

MINUTES OF THE ANNUAL SDS BUSINESS MEETING

June 29, 2017, Valencia, Spain

Attendance: The Chairman (J. MARSHALL), Vice-Chairman (C.E. BRETT); Secretary (L. SLAVÍK)

TMs: T. BECKER (Newsletter Editor), C. CORRADINI (webmaster), D.J. OVER, J.I. VALENZUELA-RÍOS, N. IZOKH,

CMs: P. CARLS, Y. GATOVSKY, C. GIRARD, S. GOUWY, S. HARTENFELS, J.-C. LIAO, K. NARKIEWICZ, M. NARKIEWICZ, L. PONCIANO, W. QIE

GUESTS: J.-F. LU, A. HUŠKOVÁ, T. KUMPAN, F. LÜDDECKE, P. NAVAS-PAREJO, S. RADZEVICIUS, C. RANDON, A. SPIRIDONOV, S. STICHLING, G. VOLDMAN, Y. WANG

Total attendance: 29 people

The meeting began at 3:15 pm in the Sala d'actes.

1. Introductions and apologies for absence

SDS Chair JOHN MARSHALL called the main meeting to order. He started with the introduction of himself as the SDS Chair, Vice-Chair CARLTON E. BRETT, Secretary LADISLAV SLAVÍK, Newsletter Editor THOMAS BECKER and SDS Web Master CARLO CORRADINI.

Apologies were received from:

TMs: X. MA, U. JANSEN

CMs: G. BAIRD, A. BARTHOLOMEW, R. BROCKE, P. BUDIL, J. EBERT, J. FRÝDA, J. GARCÍA-ALCALDE, J. HLADIL, W.T. KIRCHGASSER, H. MATYJA, M. MERGL, A. NAZIK, M. DI PASQUO, D. PLAX, E. SCHINDLER, C. SPALLETTA, C. VER STRAETEN, T. UYENO, S. VODRÁŽKOVÁ, J. ZAMBITO

2. Approval of 2016 Minutes

JM asked if there were comments on the minutes of last year's SDS meeting in Ghent. There were none and then the Minutes of 2016 meeting were approved; they had already been edited. In addition, JM acknowledged a brief report from Vice Chair C. BRETT (CB) and Secretary L. SLAVÍK (LS) on the 35th IGC in South Africa; no other members attended but two new CMs were recruited.

3. Chair's Business: JM reported, with regret, the loss of former SDS members:

ART BOUCOT, Oregon State University, U.S.A.

ELGA MARK-KURIK, Tallinn University of Technology, Estonia

ALEXANDER YAZIKOV, A.A. Trofimuk Institute of Petroleum Geology and Geophysics, SB RAS, Novosibirsk, Russia

SDS observed a moment of silence for the passing of these esteemed colleagues.

Note of appreciation: JM expressed his sincere thanks to THJIS VANDENBROUCKE for running an excellent Final IGCP 591 meeting in Ghent, Belgium, July, 2016 and to NACHO VALENZUELA-RÍOS, THERESA LIAO and to all organizers for the present 4th ICOS Symposium.

ICS Matters: DAVID HARPER has taken over as head of ICS at the Cape Town, 35th IGC with new Vice Chair: BRIAN T. HUBER and Secretary-General: PHILIP GIBBARD. Former Chair STAN FINNEY has assumed responsibility as Secretary General of the IUGS.

There has been a call, mainly led by Cenozoic workers to consider a new formal rank: Subseries. Both, the proposal and the opposing statement have been published in *Episodes*, vol. 40, (Head et al. 2017: *A case for formalizing subseries (subepochs) of the Cenozoic Era*; Pearson et al. 2017: *Sub-series and sub-epochs are informal units and should continue to be omitted from the International Chronostratigraphic Chart*). JM suggested that this was primarily an issue with the large series in the Cenozoic; unless the Devonian Subcommittee was to elevate stages to series rank to make them more comparable to the extremely short Silurian series.

