

THE BACTERIOLOGIC DIAGNOSIS OF DIPHTHERIA.

While the specificity of diphtheria and the diphtheria-bacillus is universally admitted, it is recognized that, on the one hand, membranous deposits may form in the air passages from other causes, while, on the other hand, the bacillus may be present in association with catarrhal manifestations alone or even without other evidences of diphtheria. Diphtheria-bacilli have been found also in the throats of persons suffering from other diseases, scarlet fever especially. In order to clear up some of the mooted points in connection with the presence and the pathogenicity of diphtheria-bacilli, Dr. B. Czerno-Schwarz¹ made a study of the nasal and pharyngeal secretion from the patients admitted to the department for contagious diseases at the Wladimir Children's Hospital of Moscow. Of 385 patients received into the division for cases of scarlet fever and measles, 45 (11.6 per cent) yielded, on first examination, a growth of diphtheria-bacilli, divided as follows: Eight of 207 cases of scarlet fever, 3.6 per cent.; 37 of 160 cases of measles, 21.92 per cent. Of the former patients, seven presented necrotic angina and one follicular angina, while of the latter only two presented symptoms of diphtheria. As a result of the observations made, the conclusion is reached that negative results from repeated examination for the presence of diphtheria-bacilli are of undoubted and absolute value. By this means it has been demonstrated that membranous angina, laryngitis and croup may be of non-diphtheric origin. The significance of positive results from bacteriologic examination is likewise undoubted when the clinical picture is that of diphtheria. When, however, there is a discrepancy between the clinical picture and the results of bacteriologic examination the diagnosis must be considered as doubtful.

FIBRINOUS BRONCHITIS.

Fibrinous bronchitis is a rare disorder, probably of diverse etiology. The diagnostic feature is the expectoration of casts of the bronchial tree, of varied shape and length, in conjunction with a sense of suffocation, cyanosis, shallow and frequent respirations, enfeebled respiratory murmur, and unaltered percussion-resonance unless the alveoli become occluded or atelectasis develops. The symptoms disappear temporarily with the expectoration of the coagula, to return on their reformation. There has been some difference of opinion as to whether the casts consist of fibrin or of mucus, the one substance being found in some instances and the other substance in other instances. From all of the evidence, however, it would appear as if both substances are often present, sometimes together, sometimes alone. Confirmation of this view is afforded by a communication recently made by Dr. Gustav Liebermeister,² who reports in detail a case of fibrinous bronchitis, and also gives the results of a study of the casts obtained from twelve other cases of similar kind. He found that the coagula expelled in a case of grave heart disease during the death agony differed only in their great thickness from the casts expelled in cases of true fibrinous bron-

chitis, although they agree chemically and histologically. Idiopathic fibrinous bronchitis is to be strictly differentiated, with reference to both the etiology and the morphology of the coagula, from descending diphtheria and from diphtheria of the bronchial tubes without involvement of the larynx. The coagula of true fibrinous bronchitis are honeycombed in structure, more or less completely filling the lumen of the bronchial tubes and generally containing a moderate amount of air. Microscopically, the appearances presented are those of a reticular structure, consisting of fibrin and mucus, and having spaces containing few cells. Fibrin was demonstrable in the casts in all of the cases and mucus also in seven. In cases of descending diphtheria, structures analogous to the deposits on the tonsils and the larynx are formed in the bronchi. These consist of a dense, compact, finely fibrillated fibrinous network, containing enormous numbers of cells, and they appear as simple or dendritic cylindrical membranes that can be detached from the mucous membrane surface only with the loss of epithelium. Curschmann's spirals were found in only one case among thirteen. The presence of Charcot-Leyden crystals and of eosinophile cells in the casts could not be demonstrated in any case.

THE SPECIFICITY OF THE BODY-CELL TOXINS.

The observation that the blood of one species of animal is toxic to members of another species is an old one, and the modern studies set on foot by the work of Bordet and others have greatly extended our conception of body-cell toxicity, and have shown that it is not confined to blood cells alone. It appears at first sight such a simple matter to inject a particular cell or organ from one species of animal into a member of another species, that this line of research has been extensively followed in the last year or two. Then the results achieved in some instances by this work have illuminated some of the dark regions of pathology, and further research has seemed likely to give good results. It has been pretty generally assumed by the workers along these lines that a cell specificity existed, i. e., that if an animal is injected with ciliated epithelium it will produce antibodies for ciliated epithelium only; but it seems probable that this presumed specificity has been greatly overestimated. This whole question of specificity has recently been investigated by Pearce.¹ As Pearce indirectly brings out, many of the previous investigators seem to have assumed that morphologically similar cells would give rise to similar antibodies. Pearce's work had for its object to demonstrate that the chemical composition of the cell and not its morphology is the factor determining its specificity of action. He likewise endeavored to show that many of the results supposedly due to the specific action of one cytotoxin are really due to other cytotoxins adventitiously elaborated as the result of improper methods of immunization. As a result of his observations, Pearce concludes that the cells of the various organs of the body, while differing in morphology and function, have certain receptor characteristics in common, and that one type of cell may, therefore, produce antibodies affecting several cell

1. Archiv für Kinderheilkunde, vol. xxxix, Nos. 1-3, p. 113.

2. Deutsches Archiv für klin. Med., vol. lxxx, Nos. 5-6, p. 551.

1. Journal Med. Research, vol. xii, No. 1.