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As the 11th volume of the series ‘Stratigraphy of Germany’, the Buntsandstein Monograph has been issued with scientific contributions from 27 authors, mainly from the federal Geological State Surveys. The central theme of the monograph covers the stratigraphy of the German Buntsandstein (Lower Triassic) in the Germanic Basin. It is accompanied by a geoscientific historical review on Buntsandstein research since the 18th Century, followed by a palaeogeographical overview.

The main chapter on the Buntsandstein stratigraphy explains the dual stratigraphy agreed by the German Stratigraphic Commission in 2000. The lithostratigraphic component of the historical units is retained in the seven formations Calvörde, Bernburg, Volpriehausen, Detfurth, Hardegsen, Solling and Röt, whereas the regional geochronological component determines the seven Folgen s1 to s7, which have quasi-isochronous boundaries. In wide areas of the Buntsandstein, the boundaries of these formations and Folgen coincide. The synopsis reflects the combined outcome of several working groups and panels, including those of the German State Geological Surveys.

The dual classification scheme of the Buntsandstein can be correlated throughout the major part of the German section of the Buntsandstein depository. It comprises the following units that are partly separated by unconformities with variable characters:

(Muschelkalk)

Röt-Formation	s7-Folge
Solling-Formations	6-Folge (incl. the S-Unconformity)
----- H-Unconformity -----	
Hardegsen-Formation	s5-Folge
Detfurth-Formation	s4-Folge
----- D-Unconformity -----	
Volpriehausen-Formation	s3-Folge
----- V-Unconformity -----	
Bernburg-Formation	s2-Folge
Calvörde-Formation	s1-Folge

(Zechstein)

The lower boundary of the Buntsandstein Group is in the uppermost Permian Changhsingian stage. Thus a very small portion of the Buntsandstein belongs to the Permian. The upper boundary of the Buntsandstein between the Myophorien beds of the Buntsandstein and the Grenzgelbkalk of the Muschelkalk is of early Anisian age.

The “Bröckelschiefer”, which was previously attributed to the lowest Buntsandstein, in fact represents a transitional facies with a saliniferous component. It has been now assigned to the Zechstein Group.

The siliclastic, fining-upward Calvörde Formation (Folge s1) begins in central basin areas with sandy strata, represented by the Heigenbrücken Sandstone or the lower Eck Conglomerate. The base of the Bernburg Formation (Folge s2) begins with a distinct increase in the proportion of sandstone, as well as oolitic

layers. In the coarser clastic proximal-marginal facies this lower boundary can not always be detected.

The Middle Buntsandstein consists of four formations. It starts with the coarse-grained Volpriehausen Sandstone, a member of the Volpriehausen Formation (Folge s3), which is recognizable towards the southern basin margin by a distinct conglomeratic sandstone. A comparable coarse-clastic base and fining upward sequence also characterizes the Detfurth and Hardegsen Formations. Epeirogenetic/taphrogenetic movements were active during sedimentation of the Folge s5 (Hardegsen Formation) and reached a climax towards its end, which lead to differential and widespread erosion of previously-deposited strata. Above this major erosional unconformity, coarse basal sediments of the Solling Formation (Folge s6) were accumulated. In contrast to older layer-cake deposits of the Middle and Lower Buntsandstein, this formation is characterized by local facies changes. It thins out towards the southern basin margin into coarse clastic sediments with multiple pedogenic intervals and extensive hiatuses.

Above the siliclastic Solling Formation (Folge s6) of the Middle Buntsandstein Subgroup there follows the partially-evaporitic Upper Buntsandstein Subgroup. Stratigraphically it is also classified as Röt Formation and Folge s7. It is subdivided into the six members Vitzenburg, Göschwitz, Glockenseck, Karsdorf, Gleina and Dornburg, and in some areas also into the four Subfolgen s7-1 to s7-4. In contrast to the basinal evaporitic facies, the marginal fluvial-lacustrine facies is dominated by a condensed siliclastic succession interrupted proximally by hiatuses and overprinted by stacked palaeosols, which prevent any detailed assignment of lithostratigraphic units.

These central achievements are accompanied by explanations of the biostratigraphic subdivision, of the magneto- and cyclostratigraphy and of the geological time scale, of the climate of the Buntsandstein time, of palaeosols in the Buntsandstein and their stratigraphic relevance, and by a status report on the sequence-, base level- and cyclostratigraphy.

Special insights on regional characteristics of the German Buntsandstein are given by 10 individual contributions. Finally, the Buntsandstein Monograph encompasses further 5 contributions on the lithology and stratigraphy in the adjacent countries of Netherlands and NE-Belgium, Denmark, Poland, NE-France, and eastern Alps.

