

NEW TRENDS IN PREVENTION AND INVESTIGATIONS OF GEOPATHOGENY

KOVALEVSKII A.L. Geological Institute, Siberian Branch of the Russian Academy of Sciences, Ulan-Ude, 670047, Russia.

Numerous geological hazards for humans, clearly visible in the geopathogenic territories, are connected with biogeochemical, biogeophysical and complex biogeophysical-chemical anomalies, localities, sites, lineaments and provinces. Biogeochemical provinces deficient in I, Se, F, Zn, Fe occupy the largest areas. They may be spread for great territories including whole countries. I and Se deficient provinces, for example, are connected with territories without salt marine sediments enriched by these elements, commonly with igneous rocks of granitic series. Well known are also biogeochemical localities, sites and lineaments deficient in Mn, Co, Ni, Mo, B, F, Br. All these territories are of natural origin. Biogeochemical sites with dangerous excess of toxic chemical elements usually cover much smaller areas. They may be of natural and anthropogenic origin. Such great territories occupy biogeochemical provinces with natural excess of Se and As. There is only one long explored, large biogeochemical province with excess of Se situated in the Western states of the USA and in the Southern states of Canada. Other Se excessive territories on the Earth are much smaller. In 1990-s As excessive biogeochemical provinces, deficient in Se, were revealed in Bangladesh and West Bengal-India. Very numerous are local excessive biogeochemical sites of anthropogenic origin. The most known are such objects with excess of Pb, Cd, Hg, Cu, Ni, Cr investigated by environmentalists. Natural geopathogenic territories must be contoured, mapped and investigated with the participation of geologists as they are involved in usually complicated geological composition, geochemistry, mineralogy and structures of territories and their geochemical landscapes.