

degree of tissue changes, indicates a casual relation of the cocci to these processes."—*Johns Hopkins Hospital Bulletin*, No. 26, Oct.-Nov., 1892.

During the past few years, important light has been shed by bacteriological methods upon another group of cases that had hitherto been considered as unimportant: a group of cases not accompanied by pronounced constitutional expressions, and therefore looked upon as of an innocent nature. I refer to the pseudo-membranous condition of the nostrils, commonly known as membranous rhinitis. Closer study of these affections has revealed them to be, in the great majority of instances, of a diphtheritic nature, and that diphtheria bacilli possessing their full virulence can often be isolated from them. These cases have not been considered of a dangerous character or in any way menacing to the health of individuals with whom they may come in contact, and for this reason are practically never isolated. In a paper recently read by the writer before the College of Physicians, of Philadelphia (see *Medical News*, May 13th, 1893), attention was called to the diphtheritic character of this malady and results of analyses of three cases that had been brought to his notice, were reported. From all of these cases diphtheria bacilli of varying degrees of virulence were isolated.¹

The comparative rarity of this disease necessarily limits the opportunity presented for its study, but the observations that have been made by reliable authorities point so directly to the diphtheritic nature of many of these cases that, when possible, it seems advisable to insist upon the bacteriological examination of all pseudo-membranous conditions of the nasal cavity that are not directly and positively traceable to other causes.

From what has been said, modifications should be instituted in the care of these patients, modifications concerning less the treatment than their isolation; for, in so far as I am prepared to say, the treatment received by them is that which might be, and often is, profitably employed in typical pharyngeal and laryngeal diphtheria.

Another point of great importance that has been brought out by bacteriological study of diphtheria and conditions that might be mistaken for it, is the local nature of the former and the frequent constitutional character of certain of the latter affections.

The virus of diphtheria is located in the superficial layers of the false membranes in the air passages, and does not, as a rule, invade the internal organs; while in the pseudo-diphtheritic process, as Booker cites, the organisms causing them are very commonly found in the internal organs.² The constitutional expressions, therefore, that accompany diphtheria owe their origin to something other than the dissemination of the bacilli through the tissues. This something has been isolated, and is now known to be a soluble poison of surprising intensity. It is produced at the seat of the infection in the throat by the growing organisms, and from thence is disseminated through the circulation, giving rise in the muscles and internal organs to most profound alterations of the integral cells, of which they are composed. This poison is not a ptomain, but belongs to the group of which the venom of rattlesnakes and other poisonous reptiles are members, *i.e.*, it is a poison of proteid nature, a poisonous albumore or tax-albumen as it is called. - An idea of its intensity can be formed from the statement

1. Since the appearance of this paper, two of my medical friends, Dr. I. E. Atkinson, of Baltimore, and Dr. Archibald E. Malloch, of Hamilton, Ont., have kindly acquainted me with instances occurring under their observation in which there was a dissemination of this malady through several members of a family and, in one instance, to the contraction of true diphtheria from it.

2. Froesch (*Zeit. für Hygiene*, Bd. XIII., 1893) has published a series of observations in which he found at autopsy, in ten out of fifteen cases of diphtheria, the bacilli in the internal organs. This contribution is recent and has not yet been confirmed by other observers. Flexner (*Johns Hopkins Hospital Bulletin*, April, 1893) found them in the lungs of a subject at autopsy, into the bronchi of whom there had been an extension of the false membranes, and Chriskey and the writer (*ibid.*) have caused them to appear in the lymphatic apparatus of the omentum by injection of cultures into the testicles of guinea-pigs.