 9–16, pl. 3, figs. 17–24; in the mantle cavity of *Mactra sulcataria* in muddy sand, mouth of the River Aikawa, Tsu, Mie Prefecture. **Iwata**, 1970b: 128, 132. **Iwata**, 1973: 264. **Iwata**, 1992: 198, fig. 7-3D. **Crandall *et al*.**, 2002: 15, 18, 30, 44.

NOTE: *Uchidana parasita* is the only heteronemertean species parasitizing bivalves.

Family VALENCINIIDAE Hubrecht, 1879
Genus *Baseodiscus* Diesing, 1850

Polia Delle Chiaje, 1825: 406; *non Polia* Ochsenheimer, 1816: 73 (Lepidoptera: Noctuidae).

Baseodiscus Diesing, 1850: 243.

Eupolia Hubrecht, 1887: 10; synonymized by Bürger (1904).

TYPE SPECIES: *Polia delineata* Delle Chiaje, 1825 by monotypic designation.

Baseodiscus curtus (Hubrecht, 1879)

[Japanese name: tatejima-himomushi]

Eupolia curta: **Takakura**, 1898: 185, fig. 7; sublittoral from 2–3 fathoms, Jôgashima, Kanagawa Prefecture; intertidal, Matsuwa Bay, Miura, Kanagawa Prefecture.

Baseodiscus curtus: **Kaburaki**, 1927: 1664, fig. 3185. **Kaburaki**, 1947: 1473, fig. 4154. **Iwata**, 1952: 141–142, fig. 14; lower intertidal under stones, Fukue, Gotô Islands, Nagasaki Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 7. **Iwata**, 1960c: 166, pl. 83, fig. 6. **Iwata, 1**965a: 169, 201. **Iwata**, 1965b: 391, one fig. **Utinomi**, 1969: 31, pl. 16, fig. 7. **Crandall *et al*.**, 2002: 9, 16, 26, 33, 38.

Baseodiscus delineatus var. *curtus*: **Utinomi**, 1960: 31, pl. 16, fig. 7. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Fumio Iwata.

NOTE: *Baseodiscus curtus*, originally described as *Polia curta* Hubrecht, 1879, from Naples, Italy, was transferred to the genus *Baseodiscus* by Bürger (1904). *Baseodiscus curtus* was synonymized with *B. delinatus* by Gibson (1979). However, *B. curtus* can be distinguished from *B. delineatus* by lacking stripes on the ventral surface of the body (Hubrecht, 1879: 209). Although these two species have been regarded as conspecific (*e.g.*, Gibson, 1995), they are treated as distinct species in the present paper. These two species appear to occur globally (Gibson, 1995), with virtually completely overlapping ranges of distribution (Coe, 1944).

Baseodiscus delineatus (Delle Chiaje, 1825)

[Japanese name: iso-himomushi]

?*Eupolia* sp. **Takakura**, 1898: 185, fig. 8; intertidal, Moroiso and Mwatsuwa, Kanagawa Prefecture.

Baseodiscus delineatus: **Coe**, 1944: 28. **Crandall *et al*.**, 2002: 9, 16, 26, 33, 38.

?*Baseodiscus takakurai* **Gibson**, 1995: 305.

NOTE 1: *Baseodiscus delineatus* was originally described as *Polia delineata* Delle Chiaje, 1825 from Naples, Italy, then transferred to *Baseodiscus* by Diesing (1850: 243). The species can be distinguished from *B. curtus* by its either striped or mottled ventral body surface. The species shows a circumglobal distribution; apart from the records from Japan, *Baseodiscus delineatus* is also known from the Mediterranean, the Adriatic and Atlantic coasts of Europe, Cape Verde Is., Bermuda, Barbados, southern Florida, USA, Puerto Rico, Gulf of California, Fiji Is., Mariana Is., Java, Torres Straits, Australia (the Great Barrier Reef and southern coast of Western Australia), Mauritius, Zanzibar, Brazil, and Chile (Gibson, 1995: 479).

NOTE 2: Takakura (1898) recorded a form as *Eupolia* sp. that possessed black mottles on both the dorsal and ventral surfaces of the body. Similar specimens collected on Kakeroma Island (Kagoshima Prefecture) and Ishigaki Island (Okinawa Prefecture) show mottles becoming gradually fused together to form incomplete longitudinal stripes in the middle region of the body (Kajihara, pers. obs.). Takakura's *Eupolia* sp. is herein tentatively regarded as *Baseodiscus delineatus*, though future study must confirm this identification. Takakura (1898) did not identify his material to species, mentioning that it resembled *Eupolia antillensis* Bürger, 1895. Gibson (1995) misinterpreted this as Takakura's (1898) having established a new taxon with the specific name *antillensis*, and superfluously gave the new name *Baseodiscus takakurai* for Takakura's (1898) *Eupolia* sp.

Baseodiscus hemprichii (Ehrenberg, 1831)

[Japanese name: sanada-himomushi]

Baseodiscus hemprichi [sic]: **Iwata**, 1954b: 37; habitat not recorded, Tôshima, Shirahama, Wakayama Prefecture. **Iwata**, 1954c: 30–31; habitat not recorded, Nakanoshima, Tokara Islands, Kagoshima Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 8. **Utinomi**, 1960: 31, pl. 16, fig. 8. **Utinomi**, 1969: 31, pl. 16, fig. 8.

Baseodiscus hemprichii: **Iwata**, 1960c: 166, pl. 83, fig. 7. **Ooishi**, 1964: 193; intertidal among dead reef corals, Ushuku, Amamiôshima, Kagoshima Prefecture. **Okuda and Iwata**, 1965: 392, figs. a, b. **Crandall *et al*.**, 2002: 10, 16, 24, 26, 30, 33, 38.

NOTE: Originally described as *Nemertes hemprichii* Ehrenberg, 1831 from the Red Sea, subsequently transferred to *Baseodiscus* by Bürger (1904: 83). Apart from the records from Japanese waters and its type locality, this species is widely known from India, Pakistan, East Africa (off Mozambique and Zanzibar), Maldives, Laccadive Islands, Coetivy Island, Mauritius, Malay Peninsula, Java, Ambon, Taiwan, Australia (Great Barrier Reef), Papua New Guinea, New Britain (Solomon Is.), Loyalty Is., Caroline Is., Wake Is., West Samoa, and Hawaiian Islands (Gibson, 1995: 432–433).

Baseodiscus nipponensis (Hubrecht, 1887)

Eupolia nipponensis **Hubrecht**, 1887: 14–15, pl. I, figs. 4, 5, 10, pl. VII, figs. 6, 11, 12; dredged from 345 fathoms (about 640 m) depth on green mud, collected on 12 May 1875 by H.M.S. *Challenger*, 35°11'00''N, 139°28'00''E, Sagami Bay, off Kanagawa Prefecture; transferred to

Baseodiscus by Bürger (1904: 84).

Baseodiscus nipponensis: **Crandall *et al*.**, 2002: 10, 16, 26, 38.

NOTE: *Baseodiscus nipponensis* has not been reported since its original description. The species was described from preserved body fragments.

Baseodiscus princeps (Coe, 1901)

[Japanese name: arasuka-himomushi]

Baseodiscus curtus: **Yamaoka**, 1940a: 234–236, pl. XVI, fig. 8–11, text fig.13; lower intertidal between or under stones, Daikokujima, Akkeshi, Hokkaidô Prefecture; synonymized by Iwata (1954a: 15).

Baseodiscus princeps: **Coe**, 1944: 28, obtained by the United States Bureau of Fisheries Steamer *Albatross*, 340 m depth, south of Hokkaidô Island; 250 m depth, off Ôshima, the Metropolis of Tôkyô; 260 m depth, off Ôsezaki, Izu Peninsula, Shizuoka Prefecture; 135–290 m depth, Sea of Japan. **Iwata**, 1954a: 15; lower intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 68. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965b: 392, figs. a–c. **Crandall *et al*.**, 2002: 10, 16, 26, 33, 38.

NOTE: Originally described as *Taeniosoma princeps* Coe, 1901 from Alaska (Cape Fox, Yakutat, and Orca in Prince William Sound), transferred to *Baseodiscus* by Coe (1940: 262). Also known from Puget Sound, Washington, USA (Coe, 1944: 28).

Baseodiscus quinquelineatus (Quoy and Gaimard, 1833)

[Japanese name: kurosuji-himomushi]

Taeniosoma aequale **Stimpson**, 1857: 162; intertidal under stones, Amamiôshima, Kagoshima Prefecture. The locality and habitat were originally recorded as "in sinu insulae 'Ousima;' littorale sub lapidibus"; synonymized by Bürger (1904: 83).

Baseodiscus quinquelineatus: **Iwata**, 1992: 197, pl. 44-2. **Crandall *et al*.**, 2002: 10, 16, 26, 33, 38.

NOTE: Originally described as *Borlasia quinquelineata* by Quoy and Gaimard (1833: 285) from Dorey, New Guinea, transferred to *Baseodiscus* by Bürger (1904: 83), *Baseodiscus quinquelineatus* is distributed in the western Pacific (Japan, Singapore, Indonesia [Java, Timor, Ambon], New Guinea, Solomon Is., Loyalty Is., Torres Straits, and east coast of Australia, including the Great Barrier Reef) (Gibson, 1995: 310).

Genus *Cephalomastax* Iwata, 1957

Cephalomastax Iwata, 1957a: 5.

TYPE SPECIES: *Cephalomastax brevis* Iwata, 1957 by monotypic designation.

Cephalomastax brevis Iwata, 1957

[Japanese name: amadaiba-himomushi]

Cephalomastax brevis **Iwata**, 1957a: 5–7, pl. I, fig. 9, pl. II, fig. 7, pl. III, figs. 1–7; dredged from 200–300 m depth on 7 August 1953 by His Majesty Emperor Shôwa, "Southern Maruyamadashi at Aamadaiba" [sic], Sagami Bay, off Kanagawa Prefecture. **Iwata**, 1965a: 201. **Iwata**, 1965b: 392, figs. a, b. **Iwata**, 1992: 197, fig. 7-3C. **Crandall *et al*.**, 2002: 10, 17, 26, 38.

Class HOPLONEMERTEA Hubrecht, 1879
Subclass MONOSTILIFERA Brinkmann, 1917
Family AMPHIPORIDAE McIntosh, 1874
Genus *Amphiporus* Ehrenberg, 1831

Amphiporus Ehrenberg, 1831: 63.

TYPE SPECIES: *Planaria lactiflorea* Johnston, 1828, designated under the plenary power of the ICZN (ICZN, 1992); all previous designations of *Amphiporus albicans* as the type species for *Amphiporus*, including that of Friedrich (1955: 154), have thereby been set aside.

Amphiporus antifuscus Iwata, 1954

Amphiporus antifuscus **Iwata**, 1954a: 24–25, fig. 6A; lower intertidal among algae, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 9, 19, 25, 33.

NOTE: Gibson and Crandall (1989) listed this form as a *species inquirenda*.

Amphiporus formidabilis Griffin, 1898

Amphiporus cervicalis: **Yamaoka**, 2005: 143, pl. 1, figs. 2, 4, text fig. 2; Susaki, Sotoura, and Manazuru, near Shimoda, Shizuoka Prefecture; Muroran, Hokkaidô Prefecture.

Amphiporus formidabilis: **Iwata**, 1952: 144–146, figs. 15, 16; intertidal under stones on sandy beaches, Tomioka, Amakusa Islands, Kumamoto Prefecture and Fukue, Gotô Islands, Nagasaki Prefecture. **Okuda**, 1947: 1467, fig. 4137. **Crandall *et al*.**, 2002: 9, 19, 26, 33.

NOTE: *Amphiporus formidabilis* Griffin, 1898 was originally described from Puget Sound and Alaska, USA. Coe (1904: 115) synonymized *Amphiporus exilis* Coe, 1901 with *A. formidabilis*, but Gibson and Crandall (1989) regarded these taxa as *species inquirendae*, retaining them as separate species. *Amphiporus formidabilis* has also been reported from the Aleutian Islands (Coe, 1905: 252). Some earlier records under the name *Amphiporus cervicalis* (Stimpson, 1857) from Japanese waters may represent *Amphiporus formidabilis*.

Amphiporus gelatinosus Coe, 1905

Amphiporus gelatinosus: **Coe**, 1944: 30; obtained by the United States Bureau of Fisheries Steamer *Albatross*, at 130 m depth in Uraga Strait, between the Metropolis of Tôkyô and Chiba Prefecture. **Crandall *et al*.**, 2002: 9, 19, 26, 37.

NOTE: The original description by Coe (1905: 259) was based on a single specimen dredged by *Albatross* on 9 August 1888 at Station 2853, 56°00'N, 154°20'W, southwest of Kadiak Island, Alaska, at a depth of 159 fathoms (=290 m). Known to occur from Alaska to Puget Sound, Washington State, North America (Gibson, 1995: 283). Gibson and Crandall (1989) included it as a *species inquirenda*.

Amphiporus imparispinosus Griffin, 1898

Amphiporus imparispinosus: **Yamaoka**, 2005: 145, text figs. 3, 4a; Sotoura and Mikimoto Island, near Shimoda, Shizuoka Prefecture.

NOTE: *Amphiporus imparispinosus* was originally described from Port Townsend, Washington and Sitka, Alaska, USA by Griffin (1898). The species is distributed from San

Pedro, California, to Puget Sound, Alaska, to the Commander Islands off the coast of Kamchatka, to the Bering Strait (Coe, 1905: 249). Some forms reported as *Amphiporus cervicalis* (Stimpson, 1857), *Amphiporus depressus* (Stimpson, 1857), and *Amphiporus lactifloreus* (Johnston, 1828) from Japanese waters appear to represent *A. imparispinosus*. *Pantinonemertes daguilarensis* Gibson and Sundberg, 1992, described from Hong Kong, might be conspecific with *Amphiporus imparispinosus*. The taxonomic identidy of this species should be delineated by future studies.

Amphiporus insolitus Iwata, 1954

Amphiporus insolitus **Iwata**, 1954b: 39–41; lower intertidal under stones, Kushimoto, Wakayama Prefecture. **Crandall *et al.***, 2002: 9, 19, 26, 33.

NOTE: Gibson and Crandall (1989) regarded this form as a *species inquirenda*. *Amphiporus insolitus* resembles *Diplomma serpentina* (Stimpson, 1855) in body coloration, shape of the head, and arrangement of the eyes; these two may be conspecific.

Amphiporus musculus Iwata, 1954

Amphiporus musculus **Iwata**, 1954a: 26–27, fig. 6B; intertidal among algal holdfasts, Oshoro, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Okada *et al.***, 1971: 62. **Uchida *et al.***, 1972: 62. **Crandall *et al.***, 2002: 9, 19, 26, 38.

NOTE: Listed as a *species inquirenda* by Gibson and Crandall (1989).

Amphiporus parvus Yamaoka, 1940

Amphiporus parvus **Yamaoka**, 1940a: 243–244, pl. XVII, fig. 7, text figs. 20, 21; intertidal on sandy beaches, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1954a: 19. **Yamaguchi and Yamada**, 1955: 69. **Uchida *et al.***, 1963: 17. **Crandall *et al.***, 2002: 9, 19, 26, 33.

NOTE: Listed as a *species inquirenda* by Gibson and Crandall (1989).

Amphiporus reduncus Iwata, 1957

Amphiporus reduncus **Iwata**, 1957a: 23–24; dredged sublittorally from 100–130 m depth on 7 August 1950 by His Majesty Emperor Shôwa, northeastern Nakafukari near Nagai, Sagami Bay, off Kanagawa Prefecture. **Crandall *et al.***, 2002: 9, 19, 26, 33, 38.

NOTE: Gibson and Crandall (1989) regarded this form as a *species inquirenda*, with the comment that it may be related to the genus *Nipponnemertes* or some similar taxon. It might also prove to be a reptantic polystiliferan (Crandall, pers. comm.).

Amphiporus regius Iwata, 1954

Amphioprus regius **Iwata**, 1954a: 27–29, fig. 7; lower intertidal under stones on rocky shores, Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Crandall *et al.***, 2002: 9, 19, 26, 33.

NOTE: Listed as a *species inquirenda* by Gibson and Crandall (1989). The presence of four well-developed eyes and a cephalic patch on the dorsal surface of the head indicates that this species may belong to the genus *Tetrastemma* or a related taxon.

Amphiporus retrotumidus Iwata, 1957

Amphiporus retrotumidus **Iwata**, 1957a: 25–27, pl. I, fig. 13; dredged from 30–55 m depth on 6 August 1953 by His Majesty Emperor Shôwa, “Shuragane at Hayama” [sic], Kanagawa Prefecture. **Crandall *et al.***, 2002: 9, 19, 26, 38.

NOTE: Gibson and Crandall (1989) regarded this form as a *species inquirenda*, with the comment that it may be related to the genus *Nipponnemertes* or some similar taxon. It might also prove to be a reptantic polystiliferan (Crandall, pers. comm.).

Genus *Potamostoma* Kajihara, Gibson, and Mawatari, 2003

Potamostoma Kajihara *et al*., 2003: 492.

TYPE SPECIES: *Potamostoma shizunaiense* Kajihara, Gibson, and Mawatari, 2003, by original designation.

NOTE: The familial affiliation of the genus, not referred to in its original description, is here provisionally designated as the Amphiporidae because of similarities in eye pattern (multiple and grouped) and the nature of the rhynchocoel wall (two-layered). Confirmation of this familial placement will have to be resolved by future studies, hopefully involving molecular data.

Potamostoma shizunaiense Kajihara, Gibson, and Mawatari, 2003

Potamostoma shizunaiense **Kajihara *et al.***, 2003: 491–500, figs. 1–7, tabs. 1–2; under stones on a sandy bottom, salinity at ebb tide 2 psu, mouth of the River Shizunai, 42°20’N, 142°22’E, Shizunai, Hokkaidô Prefecture.

TYPE MATERIAL: Holotype ZIHU-2037, immature female, complete series of transverse sections, 7 µm, 81 slides. Paratypes: ZIHU-1930, immature male, transverse sections of the anterior body region, 6 µm, 39 slides; ZIHU-2040, immature female, complete series of transverse sections, 6 µm, 84 slides. Eight sectioned voucher specimens are also accessioned as ZIHU-1931, -1932, -2038, -2039, -2041, -2042, -2043, and -2044. One voucher specimen, longitudinal sections of the anterior body region, 10 slides, is deposited under NHMW-EV 19875.

Genus *Zygonemertes* Montgomery, 1897

Zygonemertes Montgomery, 1897: 2.

TYPE SPECIES: *Amphiporus virescens* Verrill, 1879 by monotypic designation.

Zygonemertes glandulosa Yamaoka, 1940
[Japanese name: fujikasa-himomushi]

Zygonemertes glandulosa **Yamaoka**, 1940a: 244–247, pl. XVII, fig. 8, text figs. 22–24; lower intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Okuda**, 1947: 1468, fig. 4139 (1–4). **Iwata**, 1954a: 19. **Yamaguchi and Yamada**, 1955: 69. **Uchida *et al.***, 1963: 17. **Crandall *et al.***, 2002: 15, 22, 30, 37, 42.

Zygonemertes grandulosa [sic]: **Iwata**, 1960c: 169, pl. 84, fig. 12. **Iwata**, 1965a: 217. **Okuda and Iwata**, 1965: 399, figs. a–d. **Iwata**, 1992: 202, fig. 7-5C.

Zygonemertes jamsteci Kajihara, 2002

Zygonemertes jamsteci **Kajihara**, 2002: 131–140, figs. 6–9; about 1 m deep, among eelgrass (*Zostera marina*),

Akkeshi Bay, Hokkaidô Prefecture.

TYPE MATERIAL: Holotype, ZIHU-1928, mature male, full series of transverse sections, 43 slides. Paratypes: ZIHU-1929, mature female, serial longitudinal sections of anterior portion of the body, nine slides; ZIHU-2045, mature male, full series of transverse sections, 41 slides; ZIHU-2046, mature male, full series of transverse sections, 36 slides; ZIHU-2047, mature female, serial transverse sections of anterior portion of the body, three slides; ZIHU-2048, mature female, serial transverse sections of the anterior portion of the body, 14 slides. All collected on 8 July 1997.

Zygonemertes shintai Kajihara, 2002

Zygonemertes shintai **Kajihara**, 2002: 122–131, figs. 1–5; intertidal, among blue mussels (*Mytilus trossulus* Gould), Oshoro, Hokkaidô Prefecture.

TYPE MATERIAL: Holotype, ZIHU-1296, immature, full series of transverse sections, 16 slides, collected on 2 July 1998. Paratypes: ZIHU-1927, immature, full series of transverse sections, 31 slides, collected on 2 July 1998, ZIHU-2105, -2106; whole specimens, preserved in 100% EtOH for molecular analyses, collected on 3 March 2001.

Family CARCINONEMERTIDAE Sumner, Osburn and Cole, 1913

Genus *Carcinonemertes* Coe, 1902

Carcinonemertes Coe, 1902: 440.

TYPE SPECIES: *Nemertes carcinophilos* [originally spelled *cartinophilos*] Kölliker, 1845, by subsequent designation of Friedrich (1955: 176).

Carcinonemertes mitsukurii Takakura, 1910

[Japanese name: kani-himomushi]

Carcinonemertes mitsukurii **Takakura**, 1910: 111–116, figs. 1–4; obtained from egg masses of the crab *Eriocheir japonicus* De Haan, mouth of the River Minatogawa, Tateyama Bay, Chiba Prefecture. **Satô and Itô**, 1961: 187, fig. 7.1.12. **Kaburaki and Iwata**, 1965: 397, with one figure. **Shiino**, 1969: 94. **Iwata**, 1992: 203. **Crandall *et al*.**, 2002: 10, 19, 26, 30.

