Mar. Life 2001 – Vol. 11 (1-2) : 11-16

A new species of Nereididae (Annelida Polychaeta) from the Island of Ustica (Northern Sicily, Italy)

Une nouvelle espèce de Nereididae (annélides polychètes) de l'île d'Ustica (Sicile du nord, Italie)

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Key-words: *Nereididae,* Nereis usticensis *n. sp., Ustica Island, Mediterranean Sea.*

Mots clés : *Nereididae,* Nereis usticensis *n. sp., île d'Ustica, mer Méditerranée.*

ABSTRACT

Cantone G., D. Catalano, F. Badalamenti - A new species of Nereididae (Annelida Polychaeta) from the Island of Ustica (Northern Sicily, Italy). Mar. Life, **11** *(1-2) : 11-16.*

A new species of Nereididae, Nereis usticensis *n. sp., found among* Cystoseira *species, on the hard bottoms of infralittoral upper zone of the Island of Ustica, is described. Particular features of the new taxon are the posterior notopodial homogomph falcigers, with one terminal tooth and two or three smaller, lateral ones and the distribution pattern of paragnaths on maxillary and oral rings. A comparison with similar species is offered.*

RÉSUMÉ

Cantone G., D. Catalano, F. Badalamenti - [Une nouvelle espèce de Nereididae (annélides polychètes) de l'île d'Ustica (Sicile du nord, Italie)]. Mar. Life, **11** *(1-2) : 11-16.*

Une nouvelle espèce de Nereididae, Nereis usticensis *n. sp. a été découverte à l'île d'Ustica, dans un peuplement à* Cystoseira *sur substrat rocheux de l'étage infralittoral supérieur.* Nereis usticensis *n. sp. se distingue des autres espèces de* Nereis *par la distribution des paragnathes sur les anneaux oral et maxillaire et par les serpes homogomphes qui apparaissent à la rame dorsale dans la région postérieure. Ces serpes ont une dent terminale et deux ou trois dents latérales plus petites. Une comparaison avec des espèces similaires est réalisée.*

INTRODUCTION

A study was carried out in 1996 to compare the Polychaete fauna living in areas with different degrees of protection around the island of Ustica (marine reserve) (Badalamenti *et al.*, 1999). The zones selected were Punta Megna (zone A, core area of the marine reserve), Punta Parrino (zone B, general reserve), Punta Arpa (zone C, partial reserve). In each zone, samples were collected at depths of 1, 5, 10 and 15 m.

During the examination of the samples several Nereididae were found (table I); however some specimens were not attributable to known species. In this paper we describe a new species, *Nereis usticensis* n. sp., and compare it with other similar species.

MATERIAL AND METHODS

The new species was found in samples of benthos, collected on hard bottoms covered with *Cystoseira* species. The sampling procedure used, in which scuba divers scrape off an area of 400 cm^2 (20 x 20 cm), is outlined by Bellan-Santini (1969) and is adopted throughout the Mediterranean Sea. All specimens collected were present only at 5 m depth, seventeen at Punta Parrino and six at Punta Megna (figure 1). Specimens were preserved in 80% alcohol.

The holotype and paratypes of *Nereis usticensis* n. sp. are deposited at the Museum of Dipartimento di Biologia Animale, Università di Catania, Italia. In this moment is not possible to

Table I - Nereididae found at Ustica Island, X = presence. / *Nereididae de l'île de Ustica, X = présence.*

	Punta Megna	Punta Parrino	Punta Arpa
Websterinereis glauca (Claparéde, 1870)	x	x	
Rullierinereis cf. *zebra* (Rullier, 1963)	x		
Ceratonereis costae (Grube, 1840)	x	x	x
Ceratonereis hircinicola (Eisig, 1870)	x	x	x
Micronereis siciliensis Cantone, 1971	x		
Neanthes kerguelensis (Mc Intosh, 1885)		x	
Nereis falsa Quatrefages, 1865	x		
Nereis pelagica Linnaeus, 1758			x
Nereis rava Ehlers, 1868	x		x
Nereis zonata Malmgren, 1867	x	x	
Nereis cf. *maxillodentata* Hutchings & Turvey, 1982	x	x	x
Perinereis cultrifera (Grube,1840)	x	x	x
Platynereis coccinea (Delle Chiaje, 1841)	x	x	x
Platynereis dumerilii (Audouin & Milne-Edwards, 1833)	x	x	x

indicate the number of recordered sightings of the new species because the catalogue of the deposited species is in progress.

