

BULLETIN ZOOLOGISCH MUSEUM



Vol. 9 No. 3 1982

PNEUMODERMA DEGRAAFFI N.SP., A PTEROPOD NEW TO SCIENCE

(MOLLUSCA OPISTHBRANCHIA) ¹⁾

S. van der SPOEL & Trudy PAFORT-VAN IERSEL

ABSTRACT

Description of *Pneumoderma degraaffi* n.sp., from Sargasso Sea water, at 28°23.5'N 29°55.9'W, related to *P. a. atlanticum* forma *pygmaeum* (Tesch, 1913) and *P. mediterraneum* (Van Beneden, 1838).

INTRODUCTION

During the 1980 Amsterdam Mid North Atlantic Plankton Expedition, a gymnosomatous pteropod was collected which does not belong to a hitherto described species. For a description of the cruise and stations the reader is referred to Van der Spoel (1981). The single specimen collected with the RMT1+8 in Sargasso Sea water evidently belongs to the family Pneumodermati-

dae Pelseneer, 1887. This family consists of the genera: *Pneumodermopsis* Keferstein, 1862, *Abranchaea* Zung Fu-sui, 1964, *Crucibranchaea* Pruvot-Fol, 1942, *Spongiobranchaea* d'Orbigny, 1836, *Platybrachium* Minichev, 1976, *Pneumoderma* Dumeril, 1806, and *Schizobrachium* Meisenheimer, 1903. Further study of the two recently described genera with the two species *Abranchaea chinensis* Zung Fu-sui, 1964, and *Platybrachium antarcticum* Minichev, 1976, is necessary to ascertain their taxonomic places, as both are gill-less animals. The present specimen, which has a well-developed lateral and posterior gill, does not resemble either of them.

¹⁾ AMNAPE, Proj. 101A, rep. no. 7, supported by a grant of the Netherlands Ministry of Education and Sciences (rep. no. 6 appeared in Bull. zool. Mus. Univ. Amst., 9 (1)).

The presence of gills and the absence of a median radula plate indicates that the specimen belongs to the genus *Pneumoderma*. In this genus a large number of species has been described, usually characterized by only small meristic differences as for example differences in the numbers of lateral radula teeth or suckers. A number of these species have been taken together by the first author (Van der Spoel, 1976) into two polytypic species. The specimen described below shares no special characters with the polytypic species *Pneumoderma atlanticum* (Oken, 1815) nor with *P. peroni* Cuvier, 1817), and it cannot be considered a special growth phase of any known species (cf. Van der Spoel, 1976: 78), hence it is considered a new species.

Pneumoderma degraaffi spec. nov.
(figs. 1-4)

Material.-

The holotype was collected by the AMNAPE expedition at station 25, haul 7, depth 40-100 m, temperature 21.2°C, position 28°23.5'N 29°55.9'W on April 30, 1980, at night. It is preserved in the Zoological Museum of the University of Amsterdam.

Description.-

Body length 11.8 mm, maximum width 9.6 mm. The living specimen was ovoid in shape, with a large swollen and transparent lateral gill and a whitish posterior gill. In the preserved holotype (fig. 1) the lateral gill is fringed and so are the four radiating branches around the central ring of the posterior gill. These fringed structures are caused by shrinking during fixation. The integument is transparent, beset with numerous purple chromatophores. The wings are fleshy, when the animal is alive, yellowish. The posterior footlobe, of moderate length, is thick and white. The lateral footlobes are large, fixed over half their length, and beset with large purple chromatophores. Between the lateral footlobes a prominent median foot tubucle is present. The hood over the buccal organs is dark purple and well separated

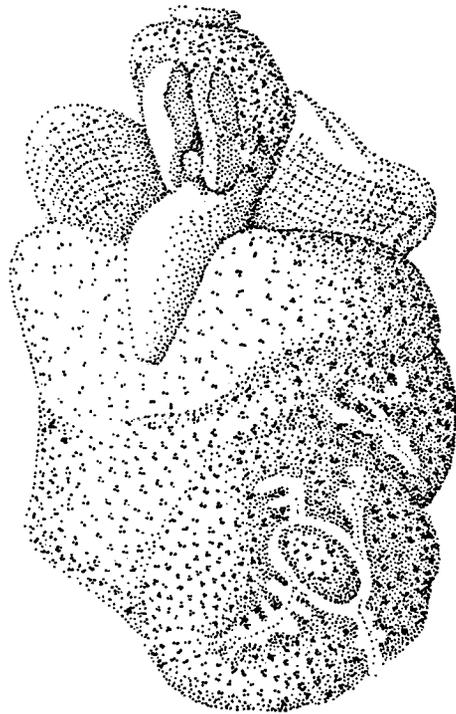


Fig. 1. Holotype of *Pneumoderma degraaffi* n. sp. in latero-ventral view.

