

The genus *Pseudocythere* Sars (Crustacea: Ostracoda) in the Bay of Naples

Gioacchino BONADUCE
Zoological Station of Naples

Mario MASOLI, Nevio PUGLIESE
Geological and Paleontological
Institute, University of Trieste

Kenneth MCKENZIE
Riverina College of Advanced Education
Wagga-Wagga (Australia)

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ABSTRACT — The genus *Pseudocythere* is represented in the Bay of Naples by 3 taxa: *Pseudocythere caudata mediterranea* n. subsp., *Pseudocythere armata* n. sp. and *Pseudocythere hastata* n. sp.. The descriptions of the carapaces of the 3 taxa are given together with the depth distribution.

RIASSUNTO — [Il genere *Pseudocythere* Sars (Crustacea: Ostracoda) nel Golfo di Napoli] - Il genere *Pseudocythere* è rappresentato nel Golfo di Napoli da 3 taxa: *Pseudocythere caudata mediterranea* n. subsp., *Pseudocythere armata* n. sp. e *Pseudocythere hastata* n. sp. di cui viene data la descrizione e la distribuzione batimetrica.

The genus *Pseudocythere* was established on soft parts by G. O. Sars (1865) who designated *Pseudocythere caudata* n. sp. as the type species. Representatives of this genus have been found from Maastrichtian to Recent; it is typically benthic marine, with species occurring at all depths and distributed world wide.

The genus *Pseudocythere* is represented in the Bay of Naples by three taxa: *Pseudocythere caudata mediterranea* n. subsp., *P. armata* n. sp. and *P. hastata* n. sp.

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MATERIAL AND METHODS

The present study is based on 367 core-samples collected during the years 1961-1963 by H. S. Puri and G. Bonaduce for a general research on the distribution of ostracod thanatocoenosis (Puri, Bonaduce & Malloy 1964).

During 1976 and 1977 G. Bonaduce collected some 100 sledge-samples for controlling the correspondence between thanatocoenosis and biocoenosis.

Of the first group of samples the first core-inch has been completely examined and all the ostracods picked; of the second group only living material has been picked.

The descriptions of species are supplemented by SEM micrographs (Institute of Geology and Paleontology of the University of Trieste) and transparency drawings realized by means of a Visopan Reichert.

SYSTEMATIC AND DISTRIBUTION

The descriptions are based mainly on carapace characters but hemipenis of the new subspecies are illustrated.

Holotypes and paratypes are deposited at Stazione Zoologica di Napoli.

PSEUDOCYthere CAUDATA MEDITERRANEA n. subsp.
Pl. 1, fig. 1; pl. 2, figs. 1, 2, 6

1894 *Pseudocythere caudata* Sars - G. W. MÜLLER, p. 284, Pl. 16, figs. 5, 10, 30-36.

1975 *Pseudocythere caudata* Sars - BREMAN, Pl. 4, fig. 42 (nec SARS 1865), nec 1964 *Pseudocythere* sp. aff. *P. caudata* Sars - BENSON, pp. 13-16.

Etymology — From the Mediterranean Sea.

Holotype — A left valve. B.C.M. Ostracod Collection no. 336.

Paratypes — 3 specimens with soft parts. B.C.M. Ostracod Collection no. 337.

Type locality — Bocca Piccola (Bay of Naples) on calcareous algae (depth 50 m). The locality corresponds to that of Müller.

Remarks — Some different species of *Pseudocythere* have been identified by several Authors under the name of *Pseudocythere caudata* Sars.

