Ammonite horizons at the basal Bathonian zone (Parvum Subzone) in Cabo Mondego, Portugal

Sixto R. FERNÁNDEZ-LÓPEZ[1], Maria Helena HENRIQUES[2] and Charles MANGOLD[3]

[1]Departamento y UEI de Paleontología, Facultad de Ciencias Geológicas (UCM) e Instituto de Geología Económica (CSIC-UCM), 28040 Madrid, Spain; e-mail: sixto@geo.ucm.es
[2]Departamento de Ciências da Terra e Centro de Geociências, Faculdade de Ciências e Tecnologia, Universidade de Coimbra, 3000-272 Coimbra, Portugal; e-mail: hhenriq@dct.uc.pt
[3]Université Claude-Bernard, Lyon-1,UFR des Sciences de la Terre et CNRS, UMR 5125, 27-43, bd du 11-Novembre-1918, 69622 Villeurbanne cedex, France

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The ammonite succession at the Bajocian/Bathonian boundary in the Cabo Mondego region provides one of the most complete biostratigraphical records so far recognized in the Iberian Plate. Lower Bathonian ammonite fossil assemblages are composed of Submediterranean taxa. Parkinsonids characterizing the Northwest European Province, as well as phylloceratids and lytoceratids characterizing the Mediterranean Province, are very scarce. The basal Bathonian zone (Zigzag Zone) established for NW Europe areas, belonging to the Northwest European Province, can be identified in the Lusitanian Basin. The Lower Bathonian boundary may be established by the lowest occurrence of the dimorphic group *Morphoceras* (M) + *Ebrayiceras* (m), although morphoceratids are scarce. The Zigzag Zone can be characterized as composed of two subunits (Parvum and Macrescens subzones) represented in diverse European basins of the Submediterranean Province. The revision of previous collections from the classical section and new field samplings of two other separate sections on Cabo Mondego allow to distinguish the lowest subzone of Bathonian (Parvum Subzone, Zigzag Zone). Along up to ten metres of thickness, over forty successive assemblages have been recognized in the Parvum Subzone.

The lowermost subzone of the Bathonian yields common perisphinctids (40%), oppeliids (25%) and hecticoceratids (20%), being the most abundant genera: *Planisphinctes* (m) + *Lobosphictes* (M), *Oxycerites* (M) + *Paroecotraustes* (m) and *Nodiferites* (m) + *Zeissoceras* (M). Ammonite fossil assemblages of the Parvum Subzone may be grouped into two successive biohorizons. The lower biohorizon, beginning with the lowest occurrence of *Morphoceras* (M) + *Ebrayiceras* (m), has been characterized by perisphinctids of the dimorphic couple *Bigotites* gr. *diniensis* Sturani (M) + "*Bigotites*" *acurvatus* (Wetzel) in Torrens (m), although they are scarce. The upper biohorizon, through 1.5-2 m of thickening upwards beds, has been identified in the stratigraphic interval beginning with the lowest occurrence of *Zigzagiceras* (m) + *Procerozigzag* (M) and underlying the lowest occurrence of *Morphoceras macrescens* (Buckman). These two successive ammonite horizons are biochronostratigraphically equivalent to the subdivisions of the Convergens Subzone distinguished on the Digne-Barrême area (France).

The occurrence of *Bigotites* gr. *diniensis* (M+m) in Cabo Mondego in the Parvum Subzone represents a new criterion for chronostratigraphical subdivision and chronocorrelation with the Digne-Barrême area, useful in understanding the evolution of the West Tethyan Perisphinctidae during earliest Bathonian.