5. Revision of the Pragian-Emsian boundary

5.1. Uzbekistan fieldwork progress report

A final report on the status of the Pragian-Emsian boundary working group was presented on powerpoint slides by the SECRETARY (LS). Samples from the 2015 sampling at Kitab Reserve, Zinzilban have now been studied independently in the labs of himself, TM NADYA IZOKH and TM NACHO VALENZUELA-RÍOS. Most samples have now been processed; the results are not promising.

As a review, LS noted the basic statements that have been approved in the SDS meeting in Kitab State reserve, Uzbekistan in 2008:

1. The present boundary placed at the entry of *P. kitabicus* is too low relative to the traditional Pragian of the Prague Synform and far away from the traditional base of the Emsian.
2. To search for the new boundary for the base of the Emsian that would be located in the same stratotype area – in the Zinzilban Gorge.
3. To keep the *kitabicus* boundary as an important stratigraphic marker with potential for future subdivision of the Pragian. The new sampling between the levels No. 39 and No. 41 was launched following up the SDS meeting in the Kitab State Reserve in 2008. The results of the sampling were published in the SDS Newsletter No. 26 in March 2011: only few polygnathids were obtained.

In 2015, almost the same team re-examined the section and re-sampled an interval higher in the section between the levels 42 and 43. In total 24 conodonts samples have been split into three parts and shipped to Novosibirsk, Prague and Valencia.

Almost all samples have been processed and picked. There were lots of spathognathodontid conodonts with a good preservation. Unfortunately, again all of us found only a few polygnathid elements, so arrived at practically the same results as in 2008. Polygnathids were found in six samples only, these polygnathid taxa are essentially the same as from the previous sampling campaign (2008): *P. excavatus*, *P. pannonicus*, i.e. still too old. Other taxa (also the same as from 2008 sampling) cannot be used for redefinition: *Criteriognathus miae* (abundant - even complete apparatuses, high variability); *Pandorinellina exigua exigua*, *Pand.*

exigua philippi and some coniform elements. Thus, the repeated conodont sampling failed to provide new data to help move on with definition of a new boundary. A new campaign in near future is unlikely. Now the questions arising: What to do next? Where to go from here? We can suggest eventually formalizing a substage boundary (Zinzilbanian) in the Kitab Reserve but should we try to stay in Zinzilban for redefined stage boundary?

5.2. Discussion on possible solutions

CM PETER CARLS: raised discussion on numbering of samples; different schemes had been used at different times (sample numbers vs. lateral measurements). It has been clarified by TM NACHO VALENZUELA and TM NADYA IZOKH who explained the new system of numbering: Previously, there was confusion over an older series of numbers from 1978; in 1987 section was re-measured and different system is used from now on.

TM THOMAS BECKER (TB) and CM PETER CARLS then discussed details on conodonts on a plate that had been shown by TM NADYA IZOKH: specimens at 140 m look like very young forms. The 134 m form is approaching *P. inversus*; but basal cavity is strange.

JM asked: Is it the implication that you are at the wrong level?

TM Nacho Valenzuela: Problem is that there is not enough material.

TB: According to our experience up to level above Atopus event in Morocco with *P. excavatus*, *I. bilatericrescens* and *C. steinhornensis*, there are many polygnathids, but none show signs of inversion at posterior end; specimens as advanced as those shown in the plate should be much younger.

JM: Noted that we always valued having a section in Zinzilban but we want to get this resolved and have worked on this for 10 years. Is this the "World's best section" for conodont zonation? He asked conodont workers to suggest if there are better sections. What about the section in the Prague Synform?

LS: The sections in the Prague Synform are relatively rich in biostratigraphic data, but conodonts at the critical level are scarce; this applies mostly polygnathids. Lot of work should still be done to fill up the sections with desired conodont data.

JM: Should we move to other sites?

CM PETER CARLS: A section in Aragon (Spain) has good succession of spiriferid brachiopods to tie with the traditional Emsian; although there are also good conodonts. However, there is a 100 m section of sandstones below and we don't know where those conodonts begin.

JM: What needs to happen now is to pick a meeting when people working on the Pragian-Emsian issues would come together and give a series of talks and discuss criteria for defining the boundary and various potential stratotype sections.

