PECULIARITIES OF CHANGES IN THE MOLLUSCAN ASSOCIATIONS IN SPACE AND TIME DURING THE KIMMERIDGIAN (LATE JURASSIC) OF THE HIGH LATITUDES OF NORTHERN HEMISPHERE

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Analysis of geographic distribution of Late Jurassic sea biota revealed significance drop of taxonomical diversity from Middle Russian to West Siberia and especially to Northern Siberia and North-East Russia. However detail study of dynamics of migrations of different genera showed situation mentioned above is simplified. It is possible to recognize trends showing regular but ambiguous patterns of ammonite distribution in space and time. It is demonstrating on the ammonite associations of the Kimmeridgian age. For these purposes we choose 16 localities from Greenland to Chukotka (fig.). During the Kimmeridgian northwards decreasing of taxonomic diversity and increasing of the significance of Arctic ammonoids are fixed. Influence of the Greenland-Norwegian Seaway on the Boreal faunas was very small. From the other hand, influence of the Middle Russian Sea on the Arctic basins was remarkable. First of all, this influence revealed on the ammonite faunas of Pechora basin and Subpolar Urals, where even records of the Tethyan aspidoceras are known. Perhaps, richness of ammonite communities of the Kimmeridgian of Bojarka could be also caused by the Middle Russian Sea effect. Extremely Arctic sites of Chukotka are very poor in ammonites, but Boreal Cardioceratids here also accompanied by the oceanic Phylloceratidae. Thus, ammonite distribution in the Arctic Kimmeridgian was influenced significantly by the adjacent sea basins, especially by the Middle Russian Sea which was directly connected with Tethys on the south. Peculiarities of distribution of different ammonite taxa as well as taxonomic diversity gradient shifts polewards not linear but depending on the nearby Subboreal Basins.

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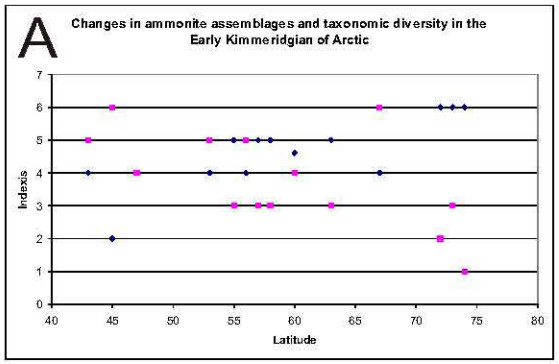

