# The Reverse polarity zone in the Turonian–Coniacian interval of the Lower Volga region

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The reverse (R) polarity zone was detected in the Turonian-Coniacian carbonate (chalky marls) succession (constrained by the terrigenous Cenomanian and the condensed, middle-upper Coniacian "sponge" horizon) of the Lower Volga region, Russia.

In the Ozerki-2 section, 5 m thick Turonian-Coniacian marls are dated by micro- and macrofaunal complexes. The middle–upper Turonian LC4 Zone (foraminiferal zones after BENIAMOVSKI, 2008) was recognized is the marls. The "Sponge" horizon is referred to the uppermost part of the middle–upper Coniacian LC7 Zone. The upper Coniacian–lower Santonian LC8 Zone is recognized above the "sponge" horizon. The Coniacian–early Santonian belemnites, *Goniocamax lundgreni* (STOLL.), *Belemnitella propinqua* (MOB.), and *Belemnitella rylskiana* NIK., and upper Turonian–lower Coniacian inoceramids, *Inoceramus lusatiae* AND., *Cremnoceramus waltersdorfensis* (AND.), *Mytiloides striatoconcentricus* (GÜMB.), *Inoceramus seitzi* AND., and *I. annulatus* GOLDF., were found in the marls. *Sphenoceramus pachti* (ARKH.) and *Sph. cardissoides* (GOLDF.) were found above the "sponge" horizon. The R-zone spans the entire carbonate succession of the Ozerki-2 section.

In the Kamenniy Brod section, 200 km to the south of the Ozerki-2 section, the R-zone spans a ~15-m thick interval of the ~45-m thick carbonate succession characterized by normal (N) polarity. In contrast to the Ozerki-2 section, the R-zone is not limited by visible gaps in the sedimentary record.

In the Nizhnyaya Bannovka section, situated between the Ozerki-2 and Kamenniy brod sections, the ~20 m thick carbonate formation is completely covered by N-polarity.

The data obtained during this study satisfy the criteria of reliability accepted in magnetostratigraphy (OPDYKE & CHANELL, 1996). The detected R-polarity zone should be included into the Geomagnetic Polarity Time Scale (GRADSTEIN et al., 2012). For now, its Turonian–Coniacian interval is characterized exclusively by normal polarity regime. The detected R-zone confirms the alternative point of view about the presence of reverse polarity epoch in the Coniacian, reflected in the Global Magnetostratigraphic Scale (KHRAMOV & SHKATOVA, 2000).

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