

## **SUBCOMMISSION ON NEOGENE STRATIGRAPHY - ANNUAL REPORT 2001**

### **1. TITLE OF CONSTITUENT BODY**

Subcommission on Neogene Stratigraphy (SNS)

### **2. OVERALL OBJECTIVES**

To the present day the prime objective of the subcommission was to provide optimum clarity and stability in the Neogene Chronostratigraphic Scale by carefully selecting and defining Global Stratotype Sections and Points (GSSPs) for Series and Stages. Since the merging with the INQUA Subcommission on Quaternary Stratigraphy (SQS), the SNS is also responsible for Pleistocene chronostratigraphy.

### **3. ORGANISATION**

The SNS is a subcommission of the International Commission on Stratigraphy, founded in 1971. Reference is made to the annual report of 1995 for a brief historical resume of the Subcommission. The subcommission has four regional committees (Mediterranean, Pacific, Atlantic and Nordic). Since August 21, 2001 the subcommission has been merged with the SQS but the organisation of this new subcommission has not been defined yet. The SNS proposed the ICS bureau to disband the SQS and to transfer their task to the present SNS. The bureau further proposed to maintain the name SNS for the new subcommission pending a decision to give up the antiquated Quaternary name and to use the Neogene for Miocene, Pliocene, Pleistocene, and Holocene. The present SNS executive consists of Willem Jan Zachariasse (Chairman, Utrecht University, The Netherlands), Davide Castradori (Vice-Chairman, ENI/Agip, San Donato M., Italy) and Frits Hilgen (Secretary, Utrecht University, The Netherlands). The SNS has presently 3 working groups: 1) WG on Miocene chronology chaired by Nick Shackleton, 2) WG for defining GSSP sections for the Tortonian and Serravallian chaired by Frits Hilgen, and 3) WG for defining GSSP sections for the Langhian and Burdigalian chaired by Isabella Raffi.

### **4. EXTENT OF NATIONAL/REGIONAL/GLOBAL SUPPORT FROM SOURCES OTHER THAN IUGS**

Financial support comes from IUGS (via ICS). The 2001 budget suffice to keep the bureau going, to set up the SNS web site, and to allow some travelling, but is too limited to completely cover the expenses related to surveying, measuring, and sampling candidate GSSP sections. These field campaigns are costly and usually funded at the university level.

### **5. INTERFACE WITH OTHER INTERNATIONAL PROJECTS**

There are close links with ODP and the IGCP. Especially, ODP has played an important role in the development of integrated time scales for the Neogene, in testing the global correlation potential of bioevents, and in a better understanding of climate and ocean history during this time span.

### **6. CHIEF ACCOMPLISHMENTS IN 2001**

Two new working groups have been established in 2001. The mandate of the first one is to select GSSP sections for the base of the Tortonian and Serravallian Stages and is chaired by Frits Hilgen. In a first circular sent to all members of this WG the critical boundary interval is defined and suitable candidate sections are presented. All candidate sections are cyclically bedded enabling astronomical tuning but lack a good magnetic signal. Discussion on guiding criterion and selection of the most suitable sections will take place via email. The second WG chaired by Isabella Raffi will focus on the selection of GSSP sections for the base of the Langhian and Burdigalian Stages. The task of this WG is certainly more difficult compared to the other WG because much less preliminary work has been done. The bureau further decided - after consultation with Nick Shackleton (chairman of the working group on Miocene Chronology - to keep this WG dormant until time is ripe to prepare a synthesis on Miocene chronology. The bureau

further submitted a proposal for 2 excursions in Sicily and the Marche during the 2004 Florence Geological Congress. For those interested in Neogene chronology these excursions will offer a unique opportunity to visit several of the sections which have been instrumental in the construction of the late Neogene astronomical time scale. Finally, the SNS web site is almost ready and will be officially in the air in November (www.geo.uu.nl/SNS). The site provides a platform for SNS information and discussion and replaces the good old hardcopy Newsletter.

## 7. PROBLEMS ENCOUNTERED IN 2001

A problem not yet solved is the organisation of the new subcommission after the merging of the SQS with the SNS. Simply merging would result in an unworkable organisation consisting of 40 voting members and 2 chairmen. The SNS bureau has proposed to the ICS to 1) disband the SQS and to transfer their task to the SNS and 2) to set up a new WG on Pleistocene chronostratigraphy which include - among other members to be appointed by the SNS - a maximum of 5 voting members from the present SQS (and to be appointed by the SQS). This WG will act under the umbrella of the SNS.

## 8. CHIEF PRODUCTS IN 2001

No GSSP proposals have been prepared or submitted.