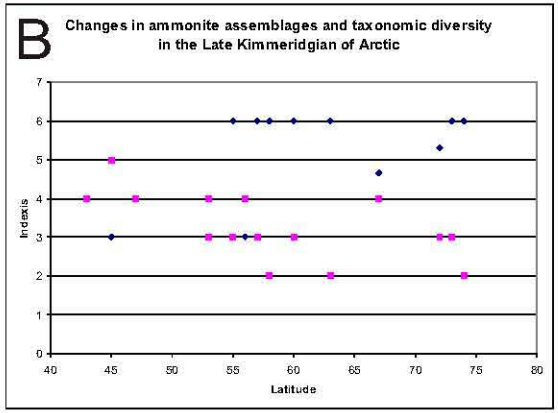

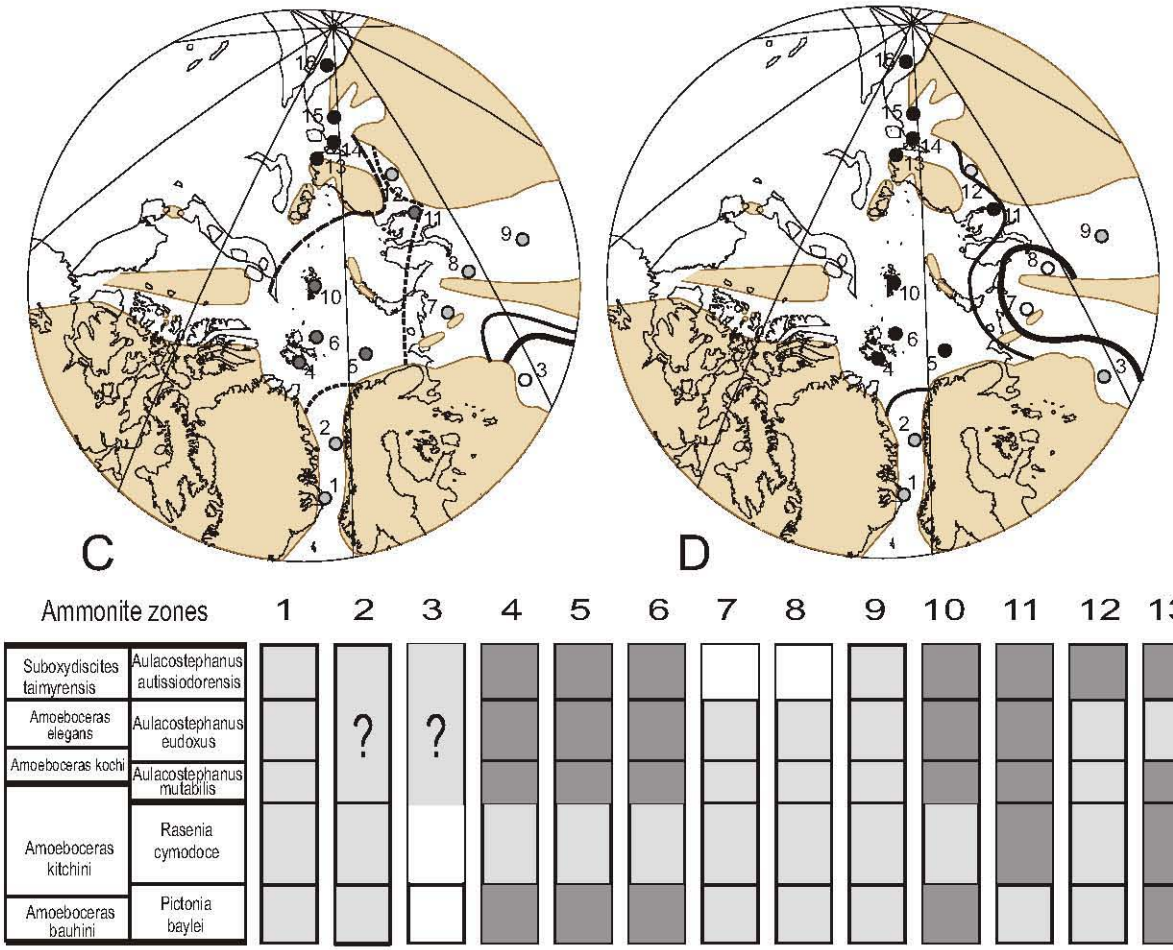

Captions:

A, B. Changes in ammonite assemblage (pink dots) and taxonimic diversity (blue dots) in the Arctic Kimmeridgian. Ammonite assemblages are changed from those with Submediterranean ammonites in each zone of Substage (index=2) to those with Subboreal ammonites (index=4) and to the Arctic (index=6) C-E 1. Milne Land; 2. Ando; 3. Unzha basin; 4. Spitsbergen; 5. Barents Sea shelf; 6. Kong Karl Land; 7. Pechora basin; 8. Subpolar Urals; 9. West Siberia; 10 Franz-Josef Land; 11. Enisei mouth; 12. Bojarka; 13. Tschernohrebetnaya; 14. Nordvik; 15. Lena;16. Chukotka. C-D. Peculiarities of the changes of ammonite communities of the two early (C) and two late (D) Kimmeridgian Chrons. Color of dots showing character of ammonite assemblages (from white with Mediterranean ammonoids to black with Arctic ones). Isolines showing clearly visible differences between ammonite distribution patterns of the Early and Late Kimmeridgian. E: zone-by-zone changes in ammonite assemblages; zones with Mediterranean ammonites marked by white, with Subboreal aulacostephanidae - by grey and those with Arctic ammonites only (with additional of Phylloceratids in the northernmost areas) - by black color.