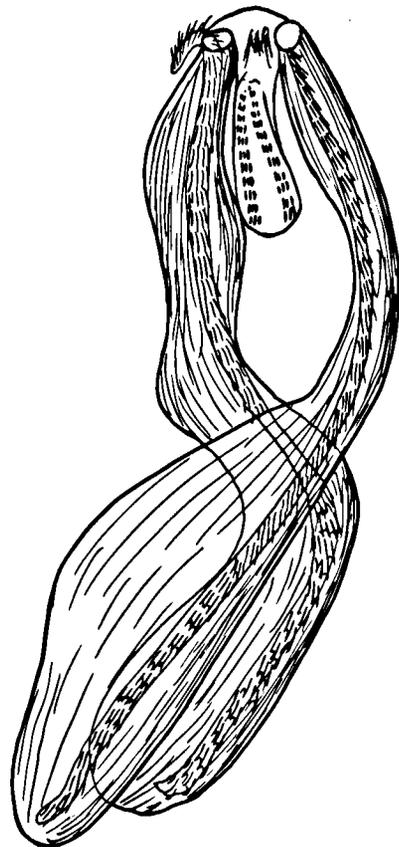


Fig. 2. Diagram of hooksacks with radula and jaws after microscopical slide.

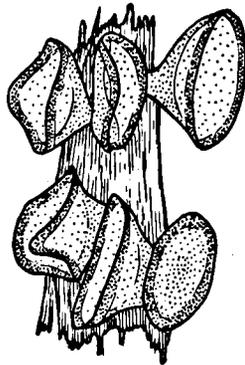


Fig. 3. The six suckers on buccal wall after dissection.



Fig. 4. Two rows of left lateral teeth from anterior end of radula.

from the body. The visceral mass fills the entire body cavity and shines through as yellowish and grayish spots. In preserved condition the body shape reflects the shape of internal organs; however, the living specimen also shows an irregular shape.

The buccal appendages consist of six suckers (fig. 3) implanted on the buccal wall. They are equal in shape and size measuring 1.16 mm in length and 0.83 mm in diameter. The hooksacks (fig. 2) are slender and half as long as the body. The hooks, about 200 on each arm, are long and slender; in the lower part of the hooksacks the hooks seem connected, one by one,

by a membrane. The jaw consists of irregular triangular plates. The radula, of the formula 3-0-3, consists of 24 rows. The lateral teeth have large square basal plates (fig. 4).

Etymology.-

The species name is given in honour to the captain of the oceanographic research vessel H.M.S. "Tydeman", Kltz G.J.H. de Graaff.

Remarks.-

Most closely related to the newly described species are *Pneumoderma atlanticum atlanticum* forma *pygmaeum* (Tesch, 1913) known from the warmer waters of the Atlantic and Pacific Oceans, and *P. mediterraneum* (Van Beneden, 1838) known from warmer waters of all oceans. The other taxa of the genus differ distinctly from the new species, as they have many more buccal suckers, shorter posterior footlobes and less fringed gills after fixation. The forma *pygmaeum* is, with 40-100 hooks, a radula formula 4-0-4 and its small size, distinctly different and *mediterraneum* is distinct from the new species by its radula formula 7-0-7 or 6-0-6. The acetabuliferous suckers of *mediterraneum*, also described by Boas (1886), under the name *P. macrocotylum*, resemble much those of the present species, but these are certainly not implanted on long arms. Consequently, the new species is well separated from all its relatives.

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Prof. Dr. S. van der Spoel,
Instituut voor Taxonomisch Zoölogie,
(Zoölogisch Museum),
Postbus 20125,
1000 HC Amsterdam,
The Netherlands.

Drs. T. Pafort-Van Iersel,
Instituut voor Taxonomische Zoölogie,
(Zoölogisch Museum),
Postbus 20125,
1000 HC Amsterdam,
The Netherlands.

received : 21.VI.1982.
distributed : 20.VIII.1982.

This periodical is regularly published by the Institute of Taxonomic Zoology (Zoölogisch Museum), of the University of Amsterdam. Requests for exchange or sale of this publication may be addressed to the Administration.

This periodical may be quoted in abbreviation as *Bull. Zool. Mus. Univ. Amsterdam*
ISSN 0165 - 9464