Paléoéanographie du Mésozoïque en réponse aux forçages de la paléogéographie et du paléoclimat

Mesozoic paleoceanography in response to paleogeographic & paleoclimatic forcings

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Université Pierre et Marie Curie
Bâtiment Esclangon, Amphithéâtre Astier
4 place Jussieu, Paris 5ème

Comité d'organisation :
Taniel Danelian (UPMC / CNRS FR 32)
François Baudin (UPMC / CNRS FR 32)
Helmut Weissert (ETH - Zürich)
Monique Troy (UPMC / CNRS FR 32)

CHANGES IN THE LATEST KIMMERIDGIAN-MIDDLE VOLGIAN MOLLUSCAN FAUNAS OF THE RUSSIAN PLATFORM AND SIBERIA VERSUS SEA LEVEL CHANGE, PALEOCLIMATE AND REGIONAL TECTONIC PATTERNS

ROGOV M.A.
Geological Institute of RAS (Moscow, Russia)

Development of the marine faunas and their composition depends from the some external cases. Major factors, restricted distribution of the modern molluscs, are food (especially for the recent Cephalopods), temperature, salinity, currents and existing of the geographical barriers. Ammonite assemblages of the studied ages and areas reveal few sharp shifts reflecting changes in the eustasy, palaeoclimate and regional tectonics. Biostratigraphy of the Lower Volgian recently have been reviewed by the author (Rogov 2002), but without special regards to the relatively change in the ammonite faunas and climate. Faunas of the latest Kimmeridgian - earliest Volgian (till *efimovi* hemera) of the Russian platform (RP) show a major role of the ammonites with Mediterranean affinities (mainly oppeliids) attaining a maximum in the *steraspis-solenoides* level (up to 80% of the whole assemblage). Close ammonite assemblages recently described from Poland by Kutek & Zeiss (1997). Perhaps a big amount of the Mediterranean ammonites on the RP may be connected with superimposed influences of the both Polish and Caucasian Basins. During the Sokolovi Chron and Pseudoscythica Subchron, conversely, Subboreal/Boreal ammonites were predominating. New mass migration of the Mediterranean ammonites (mainly aspidoceratids, up to 60% of the whole assemblage) marked in the *neoburgense* hemera. This event fixed in the RP on account of Tethyan transgression from Caucasus during sea-level highstand in the Semiforme Chron (mentioned in the Tethyan areas by Schweigert et al. 2002). Since the *puschi* hemera only solitary Miditerranean/Submediterranean ammonites penetrated into the RP. Ammonite assemblages of the Siberia (East Taimyr, Subpolar Ural) reveal strong Arctic influence: only Arctic ammonites occur in the Taimyr since *taimyrensis* Chron (latest Kimmeridgian) and in the Subpolar Ural - since *subcrasswn* Chron (lowermost Volgian).

Shifts in the ammonite assemblages reflected eustasy and palaeotemperature changes only until end of the Panderi Chron on the RP. Sea-level highstand as well as high temperature measured on the belemnite rostra in the Middle Volgian of the Siberia and RP (Sahagian et al. 1996) accompanied by the absence of the "heat-loving" ammonites. Although palaeotemperature determinations based upon belemnite guards from the silty sand horizons of Middle Volgian (RP) due to high Fe and Mn values indicative of diagenetic alteration, are not accurate (Ruffel et al. 2002), climate warming during the Middle and Late Volgian supported by the independent data. Palaeotemperature maximum in these levels fixed in the other north areas - in the North Sea (Abbink et al. 2001, spore-pollen data) and Greenland Norvegian Sea (Swientek 2002, isotopes of the belemnite rostra and bivalves) and in the RP confirm with distribution of clay minerals (Ruffell et al. 2002).

Only during the episodes of the existence of seaways ammonite assemblages reflected palaeotemperature changes and eustasy (including direction of the transgressions). Ammonite faunas, respectively, are a good tool for the determination of the tectonic events. Seaway connecting RP and Siberian basins via Ural perhaps vanished in the earliest Volgian; penetrations of the Sphinctoceras into the RP during the Sokolovi Chron already connected with Pechora strait. Ammonite exchanges between Caucasian and RP basins abruptly decreased in the beginning *of puschi* hemera and ceased close to end of Panderi Chron. Plausible reason of this event probably was extensive evaporate deposition during the Middle-Late Volgian in the Caspian region mentioned by Baraboshkin (1999).

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