Y-3: a widespread Upper Pleistocene marker layer in the Mediterranean area

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A widespread tephra layer has been identified in the Upper Pleistocene marine succession in the Mediterranean area. Many investigated gravity cores showed the presence of two companion pyroclastic tephra layers, separated by a varying thickness of pelagic sediments. The pyroclastic layers are mainly made up of pumice fragments and glass shards together with few K-feldspars and clino-pyroxene crystals. Both layers show an alcali-trachyric composition, even though a sharp difference emerges in the K/Na ratio that characterizes the two glasses. 14C dating of foraminiferous shells embedded in the clay layers directly underlaying the tephras gave an age of about 39 ky and 26 ky, respectively. An accurate review of literature regarding tephrostratigraphy in the Mediterranean area made it possible to correlate the older one to the Y-5 marker layer, joined to the Campanian Ignimbrite eruption, a paroxystic event in the Campi Flegrei area. The younger layer has been correlated with the Y-3 marker layer and probably represents another huge pyroclastic event from the Campanian area, whose products have not yet been distinguished in the field from those of typical Campanian Ignimbrite. This work clearly and definitely identifies the layer Y-3, firstly recorded by Keller (1977), as the result of a specific volcanic event different from the Campanian Ignimbrite (marker layer Y-5), defines its mineralogical and chemical composition, its relative age and, mapping the distribution of such a widespread marker layer, offers an useful support for paleoclimatic and paleoenvinromental reconstruction of the sedimentation in the Mediterranean area.