Meeting minutes of the INTERNATIONAL SUBCOMMISSION ON CRETACEOUS STRATIGRAPHY (ISCS)

at the 3rd International Congress on Stratigraphy – **STRATI 2019**
Milano, **July 4th, 2019 – 17:30 – 19:00** Room 111

ATTENDEES

The meeting was attended by 48 people.

- Officers: Petrizzo (Chair), Wagreich (Vice-Chair), Falzoni (Secretary)
- Voting members: Carvalho, Galbrun, Huber, Jarvis, Walaszczyk, Watkins, Wilmsen.
- WG Chairs: Gale (Campanian WG), Mutterlose (Hauterivian WG), Walaszczyk (Coniacian WG), Weissert and Erba (Aptian WG).
- Members of the working groups: Amodio, Batenburg, Bornemann, Coccioni, Frau, Gambacorta, Gardin, Gaona, Grabowski, Ifrim, Lima, Maron, Martinez, Michalik, Niebuhr, Premoli Silva, Rehakova, Van Buchem.
- Stratigraphers interested in the Subcommission activities: Alves, Fekete, Giraldo Gomez, Kopaevich, Leonardi, Miniati, Proshina, Rios-Netto, Salazar, Schlagintweit, Sinnesael, Turner, Visentin, Wierzbicki, Wulff.

INTRODUCTION

Maria Rose Petrizzo opened the meeting and welcomed the attendees.

Communication from the chair:

1) **Accessibility of the Santonian GSSP at Olazagutia (Navarra, N. Spain).**

   The stratotype section is located in the Cantera de Margas quarry that belongs to the Cementos Portland Valderribas and is accessible by scientists only upon request to the owner. Therefore, scientists that are willing to visit and sample the GSSP section have to plan their visit in advance and obtain the permission to access the stratotype section through submission of an application form to the Cementos Portland Valderribas.

   The application form can be downloaded on the Cretaceous Subcommission website at http://cretaceous.stratigraphy.org/ and must be sent to Ana Hernández Artigas (ana.hernandez@gcpv.com), reference person of the Cementos Portland Valderribas.

2) **Publication of the papers** presented in the session ST3.8 **Cretaceous integrated stratigraphy, greenhouse climate change and events** at STRATI 2019. Corresponding authors that are willing to contribute to the *Virtual Special Issue of Cretaceous Research* are invited to send an email to mrose.petrizzo@unimi.it by July 12, 2019.

SHORT SUMMARY OF THE WORKING GROUP ACTIVITIES PRESENTED BY THE WORKING GROUP CHAIRS

Campanian WG by A. Gale

The Bottaccione section (Italy) will be proposed as candidate stratotype section. The WG visited the section in May 2018 to develop the working strategy. The section was sampled for magneto-bio-chemostratigraphy in September 2018.

The WG agreed on proposing the base of the magnetochron 33r as primary criterion for the base of the Campanian. Secondary criteria include planktonic foraminifera and calcareous nannofossil events. Carbon isotope excursions will be used to better constrain the S/C boundary and to trace high resolution correlations with boreal sections. Auxiliary sections, possibly containing the macrofossils record, include Seaford Head (UK), Postalm (Austria), Waxahachie Dam Spillway (Texas), and sections in the Western Interior Basin.

Results of the ongoing studies on the Bottaccione section will be ready by October 2019. The GSSP proposal, including the auxiliary sections, will be likely discussed and voted within the WG by the end of 2019.

Coniacian WG by I. Walaszczyk

The Salzgitter Salder (Germany) will be proposed as candidate stratotype section. The section was re-studied for planktonic and benthic foraminifera and dinoflagellate cysts.

Primary criterion is the lowest occurrence of the inoceramid *Cremnoceramus deformis erectus*. Secondary criteria include a minimum in the d13C values (Navigation event) useful for correlation among sections. Possible auxiliary sections include El Rosario (NE Mexico), Strelec Quarry railroad cut (Bohemia, Czech Republic), Hot Spring section (Big Bend National Park, SW Texas), sections in the Cauvery Basin (SE India).

The GSSP proposal, including the auxiliary sections, is in preparation and will be discussed and voted within the WG by the end of 2019.

Aptian WG by H. Weissert

The WG is evaluating the best primary criterion to place the base of the Aptian Stage. Presently, the discussion is focused on selecting physical markers (e.g., base of magnetozone M0 according to Erba et al. 1996 or the negative carbon isotope excursion below the major positive excursion at the onset of OAE1a) or biologic markers (e.g., ammonite, planktonic and benthic foraminifera, calcareous nannofossils).

