2014 PROGRESS REPORT OF THE TASK GROUP TO ESTABLISH A GSSP CLOSE TO THE EXISTING BASHKIRIAN-MOSCOVIAN BOUNDARY

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Introduction

During the 2014 fiscal year, continued progress was made toward the selection of a marker species and suitable section for the GSSP at the base of the Moscovian Stage. One fusulinid species *Depratina prisca* (Deprat) and two conodont species *Declinognathodus donetzianus* Nemirovskaya, 1990 and *Diplognathodus ellesmerensis* Bender, 1980 appear to have substantial potential for definition of a boundary position close to the original base of the type Moscovian but the task group thinks the FAD of the conodont *D. ellesmerensis* has the best potential. *D. ellesmerensis* is easily recognized by conodont workers and has been recovered from China, Western and Eastern Europe (Moscow Basin and South Urals), boreal Canada, and South America. That makes it one of the most widely recovered conodont species in the Upper Carboniferous. In former years it was thought that *Diplognathodus coloradoensis* Murray & Chronic, 1965 was the immediate ancestor of *D. ellesmerensis*; however, additional work on ancestry of *D. ellesmerensis* is required. Several candidate sections for the GSSP are being studied but the Naqing section in southern Guizhou province of South China appears to have the best potential (Qi *et al*., 2010, 2013).

Moscow Basin

The recent suggestion (Goreva & Alekseev, 2012; Alekseev & Goreva, 2013) to shift the base of the Moscovian one substage higher - from the base of the Vereian regional Substage (lowermost Moscovian substage of stratotype in Moscow Basin) to the base of Kashirian regional Substage using the first appearance of the conodont *Neognathodus bothrops* Merrill, 1972 - received negligible support from the task group and will not receive further evaluation.

Guizhou Province, South China

Task-group members Qi Yuping, Tamara Nemyrovska, and Lance Lambert continued to study the Bashkirian/Moscovian interval in the deep-water (slope), limestone-dominated Naqing (Nashui) section in South China. All conodont genera known to have numerous species in the late Bashkirian to early Moscovian are recorded in the Naqing section and nearby sections. The conodont genera include *Declinognathodus, Diplognathodus, Gondolella, Idiognathodus, Idiognathoides, Mesogondolella, Neognathodus,* and *Neolochriea*. In the Naqing section, many species of these genera provide a succession of conodont chronomorphoclines throughout the Bashkirian/Moscovian boundary interval. They demonstrate that deposition was remarkably continuous through the turbidite-dominated Bashkirian-Moscovian boundary interval boundary interval, which is a major criterion for selecting a GSSP. More specimens of *Diplognathodus ellesmerensis* and its ancestral forms were found from both the Naqing section and the Luokun section in Guizhou during the last fiscal year. The lineage of *D. ellesmerensis* from its ancestral species is being intensively studied and its evolutionary first occurrence would provide an almost ideal GSSP to define the base of the global Moscovian Stage. Jitao Chen is conducting integrated research on sedimentology and stable-isotope geochemistry for the Bashkirian-Moscovian boundary interval in the Naqing section, with Isabel Montanez.

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