

*breach in the continuity* of its surface, placing it more or less in direct communication with the external atmosphere."

This seems scarcely the teaching of the present day, however, and guided by the observation of the last decade, we may assume that simple pneumothorax does exist, or at least, such a condition without perforation, and gases may be formed within the pleural cavity and give rise to all the signs characteristic of that condition. Bacteriological examination into such cases has established the presence of gas producing organisms of anaërobic type.

Three case reports may be cited supporting this view. The first is that reported two years ago by E. Lévy, of Strasbourg, in which no perforation was found, but the exudate contained on two occasions an anaërobic micro-organism capable of producing gas in cultures as well as in guinea-pig tests. From the clinical history of his case, it would seem that this infection was one of secondary character, and in presenting his report Dr. Lévy makes a plea for essential pneumothorax.

The second is that reported in the *Deutsches Archiv für Klinische Medicin*, 61 Band. Dr. Richard May and Dr. Adolf Gebhart describe a case of pneumothorax of this class in which the gas formation was evidently due to the presence of the bacterium coli.

The third case is No. IX., in our series. A patient under treatment for a severe form of appendicitis, was operated on and four or five days later he developed signs of disease in the right lung and subsequently in the pericardium—signs leading to a diagnosis of pneumonia and pleurisy of the right side with hydropneumo pericardium. The autopsy confirmed the diagnosis and further revealed a pyo-hæmo-pneumothorax of the right side, as well as a pleurisy of the left side. The pericardial effusion was similar to that in the pleura, but the pus elements were more scanty.

An examination of the abdomen showed a suppurative track—a retroperitoneal dissecting abscess, extending upwards, traceable along the inferior vena cava to the diaphragm. Viewed from the pleural side no perforation was discoverable, but near that point where the inferior vena cava emerged through the diaphragm a reddish grumous broken-down area existed. The pericardium presented no such area suggesting even the possibility of perforation, although, as we have said, it contained ante-mortem and post-mortem signs of pneumo-pericardium.

Subsequent examination of the organs of this patient, as reported by Dr. A. G. Nicholls, in the *British Medical Journal*, of 1897, showed the presence of the bacillus *aërogenes capsulatus* in large numbers—and the gas found in the serous sacs was doubtless due to an infection with this gas producing bacillus.