Emplectonema mitsukurii: **Kaburaki**, 1927: 1663, fig. 3182. **Kaburaki**, 1947: 1466, fig. 4132.

Carcinonemertes mitukuri [sic]: **Iwata**, 1965a: 218.

NOTE: Apart from the Japanese record, *Carcinonemertes mitsukurii* is also known from San Andreas Is. (between Marinduque and Luzon), Hong Kong, Hawaiian Is., Kingsmill Is., Society Is., and Singapore (Humes, 1942).

Family CRATENEMERTIDAE Friedrich, 1968

Genus *Nipponnemertes* Friedrich, 1968

Nipponnemertes Friedrich, 1968: 34.

TYPE SPECIES: Friedrich (1968) did not designate the type species, and the name *Nipponnemertes* was thus unavailable. This introduced nomenclatural confusion. Gibson and Crandall (1989: 463) designated *Amphiporus drepanophoroides* Griffin, 1898 as the type species. Gibson (1995: 442) later indicated *Nipponnemertes pulchra* (Johnston, 1837) as the type species. Finally, Crandall (2001: 106) designated *Amphiporus punctatulus* Coe, 1905. Crandall (2001: 106) was correct in that Gibson's (1995) listing of *Nipponnemertes pulchra* as the type species of the genus was invalid, since the nominal species *Nemertes pulchra* Johnston, 1837 was not included when the genus was established. The nominal species *Amphiporus drepanophoroides*, first designated by Gibson and Crandall (1989), is eligible for the type species of the genus, but Crandall (2001: 106) discussed that its original description is too brief and its type specimen has been lost by shipwreck. Confusion remains as to whether the author of the name is Gibson and Crandall (1989) or Crandall (2001) (Chernyshev, pers. comm.). Here, I follow the prevailing usage of the authority and date of the name *Nipponnemertes* as Friedrich (1968).

Nipponnemertes bimaculata (Coe, 1901)

[Japanese name: rishiri-himomushi]

Amphiporus bimaculatus: **Iwata**, 1954a: 21–22, fig. 5D; sublittoral among laminarian holdfasts, Rishiri Island, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 69. **Iwata, 1**960c: 169, pl. 84, fig. 14. **Iwata**, 1965b: 399, figs. a–e.

Nipponnemertes bimaculata **Crandall *et al*.**, 2002: 12, 20, 28, 35, 40.

NOTE: The species, originally described as *Amphiporus bimaculatus* Coe, 1901 from Victoria, B.C., Canada, and Sitka, Alaska and Puget Sound, Washington, USA, was later transferred to the genus *Nipponnemertes* by Friedrich (1968). Crandall *et al*. (2002) noted that the form identified by Iwata (1954a) differs from Coe's (1901) taxon in having a pair of quadrangular head markings, rather than the long-triangular markings of Coe's form, and a quite different proboscis central armature.

Nipponnemertes ogumai (Yamaoka, 1947)

[Japanese name: oguma-himomushi]

Amphiporus ogumai **Yamaoka**, 1947: 1468, fig. 4138 (1–3). **Okuda and Iwata**, 1965: 399, figs. a–c.

Nipponnemertes ogumai: **Crandall *et al*.**, 2001: 179–180, pl. 1, figs. 8–10, pl. 2, fig. 18. **Crandall *et al*.**, 2002: 12, 20, 28, 35, 40.

NOTE: Crandall *et al*. (2001) mentioned that the type locality for this species was not specified in the original manuscript; Yamaoka (1947) obtained specimens on sandy beaches at Itado, near Shimoda, Shizuoka Prefecture and Seto, Kishû (probably Shirahama, Wakayama Prefecture).

Nipponnemertes punctatula (Coe, 1905)

[Japanese name: madara-himomushi]

Amphiporus nebulosus: **Takakura**, 1933: 226–227; Kitaura, Alaid Island (=Atlasova), Kurile Islands. *Non* **Crandall *et al*.**, 2002: 9, 19, 24, 26, 33.

Amphiporus punctatulus: **Iwata**, 1951: 137–138, figs. 1, 2D; intertidal under stones, Mukaishima, Hiroshima Prefecture. **Iwata**, 1952: 143–144; lower intertidal under stones, Tomioka, Amakusa Islands, Kumamoto Prefecture and Fukue, Gotô Islands, Nagasaki Prefecture. **Iwata**, 1954a: 22–23; intertidal among algal holdfasts, Oshoro and Rishiri Island, Hokkaidô Prefecture. **Iwata**, 1954b: 39; intertidal under stones, Shirahama, Wakayama Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Utinomi**, 1956: 32, pl. 16, fig. 12. **Iwata**, 1957a: 21–22; obtained by a hand-

reeled net on 16 March 1956 by His Majesty Emperor Shôwa, Samejima at Hayama, Kanagawa Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 13. **Utinomi**, 1960: 32, pl. 16, fig. 12. **Inaba**, 1963: 228; lower intertidal to shallow sublittoral, under stones on gravelly to rocky shores, commonly found in the Inland Sea of Seto. **Iwata**, 1965a: 169. **Iwata**, 1965b: 400, figs. a–c. **Utinomi**, 1969: 32, pl. 16, fig. 12. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Iwata. **Inaba**, 1988: 226; lower intertidal to shallow sublittoral, under stones on gravelly to rocky shores, commonly found in the Inland Sea of Seto.

Amphiporus punctatus [sic]: **Okada *et al*.**, 1971: 62. **Kikuchi**, 1968: 167; among *Zostera marina*, Tomioka Bay, Amakusa, Kumamoto Prefecture.

Amphiporus puncutatulus [sic]: **Honma and Kitami**, 1978: 15; Sado Island, Nîgata Prefecture.

Cratenemertes punctatulus: **Iwata**, 1992: 202, pl. 44-9, fig. 7-2E.

Nipponnemertes punctatulus [sic]: **Uchida *et al*.**, 1972: 55; habitat not recorded, Horomui, Hokkaidô Prefecture. **Iwata**, 1997: 53 (with a color drawing), 55. **Shimomura *et al*.**, 2001: 46; intertidal on a rocky shore, Akahama, Ôtsuchi Bay, Iwate Prefecture. **Thollesson and Norenburg**, 2003: 408; Oshoro, Hokkaidô Prefecture.

Nipponnemertes punctatula: **Crandall *et al*.**, 2002: 12, 20, 25, 28, 35, 40.

NOTE: Takakura's (1933) record of *Amphiporus nebulosus* Coe, 1901 from the Kurile Islands was regarded as *Amphiporus punctatulus* by Iwata (1951), whereas *Amphiporus nebulosus s. str*., known only from its type locality Kukak Bay, Alaska Peninsula, was regarded as a *species inquirenda* by Gibson and Crandall (1989). Crandall *et al*. (2002) noted that there are two coexisting species of cratenemertids in Japanese waters that possess a brown dorsal blotch pattern, *Nipponnemertes arenaria* (Uschakov, 1927) and *Nipponnemertes punctatula* (Coe, 1905), and the records of the latter by Iwata in the 1950s were probably of *Nipponnemertes arenaria*.

Family EMPLECTONEMATIDAE Bürger, 1904

Genus *Emplectonema* Stimpson, 1857

Emplectonema Stimpson, 1857: 163.

TYPE SPECIES: *Emplectonema viride* Stimpson, 1857, was originally described from San Francisco, USA, and now is regarded as a junior synonym of *Nemertes gracilis* Johnston, 1837, by subsequent designation of Friedrich (1955: 172).

Emplectonema buergeri Coe, 1901

Emplectonema bürgeri [sic]: **Coe**, 1944: 29, obtained by the United States Bureau of Fisheries Steamer *Albatross*, 250 m depth, off Ôshima, the Metropolis of Tôkyô.

Emplectonema buergeri: **Crandall *et al*.**, 2002: 11, 20, 24, 27, 34, 39.

NOTE: Originally described from Sitka and Glacier Bay, Alaska by Coe (1901: 28), known to be distributed in North Pacific (Japan, Pribilof Islands, Bering Sea, and the coast of North America from Alaska to California) (Gibson, 1995: 362).

Emplectonema gracile (Johnston, 1837)

[Japanese name: hoso-midori-himomushi]

Emplectonema gracile: **Yamaoka**, 1940a: 237–238, pl. XVII, figs. 1, 2, text fig. 14; lower intertidal on the surfaces of stones, Daikokujima, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1954a: 15; intertidal on the surfaces of stones or in rock crevices, Akkeshi and Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 68. **Iwata**, 1957c: 102. **Iwata**, 1960a: 96, fig. 5. **Iwata**, 1960b: 27–35, figs. 97–122; intertidal, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 7; habitat not recorded, Asamushi, Aomori Prefecture. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 218. **Iwata**, 1965b: 396, figs. a, b. **Tsuchiya**, 1979: 82; intertidal, Hadakajima Island, Asamushi, and Aomori Harbor, Aomori Prefecture. **Iwata**, 1983: 181, 182, 184, figs. 8-5j, i, 8-13c.. **Iwata**, 1992: 202–203, fig. 7-4K, 7-5D. **Crandall *et al*.**, 2002: 11, 20, 27, 34, 39.

NOTE: Originally described as *Nemertes gracilis* from the British Isles by Johnston (1837); transferred to *Emplectonema* by Verrill (1895: 528). Other than Japanese waters, the species is widely distributed in the northern hemisphere: Peter the Great Bay, Aleutian Islands, Pacific coast of North America, northern coast of Europe, Mediterranean, Rumanian coast of the Black Sea, and Madeira (Gibson, 1995: 432).

Emplectonema kandai Kato, 1939

[Japanese name: hikari-himomushi]

Emplectonema kandai **Kato**, 1939: 251–253, pl. XXXII, figs. 1–6; sublittoral on the tunic of *Chelyosoma siboja* collected from sandy or muddy bottom, 30–40 m depth, near Asamushi Marine Biological Station, Aomori Bay, Aomori Prefecture. **Kanda**, 1939: 166–173, figs. 1–4. **Kato**, 1947: 1466, fig. 4134. **Satô and Itô**, 1961: 187, fig. 7.1.13. **Iwata**, 1965a: 218. **Kato and Iwata**, 1965: 396, figs. a, b. **Crandall *et al*.**, 2002: 11, 20, 27, 39.

Emplectonema candai [sic]: **Iwata**, 1970b: 129.

NOTE: *Emplectonema kandai* is so far the only known luminescent species in the phylum.

Emplectonema mitsuii Yamaoka, 1947

[Japanese name: mitsui-himomushi]

Emplectonema mitsuii **Yamaoka**, 1947: 1466, fig. 4133; intertidal among algae on rocky shores in southern Japan. **Satô and Itô**, 1961: 187, fig. 7.1.7. **Okuda and Iwata**, 1965: 397, figs. a–d. **Crandall *et al*.**, 2001: 177–178, pl. 1, figs. 1–4, pl. 2, figs. 16, 16a, 16b. **Crandall *et al*.**, 2002: 11, 20, 27, 34.

NOTE: Crandall *et al*. (2001) introduced Yamaoka's original data on the habitat and locality of this species as intertidal among rockweeds at Susaki, Sotoura, and Mikimoto Island, near Shimoda, Shizuoka Prefecture.

Genus *Nemertopsis* Bürger, 1895

Nemertopsis Bürger, 1895: 548.

TYPE SPECIES: *Nemertes peronea* Quatrefages, 1846 (now regarded as a junior synonym of *Polia bivittata* Delle Chiaje, 1841) by subsequent designation of Friedrich (1955: 173).

NOTE: Chernyshev (pers. comm.) indicated that the genus *Nemertopsis* Bürger, 1895 has a senior subjective syn-

onym, *Colpocephalus* Diesing, 1850 (type species *Borlasia quadripunctata* Quoy and Gaimard, 1833). As far as I am aware, the name *Colpocephalus* Diesing, 1850 has not been used as valid since the year 1899, meeting the condition in Article 23.9.1.1 of the Code (ICZN, 1999). The junior subjective synonym *Nemertopsis* was used during the decade from 1989 to 1998 in the following 27 works, published by 25 authors, and thus meets the condition in Article 23.9.1.2 of the Code (ICZN, 1999): Fish and Fish (1989), Morton (1989), Riser (1989), Britton (1990), Gibson (1990a, b, 1997a,b, 1998), Gibson and Knight-Jones (1990), Turbeville (1991), Iwata (1992), Roe (1993), Hansson (1994), Henry and Martindale (1994, 1996, 1997a, b), Sun and Pan (1994), Walker (1994), Martindale and Henry (1995), Senz (1997b), Boyer and Henry (1998), Envall (1998), Hochberg and Lunianski (1998), Norenburg and Roe (1998), and Stricker and Folsom (1998). The name *Nemertopsis* Bürger, 1895 is herein regarded to have precedence over *Colpocephalus* Diesing, 1850, whenever the two names are considered to be synonymous, according to Article 23.9.2 of the Code (ICZN, 1999).

Nemertopsis mitellicola Kajihara, 2007

Nemertopsis mitellicola **Kajihara**, 2007a: 51–57, figs. 7–11; among the gooseneck barnacle, *Capitulum mitella* (Linnaeus), Shirahama, Wakayama Prefecture.

TYPE MATERIAL: Holotype, ZIHU-3204, serial transverse sections of the complete body, total 52 slides: 6 µm, anterior end of body (1 cm long), 12 slides; 8 µm, rest of the body, 40 slides. Paratypes: ZIHU-3205, serial transverse sections of head (1.5 cm long), 8 µm, 15 slides; ZIHU-3206, serial longitudinal sections, 12 µm, 12 slides.

Nemertopsis quadripunctata (Quoy and Gaimard, 1833)
[Japanese name: yotsume-himomushi]

Nemertopsis gracilis: **Iwata**, 1954b: 38–39, fig. 2A; in the mantle cavity of *Capitulum mitella* (Linnaeus), Shirahama, Wakayama Prefecture. **Utinomi**, 1956: 32, pl. 16, fig. 14. **Iwata**, 1960c: 169, pl. 84, fig. 8; Onomichi, Hiroshima Prefecture; Tomioka, Amakusa Islands, Kumamoto Prefecture; Cape Muroto, Kôchi Prefecture. **Utinomi**, 1960: 32, pl. 16, fig. 14. **Inaba**, 1963: 228; upper to mid intertidal, in the mantle cavity of *Capitulum mitella* (Linnaeus), the Inland Sea of Seto. **Iwata**, 1965a: 218. **Iwata**, 1965b: 397; figs. a–c. **Shiino**, 1969: 94. **Utinomi**, 1969: 32, pl. 16, fig. 14. **Inaba**, 1988: 226; upper to mid intertidal, in the mantle cavity of *Capitulum mitella* (Linnaeus), the Inland Sea of Seto. **Iwata**, 1992: 203, fig. 7–5F.

Nemertopsis quadripunctata: **Crandall *et al*.**, 2002: 12, 20, 28, 31, 35, 40. **Kajihara,** 2007a: 45–51, figs. 2–6; from *Capitulum mitella* (Linnaeus), Shirahama, Wakayama Prefecture.

NOTE: *Nemertopsis quadripunctata* was originally described as *Borlasia quadripunctata* Quoy and Gaimard, 1833 from Ambon, Indonesia. The Japanese taxon identified as *Nemertopsis gracilis* Coe, 1904 was regarded as conspecific with *Nemertopsis quadripunctata* by Gibson (1990a). Apart from the records from Japanese waters, the species is currently known from Ambon (Quoy and Gaimard, 1833) and Hong Kong (Gibson, 1990a).

Genus *Paranemertes* Coe, 1901

Paranemertes Coe, 1901: 32.

TYPE SPECIES: *Paranemertes peregrina* Coe, 1901, by subsequent designation of Friedrich (1955: 173).

Paranemertes incola Iwata, 1952

Paranemertes incola **Iwata**, 1952: 142–143; lower intertidal under stones, Tomioka, Amakusa Islands, Kumamoto Prefecture. **Crandall *et al*.**, 2002: 13, 21, 28, 36, 41.

Paranemertes katoi Yamaoka, 1947
[Japanese name: katô-himomushi]

Paranemertes katoi **Yamaoka**, 1947: 1467, fig. 4135. **Okuda and Iwata**, 1965: 397, figs. a–c. **Crandall *et al*.**, 2001: 178–179, pl. 1, figs. 5–7, pl. 2, fig. 15. **Crandall *et al*.**, 2002: 13, 21, 28, 36, 41.

NOTE: Crandall *et al*. (2001) noted that Yamaoka's manuscript reported the species as intertidally abundant from May to July under stones or on seaweeds at Susaki and Sotoura, near Shimoda, Shizuoka Prefecture.

Paranemertes peregrina Coe, 1901
[Japanese name: onando-himomushi]

Paranemertes peregrina: **Yamaoka**, 1940a: 240–243, pl. XVII, figs. 3–5, text figs. 17–19; intertidal under or between stones; Akkeshi, Abashiri, and Muroran, Hokkaidô Prefecture. **Coe**, 1944: 29. **Okuda**, 1947: 1467, fig. 4136. **Iwata**, 1954a: 15; lower intertidal under stones or among laminarian holdfasts, Hokkaidô Prefecture (Akkeshi, Monbetsu, Muroran, Nemuro, Oshoro and Rishiri Island). **Yamaguchi and Yamada**, 1955: 68. **Utinomi**, 1956: 32, pl. 16, fig. 11. **Iwata**, 1960c: 169, pl. 84, fig. 9. **Utinomi**, 1960: 32, pl. 16, fig. 11. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169. **Okuda and Iwata**, 1965: 398, figs. a–d. **Utinomi**, 1969: 32, pl. 16, fig. 11. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 62. **Hieda and Takahashi**, 1986: 42, with two color photographs of a specimen taken at Yakumo, Hokkaidô Prefecture. **Iwata**, 1992: 203, figs. 7-4J, 7-5E. **Crandall *et al*.**, 2002: 13, 21, 25, 28, 36, 41.

NOTE: *Paranemertes peregrina* Coe, 1901 was originally described from Alaska. Yamaoka's (1940a) illustration in pl. XVII, fig. 6 depicts *Amphiporus parvus*, though the figure legend indicates *Paranemertes peregrina*. Besides the records from Japanese waters, the species is also known from the Commander Islands, Kamchatka Peninsula, Aleutian Islands, and the Pacific coast of North America from Alaska to Ensenada, Mexico (Gibson, 1995: 460).

Paranemertes plana Iwata, 1957
[Japanese name: sagami-himomushi]

Paranemertes plana **Iwata**, 1957a: 20–21, pl I, fig. 10, pl. VI, figs. 1–5; dredged sublittorally from 250–300 m depth on 16 July 1955 by His Majesty Emperor Shôwa, near "Gorombo of southern Minamiaamadaiba" [sic], Sagami Bay, off Kanagawa Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 10. **Iwata**, 1965b: 398, figs. a, b. **Crandall *et al*.**, 2002: 13, 21, 29, 41.

Family MALACOBDELLIDAE Blanchard, 1847
Genus *Malacobdella* Blainville, 1827

Malacobdella Blainville, 1827: 270.

TYPE SPECIES: *Hirudo glossa* Müller, 1776, by monotypic designation.

Malacobdella japonica Takakura, 1897
[Japanese name: himobiru]

Malacobdella japonica **Takakura**, 1897: 105–112, pl. VII, figs. 1–6; in the mantle cavity of *Mactra sachalinensis*, Kujûkuri, Chiba Prefecture. **Kaburaki**, 1927: 1664, fig. 3184. **Yamaoka**, 1940a: 253–258, pl. XVII, figs. 14–16, text figs. 32, 33; in the mantle cavity of *Mactra sachalinensis*, Akkeshi, Hokkaidô Prefecture. **Kawai and Yamaoka**, 1940: 255–259, figs. 1–6; in the mantle cavity of *Mactra sachalinensis*, Akkeshi, Hokkaidô Prefecture. **Kaburaki**, 1947: 1470, fig. 4145. **Iwata**, 1954a: 36; in the mantle cavity of *Mactra sachalinensis*, Akkeshi, Hokkaidô Prefecture and Shimoda, Shizuoka Prefecture. **Yamaguchi and Yamada**, 1955: 73. **Iwata**, 1960c: 169, pl. 84, fig. 19. **Satô and Itô**, 1961: 187, fig. 7.1.11. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 218. **Kaburaki and Iwata**, 1965: 401, figs. a, b. **Shiino**, 1969: 94, fig. 9-3F. **Okada *et al*.**, 1971: 63. **Uchida *et al*.**, 1972: 62. **Iwata**, 1992: 204, fig. 7-4M. **Iwata**, 1997: 55. **Crandall *et al*.**, 2002: 12, 23, 28, 44.

NOTE: Apart from the records from Japanese waters, *Malacobdella japonica* has also been reported from Sakhalin (Steksova, 2004).

Family OTOTYPHLONEMERTIDAE Bürger, 1895
Genus *Ototyphlonemertes* Diesing, 1863

Ototyphlonemertes Diesing, 1863: 180.

TYPE SPECIES: *Oerstedia pallida* Keferstein, 1862, by monotypic designation.

Ototyphlonemertes dolichobasis Kajihara, 2007

Ototyphlonemertes sp. **Shimomura *et al*.,** 2001: 47.

Ototyphlonemertes dolichobasis **Kajihara,** 2007b: 57–66, figs. 1–4; intertidal among coarse sand, Hakozaki, Ôtsuchi Bay, Iwate Prefecture.

