

COMMENT ON MELLUSO ET AL. (2003)

Reported data and interpretation of some wollastonite- and melilite-bearing rocks from the Central Apennines of Italy

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ABSTRACT

Two distinct occurrences of wollastonite- and melilite-bearing rocks from Ricetto and Colle Fabbri, which are located in the central Italy Apennine Range, are referred to as “paralavas” generated by melting and recrystallization of marly sediments “likely due to coal fires” by Melluso et al. (2003). We submit data demonstrating that these conclusions are incorrect. Ricetto is clearly pyrometamorphic, as described by Capitanio et al. (2001, 2004). Colle Fabbri is clearly an igneous outcrop as described in Stoppa (1988). It is quite different in scale, field relationships, and chemistry, and thus Ricetto is irrelevant to its petrogenesis. The sediment mixing model of Melluso et al. (2003) does not relate to the Colle Fabbri field data. Furthermore, the Ricetto Miocene flysch country-rock and the Colle Fabbri enclosing Pliocene clays were not analyzed by Melluso et al. (2003). A limestone-shale mixing calculation using Sr and Nd isotopic data in Melluso et al. (2003, Tables 3–4) and a $^{143}\text{Nd}/^{144}\text{Nd}$ ratio of 0.51213 for Apennine shales (op.cit. p. 1297) fails to account for the Colle Fabbri samples, which remain well clear of the hypothetical mixing line. Rocks of mantle origin, including micaceous kimberlites and Western Australia lamproites, plot in the variation field of Colle Fabbri and regionally associated igneous rocks. Colle Fabbri is but one of a series of similar igneous melilite-bearing and carbonatite occurrences that constitute the Intramontane Ultra-alkaline Province of central Italy (IUP), although Colle Fabbri does have unique features, as do other of these occurrences (Stoppa et al. 2003).