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DIPHTHERIA—ITS TREATMENT.*

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My duty is to say something concerning treatment; and as the subject is comprehensive beyond my time limit, I shall be obliged to make statements in a somewhat disconnected, fragmentary manner.

The premises will be conceded by the majority of those present that the disease in the early stages is distinctly local in character, for the following reasons:

1st. Marked prodromata are seldom observed before local manifestations; and in the exceptional instances germs probably lie in the respiratory passages, producing toxalbumin for absorption, sufficient time not having elapsed for gross signs to appear.

2nd. As a rule the more extensive the membrane and the lower in character, *cacteris paribus*, the more profound the toxæmia.

3rd. Absorption and consequent general symptoms occur largely in proportion to the lymphatic supply of the part initially affected; for example, adenitis is extreme in pharyngeal and nasal forms and slight in tonsillar.

4th. Although it is still in some degree a *quaestio vexata*, it is pretty generally acknowledged that the Klebs-Loeffler bacillus is peculiar to the disease; always present in the earlier stages at least, limited to the false membrane, most numerous when the attack is at its height, diminishing as the case approaches recovery, and productive of the characteristic neuroses, when the cultures are injected into lower animals, notwithstanding Virchow's contention that all bacilli, whether noxious or inert, are the same organisms, and are

products of disease, not the cause; the differences of form being dependent on the varied environment.

Hence arise the strongest reasons in all cases, even though the diagnosis be incomplete, that prompt local medication be resorted to. And first of all how had it better be applied? The sponge or cotton swab, excepting in the case of the most heroic abortive remedies, for circumscribed patches is to be avoided as being too harsh for the requirements. The brush, excepting in similar circumstances, is also objectionable; it wears the patient, and, if used thoroughly, especially when the membrane is extensive, the performance is tedious, and jeopardizing for the attendant. The atomizer is free from these defects, and the best I have found is the Magic No. 25, moderately simple in construction, fitted with vulcanized rubber, and therefore non-corrosive and durable, and so arranged as to adapt itself to the anatomical peculiarities of the throat and naso-pharynx.

Steam favors formation of mucous, mucous floats germs, shields the underlying membrane, and opposes absorption; and if impregnated with antiseptics and constantly enveloping the patient, it is not only a remedial agent, but also protects the attendant. A convenient and pleasantly aromatic combination is oil of Eucalyptus, carbolic acid, and oil of turpentine in equal quantities, an ounce of which is kept boiling in a quart of water over a spirit lamp.

The local remedies that have been vaunted as specifics, and in turn have died a natural death from inanition, are legion; but whatever differences of opinion may have prevailed concerning their efficacy, nearly all authorities, from Aretæus down to the present, have strongly forbidden forcible removal of the membrane, excepting in extreme cases of obstruction, therefore the applications are made over the diphtheric exudation.

They may be divided for convenience into three classes: 1st, the destructive or heroically abortive: 2nd, antiseptic, and 3rd, solvents of the membrane. In the first class are found acetic, lactic, citric, hydrochloric and carbolic acids, argentic nitras, an old so-called specific, chlorine and bromine; the last mentioned perhaps the best if care is taken in its application. It may advantageously be prepared according to the following formulæ:

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