Joachim Reitner, Yang Qun, Wang Yongdong and Mike Reich (Eds.)

Palaeobiology and Geobiology of Fossil Lagerstätten through Earth History

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ichnocoenoses evidence a diverse theropod assemblage and an iguanodontian ornithopod dominated herbivorous dinosaur community in deltaic and floodplain lowlands, while sauropods, ankylosaurs and basal ceratopsian were rare in these environments and possibly more abundant in hinterland/upland areas. Goniopholidid and pholidosaurid crocodilians were abundant in near-shore lacustrine and fluvial settings, but atoposaurids were very rare and possibly more terrestrial. The pterosaur remains are largely undiagnostic, but ichnological evidence shows the presence of taxa with wing-spans up to 6 m. The fauna includes mostly groups which could be traced back to Jurassic European/Pangean ancestors, though some elements may support East Asian/Laurasian affinities (basal ceratopsians, possibly troodontids).

Sauropterygian fossils from the predominantly limnic–brackish Bückeberg Formation (Berriasian–Early Valanginian, Early Cretaceous) of northwestern Germany – diversity, distribution, and palaeoecology *[poster presentation]*

Jahn J. **Hornung**[1], Sven **Sachs**[2] & Benjamin P. **Kear**[3]

[1]*Georg-August University Göttingen, Geoscience Centre, Department of Geobiology, Göttingen, Germany; E-mail: jhornun@gwdg.de*

[2]*Engelskirchen, Germany; E-mail: Sachs.Pal@gmx.de*

[3]*University of Uppsala, Department of Earth Sciences, Palaeobiology Programme, Uppsala, Sweden; E-mail: Benjamin.kear@geo.uu.se*

The Bückeberg Formation (Lower Saxony Basin, northern Germany and eastern Netherlands) represents a siliciclastic succession, deposited during the mid-Berriasian through to the earliest Valanginian. The unit is predominantly lacustrine with fluvial inflow and episodic marine connections to the Boreal Sea. Its fossil faunas include sauropterygian remains comprising isolated bones and partial, articulated skeletons. Though most of these finds cannot be identified at genus level, there is evidence of at least three morphotypes, representing distinct taxa: *"Plesiosaurus degenhardti"* Koken, 1887; *Brancasaurus brancai* Wegner, 1914; and an unnamed "pliosauromorph". Other previously named taxa are dubious and/or may be synonymous. Articulated remains are concentrated to two abundance maxima in the Bückeberg Formation: the Obernkirchen Sandstone (lower Bückeberg Fm.) and Osterwald Mbr. (upper Bückeberg Fm.). The depositional environments of the former succession comprise freshwater lacustrine-deltaic barrier and mouth-bar sandstones, and brackish deep-water pelites and littoral marls/calcarenites in the latter. The largely complete skeletons of *B. brancai* originate from a deep-water Konservat-Lagerstätte formed under brackish, euxinic conditions. These individuals are osteologically immature, which accords with other occurrences of limnic plesiosaurs and might infer ontogenetically controlled, migratorial behaviour.