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SOME ADDITIONAL DATA ABOUT STRATIGRAPHY AND GEOLOGY OF SPITEN-MANATI AREA

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ABSTRACT

In the Spiten-Manati area, nearby the Lezha town (NW Albania, fig. 1) occur Mesozoic carbonatic and siliceous condensed deposits. In previous investigations was studied stratigraphy distinguishing several breaks in the sequence of stratas (fig.1B). Unconformable terrigenous deposits resting on Cretaceous limestones are considered to be until now Paleocene in age.

The last investigation clarified that the above deposits belong to Upper Paleocene and Lower-Middle Eocene (condensed section). It seems that the above area represents Spiten zone localized between Kruja and Krasta zones.

KEY WORDS : Condensed section, Paleogene, Stratigraphy, Paleontology, Geology.

1. INTRODUCTION

The Spiten - Manati area occurs nearby the Lezha town (fig.1A). In the area are distributed Mesozoic carbonatic and siliceous condensed deposits, as well as Paleogenic terrigenous deposits.

It is interested to present in this paper, some new views on paleogeography and tectonics.

Mesozoic deposits of the area are investigated by several scholars (e. g. Xhomo A., 1966; Dercourt J., 1968; Dodona E., 1973; Dodona E. and Farinacci A., 1987 etc.). Relying on the above investigations a detailed division of Mesozoic condensed deposits was made possible (fig.1B) defining several breaks in the sequence of the stratas.

Not far away, northeastwards from the Spiten (Molungu tributary) outcropes the Upper Triassic-Lower Jurassic platform limestones, but should be noted that, the rest of the section is represented by pelagic deposits.

Regarding the age of the uppermost part of the Cretaceous limestones it was considered to be different: Campanian, Maastrichtian, Late Campanian-Lowermost Maastrichtian stages etc., but not well argumented. Recently, relying findings on of the *Globotruncana (Globotruncanita) elevata (Brotzen)* in specimen nr.1 (fig.1) it was proved to be Campanian in age.

Reddish marls, resting with break in the sequence on the Campanian thin-layering limestones are considered to be mainly as of Paleocene age, but other scholars have different opinions. According to Xhomo A., 1966, they are Lower Paleocene, whilst after Dercourt J., 1968; Dodona E., 1973; Dodona E. and Farinacci A., 1987 they are considered to be of Upper Paleocene.

As will be proved in this paper, the age of the above reddish marls belongs not only to the Paleocene, but also to the Eocene.

The gray argillites with olistoliths, overlying reddish marls, are regarded to be as "Paleocene-Eocene flysch" of Krasta sub-zone, "Eocene flysch", or "Krasta flysch" (e.g. Xhomo A., 1966; Group of authors,

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1983, 1984; Dodona E. and Farinacci A., 1987). They are considered as normal succession on reddish marls, but in fact, they are not flysch and rest with unconformity on marls.

Following, will be given some stratigraphic data, about reddish marls and gray argillites with olistholiths.

2. SPITENI REDDISH MARLS

They outcrop at Spiten, Manati, Tresh, Molungu tributary and their surroundings. They rest with a break in sedimentation but, without any visible angular unconformity. They are represented by an intercalation of the reddish - brown, thinly layering marls and marly limestones. Their thickness at the outcrops is different, due to the unconformable sequence of the gray argillites with olistholiths. Locally reddish marls contain limestone olistholiths of various size and age (e.g. Triassic, Jurassic and even Turonian).

Relying in on fossil assemblage remainings as: *Morozovella velascoensis (Cush.), Planorotalites pseudomenardii* (Bolli), *Planorotalites ehrenbergi* (Bolli), *Planorotalites pusilla* (Bolli) etc. (table I), only the lower part ofreddish marls can be regarded as Upper Paleocene (fig. 2, specimen 2 to 6).