TYPE MATERIAL: Holotype, ZIHU-3200, 22 July 1998, 23 slides. Paratypes: ZIHU-3199, 22 July 1998, 7 slides; ZIHU-3201, 25 September 1997, 16 slides; ZIHU-3202, 25 September 1997, 42 slides; ZIHU-3203, 25 September 1997, 31 slides; ZIHU-3208, 3209, 25 May 1998, unsectioned, fixed in Bouin's fluid, preserved in 70% EtOH; ZIHU-3210, 3211, 3212, 3214, 3215, 21 July 1998, unsectioned, fixed in Bouin's fluid, preserved in 70% EtOH; ZIHU-3213, 21 July 1998, fixed and preserved in 99% EtOH; ZIHU-3217, 3218, 22 July 1998, unsectioned, fixed in Bouin's fluid, preserved in 70% EtOH.

Ototyphlonemertes martynovi Chernyshev, 1993

Ototyphlonemertes martynovi: **Kajihara**, 1998: 11, pls 1–2; intertidal in coarse sand, Oshoro, Hokkaidô Prefecture; Ôtsuchi, Iwate Prefecture; Shirahama, Wakayama Prefecture; Sugashima, Mie Prefecture; Mukaishima, Hiroshima Prefecture. **Shimomura *et al*.**, 2001: 46; intertidal in coarse sand, Hakozaki, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.**, 2002: 13, 20, 28, 43.

NOTE: *Ototyphlonemertes martynovi* Chernyshev, 1993 was originally described from Peter the Great Bay, Russia, and appears to have a wide range of distribution in Japanese waters.

Ototyphlonemertes nikolaii Chernyshev, 1998

Ototyphlonemertes nikolaii: **Shimomura *et al*.**, 2001: 47; intertidal among coarse sand Hakozaki, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.**, 2002: 13, 20, 28, 43.

NOTE: *Ototyphlonemertes nikolaii* Chernyshev, 1998 was originally described from Peter the Great Bay, Russia. The species is currently known from Russia and Japan.

Family POSEIDONEMERTIDAE Chernyshev, 2002
Genus *Diopsonemertes* Kajihara, Gibson and Mawatari, 2001

Diopsonemertes Kajihara *et al*., 2001: 187.

TYPE SPECIES: *Diopsonemertes acanthocephala* Kajihara, Gibson and Mawatari, 2001, by original designation.

Diopsonemertes acanthocephala Kajihara, Gibson and Mawatari, 2001

Diopsonemertes acanthocephala **Kajihara *et al*.**, 2001: 187–198, figs. 1–23: Ôtsuchi Bay, Iwate Prefecture; sublittoral, 59 m depth on shell gravel. **Crandall *et al*.**, 2002: 11, 20, 27, 34.

TYPE MATERIAL: Holotype, ZIHU-1290, immature male, complete series of transverse sections, 71 slides.

Family PROSORHOCHMIDAE Bürger, 1895
Genus *Geonemertes* Semper, 1863

Geonemertes Semper, 1863: 559.

TYPE SPECIES: *Geonemertes pelaensis* Semper, 1863, by monotypic designation.

Geonemertes pelaensis Semper, 1863
[Japanese name: ogasawara-riku-himomushi]

Geonemertes pelaensis: **Oki *et al*.**, 1987: 69–75, figs. 1–4; among roadside bushes and under a flowerpot in a garden, Chichijima Island, Ogasawara Islands, the Metropolis of Tôkyô. **Kawakatsu**, 1991: 2, fig. 15. **Kawakatsu**, 1999: 11–12, figs. 1–5.

NOTE: Semper's (1863) original description of *Geonemertes pelaensis* was based upon material collected from the Palau Islands, Republic of Palau. The species is also known from Papua New Guinea, Sulawesi, Seychelle Islands, Peradeniya (Sri Lanka), Kei Island, Upolu Island (Samoa), Mauritius, Florida, Dominica (West Indies), Jamaica, Mangareva Island, Oahu (Hawaiian Islands), and Réunion (Gibson and Moore, 1998: 159).

Genus *Pantinonemertes* Moore and Gibson, 1981

Pantinonemertes Moore and Gibson, 1981: 176.

TYPE SPECIES: *Pantinonemertes winsori* Moore and Gibson, 1981, by original designation.

NOTE: The genus *Pantinonemertes* Moore and Gibson, 1981 now contains nine species (Sun, 2001), but the generic name has a subjective senior synonym *Neonemertes* Girard, 1893 (Chernyshev, pers. comm.). Moore and Gibson (1981) recognized the genus *Pantinonemertes* as including three nominal species: *Pantinonemertes winsori* Moore and Gibson, 1981, *Pantinonemertes enalios* Moore and Gibson, 1981, and *Tetrastemma agricola* Willemoes-Suhm, 1874 (the name-bearing type of the nominal genus *Neonemertes* Girard, 1893), while Moore

and Gibson (1981) designated *Pantinonemertes winsori* Moore and Gibson, 1981 as the type species of the genus *Pantinonemertes* Moore and Gibson, 1981. The name *Neonemertes* has been used as valid by six works, including Girard (1893: 238), Joubin (1894: 193), Friedrich (1955: 142, 143, 161, 1958: 22), Corrêa (1966: 365), and Riser (1974: 363, 364), whereas *Pantinonemertes* has been used in at least 42 works since the year 1981. It is thus reasonable to conclude that the name *Pantinonemertes* has been adopted as the prevailing usage, and that the senior synonym *Neonemertes* should be suppressed by plenary power by the ICZN under Article 23.9.3 of the Code (ICZN, 1999). Recently, Maslakova (2005) concluded that these two genera should be synonymized due to lack of morphological differences between them, on the basis of a reinvestigation of all available type and voucher material of species of *Pantinonemertes* Moore and Gibson 1981 and *Prosadenoporus* Bürger, 1890. The name *Prosadenoporus* Bürger, 1890 has precedence over both *Neonemertes* Girard, 1893 and *Pantinonemertes* Gibson and Moore, 1981. However, since Maslakova (2005) disclaimed nomenclatural acts, the name *Pantinonemertes* Gibson and Moore 1981 is here used as valid.

Pantinonemertes spectacula (Yamaoka, 1940)

Prostoma spectaculum **Yamaoka**, 1940b: 16–17, fig. 3; habitat not recorded, Naha and Chinen, Okinawa Prefecture.

Pantinonemertes speculacula: **Crandall *et al*.**, 2002: 13, 21, 31, 43.

NOTE: Gibson (1990a) redescribed the material from Hong Kong and transferred this species to the genus *Pantinonemertes*. Currently known from Okinawa and Hong Kong.

Family TETRASTEMMATIDAE Hubrecht, 1879

NOTE: The correct spelling of the family name is "Tetrastemmatidae" under Article, 29.3. of the Code (ICZN, 1999), since the name of its type genus *Tetrastemma* (neuter gender) gives the genitive singular "Tetrastemmatos" and the stem "Tetrastemmat-."

Genus *Nemertellina* Friedrich, 1935

Nemertellina Friedrich, 1935b: 10.

TYPE SPECIES: *Nemertellina oculata* Friedrich, 1935 by subsequent designation of Friedrich (1955: 164).

Nemertellina yamaokai Kajihara, Gibson and Mawatari, 2000

[Japanese name: yamaoka-himomushi]

Nemertellina minuta: **Yamaoka**, 1940a: 239–240, text figs. 15, 16; sublittoral from several meters depth; in the canals of sponges; Akkeshi Bay, Hokkaidô Prefecture. **Iwata**, 1954a: 15. **Yamaguchi and Yamada**, 1955: 68. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 12, 20, 28, 35, 40. *Non* **Friedrich**, 1935a: 320.

Nemertellina yamaokai **Kajihara *et al*.**, 2000: 265–276, figs. 1–33; sublittoral, 6–8 m depth among sponges, seaweeds, rocks, and mollusks (*Patinopecten* sp. and oysters), 43°00'N, 144°46'E and 43°42'N, 144°51'E, Akkeshi Bay, Hokkaidô Prefecture. **Crandall *et al*.** 2002: 12, 20, 28, 35. **Thollesson and Norenburg**, 2003: 408; Akkeshi Bay, Hokkaidô Prefecture.

TYPE MATERIAL: Holotype, ZIHU-1260, immature male, complete series of transverse sections, 26 slides. Paratypes: ZIHU-1261, female, series of transverse sections, 24 slides; ZIHU-1262, male, complete series of longitudinal sections, 14 slides; USNM 186063, female, complete series of transverse sections, 17 slides. Three unsectioned voucher specimens are also deposited under ZIHU-1271, ZIHU-1272, and ZIHU-1273.

Genus *Oerstedia* Quatrefages, 1846

Oerstedia Quatrefages, 1846: 221.

TYPE SPECIES: *Oerstedia maculata* Quatrefages, 1846, now regarded as a junior synonym of *Planaria dorsalis* Abildgaard, 1806.

NOTE: The genus *Oerstedia* Quatrefages, 1846 had long been classified into the family Prosorhochmidae, before Moore and Gibson (1988) argued that the genus could no longer be retained in that taxon. The familial affiliation of the genus has been treated as uncertain (Gibson, 1994). A recent molecular phylogenetic study (Thollesson and Norenburg, 2003) indicated that members of the genus are closely related to tetrastemmatids, although Strand and Sundberg's (2005b) molecular phylogenetic analyses were not decisive about the familial classification. The genus is here provisionally included in the family Tetrastemmatidae.

Oerstedia dorsalis (Abildgaard, 1806)

[Japanese name: botan-himomushi]

Oerstedia dorsalis: **Iwata**, 1954a: 17, fig. 4A; lower intertidal among algae or the hydrozoan *Eudendrium annulatum*, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 68. **Iwata**, 1960a: 96, fig. 6. **Iwata**, 1960c: 169; pl. 84, fig. 11. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 218. **Iwata**, 1965b: 398; figs. a–e. **Iwata**, 1983: 181. **Iwata**, 1992: 203, fig. 7-5H. **Shimomura *et al*.**, 2001: 47: intertidal, Akahama, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.**, 2002: 13, 20, 28, 35, 40.

Oerstedia dorsalis var. *aequalis* **Iwata,** 1954a: 17, fig. 4A-4; lower intertidal among algae or the hydrozoan *Eudendrium annulatum*, Akkeshi, Hokkaidô Prefecture. **Crandall *et al*.**, 2002: 10, 28.

Oerstedia dorsalis var. *albolineata*: **Iwata**, 1954a: 17, fig. 4A-2, 4A-3 lower intertidal among algae or the hydrozoan *Eudendrium annulatum*, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960b: 35–40, figs. 123–142; intertidal, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1983: 182, 187, 193, fig. 8-14c.

Oerstedia dorsalis var. *viridis*: **Iwata**, 1954a: 17, fig. 4A-1 lower intertidal among algae or the hydrozoan *Eudendrium annulatum*, Akkeshi, Hokkaidô Prefecture.

NOTE: *Oerstedia dorsalis*, originally described as *Planaria dorsalis* by Abildgaard (1806) from Denmark and Norway, was transferred to *Oerstedia* by Bürger (1895: 592). The species is known to exhibit a high degree of polymorphism in body color pattern (Bürger, 1895; Iwata, 1954a; Brunberg, 1964). A series of studies based on morphological (Sundberg, 1984) and molecular (Sundberg and Janson, 1988; Sundberg and Andersson, 1995) evidence have revealed the existence of a cryptic species, *Oerstedia striata*, that can be distinguished from *Oerstedia dorsalis* by enzyme differences, external pigmentation, and the

general appearance of the body (Sundberg, 1988). The forms reported under the name *Oerstedia dorsalis* are known from the coast of North America (from Puget Sound, Washington to Mexico), Gulf of Mexico, Atlantic coast of North America (Nova Scotia to Florida), western Baltic Sea, North Sea, Mediterranean Sea, Black Sea, northwestern Spain, and Madeira (Gibson, 1995: 467). Due to the high polymorphism, different taxa may be contained among these forms. Numerous varieties have been named, including three reported from Japanese waters: var. *aequalis* Iwata, 1954a, var. *albolineata* Bürger, 1895, and var. *viridis* Bürger, 1895. Until future studies determine whether or not these varieties warrant separate taxonomic status, these are regarded as synonymous with *Oerstedia dorsalis*.

Oerstedia polyorbis Iwata, 1954

Oerstedia polyorbis **Iwata**, 1954a: 18–19, fig. 4B; lower intertidal among the hydrozoan *Eudendrium annulatum* Norman, Daikokujima Island, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 69. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 13, 20, 28, 35, 40.

?*Oerstedia zebra*: **Thollesson and Norenburg**, 2003: 408; Akkeshi Bay, Akkeshi, Hokkaidô Prefecture.

?*Oerstedia venusta*: **Thollesson and Norenburg**, 2003: 408; Akkeshi Bay, Akkeshi, Hokkaidô Prefecture.

NOTE 1: Iwata (1954: 18) established *Oerstedia polyorbis*, which is about 5 mm in body length, with about 30 transverse dorsal bands and cephalic glands that are not well developed and limited only to the anterior portion of the head. Later, Chernyshev (1993: 13) described a similar form, *Oerstediella* (*Paroerstediella*) *zebra* (now *Oerstedia zebra*), which differs from *Oerstedia polyorbis* in body length (8–13 mm), the number of the transverse dorsal bands (10–18), and in having cephalic glands extending behind brain. However, ten specimens obtained from the same population as those that Thollesson and Norenburg (2003) identified as *Oerstedia zebra*, possessed 9–16 transverse bands, with body length varying from 2–4 mm and cephalic glands extending behind brain; there was a pair of pores on the ventral surface of the head, which represented the openings of the cerebral organ ducts, but there were no distinct anterior cephalic furrows (Kajihara, pers. obs.). This overlap in characters indicates that *Oerstedia zebra* might be a junior synonym of *Oerstedia polyorbis*.

NOTE 2: Thollesson and Norenburg (2003) identified their material from Akkeshi as *Oerstedia venusta*. Specimens from the same locality (n=10) were almost identical with what these authors identified as *Oerstedia zebra* in both external and internal morphology, except for the transverse dorsal bands that were present in the latter. However, the form identified as *Oerstedia venusta* by Thollesson and Norenburg (2003) differs from Iwata's (1954a) original description in not having distinct anterior cephalic furrows. It remains uncertain whether *Oerstedia venusta sensu* Thollesson and Norenburg (2003) represents the same taxon as Iwata's (1954a) form. *Oerstedia venusta sensu* Thollesson and Norenburg (2003) also resembles *Oerstedia oculata* (Kulikova, 1987) in external characters.

NOTE 3: Strand and Sundberg (2005a: 210) regarded *Oerstedia zebra* (Chernyshev, 1993) *sensu* Thollesson and Norenburg (2003) and *Oerstedia venusta* Iwata, 1954 *sensu* Thollesson and Norenburg (2003) as synonymous, on the basis of genetic similarity. However, as the taxonomic identity of the latter is unclear, Strand and Sundberg's (2005a) synonymization may require additional topotypic data before it is substantiated.

Genus *Prostoma* Dugès, 1828

Prostoma Dugès, 1828: 140.

Stichostemma Montgomery, 1894: 8; synonymized by Bürger (1904: 53).

TYPE SPECIES: The genus *Prostoma* was long used for species of *Tetrastemma*, until Stiasny-Wijnhoff (1938) circumscribed *Prostoma* to include only freshwater species. The single species included in the nominal genus *Prostoma* when it was established was *Prostoma clepsinoides* Dugès, 1828, which was the only nominal species eligible to be the type species of the genus. However, Friedrich (1955: 162) indicated "*Prostoma lumbricoideum* Dugès (1828) [sic]" (correctly *Prostoma lombricoideum* Dugès, 1830) as the type species of *Prostoma*, and recently Gibson (1995: 495) indicated *Prostoma graecense* (Bömig, 1892). These nomenclatural acts cannot be regarded as valid designations of the type species, according to Article 67.2 of the Code (ICZN, 1999). Meanwhile, the taxonomic identity indicated by the name *Prostoma clepsinoides* has been regarded as vague (Stiasny-Wijnhoff, 1938; Gibson and Moore, 1976). When it becomes necessary to delineate the identity of *Prostoma*, especially in comparison with similar genera like *Limnemertes*, nomenclatural actions will be required, such as either 1) removing the name-bearing function from *Prostoma clepsinoides* and bestowing it on a well-known species like *Prostoma graecense*, or 2) designating a neotype for *Prostoma clepsinoides*, ideally obtained from the type locality, probably Montpellier, France.

Prostoma ohmiense Chernyshev, Timoshkin, and Kawakatsu, 1998

Prostoma ohmiense **Chernyshev *et al*.**, 1998: 53–60, figs. 2–6; on rocks with overgrowing algae, 2 m depth, Lake Biwako, off Kitakomatsu, Shiga-chô, Shiga-gun, and off Shin-asahi-chô, Takashima-gun, Shiga Prefecture. **Crandall *et al*.**, 2002: 14, 21, 29, 43.

TYPE MATERIAL: The holotype and two paratypes are supposed to be deposited in Biwako Museum, according to the original description. However, due to confusion arising during transportation of the specimens, the holotype cannot be identified among the specimens in the museum (Dr. Mark J. Grygier, pers. comm.).

Genus *Quasitetrastemma* Chernyshev, 2004

Quasitetrastemma Chernyshev, 2004b: 152.

TYPE SPECIES: *Tetrastemma nigrifrons* Coe, 1904, by original designation.

Quasitetrastemma nigrifrons (Coe, 1904)
[Japanese name: menoko-himomushi]

Prostoma nigrifrons: **Yamaoka**, 1940a: 249–251, pl. XVI, fig. 14, pl. XVII, figs. 9–12, text figs. 26–29; lower intertidal

under stones, Akkeshi and Abashiri, Hokkaidô Prefecture; sublittoral, among the canal system of sponges attached to gastropod shells collected from a depth of several meters, Akkeshi, Hokkaidô Prefecture. **Okuda**, 1947: 1469, fig. 4142 (1–8).

Tetrastemma nigrifrons: **Iwata**, 1954a: 30–32, fig. 8B. **Yamaguchi and Yamada**, 1955: 71, fig. 18-2. **Utinomi**, 1956: 32, pl. 16, fig. 15. **Iwata**, 1960c: 169, pl. 84, fig. 16. **Utinomi**, 1960: 32, pl. 16, fig. 15. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 218. **Okuda and Iwata**, 1965: 400, figs. a–h. **Utinomi**, 1969: 32, pl. 16, fig. 15. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 55; habitat not recorded, Horomui, Hokkaidô Prefecture. **Iwata**, 1992: 203, fig. 7–4I. **Shimomura *et al*.**, 2001: 47; shallow sublittoral, among sessile organisms on mooring floats, Akahama, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.** 2002: 14, 21, 29, 36, 41.

Tetrastemma nigrifrons var. *bilineatum*: **Iwata**, 1957a: 27, pl. I, fig. 14; collected subtidally from 4–6 m depth on 8 December 1953 by His Majesty Emperor Shôwa, Samejima at Hayama, Kanagawa Prefecture. **Crandall *et al*.**, 2002: 14, 21, 29, 36, 41.

Tetrastemma nigrifrons var. *punctatum*: **Crandall *et al*.**, 2002: 14, 21, 29, 36, 41.

Tetrastemma nigrifrons var. *spadix*: **Crandall *et al*.**, 2002: 14, 21, 29, 37, 41.

NOTE: Originally described as *Tetrastemma nigrifrons* by Coe (1904: 159) from Pacific Grove (36°38'N 121°56'W) and San Pedro, California, USA, the species was recently transferred to *Quasitetrastemma* by Chernyshev (2004b). Known from the Pacific coasts of North and Central America (Puget Sound, Washington, to Salinas Bay, Costa Rica) (Gibson, 1995: 520), the species shows a high degree of polymorphism in color pattern (Coe, 1940: 305). The following varieties have been named: var. *albino* Manchenko and Kulikova, 1996b; var. *bicolor* Coe, 1904; var. *bilineatum* Iwata, 1954a; var. *pallidum* Coe, 1904; var. *punctata* Iwata, 1954a; var. *purpureum* Coe, 1904; var. *spadix* Iwata, 1954a; and var. *zonatum* Coe, 1940. Manchenko and Kulikova (1996b) demonstrated by isozyme analyses that the five sympatric varieties *albino*, *bicolor*, *pallidum*, *punctata*, and *purpureum* are conspecific. Incidentally, Manchenko and Kulikova's (1996b) description of their var. *albino* that possesses no pigmentation gives the impression that it might represent *Quasitetrastemma stimpsoni*.

Quasitetrastemma stimpsoni (Chernyshev, 1992)

Prostoma stigmatum: **Yamaoka**, 1940a: 251–253, pl. XVII, fig. 13, text figs. 30, 31; intertidal under stones or among algae, Akkeshi and Abashiri, Hokkaidô Prefecture.

Tetrastemma stigmatum: **Iwata**, 1954a: 35; intertidal under stones and among algae, Hokkaidô Prefecture (Abashiri, Akkeshi and Hiroo). **Yamaguchi and Yamada**, 1955: 72. **Uchida *et al*.**, 1963: 17. *Non* **Stimpson**, 1857: 163.

Tetrastemma stimpsoni **Chernyshev**, 1992: 135. **Crandall *et al*.**, 2002: 15, 22, 25, 29, 37, 42.

Quasitetrastemma stigmatum: **Chernyshev**, 2004b: 154.