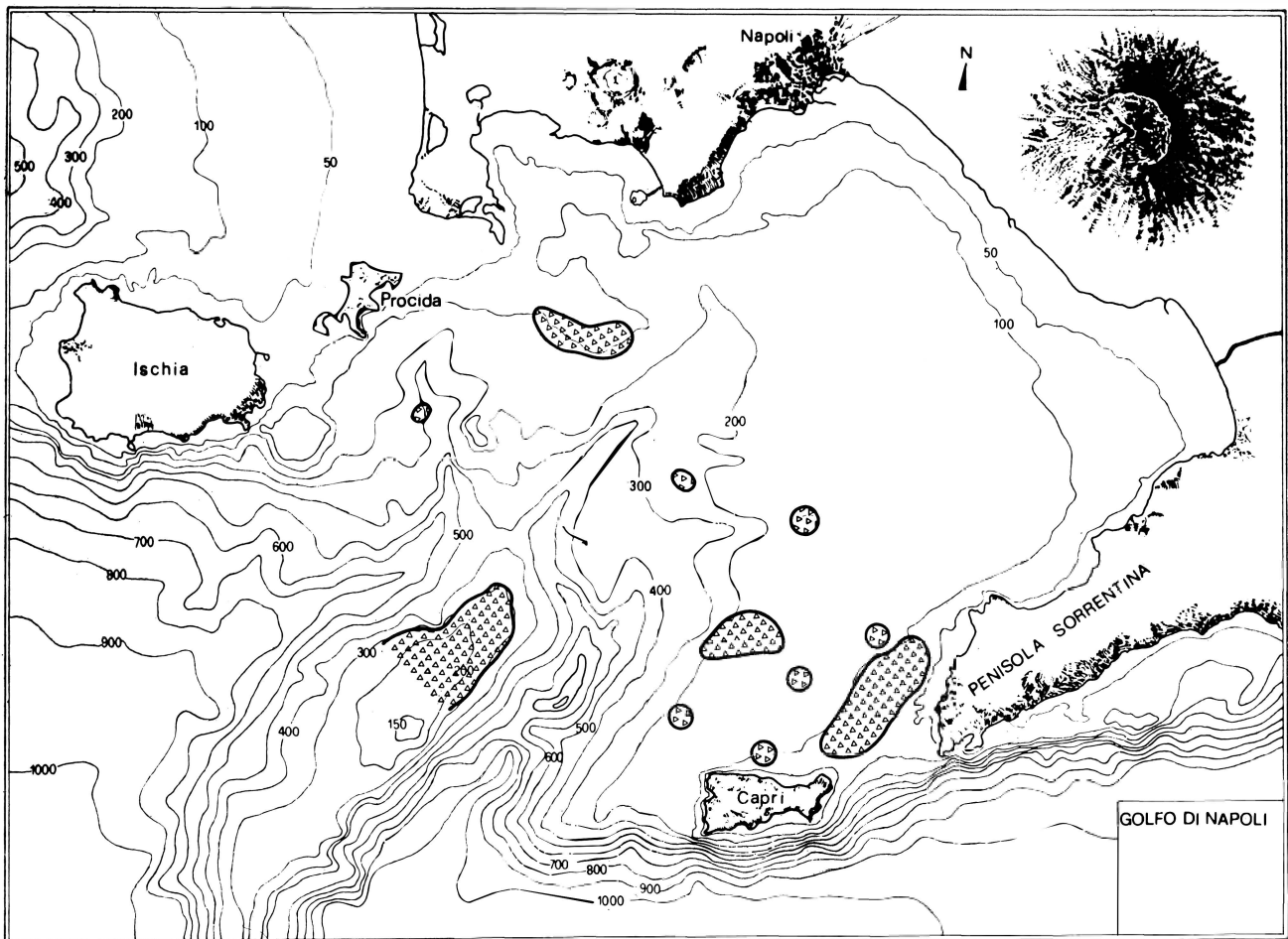
G. W. Müller (1894) refers to *Pseudocythere caudata* a species with certain features which are different from those of the type-species as observed by Elofson (1941) and Van Morkhoven (1963). The differences observed are most evident in the pattern of the radial pore-canals. Benson (1964) details the differences observed by previous Authors and himself.

