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## DIPHTHERIA—OUR PRESENT KNOWLEDGE OF IT.

The long-drawn disputings and questionings that have made that common and fatal disease, diphtheria, the shuttlecock of the profession, seem at last to be drawing to a close, and the opinion of experts is becoming settled, mainly a result of bacteriological research. The questions that have been so long, and are still some of them unfortunately, unsettled, are such as these: Is diphtheria primarily a local or a constitutional disease? Has it any connection with the non-contagious pseudo-membranous laryngitis called croup? Are other throat affections characterized by the formation of membranes properly to be called diphtheritic, such as tonsillitis, or the anginæ seen in scarlatina and sometimes in measles? From the point of view of the etymologist, *diphtheritic* is a term correctly applied to any inflammatory condition, wherever it may exist, which is accompanied by the formation of an unnatural membranous covering of the part involved in the inflammation. The Greek διφθέρα meant *leather, prepared hide.* But the pathologist has taught us a specific meaning for the term. A true diphtheria is a localized inflammation of a mucous membrane, due to the deposition upon it of a bacillus, known now as the Klebs-Loeffler bacillus, the ptomaine formed by which is so virulently poisonous to the human organization as to cause 1, the death *en masse* of the superficial layers of the epithelium in which the irritant is lodged; and, 2, serious constitutional disturbance and the clinical symptoms known to every practitioner. As regards the local condition, a true diphtheritic membrane therefore will contain, as distinct from a false membrane, not only the true Klebs-Loeffler bacillus along with a multitude of others, but a tissue of necrosed, coagulated epithelial cells, closely adherent, of course, to the subjacent un-killed tissues, and therefore requiring some force for its removal, and leaving a bleeding surface.

The false diphtheritic membrane may simulate the true very closely, but will be the result of a less virulent irritant, and will contain, of course, effused fibrin of greater or less viscosity, shed epithelial cells, inspissated mucus, and white or even red blood-corpuscles, according to the violence of the inflammatory process, together with extraneous matters, such as bacteria, food, or other particles, a mass much more closely resembling ordinary *sordes.* The reason of the greater adhesiveness and tendency to bleed of the true diphtheritic membrane is thus easily seen. The results of bacteriological enquiry must be accepted on trust by men in practice, and it is therefore pleasant to be able to lean upon the categorical statements of observers so trustworthy as Dr. Wm. H. Welch, of Johns Hopkins University. In the annual address before the State Faculty of Maryland, this year, he gave the following, among others, as conclusions at which he had arrived, backed up by careful investigations in the famous Pathological Laboratory of his University: "The specific germ of diphtheria is a bacillus devoid of independent mobility, averaging in length about that of the tubercle-bacillus. It presents itself, both in diphtheritic membranes and in cultures, in such bizarre forms that these belong to its most characteristic morphological properties. It grows upon various culture *media*, and in milk. It grows readily outside the body. It has no *spores*, but is very resistant, a fact which is shown in the viability of the disease in old clothes, rooms, etc., after many years. Diphtheria is, *without doubt, a local disease* . . . . . The constitutional symptoms are due to the reception into the system of a chemical substance, a poison produced by the bacillus. . . . . The difference in epidemics, mild or severe, is not easily explained. Similar differences are noted in experimental diphtheria. . . . . The anginæ occurring with scarla-