the reaction developed in the pulmonary tissue of rabbits when injected through the thoracic wall. Injections of pyoktanin were made in doses of sixty to one hundred and twenty cubic centimètres. The author could not absolutely affirm the curative efficacy of this method; however, he was convinced that injections of weak solution of pyoktanin can be made through the trachea into the lungs of phthisical patients without giving rise to symptoms of inflammation. In a tubercular patient, into whose trachea he had injected fifty cubic centimètres of a weak solution, repeating it after ten minutes, there was neither cough, nor attacks of dyspnœa, nor symptoms of pulmonary irritation.

Dr. BOTEY (Barcelona) held that intra-tracheal injections were destined to be of great service in the future. They were easily employed because of the slight sensitiveness of the lower rings of the trachea, and of the bronchi. They were valuable because the absorption by this route was greater than from the digestive tube or from the hypodermic tissues.

ON THE VALUE OF ELECTROLYSIS IN LARYNGOLOGY.

By Dr. DE TYMOWSKI (Nice).

This communication aims at raising a discussion upon the application of electrolysis. In many cases, especially in gynæcology, a current much too strong is employed. It is to Dr. Perrigaux that we are indebted for instruction in the micro-chemical details of electrolysis. His studies demonstrate that it is always necessary to bear in mind the difference in action of the different poles. In most cases it is necessary to employ the negative pole, and never both poles together. Electrolysis cannot be compared with the galvano-cautery. It acts as a resolvent and an antiseptic, and provokes no inflammatory reaction. It is of service in granular pharyngitis, chronic rhinitis, hæmorrhagic laryngitis, pachydermia, and to destroy the remains of polypi extirpated.

It is necessary in the application of electrolysis to employ a rheostat and a good galvanometer.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS IN ROME.

SECTION OF OTOLOGY.

(Continued.)

NOTES of a FORM of MIDDLE-EAR DISEASE associated with ADENOIDS, and occurring in some cases of DEAF-MUTISM.

By J. LOCKHART GIBSON.

In a paper read by me at the Third Intercolonial Medical Congress (September, 1892), attention was drawn to what I think a useful division

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of the forms of deafness associated with adenoid growths in the naso-pharynx. Reasons for distinguishing four varieties of deafness were given, and explanations, founded upon cases, of the manner in which deafness could be induced by these growths. It was of course admitted that combinations of the four different forms existed, but it was urged that a sufficiently definite line could be drawn to make the distinction between them valuable in many cases, if only for prognostic reasons. It is not the province of this paper to again describe the four varieties in detail. Mention of all but one variety will be sufficient. They are—

1st. Deafness due to simple Eustachian blocking (direct or indirect). Prognosis favourable, provided the adenoids be removed.

2nd. Deafness due to recurrent attacks of acute perforative middle-ear catarrh. Prognosis generally favourable, provided the adenoids be removed, and provided the tympanic membrane has not been too much destroyed, which in children is seldom the case on account of the purulent contents of the middle ear escaping as a rule easily through their membranes, and through a small perforation.

3rd. Deafness due to chronic middle-ear catarrh. Prognosis guarded, but inclined to be favourable. Frequently very good hearing obtained, provided that Politzerization or catheterization be persevered with for a considerable time after removal of the adenoids. Most hopeful in cases under sixteen or seventeen years.

4th. The variety of deafness to which this paper is intended to draw attention. I have considered it to be due to recurrent attacks of subacute middle-ear catarrh, *i.e.*, to attacks which, though often somewhat painful, have not been sufficiently acute to lead to rupture of the tympanic membrane, although the amount of exudation has been considerable. It has seemed to me that this exudation, not finding exit, is deposited upon the chain of ossicles, upon the membrane, and in the angle of junction of the membrane and the tympanic walls—*i.e.*, at the situation of the tympanic ring—and that with each successive attack a portion of this exudation leads to organized thickening where it has been deposited. If, after a few such attacks, an acute attack supervene, the membrane, having been thickened, ruptures after more than the usual delay in a child, and after considerable pain.

