

Report on the 5th International Workshop of the Lower Cretaceous Cephalopod Team (Vienna, 5 September 2000)



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1. Introduction

The workshop followed on from the 6th International Cretaceous Symposium, and local organisation was by Alexander Lukeneder (University of Vienna). It was attended by 13 members from ten countries: Maria B. Aguirre-Urreta (Argentina), Tamara Bogdanova (Russia), István Fozy (Hungary), Pedro Garcia-Barrera (Mexico), Celestina Gonzalez-Arreoloa (Mexico), Philip J. Hoedemaeker (Netherlands), Michail Kakabadze (Georgia), Jaap Klein (Netherlands), Alexander Lukeneder (Austria), Naser Raisossadat (Iran: currently UK), Peter F. Rawson (UK), Ottilia Szives (Hungary) and Zdenek Vasíček (Czech Republic).

The Lower Cretaceous Cephalopod Team originated as a group attached to IGCP Project 262 (Tethyan Cretaceous Correlation), and continued under the successor Project 362 (Tethyan-Boreal Cretaceous). That project has also terminated. The meeting unanimously accepted a suggestion from Peter Rawson, Chair of the Subcommittee on Cretaceous Stratigraphy (SCS), that the team should now become *The Lower Cretaceous Ammonite Working Group* of the SCS.

2. The 'standard' zonation of the West Mediterranean Province

The Lower Cretaceous 'standard' ammonite zonation is based on the region where the Lower Cretaceous stages (except the Albian) were historically defined, i.e., the West Mediterranean Province. The zonation does not apply to the rest of the world, but is the one that other schemes are calibrated with as far as possible.

The team's current zonation was summarized in Rawson *et al.* (1999, p. 5). The following

amendments to that scheme were agreed and are shown in Figures 1 and 2.

2.1. Valanginian

Klein & Hoedemaeker (1999) reviewed the conflicting zonal schemes published up to 1995 by Bulot and Thieuloy on the one hand and Atrops and Reboulet on the other. Reboulet & Atrops (1999) have since proposed further changes. The main areas of conflict lie in the Lower Valanginian. The team agreed to retain the *Busnardoites campylotoxus* Zone as used in its current scheme, despite the conflicting claims of Bulot & Thieuloy (1995) and Reboulet (1995) as to the range of the index species. Klein & Hoedemaeker (1999) showed that there is no difference in the species' range between the one given by Bulot & Thieuloy (1995) and that advocated by Reboulet & Atrops (1999): *B. campylotoxus* appears and disappears simultaneously in both basin and shelf in the southeast of France. The horizon of *Karakaschicerias biassalensis* occupies the upper part of the *B. campylotoxus* Zone.

There is agreement between Bulot & Thieuloy (1995) and Reboulet & Atrops (1999) on the division of the Upper Valanginian. Thus the Team agreed to replace the *Neocomites (Teschinites) pachydicranus* Zone with the *Himantoceras trinodosum* and *N. (T.) callidiscus* Zones. The *verrucosum*, *pronecostatus*, *pergrinus*, *nicklesi* and *furcillatus* 'horizons' of the two French groups will now be used as subzones. The *callidiscus* horizon remains as a horizon.

2.2. Hauterivian

The zones remain unchanged. The former 'horizons' of *loryi* and *jeannoti* become subzones of the *Crioceratites loryi* Zone. A *Breistrofferella castellanensis*

| STAGES | | ZONES | SUBZONES | HORIZONS |
|-------------|----------------------|-------------------------------------|-------------------------------|---------------------------|
| HAUTERIVIAN | Upper | <i>P. angulicostata</i> auctorum | <i>P. catulloi</i> | |
| | | | <i>P. angulicostata</i> auct. | |
| | | <i>B. balearis</i> | | |
| | | <i>P. ligatus</i> | | |
| | Lower | <i>L. nodosoplicatum</i> | | <i>O. (O.) variegatus</i> |
| | | | | |
| | | <i>C. loryi</i> | <i>O. (J.) jeannoti</i> | |
| | | | <i>C. loryi</i> | |
| | | <i>A. radiatus</i> | | <i>B. castellanensis</i> |
| | | | | |
| VALANGINIAN | Upper | <i>T. callidiscus</i> | | <i>T. callidiscus</i> |
| | | | | |
| | | <i>H. trinodosum</i> | <i>C. furcillata</i> | |
| | | | <i>O. (O.) nicklesi</i> | |
| | | <i>S. verrucosum</i> | <i>V. peregrinus</i> | |
| | | | <i>K. pronecostatum</i> | |
| | <i>S. verrucosum</i> | | | |
| | Lower | <i>B. campylotoxus</i> | | |
| | | <i>T. pertransiens</i> | | |
| | | <i>T. otopeta</i> | | |
| BERRIASIAN | Upper | <i>F. boissieri</i> | <i>T. alpillensis</i> | |
| | | | <i>B. picteti</i> | |
| | | | <i>M. paramimounum</i> | |
| | Middle | <i>T. occitanica</i> | <i>D. dalmasi</i> | |
| | | | <i>B. privasensis</i> | |
| | | | <i>T. subalpina</i> | |
| | Lower | <i>B. jacobi</i> | | |

Figure 1. Subdivision of the Berriasian–Hauterivian stages.

horizon is now recognised at the base of the *Acanthodiscus radiatus* Zone, and an *Olcostephanus (O.) variegatus* horizon at the base of the *Lyticoceras nodosoplicatum* Zone.

