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## **The age of the Badenian/Sarmatian Extinction Event – New insights on the chronology of the Middle Miocene Paratethys Realm**

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The Badenian/Sarmatian Extinction Event (BSEE) is considered to be the strongest faunal turnover in the history of Central Paratethys (Piller et al., 2007). It marks the loss of open marine ecosystems and their replacement with the Sarmatian restricted environments in which an endemic, Paratethys specific fauna develops and thrives.

Determining the age of the event is problematic due to frequent stratigraphic gaps at the BSEE level and as a result most of the current age models rely on correlations with global events. It is considered that the BSEE is caused by the restriction of the connections between Central Paratethys and the open ocean (Rögl, 1998). Correlations with various global events that could have reduced the connectivity are therefore used in dating the BSEE. This has led to age models for BSEE that vary between 12.7 and 13.32 Ma. However, the chronostratigraphic evidence for these correlations is scarce and prevents an in-depth understanding of the triggers and nature of the event.

Finding a correspondent of the BSEE in Eastern Paratethys is also problematic. The Kossovian substage (late Badenian) of the Central Paratethys is correlated with the Konkian stage (Popov, 2004) and the Sarmatian Stage is found in both realms. This would imply that BSEE could correspond to the Konkian/Sarmatian boundary but evidence on how the two boundaries correlate is scarce.

We have focused our study on key sections from a deeper basin of Central Paratethys, the Romanian Carpathian Foredeep and circum-Black Sea sections for correlations with Eastern Paratethys. Using an integrated stratigraphic approach that combines paleomagnetism techniques (magnetostratigraphy & rock-magnetism) and biostratigraphy (foraminiferans & nannoplankton studies) we have developed an age model that places the BSEE at 12.65 Ma. The continuous Badenian/Sarmatian sedimentary succession used for dating the event provides more information on the duration and the nature of the BSEE while the age allows a more precise correlation with the global events for an insight on the potential triggers of the Badenian/Sarmatian Extinction Event. The attempt to correlate the BSEE with an Eastern Paratethys event remains problematic and could hint to complex interactions between the two seas at the time when BSEE occurred.

### **References**

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