Closing the gap in the Plio-Pleistocene boundary stratotype sequence of Crotone (southern Italy)

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with 4 figures

Abstract. Results of a detailed field stratigraphic study carried out in the area south of Crotone (southern Italy) evidently demonstrate that the segments of the Crotone sequence exposed in the Plio-Pleistocene boundary stratotype section of Vrica and the lower section of Semaforo (= Stuni) are not separated by a non-exposed interval, as hitherto assumed, but that they include a considerable overlap.


Introduction

The Upper Pliocene – Lower Pleistocene sequence of Crotone (southern Italy) was originally introduced with the aim to establish the Pliocene-Pleistocene boundary stratotype in its upper part as exposed in section Vrica (Pastini et al. 1975; Selli et al. 1977). In this section, the Pliocene-Pleistocene boundary was formally defined at the base of the homogeneous claystones which conformably overlie the sapropelic marker bed with the codination e (Aguirre & Pastini 1985). The study of the complete and continuous sequence of Crotone, however, is still hampered by the presence of a non-exposed interval between those parts of the sequence exposed in the Vrica section and in the lower section of Semaforo (= Stuni) (Tauxe et al. 1983; Backman et al. 1983; Spaak 1983; Verhallen 1987; Combourieu-Nebout 1987; Ghidalia 1988). Geometric constructions showed that less than 50 m of sediment is missing between the two sections (Tauxe et al. 1983).

Japanese workers obviously avoided this non-exposed interval by incorporating an interjacently located section instead of Semaforo, but they failed to provide conclusive evidence as to the stratigraphic connection between this section and section Vrica (Nakagawa et al. 1980; Nakagawa 1981). Moreover, comparison of all stratigraphic data available (Nakagawa 1981;