Neale (1967) compares his *P. cf. P. caudata* Sars with specimens of *P. caudata* Sars from Trondhjem Fjord (Norman Collection of the British Museum of

Natural History) and with *P. similis* Müller. He gives drawings of the valves of the first two species and of the copulatory appendage of *P. caudata*. Neale states: « In some respect the Trondhjem dissection is the nearest to the Antarctic form (*P. similis*) figured by Müller. It is furthest from the Bay of Naples specimens figured as *P. caudata* by the same authors ». He agrees with Benson on the impossibility of separating *P. caudata* from *P. similis* on paleontological grounds and « believes that the same will prove true of the limbs and soft parts ».

The drawings of the carapaces of *P. caudata* and *P. similis* furnished by Sars, Benson and Neale do not indicate any marked paleontological differences.

Drawings of the hemipenis of Müller Mediterranean taxon (Pl. 1, figs. 5, 6), make clear its close relationship with *P. caudata* Sars. In our specimen, the hemipenis were fixed in two different orientations, one corresponding with that figured by Sars (1928, Pl. 109, fig. 2) and the other resembling that figured by Müller (1894, Pl. 16, fig. 35). Thus, the



Text-Fig. 1 - Areal distribution of *Pseudocythere caudata mediterranea* n. subsp.

apparent differences between them are simply an artefact of the particular orientation. The rest of the soft anatomy also is similar for both Sars' and Müller's forms.

It seems to us, however, that the antero-ventral part of the vestibulum of Müller's form has a different, more irregular, shape; moreover it shows the presence of numerous anterior false marginal pore-canal not detected in the other two species. Further, the hinge differs slightly (Pl. 2, fig. 6).

In our opinion, these differences justify its splitting as a geographic subspecies.

We give drawings (transmitted light) of right (Pl. 1, fig. 1) valve and pictures of the carapaces (Pl. 2, figs. 1, 2).

Distribution — The subspecies is quite common in the Bay of Naples. It has been found commonly living on the calcareous algae of Bocca Piccola (30-60 m) and of Secca di Forio (west of Ischia) at 50 m depth. It occurs less commonly at La Gaiola Bank

(Posillipo) and at Benda Palummo (50 m). Empty carapaces and loose valves have been found irregularly distributed down to a depth of 700 m (Text-Fig. 1).

PSEUDOCYTHERE ARMATA n. sp.

