A surprisingly diverse coral fauna from the Emsian (Lower Devonian) of the Mouthoumet massif, SW France and re-assessment of the age and affinity of the Pech Nègre Limestone

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The Mouthoumet Massif of south-western France is one of the rare occurrences of fossiliferous shallow-water carbonate facies in an intermediate position between the Montagne Noire and the Pyrenees. In the Pech Nègre locality near Auriac, the limestone yields a diverse coral fauna dominated by tabulate corals (*Favosites*, *Heliolites*, *Striatopora*, *Syringocystis*, *Remesia*) and solitary rugose corals, including yet undescribed species of *Macgeea* and *Grypophylluym*. Widely distributed rugosa such as *Calceola*, *Tryplasma* and *Cystiplasma*, occur together with endemic genera and species that were described only from the Emsian Izarne Formation of Montagne noire: *Frechocystis pertinax* and the colonial *Platysmatophyllum halleri* and *Izarneophyllum barroisi*. However, the most abundant species is a solitary cylindrical coral that displays a limited increase attributed to *Breviphrentis* in Montagne noire and to *Synaptophyllum* in the Cantabrian Mountains. Comparison with topotypes from the Emsian La Vid Group of the Cantabrian Mountains demonstrates that the corals from both Montagne noire, Mouthoumet Massif and northern Spain belong to the species *Breviphrentis angustitabulatum* Altevogt, 1965. The type material of this species is also revised. This attribution allows to correlate stratigraphically the Pech Nègre Limestone with the Izarne Formation and La Vid Group and therefore to demonstrate its upper Emsian age, and not Visean as previously stated on geological maps. The reattribution of the so-called *Synaptophyllum* of northern Spain to *Breviphrentis* has important consequences on palaeobiogeography and genuine *Synaptophyllum* are endemic to North America. Moreover, the affinity of the Pech Nègre Limestone formation with those of Montagne noire and the Pyrenees, Pays basque and Aquitaine basin is reassessed, highlighting the complexity of the carbonate platform around the small terranes at the northern margin of Gondwana during the Devonian.