

purulent effusion in the chest." Flint goes further and is of opinion that all cases of empyema are due to a special cause as yet unknown. Douglas Powell is more explicit; he thinks, "we may, indeed, with some plausibility, maintain that some septic agent present in the blood renders the inflammation purulent rather than serous, as in the joint affections in pyemia, although the pus-producing quality in the blood is very difficult to estimate and would seem to be of different sorts."

If we turn to German writers, we find much more definite statements as to the pathology of empyema, and it is a matter for surprise to find our radical American friends, who are usually inclined to follow the lead of German pathologists, in company with, or rather behind, the conservative Englishman, who is rather slow to accept any new theory. In Ziemssen's Cyclopaedia, Fraëntzel, to account for the enormous production of pus cells in many cases of empyema, which far exceed in number all the white corpuscles of the blood, suggested that a rapid process of cell division took place in the migrated white corpuscles, and that this cell division was due to some cause hitherto undiscovered. Since then the germ theory of disease has seen almost its whole development, and its widest application is received with little reservation by the German profession generally. Rindfleisch asserts that micrococci are present in all suppurations. They are found in the pus of all acute abscesses, and, with few exceptions, in the pus of all cases of empyema. Strumpel's Text Book of Medicine, the latest work we have from the German, gives it as an undoubted fact that purulent pleurisy can only be excited by infection of the pleura with a specific virus, and his teaching is widely accepted in Germany. Eichhorst says, "It is probable also that the bacteria to which such acute diseases, as typhoid fever, scarlet fever, acute ulcerative endocarditis, puerperal fever, etc., owe their origin, exert a direct inflammatory irritation on the pleura to which they are carried by the lymphatics."⁶ We know that if we keep all micro-organisms out of external wounds by appropriate dressings they do not suppurate, even if the system of the patient is depressed. If all other agencies than germs are

insufficient for the development of the suppurative process in wounds, will they not also be insufficient for the development of a similar process in the pleural cavity? This leads to the discussion of the pathology of suppuration generally, which is beyond our province.

In the treatment of empyema, medicine has little to offer towards aiding us in the management of this disease; but, the development of aseptic surgery has done very much in lowering the mortality rate, and not only so, but also in effecting such cures as are satisfactory alike to patient and surgeon. Instead of "generally proving fatal," as Trousseau mournfully remarks of this disease in his time, the results, in the experience of doubtless not a few present, have been uniformly favorable as to life, and fairly so, as to the completeness of the cure. In the past, as now, in a few cases the pus was absorbed, leaving no evil effects; in some others, in whom the pus found its way into a bronchus, and a smaller proportion still of those in whom it found exit by perforation of the chest-wall, recovery ensued; nearly all others died, operative interference being almost necessarily fatal and therefore scarcely justifiable. In our day the conditions are reversed; it is in the retention of pus in the body, not in its evacuation, that dwells the danger; so that on the discovery of pus in the pleural cavity, our imperative duty, with rare exceptions, is to remove it. If the effusion be large the removal must be prompt, irrespective of the condition of the patient, since large effusions—even in patients apparently suffering but little from them—are liable to a sudden fatal termination.

In what cases is it advisable to delay interference? The most common are those in whom perforation of a bronchus has occurred and the pus is being expectorated; some of these recover in fair time without operative aid. Godlee, of Brompton Hospital, specifies the following also:⁹—1st. Cases of chronic phthisis in whom the presence of pus may apparently be doing no harm for a considerable time, but its evacuation may be followed, apparently as a result, by increased destructive changes in the lungs. 2nd. In a class of tubercular cases, where the empyema is in direct communication with a bronchus and the patient suffering

6. Pepper's System of Medicine. 7. Ibid.

8. Diseases of Lungs, etc.

9. Lancet, 1886, vol. I, p. 95.