

assignment: *Macrocephalites* spp., *Hecticoceras* spp. and *Kosmoceras* spp. zones (Callovian), *P. athletoides*, *C. renggeri*, *P. (D.) episcopallis*, *P. (D.) antecedens* and *G. riazii* zones (Oxfordian), *H. beckeri* zone (Upper Kimmeridgian) and *H. hybonotum*, *S. schwertschlagerei* and *V. rothpletzi* zones (Tithonian).

The stratigraphic distribution and relative abundance of pelagic microplankton organisms (thin-shelled bivalves, planktonic foraminifers, radiolarians, calcareous dinocysts, pelagic echinoderms and calpionellids) have been used for biostratigraphy and/or recognition of microbiofacies. Within the Oxfordian-Berriasian interval the calcareous dinocyst zones: *C. fibrata*, *C. borzai*, *C. tithonica*, *P. malmica*, *C. tenuis*, *C. fortis*, *St. proxima* and *St. wanneri* are recorded. The Middle Tithonian to Berriasian interval is characterized by the successive calpionellid zones: *Chitinoidella*, *Praetintinnopsella*, *Crassicollaria*, *Calpionella* and *Calpionellopsis* (Lakova *et al.* 1999). Five microbiofacies within the pelagic carbonates are superposed: mudstone and wackestone with filaments of pelagic bivalves (Callovian), *Globuligerina* wackestone and radiolarian wackestone [Oxfordian-Kimmeridgian(?)], *Saccocoma* wackestones (Kimmeridgian – Lower Tithonian) *Globochaete* mudstone (Middle Tithonian) and calpionellid mudstone (Upper Tithonian and Berriasian) (Fig. 1).

The estimated average rate of sedimentation within the Callovian-Berriasian pelagic succession in the Western Fore-Balkan varying from 9 to 26 mm/10³ years is characteristic for the transition from relatively condensed to stratigraphically expanded sections in the Upper Jurassic of the Tethyan region. This rate is lower during the Callovian to Kimmeridgian and increased significantly in the Tithonian and Berriasian. Probable explanations are partial carbonate dissolution of the red nodular limestones in the Late Jurassic and the increased bioproductivity of nannoplankton in the Berriasian.

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Dubki (Saratov region, Russia), the reference section for the Callovian/Oxfordian boundary

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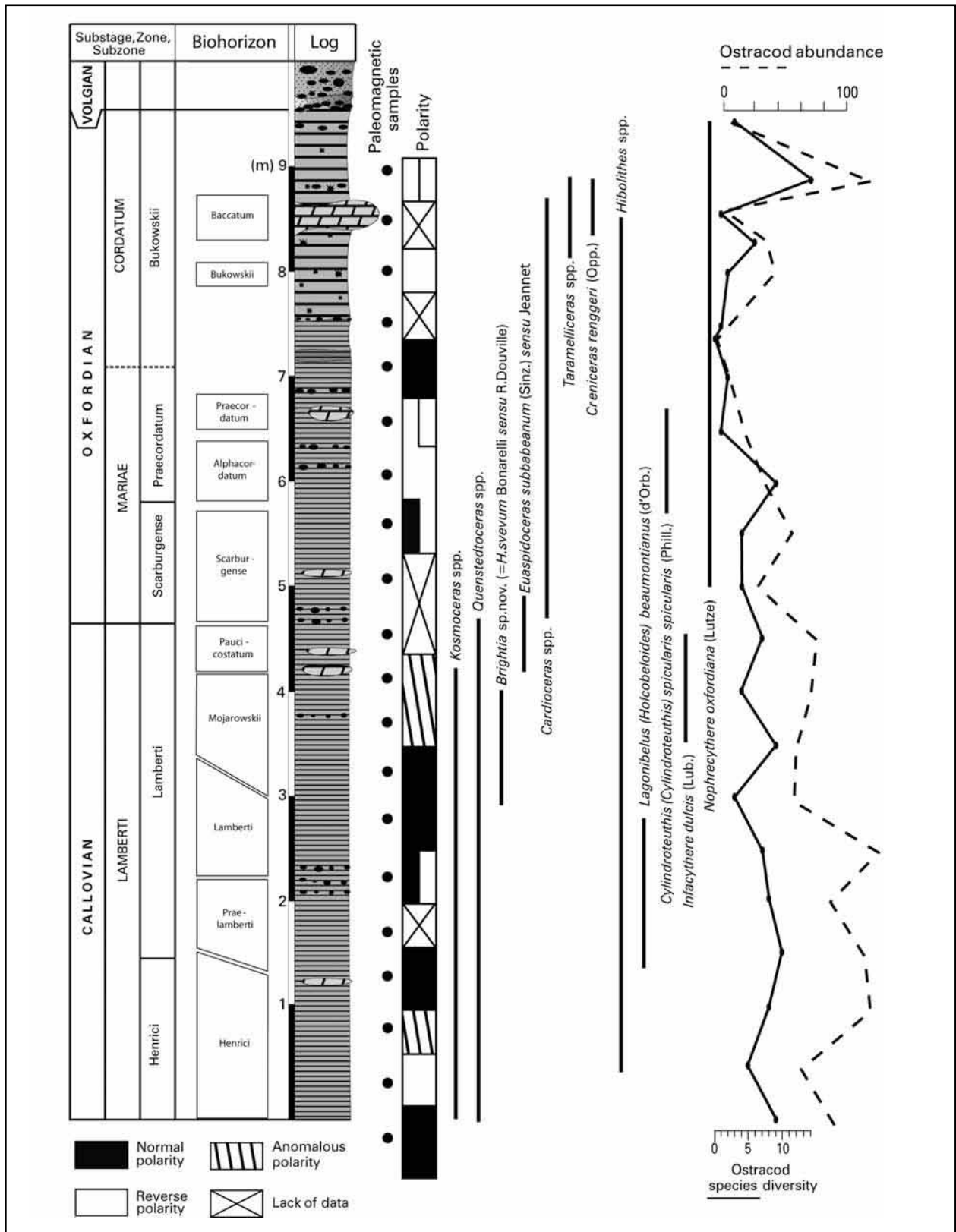