## 9. SUMMARY OF EXPENDITURES IN 2001 (UNTIL MARCH 2002):

Carry-over from 2000	\$ 0
IUGS Contribution 2001	\$ 4000

The contribution was divided as follows:

SNS Chair/secretary (Utrecht)	\$ 3500
RCPNS	\$ 250
RCMNS	\$ 250
TOTAL	\$ 4000

The budget for the bureau:

INCOME	
From ICS-IUGS	\$ 3500
TOTAL	\$ 3500

### EXPENDITURES

Business meeting with Nick Shackleton (Utrecht, March 2001)	\$ 80
Setting up SNS web site	\$ 1600
Measuring and sampling potential Serravallian GSSP section on Malta/Gozo	\$ 750
Planned business meetings for WG Langhian - Burdigalian GSSPs and future WG on Pleistocene chronostratigraphy	\$ 1070 (reservation)
TOTAL	\$ 3500

## **10. WORK PLAN AND MILESTONES TO BE ACHIEVED FOR NEXT YEAR PLUS ANTICIPATED RESULTS:**

Potential Tortonian GSSP sections have been measured, sampled, and tuned. Detailed calcareous plankton biostratigraphies are available. The lack of magnetostratigraphy might be overcome by importing (tuned) magnetostratigraphies from elsewhere. The bureau expects that the WG chaired by Frits Hilgen will be able 1) to prepare a proposal for the Tortonian GSSP and 2) to reach a decision on the Serravallian GSSP section and guiding criterion in 2002. The WG chaired by Isabella Raffi is expected to have reached substantial progress in the discussion on guiding criteria for Langhian and Burdigalian boundaries and potential GSSP sections in 2002. The bureau further expects that soon approval of its proposal to the ICS on the new organisation of the SNS will allow the formation of a new WG on Pleistocene chronostratigraphy in 2002.

## **11. BUDGET REQUEST FOR 2002**

### INCOME

Request from bureau	\$ 3000
TOTAL	\$ 3000

### ANTICIPATED EXPENDITURES

Maintaining web site	\$ 250
Travel/organisation workshops	\$ 2250
Contribution to RCPNS and RCMNS	\$ 500
TOTAL	\$ 3000

Allotment requested from IUGS/ICS for 2002 \$3000

## **12. REVIEW CHIEF ACCOMPLISHMENTS OVER LAST FIVE YEARS (1997-2001)**

1997: Ratification of Piacenzian GSSP section and submission of the Gelasian (ratified in 1996) and Piacenzian GSSP sections to Episodes. Preparing and distributing a questionnaire on Neogene chronostratigraphy and evaluating the results. Release of Newsletter 4.

1998: Preparation and submission to the ICS of proposals for Zanclean and Messinian GSSP sections. Organisation of a postal ballot within SQS and SNS on the proposal to lower the Pliocene/Pleistocene boundary from its defined position in the Vrica section to a new position corresponding with the Gelasian GSSP section. Preparation of a memorandum against such a lowering by the SNS bureau as attachment to the postal ballot. Release of Newsletter 5.

1999: Acceptance of proposals for Zanclean and Messinian GSSP sections by the ICS. Proposal for lowering the position of the Pliocene/Pleistocene boundary rejected. Requests to the ICS by the SNS bureau to communicate the outcome of the voting on the lowering of the P/P boundary in Episodes or any other suitable journal failed. Setting up of a WG on Miocene chronology chaired by Nick Shackleton. Beginning of the reorganisation of the SNS. Release of Newsletter 6.

2000: Ratification of Zanclean and Messinian GSSP sections by IUGS. Publication of these two proposals in Episodes 23. Reorganisation of SNS completed. The new organisation consists of 20 voting members and 38 corresponding members. Chairman is W.J. Zachariasse (Utrecht University, The Netherlands), vice-chairman is D. Castradori

(ENI/Agip, San Donato, Italy), and secretary Frits Hilgen (Utrecht University, The Netherlands).

2001: see above.

### **13. OBJECTIVES AND WORK PLAN FOR NEXT 5 YEARS (2002-2006)**

The long-term objective of the SNS has always been and still is to define GSSP sections for all stages of the Neogene system. At present 4 Neogene stages lack a GSSP. The ambition of the present bureau is to get proposals for Tortonian and Serravallian GSSP sections ratified before August 2004 (end of present office). The bureau anticipates that it will take another 4 to 5 years to complete the selection of GSSP sections for the Langhian and Burdigalian. Now the SQS has been merged with the SNS, Pleistocene chronostratigraphy belongs to the responsibility of the present bureau. For this purpose, the SNS bureau has the intention to set up a new WG whose mandate will be to evaluate the present status of Pleistocene chronostratigraphy and to possibly arrive within a period of 5 years to a formal chronostratigraphic subdivision of the Pleistocene and selection of related GSSP sections.

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