Pl. 1, figs. 2, 3; pl. 2, figs. 3, 4

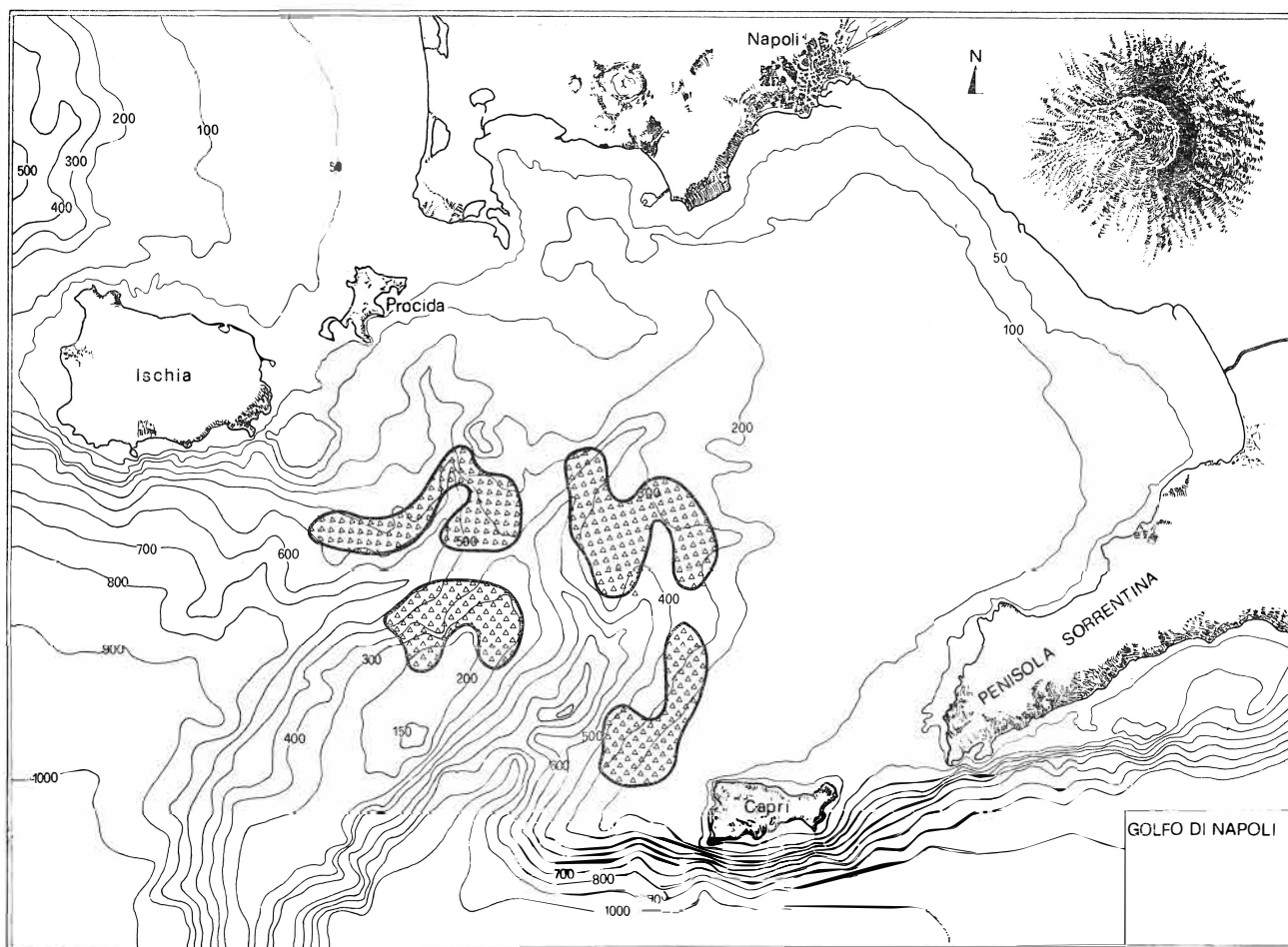
1975 *Pseudocythere armata* BONADUCE, CIAMPO & MASOLI in BREMAN, p. 78, Pl. IV, fig. 41.

Remarks — Breman (1975) cites this species as *P. armata* Bonaduce, Ciampo & Masoli (*in press*). Instead the description of this species is given by the present authors.

