

the formerly high mortality rate from tuberculosis dropped severely and its place was taken by pulmonary malignancy.

The evidence available points to the action of a causative agent which is eliminated rapidly after having done its destructive work in the body. Considering that all conditions as to the site, history, geological formation of the mines, and the type and duration of exposure of the workers are either very similar to or even identical in Joachimsthal with those existing in the Schneeberg district, and realizing that the most important and unique common factor in both mining activities is the presence of radioactive matter in the form of radon, it becomes increasingly certain that the causative agent, which elicits the neoplastic response in the lungs of the miners in both regions, is the radiating energy of radon inhaled. Attempts at an experimental reproduction of these neoplasms in animals so far have failed (Löwy).

*Incidence.* The first case of "radium disease" of neoplastic character was described by Löwy in 1926. The same author placed a second case on record in 1928, and reported three additional cases in the following year. During 1929 and 1930, there occurred 19 deaths among the miners and individuals formerly employed as miners (9). Autopsies were performed in 13 instances and cancer of the lung was found in 9 cases, while tuberculosis existed in two. These postmortem examinations were continued by Ziel during 1933 to 1934, as there were no autopsies performed during 1931 and 1932, due to the objections raised by the relatives of the deceased miners. After arrangements had been made by the government of Czechoslovakia concerning the payment of an indemnity to the relatives for the privilege of an autopsy, these studies were resumed in 1934. During 1934 and 1935, there were 15 necropsies with 4 carcinomas of the lung (30 per cent). The general incidence of death from lung cancer among the Joachimsthal miners was estimated by Šickl to amount to more than 50 per cent, while Hueck stated in 1939 that it was 47 per cent (against 75 to 80 per cent in Schneeberg).

In 1935 the Czechoslovakian government published an official report on lung tumors among the miners in Joachimsthal, basing its conclusions on the medical data obtained by the regular medical examinations (physical, laryngological, roentgenological) of the miners. In this official report it was contended that only 4 miners had died since 1932, and none had shown any evidence of pulmonary cancer at a postmortem examination. However, it was noted, that many of the workers suffered from hyperthyroidism and catarrhal complaints of the upper respiratory tract. These conditions were present in 90 per cent of the miners, yet none showed any evidence of even a preparatory condition suggesting the possible future development of a pulmonary malignancy. It may be stated that the information as to the incidence of lung tumors contained in this report is in stark contradiction of data reported from other sources. Moreover it may be added that the report appears to be unreliable, as