

Litt, T. (Ed.) 2007. *Stratigraphie von Deutschland – Quartär.*

*Eiszeitalter und Gegenwart*, **56**, 138 pp., 6 text-figs, 2 tables. Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller); Stuttgart.

This volume, edited by the Chair of the Quaternary Subcommittee of the German Stratigraphical Commission, presents major stratotypes and stratigraphical terms for the Quaternary both in northern Germany, covered by the Scandinavian glaciations, and in southern Germany, in the Alpine foreland. It consists of 6 chapters prepared by 11 authors.

The *Preface* and the short opening chapter *The Quaternary as a chronostratigraphical unit*, by Th. Litt, present the basic assumptions of the Quaternary climatostratigraphic subdivision (into glaciations and interglacials), based on climatic oscillations of the Quaternary period. Also presented are the decisions of the INQUA Commission for Quaternary Stratigraphy on the Pliocene/Pleistocene boundary and the subdivision of the Pleistocene (into Lower, Middle and Upper).

The next chapter, *Stratigraphical terms for the Quaternary of the North German Glaciation Area*, by T. Litt, K.-E. Behre, K.-D. Meyer, H.-J. Stephan and S. Wansa, discusses Scandinavian glaciations in northern Germany. The studies in northern Germany, which started in the 19<sup>th</sup> century, have led to the establishment of the basic stratigraphic terminology for the German Quaternary (e.g. the glaciation names: "Elster", "Saale" and "Weichsel"). In the pre-glaciation Quaternary interval, stratigraphic schemes are based on climatic changes revealed by pollen spectra. The chapter discusses, in a very consistent way, all the stratigraphic terms used for the Quaternary of northern Germany, including their definitions, first descriptions, type localities and sections, ages and other supplementary data. This part will surely be a great help for students of the Quaternary, not only those from Germany. Less convincing, however, are presented correlations of particular units with those from neighbouring areas of Poland and the Netherlands. The authors seem to markedly change, without any comment, the original interpretations of the Polish and Dutch workers cited by them. An example of this is provided by their treatment of the Mazovian Interglacial, which is correlated in Poland with MIS

11 (according to the references cited in the volume) but is linked by them with MIS 9 (Fig. 1). Similarly, they changed timing of ice advances as accepted in Polish literature; in the paper by Lindner *et al.* (2004), cited by them, ice advances are also documented in the Nidanian and Narevian glaciations. Also disputable is their correlation of the Holstein Interglacial with MIS 9 (see Fig. 1 and Stratigraphic Scheme of the Quaternary in Germany according to Litt *et al.* 2005). This interpretation, presented already by Geyh & Müller (2005), the members of the Quaternary Subcommittee of the German Stratigraphical Commission, has subsequently been widely criticized (Nitychoruk *et al.* 2006, Scourse 2006.).

The next chapter, *Stratigraphical terms for the Quaternary of the south German Alpine Foreland*, written by D. Ellwanger and R. Becker-Haumann, is based on unpublished manuscripts of K. A. Habbe, deceased in 2003. The original report has been rewritten, commented on, supplemented and drafted by the Working Group of the South German Subcommittee on Quaternary Stratigraphy. Southern Germany was not subjected to Scandinavian glaciations but was influenced by Alpine glaciers. The morphostratigraphy of fore-Alpine areas was founded by Penck and Brückner (1901/09), with the names of particular glaciations (Biber to Würm) having been commonly recognized for over 100 years and still applied today.

The chapter *Stratigraphical terms for the Quaternary of the periglacial area in Germany* was written by B. URBAN. There are only a few complete sections from the periglacial area of Germany that could supply data on the stratigraphy of the Quaternary. The exceptions are Krefeld and Kärlich, from which interglacial deposits were described and which have given their names to the warm intervals i.e., the Krefeld-Interglazial and Kärlich-Interglazial.

The volume ends with the chapter *Biostratigraphical Terms from Mammal Palaeontology for the Pliocene and Pleistocene in Germany* by W. von

Koenigswald and W.-D. Heinrich. Because Pleistocene fossil remains come from areas that were not covered by ice-sheets, the correlation of the faunas with corresponding glaciations and interglacials poses serious problems. Additionally, the short duration of the Pleistocene period virtually precludes the possibility of observing and using evolutionary trends within successive faunas for stratigraphical purposes. Despite these problems the authors have successfully correlated the particular biostratigraphic zones (Table 1).

Concluding, this peer-reviewed volume is well structured and well presented, with the individual chapters building a logical and consistent summary of the Quaternary stratigraphy in Germany. This work should satisfy all workers on the Quaternary both in Germany and elsewhere. The minor critical remarks raised do not diminish the overall value of this compilation. The reference list, comprising publications from Germany and other Central European countries, can serve as a good source data for scientists working on the Quaternary stratigraphy of Europe.

## REFERENCES

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