

## The Miocene Tagay locality of Olkhon Island (Lake Baikal, Eastern Siberia) – a multidisciplinary approach

DAXNER-HÖCK G.<sup>1</sup> & SHCHETNIKOV A.<sup>2</sup>

<sup>1</sup> Naturhistorisches Museum, Geologisch-Paläontologische Abteilung, Wien, Österreich. Email: gudrun.hoeck@sbg.at

<sup>2</sup> Russian Academy of Science, Institute of Earth's Crust, Siberian Branch, Irkutsk, Russia. Email: shch@crust.irk.ru

Lake Baikal is the largest and deepest freshwater basin of Central Asia. It developed by tectonic processes since the Late Cretaceous. The Olkhon Island, the largest island of Lake Baikal, was originally part of the Siberian mainland (located in the Baikal Depression). It started to separate from the western hinterland during the Miocene, and completely lost its land-connection during the Pleistocene. The Miocene Olkhon Island and the Siberian mainland share similar geologic and geomorphological features: i.e. denudated plateaus, where streams deeply cut into the crystalline basement and filled the basins and valleys with reworked terrigenous sediments. One of these Miocene basin-deposits is represented in the Tagay Bay at the western part of Olkhon Island. Our multidisciplinary studies along section Tagay-1, in summer 2014 (principal investigator M.A. ERBAJEVA, Ulan Ude) aimed at:

- Lithology and sediment structures of 17 sediment layers,
- The palaeontological record of small mammal assemblages, composed of Rodentia, Eulipotyphla and Lagomorpha (fossils available from sediment layers 11-3),
- The geochemical record of the sediment sequence, and the reconstruction of palaeoenvironments and paleoclimate,
- The magnetic polarity pattern of sections Tagay-1 (Mioc.), and Tagay-2 (Pleist.), and
- Age dating of the small mammal assemblages by correlation of biochronologic and palaeomagnetic data and the Geologic Time Scale (GTS 2020).

The palaeontological record and the magnetic polarity pattern of fossil layers 11–3 of section Tagay-1 correlate with the subchrons C5Cn.2r–C5Cn.1r of Chron C5C and the upper Burdigalian stage of the Geologic Time Scale (GTS 2020). The corresponding age range of the Tagay-1 fauna is ~16.5 to ~16.3 Ma.

Reference:

Daxner-Höck G. & Shchetnikov A. (2022). The Miocene Tagay locality of Olkhon Island (Lake Baikal, Eastern Siberia) – a multidisciplinary approach. *Palaeobiodiversity and Palaeoenvironments*, 102: 831–841.