results of a roentgen-ray examination may help to establish the correct diagnosis.

A roentgen-ray examination of the chest may show a marked discrepancy between the size of the tumor in the roentgenogram and the extent of the physical symptoms, which are found over a larger area on account of atelectases. The presence of an effusion interferes with the proper interpretation of the lung findings. The effusion has to be removed before the pictures are taken. The establishment of a pneumothorax, which is sometimes prevented by the presence of adhesions, may improve the demonstration of the lung tumor in the roentgenogram. By the injection of iodinized oil into the bronchi, the existence of an obstruction of the bronchi by tumor growth can be visualized. The presence of extensive calcifications in the roentgen-ray pictures of the lung does not support the diagnosis of a carcinoma of the lung.

In the nodular type the tumor appears as an irregularly outlined area of homogeneous density. The density does not increase toward the margin but extends infiltratively into the surrounding tissue. When a whole lobe is affected the consolidation appears as a homogeneous density without any mottling, and is not as marked as that of a fluid. The edge of the shadow is irregular and shows a peripheral infiltration into the healthy parenchyma. Carcinomas originating from the bronchial mucosa in the vicinity of the hilum appear as irregular densities, from which a bronchial tree of increased density radiates. Bronchial tumors may be seen with the bronchoscope in 75 per cent of cases (Jackson and Konzelmann).

Laboratory Findings. The sputum varies in appearance and amount. It may be mucoid, purulent, or sanguinolent. A sanguinolent sputum, which may contain red streaks, be rust brown, or have the appearance of raspberry jelly, rarely is seen early in the disease, while it is present in 60 per cent (Fishberg) of the cases during the late stage. A transitory hemoptysis is more characteristic of primary lung carcinoma than a continuous one. Fat globules, which are indicative of carcinoma of the lung, according to Lenhartz, are found in the sputum in other diseases. Acid fast bacilli may occur in the sputum if lung gangrene complicates the tumor. They are saprophytic bacilli (Muir and Ritchie). A copious sputum usually appears only in a late stage and may be malodorous at times. It originates from cavities.

Effusion: Pleural effusion is present in about 50 per cent of the cases. It may be serous, purulent, or bloody. A purulent fluid is observed in 19.9 per cent and a hemorrhagic one in 29 per cent (Fishberg), but the latter may be transitory.

Blood: A leucocytosis with myelocytes and myeloblasts points to the presence of bone metastases.

Histological examination: The sediment of sputum or pleural effusion can be used for histological examination for tumor tissue. Krampf reported that in one of 26 cases the diagnosis could be made from a histological examination