INTEGRATED STRATIGRAPHY OF THE NORIAN GSSP CANDIDATE PIZZO MONDELLO SECTION (SICANI MOUNTAINS, SICILY)

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Pizzo Mondello (Sicani Mountains, western Sicily, Italy) is one of the best localities in the world for the definition of the Carnian/Norian boundary. This site shows an unusual combination of features that fulfil most of the requirements of the "perfect" GSSP candidate section (SALVADOR, 1994). At Pizzo Mondello a 450 m-thick Upper Carnian to Upper Norian pelagic-hemipelagic limestone succession is well exposed and very easily accessible. The succession belongs to the *Calcari con selce* (*Halobia Limestone auctorum*; Cherty Limestone, MUTTONI et al, 2001; 2004) and is known since the XIX century for the rich ammonoid and bivalve record (GEMMELLARO, 1882, 1904). The Carnian /Norian (C/N) boundary interval is included into the lower 140 m of the section, that consists of a monotonous succession of well-bedded white-yellow calcilutites with black chert nodules.

Pizzo Mondello section is well known for the good primary magnetostratigraphic record and stable carbon isotope variations (MUTTONI et al, 2001, 2004) which became *de facto* the standard Tethyan marine reference for the Newark astrochronological polarity time scale (KENT et al., 1999; MUTTONI et al., 2004). The biostratigraphic calibration of the magnetostratigraphy and carbon isotope variations was based only on relatively few conodont samples (MUTTONI et al., 2004). In 2006 we started a new integrated biostratigraphic study of the section based on conodonts, ammonoids, pelagic bivalves and radiolarians. These investigations were also accompanied by new lithological and sedimentological analyses of the succession. GUAIUMI et al. (2007) and NICORA et al. (2007) presented the preliminary results of the new study on the lower 140 thick part of the section. Here we focus on the 30 m-thick C/N boundary interval straddling magnetozones PM4n and PM4r as well as the positive shift of $\delta^{13}C$.

Conodonts resulted the most promising tool for the selection of the GSSP marker event. Conodont taxonomy and phylomorphogenesis are described in detail in a separate contribution (MAZZA & RIGO, 2008). Two major bioevents were identified, namely the FAD of *Epigondolella quadrata* Orchard and the FAD of *Metapolygnathus communisti* Hayashi.

Ammonoids, albeit sparse, are useful for the calibration of the conodont bioevents, however they become extremely rare above the $\delta^{13}C$ shift. The fauna of the boundary interval is dominated by *Gonionotites* and ammonoids of the group of *Anatomites sensu* GEMMELLARO. *Dimorphites*, regarded as a good marker for the Lower Norian, was unfortunately found only in debris.

Halobiids are much more frequent than the ammonoids; moreover, they are of great interest for global correlations. Ten halobiids species were recognized, grouped in six assemblages (LEVERA & McROBERTS, 2008). Of special interest is the occurrence in the boundary interval of *Halobia* cf. *beyrichi* and *H.* group of *areata*, which are typical of the Lower Norian.

An additional tool for global correlations is represented by radiolarians, which were found in some samples with high diversity assemblages. In the 30 m-thick boundary interval there is an overlap between species previously considered Late Carnian with species usually regarded as Early Norian. The first Early Norian radiolarian assemblage occurs above the FAD of *E. quadrata*. This fauna consists of *Braginastrum curvatus* Tekin, *Capnuchosphaera deweveri* Kozur & Mostler, *Capnuchosphaera tricornis* De Wever, *Kahlerosphaera norica* KOZUR & MOCK, *Mostlericyrtium sitepesiforme* Tekin, *Podobursa akayi* TEKIN and *Xiphothecaella longa* (KOZUR & MOCK).

In conclusion, Pizzo Mondello is a good candidate for the definition of the global stratigraphic section and point (GSSP) for the base of the Norian because of its relatively high rates of sedimentation (20-30 m/m.y.), the good record of age-diagnostic conodonts, ammonoids, halobiids, and radiolarians, the relatively complete chemostratigraphic record and numerical age control, derived from magnetostratigraphic correlation with the Newark APTS.

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