JM: We have to balance keeping a section and helping the people there with the need to establish a workable GSSP. ICS wants GSSP's with multi-proxies. If we took the present data on Zinzilban, the ICS (which includes Mesozoic and Cenozoic workers) would reject it. At the very least they would want a full lineage; they would not accept a single conodont - based boundary occurrence. As a strong suggestion; let's come back to this topic with a session at next year's meeting.

TB: Just to note NACHO VALENZUELA has shown us a steep section without vegetation in the Pyrenees that could provide a workable GSSP.

JM: Regardless we need to show progress on the GSSP redefinition.

TM NACHO VALENZUELA supports taking a year to re-think this and come back with a session focused on the Pragian-Emsian boundary problem.

JM: We can't make any decision now. Let's make an effort to organize a special discussion session next year.

TM NADYA IZOKH: Noted that there was geochemistry done at Zinzilban to provide multi-proxy data. She showed a new data slide with geochemical data indicating a marked excursion near the putative new boundary interval.

LS explained that oxygen isotopes from conodonts in the PS and in other peri-gondwanan sections indicate a slow rise from the base of the Pragian. However, this cannot be correlated in Zinzilban where the data are from whole-rock samples. We should also have oxygen isotopes from the conodont apatite from the Zinzilban section; then the correlation might be clear.

6. Information about progress in Devonian-Carboniferous Boundary redefinition

In September 21-22, 2016 a special meeting was held in Montpellier, France, organized by Marcus Aretz. Participants visited the present D-C GSSP at La Serre, Montagne Noire and decided (as expected) that it was inadequate. They made a list of possible boundary sections, discussed their merits and problems and also whether various levels could actually be found at particular sections. It was accepted that the ICS are strict about the criteria used to define GSSPs. Can these be met? The majority voted for the base of *Protognathodus kockeli* Zone and three other criteria; they then voted on particular potential levels for the boundary. But there is still not a full agreement. A goal in the next two months is to get out a paper in a special volume of P-2, hopefully early in 2018. A pdf will also be placed on the SDS website. TB: It was nice to see the GSSP section but he was against the vote because he felt there was agreement with CM MARCUS ARETZ and CM SANDRA KAISER that a better position would be at the base of the Hangenberg Shale. This would form a so-called natural boundary following the suggestion of O.H. WALLISER. With *P. kockeli* it will be difficult to find a section with a complete lineage. He proposed to clearly define *kockeli* now before proceeding with this. TM CARLO CORADINI: He had discussed this with CM SANDRA KAISER; if a more satisfactory biostratigraphic level could be found he was still open to it.

7. Devonian Substages

JM: Moving on from the D-C boundary he noted that substages were still on hold. STAN FINNEY had tabled that there should be no further discussion of substages until all needed redefinitions and other issues (e.g., Pragian-Emsian and D-C boundary) are resolved. He had hoped that under the new leadership of DAVID HARPER the ban on substage work until all stages are completely defined might be lifted. But this is not clear. So for now these discussions are still on hold.

8. SDS Membership

SDS welcomed the following new CMs:

Dr. JINZHUANG XUE, PKU, China, specialist on Devonian fossil plants, proposed by Xueping Ma and Hongfei Hou, seconded by LS.

Dr. PU ZONG, Institute of Geology, Chinese Academy of Geological Sciences, specialist on Devonian brachiopods and ammonoids, proposed by Xueping Ma and Hongfei Hou, seconded by LS.

Dr. CAMERON PENN-CLARKE, a Devonian sequence stratigrapher/biostratigrapher from South Africa, proposed by CB and LS, seconded by JM.

Dr. ROBERT GESS, of Rhodes University, Grahamstown, South Africa, a Devonian, vertebrate specialist who recently completed a dissertation on the Bokkeveld Group. Proposed by CB and seconded by LS.

MSC. ANETA HUŠKOVÁ, Charles University Prague, Czech Republic, conodont worker.

Proposed by LS, seconded by JM

DR. IAN TROTH, palynologist and stratigrapher working in South America, proposed by JM, seconded by CB.

DR. TOMÁŠ KUMPAN, Masaryk University, Brno, Czech Republic, D-C boundary worker, sedimentologist and biostratigrapher. Proposed by LS, seconded by JM.

