

DISTRIBUTION OF THE CRUSTACEANS AMPHIPODS IN THE EAST TYRRHENIAN LAGOONS

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SUMMARY - A list of the Crustaceans Amphipods of the East Tyrrhenian lagoons is given, with some remarks on their distribution and ecology. 26 species, belonging to 11 families, have been recorded on the basis of several researches carried out till now.

RESUME - 26 espèces de Crustacés Amphipodes, appartenantes à 11 familles, ont été recoltées dans les lagunes de la côte est-tyrrhénienne. On en donne ici la liste, avec quelques remarques sur la distribution et l'écologie.

On the basis of the researches carried out till now in the brackish lagoons of the East Tyrrhenian coast (Brunelli and Cannicci, 1944; Cognetti *et alii* 1978a, 1978b; Diviaco, 1979, 1981, 1982; Ferrero, 1956, 1961; Sacchi, 1964; Sommani, 1954) the presence of 26 species of Crustaceans Amphipods has been confirmed (Tab. I).

The 12 environments examined, placed from Grosseto to Naples (Fig.1) differ from one another in surface, depth, salinity, intensity of exchanges with the sea, but all present a marked eutrophication of the water, due to urban and agricultural wastes.

Corophium insidiosum, found in almost all the lagoons, is the most common and abundant species. Its high euryhalinity makes it able to live both in oligohaline waters, and in poly- and hyperhaline ones, but while in the former it seems to compete with *C. orientale*, more bound to little salted waters, in the latter it dominates clearly, thanks to the lack of equally resistant competitors.

After *C. insidiosum*, *Gammarus aequicauda* is the most represented species, characterized by a very high resistance. In fact it also lives from oligohaline to hyperhaline waters, even very eutrophic, and it is able to mate during the winter, when the temperature falls near 0° C. *Melita palmata* is another euryecious Gammarid, present in different salinity conditions, but its range of tolerance is narrower than that of *G. aequicauda*.

All the other species, except *Echinogammarus* sp., *Orchestia mediterranea* and *O. platensis*, can be divided in two groups.

Species with affinity for brackish environments of oligo-polyhaline type (*Corophium orientale*, *Leptocheirus pilosus*) and of poly-euhaline or harbour type (*Microdeutopus gryllotalpa*, *Corophium acherusicum*, *Erichthonius brasiliensis*, *E. difformis*, *Gammarus insensibilis*, *Hyale crassipes*) belong to the first group. *M. gryllotalpa* and *C. acherusicum*, considered indicators of lagoon tendency zones (Ledoyer, 1968) are the best represented species of the latter undergroup. *E. brasiliensis*, that is considered indicator of polluted and desalted waters, is perhaps bound to hypersedimentation (Bellan Santini, 1972; Ledoyer, 1968).

The second group, that is the largest and the most heterogeneous, is at the same time the least important because it consists of marine

