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**PRELIMINARY REPORT ON A NEW LOCALITY WITH NEOGENE
MOLLUSK FAUNA FROM STRYMONIKOS GULF (MACEDONIA, GREECE)**

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ABSTRACT

A new site with fossil mollusks was discovered, near the village of Nea Kerdylia, on the west side of Strymon's River estuaries (Macedonia, Greece). The determination of the first collected material yield new evidences, which allow us to characterize the fossiliferous sediments as shallow-marine to littoral and date them possibly to Pliocene.

INTRODUCTION

The Neogene fossiliferous deposits of the wider area of Strymonikos gulf basin are known since 1920 when OPPENHEIM (1920) described some fossil mollusks, collected by ERDMANNSDOERFFER (1925) from the area of the villages Akropotamos and Galypsos (Fig. 1). The years after several scientists worked in the neighbouring bassin of Serres (northern of Strymonikos gulf), and they described mollusk faunas (PAPP, 1948; SAKELLARIOU-MANE et al, 1968; GRAMANN et al, 1969; KARYSTINEOS et al., 1985/1986).

SAKELLARIOU-MANE (1966) studied the Neogene and Quaternary deposits of Strymonikos basin, and she distinguished three "systems" of sediments, in the area eastern of Strymon river:

- "Neogene system", dated to Astian by foraminiferes and ostracodes,
- "Lower Pleistocene system", dated to Calabrian by marine mollusks,
- "Holocene system".

A review of the previous opinions of various researchers and some new data about the wider area of Strymonikos basin are also given by STEFFENS et al. (1979).

A rich mollusk fauna is also known from the area of the village of Galypsos. The determination and the comparison of the collected material indicate an early Pliocene age (PSILOVIKOS et al, 1983).

The evaporitic sediments of Akropotamos area have been dated to late Miocene (Messinian) (GEORGIADES-DIKEOULIA et al., 1983; DERMITZAKIS et al., 1985/1986).

LOCALITY

The new fossiliferous site was found in summer 1991 during our investigations in the area of Strymonikos gulf basin. It is situated 3 km southwest to the village of Nea Kerdylia (Fig. 1) and it was named "Kerdylia - 1" (KER). The area reveals a hilly terrain with bushed vegetation, and suffers a gully erosion by numerous N to S trending torrents with stepped valleysides. The deposits of the area consist mainly of clastic and unconsolidated sediments with a general N to S inclination. Numerous minor faults, in conjunction with the vegetation, the formation of agricultural terraces and the rapid building-up of the area, obscure the stratigraphy creating an everchanging landscape.

The lithostratigraphy of the studied outcrop is given in Fig. 2 and the following beds are distinguished:

1. Soil
2. White-greywhite, unconsolidated, cross-bedded, fluvial sands with rounded pebbles.
3. Fossiliferous yellowish sands with thin intercalations consisted of sandstone, silt and gravels. The fossils occur mainly in the lower part of the bed forming small lens-shaped concentrations with various degree of cementation.

The characteristics of these sediments reveal a shallow marine to littoral clastic environment.

4. Grey-green, silty, finegrained sands consisted of well stratified thin alternations of more or less silty or sandy beds with slight color variations.

FAUNA-BIOSTRATIGRAPHY

The first collected material is badly preserved and thus it is difficult to have certain specific determinations. Nevertheless a first collected and determined fauna includes bivalves and gastropodes (Table I), as well as spines and test fragments of heart-shaped echinoids and fish otoliths.

The determination of the fauna is not complete but give us some indications about the age of the locality and the environmental conditions. All the genera and species (Table I) are of marine origin and characterize the shallow marine and littoral zone.

Taking in account the time distribution of the so far determined species (Table I), the following remarks can be made:

- Four (4) species have a wide time distribution through Neogene and Quaternary.

- Ten (10) species were lived during the Neogene only, and thus the KER fauna can be dated into the Neogene.

- The presence of *Hinia (Uzita) cf. interdentata*, that is considered as a Pliocene species, as well as *Callista (Callista) italica* which occurs with the Pliocene large size form, are the first indications of a possible Pliocene age of the KER fauna.

The faunistic composition of the KER locality is close to that from Nigrita described by SAKELLARIOU-MANE et al. (1968). Especially the species: *Cardium (Bucardium) hians*, *Acanthocardia echinata*, *Chamelea gallina*, *Circomphalus foliaceolamellosus*, *Callista (Callista) italica*, *Natica (Neverita) josephina*, and the genera: *Pinna*, *Pecten*, *Ostrea*, *Solen*, *Panopaea*, *Nassa*, are represented in both localities and their similarity indicates a similar age.