Titular members (TMs) are selected/approved every 4 years. They should show a high activity.

9. SDS Devonian Publications

Papers from the 2015 Brussels Meeting on Devonian events edited by PETER KOENIGSHOF, BERNARD MOTTEQUIN and LADISLAV SLAVÍK is now nearly completed and will soon be published by Senckenberg's P-2 (*Palaeobiodiversity and Palaeoenvironments*) as a two volume series.

TM NACHO VALENZUELA will make a proposal to CM PETER KOENIGSHOF tomorrow for a volume of papers related to the Valencia ICOS symposium. For those wishing to publish a paper in this volume the deadline will be next summer (2018).

TB: Noted that a volume of papers by Russian scientists once proposed at Novosibirsk meeting (in 2011) appears to be a dead issue. He and PETER KOENIGSHOF had agreed to be editors, but few manuscripts were ever received. Therefore it will not happen. However, Chinese colleagues are working on another volume. Contributions were meant to be due next month, but now postponed to October.

The German field guide (2015 Brussels IGCP post-meeting fieldtrip) a 250-page book is now out and includes more comprehensive data than in the original field guide; at a modest price 22 Euros it is a bargain.

SDS Newsletter: TB wants all contributions in by the end of August and wants to do editing quickly. This should also include a report on the definition of the base of the Emsian. Any documents that you wish to get out quickly can be put in the newsletter. TMs and CMs were reminded that should all make contributions.

JM: GTS 2012 is now up for revision. The plan is to put out a new timescale volume by 2020. We have been asked for a new contribution; maximum of four authors (JM, TB, LS and CM ANNE-CHRISTINE DASILVA will include a new section on astrochronology). It will be an ICS publication.

10. Future Meetings

2018

International Palaeontological Congress (IPC): July 9-13, 2018; Paris, France.

2019

3rd STRATI Milano, Italy. Dates have not been announced yet, near the beginning of July?

TM JEFF OVER and colleagues proposed to organize an SDS meeting in late July-early August 2019 with pre-meeting trips in the Lower-Middle Devonian of the Hudson Valley and eastern New York (3 days), 3-4 day meeting in Geneseo (note that there are two new hotels), a mid-meeting field trip in the Genesee Valley near Geneseo and 3-4 day post-meeting field trips in western New York near Lake Erie. He hoped that the meeting would also include a workshop on Cyclostratigraphy and Astrochronology run by CM ANNE-CHRISTINE DASILVA, University of Liege.

TM CARLO CORRADINI noted that two meetings closely spaced in one year might pose a problem to some members.

2020

36th IGC in New Delhi, India, but it is likely that only few members will attend. JM asked if there were another potential meetings.

CB: Suggested that given that there are two potentially conflicting meetings in summer 2019 and no satisfactory meeting in 2020 it might be best to postpone the New York SDS meeting until 2020. He asked TM JEFF OVER to consider that possibility and Jeff agreed to consider this and come up with the final plan by next year.

11. Financial Report

SDS received \$1500 this year for the SDS Newsletter and to support attendance by SDS officers.

12. Any Other business

CM PETER CARLS noted that the duration of the Early Devonian is now estimated at 26.5 m.y. Well more than half of that time is in the Emsian. This seems overly long. CM KARSTEN WEDDIGE tried to apportion time to the lower and upper Emsian based upon relative thickness in Zinzilban. He concluded that the upper Emsian must be very long. But Peter Carls is skeptical of this as are some others; he would prefer a roughly equal subdivision of these intervals but that did not happen. He would suggest that the upper Emsian should be something like 4-5 m.y. and lower about 3 m.y. He suggests going back to an approach similar to that once attempted by former SDS TM IVO CHLUPÁČ, simply counting the number of cycles to determine duration.

JM and CB noted that this is precisely what CM ANNE CHRISTINE DASILVA is attempting, in a rigorous way, using magnetic susceptibility records and other proxies of climatic fluctuation and astrochronology. This will become an important focus in the future. LS mentioned that study of the Zlichovian part of the Emsian in the Prague Synform is now in progress in the same way.

Meeting adjourned at 4:45 PM so attendees could prepare for the ICOS banquet.