

## CONTRIBUTIONS TO THE GEOLOGY OF THE MINERVOIS AND THE CABARDÈS (MONTAGNE NOIRE, SW FRANCE)

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The region studied is located several kilometers North of Carcassonne (Dept. Aude, SW France) in the Cabardès and Minervois mountains.

According to the classic interpretation of ARTHAUD (1970), the Variscan (Hercynian) chain of the Montagne Noire is divided in 3 zones which are aligned in a ENE – WSW direction. The southern zone is composed of several distinct nappes. The studied Minervois nappe is the lowermost nappe with a rather complete stratigraphical range from the Lowermost Cambrian to the Lower Ordovician (Arenigian):

GEYER (1986) described for the first time sponge spicules of primitive Porifera, interpreted as Chancelloriida, from the quartzitic sandstones of the "Marcory" Formation (Lowermost Cambrian) and discussed their regional spreading in the Western Mediterranean hemisphere. The "Limousis" Formation (alternating quartzitic sandstones and often dolomitic limestones) contains some undeterminable sections of Archaeocyathids. The upper part of the Lower Cambrian ("Lastours" Formation) consists mostly of dolomitic limestones and dolomites and therefore contains no fossils.

The Middle Cambrian starts with red and white limestones of the "Ferrals" Formation that may contain very few determinable sections of characteristic trilobites (COURTESOLE 1973). The sedimentation becomes very monotonous in the overlaying strongly-folded schists of the "Pardailhan" Formation.

Trilobites confirm the existence of fossiliferous calcareous Upper Cambrian, belonging to the East-Asian faunal province ("Val-d'Homs" Formation; FEIST & COURTESOLE 1984).

Some sparse nodules in the Lower Ordovician schists ("Barroubio" Formation) contain fragments of trilobites and brachiopods.

As a result of a recent mapping (GEYER 1984) a digitized geological map to the scale of 1:25.000 of the studied region is presented. The geological limits are different from older maps because the recent fossil discoveries have caused important modifications in the stratigraphical range of formations.

The stratigraphic succession of the Minervois and the Cabardès region is compared with other classic Cambrian areas, such as the outcrops in Sardinia, Normandy, Spain and Morocco.

## GEOCHRONOLOGICAL AGE CONSTRAINTS FOR THE EVOLUTION OF A VARISCAN SUTURE IN SW SPAIN: THE BOUNDARY OF OSSA-MORENA-ZONE AND SOUTH-PORTUGUESE-ZONE

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The boundary of Ossa-Morena-Zone (OMZ) and South Portuguese Zone (SPZ) represents the main Variscan suture in the Iberian Hercynian Orogen. The geodynamic evolution of this suture can be subdivided into three main stages.

Onset of the Variscan deformation in the Lower / Middle Devonian is marked by a sedimentary gap and subsequent progradation of the first deformation phase in the OMZ. Crustal stacking, nappe emplacement and contemporaneous basin formation are related to this stage. <sup>40</sup>Ar/<sup>39</sup>Ar whole-rock spectra of anchizonal slates display internally discordant age spectra, which suggest cooling prior to 375 Ma and younger Variscan rejuvenation.

The second stage represents a phase of transpression. It comprises the second and third Variscan deformation phase and results in the transpressional uplift of the high-grade metamorphic core of the suture zone. It is associated with the intrusion of basic melts and wide-spread migmatization in the granulitic countryrocks. <sup>40</sup>Ar/<sup>39</sup>Ar and Rb/Sr isotope data of the suture zone are distinctly