



Erläuterungen zur Stratigraphischen Tabelle von Deutschland 2005 (ESTD 2005). Editors: M. Menning and A. Hendrich. Newsletters on Stratigraphy, vol. 41, no. 1-3, 405 pp. Gebrüder Borntraeger. Berlin-Stuttgart

The Stratigraphic Chart of Germany (STD 2002) is now supplemented by an explanatory volume consisting of 28 chapters, a table including corrections to the chart, and 17 attached plates. Most of the plates reproduce the chart with a few corrections. Other show comparisons of historical and current ages of particular units and give more detailed information on the Devonian and the Middle Triassic.

In the introduction Menning and Steininger express their hope that the chart will serve its purpose over the next 5–10 years. The following chapter by Menning explains the construction of the time scale, which integrates 10 previous scales. These include both published data as well as 3 scales compiled specifically for the STD 2002. For the Permian-Triassic, a highly integrative approach has been applied, involving isotope geochronometry, sediment-thickness analysis, and cyclo-, bio- and magnetostratigraphy.

Most of the volume is devoted to commenting, in order of age, on the successive parts of the chart. In general, the younger the units, the more extensive the description, although there are notable exceptions to this rule. Thus, a paper by Leonhardt *et al.* on the Proterozoic to Silurian interval summarizes briefly (in 18 pages) crucial tectonic and stratigraphic aspects of the component systems. Also the Devonian (Weddige *et al.*) and two Carboniferous chapters (Mississippian, Weyer *et al.*; Silesian, Wrede *et al.*) give a general summary of the development of particular palaeogeographic zones or sedimentary basins.

The Permian is commented on in a chapter on the Rotliegend (Menning *et al.*) and a very brief account of the Zechstein (Käding). The STD 2002 demonstrates considerable progress in the dating and correlation of various local Rotliegend units. It is notable that the authors propose the abandonment of once widely used subdivisions: Autunian, Saxonian and Thuringian. The Zechstein is subdivided into 7 successions from *Werra* (z1) to *Fulda* (z7). The Triassic is covered by three papers on traditional Germanic units of group rank: Bunter (Lepper *et al.*), Muschelkalk (Hagdorn and Simon) and Keuper (Nitsch). A two-fold approach is applied: typical lithostratigraphy, and subdivision into successions (*Folgen*) defined by bounding marker beds (*Leithorizonte*). The interesting concept of *Folgen* (rather improperly referred to as “allostratigraphic”) is explained in a more detail by Lutz *et al.* and Nitsch *et al.*

The Jurassic System is commented in two papers: by Mönning, briefly summarizing selected aspects of the north German lithostratigraphic subdivision, correlation and facies, and by Bloos *et al.* who briefly describe southern German units. The Cre-

taceous is comprehensively treated in a paper by Hiss *et al.* The description of Neogene and Paleogene (traditionally named “Tertiary”) is most detailed, and is split into 8 papers on various regions: the Lower Rhine area (Hiss *et al.*), NW Germany (Gürs *et al.*), E Germany (Standke *et al.*), the Hessian Basin (Ritzkowski), the Mainz Basin (K. I. Grimm), the Upper Rhine Graben (Grimm *et al.*), the S German Molasse Basin (Doppler *et al.*) and the Alps (Schwerdt). In contrast to this, the late Pliocene-Pleistocene subdivision is rather simple as it is based on well-established glacial and interglacial intervals (Litt *et al.*).

The STD 2002 and its companion volume provide a basic stratigraphic reference and are helpful as an educational tool. Their importance exceeds the strictly German area as several Central and Western European countries share common stratigraphic problems or even gross subdivisions. This pertains in particular to the South Permian and Triassic Germanic basins with their endemic stratigraphy rooted in German territory. Certain weaknesses of these publications are inherent in the adopted methodology and means of presentation. Given the limited space of a chart, some oversimplifications and overgeneralizations became unavoidable, particularly for intervals characterized by strong vertical lithofacies variability and high deposition rates as e.g. during Zechstein time. The error brackets for time correlation, even if known, are difficult to present quantitatively in a chart format. The graphical presentation of genetic aspects of units may lead to some oversimplifications and inconsistencies. The ESTD 2005 clearly demonstrates the problem of the short half-life period of successive time-scales, as it already introduces considerable changes to the ages of the Permian and Triassic boundaries with respect to the STD 2002. Both scales differ in several details from the current GTS scale (Gradstein *et al.*, 2004). Also, the reader might expect more consistency between the chapters and a more orderly construction of the text and illustrations. It would be helpful to have in every chapter a short account of the palaeogeographic or tectonic controls behind different subdivisions, illustrated by a schematic map. It would be also desirable to have a short description and key references to the units shown in the chart.

In spite of the above reservations, the STD 2002 and ESTD 2005 together represent a valuable stratigraphic synthesis. They are recommended to all readers who: (1) want to have a general idea of the stratigraphy of the Phanerozoic the Germany, (2) have some particular questions and need a starting point for further studies, (3) are interested in the current status of regional Central European stratigraphic units, but at the same time (4) can read the German language. The latter requirement is necessary as, unfortunately, there are only short English abstracts included.

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