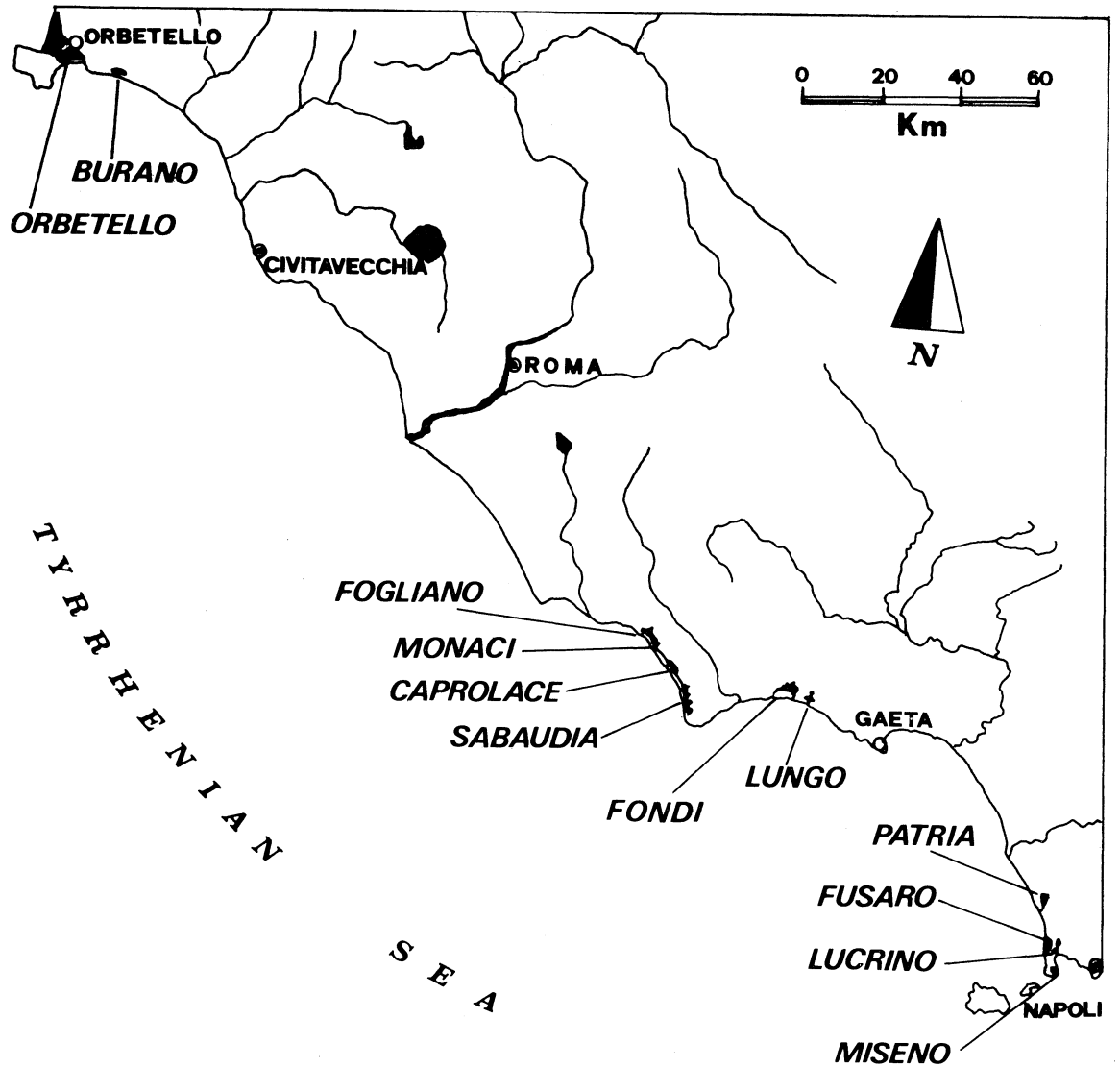


Fig. 1 - Position of the East Tyrrhenian lagoons.

species, found mostly sporadically, near the mouths. *Jassa falcata* is common in the Photophilous Algae biocoenosis and very common and abundant in harbours, even polluted, but it is not placed in the first group, because it does not live in too eutrophic and desalted waters. *Caprella equilibra* is another harbour species, but it does not penetrate in the inner parts of lagoons, thwarted by salinity variations or perhaps by the rarefaction of Hydroids, to which it seems bound. *Colomastix pusilla* and *Pseudoprotella phasma*, two coralligenous species, bound respectively to Sponges and Hydroids, have been collected only where hard substratum and those organisms were present. The other species of this group generally come from Photophilous Algae or *Posidonia* beds.

	ORBETELLO (P-H)	BURANO (M)	FOGLIANO (P)	MONACI (M-P)	CAPROLACE (E)	SABAUDIA (P)	FONDI (O)	LUNGO (M)	PATRIA (O-M)	FUSARO (E)	MISENO (E)	LUCRINO (E)
<i>Amphithoe ramondi</i> (Audouin)	0											
<i>Leptocheirus pilosus</i> Zaddach		0				0						
<i>Microdeutopus gryllotalpa</i> Costa	0									0		0
<i>Colomastix pusilla</i> Grube	0											
<i>Corophium acherusicum</i> Costa	0		0			0						0
<i>Corophium acutum</i> Chevreux	0											
<i>Corophium insidiosum</i> Crawford	0	0	0	0	0	0			0	0	0	0
<i>Corophium orientale</i> Schelleberg		0				0	0	0	0			
<i>Erichthonius brasiliensis</i> (Dana)	0											0
<i>Erichthonius difformis</i> M. Edw.	0									0		0
<i>Dexamine spinosa</i> (Montagu)	0											
<i>Echinogammarus</i> sp.							0					
<i>Elasmopus affinis</i> Della Valle										0		
<i>Gammarus aequicauda</i> (Martynov)	0	0	0			0		0	0	0		
<i>Gammarus insensibilis</i> Stock	0									0		
<i>Melita palmata</i> (Montagu)	0	0				0	0		0			0
<i>Ischyrocerus inexpectatus</i> Ruffo	0											
<i>Jassa falcata</i> (Montagu)	0											
<i>Perioculodes aequimanus</i> (Kossm.)	0											
<i>Pereionotus testudo</i> (Montagu)	0											
<i>Hyalè crassipes</i> (Heller)	0									0		
<i>Orchestia mediterranea</i> Costa	0			0		0				0		
<i>Orchestia platensis</i> Kröyer									0			
<i>Caprella acanthifera</i> Leach	0											
<i>Caprella equilibra</i> Say	0											
<i>Caprella</i> sp.											0	
<i>Pseudoprotella phasma</i> (Montagu)	0											0

Tab. I - Distribution of the Crustaceans Amphipods in the East Tyrrhenian lagoons (O=oligohaline, M=mesohaline, P=polyhaline, E=euhaline, H=hyperhaline).

Some females and young specimens of *Echinogammarus* have been found in oligohaline waters, while the two *Orchestia* species, never recorded together, are probably bound to the presence of organic detritus (Sachi, 1964).

The high number of species recorded in the Orbetello lagoons is probably due to its large extent, that permits the presence of several environment conditions, and to the quantity of samples, collected during three years, almost everywhere in these lagoons.

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