NOTE 1: Although Stimpson's (1857) original description of *Tetrastemma stigmatum* was brief and accompanied by no illustration, Yamaoka (1940a) and Iwata (1954a) considered their material as conspecific with Stimpson's. Based upon literature, Chernyshev (1992) regarded *Prostoma stigmatum sensu* Yamaoka (1940a) as different from *Tetrastemma stigmatum* Stimpson, 1857 and gave to Yamaoka's taxon a new name, *Tetrastemma stimpsoni* Chernyshev, 1992, while he considered the name *Tetrastemma stigmatum* to be a *nomen dubium*. Later, Chernyshev (2004b) transferred *Tetrastemma stigmatum* (=*Prostoma stigmatum*) *sensu* Yamaoka (1940a) into *Quasitetrastemma* Chernyshev, 2004, ascribing "*Quasitetrastemma stigmatum* (Yamaoka, 1940)." Chernyshev's (1992, 2004b) treatment of the names raises the following two issues: 1) Homonymy. Chernyshev (2004b) states "*Prostoma stigmatum* Yamaoka, 1940 was replaced by a new name *Tetrastemma stimpsoni*," although Yamaoka (1940a) did not establish any nominal species bearing the epithet *stigmatum*. Accordingly, there was no homonymy when Chernyshev (1992) created a new name. 2) Authorship. As mentioned, Chernyshev (2004b) appears to misinterpret Yamaoka (1940a) as establishing a new nominal species *Prostoma stigmatum*. Since Stimpson's material is deemed to belong to a different species from Yamaoka's, the latter taxon name should be ascribed as *Quasitetrastemma stimpsoni* (Chernyshev, 1992).

NOTE 2: It seems likely that Yamaoka did not have access to a copy of Stimpson's 1857 paper, and probably had to refer to Bürger (1904) for the identification of his material as *Prostoma stigmatum*. Unfortunately, the German translation of an excerpt of Stimpson's (1857) Latin description of the species in Bürger (1904) lacked an important sentence for the identification of tetrastemmatids, namely, the presence and coloration of the cephalic patch. Nothing equivalent to the sentence in Stimpson (1857: 163) "pone ocellos anteriores fascia transversa obscure rubra" [behind the anterior eyes there is a dark red transverse band] can be found in Bürger (1904). This could account for why Yamaoka (1940a) identified his material without a cephalic patch as *Tetrastemma stigmatum*, and also why he later established a new species that possessed a red cephalic patch as *Tetrastemma roseocephalum*.

Genus *Sacconemertella* Iwata, 1970

Sacconemertella Iwata, 1970a: 147.

TYPE SPECIES: *Sacconemertella lutulenta* Iwata, 1970 by original designation.

Sacconemertella lutulenta Iwata, 1970
[Japanese name: chibi-kisui-himomushi]

Sacconemertella lutulenta **Iwata**, 1970a: 148–151, fig. 1G-I, pl. 4, figs. 26–33; sublittoral in mud, brackish Lake Hinuma, Ibaraki Prefecture. **Iwata**, 1973: 264. **Crandall *et al*.**, 2002: 14, 21, 29, 43.

Genus *Sacconemertopsis* Iwata, 1970

Sacconemertopsis Iwata, 1970a: 142.

TYPE SPECIES: *Sacconemertopsis olivifera* Iwata, 1970 by original designation.

Sacconemertopsis olivifera Iwata, 1970
[Japanese name: hime-kisui-himomushi]

Sacconemertopsis olivifera **Iwata**, 1970a: 143–147, fig. 1D-

F, pl. 3, figs. 18–25; sublittoral in mud, brackish Lake Hinuma, Ibaraki Prefecture. **Iwata**, 1973: 264. **Crandall *et al*.**, 2002: 14, 21, 29, 43.

Genus *Tetrastemma* Ehrenberg, 1831

Tetrastemma Ehrenberg, 1831: 61.

TYPE SPECIES: *Tetrastemma flavidum* Ehrenberg, 1831, by monotypic designation.

Tetrastemma candidum (Müller, 1774)

Tetrastemma candidum: **Iwata**, 1954a: 35–36; lower intertidal among algae, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 72. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 14, 21, 29, 36, 41.

NOTE: Originally described as *Fasciola candida* Müller, 1774 from Norway, this species was transferred to *Tetrastemma* by Örsted (1844: 88). The species has a circumpolar distribution in the northern hemisphere (British Isles, coasts of Scandinavia, North Sea, Mediterranean, Madeira, Faroe Islands, Iceland, Greenland, Caribbean, Atlantic and Pacific coasts of North America) (Gibson, 1995: 372).

Tetrastemma insolens Iwata, 1952

Tetrastemma insolens **Iwata**, 1952: 146–147, figs. 17, 18; intertidal under stones, Tomioka, Amakusa, Kumamoto Prefecture and Fukue, Gotô Islands, Nagasaki Prefecture. **Crandall *et al*.**, 2002: 14, 21, 29, 36, 41.

Tetrastemma melanocephalum (Johnston, 1837)

Tetrastemma melanocephalum: **Yamaoka**, 2005: 153, pl. 1, fig. 5, pl. 2, fig. 5, text fig. 9a–c; intertidal under stones and among algal holdfasts, Shimoda, Shizuoka Prefecture.

NOTE: *Tetrastemma melanocephalum* was originally described as *Nemertes melanocephala* by Johnston (1837). The species is reported from west coast of Sweden, Baltic Sea coasts of Germany, Denmark, British Isles, Meditteranean, Adriatic and Black Sea coasts, northern Spain, Madeira, and the Canary Islands (Gibson, 1995).

Tetrastemma pinnatum Iwata, 1954

Tetrastemma pinnatum **Iwata**, 1954a: 34–35, fig. 9C; sublittoral among algae about 4 m deep, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada** 1955: 72. **Uchida *et al*.** 1963: 17. **Crandall *et al*.**, 2002: 15, 21, 29, 37, 42.

Tetrastemma pseudocoronatum Chernyshev, 1998

Prostoma coronatum: **Yamaoka** 1940a: 247–249, pl. XVI, figs. 12, 13, text fig. 25; lower intertidal on stones, Akkeshi and Abashiri, Hokkaidô Prefecture.

Tetrastemma coronatum: **Iwata**, 1954a: 32; lower intertidal, under stones and among algae, Akkeshi and Abashiri, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 72. **Uchida *et al*.**, 1963: 17. **Shimomura *et al*.**, 2001: 47; intertidal, coarse sand, Akahama, Ôtsuchi Bay, Iwate Prefecture. **Crandall *et al*.**, 2002: 14, 21, 29, 36, 41.

Tetrastemma pseudocoronatum: **Crandall *et al*.**, 2002: 15, 21, 29, 37, 42.

NOTE: *Tetrastemma coronatum* was originally described as *Polia coronata* from Bréhat, France, by Quatrefages (1846: 213) and was later transferred to *Tetrastemma* by Hubrecht (1879: 228). Gibson (1995: 478) stated that the species has been reported from the British Isles, Scandinavia, the Atlantic coast of France, the Mediterranean, the Adriatic and Black Seas, and Madeira, but questioned the validity of the records by Yamaoka (1940a) and Iwata (1954a). Chernyshev (1998) described *Tetrastemma pseudocoronatum* based upon material obtained from Kunashiri Island and regarded *Prostoma coronatum sensu* Yamaoka (1940a) as conspecific.

Tetrastemma roseocephalum (Yamaoka, 1947)

Prostoma roseocephalum **Yamaoka**, 1947: 1469, fig. 4141 (1–4); under stones and among algal holdfasts; Shimoda, Shizuoka Prefecture.

Tetrastemma roseocephalum: **Okuda and Iwata**, 1965: 400; figs. a–d. **Crandall *et al*.**, 2001: 180, pl. 1, figs. 11–14, pl. 2, figs. 17, 17a. **Crandall *et al*.**, 2002: 15, 22, 29, 37, 42. **Yamaoka**, 2005: 155.

NOTE: *Tetrastemma roseocephalum* is potentially a junior synonym of *Tetrastemma stigmatum*. See NOTE under *Tetrastemma yamaokai*.

Tetrastemma stigmatum Stimpson, 1857

Tetrastemma stigmatum **Stimpson**, 1857: 163; sublittoral, under stones or among algae at a depth of about 11 m, Hakodate, Hokkaidô Prefecture. **Crandall *et al*.**, 2002: 15, 22, 29, 37, 42.

NOTE: *Tetrastemma stigmatum* is potentially a senior synonym of the two nominal species *Prostoma roseocephalum* and *Tetrastemma yamaokai*. See NOTE for *Tetrastemma yamaokai*.

Tetrastemma verinigrum Iwata, 1954

Tetrastemma verinigrum **Iwata**, 1954a: 32–33, fig. 9A; intertidal among algal holdfasts, Oshoro, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 72. **Okada *et al*.**, 1971: 62. **Uchida *et al*.**, 1972: 62. **Crandall *et al*.**, 2002: 15, 22, 30, 31, 37, 42.

Tetrastemma verinigrum var. *meridianum* **Iwata**, 1954b: 41, fig. 2C; lower intertidal under stones, Kushimoto, Wakayama Prefecture. **Crandall *et al*.**, 2002: 15, 22, 30, 37, 42.

NOTE: Apart from the records from Japanese waters, *Tetrastemma verinigrum* is also known from Hong Kong (Gibson, 1990a).

Tetrastemma yamaokai Iwata, 1954
[saninuri-himomushi]

Tetrastemma yamaokai **Iwata**, 1954a: 33, fig. 9B; Oshoro, Hokkaidô Prefecture, intertidal among algal holdfasts. **Yamaguchi and Yamada**, 1955: 72. **Okada *et al*.**, 1971: 63. **Uchida *et al*.**, 1972: 62. **Crandall *et al*.**, 2002: 15, 22, 30, 37, 42.

NOTE: Judging from the original description of *Tetrastemma yamaokai* Iwata, 1954, the taxonomic identity of this species can be regarded to be encompassed by that of *Tetrastemma roseocephalum* Yamaoka, 1947; thus the former name may possibly be a junior synonym of the latter. *Tetrastemma stigmatum* Stimpson, 1857 was regarded by Chernyshev (1992) as a *nomen dubium*, but Stimpson's (1857) original description contains such

important taxonomic characters for identifying tetrastemmatids as the coloration of the body and cephalic patch. These character states in *Tetrastemma stigmatum* Stimpson, 1857 also apply to *Tetrastemma yamaokai* Iwata, 1954 and *Tetrastemma roseocephalum* Yamaoka, 1947. These might be synonymized by future studies.

Subclass POLYSTILIFERA Brinkmann, 1917
Order REPTANTIA Brinkmann, 1917
Family DREPANOPHORIDAE Verrill, 1892
Genus *Drepanophorus* Hubrecht, 1874

Drepanophorus Hubrecht, 1874: 42.

TYPE SPECIES: *Drepanophorus rubrostriatus* Hubrecht, 1874 by subsequent designation of Gibson (1995: 360).

Drepanophorus longiceps Iwata, 1957

[Japanese name: mikado-himomushi or tsurugi-himomushi]

Drepanophorus longiceps **Iwata**, 1957a: 27–30, pl. I, fig. 15, pl. VI, figs. 9, 10, pl. VII, figs. 1–8; dredged from a depth of 50 m on 7 November 1954 by His Majesty Emperor Shôwa, Shimoda, Shizuoka Prefecture. **Iwata**, 1960c: 169, pl. 84, fig. 17. **Iwata**, 1965a: 216. **Iwata**, 1965b: 401, figs. a, b. **Iwata**, 1992: 199, fig. 7-5B.

Hirohitonemertes longiceps [*nomen nudum*]: **Crandall *et al*.**, 2002: 11, 22, 27, 39.

Genus *Kameginemertes* Iwata, 1998

Kameginemertes Iwata, 1998: 199.

TYPE SPECIES: *Amphiporus parmiornatus* Iwata, 1957 by original designation.

Kameginemertes parmiornata (Iwata, 1957)

Amphiporus parmiornatus **Iwata**, 1957a: 24–25, pl. I, fig. 12, pl. VI, fig. 6; dredged from 50–55m depth on 6 December 1951 by His Majesty Emperor Shôwa, "Kamejyo" [sic], Sagami Bay, off Kanagawa Prefecture.

Kameginemertes parmiornatus **Iwata**, 1998: 199–213, figs. 1–9.

Kameginemertes parmiornata: **Crandall *et al*.**, 2002: 11, 22, 27, 39.

NOTE: Iwata (1998) redescribed *Amphiporus parmiornatus* Iwata, 1957 based on the original material, establishing a new genus; in his 1998 paper, the locality is noted as "On off-shore reef at Kamegisho, near Nagai."

Family SAGAMINEMERTIDAE Chernyshev, 2003
Genus *Sagaminemertes* Friedrich, 1968

Sagaminemertes Friedrich, 1968: 34.

TYPE SPECIES: *Amphiporus nagaiensis* Iwata, 1957 by monotypic designation.

Sagaminemertes nagaiensis (Iwata, 1957)

[Japanese name: nagai-himomushi]

Amphiporus nagaiensis **Iwata**, 1957a: 23–24, pl. I, fig. 11, pl. VI, figs. 6, 7; dredged sublittorally from 100–130 m depth on 7 August 1950 by His Majesty Emperor Shôwa, northern Nakafukari near Nagai, Sagami Bay, Kanagawa Prefecture.

Sagaminemertes nagaiensis **Iwata**, 1988: 115–123, figs. 1–7; **Iwata**, 1992: 199, fig. 7-5A. **Crandall *et al*.**, 2002: 14, 22, 29, 41.

NOTE: Iwata (1988) redescribed *Amphiporus nagaiensis* Iwata, 1957 based on the original material, establishing a new genus. Iwata (1988) indicated the depth as 100–110 m, whereas Iwata (1957) gave it as 100–130 m.

Order PELAGICA Brinkmann, 1917
Family NECTONEMERTIDAE Verrill, 1892
Genus *Nectonemertes* Verrill, 1892

Nectonemertes Verrill, 1892: 447.

TYPE SPECIES: *Nectonemertes mirabilis* Verrill, 1892 by monotypic designation.

Nectonemertes japonica Foshay, 1912

[Japanese name: hoso-oyogi-himomushi]

Nectonemertes japonica **Foshay**, 1912: 50–53, fig. 1; off Misaki, Kanagawa Prefecture, "taken in the vicinity of Misaki…, but no depth is recorded." **Crandall *et al*.**, 2002: 12, 22, 28, 31, 42.

Nectonemertes mirabilis: **Komai**, 1919: 295, fig. 2. **Kato**, 1947: 1469, fig. 4143. **Satô and Itô**, 1961: 187, fig. 7.1.9. **Kato and Iwata**, 1965: 401; with one figure. **Shiino**, 1969: 94, fig. 9-3E. **Iwata**, 1992: 201, fig. 7-4E. **Iwata**, 1997: 55.

NOTE: Brinkmann (1917: 9) synonymized *Nectonemertes japonica* Foshay, 1912 with *Nectonemertes mirabilis* Verrill, 1892. Coe (1926: 174) proposed separating these species, but later synonymized *Nectonemertes japonica* with *Nectonemertes mirabilis* (Coe, 1954: 259). Korotkevitsch (1955: 72, 81–82; 1977: 17) retained *Nectonemertes japonica* under its original name. Gibson (1995: 425) listed *Nectonemertes japonica* as a valid species name. Future studies must settle the problem of which name should be applied to the Japanese species. *Nectonemertes mirabilis* was originally described from the Atlantic, but is known to be distributed in the North, equatorial and South Atlantic and North Pacific (Gibson, 1995: 426), while *Nectonemertes japonica* is only known from Japanese waters.

Family PELAGONEMERTIDAE Moseley, 1875
Genus *Pelagonemertes* Moseley, 1875

Pelagonemertes Moseley, 1875a: 168.

TYPE SPECIES: *Pelagonemertes rollestoni* Moseley, 1875 by monotypic designation.

Pelagonemertes moseleyi Bürger, 1895

[Japanese name: oyogi-himomushi]

Pelagonemertes rollestoni **Moseley**, 1875b: 377–383, pl. XI, figs. 1–5; trawled from 420–755 fathoms by H.M.S. *Challenger* on 5 June 1875, obtained by Willemoes-Suhm, 34°58'N, 139°30'E, about halfway between Ôshima (the Metropolis of Tôkyô) and Cape Sagami (Kanagawa Prefecture).

Pelagonemertes moseleyi: **Komai**, 1919: 294, fig. 1. **Kato and Tanaka**, 1938: 595–598, pl. XL, figs. A–F, text figs. 1 and 2; "In the middle of November, 1937, one of the writers, Otohiko Tanaka, obtained several specimens of pelagic nemertean along with a large number of deep-sea medusae, copepods, arrow-worms, etc., by the vertical net from about 1,000 meters to the surface, at a station 3 miles off Hasima in Sagami Bay." **Kato**, 1940: 101, two

figs. **Kato**, 1947: 1470, fig. 4144. **Iwata**, 1960c: 169; pl. 84, fig. 18. **Satô and Itô**, 1961: 187, fig. 7.1.8. **Iwata**, 1965a: 169, 217. **Kato and Iwata**, 1965: 401, one figure. **Iwata**, 1992: 201, fig. 7-4F. **Crandall *et al*.**, 2002: 13, 22, 29, 32.

NOTE: *Pelagonemertes moseleyi* was first reported by Moseley (1875b) as a young individual of *Pelagonemertes rollestoni*, which was also obtained during the scientific cruise of H.M.S. *Challenger* (Moseley, 1875a). Later, Bürger (1895: 596) regarded the former as different from the latter and gave it a new name, *Pelagonemertes moseleyi*; this species has been found in the North and tropical Atlantic and the North Pacific (Gibson, 1995: 463).

Records for Which Application of the Species Name is Doubtful

Class PALAEONEMERTEA Hubrecht, 1879
Family CEPHALOTRICHIDAE McIntosh, 1874
Cephalothrix filiformis (Johnston, 1829)
[Japanese name: daikoku-hoso-himomushi]

Procephalothrix filiformis: **Iwata**, 1954a: 7, fig. 1B, D; under stones near the low-water level on a stony beach, Daikokujima Island, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 65. **Iwata**, 1960b: 14–18, figs. 46–61; intertidal, Akkeshi, Hokkaidô Prefecture. **Uchida *et al*.**, 1963: 17. **Iwata**, 1983: 181, 182, 188, fig. 8-5d, e, f. **Crandall *et al*.**, 2002: 14, 16, 29, 36, 41. **Thollesson and Norenburg**, 2003: 409; Akkeshi Bay, Hokkaidô Prefecture.

NOTE: *Cephalothrix filiformis* was originally described as *Planaria filiformis* by Johnston (1828) from the British Isles. Johnston's type material is presumably not extant. The taxonomic identity of *Cephalothrix filiformis sensu* Iwata (1954a) requires further investigation, since the occurrence in Japanese waters is quite outside the range of this species based on other records from the British Isles, the coast of France, and northern Spain (Gibson, 1994: 60, 1995: 467).

Cephalothrix linearis (Rathke, 1799)
[Japanese name: hoso-himomushi]

Cephalothrix linearis: **Takakura**, 1898: 119, fig. 4; intertidal among *Sargassum thunbergii*, Jôgashima, Kanagawa Prefecture. **Kaburaki**, 1927: 1662, fig. 3181. **Kaburaki**, 1947: 1474, fig. 4156. **Iwata**, 1951: 135; habitat not recorded, Onomichi, Hiroshima Prefecture. **Iwata**, 1952: 132; intertidal under stones, Tomioka, Amakusa, Kumamoto Prefecture and Fukue, Gotô Islands, Nagasaki Prefecture. **Yamaoka**, 1940a: 215, pl. XIV, figs. 5–8, text figs. 5, 6; under stones on sandy beach near high-water level, Akkeshi, Hokkaidô Prefecture. **Utinomi**, 1956: 31, pl. 16, fig. 2. **Iwata**, 1960c: 166, pl. 83, fig. 4. **Utinomi**, 1960: 31, pl. 16, fig. 2. **Satô and Itô**, 1961: 187, fig. 7.1.2. **Inaba**, 1963: 227; lower intertidal to shallow sublittoral under stones on rocky to gravelly shores; commonly found in the Inland Sea of Seto. **Iwata**, 1965a: 169. **Kaburaki and Iwata**, 1965: 390, figs. 1a, b. **Utinomi**, 1969: 31, pl. 16, fig. 2. **Honma and Kitami**, 1978: 14; Sado Island, Nîgata Prefecture. **Inaba**, 1988: 225; lower intertidal to shallow sublittoral under stones on rocky to gravelly shores; commonly found in the Inland Sea of Seto. **Ali *et al*.**, 1990: 1083; intertidal, Shimoda, Shizuoka Prefecture, identified by Dr. Minoru Imajima. **Noguchi *et al*.**, 1991: 846; Shimoda, Shizuoka Prefecture. **Iwata**, 1992: 195, fig. 7-3A. **Asakawa *et al*.**, 2000: 764; among shells of the oyster, *Crassostrea gigas*, Hiroshima Bay, Hiroshima Prefecture, identified by Prof. Iwata. **Crandall *et al*.**, 2002: 10, 16, 24, 26, 33, 38.