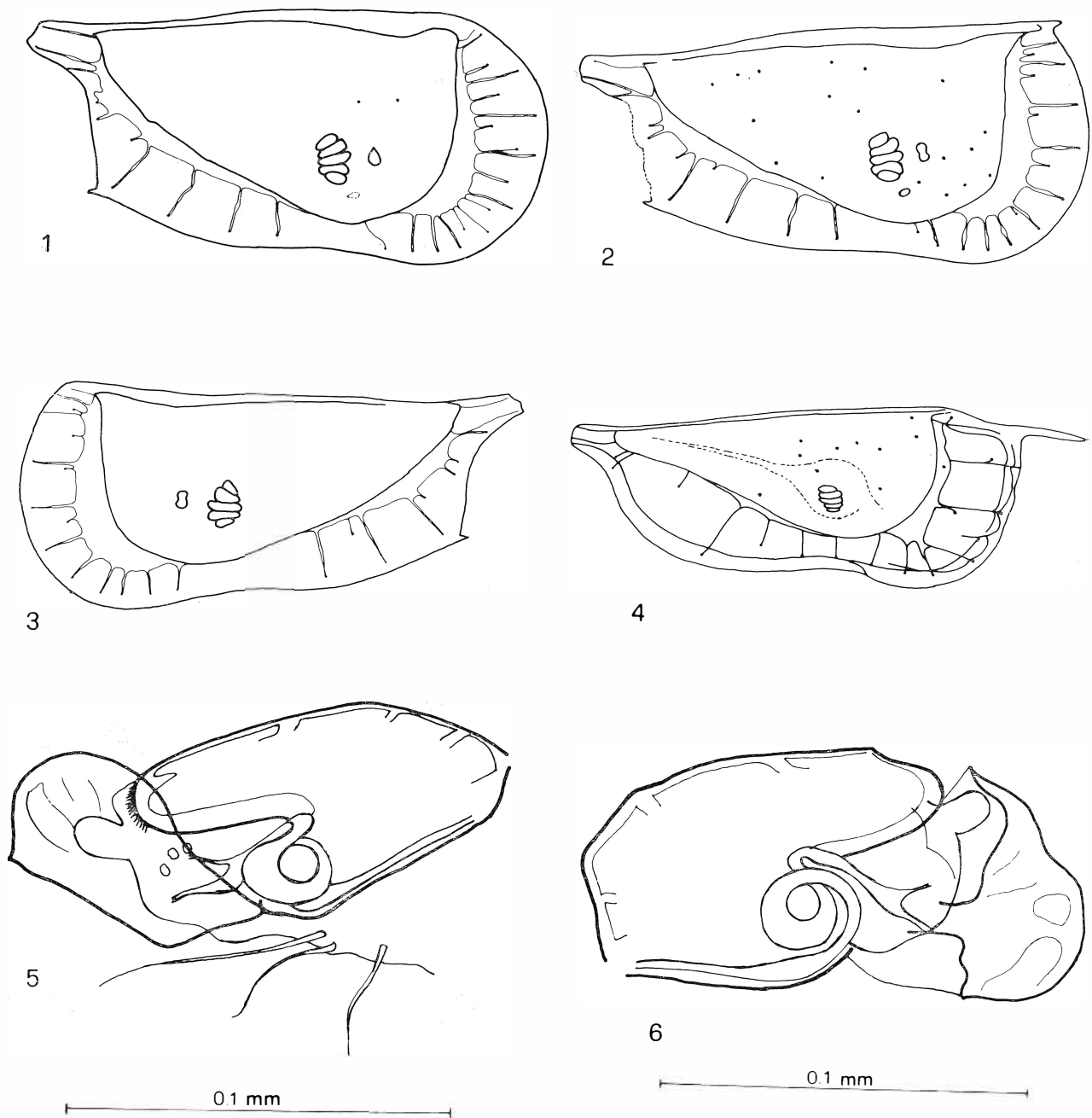
Etymology — From latin *armatus* = armed.

Holotype — 1 right valve (fig. 2). B.C.M. Ostracod Collection no. 338.

Paratypes — 2 loose valves. B.C.M. Ostracod Collection no. 339.



Text-Fig. 2 - Areal distribution of *Pseudocythere armata* n. sp.



EXPLANATION OF PLATE 1

- Fig. 1 - *Pseudocythere caudata mediterranea* n. subsp.: right valve (transparency).
 Figs. 2-3 - *Pseudocythere armata* n. sp.: 2) right valve (transparency); 3) left valve (transparency).
 Fig. 4 - *Pseudocythere bastata* n. sp.: right valve (transparency).
 Figs. 5-6 - *Pseudocythere caudata mediterranea* n. subsp.: 5) left hemipenis (transparency); 6) right hemipenis (transparency).

Type locality — Bay of Naples, Station C-13, depth 200 m.

Description — Shape: Valves subrectangular in lateral view with dorsal margin straight, somewhat concave anteriorly, ventral margin a little sinuous. Anterior forming with dorsum a right angle, regularly arched anteroventrally; posterior ending with the caudal process typical of the genus, below which is present a posteroventral spine. The dorsal margin ends anteriorly with a short and stocky spine in the right valve only (Pl. 2, fig. 4). In dorsal view lens-shaped, depressed in the area below and after the anterior cardinal angle.

