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# Fish and Seafood Anthropological and Nutritional Perspectives

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Palaeo-environmental data show that most or all fossil *Homo* remains derive from waterside milieus with large bodies of water and abundant edible molluscs. Durophagous mammals that feed on hard-shelled foods such as shellfish typically display thick enamel as well as well-developed dexterity and tool use – features that were prominent in fossil *Homo* species. Brain enlargment, seen throughout the evolution of *Homo*, requires polyunsaturated long-chain fatty acids, which are abundant in aquatic foods (DHA).

## Exploring the Role of Molluscs in Diet: Preliminary Results from the Shell Assemblage of the Prepalatial Trypiti, Southern Crete.

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Molluscs have played an important role for the Neolithic and Minoan populations of Crete, especially for the later eras when they provided the well known purple dye. However, the role of molluscs as food is poorly known and rarely is being included in the discussion of prehistoric Cretan cuisine. This paper presents the shell assemblage from a Prepalatial settlement at Trypiti, Southern Crete. The study of shells gave important evidence on the consumption of molluscs as food, as well as an array of related activities, such as food gathering and methods of preparation and consumption as food. At the same time, the spatial analysis of findings contributed significant information on the reconstruction of disposal practices. Finally, the initial role of Murex as a food source and its later transformation to raw material for dye manufacture is explored. The results from the shell assemblage of Trypiti are being compared with other Prepalatial settlements on Crete, and the role of mollusks in Early Bronze Age diet is investigated.

#### Bivalve Molluscs in the Diet and Medicine of Ancient Greeks

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Shellfish were high-status food in antiquity and their consumption was connected with the treatment or prevention of health problems. Nevertheless, terminology has always been a problem in understanding the diet of ancient people, and the classification of marine animals mentioned in the classical texts is still far from agreed. An attempt was made herein to identify the bivalve mollusc species mentioned in the classical texts of Greek antiquity on the basis of modern taxonomy. The study of the works by Aristotle, Hippocrates, Xenocrates, Galen, Dioscorides and Athenaeus showed that out of the 35 exploited marine invertebrates recorded in the texts, 20 were molluscs. Among them 11 bivalve names are included, the remaining being mainly cephalopods (squids, octopuses and cuttlefishes) and only a few gastropods (such as the purple dye gastropods). The most frequently appearing bivalves in the classical texts are the oysters (Ostrea edulis) and the scallops (Pecten

jacobaeus, Chlamys glabra). The mussel (Mytilus galloprovincialis), bearded mussel (Modiolus barbatus), pen shell (Pinna nobilis), razor shell (Solen marginatus, Ensis siliqua), Venus clam (Venus verrucosa, Chamelea gallina), brown Venus (Callista chione), lagoon cockle (Cerastoderma glaucum), tellin and donax (Tellina spp. and Donax spp.) have been also identified according to the descriptions and other clues given by the above authors. Three more species, the date shell (Lithophaga lithophaga), paddock (Pholas dactylus) and Noah's arc (Arca noae) were probably known under a common name. Obviously, the diet of ancient Greeks included the same bivalve species consumed nowadays in the Eastern Mediterranean littoral communities. The habitats of the exploited bivalves and consequently their fishing areas were well known and recorded in the classical texts. Information on the morphology and various aspects of the biology of certain edible species was given mostly in Aristotle's zoological works, while Xenocrates and Athenaeus presented instructions and recipes on how bivalves were cooked and served. Finally, Hippocrates and Galen gave detailed information on the dietary value of bivalve molluscs, their consumption for treatment or prevention of certain diseases, and their use for the production of drugs from their shell or flesh.

### The Value of Aquatic Resources in Antiquity: Cultural Continuity or Cultural Revolution?

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The value of aquatic resources and aquatic exploitation to human populations in the southern Levant is still a mystery since relatively little research has been done in this region. Here, for the first time, we review the evidences of aquatic exploitation in the southern Levant, since the late Epi-Paleolithic until the Pre Pottery Neolithic (ca. 23,000 BP - 8,200 BP). During this period this region experienced extreme changes in the subsistence economy from mobile hunter-gatherers to sedentary communities with domesticated animals. The value of aquatic resources and aquatic habitats during this revolutionary period has long been debated. The present study reviews the available archaeological data on aquatic exploitation (coastal and inland water) and develops a model based on species richness and composition to explain the observed patterns and variations. Analysis of more than 32,000 fish remains recovered from nine archaeological sites demonstrate the following patterns: 1. There is no doubt that the emergence of fishing communities observed since the Epi-Palaeolithic has developed from earlier fishing experience in inland habitats. Littoral freshwater fish were an optimal resource that heavily contributed to the economy of these populations. 2. Our knowledge regarding marine exploitation and coastal adaptation is biased not only as a result of the recovery methods applied, but also due to sea level changes, as observed from the recovery of the underwater site of Atlit-Yam. 3. Diverse littoral fish were among the food resources targeted by Mediterranean communities since the Natufian period, as observed from the diversity of fish and mobility to inland sites. The fish data is supported by information from the exploitation of mollusc shells primarily as raw material for personal ornaments. During these periods there is a broadening of technologies used in the production of shell beads. To conclude, the period of the onset of