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NEREIPHYLLA PUSILLA (POLYCHAETA, PHYLLODOCIDAE) REDISCOVERED AND REDESCRIBED FROM SICILY

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INTRODUCTION

Anaitis pusilla was originally described from Naples by Claparède (1870). Since then the species has rarely been reported. This is probably due, at least in part, to a lack of both type material and of subsequent descriptions. In addition, its generic affinities have been uncertain; the species being variously referred to Phyllodoce (in Fauvel 1923), Paranaitis (in Hartman 1959) and Genetyllis (in Campoy 1982).

Dredge samples taken during scientific investigations off eastern Sicily in May 1990 yielded numerous specimens which correspond well to Claparède’s original description, and the species is redescribed below as Nereiphylla pusilla comb. nov.

MATERIALS AND METHODS

Most specimens were relaxed in 7 % magnesium chloride, fixed in 4 % formaldehyde in seawater for a few days, rinsed in fresh water and subsequently transferred to 70 % alcohol. A few specimens (NMW.Z.1992.002.6, 9 & 11) were fixed (approx. 10 % formaldehyde in seawater) in unsorted samples without being relaxed, while several others (NMW.Z.1992.002.7-8) were relaxed using menthol. In both cases the specimens were later rinsed and preserved in alcohol as above. All drawings were prepared with the aid of a camera lucida.

The holotype of Phyllodoce nana Saint-Joseph, 1906, was examined in the Muséum National d'Histoire Naturelle, Paris (MNHN). For comparative purposes, type materials of other species referable to Nereiphylla were also examined: holotype of Phyllodoce magnaoculata Treadwell, 1901 (USNM 15951), syntypes of Phyllodoce ferruginea Moore, 1909 (USNM 17361) and Phyllodoce fragilis Webster, 1879 (USNM 535) from the National Museum of Natural History, Smithsonian Institution, Washington D.C.; holotype of Pomatoceros graui Rullier, 1973 from the Université Catholique, Angers (UCA); syntypes of Genetyllis longa Malmgren, 1865 (BMNH 1865.9.23.5 and SMNH 2416) from the Natural History Museum, London, and the Swedish Mu-
seum of Natural History, Stockholm. Non-type material of other Nereiphylla species was also examined: Carobia castanea Marenzeller, 1879 (NMW.Z.1986.079. 134-141; 13 specimens from Hong Kong) from the collections of the National Museum of Wales, and Nereiphylla paretti Blainville, 1828 (about 20 specimens from around the British Isles and the western Mediterranean) and Phylloodoce (Carobia) rubiginosa Saint-Joseph, 1888 (about 50 specimens from western Ireland, English Channel, west-coasts of France and Spain, Italy, Yugoslavia and Greece) from a number of polychaete collections (including those of the MNHN, SMNH & NMW).

SYSTEMATICS

Nereiphylla pusilla (Claparède, 1870) (Figs. 1-3)

Anaitis pusilla Claparède, 1870 : 460-461, pl. IX, fig. 6.
Phylloodoce pusilla. Fauvel, 1923 : 157, fig. 56f.


Material examined

France: Cannes, holotype of Phylloodoce nana (MNHN). ITALY, eastern Sicily: sample T1, off Capo Mulini (near Acì Trezza), 37°34.35'N 15°11.65'E, large rock blocks, 30-40 m, 8 specimens (SMNH), 12.5.90; sample T14, off Capo Mulini (near Acì Trezza), 37°34.45'N 15°11.8'E, base of rock face, 40 m, 2 specimens (NMW.Z.1992.002.6), 17.5.90; sample T19/20, off Capo Mulini (near Acì Trezza), 37°34.45'N 15°11.8'E, large rock blocks, 35 m, 1 specimen (SMNH), 1 specimen (NMW.Z.1992.002.7), 18.5.90; sample T33, off Capo Campolato (NE of Brucoli), 1-3 m, neotype (NMW.Z.1991.002.5), 2 specimens (SMNH), 22.5.90; sample T36/40, off Capo Campolato (NE of Brucoli), 37°17.1'N 15°15.55'E, rock, 24 m, 1 specimens (NMW.Z.1992.002.8), 1 specimen (SMNH), 23.5.90; sample T46/49, off Valtur (NW of Brucoli), 37°17.1'N 15°11.1'E, boulders/muddy sand/seagrasses, 17-24 m, 19 specimens (SMNH), 3 specimens (NMW.Z.1992.002.9-10), 25.5.90; east of Cozzo dei Turchi, 37°17.1'N 15°10.1'E, algae/coarse sand, 2-4 m, 4 specimens (NMW.Z.1992.002.11), 29.5.90.