Procephalothrix simulus [sic]: **Iwata**, 1954a: 6, fig. 1A; under stones or among laminarian holdfasts, Hokkaidô Prefecture (Akkeshi, Muroran, Hiroo, Nemuro and Oshoro). **Yamaguchi and Yamada**, 1955: 65. **Iwata**, 1957c: 108. **Iwata**, 1960a: 96, fig. 1. **Iwata**, 1960b: 3–14, figs. 1–45; intertidal, Akkeshi, Hokkaidô Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 5. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965a: 169, 201. **Iwata**, 1965b: 390, figs. a, b. **Okada *et al*.**, 1971: 62. **Honma and Kitami**, 1978: 14; Sado Island, Nîgata Prefecture. **Iwata**, 1983: 181, 182, 193, figs. 8-5a, b, c, 8-13a. **Iwata**, 1992: 196. **Iwata**, 1997: 55. **Thollesson and Norenburg**, 2003: 409; Akkeshi Bay, Hokkaidô Prefecture.

Procephalothrix similus [sic]: **Uchida *et al*.**, 1972: 62.

Procephalothrix simula: **Crandall *et al*.**, 2002: 14, 16, 29, 36, 41.

Cephalothrix sp. **Asakawa *et al*.**, 2003: 748; among shells of the oyster, *Crassostrea gigas*, Hiroshima Bay, Hiroshima Prefecture. **Tanu *et al*.**, 2004: 516; Hiroshima Bay, Hiroshima Prefecture.

NOTE: *Cephalothrix linearis* was originally described as *Planaria linearis* by Rathke (1799) from the North Sea coast of Denmark, based on two specimens. The original description was so brief and uninformative that Jensen (1878) even suspected that Rathke's two specimens represented two different species. Because of the vagueness of the taxonomic identity of this species, determining whether or not the Japanese population identified as *C. linearis* can be included in the same species will require further investigation. Comparative toxicological (Dr. Manabu Asakawa, unpublished) and molecular (Kajihara, unpublished) data from Hiroshima Bay, Ôtsuchi Bay, and Akkeshi Bay indicate that the species previously recorded as *Cephalothrix linearis* from Japanese waters appears to be conspecific with *Cephalothrix simula sensu* Iwata (1954a). The species possesses strong toxicity due to a high concentration of tetrodotoxin and/or related chemicals (Ali *et al*., 1990; Asakawa *et al*., 2000, 2003). Possible nominal species contained in this taxon include *Procephalothrix fasciculus* Iwata, 1952 and *Procephalothrix arenaria* Gibson, 1990.

Class PILIDIOPHORA Thollesson and Norenburg, 2003
Family LINEIDAE McIntosh, 1874
Cerebratulus fuscus (McIntosh, 1874)

Cerebratulus fuscus: **Takakura**, 1898: 426–427, fig. 24; on the surfaces of rocks obtained sublittorally from a depth of several fathoms on a muddy sand substrate, Jôgashima, Kanagawa Prefecture. **Crandall *et al*.**, 2002: 10, 17, 27, 38.

NOTE: *Cerebratulus fuscus* was originally described as *Micrura fusca* by McIntosh (1873–1874) from the British Isles and later transferred to *Cerebratulus* by Hubrecht (1879: 219). The species is distributed in European waters, including the Mediterranean (Gibson, 1994: 78). Records from North American and Greenland are related to *Cerebratulus marginatus* Renier, 1804 (Coe, 1940: 276, 1943: 255). Gibson

(1995: 417) doubted the validity of Wheeler's (1934: 232, 1940: 32) records from South Africa. Takakura's (1898) record of *C. fuscus* from Japan is based on external characters and thus requires further investigation.

Lineus vegetus Coe, 1931

Lineus cf. *vetatus* [sic]: **Inaba**, 1988: 225; lower intertidal to shallow sublittoral, sandy to muddy sediment; a specimen collected on May 1976 in Bizen, Okayama Prefecture, is deposited in Mukaishima Marine Biological Station, Hiroshima University.

Lineus vegetus: **Iwata**, 1997: 53, species name appearing as the caption of a color photograph taken by Fumio Iwata, locality not indicated.

NOTE: *Lineus vegetus* was originally described by Coe (1931) from California, USA, as possessing a strong capacity for regeneration. It was later synonymized with the nominal species *Ramphogordius sanguineus* Rathke, 1799 by Riser (1994), who established a new genus *Myoisophagos* to accommodate the species, along with the two nominal species *Planaria sanguinea* Rathke, 1799 and *Lineus pseudolacteus* Gontcharoff, 1951. However, as the genus *Myoisophagos* Riser, 1994 constitutes a junior synonym of *Ramphogordius* Rathke, 1843, the species should now called *Ramphogordius sanguineus* Rathke, 1799 (Riser, 1998). There is no taxonomic account of any material of this species from Japanese waters, and the use of the species name by Inaba (1988) and Iwata (1997) should be regarded as questionable.

Lineus bilineatus (Renier, 1804) *sensu* Iwata (1954a)
[Japanese name: hutasuji-himomushi]

Lineus bilineatus: **Iwata**, 1954a: 9–10, fig. 2A; lower intertidal under stones, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 65, fig. 17-1. **Uchida *et al*.**, 1963: 17. **Iwata**, 1965b: 393, figs. a–c. **Crandall *et al*.**, 2002: 11, 17, 27, 34, 39.

NOTE: *Lineus bilineatus*, originally described as *Cerebratulus bilineatus* Renier, 1804 from the Adriatic Sea (presumably near Padua), has a color pattern and number of eyes different from the Japanese form identified under this name (Gibson, 1995: 330–331).

Lineus gesserensis (Müller, 1774) *sensu* Takakura, 1898

Lineus gesserensis: **Takakura**, 1898: 335, fig. 17; intertidal among algae, Koajiro Bay, Kanagawa Prefecture.

NOTE: *Lineus gesserensis*, originally described by Müller (1788: 32) as *Planaria gesserensis* from Denmark, was subsequently synonymized with *Lineus ruber* (Müller, 1774) by Bürger (1904: 101). However, Gibson (1982a: 90; 1994: 94) noted that forms identified as *Lineus gesserensis* also contain what should now be referred to as *Lineus viridis* (Müller, 1774). Takakura's (1898) description of the external features of what he called *Lineus gesserensis* equally applies to both *Lineus ruber* and *Lineus viridis*, so the identity of Takakura's material cannot be determined. *Lineus ruber* and *Lineus viridis* were recently transferred to the genus *Poseidon* Girard, 1852 by Chernyshev (2004c).

Lineus grubei (Hubrecht, 1879) *sensu* Takakura, 1898

Lineus grubei: **Takakura**, 1898: 331–332, fig. 11; among algae from 2–3 fathoms depth, Misaki and Jôgashima, Kanagawa Prefecture.

NOTE: Originally reported from Naples as *Cerebratulus grubei* by Hubrecht (1879: 215–126), this species was transferred to *Lineus* by Bürger (1892: 160). Gibson (1995: 335) stated that Takakura's (1898) report of this species from Japan "cannot be substantiated."

Lineus longifissus (Hubrecht, 1887) *sensu* Takakura (1898) and Iwata (1952)
[Japanese name: murasaki-himomushi]

Lineus longifissus: **Takakura**, 1898: 336, fig. 19; obtained sublittorally from muddy sediment, Moroiso Bay, Kanagawa Prefecture. **Iwata**, 1952: 137–138; collected sublittorally among sandy mud at 30 cm depth; Tomioka, Amakusa, Kumamoto Prefecture. **Iwata**, 1960c: 166, pl. 83, fig. 12. **Iwata**, 1965b: 394, one figure. **Saito and Suzuki**, 1974: 38; intertidal, Niisaki Beach, Kanagawa Prefecture; identified by Dr. Iwata. **Crandall *et al*.**, 2002: 11, 18, 27, 34, 39.

NOTE: *Lineus longifissus* was originally described as *Cerebratulus longifissus* Hubrecht, 1887, based on material from Marion Island, South Africa obtained during the cruise of H.M.S *Challenger*. It was later transferred to *Lineus* by Wheeler (1934: 255), and more recenlty to *Heteronemertes* by Chernyshev (1995: 15). *Lineus longifissus* differs from Takakura's (1898) and Iwata's (1952) descriptions in the degree of posterior extension of the lateral cephalic grooves; the Japanese form belongs to a different species and will be given a different name when it is redescribed.

Lineus mcintoshii (Langerhans, 1880) *sensu* Takakura (1898)

Lineus Mcdntoshii [sic]: **Takakura**, 1898: 187, fig. 10; intertidal, Koajiro, Kanagawa Prefecture.

NOTE: Collected among algae on a rocky shore in Madeira and originally described as *Cerebratulus mcintoshii* by Langerhans (1880), this species was later transferred to *Lineus* by Bürger (1904: 95). It appears to differ from Takakura's (1898) material in the color pattern of the cephalic region. The taxon recognized by Takakura (1898) must be given a different name when additional material has been found and redescribed.

Class HOPLONEMERTEA Hubrecht, 1879
Subclass MONOSTILIFERA Brinkmann, 1917
Family AMPHIPORIDAE McIntosh, 1874
Amphiporus cervicalis (Stimpson, 1857)
[Japanese name: yajirobei-himomushi]

Polina cervicalis **Stimpson**, 1857: 165; intertidal under stones, Shimoda, Shizuoka Prefecture; transferred to *Amphiporus* by Bürger (1904: 39).

Amphiporus cervicalis: **Iwata**, 1954a: 25–26; intertidal among mussels, Muroran and Rishiri Island, Hokkaidô Prefecture; intertidal among mussels, Kominato, Chiba Prefecture; intertidal among mussels, Shimoda, Shizuoka Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Utinomi**, 1956: 32, pl. 16, fig. 13. **Iwata**, 1960c: 169, pl. 84, fig. 15; habitat not recorded, Asamushi, Aomori Prefecture; habitat not recorded, Cape Muroto, Kôchi Prefecture. **Utinomi**, 1960:

32, pl. 16, fig. 13. **Iwata**, 1965a: 217. **Okuda and Iwata**, 1965: 399, figs. a–c. **Shiino**, 1969: 94. **Utinomi**, 1969: 32, pl. 16, fig. 13. **Tsuchiya**, 1979: 82; intertidal, Hadakajima Island, Asamushi, and Aomori Harbor, Aomori Prefecture. **Uchida *et al*.** 1972: 55; habitat not recorded, Horomui, Hokkaidô Prefecture. **Iwata** 1992: 202, pl. 44-8. **Crandall *et al*.**, 2002: 9, 19, 25, 33.

Amphiporus cervicaris [sic]: **Inaba**, 1988: 226; lower intertidal to shallow sublittoral, on algae or under stones on gravelly to rocky shores; a specimen collected 18 July 1977 at Shijûshima, Hiroshima Prefecture, is deposited in Mukaishima Marine Biological Station, Hiroshima University.

NOTE: The original description of *Polina cervicalis* contains little information about the arrangement of the ocelli, and the description can be applied as well to the conditions in both *Amphiporus formidabilis* Griffin, 1898 and *A. imparispinosus* Griffin, 1898. Records of nemerteans under the name *Amphiporus cervicalis* from Japanese waters probably represent either *A. formidabilis* or *A. imparispinosus*, or even another taxon.

Amphiporus depressus (Stimpson, 1857)

Tatsnoskia depressa **Stimpson**, 1857: 165; sublittoral on sandy bottom at a depth of about 3–5 m, Hakodate, Hokkaidô Prefecture; originally recorded as "In portu 'Hakodadi' insulae 'Jesso;' in fundo arenoso, e 6–10 org. profundo accepta"; transferred to *Amphiporus* by Bürger (1904: 44).

Amphiporus depressus: **Iwata**, 1954a: 19–21, fig. 5C; lower intertidal under stones, Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 69. **Crandall *et al*.**, 2002: 9, 19, 26, 33, 37.

NOTE: Gibson and Crandall (1989: 458) regarded *Amphiporus depressus sensu* Stimpson (1857) as a *nomen dubium*, but *Amphiporus depressus sensu* Iwata (1954a) as a different taxon. The illustration of Iwata's (1954a) taxon resembles *Amphiporus imparispinosus*.

Amphiporus lactifloreus (Johnston, 1828)

Amphiporus lactifloreus: **Iwata**, 1954a: 23–24; intertidal under stones, Akkeshi and Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 70. **Uchida *et al*.**, 1963: 17. **Crandall *et al*.**, 2002: 9, 19, 26, 33, 38.

NOTE: *Amphiporus lactifloreus* was originally described from the British Isles as *Planaria lactiflorea* by Johnston (1828: 489). Gibson (1995: 469) questioned the conspecificity between Iwata's material and Johnston's taxon. Iwata's (1954a) taxon may represent *Amphiporus imparispinosus*.

Family CRATENEMERTIDAE

Nipponnemertes pulchra (Johnston, 1837)

Nipponnemertes pulchra: **Yamaoka**, 2005: 147, pl. 2, fig. 2, text fig. 5a–d; subtidal, 50 m depth, muddy sediment, off Kawazu, near Shimoda, Shizuoka Prefecture; habitat not recorded, Hashima Island, near Itô, Shizuoka Prefecture.

NOTE: *Nipponnemertes pulchra* was originally described as *Nemertes pulchra* from Berwickshire, UK, by Johnston (1837: 536). The species has been reported in the northern hemisphere from the east coast of North America, Greenland, the Faroe Islands, the White Sea, and northern Europe from the Atlantic coast of France to Scandinavia; also reported in the southern hemisphere from Chile, South Africa, and Antarctica (Gibson, 1995). Yamaoka's (2005) material differs from the other records of *N. pulchra* in possessing a white head, and probably represents a different species.

Family TETRASTEMMATIDAE Hubrecht, 1879

Oerstedia venusta Iwata, 1954

[Japanese name: hime-himomushi]

Oerstedia venusta **Iwata**, 1954a: 15–16, fig. 3; intertidal among algal holdfasts, Muroran and Rishiri Island, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 68. **Iwata**, 1965b: 398, figs. a–f. **Crandall *et al*.**, 2002: 13, 20, 28, 35, 40.

NOTE: Envall and Sundberg (1993: 313) stated, "It is not possible from the brief description of this species to identify it to the genus *Oerstedia*." Gibson (1995: 447) regarded the name *Oerstedia venusta* as a *nomen dubium*.

Prostoma graecense (Bömig, 1892)

[Japanese name: mamizu-himomushi]

Prostoma graecense: **Ishizuka**, 1933: 215–218, figs. A, B; paddy fields and ponds, especially in chalybeate water, Sapporo, Hokkaidô Prefecture. **Sudzuki**, 1953: 218; in paddy fields around Urawa, Saitama Prefecture; in paddy fields around Sugashima, Mie Prefecture. **Iwata**, 1954a: 29. **Iwata**, 1970b: 128, fig. 91; Urawa, Saitama Prefecture. **Iwata**, 1973: 262. **Iwata**, 1992: 203, fig. 7-5G; Sapporo, Urawa, Sugashima.

Prostoma hokkaidoensis [sic] **Stiasny-Wijnhoff**, 1938: 222.

Prostoma lacstre [sic]: **Sudzuki**, 1953: 218; habitat not recorded, Sapporo, Hokkaidô Prefecture.

Prostoma graecens [sic]: **Iwata**, 1965a: 217; Urawa, Saitama Prefecture; Sapporo, Hokkaidô Prefecture.

Prostoma gracense [sic]: **Crandall *et al*.**, 2002: 14, 21, 29, 43.

Prostoma hokkaidoense: **Crandall *et al*.**, 2002: 14, 21, 29, 43.

NOTE: Ishizuka (1933) identified his material from Sapporo as *Prostoma graecense* (type locality: a local botanic garden in Graz, Austria). Stiasny-Wijnhoff (1938) created a new name, *Prostoma hokkaidoense*, to refer to the Sapporo form, attributing the naming authority to Ishizuka. Sudzuki (1953) regarded the Sapporo form as *Prostoma lacustre* (du Plessis, 1892) (type locality: under pebbles on a beach of Lac Léman at Anière, near Genéve, Switzerland), while he identified the form from Urawa and Sugashima as *Prostoma graecense* (Bömig, 1892). Iwata (1954a) listed *Prostoma hokkaidoense* and *Prostoma lacustre sensu* Sudzuki (1953) as synonymous with *Prostoma graecense*. Chernyshev *et al*. (1998: 62) argued that since previous records of *Prostoma* from Japan lack histological information about internal morphology, the specimens involved cannot be identified with certainty, and concluded that "all previous records of *Prostoma* from Japan should be cited as *Prostoma* sp. (or spp.?)."

Prostoma grande (Ikeda, 1913)

[Japanese name: mimizu-himomushi]

Stichostemma grandis **Ikeda**, 1913:239–256, pl. IV, figs. 1–5;

a vessel planted with the aquatic plant *Lisichiton kamtschatense* Schott in the Botanic Garden of the Hiroshima Normal School, Hiroshima Prefecture. **Iwata**, 1957c: 101.

Prostoma grandis: **Kaburaki**, 1927: 1663, fig. 3183. **Miyashita**, 1932: 328; among *Potamogeton cristatus* covering the bottom of a small river, Setagaya, the Metropolis of Tôkyô. **Kaburaki**, 1947: 1468, fig. 4140. **Satô and Itô**, 1961: 187, fig. 7.1.10. **Iwata**, 1965a: 217. **Kaburaki and Iwata,** 1965: 400, figs. a, b. **Iwata**, 1973: 262. **Iwata**, 1983: 181.

Prossoma grandis [sic]: **Okugawa**, 1932: 70; in paddy fields over much of Japan, including Hokkaidô, but excepting Kyushu and Shikoku.

Prostoma lubricoideum [sic]: **Sudzuki**, 1953: 217–218.

Prostoma grande: **Kawakatsu *et al*.**, 1989: 47. **Crandall *et al*.**, 2002: 14, 21, 29, 43.

NOTE: Described from Hiroshima by Ikeda (1913), *Prostoma grande* has been widely reported from Japan by various authors. Sudzuki (1953) regarded *Prostoma grande* (Ikeda, 1913) as synonymous with *Prostoma lombricoideum* Dugès, 1830 (type locality: Montpellier [?], France). The comments of Chernyshev *et al*. (1998: 62) above (see 'NOTE' under *Prostoma graecense*) equally apply to *Prostoma grande*. Chernyshev *et al*. (1998: 62) further commented, "Future taxonomic studies on the comparative morphology and histology of *Prostoma* samples from elsewhere in Japan, including the type localities of the nominal species *P. grande* and *P. hokkaidoense*, are necessary."

Species That Cannot With Certainty Be Assigned to Valid Genera

Cosmocephala japonica Stimpson, 1857

Cosmocephala japonica **Stimpson**, 1857: 165; intertidal under stones and in rock crevices, Shimoda, Shizuoka Prefecture.

?*Amphiporus angulatus* [in part]: **Coe**, 1944: 30. **Crandall *et al*.**, 2002: 9, 19, 24, 33, 37.

Amphiporus japonicus: **Crandall *et al*.**, 2002: 9, 19, 26, 33.

NOTE: Bürger (1904: 48) regarded this form as a subspecific taxon, *Amphiporus angulatus japonicus*. Iwata (1952: 144) mentioned the similarity between the cephalic marking of *Amphiporus angulatus japonicus* and those of *Amphiporus punctatulus* Coe, 1905 (now *Nipponnemertes punctatula*); the former, having a uniform dorsal body coloration, can be differentiated from the latter, in which the dorsal coloration is mottled. Gibson and Crandall (1989: 460) regarded *Amphiporus japonicus* as a *nomen dubium*. The external appearance of a specimen I recently collected in Hiroshima Bay agrees with the original description of this species, but also resembles that of the *Nipponnemertes* species. This might mean that *Cosmocephala* is a senior synonym of *Nipponnemertes*, which must be determined by future studies. If this proves to be the case, however, the nomenclature of Cratenemertidae will have to be altered to a large extent.

ORIGINAL DESCRIPTION: Stimpson (1857) gave the following diagnosis: "Corpus subelongatum, utrinque obtusum; lateribus in extentione fere parallelis. Color supra brunnea, subtus alba; caput linea mediana et maculis minutis irregularibus incoloratis; fronte, et maculis cervicalibut triangularibus, albis. Caput breve subdiscretum fronte rotundata, ad aperturam profunde fissa. Cervix utrinque pseudorima obliqua, antrorsum curvata. Ocelli sat magni, in capitis marginibus antero-lateralibus, utrinque 10–15. Long. 4; lat. 0.18 poll." [Free translation: Body somewhat elongated, sometimes blunt; when extended the lateral margins are parallel. Dorsally brown, ventrally white; head with a white median line and irregularly-shaped small white dots; anterior end of the head and triangle-shaped neck spots are white. Head wide, somewhat discrete, anteriorly rounded, deeply splits toward proboscis pore. Neck on each side with pseudo-crevices antero-obliquely curved. Eyes sufficiently large, arranged on the antero-lateral margins of the head, 10–15 on each side. 10 cm long, 4.5 mm wide.].

Dicelis rubra Stimpson, 1857

Dicelis rubra **Stimpson**, 1857: 164; sublittoral, between barnacles and sponges at a depth of about 7–8 m, Tanegashima, Kagoshima Prefecture.

NOTE: Bürger (1904) included this species in a group of dubious nemertean taxa. Gibson (1995) regarded the name as invalid.