Genus *Nereis* Linnaeus, 1758

Nereis usticensis n. sp. (figures 2, 3)

Holotype

Italy, Ustica Island, Punta Parrino, 5 m depth, hard bottom covered with *Cystoseira* species, September 1996, Badalamenti, scuba diving (Museum of Dipartimento di Biologia Animale, University of Catania).

Paratypes

Sixteen specimens from the same locality and with the same data as the holotype; six specimens from Punta Megna, same depth, bottom and data.

Etymology

The specific name refers to the locality of finding.

Diagnosis

This species can be distinguished by the number and disposition pattern of paragnaths (figure 2; B-C) and by the shape of homogomph falcigers (figure 3; D-E).

Description

Holotype complete with 41 setigers. Total length 7 mm; body width 0.5 mm. Body elongated, tapering posteriorly (figure 2A); colourless in alcohol. Eyes dark, anterior pair slightly larger. Palps stout, styles globose. One pair of antennae, slightly shorter than palps. Four pairs of tentacular cirri, the longest extended to the middle of setiger 2. Both antennae

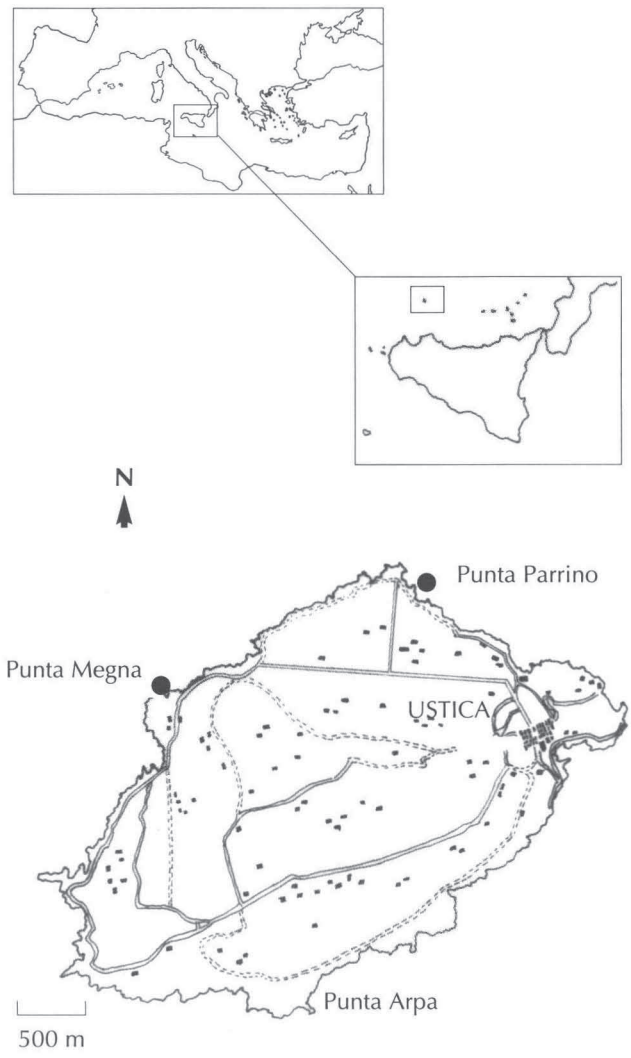


Figure 1 - Sampling stations (•). / *Stations étudiées (•).*

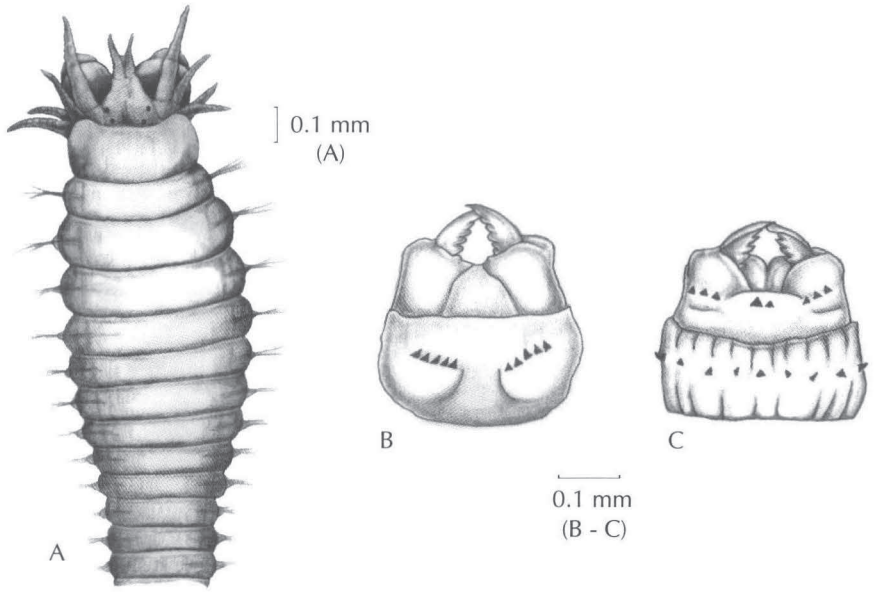


Figure 2 - *Nereis usticensis* n. sp. - A: anterior end; B: dorsal view of proboscis; C: ventral view. / Nereis usticensis *n. sp. - A : tête et trompe ; B : face dorsale de la trompe ; C : face ventrale.*