C. italica from Nigrita is considered similar to the Pliocene forms of Italy (SAKELLARIOU-MANE et al. 1968). The Kerdylia form of *C. italica* is very close to that from Nigrita and a Pliocene age is

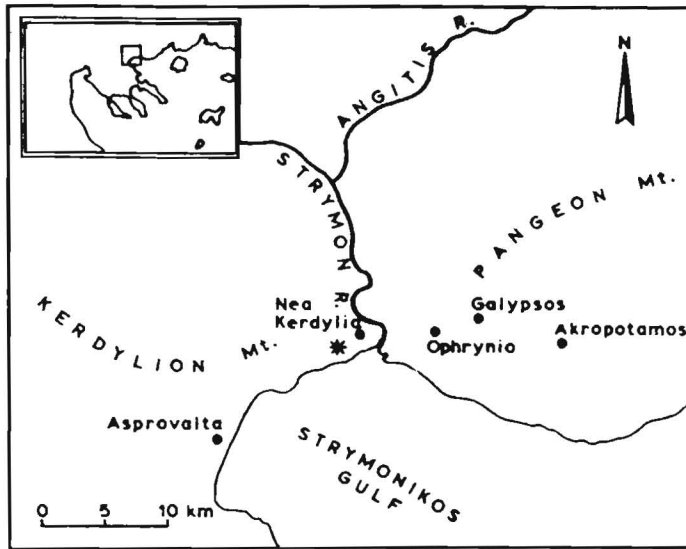


Fig. 1. Sketch map of Strymonikos gulf with the new site (*).

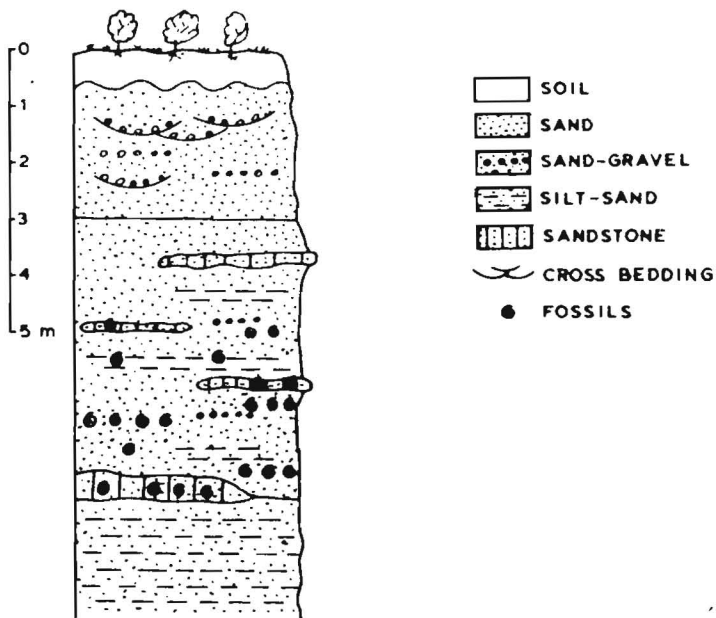


Fig. 2. Lithostratigraphic column of the "Kerdylia - 1" outcrop.