The WG is considering as possible candidate stratotype sections Gorgo a Cerbara and Cismon (Italy), and La Bedoule (France).

The proposal, including the auxiliary sections, is planned to be discussed and voted within the WG by the end of 2020.

Barremian WG by M.R. Petrizzo (on behalf of P. Rawson and M. Company)

The Rio Argos section (Caravaca, SE Spain) will be proposed as candidate stratotype section for the Barremian Stage. Biostratigraphic analyses (foraminifera and calcareous nannofossils), stable isotope stratigraphy and cyclostratigraphic analyses are concluded.

The primary criterion is the lowest occurrence of the ammonite *Taveraidiscus hugii*. Secondary criteria are ammonite, calcareous nannofossil and foraminiferal events. Auxiliary sections are identified in the Subbetic zone, the Arroyo Gilico section near Caravaca and other two sections nearby Rio Argos. In addition, correlation between Rio Argos and the Gorgo a Cerbara and Fiume Bosso sections (central Italy) can be performed by using ammonite and isotope stratigraphy within the upper part of magnetochron M5n.

The WG is currently revising and updating some ammonite determinations of the Rio Argos section. The GSSP proposal, including the auxiliary sections, is planned to be discussed and voted within the WG during 2020.

Hauterivian WG by J. Mutterlose

The GSSP proposal for the base of the Hauterivian Stage was submitted to the Cretaceous Subcommission in April 2019. Voting members commented and returned the proposal to the WG. At the moment the WG is revising the proposal following the comments received.

Candidate stratotype section is La Charce (SE France) and the primary criterion is the lowest occurrence of the ammonite genus *Acanthodiscus*. Secondary criteria are additional ammonite and calcareous nannofossil events. Changes in the $^{86}Sr/^{87}Sr$ values were identified to be useful for correlation among sections.

The proposal will be re-submitted to the Cretaceous Subcommission and then voted by the voting members in the next few weeks.

Valanginian WG by M.R. Petrizzo (on behalf of M. Company and S. Reboulet)

Possible GSSP candidates for the base of the Valanginian are the Cañada Luenga section (SE Spain) and the Vergol section (SE France).

The proposed primary criterion for the base of the Valanginian is the lowest occurrence of *Calpionellites darderi*, which correlates with the lowermost part of magnetochron M14. Integrated analysis of ammonites, calpionellids and calcareous nannofossils correlated with magnetostratigraphic and chemostratigraphic data are available for the Cañada Luenga section. Calpionellid, ammonite, calcareous nannofossil biostratigraphy and cyclostratigraphy are available for the Vergol section; unfortunately, no magnetostratigraphic analysis is possible.

Because studies on both sections are still in progress, the selection of the candidate stratotype section will be discussed and voted within the WG by 2021.

Berriasian WG by J. Michalik (on behalf of W. Wimbledon)

In June 2016, the Berriasian WG voted, by a 75% majority, to adopt the *Crassicollaria*/*Calpionella* turnover and the base of the Alpina Subzone as the primary marker for the base of the Berriasian Stage.

After detailed documentation of more than 60 localities and selection of those having a well-developed Alpina Subzone and complete M19r, M19n, and M18r magnetochrons, together with supporting nannofossil and ammonite datums, the Fiume Bosso section (Italy) and the Le Chouet, Font de St Bertrand, Haute Beaume, Charens, and Tre Maroua sections (Vocontian basin) resulted to be the best candidates for the GSSP. In May 2019, the WG voted the candidate stratotype section and Tre Maroua section (Haute Alpes, SE France) was selected with a majority of 73% of the votes cast.

The GSSP proposal will be submitted to the Cretaceous Subcommission by October 2019.

PROPOSAL OF A FIELD TRIP TO BRAZIL BY I. CARVALHO

Ismar de Souza Carvalho, voting member of the Cretaceous Subcommission, proposed a five days field trip to be held in August 2020 to the Araripe Basin located in Northeastern Brazil. The Araripe Basin is particularly important because allows new perspectives on the South Atlantic history of connections with the Tethyan Sea. There are also many aspects concerning the changes in the terrestrial ecosystems from the Late Jurassic to the Aptian as the area includes the most important fossiliferous carbonate deposits of South America.

The proposal is intended to check the interest of the scientific community in attending the field trip. Details on the costs and logistics will be disseminated in autumn 2019.

The meeting closed at 19.05.