ORIGINAL DESCRIPTION: Stimpson (1857: 164) gave the following diagnosis for the genus *Dicelis*: "Corpus lineare, depressiusculum, utrinque obtusum. Caput continuum vel subdiscretum, fronte emarginata, apertura proboscidis terminali. Ocelli duo simplices, rotundati, subterminales. Maricolae." [Free translation: Body filiform, dorsoventrally flattened, blunt on both ends. Head continuous to, or somewhat discrete from, body; frontally convex, proboscis pore terminal. Two rounded eyes subterminally. Marine.]. The diagnosis for the species was given as: "Subfiliformis, depressiuscula, antice subattenuata; colore rubra vel purpurea. Cervix quam caput vix angustior. Caput antice rotundata et emarginata. Ocelli duo parvi subterminales. Long. 1.5; lat. 1.03 [sic. probably 0.03] poll." [Free translation: somewhat filiform, dorsoventrally flattened, anteriorly somewhat tapered; red or purple in color. Neck hardly narrower than head. Head anteriorly rounded and convex. Two eyes slightly subterminally. 3.75 cm long, 0.75 mm wide.].

Dichilus obscurus Stimpson, 1857

Dichilus obscurus **Stimpson**, 1857: 163; intertidal between stones, Amamiôshima, Kagoshima Prefecture; originally recorded as "In portu insulae 'Ousima;' littoralis inter lapillus."

NOTE: Bürger (1904) included this species in a group of dubious nemertean taxa. Gibson (1995) regarded the name as invalid.

ORIGINAL DESCRIPTION: Stimpson (1857: 163) gave the following diagnosis for the genus *Dichilus*: "Corpus lineare depressum, longitudine mediocre. Caput corpori continuum subquadratum, plica transversa terminali bilabiatum; labio inferiore emarginato. Ocelli duo subterminales. Cervix supra rimis obsoletis (pseudorimis) impressa. Maricolae." [Free translation: head somewhat rectangular, continuous to body, transverse fold terminally bilobed; lower lip concave. Two ocelli subterminally. Neck dorsally with

pseudo-crevices. Marine.]. The diagnosis for the species is given as: "Corpus supra pallide rubro-fulvum, maculis duabus oblongis in capite. Ocelli fusci, sat magni, subdistantes, in maculis siti. Pseudorimae cervicales tres; una mediana longitudinalis, ex cujus media aliae versus merginem utrinque oblique extendunt. Long. 3; lat. 0.08 poll." [Free translation: Body dorsally pale reddish brown, with two oblong cephalic patches. Ocelli brown, large, rather separately situated in the cephalic patch. Three pseudo-crevices on neck; one mediologitudinal, from which other median ones extend obliquely towards the margins respectively. 7.5 cm long, 2mm wide.].

Diplomma serpentina (Stimpson, 1855)

Nareda serpentina **Stimpson**, 1855: 381; habitat not recorded, Okinawa Prefecture.

Diplomma serpentina: **Stimpson**, 1857: 164; intertidal under stones on muddy sand, Okinawa Prefecture.

NOTE: Bürger (1904) included this species in a group of dubious nemertean taxa. Gibson (1995) regarded the name as invalid. It appears that *Diplomma serpentina* is conspecific with *Amphiporus insolitus* Iwata, 1954 and *Paranemertes* sp. *sensu* Yamaoka (2005). The identity of this taxon should be clarified by future studies.

ORIGINAL DESCRIPTION: "Elongated, somewhat flattened, brownish; head broader than the body, emarginate in front; neck well contracted; eyes two, rather large, bilobate, placed one on each side at the middle of the head. Length 2 1/2 inches" (Stimpson, 1855: 381).

Records of Specimens Not Identified to Species

Class PALAEONEMERTEA Hubrecht, 1879
Family TUBULANIDAE Bürger, 1904 (1874)
Carinella sp.

Carinella sp. **Takakura**, 1898: 119; Misaki, Kanagawa Prefecture.

NOTE: The genus *Carinella* Johnston, 1833 was synonymized with *Tubulanus* Renier, 1804, by Bürger (1904). This form differs from *Tubulanus punctatus* (Takakura, 1898) in possessing continuous longitudinal stripes on the mid-dorsal and lateral surfaces of the body.

Class HOPLONEMERTEA Hubrecht, 1879
Subclass MONOSTILIFERA Brinkmann, 1917
Family AMPHIPORIDAE McIntosh, 1874
Amphiporus sp.

Amphiporus sp. **Yamaoka**, 2005: 147, pl. 1, fig. 3; text fig. 4b, c; among shelly bottom, several meters depth, Susaki, Shizuoka Prefecture.

NOTE: *Amphiporus* sp. *sensu* Yamaoka (2005) is well illustrated, which will facilitate identification when this species is again encountered; the external characters of this form include the ovoid-shaped head, the eyes arranged on the edges of the head in front of the anterior cephalic furrows, and the uniformly pinkish-red body coloration. The generic placement of this form may require further assessment based on new material in future studies.

Zygonemertes sp.

Zygonemertes sp. **Iwata**, 1954a: 19, fig. 5A; under a stone near low tide mark, Muroran, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 69.

NOTE: This form can be identified as a member of the genera *Zygonemertes* or *Pheroneonemertes* by possessing post-cerebral ocelli; proper generic identification of this form will require histological examination of its internal morphology. The body is about 3 cm long, 1 mm wide, pale blue in color without any marking. There are short, double longitudinal lines on the mid-dorsal surface of the head (Iwata, 1954a).

Family CRATENEMERTIDAE Friedrich, 1968
Nipponnemertes sp. 1

Nipponnemertes sp. 1. **Yamaoka**, 2005: 151, pl. 2, fig. 3; text figs. 6b, c, 7; intertidal, under stones, Shitaru, near Shimoda, Shizuoka Prefecture; shelly bottom, several meters depth, Susaki, Shimoda, Shizuoka Prefecture.

NOTE: The form can be identified as *Nipponnemertes* by the interwoven longitudinal and circular muscle fibers in the rhynchocoel wall. Detailed external features illustrated by Yamaoka (2005) will suffice for identification when this species is again encountered. The body is 2.5 cm long, 0.8 mm wide, yellowish brown in color, rarely with small brown dots; about 15 eyes are irregularly arranged on either side of head. Remarkably, Yamaoka's (2005) specimen possessed only one accessory stylet pouch.

Nipponnemertes sp. 2

Nipponnemertes sp. 2. **Yamaoka**, 2005: 152, text fig. 8; subtidal, several meters depth, Susaki, Shimoda, Shizuoka Prefecture.

NOTE: Yamaoka's (2005) specimens were 10–12 mm long, 0.7 mm wide; anterior cephalic furrows ventrally forming M-shape; posterior cephalic furrows encircling body in esophageal region, curving forward on both dorsal and ventral surfaces; body color pure white, yellowish white, or yellow, with scattered small brown patches. The large cerebral organs extending behind the brain in this form is characteristic of the Cratenemertidae.

Family EMPLECTONEMATIDAE Bürger, 1904
Paranemertes sp.

Paranemertes sp. **Yamaoka**, 2005: 142, pl. 1, fig. 6; text fig. 1; Itado, near Shimoda, Shizuoka Prefecture.

NOTE: Body 6 cm long, 0.7 mm wide; uniformly bright chestnut-brown in color, except for white margins on cephalic tip. This form may be conspecific with *Diplomma serpentina* (Stimpson, 1855) and *Amphiporus insolitus* Iwata, 1954. Future study should clarify the identity of this taxon.

Family TETRASTEMMATIDAE Hubrecht, 1879
Prostoma sp.
[Japanese name: toyama-mamizu-himomushi]

Prostoma sp. **Iwata**, 1997: 53, with two color photographs taken in life by Dr. Fumio Iwata; under stones near a spring in a small pond near a paddy field, Asahi-chô, Toyama Prefecture.

NOTE: The body is about 1 cm long, 0.5 mm wide, pale orange in color. The proboscis retractor muscle is well developed (Iwata, 1997).

Tetrastemma sp.

Tetrastemma sp. **Iwata**, 1954a: 30, fig. 8A; among seaweeds, Akkeshi, Hokkaidô Prefecture. **Yamaguchi and Yamada**, 1955: 71, fig.18-1.

NOTE: Body 2 cm long, 1 mm wide, yellowish green in basement body color, with four darker longitudinal stripes on the dorsal surface; with four eyes (Iwata, 1954a).

Tetrastemma sp.

Tetrastemma sp. **Yamaoka**, 2005: 155, pl. 2, fig. 1, text figs. 9d, e, 10; subtidal, about 5 fathoms deep, Shirahama, near Shimoda, Shizuoka Prefecture.

NOTE: Body 1 cm long, 2 mm wide; dorsally reddish brown, paler ventrally, with dark brown mid-dorsal stripe (Yamaoka, 2005).

ACKNOWLEDGMENTS

Thanks are due to Dr. Mark J. Grygier, Lake Biwa Museum, for information about the type specimens of *Prostoma ohmiense*, and to Dr. Manabu Asakawa, Hiroshima University, for his unpublished toxicological data on nemerteans from some places in Japan. I wish to express my gratitude to Dr. Alexei V. Chernyshev (Institute of Marine Biology, Far East Division, Russian Academy of Sciences, Russia), Dr. Frank B. Crandall (Department of Invertebrate Zoology, National Museum of Natural History, USA), Dr. Ray Gibson (Professor Emeritus of Liverpool John Moores University, UK), Dr. Svetlana A. Maslakova (University of Washington, USA), Dr. Jon L. Norenburg (Department of Invertebrate Zoology, National Museum of Natural History, USA) and Dr. Sun Shichun (Mariculture Research Lab, Ocean University of Qingdao, China) for their valuable comments on an earlier version of the manuscript. This study was supported by Grants-in-Aid from the Japan Society for the Promotion of Science (research grant numbers 16770059 and 16207005).

REFERENCES

Abildgaard PC (1806) *Planaria dorsalis*. In "Zoologia Danica Seu Animalium Daniae et Norvegiae Rariorum ac Minus Notorum Descriptiones et Historia Vol 4" Ed by OF Müller, N Christensen, N Mölleri et Fillii, Havniae, p 25

Ali AE, Arakawa O, Noguchi T, Miyazawa K, Shida Y, Hashimoto K (1990) Tetrodotoxin and related substances in a ribbon worm *Cephalothrix linearis* (Nemertean). Toxicon 28: 1083–1093

Asakawa M, Toyoshima T, Shida Y, Noguchi T, Miyazawa K (2000) Paralytic toxins in a ribbon worm *Cephalothrix* species (Nemertean) adherent to cultured oysters in Hiroshima Bay, Hiroshima Prefecture, Japan. Toxicon 38: 763–773

Asakawa M, Toyoshima T, Ito K, Bessho K, Yamaguchi C, Tsunetsugu S, Shida Y, Kajihara H, Mawatari SF, Noguchi T, Miyazawa K (2003) Paralytic toxicity in a ribbon worm *Cephalothrix* species (Nemertea) in Hiroshima Bay, Hiroshima Prefecture, Japan and the isolation of tetrodotoxin as a main component of its toxins. Toxicon 41: 747–753

Bergendal D (1900) Über ein Paar sehr eigenthümliche nordische Nemertinen. Zool Anz 23: 313–328

Bergendal D (1902) Zur Kenntnis der nordischen Nemertinen. 2. Eine der construierten Urnemertine entsprechende Palaeonemerine aus dem Meere der schwedischen Westküste. Zool Anz 25: 421–432

Blainville HM de (1827) Vers. In "Dictionnaire des Sciences Naturelles Vol 57" Ed by FG Levrault, Normant, Paris, pp 270–271

Blake JA (1993) Phylum Nemertea. In "Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel Vol 1 Introduction, Benthic Ecology, Oceanology, Platyhelminthes, and Nemertea" Ed by JA Blake, A Lissner, Santa Barbara Museum of Natural History, California, pp 95–132

Boyer BC, Henry JQ (1998) Evolutionary modifications of the spiralian developmental program. Am Zool 38: 621–633

Brinkmann A (1917) Die pelagischen Nemertinen. Bergens Mus Skr 3: 1–180

Britton JC (1990) The intertidal crevice fauna of Tolo Channel and Harbour, New Territories, Hong Kong. In "Proceedings of the Second International Marine Biological Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong, 1986, Vol 2" Ed By B Morton, Hong Kong University Press, Hong Kong, pp 803–835

Brunberg L (1964) On the nemertean fauna of Danish waters. Ophelia 1: 77–111

Bürger O (1890) Untersuchungen über die Anatomie und Histologie der Nemertinen nebst Beiträgen zur Systematik. Z Wiss Zool 50: 1–277

Bürger O (1892) Zur Systematik der Nemertinenfauna des Golfs von Neapel. Nachr Königl Gessels Wiss Georg

Bürger O (1895) Nemertinen. F F Golf Neapel 22: 1–743

Bürger O (1904) Nemertini. Tierreich 20: 1–151

Bürger O (1897–1907) Nemertini (Schnurwürmer). In "Klassen und Ordnungen des Tier-Reichs, wissenschaftlich dargestellt in Wort und Bild Vol 4 Supplement" Ed by HG Bronn, CF Winter'sche Verlagshandlung, Leipzig, pp 1–542 [1897, pp 1–176; 1898, pp 177–240; 1899, pp 241–288; 1903, pp 289–384; 1905, pp 385–480; 1907, pp 481–542]

Chernyshev AV (1992) On the names of some nemertines. Zool Zh 71: 134–136 [In Russian with English abstract]

Chernyshev AV (1993) A review of the genera of nemerteans allied to *Oerstedia* (Monostilifera, Tetrastemmatidae) with description of four new species. Zool Zh 72: 11–20 [In Russian with English abstract]

Chernyshev AV (1995) On the higher taxa of the phylum Nemertea with the taxonomic review of the subclass Anopla. Zool Zh 74: 7–18

Chernyshev AV (1998) Nemerteans of the genus *Tetrastemma* (Enopla, Monostilifera) from the Far East seas of Russia. Zool Zh 77: 995–1002 [In Russian with English abstract]

Chernyshev AV (2003) Classification system of the higher taxa of enoplan nemerteans (Nemertea, Enopla). Russ J Mar Biol 29: 57–65

Chernyshev AV (2004a) Nemertini. In "Dalnevostochnyi Morskoi Biosfernyi Zadovednik Biota Vol 2" [Far Eastern Marine Biosphere Nature Reserve Biota] Ed by AN Tyurin, Dalnauka, Vladivostok, pp 151–155

Chernyshev AV (2004b) Two new genera of nemertean worms of the family Tetrastemmatidae (Nemertea: Monostilifera). Zoosyst Russ 12: 151–156

Chernyshev AV (2004c) Problems of taxonomy of the "*Lineus ruber*" heteronemertean complex (Nemertea, Anopla). Zool Zh 88: 788–794 [In Russian with English abstract]

Chernyshev AV, Timoshkin OA, Kawakatsu M (1998) *Prostoma ohmiense* sp. nov., a new species of freshwater nemertean from Lake Biwa-Ko, central Japan, with special reference to the taxonomy and distribution of the known species in the genus *Prostoma* Dugès, 1828 (Enopla, Hoplonemertea, Monostylifera, Tetrastemmatidae). Bull Fuji Women's Coll Ser II 36: 51–66

Coe WR (1901) Papers from the Harriman Alaska Expedition. XX. The nemerteans. Proc Wash Acad Sci 3: 1–84

Coe WR (1902) The nemertean parasites of crabs. Amer Nat 36: 431–450

Coe WR (1904) Nemerteans of the Pacific coast of North America. Part II. Harriman Alaska Ser 11: 111–220

Coe WR (1905) Nemerteans of the west and northwest coasts of America. Bull Mus Comp Zool Harvard Coll 47: 1–318

Coe WR (1926) The pelagic nemerteans. Mem Mus Comp Zoöl Harvard Coll 49: 1–244

Coe WR (1930) Two new species of nemerteans belonging to the family Cephalotrichidae. Zool Anz 89: 97–103
Coe WR (1931) A new species of nemertean (*Lineus vegetus*) with asexual reproduction. Zool Anz 94: 54–60
Coe WR (1940) Revision of the nemertean fauna of the Pacific coasts of North, Central, and northern South America. Allan Hankock Pac Exped 2: 247–322
Coe WR (1943) Biology of the nemerteans of the Atlantic coast of North America. Trans Conn Acad Arts Sci 35: 129–328
Coe WR (1944) Geographical distribution of the nemerteans of the Pacific coast of North America, with descriptions of two new species. J Wash Acad Sci 34: 27–32
Coe WR (1947) Nemerteans of the Hawaiian and Marshall Islands. Occ Pap Bernice P Bishop Mus 19: 101–106
Coe WR (1954) Bathypelagic nemerteans of the Pacific Ocean. Bull Scripps Inst Oceanogr Univ Califor 6: 225–286
Corrêa DD (1963) Nemerteans from Curaçao. Stud Faun Curaçao Carib Is 17: 41–56
Corrêa DD (1964) Nemerteans from California and Oregon. Proc Calif Acad Sci 31: 515–558
Corrêa DD (1966) A new hermaphroditic nemertean. An Acad Brasil Ciênc 38: 365–369
Crandall FB (2001) A cladistic view of the Monostilifera (Hoplonemertea) with interwoven rhynchocoel musculature: a preliminary assessment. Hydrobiologia 456: 87–110
Crandall FB, Kajihara H, Mawatari SF, Iwata F (2001) The status of four Japanese nemertean species of Yamaoka. Hydrobiologia 456: 175–185
Crandall FB, Norenburg JL, Chernyshev AV, Maslakova S, Schwartz M, Kajihara H (2002) Checklist of the Nemertean Fauna of Japan and Northeastern Asia. The Smithsonian Institution, Washington, D.C. [PDF available from http://nemertes.si.edu/PDFs/epub2917.pdf]
Delle Chiaje S (1825) Memorie Sulla Storia e Notomia Degli Animali Senza Vertebre del Regno di Napoli Vol 2. Societa' Tipografica, Napoli
Delle Chiaje S (1828) Memorie Sulla Storia e Notomia Degli Animali Senza Vertebre del Regno di Napoli Vol 3. Societa' Tipografica, Napoli
Diesing CM (1850) Systema Helminthum Vol I. W Braumuller, Vindobonae
Diesing KM (1863) Nachträge zur Revision der Turbellarien. Sitzungsb Akad Wiss Wien Math Naturwiss Kl 46: 173–188
Dugès A (1828) Recherches sur l'organisation et les moeurs des Planariées. Ann Sci Nat 15: 139–183
Ehrenberg CG (1828–1831) Phytozoa turbellaria Africana et Asiatica in Phytozoorum Tabula IV et V delineata. In "Symbolae physicae, seu icones et descriptiones corporum naturalium novorum aut minus cognitorum quae ex itineribus per Libyam, Aegyptium, Nubiam, Dongalam Syriam, Arabiam et Habessiniam, pars zoologica II, animalia evertebrata exclusis insectis" Ed by FG Hemprich, CG Ehrenberg, Officina Academica, Berolina, pp 53–67, pls IV–V [Plates published in 1828, text in 1831]
Envall M (1998) General problems in estimating nemertean relationships on ribosomal sequence data — an example using six monostiliferous species and mitochondrial 16S rDNA. Hydrobiologia 365: 19–31
Envall M, Sundberg P (1993) Intraspecific variation in nemerteans (Nemertea): synonymization of the genera *Paroerstedia* and *Oerstediella* with *Oerstedia*. J Zool Lond 230: 293–318
Fish JD, Fish S (1989) A Student's Guide to the Seashore. Unwin Hyman, London
Foshay EA (1912) *Nectonemertes japonica*, a new nemertean. Zool Anz 40: 50–53
Friedrich H (1935a) Studien zur Morphologie, Systematik und Ökologie der Nemertinen der Kieler Bucht. Arch Naturg NF 4: 293–375
Friedrich H (1935b) Neue Hoplonemertinen der Kieler Bucht. Schrift Naturw Ver Schleswig-Holst 21: 10–19
Friedrich H (1955) Beiträge zu einer Synopsis der Gattungen der Nemertini monostilifera nebst Bestimmungsschlüssel. Z Wiss Zool 158: 133–192
Friedrich H (1958) Nemertini. Zool Iceland 2: 1–24
Friedrich H (1968) *Sagaminemertes*, eine bemerkenswerte neue Gattung der Hoplonemertinen und ihre systematische Stellung. Zool Anz 180: 33–36
Gibson R (1979) Nemerteans of the Great Barrier Reef. 1. Anopla Palaeonemertea. Zool J Linn Soc 65: 305–337
Gibson R (1981) Nemerteans of the Great Barrier Reef 3. Anopla Heteronemertea (Lineidae). Zool J Linn Soc 71: 171–235
Gibson R (1982a) British Nemerteans. University Press, Cambridge
Gibson R (1982b) Nemertea. In "Synopsis and Classification of Living Organisms Vol 1" Ed by SP Parker, McGraw-Hill, New York, pp 823–846
Gibson R (1985) The need for a standard approach to taxonomic descriptions of nemerteans. Am Zool 25: 5–14
Gibson R (1990a) The macrobenthic nemertean fauna of Hong Kong. In "Proceedings of the Second International Marine Biological Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong, 1986 Vol 1" Ed by B Morton, Hong Kong University Press, Hong Kong, pp 33–212
Gibson R (1990b) The macrobenthic nemertean fauna of the Albany region, Western Australia. In "Proceedings of the Third International Marine Biological Workshop: the Marine Flora and Fauna of Albany, Western Australia Vol 1" Ed by FE Wells, DI Walker, H Kirkman, R Lethbridge, Western Australian Museum, Perth, pp 89–194
Gibson R (1994) Nemerteans. Field Studies Council, Shrewsbury
Gibson R (1995) Nemertean genera and species of the world: an annotated checklist of original names and description citations, synonyms, current taxonomic status, habitats and recorded zoogeographic distribution. J Nat Hist 29: 271–562
Gibson R (1997a) An annotated checklist of the Nemertea recorded from the Cape d'Aguilar Marine Reserve, Hong Kong. In "The Marine Flora and Fauna of Hong Kong and Southern China Vol 4" Ed by B Morton, Hong Kong University Press, Hong Kong, pp 31–36
Gibson R (1997b) Nemertea. In "The Species Directory of the Marine Fauna and Flora of the British Isles and Surrounding Seas" Ed by C M Howson, BE Picton, Ulster Museum and The Marine Conservation Society, Belfast and Ross-on-Wye, pp 49–54
Gibson R (1998) Epilogue - one hundred years of nemertean research: Bürger (1895) to the present. Hydrobiologia 365: 301–310
Gibson R, Crandall FB (1989) The genus *Amphiporus* Ehrenberg (Nemertea, Enopla, Monostiliferoidea). Zool Scr 18: 453–470
Gibson R, Knight-Jones EW (1990) Platyhelminthes, Nematoda, Nemertea. In "The Marine Fauna of the British Isles and Northwest Europe Vol 1" Ed by PJ Hayward, JS Ryland, Clarendon Press, Oxford, pp 181–200
Gibson R, Moore J (1976) Freshwater nemerteans. Zool J Linn Soc 58: 177–218
Gibson R, Moore J (1998) Further observations on the genus *Geonemertes* with a description of a new species from the Philippine Islands. Hydrobiologia 365: 157–171
Girard C (1893) Recherches sur les Planariés et les Némertiens de l'Amérique du Nord. Ann Sci Nat Sér 7 15: 145–310
Hansson HG (1994) Sydskandinaviska marina flercelliga evertebrater. Lanstryckeriet i Goteborg, Goteborg
Henry JQ, Martindale MQ (1994) Establishment of the dorsoventral axis in nemertean embryos: evolutionary considerations of spiralian development. Dev Gen 15: 64–78
Henry JQ, Martindale MQ (1996) The establishment of embryonic

