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Stabilization mechanisms and functions of organic matter in phosphorites soils of Mongilia

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The complex learning of morphogenetic and ecological characteristics of soils, processes of pedogenesis and humus state features in main types of mountain soils developed on the outputs of Hubsugul phosphorites deposites of Mongolia is conducted. Hubsugul lake basin belong to that territories, whose sustainable development has national, and also great international importance. Investigated Prichubsugul area is included into the Altai-Sayano-Mongolian mountain land and refer to south-west ending of Baikal rift zone with planetary boreal taiga and Asian boreal steppe types of nature, which was formated on boundary of Neogen and Anthropogen. The influence of mountain-zone component, intrazonal factors and cryogenesis on humus state of soils, pedogenesis, pedochemistry and biogeochemical migration of phosphorus and other elements, biological effeciency of biocenoses, natural-resource potential of research terrain was established. The representations about possibilities of topsoil evolutionary development and soil body existence ecological balance both in conditions of natural development of geosystems, and under destabilization effect of an anthropogenic factor were broden through conducted researches. In aspect of mastering of phosphorites deposit possible consequences of intensifyed technogenic press on unique in natural and cultural attitude Hubsugul lake ecosystem are predicted. The weathering of phosphorite rocks of south-west Hubsugul lake area produce to significant accumulation of silicate compounds as decomposition and carrying out of phosphate-carbonate component and else to residual accumulation of clay minerals and silt organic matter. The stabilization role of the phosphorous and carbonates consist in formation of solid calcium-phosphorous humic coagulation complexes. Their further humification and mineralization is difficult owing to more quantity limits of zonal humic accumulation. Investigataed soils are characterised of a large quality of total and mobile phosphorous, which determine definite propeties. The structure and functioning of investigated geosystems are characterized by intensive decomposition in accumulative-eluvial soil horizonts of dead organic matter and depositing of big reserves of weakly mobile humus with fulvate-humate composition and high content of Ca-Mg humates, clay-minerals fixed humates, (II III fractions) and also unconposition humin residual. The high contents of humic acids, is conditioned, probably, presence of frankolite (tricalcium phosphate). It has "fixing" of humic materials and promoting to preservation and "aging" of a humus. The mineral phosphate fractional analysis has shown, that the most actively under influence of phosphorite layers are accumulated Al-phosphates and Fe-phosphates. This is connected with organic matter quantity and the clay material, which have promoting fixing of Al- and Fe-phosphates inside the soils profile. Throught soil formation and humification process it take place the plant residuals and prohumus substances preservation by carbonate kutans, which are protected them from further microbiological influence Humic acids encstinction coefficients of phosphorites soils, more stably fixed of their genetic features, are indicated of low degree humic acids condensation and so weakly isolation between hunic and fulvic acids. During pedogenesis the phosphorus is eluviated in form of mineral and phosphor-organic compounds (POC) and can migrated in landscapes. The main part of POC phosphorus in investigated soils types is fixed with fulvic acids. Carbonate components «shades» influence of phosphate rooks materials. The common trend of the weathering carries on to formation of the hydroshale-chlorite-illite composition of a clay part of soils with bad cristallization and superdisperse features of illites. The chemical elements accumulation degree in separate parts of landscape cascade- geochemical systems depends on a mutual combination of humification processes, pedogenesis and of chemical units migration features. Key words: soil organic substansies, humus, mountain soils, phosphorites, Prihibsugul region, Mongolia