

NEW AND NEWLY ASSIGNED SPECIES OF THE GENUS *DENTATISYLLIS* (POLYCHAETA, SYLLIDAE, SYLLINAE), WITH COMMENTS ON THE REPRODUCTION, TOGETHER WITH A KEY AND A SYNOPTIC TABLE OF ALL SPECIES OF THE GENUS

ZHIHU DING, FRANK LICHER & WILFRIED WESTHEIDE

SARSIA



DING, ZHIHU, FRANK LICHER & WILFRIED WESTHEIDE 1998 03 13. New and newly assigned species of the genus *Dentatisyllis* (Polychaeta, Syllidae, Syllinae), with comments on the reproduction, together with a key and a synoptic table of all species of the genus. - *Sarsia* 83:29-43. Bergen. ISSN 0036-4827.

Three new *Dentatisyllis* species, *D. hongkongensis* sp. nov. and *D. mortoni* sp. nov., each from sandy tidal beaches of Hong Kong, and *D. uebelackerae* sp. nov. from Florida are described. *D. hongkongensis* sp. nov. is distinguished from other species of the genus in having antennae, peristomial and dorsal cirri composed of numerous articles, falcigerous blades of compound chaetae with enlarged secondary tooth, and lacking spines subdistally. *D. mortoni* sp. nov. has the unique combination of compound dorsal almost pseudospinigers, simple bifid chaetae, and antennae, peristomial and dorsal cirri possessing few articles; details of the viviparous reproduction of this species are given. *D. uebelackerae* sp. nov. is the *Dentatisyllis* sp. A of UEBELACKER (1984); it differs from all other species of the genus in the high number of proventricular muscle cell rings. *Syllis inflata* MARENZELLER, 1879 and *Typosyllis (Langerhansia) kiaorensis* HARTMANN-SCHRÖDER, 1992 are assigned to the genus *Dentatisyllis*. A key to all species of *Dentatisyllis* is included, together with a table of their characters.

Drei neue *Dentatisyllis*-Arten, *D. hongkongensis* sp. nov. und *D. mortoni* sp. nov., jeweils von sandigen Gezeitenstränden von Hong Kong, und *D. uebelackerae* sp. nov. von Florida werden beschrieben. *D. hongkongensis* sp. nov. unterscheidet sich von anderen Arten der Gattung dadurch, daß Antennen, Peristomial- und Dorsalcirren zahlreich gegliedert sind, daß die Endglieder der falcigeren Borsten einen vergrößerten sekundären Zahn aufweisen, und daß subdistale Stacheln fehlen. *D. mortoni* sp. nov. besitzt zusammengesetzte pseudospinigere Borsten, einfache gekerbte Borsten und weniger gegliederte Antennen, Peristomial- und Dorsalcirren; die vivipare Fortpflanzung dieser Art wird kurz beschrieben. *D. uebelackerae* sp. nov. ist die *Dentatisyllis* sp. A in UEBELACKER (1984); sie unterscheidet sich von den anderen Arten der Gattung vor allem durch die hohe Zahl von proventrikulären Muskelzellringen. *Syllis inflata* MARENZELLER, 1879 und *Typosyllis (Langerhansia) kiaorensis* HARTMANN-SCHRÖDER, 1992 werden der Gattung *Dentatisyllis* zugeordnet. Die Arbeit enthält außerdem einen Bestimmungsschlüssel und eine Übersicht charakteristischer Merkmale der *Dentatisyllis*-Arten.

Zhihu Ding, Frank Licher & Wilfried Westheide, *Spezielle Zoologie, FB 5, Universität Osnabrück, D-49069 Osnabrück, Germany.* (Correspondence to Frank Licher or Wilfried Westheide.)

KEYWORDS: Polychaeta; Syllidae; Syllinae; *Dentatisyllis*; *Syllis*; *Typosyllis*; *Langerhansia*; Hong Kong; South China Sea; viviparity; meiofauna.

INTRODUCTION

The generic name *Dentatisyllis* was introduced by PERKINS (1981) for species of the subfamily Syllinae having a pharynx with a denticulated anterior margin. Up to now, the taxon contained only 4 species: *D. carolinae* (DAY, 1973), *Dentatisyllis* sp. A of UEBELACKER 1984, *D. junoyi* LÓPEZ GARCÍA & SAN

MARTIN, 1992, and *D. mangalis* RUSSELL, 1995. The present paper redescribes *Dentatisyllis* sp. A (= *D. uebelackerae* sp. nov.), assigns *Syllis inflata* MARENZELLER, 1879 and *Typosyllis (Langerhansia) kiaorensis* HARTMANN-SCHRÖDER, 1992 to *Dentatisyllis* and adds two new species, for one of which details of the viviparous reproduction are described. Both of the new species were collected by the first author at the

Chinese coast off Hong Kong in 1995 during the course of a short expedition to collect meiofaunal polychaetes; they represent the first record of this genus for China.

