

**MEETING ON THE PLIO-PLEISTOCENE BOUNDARY AND THE LOWER/MIDDLE  
PLEISTOCENE TRANSITION: TYPE AREAS AND SECTIONS  
(BARI, ITALY, 25-29 SEPTEMBER 2000)**

*A report by: Domenico RIO (SNS past-Chairman) and Davide CASTRADORI (SNS Vice-Chairman)*

The Subcommission on European Quaternary Stratigraphy (SEQS), a very active subcommission within the Commission on Stratigraphy of INQUA, convened in Bari (Italy) with the aim at discussing the state of the art in the stratigraphy of the Pliocene-Pleistocene boundary and the lower-middle Pleistocene, mainly from a "continental perspective". A crucial part of the meeting was the visit to the Vrica section (GSSP of the Pleistocene) under the leadership of Giancarlo Pasini (University of Bologna), who first described and studied the section in the seventies. In addition, we visited sections in Basilicata (excursion leaders Neri Ciaranfi, Tina D'Alessandro and coworkers of the University of Bari) and Calabria (excursion leaders Francesco Massari, Domenico Rio and coworkers of the University of Padova) that can be proposed as stratotype for the lower/middle Pleistocene boundary.

Needless to say, a meeting on the Pliocene/Pleistocene boundary organized by a group of "continental" stratigraphers is bound to revitalize the never totally settled problem of the Pliocene/Pleistocene boundary. As you certainly know, the joint postal ballot between the INQUA Commission on stratigraphy (acting as IUGS Subcommission on Quaternary Stratigraphy) and SNS, that took place in the last months of 1998, resulted in the rejection of the proposal to lower the boundary from the present position (at about 1.8 Ma in the Vrica section, Calabria) to the base of the Upper Pliocene Gelasian Stage (at about 2.6 Ma in the Monte San Nicola section, Sicily).

In spite of the outcome of the ballot, a few factors played, once more, against the acceptance of the Vrica boundary by the totality of stratigraphers. In particular: (a) the quite exacerbate atmosphere that characterized the development of the postal ballot, (b) the lack of an ad-hoc paper publicizing the results of the ballot (whose preparation has been repeatedly requested to the ICS past-Chairman), and (c) the nature itself of the controversy and of the parties on the two sides of the question, with such a different geologic and stratigraphic background, are all elements conjuring against a peaceful and definitive conclusion of this drama.

With all this in mind, we decided to take part in the meeting of SEQS to help increasing the degree of knowledge and acceptance of the last decisions on the Vrica boundary and to try to draw the "continental" stratigraphers' attention to the problem of the much needed internal subdivision of the Pleistocene. It was our firm belief that failing to accept the Vrica boundary as base of the Pleistocene would automatically results in a lack of progress for what concerns lower-rank subdivisions. In other words: how can we select a lower/middle Pleistocene boundary at about, let say, 0.8 Ma if someone is still trying to push back the base of the Pleistocene to about 2.6 Ma? Wouldn't this result in a too long time span for the Lower Pleistocene with respect to the other Sub-Series?

All the oral presentations and posters in Bari gave us the opportunity to better appreciate the peculiarities and difficulties typical of the researches on the continental Pliocene and Pleistocene. The study regions were mostly located in north and eastern Europe and in continental Asia and we did learn a lot on those lands and geologic realities.

For what concerns specifically the matter of the correct usage of the Pliocene/Pleistocene boundary, we asked the Chairman of the meeting to allow us a brief introduction on the state of the controversy. The matter was further addressed during the discussion in Bari and in Crotona during a final meeting after the field trips.

The impression we got of the intellectual position of our "continental" colleagues is quite bewildering. It seems to us that most of them do recognize that an unanimously agreed upon boundary would improve the degree of communication and mutual understanding and that such a boundary already exists, in principle, and is situated in the Vrica section. But it also seems that they are somehow asking us to understand that their field of study and local

geologic situations are quite particular, that their usage of the boundary is too deeply rooted in the local realities and that, after all, even if they use their own boundary nobody get hurt. At the extreme side are those researchers who seem to enjoy a boundary which is situated at the first local appearance of any climatic deterioration in a given locality, depriving the word Pleistocene, knowingly or unknowingly, of any chronostratigraphic implications. To summarize, we got the impression that they do not want to challenge any more the Vrica boundary from a "legal" point of view, but they neither want to comply with it. It is a sort of "let's everybody mind his own business and stop fighting".

Concerning the other big issue under discussion, i.e. the formal chronostratigraphic classification of the Pleistocene, during the final meeting held in Crotona after the field trips, the Chairman of SEQS (Van Kolfschoten) and several others agreed that the time is ripe for taking action aimed to bring the matter to the attention of the whole INQUA Commission on Stratigraphy, trying to force them to speed up the decision-making procedure. Specifically, it was suggested to propose to the INQUA and ICS chairs to establish an ad-hoc Working Group, well balanced between continental and marine stratigraphers, that should discuss in a short time 1) criteria for the chronostratigraphic subdivision of the Pleistocene (with particular emphasis in defining the base of the Middle Pleistocene) and 2) the merits of the various sections outcropping in various countries to serve as GSSP for this crucial boundary. Plenty of data and information are available that should make decision making only a matter of agreement among the different workers. During the field trips we visited spectacular sections outcropping in Basilicata and in Crotona basin (the same basin in Calabria where the Vrica section is located). All these sections have a good biostratigraphic control, and in some of them magnetostratigraphy, oxygen isotope stratigraphy and pollen climatostratigraphy have been established or are in progress. In addition, we have been given a document of the Japanese Quaternary Working Group proposing the GSSP of the base of the Middle Pleistocene in correspondence with the Matuyama/Brunhes boundary in the expanded record of the Boso peninsula in Japan. With the already available data and with other data possibly not presented in Bari meeting, formal proposals can be made, most probably within a short time, for solving the problem of the chronostratigraphic classification of the Lower and Middle Pleistocene.

To conclude, we believe that the Pliocene-Pleistocene controversy will never be completely settled. At this point, having done all what we were able to do, we feel the need for a truce. This does not imply that we will stop trying to spread as much as possible the acceptance of the Vrica boundary, but we deem it really necessary to convey our best efforts toward the selection of suitable GSSPs for the internal subdivision of the Pleistocene.