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### Poster session

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## Competition and predation between the river crab *Potamon fluviatile* and the crayfish *Austropotamobius pallipes*

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In decapods, intraspecific competition has been generally invoked as the main factor conditioning both the partitioning of fundamental resources (e. g., food, shelter, and sexual partners) and the spatial segregation of the examined populations. In contrast, only anecdotal information has been provided concerning the influence that interspecific competition might exert on the exploitation of common resources, as well as on the geographic distribution of the species.

*Potamon fluviatile* (Herbst) and *Austropotamobius pallipes* (Faxon) are widely diffused in Appennine streams. Previous field studies (Frogia, 1978; Hynes, 1970; Tarducci, 1987) showed that the two species do not share the same rivers; only *A. pallipes* is found on the north side of the Tuscan-Emilian Appennine, while both species are present on the south side, but never coexist in the same stream.

The two species have been studied in the laboratory, with the aim of understanding this sharp geographical segregation. Experiments showed that the larger the individual decapod is, the higher is the probability of winning a contest with a heterospecific. In both species, individuals of medium and small size used weak agonistic patterns (e. g., avoidance), and only large crayfishes showed a high aggressivity towards immature crabs. *P. fluviatile* had the stronger aggressive repertoire, usually preying upon *A. pallipes* of medium and small sizes.

Within the framework of the paleo-ecological studies of Pretzmann (1987), an ethological hypothesis was set forth which explains that *A. pallipes* is confined to less favourable habitats (where, e. g., temperature is at the limit of the physiological tolerance of the species) in order to avoid the strong predatory pressure exerted by the dominant freshwater crab.

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## Feeding specialization and activity in certain mangrove crabs

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Decapoda is surely one of the most important taxa, both regarding the number of species and individuals, in the macrofauna of the mangrove ecosystem (Macnae, 1968; Macintosh, 1988). For this reason, knowledge about their feeding habits and diet is of primary importance for understanding the energy flow typical of this ecosystem.

In Mida Creek and Gazi Bay (Kenya) we collected and then analysed the stomach contents of about 350 crabs belonging to the most common mangrove crab species (excluding the *Uca* species whose micro-algal feeding habits were already known): *Cardisoma carnifex*, *Epixanthus dentatus*, *Eurycarcinus natalensis*, *Metopograpsus oceanicus*, *M. thukubar*, *Sesarma elongatum*, *S. guttatum*, *S. leptosoma*, *S. meinerti*, *S. ormanni*, *Thalamita crenata*.

Species were divided into classes according to the animal/vegetable matter ratio of their stomach contents. The average stomach fullness proved to be correlated with the degree of vegetable content, being lower in the carnivorous species.

Stomach analysis showed that only a few species were strictly herbivorous (mostly feeding on leaf litter) or strictly carnivorous (ambush predators of molluscs or crabs). Instead, mangrove crabs seemed to be generally omnivorous, probably due to the low energy and protein content of the food commonly found and to the difficulties in catching suitable prey.

For *Thalamita crenata*, a predator inhabiting the intertidal platform in front of the mangroves, it was also possible to analyse the feeding activity in relation to the different conditions of tide and light. Its feeding activity was higher during the day than at night, and it also seems to feed during low tide, probably catching prey during ebb tides and consuming them when it hides in its shelter.

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