Inner lamella: Very wide anteriorly with inner margin almost vertical; well developed vestibule anteriorly and posteroventrally (Pl. 2, fig. 3).

Marginal pore-canals: These number 9-10, are straight and a little inflated in the middle anteroventrally with some false pore-canals intercalated; there are 5 posteroventrally with a bifurcating one near the posterior end of the vestibule. Some false

pore-canals are also present posteriorly (Pl. 1, figs. 2, 3).

Normal pore-canals: Simple, few and scattered.

Central muscle-scars: A subvertical row of 5 scars the two extreme of which are smaller and oval and the three intermediate subrectangular; frontal scar bean-shaped.

Size (in mm): L = 0,63; H = 0,31.

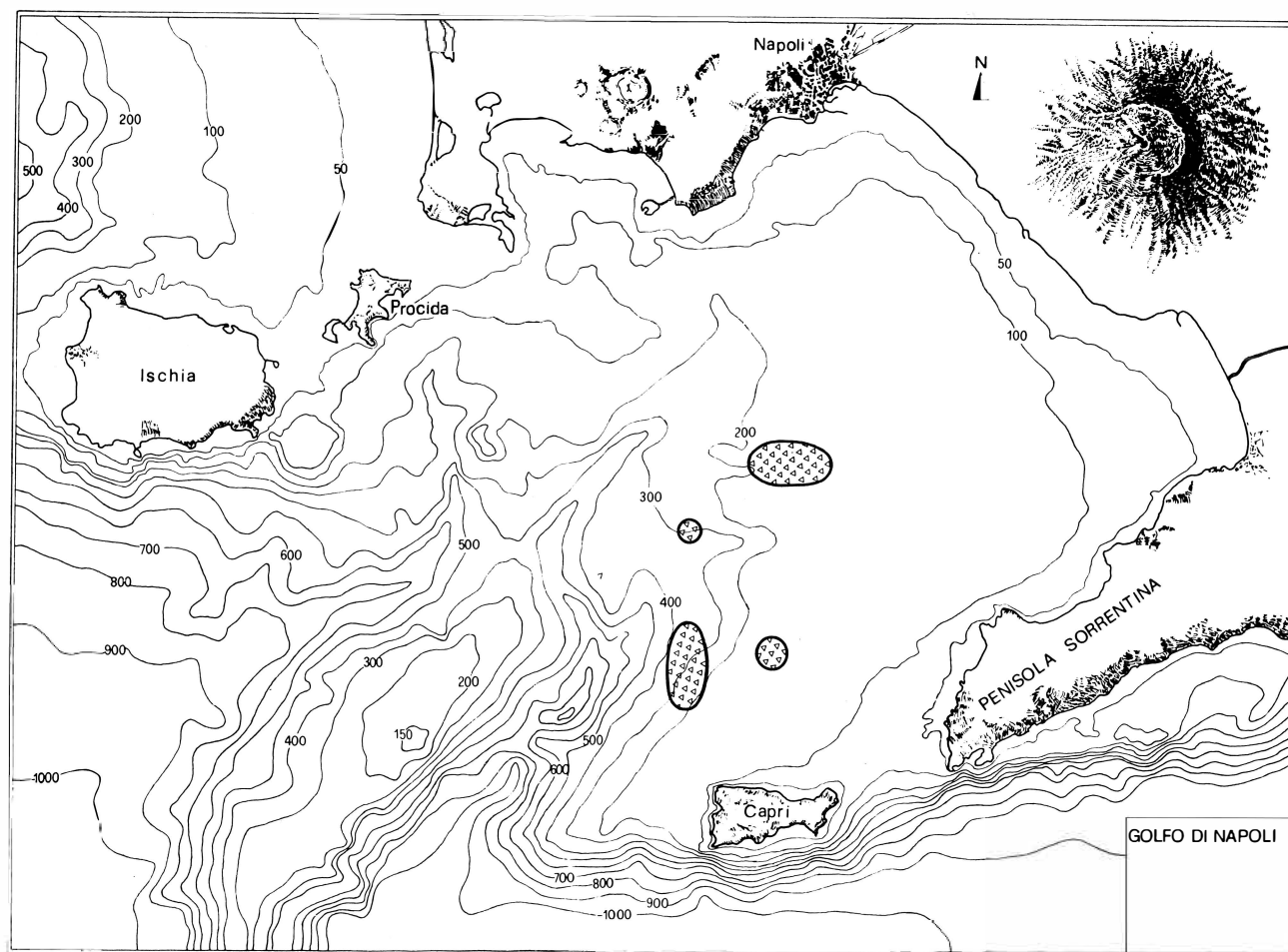
Distribution — This species has been rarely found alive. Depth of findings of thanatocoenosis deeper than 200 m; absent below 700 m (Text-Fig. 2).