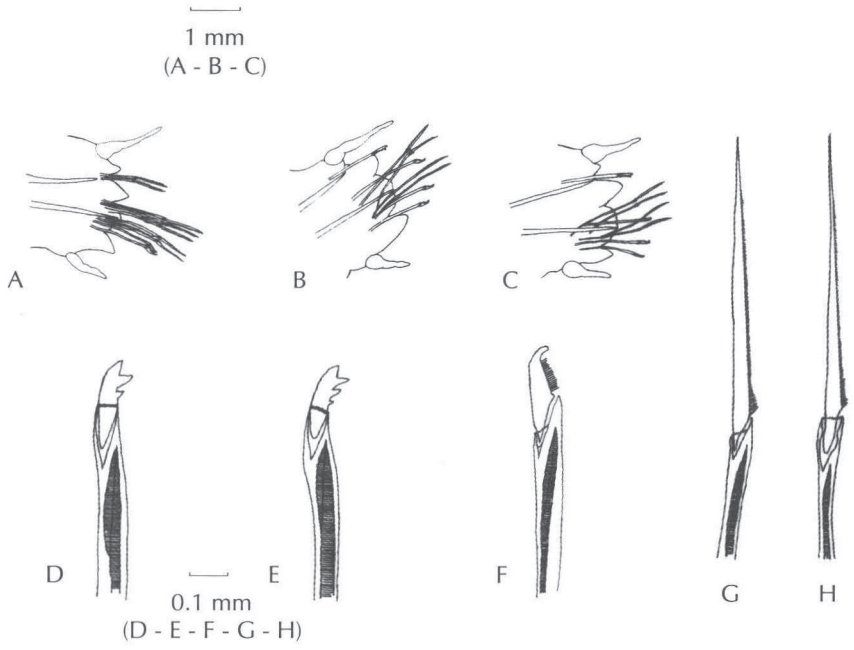
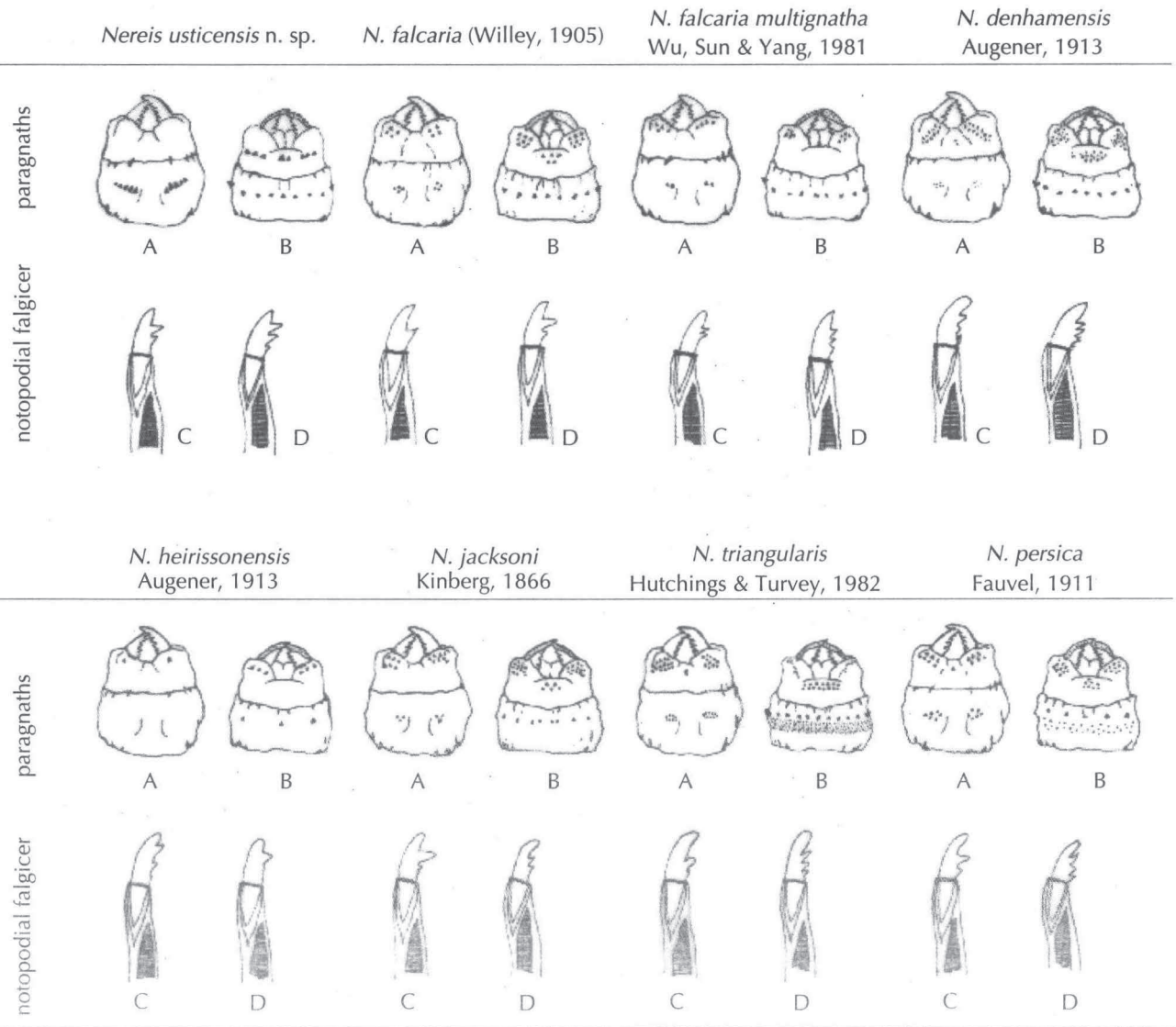