Fig. 1. Stratigraphical interpretation of the Dubki section.

Efforts in the choosing of GSSP for the Cl/Ox boundary have led to distinction of some available sections with good succession of the ammonite faunal horizons in the vicinities of Saratov. One of the primary criteria for GSSP proposal is the good traceability across the world, and hence, the study of reference section (especially in the region with mixed faunas) in the terms of integral stratigraphy. Additional importance of the investigation of the reference sections for the Cl/Ox boundary is connected with wide distribution of the condensed facies and gaps perhaps due to the suggested sharp changes in climate of the Northern Hemisphere. Few variants of the infrazonal units for the Cl/Ox transitional beds of the Russian Platform were suggested recently. Here we are using the scheme of Kiselev and Rogov (2005). The Dubki section is located few kilometers north from Saratov and originally was a temporary quarry for the nearby road-building. Recently this section and/or ammonites from this section were briefly described by Mitta (Keupp & Mitta 2004) and by the present authors (Rogov & Egorov 2003). In addition, this section has recently been proposed as possible candidate for the Cl/Ox GSSP (Kiselev & Rogov 2004).

Precise ammonite sampling permits establishing a succession of faunal horizons close to that of Northwest Europe (Fig. 1). Inclined boundaries between some horizons in the figure mean short transitional span, where index species (or both morphologies in lineage) co-occur. Only ranges of the few, most important taxa are shown. Strong Tethyan influence is fixed in the *mojarowskii* and *baccatum* horizons, while Boreal cardioceratids dominate in the other intervals. Among the Belemnitida two main groups are recorded. Belemnitheutids are generally scarce; they range from *Henrici* to *Praecordatum* subzones. Belemnitids are typically of Tethyan origin (*Hibolithes*). Boreal forms are common only in two restricted levels.

Ostracods are numerous and diverse. However, they show wide oscillations in these two characters through the section, possibly reflecting sea-level changes. Remarkably, *Infacythere dulcis* is replaced by *Nophrecythere oxfordiana* at the Cl/Ox boundary as determined by ammonite biostratigraphy.

Quite exceptionally, some levels in the studied section provided good samples for magnetostratigraphic studies across the Cl/Ox boundary. Lamberti Zone is chiefly characterized by normal polarity, whereas *Mariae* and *Cordatum* zones show dominant reverse polarity, corresponding to polarity structure of the M-35-M37 Chrons (Ogg 2004).

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