

SUBCOMMISSION ON NEOGENE STRATIGRAPHY

ANNUAL REPORT 2014

1. TITLE OF CONSTITUENT BODY and NAME OF REPORTER

Subcommission on Neogene Stratigraphy (SNS)

Isabella Raffi, Chairman SNS (from August 1, 2012)

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2. OVERALL OBJECTIVES, AND FIT WITHIN IUGS SCIENCE POLICY

The SNS is the primary body responsible for providing optimum clarity and stability in the Neogene Chronostratigraphic Scale by selecting and defining Global Stratotype Sections and Points (GSSPs) for Series and Stages.

3. CHIEF ACCOMPLISHMENTS AND PRODUCTS IN 2014

Burdigalian and Langhian GSSPs working group

Frits Hilgen is the new chair of the working group for the remaining GSSPs, base-Langhian and base-Burdigalian. Most of the members of this working group have been designated, also some corresponding members will be involved in the discussion dedicated to the final selection of the GSSP section, and the WG will be completed within December 2014.

Update of the studies for defining the Langhian GSSP

Studies are in progress to complete the stratigraphic information on the two potentially suitable sections for defining the Langhian GSSP selected in the Mediterranean, namely the downward extension of the La Vedova beach section (Northern Italy) and St. Peter's Pool (Malta Island). The research in progress focuses on the stable isotope stratigraphy, and cyclostratigraphy and astronomical tuning of these sections. A meeting of the newly established working group is scheduled during the STRATI 2015 Congress in Graz. Discussion on the problematic Burdigalian GSSP will be a major task to face for the WG (see below).

2010

Preparation of several papers on the two candidate sections for defining the Langhian GSSP for publication in a special volume of *Stratigraphy*, on the historical stratotype of the Langhian, and on the taxonomic concept of *Praeorbulina*.

2011

Publication of papers about potential Langhian GSSP sections in a special volume of *Stratigraphy*. Preparation of the Neogene chapter (ATNTS2012) of the GTS2012 (Hilgen et al., 2012, in press).

2012

Publication of the Neogene chapter ATNTS2012 in GTS2012 (Hilgen et al., 2012). Publication of a new Neogene calcareous nannofossil zonation (Backman et al., 2012).

2013

Presentation of a new Paleogene calcareous nannofossil zonation at the STRATI 2013 Congress in Lisbon (by I. Raffi et al.).

2014

Talk at the Congress of Italian Geological Society (SGI-SIMP) in Milan (September 2014) about: "The Italian contribution to the definition of the ICS timescale: ongoing research" (by I. Raffi and coauthors M. Balini and S. Monechi).

8. OBJECTIVES AND WORK PLAN FOR NEXT 2 YEARS (2015-2016)

A workshop will be organized to discuss on the selection of boundary criteria and sections for defining the 2 remaining stage boundaries in the Miocene, namely the base-Langhian and the base-Burdigalian. A decision will be taken for the Langhian GSSP taking into consideration the two selected sections of La Vedova and St. Peter's Pool. Crucial questions to be addressed during the workshop are: 1) which section is most suitable to be proposed as Langhian GSSP, 2) which prime guiding criterion should be selected. As regards the thorny issue of the Burdigalian GSSP, critical questions are: 1) should we abandon the ambition of having the Burdigalian GSSP directly tied within an astrochronologic framework in order to have the GSSP defined in a Mediterranean land-based section, or should we define this GSSP in drilled ODP sequences at Ceara Rise or any other tuned sequence drilled by (I)ODP, or 2) should the Burdigalian as Stage denotation be disused because no suitable onland stratigraphic sections are available.

Writing of proposals for the Langhian GSSP, and writing on discussion about Burdigalian GSSP in 2015.

9. ORGANIZATION AND SUBCOMMISSION MEMBERSHIP

The SNS is a subcommission of the ICS, founded in 1971. Reference is made to the annual report of 1995 for a brief historical resume of the SNS. The subcommission has four regional committees

(Mediterranean, Pacific, Atlantic and Nordic) and keeps close contacts with the Russian Neogene Commission chaired by Prof. Yuri B. Gladenkov. Apart from the executive bureau, the SNS has 22 voting members and 24 corresponding members (*see Appendix for full list of officers and voting and corresponding members*). The SNS has presently one active working group for defining the GSSP remaining for the Langhian and Burdigalian chaired by Frits Hilgen, with 11 active members (listed below - section 9a). Composition of this WG will be completed within December 2014.

The SNS web site (www.sns.unipr.it) has been renewed and published in December 2013.

Support for the SNS comes from the Chairman's Institution in Italy (Università degli Studi "G. d'Annunzio di Chieti-Pescara). The Secretary's Institution in Parma (Università degli Studi di Parma) hosts the SNS web-site.

9a. CURRENT OFFICIERS, VOTING AND CORRESPONDING MEMBERS

Subcommission officers (from August 1, 2012)

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9c. INTERFACES WITH OTHER INTERNATIONAL PROJECTS

There is a close link with (I)ODP because of its important role in the development of integrated time scales for the Neogene, in testing the global correlation potential of bio-events, and in a better understanding of climate and ocean history during this time span.

There is even a link with the activity of the EARTHTIME-EU Research Networking Programme (RNP), that is part of a broader international initiative "EARTHTIME: a community-based scientific effort aimed at sequencing Earth history through an integrated geochronologic and stratigraphic approach".

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