

MINERAL ASSOCIATIONS OF THE BURNING DUMPS OF THE RUSSIAN AND EUROPEAN COAL BASINS: SIMILARITIES AND DIFFERENCES

SHCHERBAKOVA, E. (Natural Science Museum of the Ilmen State Reserve, Miass, Russia)
E-mail: founds@ilmeny.ac.ru

Mineral associations of the burning dumps of coal mines have been studied in Europe since the twenties of the 19th century. Today the total number of mineral species described on such dumps approximates 300. The number of minerals found in each basin is diverse; it is 21 for the L'vov-Volinsky basin, Ukraine (SREBRODOLSKY, 1986), 57 for burning dumps of Hungary (SZAKÁLL & JÁNOSI, 1996), 95 for Bohemia, Czech Republic (ŽÁČEK, 1995; ŽÁČEK & ONDRUŠ, 1997) and more than 200 for the Chelyabinsk coal basin, Russia (CHESNOKOV, 1999; CHESNOKOV & SHCHERBAKOVA, 1991).

The similarities and differences between mineral lists of these areas may easily be discovered. For example, the dominance of sulphates and the presence of ammonium and organic minerals are typical for every of them. What is more, there is a whole series of minerals, such as sulphur, sal ammoniac, mascagnite, tschermigite (or K-alum), gypsum, anhydrite, alunogen, pickeringite, copiapite, epsomite, hematite and one of the mineral forms of silica, more often quartz, which have been described in every coal basin, regardless of the total amount of minerals known there. These phenomena reflect the same genetic essence of mineral forming processes occurring in the burning dumps, that is, the interaction of the volatiles (products of the decomposition of residual dump coal) and their influence to primary dump rock.

On the other hand, appearance of some unique or rare minerals such as compounds of As and Sb in Bohemia or the rarest Fe chlorides in Chelyabinsk are connected, first of all, with the geochemical character of a basin as a whole and regional climatic conditions.

References

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