

2015 WORK PLANS FOR THE JOINT DEVONIAN-CARBONIFEROUS BOUNDARY GSSP REAPPRAISAL TASK GROUP

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General activities

The primary tasks for the Devonian-Carboniferous (D-C) boundary task group are to locate a suitable event marker to define the boundary and then find a suitable section for the GSSP. To help achieve these goals, work in 2015 will focus on the compilation of detailed data sets for the best boundary sections throughout the world. Data to be integrated will be derived from the evaluation of lithology and facies, distribution of fauna and flora, and geochemical and geophysical data. Markus Aretz, the task-group chairman, plans to have the task group evaluate the results of the compilations at Devonian/Carboniferous boundary workshops held at two important conferences in 2015: 1) the August XVIII International Congress on the Carboniferous and Permian in Kazan, Russia, and 2) the 2nd International Congress on Stratigraphy (STRATI 2015) in Graz, Austria during July 2015. Results of the workshops will provide future direction for the task group.

Considerable progress on re-evaluating all of the conodonts within the D-C boundary interval including the current D-C boundary marker, the FAD of the conodont *Siphonodella sulcata* (Huddle, 1934), has been made in recent years (Corradini *et al.*, 2013). Additional study of the conodonts is required, however, and the task group plans to complete that work shortly. Several task-group members have also been studying the taxonomic and phylogenetic problems within the protognathodid conodont lineages. Four species of *Protognathodus* are known from the relevant time span: *Protognathodus meischneri*, *P. collinsoni*, *P. kockeli* and *P. kuehni*. Markus Aretz has asked the conodont specialists to evaluate the utility of using the conodonts for boundary definition by studying them in the best of their D-C boundary sections.

At recent meetings, it has been proposed that the task group consider using some component of the multiphase Hangenberg Event Interval (Kaiser *et al.*, 2008) for boundary definition. Markus Aretz asked members to prepare for the D-C boundary workshop in Erfoud Morocco (March 22nd to 29th, 2013; see circular in v 29 of Newsletter on Carboniferous Stratigraphy), by developing precise correlation charts for the best D-C boundary sections in their regions of study showing the biostratigraphic, geochemical and depositional events within the Hangenberg Event interval. Markus Aretz is requesting the work on the data sets be completed for the 2015 workshops that will be held at the August XIVIII ICCP in Kazan, Russia and the July (STRATI 2015) in Graz, Austria.

Several of the ongoing D-C boundary projects that are planned for next four to five years are outlined below. 1) Yuriy Gatovsky and Lyudmila Kononova (Moscow State University) plan to complete a monograph on the conodont biostratigraphy of D-C boundary interval in the Ural Mountains of Russia. 2) Chinese colleagues along with the SCCS executive and task-group leaders initiated a re-assessment of the best D-C boundary sections in China by visiting the Dapoushang section (Ji *et al.*, 1989) in southern Guizhou Province. 3) Task-group member Jiri Kalvoda & colleagues from the Czech Republic are conducting a multidiscipline project to study

the D-C boundary interval in Western and Central Europe including the La Serre section. The project's principal goal is the correlation of evolutionary changes in foraminifer and conodont faunas in the D-C boundary interval with a high-resolution stratigraphic framework arising from multidiscipline stratigraphic-paleoenvironmental analysis. Anticipated benefits of the project are a better understanding of the *S. praesulcata* - *S. sulcata* lineage and whether or not it is suitable for definition of the D-C Boundary GSSP. Other conodont lineages relevant to the boundary (protognathodids lineages) will also be evaluated. The resulting high-resolution stratigraphy will be used to test the isochroneity of the events within the Hangenberg Event Interval. 4) In western Canada, Barry Richards and several colleagues (include Mark Schmitz and Vladimir Davydov at Boise State, Idaho; Jeffrey Over at SUNY-Geneseo, New York; Tim Hartel, Calgary) intend to continue ongoing studies of the latest Famennian to early Tournaisian Exshaw Formation (see Richards *et al.*, 2002) and its correlatives to see if the main events in the multi-phase Hangenberg Event Interval can be more precisely located in the formation by using an approach that includes radiometric dating and stable carbon isotope ($\delta^{13}\text{C}$) stratigraphy. 5) Carlo Corradini has several ongoing projects related to the D-C boundary study in various part of northern Gondwana. 6) Thomas Becker (Münster) and his research group plan to continue their investigation of the D-C boundary transition in Morocco, particularly in the southeastern Anti-Atlas Mountains.

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