Figure 3 - *Nereis usticensis* n. sp. - A: 9th parapodium; B: 19th parapodium; C: 32nd parapodium; D: notopodial homogomph falciger from 19th parapodium; E: notopodial homogomph falciger from 32nd parapodium; F: neuropodial heterogomph falciger from 9th parapodium; G: neuropodial heterogomph spiniger from the same parapodium; H: notopodial homogomph spiniger from the same parapodium. / Nereis usticensis *n. sp. - A : 9e parapode ; B : 19e parapode ; C : 32e parapode ; D : serpe homogomphe dorsale du 19e parapode ; E : serpe homogomphe dorsale du 32e parapode ; F : serpe hétérogomphe ventrale du neuvième parapode ; G : soie hétérogomphe ventrale du même parapode ; H : soie homogomphe dorsale du même parapode.*

Table II - Comparison of similar species. - *Nereis usticensis* n. sp. - A: dorsal view of proboscis; B: ventral view; C: median notoseta; D: posterior notoseta. - *N. falcaria* - A: dorsal view of proboscis; B: ventral view; C: median notoseta, according to Day (1967); D: posterior notoseta, according to Wu *et al.* (1985). - *N. falcaria multignatha* - A: dorsal view of proboscis; B: ventral view; C: median notoseta, according to Wu *et al.* (1985); D: posterior notoseta, according to Wu *et al.* (1985). - *N. denhamensis* - A: dorsal view of proboscis; B: ventral view; C, D: variations in dentition of notosetae, according to Hutchings and Turvey (1982). - *N. heirissonensis* - A: dorsal view of proboscis; B: ventral view; C, D: variations in dentition of notosetae, according to Hutchings and Turvey (1982). - *N. jacksoni* - A: dorsal view of proboscis; B: ventral view; C: posterior notoseta, according to Day (1967); D: posterior notoseta, according to Wu *et al.* (1985). - *N. triangularis* - A: dorsal view of proboscis; B: ventral view; C: median notoseta, according to Hutchings and Turvey (1982); D: posterior notoseta, according to Hutchings and Turvey (1982). - *N. persica* - A: dorsal view of proboscis; B: ventral view ; C: posterior notoseta, according to Day (1967); D: posterior notoseta, according to Wu *et al.* (1985). / *Comparaison entre espèces semblables.* - Nereis usticensis *n. sp. - A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale moyenne ; D : soie dorsale postérieure.* - N. falcaria - *A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale moyenne, selon Day (1967) ; D : soie dorsale postérieure, selon Wu* et al. *(1985).* - N. falcaria multignatha - *A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale moyenne, selon Wu* et al. *(1985) ; D : soie dorsale postérieure, selon Wu* et al. *(1985).* - N. denhamensis - *A : face dorsale de la trompe ; B : face ventrale : C, D : variations de dentition de la soie dorsale, selon Hutchings et Turvey (1982).* - N. heirissonensis - *A : face dorsale de la trompe ; B : face ventrale ; C, D : variations de dentition de la soie dorsale, selon Hutchings et Turvey (1982).* - N. jacksoni - *A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale postérieure, selon Day (1967) ; D : soie dorsale postérieure, selon Wu* et al. *(1985).* - N. triangularis - *A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale moyenne, selon Hutchings et Turvey (1982) ; D : soie dorsale postérieure, selon Hutchings et Turvey (1982).* - N. persica - *A : face dorsale de la trompe ; B : face ventrale ; C : soie dorsale postérieure, selon Day (1967) ; D : soie dorsale postérieure, selon Wu* et al. *(1985).*



