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Position of the Matuyama-Brunhes Boundary in Pleistocene Subaerial Formation of Ukraine

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A b s t r a c t

Pleistocene subaerial deposits in Ukraine have been paleomagnetically studied in several dozens of loess-paleosol sequences. In some sections the results were frequently fairly contradictory, for example, different authors placed the Matuyama-Brunhes (M/B) boundary – a key magnetostratigraphic benchmark of Pleistocene – in different stratigraphic horizons even within the same sections (Bakhmutov *et al*. 2017). Independent investigations concerning the magnetic parameters of the rocks and paleomagnetic study of loess-paleosol sections in Volhynian Upland (Boyanychi and Korshiv sections), Black Sea Lowland (Roxolany section) and Dnieper Lowland (Vyazivok section) by the same experimental procedure for comparing the formation of the magnetic properties for these regions and revealing the magnetostratigraphic markers were obtained by the author. According to new results for Roxolany section the M/B boundary is located at a depth of 46.6 m at the contact of buried soils of Lubny (lb) and Martonosha (mr) horizons (Fig. 1). The M/B boundary in Vyazivok section lies at a depth of 56.2 m in the lower part of Shyrokino (sh) paleosol horizon (Hlavatskyi 2016). The position of the M/B boundary in Roxolany and Vyazivok sections is controversial following by local stratigraphic schemes, which can be explained both of peculiarities of "magnetic record" in soil and incorrect stratigraphic subdivision of Roxolany section. There are evidences of magnetic event, probably Emperor/Big Lost (560-570 kyr), in both sections, which was detected in Zavadivka (zv) soil. The same zone of reversed polarity was fixed in Zavadivka horizon in other sections of the south of Ukraine (Bakhmutov *et al.* 2017). The M/B boundary is not revealed in the Volhynian Upland sections and short reversed-polarity episodes or excursions are absent; therefore, magnetostratigraphic correlation of Boyanychi and Korshiv sections with other loess- paleosol sequences is impossible. New correlation stratigraphic scheme of the subaerial formation of Ukraine is proposed.

Keywords: the Matuyama-Brunhes boundary, loess-paleosol sequence, Pleistocene, magnetostratigraphy, Ukraine.

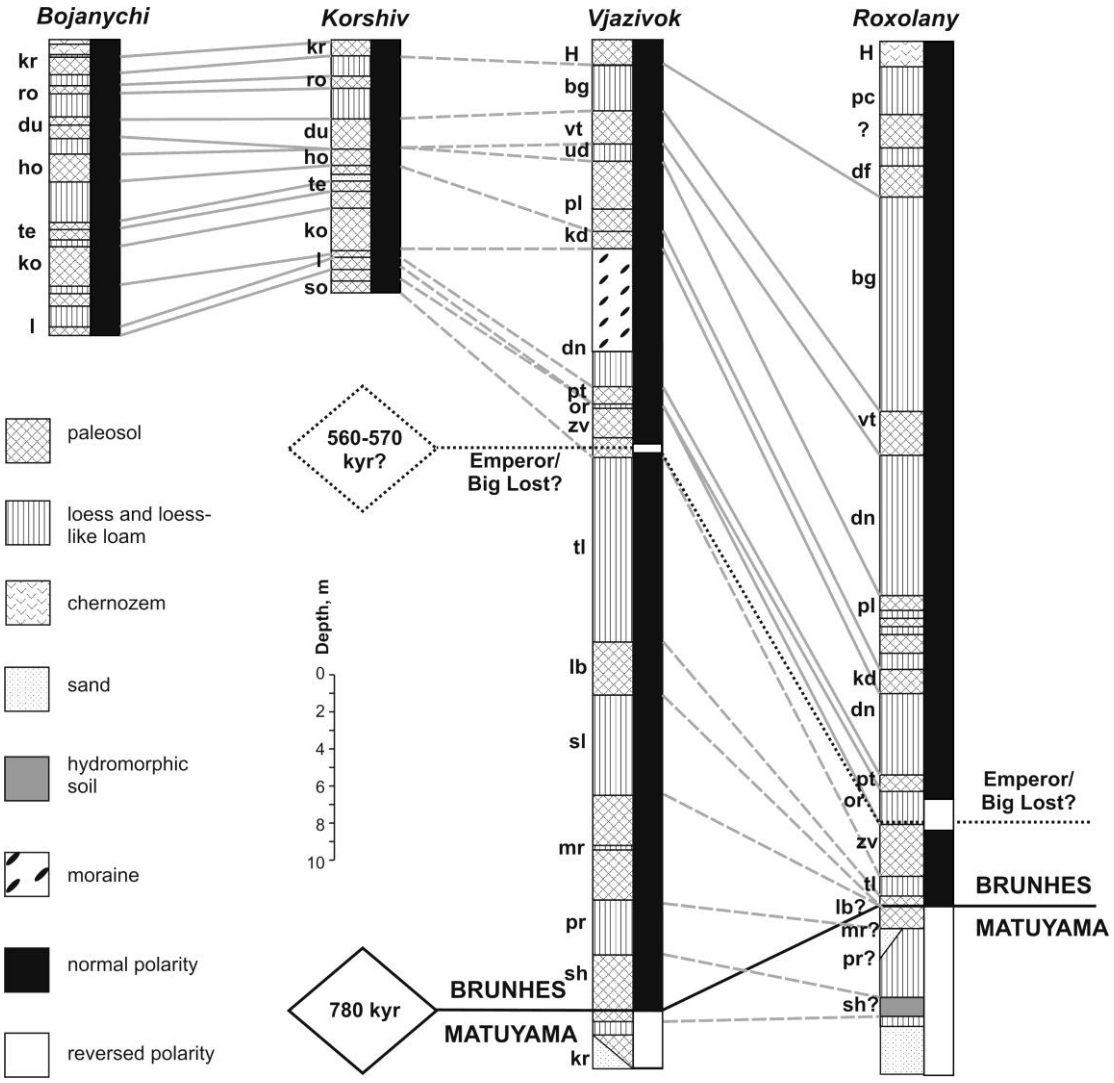

Fig. 1. Stratigraphic and magnetostratigraphic correlation of subaerial sequences of Ukraine studied by the author.

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