	MIocene	PLIOCENE	PLEISTOCENE	HOLOCENE
<u>Bivalvia</u>				
<i>Anadara (Anadara) diluvii</i> (LAMARK)	+	+	+	+
<i>Glycymeris</i> sp.				
<i>Pinna</i> sp.				
<i>Pecten</i> sp.				
<i>Ostrea</i> sp.				
<i>Divaricella</i> sp.				
<i>Loripes lacteus</i> LINNE	?	+	+	+
<i>Glans (Glans) intermedia</i> (BROCCHI)	+	+	?	
<i>Cardita</i> sp.				
<i>Cardium (Bucardium) hians</i> (BROCCHI)	+	+	?	
<i>Acanthocardia</i> cf. <i>echinata</i> (LINNE)	+	+	+	+
<i>Cardium</i> sp.				
<i>Chamelea gallina</i> (LINNE)	+	+	+	+
<i>Circomphalus foliaceolamellosus</i> (DILLWYN)	+	+		
<i>Callista (Callista) italica</i> (DEFRANCE)	+	+		
<i>Solen</i> sp.				
<i>Panopaea</i> sp.				
<i>Donax</i> sp.				
<i>Clavagella</i> sp.				
<i>Mesodesma (Donacilla) cornea</i> POLI				
<u>Gastropoda</u>				
<i>Trochus</i> sp.				
<i>Cerithium</i> sp.				
<i>Natica (Neverita) josephina</i> (RISSO)	+	+	+	+
<i>Hinia (Uzita) cf. interdentata</i> (BELLARDI)		+		
<i>Nassa (Nassa) cf. subventricosa</i> COSSM. et PEYR.	+	+		
<i>Nassa</i> sp.				
<i>Cyclope neritea</i> (LINNE)	?	+	+	+
<i>Cancellaria (Bivetiella) cancelata</i> (LINNE)	+	+	?	
<i>Cancellaria piscatoria</i> LINNE	+	+		
<i>Conus (Chelyconus) pyrula</i> BROCCHI	+	+		
<i>Subula (Subula) fuscata</i> (BROCCHI)	+	+		
<i>Strioterebrum (Strioterebrum) pliocenicum</i> (FONTANNES)	+	+		

TABLE I. Faunistic list and time distribution of the KER fauna.

possible for the locality of "Kerdylia - 1" (KER).

Moreover the Galypsos fauna reveals composition similarities with the Kerdylia one; the lithology of the fossiliferous deposits from both sites is also very similar. The Galypsos locality has been dated to Early Pliocene (PSILOVIKOS et al 1983) and thus a Pliocene age can be considered for "Kerdylia - 1" (KER). Nevertheless the age problem of KER is still remains. The continuing research, the collection of more material, as well as its description and comparison will provide us further data for a more precise dating of "Kerdylia-1" fauna.

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REFERENCES

- ERDMANNSDOERFFER, O. (1925). Pinar Dagh. Kriegsschaupl. 1914-18, 13 S. 85-89, 1Abb. Berlin.
- DERMITZAKIS, M. GEORGIADES-DIKEOULIA, E. VELITZELOS, E. (1985/86). Ecostratigraphic observations on the Messinian deposits of Akropotamos area (Kavala, N. Greece). Ann. Geol. pays Hell. XXXIII/I, 367-376, Athens.
- GEORGIADES-DIKEOULIA, E. VELITZELOS, E. (1983). Occurrence of Messinian sediments in the north Aegean region (Basin of Strymon, Akropotamos). Terra cognita, 3, 223-224, Strasbourg.
- GRAMANN, F. KOCKEL, F. (1969). Das Neogen im Strimonbecken (Griechisch-Ostmazedonien). Teil I. Lithologie, Stratigraphie und Palaeogeographie. Geol. Jb. 87 S. 445-484, 7 Abb. 4 Tab. 2 Taf. Hannover.
- KARYSTINEOS, N. GEORGIADES-DIKEOULIA, E. (1985/86). The marine transgression in the Serres basin. Ann. Geol. pays Hell. XXXIII/I, 221-232, Athens.
- OPPENHEIM, P. (1920). Uber Neogen am Golfe von Orfana im SO Mazedonien. Zbl. Miner. Geol. etc. S.9-14, 1Abb. Stuttgart.
- PAPP, A. (1948). Eine unterpliozane Fauna (Plaisancien) von Serres (Makedonien). N. Jahrb. Min. etc., Monatshefte, Jahrg. 1945-48. Abt. B, 75-77, Stuttgart.
- PSILOVIKOS, A. SYRIDES, G. (1983). Stratigraphy, sedimentation and palaeogeography of the Strymon basin, Eastern Macedonia/N. Aegean sea, Greece. Clausthaler Geol. Abh. No 44, p. 55-87.
- SAKELLARIOU-MANE, E. (1966). Contribution to the Geology of the Gulf of Orphanos area, E. Macedonia, Greece. Sci. Ann. Fac. Phys. Math. Thessaloniki Univ. 10, 1-48, Thessaloniki.
- SAKELLARIOU-MANE, E. SYMEONIDIS, N. (1968). Stratigraphic investigation in the Nigrita area. Ann. Geol. Pays Hell. V. 21, p. 21-29. Athens.
- STEFFENS, P. DE BRUIJN H. MEULENKAMP E. BENDA L. (1979). Field guide to the Neogene of Northern Greece (Thessaloniki area and Strimon basin) Publ. of the Dept. of Geol. Paleont. Univ. Athens, Series A. No 35, 14 p. Athens.