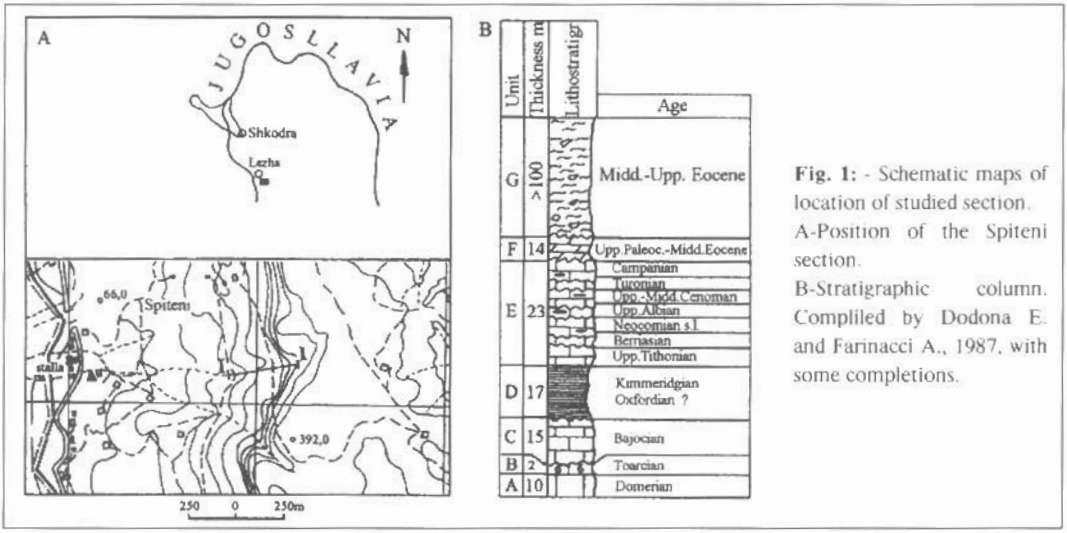
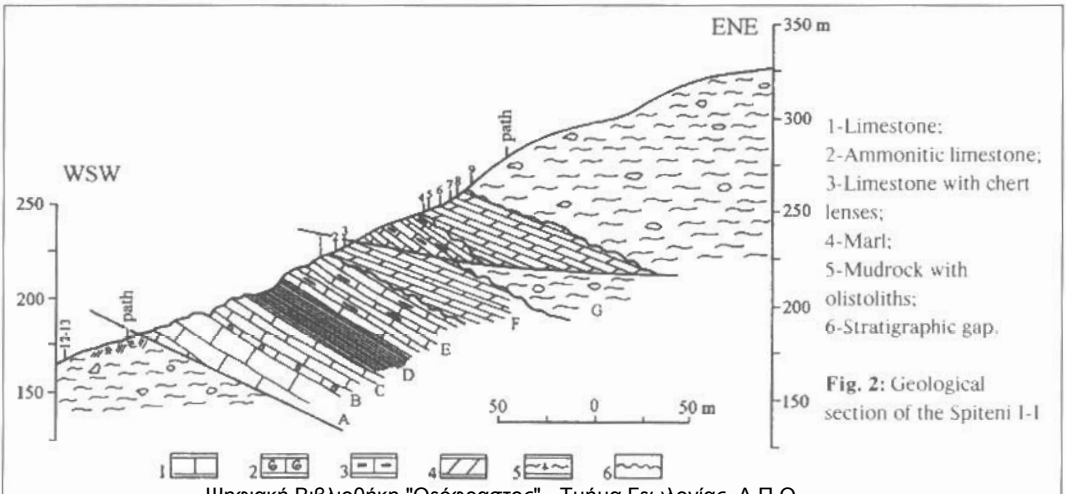


Fig. 1: - Schematic maps of location of studied section.
A-Position of the Spiteni section.
B-Stratigraphic column. Compliled by Dodona E. and Farinacci A., 1987, with some completions.



1-Limestone;
2-Ammonitic limestone;
3-Limestone with chert lenses;
4-Marl;
5-Mudrock with olistoliths;
6-Stratigraphic gap.

Fig. 2: Geological section of the Spiteni 1-1

Upwards in the section (fig.2, specimen 7) is found *Morozovella aff. aragonensis (Nuttall)* recognized also in the Lower-Middle Eocene and even further upwards (fig.2, specimen nr.8) are found also some exemplars of *Acarinina topilensis* (Cush.) indicating for Mid Eocene age (Tab.I, fig.8,9).

So, the Spiteni reddish marls, about 14 m thick, range in age from Upper Paleocene to Lower Eocene up to the Middle Eocene.

Already it was proved that Spiteni condensed section represents not only Jurassic and Cretaceous Systems, but also Upper Paleocene and Middle Eocene, inclusively.

Condensed hematite reddish marls of the Spiteni area are very distincted from the gray colour thick flysch deposition of the same age of the Krasta zone. As result, must be assumed that the reddish ironeous material must not have been brought from the East zones (e.g. Mirdita's ophiolite zone).

3. GRAY ARGILLITES OF PLANA AREA

They outcrop at Plana village (north of Miloti small town) extending to the Zejmen, Spiten, Tresh, Manati and their surroundings. They are represented by dark gray to green argillites, containing limestone olistholithes of various size and age (Upper Triassic limestones with *Megalodonts*, Jurassic olistholithes etc.). Infrequently, it was distincted layering ,represented by intercalations of the pale-blue, pale-grey argillites, pale-grey marl layers, grey-green sandstone layers and rarely biocalcarenitic limestone layers with the predominance of argillites with olistholiths. At the Spiteni section, grey argillites of the Plana, rest unconformably on reddish marls (fig.2). In their lowermost parts (thin section nr.9) are defined *Globigerinatheka sp.* (tab. I, fig. 10) and *Globigerina and Morozovella*. In a biocalcarenite limestone specimen are defined enormous *Nummulites spp., Assilina sp., Discocyclina spp., Alveolina sp. etc.* Above data indicate mainly a Mid Eocene age of the argillites. Nevertheless, it needs to be clarified in the future, but the age is assumed to be not younger than Eocene.