axial properties in the nemertean, *Cerebratulus lacteus*. Dev Biol 180: 713–721
Henry J, Martindale MQ (1997a) Nemerteans, the ribbon worms. In "Embryology: Constructing the Organism" Ed by SF Gilbert, AM Raunio, Sinauer Associates, Sunderland, pp 151–166
Henry JQ, Martindale MQ (1997b) Regulation and the modification of axial properties in partial embryos of the nemertean, *Cerebratulus lacteus*. Dev Gen Evol 207: 42–50
Hieda K, Takahashi Y (1986) Hokkaido Umibenoikimono. [Sea Shore Animals Around Hokkaido] Hokkaido Shimbun, Sapporo [In Japanese]
Hochberg FG, Lunianski DN (1998) Nemertean collections at the Santa Barbara Museum of Natural History: type specimens and vouchers for Wesley R. Coe's 1940 publication. Hydrobiologia 365: 291–300
Honma Y, Kitami T (1978) Fauna and flora in the waters adjacent to the Sado Marine Biological Station, Niigata University. Ann Rep Sado Mar Biol Stat Niigata Univ 8: 7–81
Hubrecht AAW (1874) Aanteekeningen Over de Anatomie, Histologie en Ontwikkelingsgeschiedenis van Eenige Nemertinen. JL Beijer, Utrecht
Hubrecht AAW (1879) The genera of European nemerteans critically revised, with description of several new species. Note Leyden Mus 1: 193–232
Hubrecht AAW (1885) The Nemertea. Rep Sci Res *Challenger* Exped, Narrative 1: 830–833
Hubrecht AAW (1887) Report on the Nemertea collected by H.M.S. *Challenger* during the years 1873–76. Rep Sci Res *Challenger* Exped, Zoology 19: 1–150
Humes AG (1942) The morphology, taxonomy, and bionomics of the nemertean genus *Carcinonemertes*. Illinois Biol Monogr 18: 1–105
Huschke E (1830) Beschreibung und Anatomie eines neuen an Sicilien gefundenen Meerwurms, *Notospermus drepanensis*. Isis 23: 681–683
Hylbom R (1957) Studies on palaeonemerteans of the Gullmar Fiord area (West Coast of Sweden). Arkiv Zool 10: 539–582
Hylbom R (1993) A proposal for a check-list of characteristics to be used in the descriptions of palaeonemertean species. Hydrobiologia 266: 169–174
Ikeda I (1913) A new fresh-water nemertine from Japan (*Stichostemma grandis*). Ann Zool Jpn 8: 239–256
Inaba A (1963) Fauna and Flora of the Inland Sea of Seto. Mukaishima Marine Biological Station, Faculty of Science, Hiroshima University, Hiroshima
Inaba A (1988) Fauna and Flora of the Seto Inland Sea. 2nd ed, Mukaishima Marine Biological Station, Faculty of Science, Hiroshima University, Hiroshima
International Commission on Zoological Nomenclature (1985) International Code of Zoological Nomenclature. 3rd ed, International Trust for Zoological Nomenclature, London
International Commission on Zoological Nomenclature (1988) Opinion 1486, *Tubulanus* Renier, [1804] and *T. polymorphus* Renier, [1804] (Nemertea): reinstated and made available. Bull Zool Nom 45: 157–158
International Commission on Zoological Nomenclature (1992) OPINION 1675 *Amphiporus* Ehrenberg, 1831 (Nemertea): *Planaria lactiflorea* Johnston, 1828 designated as the type species. Bull Zool Nom 49: 157
International Commission on Zoological Nomenclature (1999) International Code of Zoological Nomenclature. 4th ed, International Trust for Zoological Nomenclature, London
Ishizuka H (1933) On a fresh-water nemertean from Hokkaido. Proc Imp Acad Jpn 9: 215–218
Iwata F (1951) Nemerteans in the vicinity of Onomichi. J Fac Sci Hokkaido Univ Ser 6 Zool 10: 135–138
Iwata F (1952) Nemertini from the coasts of Kyusyu. J Fac Sci Hokkaido Univ Ser 6 Zool 11: 126–148
Iwata F (1954a) The fauna of Akkeshi Bay. XX. Nemertini in Hokkaido (revised report). J Fac Sci Hokkaido Univ Ser 6 Zool 12: 1–39
Iwata F (1954b) Some nemerteans from the coasts of the Kii Peninsula. Publ Seto Mar Biol Lab 4: 33–42
Iwata F (1954c) Invertebrate fauna of the intertidal zone of the Tokara Islands. X. Nemertini. Publ Seto Mar Biol Lab 4: 27–31
Iwata F (1957a) Nemerteans from Sagami Bay. Publ Akkeshi Mar Biol Stat 7: 1–31
Iwata F (1957b) On the early development of the nemertine, *Lineus torquatus* Coe. J Fac Sci Hokkaido Univ Ser 6 Zool 13: 54–58
Iwata F (1957c) Nemertini. In "Musekitsui-dôbutsu-hasseigaku" [Developmental Biology of Invertebrates] Ed by M Kume, K Dan, Baifûkan, Tokyo, pp 101–110 [In Japanese]
Iwata F (1958) On the development of the nemertean *Micrura akkeshiensis*. Embryologia 4: 103–131
Iwata F (1960a) The life history of the Nemertea. Bull Mar Biol Stat Asamushi 10: 95–97
Iwata F (1960b) Studies on the comaparative embryology of nemerteans with special reference to their interrelationships. Publ Akkeshi Mar Biol Stat 10: 1–51
Iwata F (1960c) Nemertini. In "Encyclopaedia Zoologica Illustrated in Colours Vol 4" Ed by T Okada, T Uchida, Hokuryu-kan Publishing Co., Ltd., Tokyo, 166–169 [In Japanese]
Iwata F (1965a) Nemertinea. In "Dôbutsu-keitô-bunruigaku Vol 3" [Systematic Zoology Vol 3] Ed by T Uchida, Nakayama-Shoten Co., Ltd, Tokyo, pp 167–219 [In Japanese]
Iwata F (1965b) *Procephalothrix simulus* Iwata, *Tubulanus punctatus* Takakura, *Carinesta uchidai* Iwata, *Coia ijimai* Takakura, *Tetramys ramicerebrum* Iwata, *Baseodiscus curtus* Hubrecht, *Baseodiscus princeps* Coe, *Cephalomastax brevis* Iwata, *Euborlasia gotoensis* Iwata, *Lineus alborostratus* Takakura, *Lineus bilineatus* Renier, *Lineus geniculatus* Delle Chiaje, *Lineus longifissus* Hubrecht, *Lineus piperatus* Stimpson, *Micrura japonica* Iwata, *Emplectonema gracile* Johnston, *Nemertopsis gracilis* Coe, *Paranemertes plana* Iwata, *Oerstedia dorsalis* Abildgaard, *Oerstedia venusta* Iwata, *Amphiporus bimaculatus* Coe, *Amphiporus punctatulus* Coe, *Drepanophorus longiceps* Iwata. In "New Illustrated Encyclopedia of the Fauna of Japan Vol 1" Ed by Y Okada, S Uchida, T Uchida, Hokuryu-kan Publishing Co., Ltd., Tokyo, pp 390–401 [In Japanese]
Iwata F (1967) *Uchidana parasita* nov. gen. et nov. sp., a new parasitic nemertean from Japan with peculiar morphological characters. Zool Anz 178: 122–136
Iwata F (1970a) On the brackish water nemerteans from Japan, provided with special circulatory and nephridial organs useful for osmoregulation. Zool Anz 184: 133–154
Iwata F (1970b) Nemertinea. In "Gendai-seibutugaku-taikei Vol 1 musekitui-dôbutsu" [Contemporary Biology Series Vol 1 Invertebrates] Ed by T Uchida, S Mawatari, Nakayama-shoten, Tokyo, pp 125–132 [In Japanese]
Iwata F (1972) Axial changes in the nemertean egg and embryo during development and its phylogenetic significance. J Zool Lond 168: 521–526
Iwata F (1973) Nemertinea. In "Freshwater Biology of Japan Enlarged and Revised Edition" Ed by M Uéno, Hokuryukan Publishing Co., Ltd., Tokyo, pp 262–264 [In Japanese]
Iwata F (1983) Nemertinea. In "Musekitui-dôbutsu-no-hassei-jô" [Development of Invertebrates Vol 1] Ed by K Dan, K Sekiguchi, Y Andô, H Watanabe, Baifûkan, Tokyo, pp 181–196 [In Japanese]
Iwata F (1985) Foregut formation of the nemerteans and its role in nemertean systematics. Amer Zool 25: 23–36
Iwata F (1988) On the hoplonemertean *Sagaminemertes nagaiensis* (Iwata, 1957), with consideration of its systematics. Hydrobiologia 156: 115–124

Iwata F (1992) Nemertinea. In "Guide to Seashore Animals of Japan with Color Pictures and Keys Vol 1" Ed by S Nishimura, Hoikusha Publishing Co., Ltd., Osaka, pp 194–204 [In Japanese]

Iwata F (1993) *Paralineopsis taki* gen. et sp. nov., a littoral heteronemertean from Japan, provided with special proboscideal, circulatory and sensory organs of significance to nemertean systematics. Hydrobiologia 266: 185–201

Iwata F (1997) Himogatadôbutsu (Himomushirui). In "The Encyclopaedia of Animals in Japan Vol 7 Invertebrates" Ed by T Okutani, M Takeda, M Imafuku, Heibonsha Ltd., Tokyo, pp 50–55 [In Japanese]

Iwata F (1998) On the hoplonemertean, *Kameginemertes parmiornatus* (Iwata, 1957) gen. n., comb. n. from Sagami Bay, Japan. Hydrobiologia 365: 199–213

Iwata F (2001) *Nipponnemertes fernaldi*, a new species of swimming monostiliferous hoplonemertean from the San Juan Archipelago, Washington, U.S.A. Proc Biol Soc Wash 114: 833–857

Iwata F (2006) On four monostiliferous hoplonemerteans, including three new genera and species from Washington state and British Columbia. J Nat Hist 40: 873–913

Jenner RA (2004) Towards a phylogeny of the Metazoa: evaluating alternative phylogenetic positions of Platyhelminthes, Nemertea, and Gnathostomulida, with a critical reappraisal of cladistic characters. Contr Zool 73: 1–216 [Available from http://dpc2.uba.uva.nl/ctz/vol73/nr01/art01]

Jensen OS (1878) Turbellarier ved Norges Vestkyst. JW Eides, Bergen

Johnston G (1828) Contributions to the British fauna. Zool J 4: 52–57

Johnston G (1833) Illustrations in British Zoology. Mag Nat Hist 6: 232–235

Johnston G (1837) A description of some planarian worms. Mag Zool Bot 1: 529–538

Joubin L (1894) Les Némertiens. In "Fauna Française" Ed by R Blanchard, J de Guerne, Société d'Éditions Scientifiques, Paris, pp 1–235

Kaburaki T (1927) Nemertea. In "Figuraro de Japanaj Bestoij" Ed by S Uchida, Hokuryukwan & Co., Ltd., Tokyo, pp 1662–1666 [In Japanese]

Kaburaki T (1947) *Emplectonema mitsukurii* (Takakura), *Prostoma grandis* (Ikeda), *Malacobdella japonica* Takakura, *Lineus fuscoviridis* Takakura, *Lineus subcingulatus* Takakura, *Cerebratulus communis* Takakura, *Baseodiscus curtus* (Hubrecht), *Cephalothrix linearis* (Rathke), *Tubulanus punctatus* (Takakura). In "Revised Edition Illustrated Encyclopedia of the Fauna of Japan (Exclusive of Insects)" Ed by S Uchida *et al*. The Hokuryukan Co., Ltd., Tokyo, pp 1466–1474 [In Japanese]

Kaburaki T, Iwata F (1965) *Cephalothrix linearis* Rathke, *Lineus fuscoviridis* Takakura, *Lineus subcingulatus* Takakura, *Cerebratulus comunis* Takakura, *Carcinonemertes mitsukurii* Takakura, *Prostoma grandis* Ikeda, *Malacobdella japonica* Takakura. In "New Illustrated Encyclopedia of the Fauna of Japan Vol 1" Ed by Y Okada, S Uchida, T Uchida, Hokuryu-kan Publishing Co., Ltd., Tokyo, pp 390–401 [In Japanese]

Kajihara H (1998) Kangekisei-himomushirui — sunano-sukima-nisumu-himomushi [Interstitial nemerteans]. Umiushi Tsûshin 19: 10–11 [In Japanese]

Kajihara H (2001) Taxonomic study on nemerteans from South West Islands, Japan. In "Toyoshio-maru Cruise Report No2001-6" Ed by A Go, Faculty of Applied Biological Science, Hiroshima University, Hiroshima, pp 10–11 [In Japanese]

Kajihara H (2002) Two new species of *Zygonemertes* (Nemertea: Enopla: Monostilifera) from Hokkaido, Japan. Spec Div 7: 121–143

Kajihara H (2004) Usamaro Takakura (1867–1944), Japanese pioneer nemertean researcher. Arch Nat Hist 31: 208–213

Kajihara H (2006) Four palaeonemerteans (Nemertea: Anopla) from a tidal flat in middle Honshu, Japan. Zootaxa 1163: 1–47

Kajihara H (2007a) Two species of *Nemertopsis* (Nemertea: Hoplonemertea: Monostilifera) living in association with *Capitulum mitella* (Crustacea: Cirripedia: Thoracica: Lepadomorpha). Zootaxa 1446: 43–58

Kajihara H (2007b) *Ototyphlonemertes dolichobasis* sp. nov. (Nemertea: Hoplonemertea: Monostilifera: Ototyphlonemertidae), a new species of interstitial nemertean from Japan. Spec Div 12: 57–66

Kajihara H, Gibson R, Mawatari SF (2000) Redescription and taxonomic reassessment of *Nemertellina minuta* Friedrich, 1935, *sensu* Yamaoka, 1940 (Nemertea, Hoplonemertea, Monostilifera). Zool Sci 17: 265–276

Kajihara H, Gibson R, Mawatari SF (2001) A new genus and species of monostiliferous hoplonemertean (Nemertea: Enopla: Monostilifera) from Japan. Hydrobiologia 456: 187–198

Kajihara H, Gibson R, Mawatari SF (2003) *Potamostoma shizunaiense* gen. et sp. nov. (Nemertea: Hoplonemertea: Monostilifera): a new brackish-water nemertean from Japan. Zool Sci 20: 491–500

Kanda S (1939) The luminescence of a nemertean, *Emplectonema kandai* Kato. Biol Bull 77: 166–173

Kato K (1939) A new luminous species of the nemertea, *Emplectonema kandai* sp. nov. Jpn J Zool 8: 251–254

Kato K (1940) Oyogi-himomushi. Saishû to Shiiku 2: 101 [In Japanese]

Kato K (1947) *Emplectonema kandai* Kato, *Nectonemertes mirabilis* Verrill, *Pelagonemertes moseleyi* Bürger. In "Revised Edition Illustrated Encyclopedia of the Fauna of Japan (Exclusive of Insects)" Ed by S Uchida, The Hokuryukan Co., Ltd., Tokyo, pp 1466–1470 [In Japanese]

Kato K, Iwata F (1965) *Emplectonema kandai* Kato, *Pelagonemertes moseleyi* Bürger, *Nectonemertes mirabilis* Verrill. In "New Illustrated Encyclopedia of the Fauna of Japan Vol 1" Ed by Y Okada, S Uchida, T Uchida, Hokuryu-kan Publishing Co., Ltd., Tokyo, pp 396–401 [In Japanese]

Kato K, Tanaka O (1938) Notes on *Pelagonemertes moseleyi* Bürger. Jpn J Zool 7: 595–598

Kawai S, Yamaoka T (1940) On *Malacobdella japonica* Takakura. Zool Mag 52: 255–259 [In Japanese with English summary]

Kawakatsu M (1991) Nemertinea. In "Pictorial Keys to Soil Animals of Japan" Ed by J Aoki, Tôkaidaigaku Shuppan Kai, Tokyo, p 2 [In Japanese]

Kawakatsu M (1999) Nemertinea. In "Pictorial Keys to Soil Animals of Japan" Ed by J Aoki, Tôkaidaigaku Shuppan Kai, Tokyo, p 11 [In Japanese]

Kawakatsu M, Nunomura N, Suzuki H (1989) Corrections and emendations of specific names of several Japanese species of turbellarians (Acoela, Tricladida-Maricola, Polycladida-Cotylea, and Temnocephalida-Scutariellidata) and Nemertinea (Enopla-Hoplonemertea-Monostylifera). Bull Fuji Women's Coll Ser II 27: 41–51

Kikuchi T (1968) Faunal list of the *Zostera marina* belt in Tomioka Bay, Amakusa, Kyushu. Publ Amakusa Mar Biol Lab 1: 163–192

Kito K (1975) Preliminary report on the phytal animals in the *Sargassum confusum* region in Oshoro Bay, Hokkaido. J Fac Sci Hokkaido Univ Ser 6 Zool 20: 141–158

Komai T (1919) Huyûsei-himomushi [Pelagic nemerteans]. Zool Mag 31: 294–296 [In Japanese]

Korotkevitsch VS (1955) Pelagicheskie nemertiny dalnevostochnykh morei SSSR. Izd Akad Nauk SSSR 58: 1–131 [In Russian]

Korotkevitsch VS (1971) K ekologii i sistematike nemertin zaliva noseta yponskogo morya. Issl Faun Mor 8: 109–122 [In Russian]

