

ranged from generalism to specialization on a single host species.

AN UNDESCRIBED FALSE SPIDER CRAB OF THE GENUS *NEORHYNCHOPLAX* (CRUSTACEA: DECAPODA: BRACHYURA) FROM IRIOMOTE ISLAND, THE RYUKYU ISLANDS, JAPAN

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An undescribed false spider crab, *Neorhynchoplax* sp. (Crustacea: Decapoda: Brachyura: Hymenosomatidae) is found on the pebbly bottoms of upper part of estuarine basins and a mangrove tide pool of Iriomote Island, the Ryukyu Islands, Japan. *Neorhynchoplax* sp. is morphologically close to *N. nasalis* and *N. aspinifera*, distributed on West Bengal, India and North Queensland, Australia, respectively. *Neorhynchoplax* sp. is, however, distinguished from *N. nasalis* by the shape of the anterolateral border of the carapace, the shape of the male abdomen, and the presence of the subterminal spine on the first ambulatory dactylus. *Neorhynchoplax* sp. is also differentiated from *N. aspinifera* by the presence of the single subterminal spine on the inner margin of the ambulatory legs and the shape of the distal end of the G1. *Neorhynchoplax okinawaensis*, distributed on close geographical range with *N. sp.*, has very different characters from *N. sp.* in the absence of the posterior lateral tooth, the shape of the dorsal surface of the carapace, the shape of the male abdomen, and the shape of the G1.

DEVELOPMENT OF THE DEEP-SEA OPHIUROID, *OPHIURA SARSII SARSII* LÜTKEN, 1855

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Detailed information on the developmental pattern of deep-sea ophiuroids is needed, because previous studies concluded that most species of this taxon undergo direct development based on limited characteristics such as egg size. In the 74th annual meeting last year, we reported that *Ophiura sarsii sarsii* inhabiting a deep-sea with a constant physical environment has a seasonal reproductive cycle, and breeds between winter and spring. In this study we examined the developmental pattern of *O. sarsii sarsii* using the specimens collected in the breeding season (December - March) at a depth of 300 m off Toyama Bay. In the laboratory, we observed the development from the spawning, induced by a sudden change in seawater temperature, to the stage before metamorphosis. Fertilized eggs measuring about 120µm diameter with negative buoyancy developed into 6-armed planktotrophic ophioplutei. The larval skeleton was first formed as a pair of tetradactylous spicules. About 40 days after fertilization, larva formed a 5-lobed hydrocoel. These findings suggest that the full-grown ophiopluteus of this ophiuroid has six arms.

RECORD OF COMPLETED SPECIES BY DISTRIBUTION INVESTIGATION OF THE FAMILY MEGASCOLECIDAE (OLICOCHAETA) FROM KANAGAWA PREFECTURE, CENTRAL JAPAN

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We have investigated the distribution of earthworm (family Megascolecidae) in Kanagawa Pref. As a result, a total of 33 species including 27 species of Amyntas, 4 species of Metaphire, and 2 of species incertae sedis, which probably to Pheretima group, were found. In these species, 32 species that containing 2 of undescribed species were new records in Kanagawa pref. We report the morphological characteristic and the distribution of all these species found by this investigation.

FORMATION OF THE LARVAL SKELETON IN VITELLARIAE OF THE BRITTLE STAR *OPHIOPLOCUS JAPONICUS* H. L. CLARK

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Ophiuroids have 2 types of planktonic larval forms: ophioplutei and vitellariae. The former is a common feeding type with a continuous ciliary band and usually four pairs of arms supported by skeletal rods. The latter which has been reported in 10 species including *Ophioplocus japonicus* (Komatsu and Shosaku, 1993) is non-feeding and possesses transverse ciliary bands. The present study observed with a polarization microscope shows that the larval skeleton had appeared as a pair of tetradactylous spicules in the posterior corners of the blastocoel of the early vitellaria in *O. japonicus* about 36hr after fertilization. By 44hr the pair of spicules had grown, and formed a branched skeleton, however, in the 84-hr vitellaria, the larval skeleton was no longer existent among the rudiments of the adult skeletal plate. Thus, as suggested by Hendler (1982), it might be expected that the vitellaria of *O. japonicus* could retain vestiges of an ophiopluteus larval skeleton.

