

hepatitis. The results so far indicate that the intravenous administration of large quantities of human albumin to such patients is life-saving; they are tided over a critical period until they can resume the manufacture of their own plasma proteins.

STUDIES ON PNEUMOCOCCI, THE CAUSATIVE AGENT OF LOBAR PNEUMONIA

Dr. Avery and associates.

For a number of years Dr. Avery and his associates have been studying the phenomenon of transformation of one type pneumococcus to another. The results of these investigations are of great biological significance, as well as being of importance in understanding certain phenomena associated with disease. It has been shown that one type of pneumococcus, grown in a medium containing an extract from another type of pneumococcus and rabbit serum containing antibodies against a rough form of pneumococcus, will be transformed to the type of pneumococcus from which the extract just mentioned was obtained. This phenomenon has been designated transformation of one type of pneumococcus to another. For several years, Dr. Avery and his associates attempted to identify the active principle in the pneumococcus which is responsible for transformations, and have shown that the substance is desoxyribonucleic acid. This finding uncovered new biologic activities of nucleic acid. Then, Dr. Avery and his associates were able to purify a desoxyribonuclease which is capable of destroying desoxyribonucleic acid, and the enzyme has been used extensively in studying the transformation phenomenon.

As mentioned above, rabbit serum containing anti-R antibodies is also essential to produce transformation experimentally. During the past year, Dr. Avery and his associates have been studying the factors in the serum which are needed to bring about transformation. So far they

have been able to show that antibody is active in the phenomenon by virtue of the fact that it agglutinates pneumococci into clumps. At least, similar conditions of clumping brought about in the absence of antibody, provided other conditions are suitable, permit transformation to occur. They have also found that a dialysable factor in the serum is essential; and, finally, they have demonstrated that a globulin factor is necessary. This globulin factor is found also in the spleen and thymus, particularly of calves. Work on these serum factors has unearthed interesting facts, and will be continued.

#### RESPIRATORY DISEASES

##### Dr. Horsfall and associates,

Dr. Horsfall and his associates have continued to study respiratory diseases, particularly primary atypical pneumonia. In spite of the fact that most of the hospital beds were used for patients with acute infectious hepatitis, at least thirty patients with respiratory diseases were admitted for study and treatment.

Intensive investigations on patients with various acute respiratory diseases have demonstrated the futility of attempts to make a diagnosis in the absence of abundant laboratory data. Even the presence or absence of pulmonary consolidation appears not to be discernible consistently without adequate roentgenological studies. Among acute respiratory diseases the distribution of clinical manifestations overlap sufficiently to preclude the possibility of reaching a specific diagnosis in individual cases on clinical grounds alone. Detailed investigations on the etiology of each case of respiratory disease coming under study have served to highlight the inadequacy of present knowledge, and have cast doubt on the validity of data commonly thought to have etiological import.