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Ecological and geochemical research Shostka city (Sumy region)

A ecological and geochemical studies environmental objects (soil, bottom sediment and vegetation) Shostka (Sumy region) under the influence of chemical enterprises (Shostka plant of chemicals, Zirka, Svema) and power (CHP Shostka), as well as on the background area (Bogdanovsky reserve). The physicochemical properties of the soil (organic matter content, the content of exchangeable cations, pH). Are defined anthropogenic geochemical associations of heavy metals in the soils of the city, which is represented by the following elements: $Zn_6, Cr_6 > Cu_5 > Pb_3, Ag_3 > V_2 > Ni_{1,5}, Co_{1,5}$ (indices of the items – concentration ratios). Has been given their ecological and geochemical assessment of contamination by total index using methods Yu.E. Saet and Yu.N. Vodyanitsky. Total index of the surface layer of soil contamination Shostka (0-10 cm) of metals Cr, Cu, Ag, Pb, Zn, Co, V and Ni ranges from 10 to 112, the average – 36, which corresponds to a strong level of contamination of soil cover. The regularities of distribution of heavy metals in urban soils are studied. Conducted analytical work to determine the modes of occurrence of heavy metals in urban soils by stepwise extracts. Soil contamination because of the work of industrial enterprises has led to the disruption of natural balance modes of occurrence of heavy metals. It is shown that the anthropogenic contaminated soils under the influence of industrial enterprises is increasing the mobility of heavy metals in comparison with background soils areas. The content of heavy metals in the sediments on the technogenic contaminated and background sites. The coefficients of biological absorption of heavy metals in vegetation (for example, herbaceous vegetation couch grass). It is shown that Cu is characterized by the highest values of the biological transition coefficients. The increase in the content of heavy metals in the soils of the zones of influence of industrial enterprises and changes in physical and chemical properties of the soil leads to a more active migration of heavy metals from soil to vegetation.

Keywords: heavy metals, environmental objects, patterns of distribution, forms of occurrence.