2.3. Barremian

The *Kotetishvilia compressissima* and *Moutoniceras moutonianum* Zones of Company *et al.* (1995) replace

| STAGES | | ZONES | SUBZONES | HORIZONS | |
|-----------------------|------------------------|-----------------------------|--------------------------|--------------------------|--|
| ALBIAN | Upper | <i>S. (S.) dispar</i> | <i>S. (S.) dispar</i> | | |
| | | | <i>S. (F.) blancheti</i> | | |
| | | <i>M. inflatum</i> | | <i>D. cristatum</i> | |
| | | | | | |
| | Middle | <i>E. lautus</i> | | | |
| | | <i>E. loricatus</i> | | | |
| | | <i>H. dentatus</i> | <i>H. spathi</i> | | |
| | | | <i>L. lyelli</i> | | |
| | Lower | <i>D. mammillatum</i> | | | |
| | | <i>L. tardefurcata</i> | | | |
| APTIAN | Upper | <i>H. jacobi</i> | | | |
| | | <i>A. nolani</i> | | <i>D. nodosocostatum</i> | |
| | | | | | |
| | Middle | <i>P. melchioris</i> | | | |
| | | <i>E. subnodosocostatum</i> | | | |
| | Lower | <i>D. furcata</i> | | | |
| | | <i>D. deshayesi</i> | | | |
| | | <i>D. weissii</i> | | | |
| <i>D. tuarkyricus</i> | | | | | |
| BARREMIAN | Upper | <i>P. waagenoides</i> | | | |
| | | <i>C. sarasini</i> | | | |
| | | <i>I. giraudi</i> | | | |
| | | <i>H. feraudianus</i> | | | |
| | | <i>G. sartousiana</i> | <i>G. provincialis</i> | | |
| | | | <i>G. sartousiana</i> | | |
| | <i>A. vandenheckii</i> | | <i>H. sayni</i> | | |
| | Lower | <i>M. moutonianum</i> | | <i>P. caicedi</i> | |
| | | <i>K. compressissima</i> | | <i>P. communis</i> | |
| | | | | | |
| | | <i>K. nicklesi</i> | | <i>N. pulchella</i> | |
| | | <i>A. hugii</i> | | | |

Figure 2. Subdivision of the Barremian–Albian stages.

the top part of the *Kotetishvilia nicklesi* Zone and the *Holcodiscus caillaudianus* Zone.

Following Vermeulen (1998a, b), a horizon of *Pulchellia communis* is recognised in the upper part of the *compressissima* Zone, a horizon of *Pulchellia caicedi* at the top of the *moutonianum* Zone, and a horizon of *Heinzia sayni* in the lower part of the *Ancyloceras vandenheckii* Zone. The other horizons introduced by Vermeulen (1998a, b) and those introduced by Delanoy (1997) can be used for local subdivision.

The *Gerhardtia sartousiana* Zone is divided into the *G. sartousiana* and *G. provincialis* Subzones. The top part of the *Colchidites sarasini* Zone is replaced by the *Pseudocrioceras waagenoides* Zone of Kakabadze & Kotetishvili (1995).

2.4. Aptian

There is no change to the zonal scheme. The first appearance of *Deshayesites* is generally taken to mark the base of the Aptian. In the stratotype of the Barremian near Angles (SE France), ammonites are rare across the Barremian/Aptian boundary but it was noted that while Delanoy (1995) has recorded the first *Deshayesites* from bed 206, Kakabadze and Wiedmann had previously found a poorly preserved fragment of *Deshayesites* sp. in bed 200. This is hitherto the lowest find of *Deshayesites* in the area.

3. The Lower Cretaceous Ammonite Working Group

Philip Hoedemaeker (Chair), Peter Rawson (Vice-Chair: 'Boreal') and Maria Aguirre-Urreta (Vice-Chair: 'Austral') were elected unanimously. Under IUGS rules they will serve for an initial period of four years.

The first meeting of the Working Group will be in Lyon (France) in June or July 2002 (during the symposium 'French Cretaceous System'). A second

meeting will take place in Neuchâtel, Switzerland, in September 2005 (during the 7th International Cretaceous Symposium).

All specialists on Lower Cretaceous ammonites are welcome to join the group by contacting the Chairman or one of the Vice-Chairs.

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