

Indoor combustion of coal and Iodine-deficiency disease

¹Zheng, B.S., ²QIN, S.X., ¹ZHU, G.W., ¹WANG, B.B.¹.State Key Lab of Environ. Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, Guizhou province, P.R.China ².Dept.of Public Health, Guiyang, Guizhou Province, P.R.China 550002

According to the survey in 1990, in 87 counties and cities within Guizhou province, 57 of them were found with the iodine-deficiency disease (IDD) epidemic while the other 30 were discovered with endemic fluorosis. It was estimated that among the population of 30.73 million in the province, there were 2.09 million people come with the IDD, cretinism syndrome 21 thousand people, and 11.74 million for the fluorosis. The IDD is popular in the east and south-eastern regions of Guizhou province, where firewood is used as the main source of heating energy. And fluorosis is a common disaster in the north-western coal-mining areas of the province.

The peasants in Guizhou are used to cooking and getting warm by using stoves without chimney. Then the food and vegetable stored in the room may absorb the fluorine that is released by the burning coal. So it causes the epidemic fluorosis.

There are two explanations to the epidemic fluorosis without IDD in the disaster areas. First one considers the fact that Iodine is rich in regions that contain coal. And in the iodine-rich soil, the agricultural commodities are also contained with high levels of iodine. The second idea is that coal has iodine in its ingredient and in coal-burning chamber as fluorine-pollution results in fluorosis. In fact, the food and vegetable and indoor air are found with higher levels of iodine. Thereby decreases the possibility of getting IDD.

The detail causes of thinking will be discussed in this paper.