Affinities — The species differs from *P. caudata mediterranea* by the presence of the anterior spine and the different shape of the anterior margin. The frontal scar also appears to be different.

PSEUDOCYTHERE HASTATA n. sp.

Pl. 1, fig. 4; pl. 2, fig. 5

Etymology — From latin *hastatus* = lanced.



Text-Fig. 3 - Areal distribution of *Pseudocythere hastata* n. sp.



EXPLANATION OF PLATE 2

- Figs. 1-2, 6 - *Pseudocythere caudata mediterranea* n. subsp.: 1) lateral exterior view of left valve; 2) interior of right valve; 6) detail of the anterior part of the hinge of left valve from inside.
Figs. 3-4 - *Pseudocythere armata* n. sp.: 3) interior of right valve; 4) lateral exterior view of right valve.
Fig. 5 - *Pseudocythere hastata* n. sp.: interior of right valve.

Holotype — 1 left valve. B.C.M. Ostracod Collection no. 340.

Paratypes — 2 loose valves. B.C.M. Ostracod Collection no. 341.

Type locality — Bay of Naples. Station C-13, depth 200 m. Muddy bottom.

Description — Shape: Valves subrectangular in lateral view with dorsal margin almost straight ending anteriorly with a very long spine, anterior margin vertical connected with the ventral margin a 90° angle. Ventral margin inflexed and posterior swinging abruptly to the caudal process. Posteroventral spine absent. Valves very flat peripherally but with an oblique inflation running from the caudal process to the anteroventral area, larger in the muscle-scars region (Pl. 1, fig. 4). In dorsal view, acuminate anteriorly and posteriorly.

Ornamentation: Valves completely smooth.

Marginal pore-canal: Anteriorly five in number plus two from the area between the anterior and posterior vestibule and three from the posterior vestibule. A few false pore-canal are present posteriorly and anteriorly (Plate 1, fig. 4).

Normal pores: Simple, few and scattered.

Central muscle-scars: A subvertical row of five, elongate scars located in the inflated part of the valves, the lowest is much smaller than the other four. Frontal scar not identified.

Size (in mm): L (with spine) = 0.55; L (without spine) = 0.48; H = 0.207.

Distribution — This species has never been taken alive. Only loose and rare valves have been found. Depth of findings: 200-300 m on muddy bottom (Text-Fig. 3).

CONCLUSION

Pseudocythere is represented in the Gulf of Naples by three species. The depth range and areal distribution of the thanatocoenosis of *P. caudata mediterranea* n. subsp. is not clearly defined. It occurs from 30 down to 700 m. *P. hastata* is represented by very few specimens and seems restricted to the depth range interval of 200-300 m. *P. armata* shows a depth distribution between 200 to 700 m and its areal distribution appears to be restricted to the major canyons entering the Gulf.

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