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Reconsidering the Variscan basement of southern Tuscany (inner Northern Apennines)

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The Pre-Mesozoic units exposed in the inner Northern Apennines mostly consist of middle-late Carboniferous-Permian successions unconformably deposited on a continental crust consolidated at the end of the Variscan (i.e. Hercynian) orogenic cycle (Silurian-Carboniferous). In the inner Northern Apennines, exposures of this continental crust, Cambrian?-early Carboniferous in age, have been described in the Northern Tuscany, Elba Island (Tuscan Archipelago) and, partly, in scattered and isolated outcrops of southern Tuscany. In this contribution, we reappraise the most significant succession (i.e. Risanguigno Formation) exposed in southern Tuscany and considered by most authors as part of the Variscan Basement. New stratigraphic and structural studies, coupled with palynological analyses, allow us to refine the age of the Risanguigno Fm and its geological setting and evolution. Based on the microfloristic content, the structural setting and the fieldwork study, we attribute this formation to late Tournaisian-Visean (middle Mississippian) time interval and conclude it is not showing evidence of a pre-Alpine deformation. These results, together with the already existing data, allow us to presume that no exposures of rocks involved in the Variscan orogenesis occur in southern Tuscany.