PHYLOGENETIC RELATIONSHIPS OF JAPANESE CUTTLEFISHES INFERRED FROM MITOCHONDRIAL 16S rDNA GENE AND CYTOCHROME C OXIDASE SUBUNIT I GENE

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We collected 10 species of cuttlefishes including 3 genera from Japanese waters and determined partial nucleotide sequences of two mitochondrial genes, mt16S rDNA gene and cytochrome c oxidase subunit I gene, to study phylogenetic relationships. Our molecular data supported the morphological classification based on the cuttlebone shape, the size and arrangement of suckers on tentacular clubs. Japanese cuttlefishes were separated into 4 groups: (1) Wide cuttlebone species with equal-sized suckers on tentacular clubs, including 2 subgenera *Platysepia* (*Sepia esculenta*, *S. madokai*) and *Acanthosepion* (*S. lycidas*). (2) Narrow cuttlebone species with unequal-sized suckers on tentacular clubs, subgenus *Doratosepion* (*S. kobeensis*, *S. perterseni*, *S. pardex*). (3) Spineless cuttlebone species, *Sepiella japonica*. (4) Rhomboidal cuttlebone species, *Metasepia tullbergi*.

CUMACEAN GENUS *EUDRELLA* (CRUSTACEA, CUMACEA, LEUCONIDAE) FROM JAPANESE WATERS

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Since the establishment of the genus by Norman in 1867, about 30 species of *Eudrella* (Crustacea, Cumacea, Leuconidae) has been reported so far from Atlantic Ocean and Arctic region. Recently, R/V hakuho-Maru and R/V Tansei-Maru, the Ocean Research Institute, Tokyo University and T/V Toyoshio-Maru, Hiroshima University collected many cumacean specimens from bathyal depth. We examined these specimens. As a result, about species of *Eudrella* will be added to our fauna.

STUDY ON THE SPERMATOOZOA IN THE MALE AND FEMALE GENITAL TRACT OF THE ISOPOD, *PORCELLIONIDES PRUINOSUS*

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We have observed the ultrastructure of the spermatozoa in the male and female genital tract of the isopod, *Porcellionides pruinosus* by means of light and electron microscopy. Spermatophores probably function in maintaining spermatozoa in bundles during their transport through the male reproductive tract. The epithelial cells of the vasa deferentia have developed microvilli at the surface portion. And the cells are characterized endoplasmic reticulum, many Golgi complexes, and many secretory materials. The electron micrographs of the epithelial cells of the vasa deferentia show the cells, presumably used to form spermatophores. Spermatophores in the anterior vas deferens are different from those in the ejaculatory duct. The matrix material between sperm tails and heads comes progressively more electron dense at lower levels of the ejaculatory duct. In the female genital tract the spermatophores are dissolved. The sperm tails progressively change electron dense at lower level. They seem to be absorbed. Spermatophores appear to change the single spermatozoa without tails in the female genital tract.

IS THE JAPANESE ORIBATID MITE *EUPHTHRACARUS FOVEOLATUS* AOKI, 1980 (ACARI: EUPHTHRACARIDAE) A JUNIOR SYNONYM OF *E. CRIBRARIUS* (BERLESE, 1904)?

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Two similar species of oribatid mites, *Euphthracarus foveolatus* and *E. cribrarius*, have different distributions, with the former being endemic to Japan and the latter being a widespread Eurasian species that has not been reported from Japan. Recently the distinction between these species has become questionable, due to a mistake discovered in the original description. Also, new collections of *E. foveolatus* from Japan have shown it to be variable in morphology, and this variability overlaps in some ways with that of European populations of *E. cribrarius*. In this report, I examine the morphological variability of *E. foveolatus* and reconsider its distinctness from *E. cribrarius*, which seems to be its closest relative. Studied specimens of the latter were from Norway, the type country. Despite some overlapping characters, the Japanese and Norwegian specimens are distinguishable in two obvious ways. First is the ratio of lengths of aggenital setae (ag_1/ag_2). Second is that *E. foveolatus* lacks three leg setae that are present in *E. cribrarius*. Thus, I feel these species are distinct and the names are not synonyms.