

## PATHOLOGY AND BACTERIOLOGY

IN CHARGE OF

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## PREFERENCE OF THE DIPHTHERIA-BACILLUS FOR THE TONSIL.

Evidently the bacillus flourishes best not only in the presence of oxygen, but in a current of air. And where in the entire alimentary canal can this requisite be met except upon the back part of the inner surface of the tonsil? Which is precisely the point of attack in 80 per cent. of our cases. It seems to be pretty clearly established that diphtheria almost invariably enters the system through the alimentary canal, either in the food or drink, or by labial contact, and the comparative immunity of the mucosa, of both mouth and stomach from attack has been a matter of surprise, for which, however, the absence of an air-current in these situations gives, at least, a plausible explanation. The mouth is, of course, frequently attacked, and the stomach in rare instances, but both almost always secondarily, after the germ has gained a vigorous foothold upon the ventilated surface of the tonsil. This demand of the germ also helps to explain its marked tendency to extend along the air-passages rather than the alimentary tube, and also the fact that its most vigorous and virulent growth occurs at the point where the air-current is most rapid, the interior of the larynx, the trachea, and especially upon the vocal cords. The extreme virulence and high death-rate from systemic poisoning and heart-failure of diphtheria of the nasal passages are also more easily understood. May not the special liability of the nerves of the palate-muscles in general, and azygos uvulæ in particular, to peripheral neuritis and paralysis after diphtheria, be partially due to their nearness on both aspects to surfaces swept by a current of air and hence peculiarly suited to the development of a virulent form of the toxins?

Fortunately, however, the tonsil is, to use a Hibernicism, not only the most vulnerable, but one of the best protected places in the body. For every dart nature seems to have a shield. And in this case the shield consists of the swarms of leucocytes poured forth by the gland. They cannot defeat the enemy in a fair fight upon a field of his own choosing, for they are sappers and miners

rather than riflemen, but they bravely bar his way into the heart of the country by a solid rampart of rank upon rank of their dead bodies. This is the famous and much-maligned "membrane," which happily in a large majority of cases is successful in mechanically cutting off the Klebs-Löffler pirate from the base of supplies which he hoped to establish in the rich inland districts. When his forces have become enfeebled by starvation, the membrane craftily detaches itself and sweeps the invading army down with it into the war-like gastric districts, where the leucocytes have all the advantages of the situation; can massacre the bacilli at their leisure and eat them afterward.

This again coincides with the clinical observation—that so long as the membranes are well developed and *confined to the tonsils*, constitutional symptoms are usually few and mild, and reinforces the *old* teachings as to the danger of forcibly detaching the membranes, and the *modern* ones as to the harmfulness of too frequent swabbing. It also fits in with the fact that many of the most rapidly-fatal cases are attended by the formation of very little membrane, or of only a thin pellicle, as is usually the case in nasal diphtheria, where both the fixed cells and leucocytes seem simply overwhelmed by the virulence and rapid production of the toxins before they have time to form a membrane.—*Echoes and News.*

## IMMUNITY FROM ANTITOXINE.

That the immunity conferred by the antitoxine (passive immunity) does not protect over as long a period as natural immunity (active immunity) has long been known as far as animals are concerned. Cases showing the duration of this artificial immunity in man, are not, however, common. Henach has reported a case in which a recurrence of the disease occurred from 25 to 30 days after the use of the antitoxine, and Wolff-Lewin reports a case where a child who had apparently recovered perfectly after the use of antitoxine, developed symptoms of a fresh attack ten days from the beginning of the first one. In our case the patient was immunized on January 7th and contracted a