



Book Review

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The Cretaceous Subcommittee held its *First International Symposium on Cretaceous Stage Boundaries* in Copenhagen in 1983, under the Chairmanship of Tove Birkelund, with Finn Surlyk as Secretary. The proceedings were published in Vol. 33 of the *Bulletin of the Geological Society of Denmark* (1984) and Vol. 5 of *Cretaceous Research* (1985, misdated 1984). The preliminary proposals for the definitions of the bases of the stages by Birkelund et al. (1994) provided the starting point for all subsequent discussion.

In 1992 the structure of the Subcommittee was reorganized and working groups were formed for each stage. The working groups were strongly encouraged to follow certain guiding principles. 1) The selected boundaries should be recognizable over as wide areas as possible and ideally in both Tethyan and Temperate Realms. 2) Selection should rely on accurate correlation using all available tools, including biostratigraphy, magnetostratigraphy, sequence stratigraphy and isotope stratigraphy. 3) The stratigraphic level of the recommended boundary should rely as closely as feasible with current practise. 4) The choice of the Global Stratotype Section and Point (GSSP) depends primarily on the chosen boundary marker(s).

The conclusions and recommendations of the working groups were presented at the *Second International Symposium on Cretaceous Stage Boundaries* held in Brussels, Belgium, from 8 to 16 September 1995, under the Chairmanship of Peter Rawson and Vice-chairmanship of Annie V. Dhondt. Twelve summary papers were published the following year.

Lower Cretaceous. – The base of the Berriasian Stage should be placed either at the base of the *Berriasella jacobii* ammonite Zone or at the base of the *Tirnovella subalpina* ammonite Subzone (Zakharov, Bown & Rawson). The base of the Valanginian is placed at the base of Calpionellid Zone E (Bulot). The base of the Hauterivian is placed at the first appearance datum (FAD) of the ammonite genus *Acanthodiscus* and the base of the Upper Hauterivian at the last occurrence of the nannofossil *Cruceillipsis cuvillieri* (Mutterlose). The base of the Barremian is placed at the base of the *Spitidiscus hugii* ammonite Zone and the base of the Upper Barremian at the FAD of the ammonite *Ancylloceras vandenheckei* (Rawson). The base of the

Aptian is placed at the base of magnetic chron M0 (Erba). No definite proposals were put forward for the definition of the bases of the Albian and its three substages (Hart & Kennedy).

Upper Cretaceous. – The base of the Cenomanian is defined by the FAD of the planctic foraminiferan *Rotalipora globotruncanoides* and the base of the Middle Cenomanian by the FAD of the ammonite *Cunningtoniceras inerme* (Tröger & Kennedy). The base of the Turonian is placed at the FAD of the ammonite *Watinoceras devonense* and the base of the Middle Turonian by the FAD of the ammonite *Collignoniceras woolgari* (Bengtson). The base of the Coniacian is defined by the FAD of the inoceramid *Cremnoceramus rotundatus*, the base of the Middle Coniacian by the FAD of the inoceramid *Volvicceramus koeneni*, and the base of Upper Coniacian by the FAD of the inoceramid *Magadiceramus subquadratus* (Kauffman, Kennedy & Wood). The base of the Santonian is defined by the FAD of the inoceramid *Cladoceramus undulatopectatus* (Lamolda & Hancock). No definite proposal was put forward for the definition of the Campanian, but it was suggested that the base of the Campanian be defined by the LAD of the planctic crinoid *Marsupites* (Hancock & Gale). The base of the Maastrichtian is defined by the FAD of the ammonite *Pachydiscus neubergicus* (Odin).

Proposals for Global Stratotype Sections and Points were put forward for most stages and several substages.

References

Birkelund, T., Hancock, J. M., Hart, M. B., Rawson, P. F., Remane, J., Robaszynski, F., Schmid, F. & Surlyk, F. 1984: Cretaceous stage boundaries – Proposals. *Bulletin of the Geological Society of Denmark* 33, 3–20.

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