Chapter 9
Ostracods and Benthic Foraminifers Distribution in the Subsurface Sediments of Gargour Coastal Fringe (Southeastern Tunisia)

Soumaya Ben Rouina
University of Sfax, Tunisia

Rimeh Zarai
University of Gabes, Tunisia

Jamel Touir
University of Sfax, Tunisia

ABSTRACT

A quantitative and qualitative distribution of the foraminiferal and ostracods obtained from a 80 cm length core implanted in Gargour coastal fringe (Southeastern of Tunisia), shows various species. The benthic foraminifera, are composed of two assemblages, (1) Coastal marine assemblage comprising Elphidium crispum, Elphidium advenum, Quinqueloculina bicostata, Quinqueloculina seminula, Adolisina sp., Sorites orbiculus, Peneroplis perstus. (2) Brackish estuarine influences assemblage containing Ammoniana tepida, Ammonia parkinsoniana and Trochamina inflata. The ostracods show three associations, (1) Marine assemblage containing Aurila woodwardii, Semicytherura striata and Loxoconcha rhomboidea. (2) Lagoonal

DOI: 10.4018/978-1-6684-7801-1.ch009

assemblage made up of Leptocythere fabaeformis and Xestoleberis aurantia. (3) Estuarine influences brackish assemblage comprising Cyprideis torosa, Loxoconcha elliptica and Loxoconcha turbida. Three major zones (I, II, and III) were identified based on dominance of ostracods and benthic foraminifera assemblages, coupled with sedimentary facies.

INTRODUCTION

Paleoecological studies using ostracods and benthic foraminifera are important for understanding and interpreting past environments conditions (Bergue et al., 2021, De Almeida et al., 2022). in the Mediterranean, quantitative analyses of modern microfauna and sedimentological parameters have been used for the paleoenvironmental reconstruction (Horton et al., 2007; Sarr et al., 2009; Carboni et al., 2010; Nachite et al., 2010; El Hmaidi et al., 2010; Di Bella and Casieri, 2011 ; Ben Rouina et al., 2016 ; Lamourou et al., 2017; Romano et al., 2023).

In Tunisia, some studies have been carried out, on ostracods and especially benthic foraminifera from Quaternary sediments extracted from marine, lagoons, lakes or estuaries. In El Melah lagoon (Northeast Tunisia), Ruiz et al., (2006), three main groups of ostracods maybe distinguished:

- Freshwater to slightly brackish assemblage: *Candona* spp., *Cypridopsis vidua, Cyprinotus salinus, Heterocypris salina* and *Ilyocypris gibba.*
- Strongly brackish assemblage: *Cyprideis torosa, Cytherois fischeri, Leptocythere castanea* and *Loxoconcha elliptica.*
- Marine assemblage: *Aurila convexa, Bairdia longivaginata, Cytheretta adriatica, Cytheridea neapolitana, Heterocytherideis albomaculata, Loxoconcha rubritincta, Pontocythere turbida, Semicytherura spp., Tenedocythere prava, Urocythereis margaritifera* and *Xestoleberis* spp.

In El Hisha lagoon (Southeast Tunisia), Ben Rouina et al., (2011) demonstrates the existence of three ostracod assemblages:

(1) Brackish assemblage: *Cyprideis torosa* and *Loxoconcha elliptica*.
(2) Lagoonal assemblage: *Xestoleberis aurantia* and *Leptocythere fabaeformis*.
(3) Marine assemblage: *Loxoconcha rhomboidea*, *Callistocythere descripiens*, *Aurila prasina*, *Aurila convexa, Urocythereis oblonga*, *Semicytherura incongruens*, *Hiltermanicythere rubra*, *Neocytherideis* and *Cushmanidea elongata*.