Geophysical Research Abstracts,
Vol. 10, EGU2008-A-07305, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-07305
EGU General Assembly 2008

Conflicting dating of the coastal Dinaric flysch, and implications: Eocene or Miocene? The case of north Dalmatia and Istria

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The age of flysch in foreland basins is of critical importance for deciphering the tectonic history and paleogeographic evolution of an orogen. For our study we selected Pag island (north Dalmatia), and Pazin Basin (Istria), which show Dinaric foreland basin flysch sediments. There are two reasons for this choice:

(1) There is a conflict in dating the flysch in both areas. While some authors suggested a Middle Eocene age (Krašeninnikov et al., 1968; Piccoli & Proto Decima, 1969; Benić, 1975), a recent study proposed an Early-Middle Miocene age (Mikes et al., 2007).

(2) As in both areas flysch sediments overlay Middle Eocene carbonates, the conflicting dating of the flysch means considerably different times of the foreland basin formation: Middle Eocene or Miocene. Thus, the difference implies considerably different views on the history of the Dinaric orogen.

We have found nannoplankton assemblages of the Lutetian, and Bartonian, while Miocene forms have not been identified. We also show planktonic foraminiferal associations indicating the same age. Implications of such dating comprise:

(1) Middle Eocene formation of the relevant foreland basins.

(2) Middle Eocene time of uplift and denudation of specific parts of the Dinaric orogen, which supplied the detritus to these foreland basins.

Further investigations are needed to explain the relationships between the Eocene flysch, and younger flysch deposits reported from Middle Dalmatia (Split area), and farther to south-east (de Capoa et al., 1995).

This work is a part of the project No. 119-1191155-1159 "Evolutionary changes of the Dinarides from Subduction to Modern Adriatic Beaches", which is funded by the Ministry of Science, Education and Sport of the Republic of Croatia.

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