

THE BOUQUET OF THE METEORITE CRATERS IN THE EPICENTRE OF TUNGUSKA IMPACT 1908 YEAR. L. P. Hryanina, Institute of Geosphere Dynamics, Russian Academy of Sciences, Leninski pr. 34, Building 6, 117334 Moscow, Russia.

The "Great Depression" under Tunguska impact 1908 year (coordinates 101°57'E, 60°55'N) is near oval, D about 8 km, surrounded of the rim with intrusive trappas ring. Numerous trappa hills are within the depression. The Permian sandstones lie on the foot and slopes of the mountains Stoykovich and Farrington, which are the central peaks, and, structurally, horst-anticlynals. The rock meal was described on the top of mountain Stoykovich. [1]

The great depression is located near the south boundary of Siberian tuffs field (T_1 age), and was described [1] as trap pas volcano. Relatively small-grained tuffs surrounded this structure, but agglomerate breccias are timed to it only.

There are many faults of the spider net within and around the great depression (Fig. 1).

We had looked through some thin sections of the tufogeneous sandstones from the slopes of mountains Stoykovich and Farrington (the specimens, collected by B. N. Golubov and D. N. Petrov).

The quartz grains in these rocks have signs of shock metamorphism: the cleavage, the systems of wavy cracks, likewise of planar features, partial and total isotropization of the grains, diaplect glasses and lechatelierite, crystallized. The iron spherules were noted in the pores of the sandstones.

Thus, there are many signs of the great depression meteorite genesis: morphological-ring fall with rim and central peaks (mountains Stojkovich and Farrington), structural -- horst-anticlynals (these mountains) and spider net of the faults, petrographical-shock metamorphism of the rocks from central peaks. All these signs permit one to suppose that the great depression has a meteorite genesis. Two central peaks and festoon contours of rim-trappa-intrusion indicate that this structure was formed by rapprochement and simultaneous impacts of at least three meteorites, probably in Trias. Numerous trappa hills maybe be a large klippens or the result of the trigger magmatism after impact. Magnetic measurements should be used to find the deep channels or absence of deep roots under trappa hills.

BOUQUET OF TUNGUSKA CRATERS: L. P. Hrganina

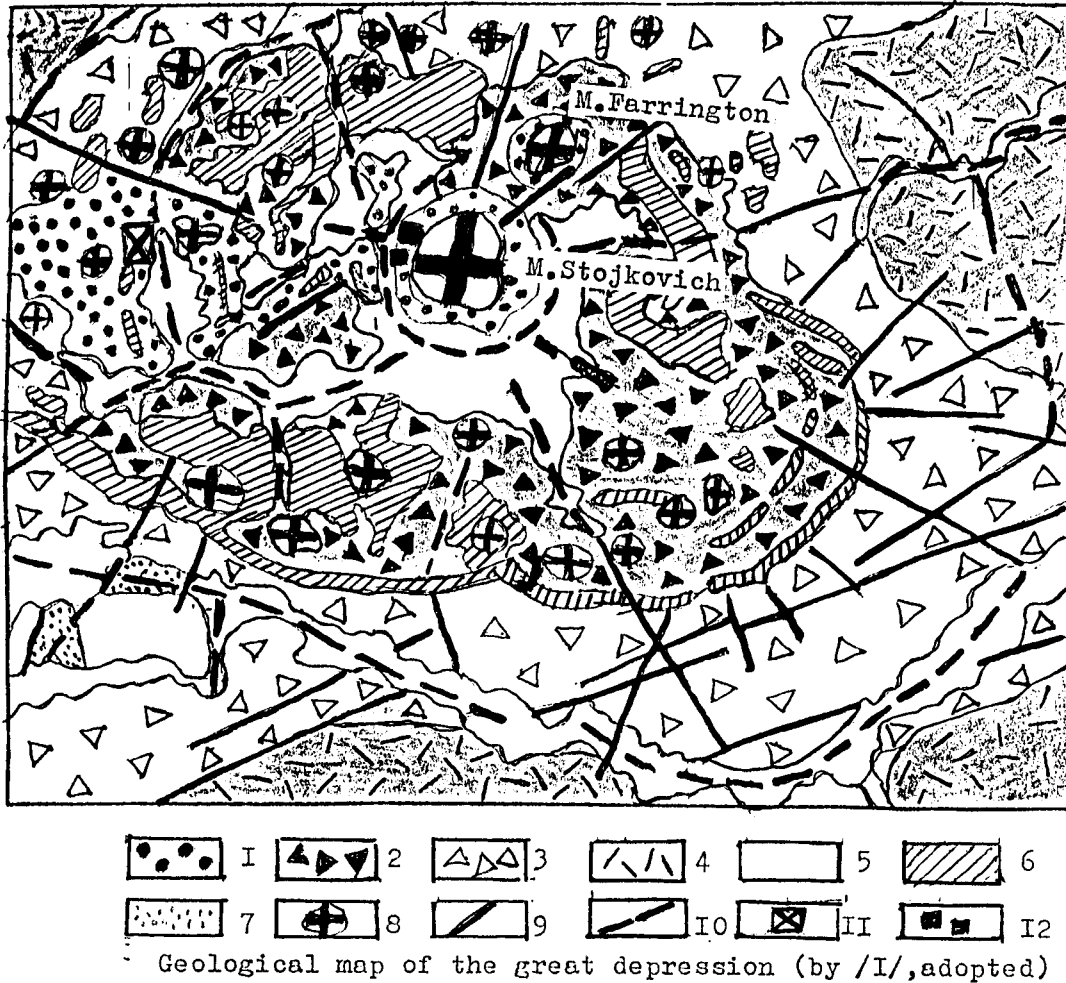


Fig. 1. Geological map of the great depression: (1) sandstones (P_2), Tuffs (T_1); (2) agglomerate breccias of near crater zone; (3) agglomerate breccias of intermediate zone; (4) tuffs and tuffites of far zone; (5) young alluvial and swamp deposits; (6) intruded trapps; (7) zones of metasomatose; (8) crates of volcanoes (by [1]); (9) faults (by [1]); (10) faults, added by Hrganina. (11) epicenter of 1908 impact; (12) houses of kulik.

References: [1] In Russian, 1975.