



Concerning spatial organization of modern zones of anthropogenic contamination

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Biogeochemical regionalizing implies evaluation of ecological risk in the zones of anthropogenic contamination. At present this problem is solved inductively basing on mapping the contamination gradients with regard to the adopted MPC levels for biologically significant chemical elements and compounds. The results are useful but this does not mean that the problem has no deductive solution.

Analysis of this statement basing on theoretical approaches of Vernadsky, Vinogradov and Kovalsky has shown that: firstly, spatial chemical differentiation of biosphere has always reflected the result of geological and historical interaction of living matter with its environment; secondly, its structural stability was provided by survival of species that were ideally adapted to their habitat including its geochemical conditions; thirdly, the communities with stable negative biological reactions could not exist in the virgin (anthropogenically untouched) biosphere in principle due to its self-regulation. Therefore the virgin biosphere has existed as a self-organized ecologically optimal system which geochemical parameters have been fixed in such a variable but conservative component of the biosphere as the soil cover is.

In case of anthropogenic contamination it superimposes on the initially formed geochemical heterogeneity of the virgin soil cover and therefore modern populations of different species including that of the man inhabit the environment of the two-layer geochemical structure that affects them by different spatial combination of the interfering layers.

The developed approach allows deductive practical solution of the problem of mapping ecological risk in zones of anthropogenic contamination. It includes the following steps: 1) mapping natural biogeochemical background variation on the basis of the structure of the undisturbed soil cover; 2) mapping anthropogenic contamination; 3) superposition of the two maps and revealing zones with different potential ecological risk.