Viviparity, a special form of internal brooding, is rare within the polychaetes. SCHROEDER & HERMANS (1975) listed only 19 viviparous species in 13 families. For most of these cases the descriptions are brief and incomplete, and SMITH (1950) had earlier shown that for some of them this kind of reproduction has not been verified. The most thorough recent analysis is that of ÅKESSON (1994) on the evolution of viviparity in the dorvilleid *Ophryotrocha* CLAPARÈDE & MECZNIKOW, 1869. A number of the species for which viviparity has been claimed belong to various syllid genera: *Typosyllis vivipara* (GOODRICH 1900; MESNIL 1901; FERRONIERE 1909; CAZAUX 1981), *Typosyllis incisa* (MESNIL 1901; AUGENER 1929), *Ehlersia nepitoca* (CAULLERY & MESNIL 1916; GRAVIER 1923), *Exogone hebes* (POCKLINGTON & HUTCHESON 1983). The most recent description of a viviparous syllid is that of *Dentatisyllis mangalis* by RUSSELL (1995). Probably, viviparity occurs in all species of *Dentatisyllis*.

#### MATERIAL AND METHODS

Animals were extracted from small samples of sand by the MgCl<sub>2</sub> method (WESTHEIDE 1990), cursorily sorted and inspected using a dissecting microscope at the Swire Marine Laboratory, University of Hong Kong, where they were investigated in living condition. For light microscopical prepa-

rations, fixed specimens (stored in Bouin's or 10% formalin) were transferred to a mixture of alcohol and glycerine. Drawings and measurements were made in Osnabrück by means of a LEITZ Diaplan microscope with interference contrast optics and a camera lucida.

#### ABBREVIATIONS

AusM:	Australian Museum, Sydney
BMNH:	British Museum (Natural History), London
FIOQ:	First Institute of Oceanography, Qingdao
LACM-AHF:	Los Angeles County Museum of Natural History, Los Angeles
MNCNM:	Museo Nacional de Ciencias Naturales de Madrid
MHNG:	Museum d'Histoire Naturelle, Genève
MNHN:	Muséum National d'Histoire Naturelle, Paris
NHMW:	Naturhistorisches Museum, Wien
NSMT:	National Science Museum, Tokyo
SMF:	Senckenberg Museum, Frankfurt
USNM:	National Museum of Natural History, Smithsonian Institution, Washington, D.C.
ZMH:	Zoologisches Museum, Universität Hamburg
ZMUC:	Zoological Museum, University of Copenhagen

#### KEY TO THE SPECIES OF *DENTATISYLLIS*

- 1 Dorsal cirri in middle and posterior body regions irregularly wrinkled; 3 aciculae per neuropodium in middle, 1 in posterior region; up to 60 mm long ..... *D. inflata* comb. nov.
- Dorsal cirri well articulated in all body regions ..... 2
- 2(1) Long dorsal cirri in middle body region with more than 30 articles ..... 3
- Dorsal cirri with fewer articles ..... 4
- 3(2) Proventricle extending through 5-8 segments, with ca 32 muscle rings; anteriormost parapodia each with up to 5 neuroaciculae ..... *D. carolinae*
- Proventricle extending through 2-4 segments, with 47-50 muscle rings ..... *D. uebelackerae* sp. nov.
- 4(2) Long-bladed pseudospinigerous chaetae lacking; all parapodia with 1 neuroacicula; eyes lacking ..... *D. hongkongensis* sp. nov.
- Long-bladed pseudospinigerous chaetae present; anteriormost parapodia with at least 2 neuroaciculae; eyes present ..... 5
- 5(4) Dorsal cirri of median body region with 3-8 articles ..... 6
- Dorsal cirri with more than 8 articles ..... 7
- 6(5) Simple chaetae subdistally with several relatively long fine spines ..... *D. mangalis*
- Simple chaetae subdistally with few short serrations; pharynx reddish brown ..... *D. kiaorensis* comb. nov.
- 7(5) Falcigers of posterior parapodia with secondary tooth much bigger than primary tooth; dorsalmost long-bladed chaetae bifid; proventricle with about 27 muscle rings ..... *D. junoyi*
- Falcigers of all body regions with primary and secondary tooth subequal; long-bladed chaetae pointed; proventricle with about 38 muscle rings ..... *D. mortoni* sp. nov.