Fig. 1. – Nereiphylla pusilla. Neotype, dorsal view of entire animal. Scale line 0.5 mm.

Description

Prostomium anteriorly rounded (Figs. 1, 2A). Paired antennae all basally swollen, widest subproximally, with distinct drawn-out tips (Fig. 2B). Ventral pair slightly smaller than dorsal, ventrally displaced and not usually visible from above. Eyes very large, rounded. Nuchal organs not observed. Proboscis long and thin, with diffusely distributed blunt conical papillae (Fig. 2C). Distal part not observed. Segment 1 dorsally fused with segment...
2 (i.e. distinct delineation absent). All tentacular cirri similar; ampulliform, proximally swollen with distinct drawn-out tip. Dorsal pair of segment 2 longest, reaching about segment 5 if directed posteriorly; dorsal ones of segment 3 slightly shorter. Ventral pair of segment 2 and those of segment 1 shortest, of equal length (Fig. 2A). Several setae evident on segment 2, arising from small setigerous lobe fused to each cirrophore (Fig. 2B). Dorsal cirri of median segments swollen, but slightly flattened, semi-globular to ovoid, almost as long as wide (Fig. 2D). Setigerous lobes small, symmetrical. Setae about 10-12 per parapodium, all compound. Rostrum of setal shaft truncate with large number of acuminate teeth. Ventral cirri swollen, slightly longer than wide, obliquely oriented. Pygidial cirri swollen, almost as wide as long, ovoid (Fig. 2E). Median pygidial papilla present. No ciliation observed.

**Colour**

Eyes of live specimens red, body bright yellow with darker yellow prostomium and cirri. Tentacular cirri only with proximal swollen part pigmented. Eggs of mature females dull pink. Acicula distinctly black. Preserved specimens with body light yellow and orange to dark brown cirri. Eyes brown.

**Reproduction**

Mature specimens found on eastern Sicily in May. Diameter of eggs about 150 μm, possibly
indicating a lecithotrophic larval development. In the studied material mature specimens occurred from a size of about 3 mm, corresponding to about 30 segments.

**Measurements**

No specimens found with more than 39 segments and 5.0 mm long (Fig. 3).

![Graph showing relationship between number of segments and length in *Nereiphylla pusilla*.](image)

**Distribution**

Presently known only from the Mediterranean coast of France and the east coast of Sicily.

**Remarks**

As far as we are aware, there is no extant type material. Claparède strongly believed that the examination of live specimens was paramount and regarded the study of preserved museum material as a useless exercise (Claparède, 1868: 318). His original description and drawing of *Anaitis pusilla*, however, indicate conspecificity with the specimens described above. The yellowish colour, small size of mature specimens (i.e. 2.8 mm for 28 segments; compare Fig. 3), form of the antennae, and the form and arrangement of the tentacular cirri are all similar.

There are, however, two discrepancies relative to the original description. First, the dorsal cirri were described as lanceolate whereas, in our specimens, they are swollen and rounded. Second, the species was described as having 4, rather than 2, pygidial cirri. In our view these differences are simply differences in interpretation. When viewed from above (as in Claparède’s drawing) the dorsal cirri, being slightly antero-posteriorly compressed, often appear more pointed than if seen in direct anterior or posterior view. The presence of 4 pygidial cirri would be a unique feature within the Phyllodocidae, and we believe two of these actually represent the last pair of dorsal cirri. This mistake is easily committed since the dorsal and pygidial cirri in *N. pusilla* are rather similar (Fig. 1).

![Table I. - Synopsis of characters for separating European species of *Nereiphylla*.](image)

**Habitat**

Specimens were mainly collected from hard substrates (1-40 m), usually with encrusting organisms (e.g. bryozoans, sponges, ascidians), crevices and algae. When collected from soft sediments there were always sea-grasses or algae present also. Saint-Joseph (1906) recorded *Phyllophora alveolata* from among the tubes of *Sabellaria alveolata*. These types of habitats agree well with other records (e.g. Bellan, 1964; Camp, 1976; Campoy, 1982; Giangrande, 1986, 1988; Sardá-Borroy, 1987; Somaschini, 1988).
Nereiphylla pusilla redescribed (Polychaeta)

N. paretti and partly occur sympa-
N. rubiginosa belongs to
is
Eh-
Nereiphylla ranging from the Irish Sea to northern Norway.