Korotkevitsch VS (1977) K systematike nemertin tribui Pelagica. Issl

Faun Mor 20: 13–19 [In Russian]
Korotkevitsch VS (1982) Novye i redkie vidy nemertin (Nemertini) s iuzhnogo shel'fa ostrova sakhalin. Issledv Faun Mor 29: 12–26 [In Russian]
Kulikova VI (1988) Raspredelenie nemertin v agregatsiiakh dvustvorchatykh molliuskov. Dokl Akad Nauk SSSR 302: 1013–1016 [In Russian]
Kulikova VI, Kutishchev AA (1984) Nemertinui druz mitilid zaliva vostok yaponskogo morya. Izv Akad Nauk SSSR Ser Biol 4: 615–619
Langerhans P (1880) Die Wurmfauna von Madeira III. Z Wiss Zool 34: 87–143
Leuckart FS (1828) Breves animalium quorundam maxima ex parte marinorum descriptiones. Augusti Osswaldi, Heidelbergae
Manchenko GP, Kulikova VI (1996a) Allozyme and colour differences between two sibling species of the heteronemertean *Lineus torquatus* from the Sea of Japan. Mar Biol 125: 687–691
Manchenko GP, Kulikova VI (1996b) Enzyme and colour variation in the hoplonemertean *Tetrastemma nigrifrons* from the Sea of Japan. Hydrobiologia 337: 69–76
Martindale MQ, Henry JQ (1995) Modifications of cell fate specification in equal-cleaving nemertean embryos: alternate patterns of spiralian development. Development 121: 3175–3185
Maslakova SA (2005) Systematics and evolution of smiling worms family Prosorhochmidae (Hoplonemertea; Nemertea). Ph.D thesis, George Washington University, Washington DC, USA
Maslakova SA, Martindale MQ, Norenburg JL (2004a) Fundamental properties of the spiralian developmental program are displayed by the basal nemertean *Carinoma tremaphoros* (Palaeonemertea, Nemertea). Dev Biol 267: 342–360
Maslakova SA, Martindale MQ, Norenburg JL (2004b) Vestigial prototroch in a basal nemertean, *Carinoma tremaphoros* (Nemertea; Palaeonemertea). Evol Dev 6: 219–226
McDermott JJ, Roe P (1985) Food, feeding bahavior and feeding ecology of nemerteans. Amer Zool 25: 113–125
McIntosh WC (1873–1874) A Monograph of the British Annelids Part I The Nemerteans. Ray Society, London [pp 1–96, pls I–X in 1873; pp 97–214, pls XI–XXIII in 1874]
Melville RV (1986) *Tubulanus* Renier, [1804] and *T. polymorphus* Renier, [1804] (Polychaeta): proposed reinstatement under the plenary powers. Bull Zool Nom 43: 112–114
Miyashita Y (1932) Kansatsu-zakki. [Miscellaneous notes of observation]. Zool Mag 44: 327–331 [In Japanese]
Miyazawa K, Higashiyama M, Ito K, Noguchi T, Arakawa O, Shida Y, Hashimoto K (1988) Tetrodotoxin in two species of ribbon worms (Nemertini), *Lineus fuscoviridis* and *Tubulanus punctatus*. Toxicon 26: 867–874
Montgomery TH (1894) Kritische Uebersicht der Süsswasser-Nemertinen. Inaugural Dissertation, University of Berlin, Berlin
Montgomery TH (1897) Descriptions of new metanemerteans, with notes on other species. Zool Jb Abt Syst 10: 1–14
Moore J, Gibson R (1981) The *Geonemertes* problem (Nemertea). J Zool Lond 194: 175–201
Moore J, Gibson R (1988) Marine relatives of terrestrial nemerteans: the genus *Prosadenoporus* Bürger, 1890 (Hoplonemertea). Hydrobiologia 156: 75–86
Moretto HJA (1974) Un paleonemertino de Quequen. Neotropica 20: 9–13
Moriyama H (1995) Nakamura Kazuhiko sensei Okazaki Yoshio sensei Iwata Fumio sensei wo ookurisuru. Mem Kushiro Publ Univ Econom 7: 1–18 [In Japanese]
Morton B (1989) Partnerships in the sea: Hong Kong's marine symbioses. Hong Kong University Press, Hong Kong
Moseley HN (1875a) On *Pelagonemertes rollestoni*. Ann Mag Nat Hist Ser 4 15: 165–169
Moseley HN (1875b) On a young specimen of *Pelagonemertes rollestoni*. Ann Mag Nat Hist Ser 4 16: 377–383
Müller OF (1788) Zoologica Danica Seu Animalium Daniae et Norvegiae Rariorum ac Minus Notorum Descriptiones et Historia Vol 2. N Mölleri et Fillii, Havniae
Nielsen C (2005) Trochophora larvae: cell-lineages, ciliary bands and body regions. 2. Other groups and general discussion. J Exp Zool 304b: 401–447
Nishikawa T, Sattmann, H (2001) List of Dr. Albrecht von Roretz's collection of Japanese animals made about 120 years ago, compiled from the catalogues of Naturhistorisches Museum Wien. Bull Nagoya Univ Mus 17: 33–44
Nishimura S (1992) Gaisetsu [Overview]. In "Guide to Seashore Animals of Japan with Color Pictures and Keys Vol I" Ed by S Nishimura, Hoikusha, Osaka, pp xi–xxxv [In Japanese]
Noguchi T, Ali AE, Arakawa O, Miyazawa K, Kanoh S, Shida Y, Nishio S, Hashimoto K (1991) Tetrodonic acid-like substance; a possible precursor of tetrodotoxin. Toxicon 29: 845–855
Norenburg JL, Roe P (1998) Reproductive biology of several species of recently collected pelagic nemerteans. Hydrobiologia 365: 73–91
Ochi O (1979) Ultrastructures of the blood vessels and the haemocytes in a nemertean, *Lineus fuscoviridis*. Zool Mag 88: 640
Ochsenheimer F (1816) Die Schmetterlinge von Europa Vol 4. Gerhard Fleischer, Leipzig
Ohuye T (1942) On the blood corpuscles and the hemopoiesis of a nemertean, *Lineus fuscoviridis*, and of a sipunculus, *Dendrostoma minor*. Sci Rep Tôhoku Imp Univ 4th Ser Biol 17: 187–196
Ohuye T (1950) Preliminary note on the survey of peroxidase distribution in the blood and coelomic cells of various invertebrates. Mem Ehime Univ Sect II Sci 1: 21–26
Okada S, Igarashi T, Kobayashi K (1971) Invertebrates and fishes of Oshoro Bay and neighbouring Area. Bull Plankton Soc Jpn 18: 59–72
Oki I, Tamura S, Ogren RE, Kitagawa K, Kawakatsu M (1987) The karyotype and a new locality for the land nemertine *Geonemertes pelaensis* Semper, 1863. Bull Fuji Women's Coll Ser 2 25: 66–77
Okuda S (1947) *Paranemertes peregrina* Coe, *Amphiporus formidabilis* Griffin, *Zygonemertes glandulosa* Yamaoka, *Prostoma nigrifrons* (Coe), *Lineus torquatus* Coe, *Cerebratulus marginatus* Renier, *Micrura bella* (Stimpson), *Micrura uchidai* Yamaoka, *Micrura akkeshiensis* Yamaoka, *Baseodiscus hemprichi* (Ehrenberg), *Tubulanus ezoensis* Yamaoka. In "Revised Edition Illustrated Encyclopedia of the Fauna of Japan (Exclusive of Insects)" Ed by S Uchida, The Hokuryukan Co., Ltd, Tokyo, pp 1467–1474 [In Japanese]
Okuda S, Iwata F (1965) *Tubulanus ezoensis* Yamaoka, *Baseodiscus hemprichii* Ehrenberg, *Lineus torquatus* Coe, *Cerebratulus marginatus* Renier, *Micrura akkeshiensis* Yamaoka, *Micrura bella* Stimpson, *Micrura uchidai* Yamaoka, *Emplectonema mitsuii* Yamaoka, *Paranemertes katoi* Yamaoka, *Paranemertes peregrina* Coe, *Zygonemertes grandulosa* Yamaoka, *Amphiporus ogumai* Yamaoka, *Amphiporus cervicalis* (Stimpson), *Tetrastemma roseocephalum* Yamaoka, *Tetrastemma nigrifrons* Coe. In "New Illustrated Encyclopedia of the Fauna of Japan Vol 1" Ed by Y Okada, S Uchida, T Uchida, Hokuryu-kan Publishing Co., Ltd., Tokyo, pp 390–400 [In Japanese]
Okugawa K (1932) An outline of the Japanese freshwater rhabdocoelids. Zool Mag 44: 69–70. [In Japanese]
Ooishi S (1964) Results of Amami Expedition, no. 3, invertebrates. Rep Fac Fish Pref Univ Mie 5: 189–215
Örsted AS (1843) Forsog til en ny classification af Planarierne (Planariea Duges) grundet paa mikroskopisk-anatomiske Undersogelser. Naturhist Tidsskr 4: 519–581
Örsted AS (1844) Entwurf Einer Systematischen Eintheilung und Speciellen Beschreibung der Plattwürmer, auf Microscopische Untersuchungen. CA Reitzel, Copenhagen

Punnett RC (1900) On some South Pacific nemertines collected by Dr Willey. Zool Resul New Brit New Guinea, Loyalty Is Coll 1895 1896 1897 Arthur Willey 5: 569–584

Punnett RC and Cooper CF (1909) On some nemerteans from the eastern Indian Ocean. Trans Linn Soc Lond Ser 2 Zool 13: 1–15

Quatrefages A de (1846) Étude sur les types inférieurs de l'embranchement des annelés. Ann Sci Nat Sér 3 Zool 6: 173–303

Quoy JRC, Gaimard JP (1833) Voyage de découvertes de l'Astrolabe éxécute par ordre du Roi, pendant les années 1826–1827–1828–1829, sous le commandement de M. J. Dumont d'Urville, Zoologie Vol 4. J Tastu, Paris, pp 284–292

Rathke J (1799) Jagttagelser henhorende til Indvoldeormenes og Bloddyrenes Naturhistorie. Skr naturh Selsk Kbh 5: 61–148

Renier SA (1804) Prospetto Della Classe dei Vermi, Nominati e Ordinati Secondo il Sistema di Bosc. pp xv–xxvii [A work commonly attributed to the year 1804, rejected for nomenclatural purposes by ICZN with Opinion 316 as not duly published within the meaning of Article 25 of the Régle Internationales de la Nomenclature Zoologique, thereby placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature (Work No. 25) in 1954; names of animals contained in this work were subsequently ruled to be unavailable by ICZN with Opinions 427and 436, thereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology and Official Index of Rejected and Invalid Specific Names in Zoology in 1956 and 1957, respectively; later, a certain number of these names were reinstated by the plenary power of ICZN, including the nemertean names *Cerebratulus marginatus* (Opinion 477) in 1957 and *Tubulanus polymorphus* (Opinion 1486) in 1988]

Riser NW (1974) Nemertinea. In "Reproduction of Marine Invertebrates Vol 1" Ed by JS Pearse, AC Giese, Academic Press, New York, pp 359–389

Riser NW (1989) Speciation and time — relationships of the nemertines to the acoelomate metazoan Bilateria. Bull Mar Sci 45: 531–538

Riser NW (1991) New Zealand nemertines from kelp holdfasts: Heteronemertinea II. *Notospermus geniculatus* (Delle Chiaje, 1828) n. comb. N Z J Zool 18: 427–438

Riser NW (1994) The morphology and generic relationships of some fissiparous heteronemertines. Proc Biol Soc Wash 107: 548–556

Riser NW (1998) The morphology of *Micrura leidyi* (Verrill, 1892) with consequent systematic revaluation. Hydrobiologia 365: 149–156

Roe P (1993) Aspects of the biology of *Pantinonemertes californiensis*, a high intertidal nemertean. Hydrobiologia 266: 29–44

Saito M, Suzuki H (1974) Fauna in the littoral zone of Niisaki Beach in the western part of Sagami Bay I. Sci Rep Yokohama Natn Univ (Sect 2) 21: 31–48

Satô H, Itô T (1961) Musekitsui Dôbutsu Saishû Shiiku Jikkenhô [Methods of Sampling, Raring, and Experiments on Invertebrates]. Hokuryûkan, Tokyo [In Japanese]

Semper C (1863) Reisebericht. Briefliche Mittheilung an A. Kölliker. Z Wiss Zool 13: 558–570

Senz W (1997a) Morphologie und klassifikatorische Position einiger anopler Nemertinen (Nemertini: Anopla). Ann Naturhist Mus Wien 99B: 423–496

Senz W (1997b) Über die phylogenetische Herkunft und systematische Stellung der Gattung *Malacobdella* Blainville, 1827 (Nemertini, Bdellonemertini). Sitzungsber Math naturwiss Kl Abt I 204: 39–62

Senz W (2001) Eine neue Heteronemertine von der Küste Japans (Nemertini). Spixiana 24: 5–12

Shiino S (1969) Suisan-musekitsui-dôbutsugaku [Aquatic Invertebrate Zoology]. Baifûkan, Tokyo

Shimomura M, Kato T, Kajihara H (2001) Records of some marine invertebrates (nemerteans, asellotes and phyllodocids) from the coast around Otsuchi Bay. Otsuchi Mar Sci 26: 46–50

Sowerby J (1806) The British Miscellany: Or Coloured Figures of New, Rare, or Little Known Animal Subjects; Many Not Before Ascertained to Be Inhabitants of the British Isles. Taylor, London

Steksova VV (2004) Invaziia dvustvorchatogo molliuska *Spisula sachalinensis* v zal. aniva o. sakhalin nemertinoi *Malacobdella japonica* (Takakura, 1897). Trudy Sakhin Nauch-Issled Inst Rybn Khoz Okean 6: 297–300 [In Russian]

Stiasny-Wijnhoff G (1938) Das Genus *Prostoma* Dugès, eine Gattung von Süsswasser-nemertinen. Arch Néerland Zool 3: 219–230

Stimpson W (1855) Descriptions of some of the new marine Invertebrata from the Chinese and Japanese seas. Proc Acad Nat Sci Philadelphia 7: 375–384

Stimpson W (1857) Prodromus descriptionis animalium evertebratorum quae in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, Dadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit. Pars II. Turbellarieorum Nemertineorum generum et specierum adhuc ineditarum descriptions; adjunctis notis de generibus jam constitutes. Proc Acad Nat Sci Philadelphia 9: 159–165

Strand M, Sundberg P (2005a) Delimiting species in the hoplonemertean genus *Tetrastemma* (phylum Nemertea): morphology is not concordant with phylogeny as evidenced from mtDNA sequences. Biol J Linn Soc 86: 201–212

Strand M, Sundberg P (2005b) Genus *Tetrastemma* Ehrenberg, 1831 (phylum Nemertea) — a natural group? Phylogenetic relationships inferred from partial 18S rRNA sequences. Mol Phylogenet Evol 37: 144–152

Stricker SA, Folsom MW (1998) A comparative ultrastructural analysis of spermatogenesis in nemertean worms. Hydrobiologia 365: 55–72

Sudzuki M (1953) On Japanese fresh-water nemerteans. Zool Mag 62: 212–219 [In Japanese with English summary]

Sun S (1995) The preliminary report of nemerteans from Taiwan Channel. Mar Sci 5: 45–48

Sun S (2001) A new mangrove-dwelling nemertean from China. Hydrobiologia 456: 199–209

Sun S, Pan H (1994) Nemertinea. In "Marine Species and Their Distributions in China's Seas" Ed by Z Huang, China Ocean Press, Beijing, pp 328–330 [In Chinese]

Sundberg P (1984) Multivariate analysis of polymorphism in the hoplonemertean *Oerstedia dorsalis* (Abildgaard, 1806). J Exp Mar Biol Ecol 78: 1–22

Sundberg P (1988) A new monostiliferous hoplonemertean (Nemertea), *Oerstedia striata* sp. n., from the west coast of Sweden. Zool Scr 17: 135–139

Sundberg P, Andersson S (1995) Random amplified polymorphic DNA (RAPD) and intraspecific variation in *Oerstedia dorsalis* (Hoplonemertea, Nemertea). J Mar Biol Ass UK 75: 483–490

Sundberg P, Gibson R (1995) The nemerteans (Nemertea) of Rottnest Island, Western Australia. Zool Scr 24: 101–141

Sundberg P, Gibson R, Olsson U (2003) Phylogenetic analysis of a group of palaeonemerteans (Nemertea) including two new species from Queensland and the Great Barrier Reef, Australia. Zool Scr 32: 279–296

Sundberg P, Hylbom R (1994) Phylogeny of the nemertean subclass Palaeonemertea (Anopla, Nemertea). Cladistics 10: 347–402

Sundberg P, Janson K (1988) Polymorphism in *Oerstedia dorsalis* (Abilgaard, 1806) revised — electrophoretic evidence for a species complex. Hydrobiologia 156: 93–98

Takakura U (1897) On a new species of *Malacobdella* (*M. japonica*). Ann Zool Jpn 1: 105–112

Takakura U (1898) Misaki-kinbôsan-himomushirui-(Nemertine)-no-bunrui [A classification of the nemerteans of the Misaki region]. Zool Mag 10: 38–44, 116–120, 184–187, 331–337, 424–429 [In Japanese]

Takakura U (1910) Kisei-himomushi-no-ichi-shinshu [A new species of parasitic nemertean]. Zool Mag 22: 111–116 [In Japanese]

Takakura U (1922) Honpôsan-himomushi-no-ichi-shinzoku-ni-tsukite [On a new genus of nemertean from Japan]. Zool Mag 34: 419–422 [In Japanese]

Takakura U (1933) Kitachishima-no-himomushi-rui [Nemerteans of the Northern Kurile Islands]. Bull Biogeogr Soc Jpn 4: 226–227 [In Japanese]

Tanu MB, Mahmud Y, Arakawa O, Takatani T, Kajihara H, Kawatsu K, Hamano Y, Asakawa M, Miyazawa K, Noguchi T (2004) Immunoenzymatic visualization of tetrodotoxin (TTX) in *Cephalothrix* species (Nemertea: Anopla: Palaeonemertea: Cephalotrichidae) and *Planocera reticulata* (Platyhelminthes: Turbellaria: Polycladida: Planoceridae). Toxicon 44: 515–520

Thollesson M, Norenburg JL (2003) Ribbon worm relationships: a phylogeny of the phylum Nemertea. Proc R Soc Lond B 270: 407–414

Tizard TH, Moseley HN, Buchanan JY, Murray J (1885) Japan. Rep Sci *Challenger* Exped, Narrative 1: 744–750

Tsuchiya M (1979) Quantitative survey of intertidal organisms on rocky shores in Mutsu Bay, with special reference to the influence of wave action. Bull Mar Biol St Asamushi Tohoku Univ 16: 69–86

Turbeville JM (1986) An ultrastructural analysis of coelomogenesis in the hoplonemertine *Prosorhochmus americanus* and the polychaete *Magelona* sp. J Morph 187: 51–60

Turbeville JM (1991) Nemertinea. In "Microscopic Anatomy of Invertebrates Vol 3 Platyhelminthes and Nemertinea" Ed by FW Harrison, BJ Bogitsh, Wiley-Liss, Inc., New York, pp 285–328

Turbeville JM (2002) Progress in nemertean biology: development and phylogeny. Integ Comp Biol 42: 692–703

Turbeville JM, Ruppert EE (1985) Comparative ultrastructure and the evolution of nemertines. Amer Zool 25: 53–71

Uchida H (1994) Nagamushirui [Vermes]. In "Yama-Kei Field Books Vol 8 Umibenoikimono" [Sea Shore Animals] Ed by T Okutani, Yamatokeikokusha, Tokyo, pp 85–90 [In Japanese]

Uchida T, Iwata F, Nagao Z (1972) Shakotan-hantô-kaichû-kôen-kôho-chi-no-musekitsui-dôbutsu [Invertebrates in a site proposed for Shakotan Marine Park]. In "Hokkaidô-shakotan-hantô-otaru-kaigan-kaichû-kôen-chôsa-sôkokusho" [Report on Hokkaido Shakotan Penninsula and Otaru Beach Marine Park] Ed by Hokkaido Wildlife Conservation Section, Hokkaido, pp 45–66

Uchida T, Yamada M, Iwata F, Oguro C, Nagao Z (1963) The zoological environs of the Akkeshi Marine Biological Station. Publ Akkeshi Mar Biol St 13: 1–36

Utinomi H (1956) Coloured Illustrations of Sea Shore Animals of Japan. 1st ed, Hoikusha, Osaka

Utinomi H (1960) Coloured Illustrations of Sea Shore Animals of Japan. 1st ed, 4th copy, Hoikusha, Osaka

Utinomi H (1969) Coloured Illustrations of Sea Shore Animals of Japan. 2nd ed, Hoikusha, Osaka

Vaillant L (1890) Histoire Naturelle des Annelés Marins et d'Eau Douce. Lombriciniens, Hirudiniens, Bdellomorphes, Térétulariens et Planariens. Librairie Encyclopédique de Roret, Paris

Verrill AE (1895) Supplement to the marine nemerteans and planarians of New England. Trans Connecticut Acad Art Sci 9: 523–534

Walker G (1994) Preliminary observations on the association of the nemertean, *Nemertopsis quadripunctatus*, with the stalked barnacle, *Capitulum mitella*, on an exposed Hong Kong shore. Asian Mar Biol 11: 125–136

Wheeler JFG (1934) Nemerteans from the South Atlantic and southern oceans. Discovery Rep 9: 215–294

Wheeler JFG (1940) Some nemerteans from South Africa and a note on *Lineus corrugatus* M'Intosh. J Linn Soc Lond Zool 41: 20–49

Wijnhoff G (1913) Die Gattung *Cephalothrix* und ihre Bedeutung für die Systematik der Nemertinen. II. Systematischer Teil. Zool Jb Abt Syst Ökol Geogr Tiere 34: 291–320

Yamaguchi E, Yamada M (1955) Kitanihon-kaisan-musekitsui-dôbutsu [Marine Invertebrates in Northern Japan]. Hokkai-kyôiku-hyôron-sha, Sapporo

Yamaoka T (1939) Two nemerteans from Formosa. Ann Zool Jpn 18: 283–289

Yamaoka T (1940a) The fauna of Akkeshi Bay. IX. Nemertini. J Fac Sci Hokkaido Imp Univ Ser 6 Zool 7: 205–263

Yamaoka T (1940b) Two nemerteans from the Riukiu Islands. Ann Zool Jpn 19: 13–18

Yamaoka T (1943) Nemertini. In "Keitô-dôbutsugaku" [Systematic Zoology] Ed by H Ohshima, Y Okada, Yôkenrô, Tokyo, pp 773–815 [In Japanese]

Yamaoka T (1947) *Emplectonema mitsuii* Yamaoka*, Paranemertes katoi* Yamaoka*, Amphiporus ogumai* Yamaoka, *Prostoma roseocephalum* Yamaoka, as submitted by S Okuda. In "Revised Edition Illustrated Encyclopedia of the Fauna of Japan (Exclusive of Insects)" Ed by S Uchida, The Hokuryukan Co. Ltd., Tokyo, pp 1466–1469 [In Japanese]

Yamaoka T (2005) On fourteen monostiliferous hoplonemerteans from the Izu Peninsula, Middle Japan. Publ Seto Mar Biol Lab 40: 141–158 [A posthumous publication submitted by Prof. Fumio Iwata]

Yin Z, Shi J, Li N (1988) A preliminary study of the intertidal nemerteans along the coast of Shandong Province. Mar Sci Bull 1: 68–74

(Received September 1, 2006 / Accepted November 8, 2006)