4. PALEOGRAPHIC SETTING OF THE PLANA-SPITEN-MANATI AREA

This area is located at the east of Kruja tectonic zone (analogues of the Gavrovos zone) and in the west of the Krasta tectonic zone (analogues of the Pindos zone), the first one, representing a ridge and the second one a trench. The Plana-Spiten-Manati area during Late Triassic-Early Jurassic it was an outer platform of the Kruja ridge, towards Krasta basin. As testimony for the above are fossils assemblages *as: Echinodermata, Ostracoda, Ammonites, Globochaete alpina, Involutina liassica, Lenticulina sp., Frondicularia sp., Textularidae etc.*(Dario S. at al.,1988; Fleury J.-J.,1980).

During Late Jurassic, Cretaceous up to the Mid Eocene the above area represented a transition zone from a slope towards the Krasta trench. As testimony for these are p*elagic bivalves, radiolarians, Saccocoma, planktonic foraminifera etc.* The above assemblage is continuous down to basin, but at this part basinal deposits are not present for following reasons:

1- The absence of the Aptian-Cenomanian flysch, generated at Krasta trench, but not at western slopes of the trench.

2- Paleocene-Eocene flysch of Krasta zone is with gray colour, whilst the Paleocene-Eocene marls of the Spiten-Manati area are reddish in colour, it seems due to the washing out of reddish ironous bauxites of the Kruja ridge towards the Krasta trench during the Paleocene-Mid Eocene times.

5. CONCLUSIONS

1- Reddish marls of the Spiteni area belong not only to the Upper Paleocene, accepted up to now, but also to the Lower Eocene and the Middle Eocene.

2- Condensed section of the Spiteni type, belongs to the Spiteni tectonic zone, located between the Kruja and Krasta zones.

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PLATE 1

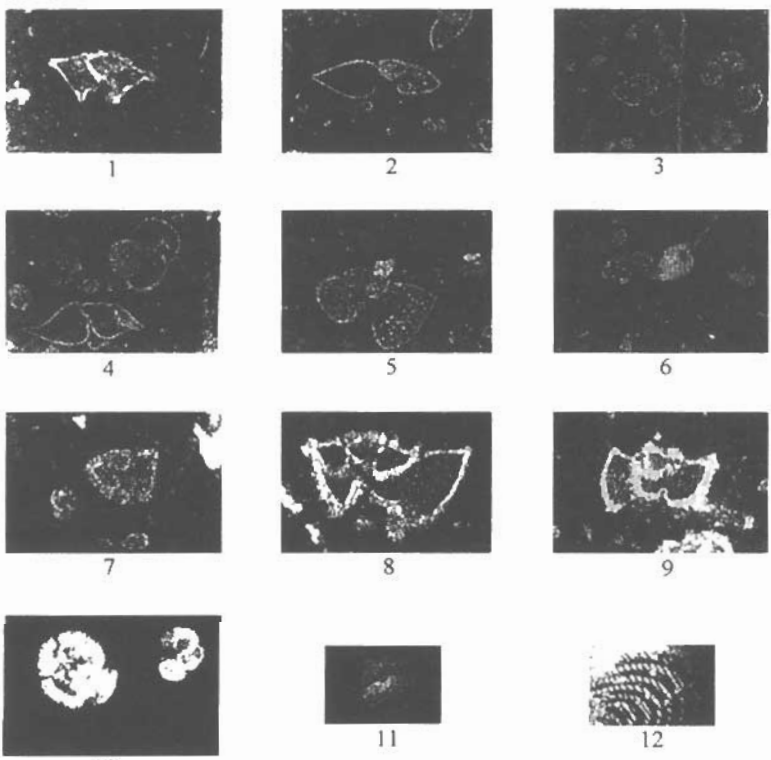

PLATE I

1. *Morozovella velascoensis (Cush).* Axial section, Spiteni section, specimen nr. 4, Upper Paleocene
2. *Planorotalites pseudomenardii (Bolli).* Axial section, Spiteni section, specimen nr. 4, Upper Paleocene
3. *Planorotalites pusilla (Bolli).* Axial section, Spiteni section specimen nr 3, Upper Paleocene
4. *Hantkenina sp., Globigerina triloculinoides Plummer.* Axial section, Spiteni section, specimen nr. 3, Upper Paleocene.
5. *Morozovella wilcoxensis (Cush. and Ponton).* Axial section, Spiteni section, specimen nr.5, Upper Paleocene.
6. *Planorotalites ehrenbergi (Bolli).* Axial section, Spiteni section, specimen nr.2, Upper Paleocene.
7. *Morozovella aff. aragonensis (Nuttall).* Axial-tangential section, Spiteni section, specimen nr. 7, Lower-Middle Eocene.
8. *Acarinina topilensis (Cush).* Axial section, Spiteni section, specimen nr. 8, Middle Eocene.
9. *Acarinina topilensis (Cush).* Axial section, Spiteni section, specimen nr. 8, Middle Eocene.
10. *Globigerinatheka sp.* Axial section, Spiteni section, specimen nr.9, Middle Eocene.
11. *Assilina sp.* Axial section, Spiteni section, specimen nr. 12, Middle Eocene.
12. *Alveolina sp.* (fragment). Spiteni section, specimen nr. 12, Middle Eocene

Magnified 50 x

11, 12 magnified 10 x