

2015 WORK PLANS OF THE TASK GROUP TO ESTABLISH THE MOSCOVIAN–KASIMOVIAN KASIMOVIAN–GZHELIAN BOUNDARIES

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MOSCOVIAN-KASIMOVIAN BOUNDARY

Introduction

Until the 2013 fiscal year, the task group had concluded the first appearance datums (FADs) of either *Idiognathodus sagittalis* Kozitskaya, 1978 or *Idiognathodus turbatus* Rosscoe & Barrick, 2009a had the best potential as a marker for the base of the Kasimovian (Villa & task group, 2008; Ueno & task group, 2011). Now, a slightly lower level defined by the first occurrence of *Idiognathodus heckeli* Rosscoe & Barrick, 2013, which is considered as the direct ancestor of *I. turbatus* is newly proposed as a more appropriate position of the potential base of the Kasimovian. The group will plan to prepare a proposal for using *I. heckeli* taxon for boundary definition and vote on it or at least discuss the proposal during their business meeting at the XVIII International Congress on the Carboniferous and Permian in Kazan, Russia in 2015. After such a proposal is made and voted on, additional taxonomic work and comparison of morphotypes from different regions can be continued. The task group plans to continue work on sections in south China and in Russia.

Activities in southern China

During the last several years, Qi Yuping and James Barrick intensively studied conodonts from the uppermost Moscovian to lower Gzhelian slope carbonates in the Naqing (Nashui) section, southern Guizhou Province (Qi *et al.*, 2007; Barrick *et al.*, 2010). A conodont evolutionary lineage of *Idiognathodus swadei* – *I. heckeli* – *I. turbatus* was established in the Moscovian–Kasimovian boundary interval of the Naqing section, southern Guizhou province (Qi *et al.*, 2013) and during future studies they will consider the FAD of *Idiognathodus heckeli* as the potential boundary marker. They will continue with intensive studies to provide more detailed information on the conodont succession across the Moscovian-Kasimovian boundary in the Naqing section and several other limestone-dominated, turbiditic sections in the region as a potential GSSP candidate sections. Work on the sequence stratigraphy, sedimentology, stable-isotope geochemistry, and geophysical characteristics of the Moscovian-Kasimovian boundary interval at Naqing is less advanced than the paleontological investigations and will be a focus of the team's field work in 2015 and future years.

To place the Naqing section into its sedimentological and paleoenvironmental context and determine the relationship of shallow-water coral, conodont and foraminiferal zones to the deeper-water conodont markers within the Moscovian-Kasimovian transition in south China, the investigation of reference sections including the Zhongdi (Ueno *et al.*, 2007), Luokun, and Narao sections will continue. Foraminifers are more abundant and better preserved than at Naqing and it is anticipated that a better correlation between conodonts and foraminifers can be achieved by the study of the other sections.

Activities in Moscow Basin, Russia

The task group will continue to study the conodonts *Idiognathodus turbatus* and *I. sagittalis* as possible markers for the base of the Kasimovian Stage in the Moscow Basin. They are going

to show the Afanasievo section (Goreva *et al.*, 2009) as the Kasimovian Neostatotype during a field trip for the XVIII ICCP in 2015. At this moment, they considered that the mid-Khamonvnikian Substage is the best potential level for the fixation of the base-Kasimovian boundary.

KASIMOVIAN-GZHELIAN BOUNDARY

Introduction

Since 2007, when the task group voted in favor of using the first appearance of the conodont *Idiognathodus simulator* (Ellison, 1941) in the lineage *Idiognathodus eudoraensis* - *I. simulator* as the boundary-defining event (Heckel *et al.*, 2008; Villa *et al.*, 2009), the search for a suitable section for the GSSP has been the task-group's main objective, and will continue to be so in 2015.

Activities in Russia

The Usolka section in the southern Ural Mountains of Russia had been proposed as a candidate section for the GSSP at the base of the Gzhelian (Chernykh *et al.*, 2006; Davydov *et al.*, 2008) but examination by members of the SCCS on a field trip to the locality in 2009 revealed the section required substantial new lithostratigraphic, sedimentologic and conodont-based biostratigraphic work before it could be considered as a candidate section. During 2013-2014, the section was extensively excavated to improve exposure and was resampled for conodonts. Gusel Sungatullina (Kazan University) has been reevaluating the conodonts from the newly-exposed Usolka section and will continue that work in 2015. Alexander Alekseev anticipates her results will permit the Usolka section to be considered as a GSSP candidate for the base of the Gzhelian.

Activities in China

Yuping Qi and colleagues will continue their intensive investigation across the proposed Kasimovian-Gzhelian boundary level in the Naqing and Narao sections in Guizhou Province, south China. At the Naqing and Narao sections in Guizhou Province, south China, Qi and his colleagues are going to continue with detailed studies in the coming years to better understand both the conodont and fusulinid evolutionary changes across the Kasimovian-Gzhelian boundary interval. Sedimentologic and stable-isotope geochemical investigations are being done by Chen Jitao and Isabel Montanez.

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