

E. S. ZHITOVA,*, **** *M. P. POPOV*,**, *** *S. V. KRIVOVICHEV*,*, *****
A. N. ZAITSEV,*, ***** *N. S. VLASENKO*.* QUINTINITE-1M FROM THE MARIINSKOE
DEPOSIT (URAL EMERALD MINES, MIDDLE URALS, RUSSIA)

* *Saint Petersburg State University, Saint Petersburg, Russia*

** *Institute of Geology and Geochemistry, Urals Branch of RAS, Ekaterinburg, Russia*

*** *Urals State University of Mines, Ekaterinburg, Russia*

**** *Institute of Volcanology and Seismology, Far East Branch of RAS,
Petropavlovsk-Kamchatsky, Russia*

***** *Kola Science Centre of RAS, Apatity, Russia*

***** *Natural History Museum, London, UK*

The paper contains description of quintinite $[\text{Mg}_4\text{Al}_2(\text{OH})_{12}](\text{CO}_3)(\text{H}_2\text{O})_3$ for the first time found in the Mariinskoe deposit (the Middle Urals, Russia). The mineral occurs there as white tabular crystals in cavities of metasomatically altered gabbro in association with prehnite, calcite and a chlorite group mineral. Its formation seems to be connected with the late hydrothermal alteration of primary mafic and ultramafic rocks hosting the emerald-bearing glimmerites. The Mg:Al ratio was determined as $\sim 2:1$ by electron microprobe analysis. IR-spectroscopy revealed in the mineral the presence of H_2O molecules, hydroxyl and carbonate groups. Quintinite is monoclinic, space group $C2/m$, $a = 5.233(1)$, $b = 9.051(2)$, $c = 7.711(2)$ Å, $\beta = 103.09(3)^\circ$, $V = 355.7(2)$ Å³. Based on single-crystal structure refinement the polytype should be denoted as 1M. This is the third find of quintinite-1M in the world (after Kovdor massif and Bazhenovskoe chrysotile-asbestos deposit).

Key words: quintinite-1M, hydrotalcite supergroup, layered double hydroxides, Mariinskoe (Malyshvskoe) deposit.