and tentacular cirri distally pseudoannulated. Pharynx with stout, transparent brown jaws bearing eight teeth. Paragnaths arranged as follows: group I=0; II=0; III=2 unequal side by side cones, IV=3 in transverse row; V=0; VI=5 in single transverse row; VII-VIII=9 in single row. Dorsal and ventral cirri fusiforms, the dorsal twice as long as the ventral notopodial lobe, the ventral extends to the same level as the neuropodial ventral lobe. Acicula dark-brown. Anterior setigers with notopodial and ventral neuropodial lobes bluntly conical, dorsal neuropodial lobe short and rounded (figure 3A).

Anterior notopodial setae are two homogomph spinigers. Neurosetae are arranged in dorsal and ventral fascicles: the dorsal with homogomph spinigers above (figure 3H) and one heterogomph falciger, with spinulose blade, below; the ventral fascicle presents dorsally heterogomph spinigers (figure 3G) and ventrally heterogomph falcigers (figure 3F). Median setigers with dorsal notopodial lobe reduced to a very small lobe, ventral one conical; dorsal neuropodial rounded lobe, shorter than ventral conical one (figure 3B); one notopodial homogomph falciger from 15th setiger, with large terminal tooth and two lateral teeth decreasing in size basally.

Dorsal neuropodia with homogomph spinigers and heterogomph falcigers, ventrally heterogomph spinigers and falcigers are present.

Posterior setigers similar to median ones, except for the ventral cirrus, which is longer than neuropodial ventral lobe (figure 3C). Two long pseudo-annulated anal cirri.

Remarks

The number of setigers ranges from 30 to 40, the length of the body from 4 to 6 mm; in smaller specimens the notopodial homogomph falciger appear at 14th setiger. The number of paragnaths varies as follows: group III=0-2; IV=1, 3, 4; VI= 3, 4 or 5; VII - VIII= 8 or 9.

DISCUSSION

Several species of *Nereis* have notopodial homogomph falcigers with two or three teeth: *N. jacksoni* Kinberg, 1866; *N. falcaria* (Willey, 1905); *N. falcaria multignatha* Wu *et al.*, 1981; *N. persica* Fauvel, 1911; *N. heirissonensis* Augener, 1913; *N. maxillodentata* Hutchings & Turvey, 1982; *N. denhamensis* Augener, 1913; *N. triangularis* Hutchings & Turvey, 1982. However, as shown in table II, all these species are different from the new species with regard to the dentition of the notopodial homogomph falcigers and to the number and pattern of paragnaths. *Nereis heirissonensis, N. maxillodentata, N. triangularis* are Australian species; *N. persica* and *N. falcaria* have a tropical or subtropical distribution, essentially Indo-West Pacific. *N. falcaria multignatha* has, so far, only been found in the East China Sea.

N. denhamensis has been found in China, Japan, Australia and New Caledonia. *N. jacksoni* has a circumtropical distribution, and is a lessepsian migrant species, which has entered the Mediterranean Sea through the Suez Channel (Amoureux *et al.*, 1980). It has been cited for the northern (Somaschini, 1988) and central (Giangrande, 1988) Tyrrhenian Sea and along the southern Spanish coast (San Martín *et al.*, 1982; 1990; San Martín, Viétez, 1991). This lessepsian species can be distinguished from *N. usticensis* by the number and pattern of paragnaths, particularly group II, IV and VI.

Distribution and habitat

At present the species is known only from the type locality: the island of Ustica, northern Sicily, Italy, where specimens were found on shallow hard bottoms (5 m depth) associated with *Cystoseira* species.

N. usticensis, like all the similar species with indo-pacific distribution confined to tropical or subtropical areas, might be relic of Tethys fauna.

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Received January 2000; accepted November 2000.
Reçu en janvier 2000 ; accepté en novembre 2000.