Our slight doubt as to this synonymy is
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ossession of swollen (almost globular) dorsal,
guished from these species by its small size and
in Table 1.
Nereiphylla pusilla is readily distin-
providing in Pleijel and Dales (1991) and Pleijel
European waters: N. lutea (Malmgren, 1865), N. ca-
frigilis (Webster, 1879), N. gruai (Ruli-
An additional species, Phyllodoce magnaoculata
Treadwell, 1901, may belong in the genus but the
condition of the holotype does not permit any cer-
tain assignment. Of the aforementioned species,
only N. mimica from Belize approaches N. pusilla
in body size and form of the dorsal, ventral and
pygidial cirri. It differs in having abruptly tapered
tentacular cirri, the widths of which are almost
uniform along their entire lengths, and in the pig-
mentation pattern of both live and preserved ma-
terial. Nereiphylla castanea, N. ferruginea and N.
fragilis all differ in their much greater size (40-
50 mm maximum), their pigmentation, and in hav-
ing large flattened foliaceous and cordiform
dorsal cirri.

In its small size and thickened dorsal cirri, Ne-
reiphylla gruai from the Kerguelen Islands ap-
pears superficially to resemble N. pusilla.
Examination of the slide-mounted holotype proved
inconclusive. The specimen was not sexually ma-
ture and its general aspect was very suggestive of
it being a juvenile specimen of a larger species.
In this respect we would like to advise caution
when identifying small specimens of any Nerei-
phylla species. The thickness of the dorsal and
ventral cirri is, to a certain degree, size-dependant.
For example, the dorsal cirri of small specimens of
N. rubiginosa can be somewhat swollen, but
they become more flattened as the animals grow
larger. This character should therefore not be used
in isolation.

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DISCUSSION

Following the proposed phylogeny of Pleijel
(1991), the possession of the two shared derived
characters (sub-proximally swollen frontal anten-
nae and obliquely oriented ventral cirri) indicate
membership within the subfamily Notophyllinae,
and the absence of median antenna membership
within the genus Nereiphylla.

Three other species of Nereiphylla occur in Eu-
ropean waters: N. lutea (Malmgren, 1865), N. pa-
retti Blainville, 1828 and N. rubiginosa
(Saint-Joseph, 1888). Descriptions of these are
provided in Pleijel and Dales (1991) and Pleijel
(1993), and a summary of all four species is given
in Table 1. Nereiphylla pusilla is readily distin-
guished from these species by its small size and
possession of swollen (almost globular) dorsal,
ventral and pygidial cirri. As to their distribution,
N. paretti and N. rubiginosa partly occur sympa-
tically with N. pusilla with a distribution from
the northern Mediterranean up to the British Isles,
whereas N. lutea has a more northern distribution,
ranging from the Irish Sea to northern Norway.

An additional European species that probably
belongs to Nereiphylla is Phyllodoce lugens Eh-
liers, 1864. This species, described from the north-
ern Adriatic, is known only from the original des-
cription. According to this, it is similar to N.
pusilla in its small size at maturity and in the size
of its eggs. It differs in being dark olivebrown to
green, in having green eggs, and in having pointed
flattened pygidial cirri. We have been unable to
locate any type material and, for the present,
consider this a nomen dubium.

Only five non-European phyllodocid species
can be referred, with any degree of confidence,
to Nereiphylla (checklist in Pleijel 1991): N. ca-
stanea (Marenzeller, 1879), N. ferruginea (Moore,
1909), N. fragilis (Webster, 1879), N. gruai (Rulli-

Brucoli on the east coast of Sicily is not too
far from Claparède’s original locality of Naples
and, since the species is common in the area, we
find this an appropriate place from which to select
a neotype. The holotype of Phyllodoce nana Saint-
Joseph, 1906, is in poor condition, but examina-
tion of the specimen and the original description
suggests that it is a junior synonym of Nereiphylla
pusilla. Our slight doubt as to this synonymy is
due to Saint-Joseph’s description of enormous
(400 µm) eggs in an animal 480 µm wide includ-
ing cirri! Such a large egg size differs markedly
from those of all the other European species of
Nereiphylla (Table 1), as well as from other phyl-
lodocids.

Taking this synonymy into account, N. pusilla
has been recorded from several widespread loca-
lities: Italy (Claparède, 1870; Cantone, 1971; Gi-
gianrande, 1986, 1988; Somaschini, 1988), south
of France (Saint-Joseph, 1906; Bellan, 1964),
neastern Spain (Camp, 1976; Campoy, 1982), Gil-
britar Strait (Sárdá-Borroy, 1987), Atlantic coast
of France (Cazaux, 1965), Canary Islands (Núñez
et al., 1991), Senegal (Rullier, 1964) and Ivory
Coast (Intes & Le Lœuff, 1977). The descriptions
provided by Saint-Joseph, Claparède, Campoy,
Rullier and Núñez et al. indicate a distribution
throughout the western Mediterranean and along
the northwest coast of Africa. The description of
Phyllodoce pusilla from Arcachon (Cazaux, 1965),
however, clearly relates to N._rubiginosa.
REFERENCES


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