



Proposal for a new Central Paratethys pectinid bivalve zonation

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The study provides a work out proposal for a new Central Paratethys pectinid bivalve zonation defining 12 biozones within a time span between the Lower Oligocene "Solenovian" crisis and the Mid-Miocene Sarmatian restriction event. The period covers about 17 my. Pectinid bivalves restricted to the fully marine environments got extinct in the region following the latter event. Otherwise the "Solenovian" crisis signaled the early installation of the Paratethys as an independent realm positioned northwards and northeastwards from the Mediterranean Tethys region. Pectinid bivalve record of the Paratethys is forced mainly by the immigrations from the Tethys although with the Lower Miocene *Oopecten rotundatus* - *Oopecten gigas* lineage an example for the autochthonous evolution is represented as well. Except for three Taxon Range Zones (TRZ) all other zones are Interval Zones (IZ) defined between the first occurrences of name bearing taxons. Bounded to shallow marine environments and the basal parts of transgressive sequences, the zonal boundaries correlate roughly to Central Paratethys stage and substage boundaries. The calibration of Badenian Zones is underpinned by the type strata, regional benthic foraminifera zonation, planktonic foraminifera marker and the corresponding calcareous nannoplankton biozones.

The here proposed Central Paratethys pectinid bivalve biozones are as follows:

1. *Costellamussiopecten deletus* - *C. pasini* IZ, top of the "Solenovian event" - top of the Kiscelian.
2. *Costellamussiopecten pasini* - *O. rotundatus* IZ, Lower Egerian.
3. *Oopecten rotundatus* T.R.Z, Upper Egerian.
4. *Oopecten gigas* TRZ, Lower Eggenburgian.

5. *Flexopecten palmatus* - *F. hermannsseni* IZ, Upper Eggenburgian.
6. *Flabellipecten hermannsseni* - *Pecten fotensis* IZ, Ottnangian.
7. *Pecten fotensis* - *Pecten revolutus* IZ, Lower Karpatian.
8. *Pecten revolutus* - *Gigantopecten nodosiformis* IZ, Upper Karpatian.
9. *Gigantopecten nodosiformis* - *A. malvinae* IZ, lowermost Badenian ("Styrian Level", *Praeorbulina* Occurrence, NN4).
10. *Aequipecten malvinae* - *Aequipecten elegans* IZ, ("Grund Level", Lower Lagenidae Zone, *Praeorbulina-Orbulina* Cooccurrence, NN5).
11. *Aequipecten elegans* - *Delectopecten bittneri* IZ, (Upper Lagenidae Zone, *Orbulina* Occurrence, NN5).
12. *Delectopecten bittneri* TRZ, Upper Badenian (*Velapertina* Occurrence, NN6).