It is in such cases that one gets an opportunity of puncturing the membranes of children, and of relieving them of symptoms simulating meningitis, and often very alarming. I have had to puncture both membranes of a child of six years for such symptoms. Pus was liberated from each ear, and the head symptoms relieved.

An attack of acute catarrh can, it seems to me, be looked upon as to some extent curative, as it leads to absorption of the deposit, and also to a cicatrix in the membrane, which will rupture more easily during any subsequent less acute attack. If no acute attack occur, the thickening and clogging increase with each subsequent attack of subacute catarrh, and the membrane assumes a very distinctive appearance It is, as a whole, cup-shaped, especially in its inferior quadrants. It is thickened and opaque, but glistening, unless an attack exists at the time of examination, when its appearance is altered from the presence of the subjacent

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exudation ; there is no posterior fold, but the handle of the malleus is directed much backwards, and often in a line with a pronounced anterior fold. This misdirection of the handle of the hammer causes the posterior segment of the membrane to be very narrow. The absence of a posterior fold, with a narrow posterior segment, and a generally cup-shaped, thickened, but glistening membrane, is very distinctive of these cases, and, in addition, a pronounced peculiarity is the existence of a marked opalescent crescent at the junction of the inferior quadrants with the tympanic ring. This crescent, and the general cup-shaped appearance of the membrane, I have surmised to be due to an organization in the position of the deposit at the junction of the membrane with the tympanic ring, especially in its inferior part.

In this form of deafness the prognosis is most unfavourable. Ordinary treatment is seldom productive of much good after the condition has become well established, though one sees many cases which yield to treatment on account, it seems to me, of the changes not having become sufficiently fixed. Recognition of it is most important for prognostic purposes, and it will be found to be answerable for a certain proportion of cases of deaf-mutism. Two brothers were brought to me on account of deaf-mutism. The first I saw, aged six years, had apparently heard well until nearly twelve months of age, and had learnt to say "Ma" by then. About that time deafness was noticed, and was soon found to be very great. It grew greater as he grew older. His parents thought when I first saw him that he could hear a loud sound, such as a gun going off close to him. He was a delicate-looking boy, but proved to be bright and intelligent. His attention could be attracted by no ordinary sound, however near either ear. But perception for bone-conduction seemed good. Each membrane presented the appearance described under the head of advanced cases of recurrent subacute middle-ear catarrh. There was no sign of recent deposit. They moved very imperfectly to Siegel's air-pump. His naso-pharynx was largely occupied by adenoids, which were of unusually dense consistence for so young a child, and pressed distinctly against the pharyngeal surfaces of the Eustachian tubes. Prognosis given was very guarded to unfavourable, but removal of the adenoids advised. They were thoroughly removed, and he was treated for some six months afterwards, first imperfectly by Politzerization, and latterly by catheterization. By this means the middle ears were regularly inflated, and the Eustachian tubes rendered patent. The membranes became more movable, but were in other respects little altered. He soon improved to hear loud sounds, and even to repeat easy sounds after me (without having seen my lips produce them), but not sufficiently to have hearing which could prove of any but a slight help in teaching him to speak. His general health improved markedly.

In this case my diagnosis was recurrent subacute catarrh, induced by adenoids, which had grown to a considerable extent before he was twelve months old. I believe that if these had been removed before that age his hearing would most likely have been retained. In favour of this view is, I think, the fact that a younger brother, aged five years, had become deaf and dumb in a precisely similar manner, and at a similar

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age, but, probably owing to his being younger, not to so great an extent. He could say one or two words more than his brother, and could still have his attention attracted by a loud sound. His membranes had practically the same appearance, and his naso-pharynx was well occupied by adenoids of a dense consistence. None of the supposed hereditary causes of deaf-mutism could be ascertained, and neither had suffered from any illness which could account for deafness.

A third case, somewhat similar, was that of a little girl, aged four years, but she had some slight indications of hereditary syphilis, and I was unable to convince myself that she possessed perception of sound to bone-conduction. Her naso-pharynx was small and full of adenoids. Removal of these did not restore hearing, and I failed also to cause improvement by perforating one of the membranes in its posterior segment with an electro-cautery point. In the cases of the two brothers I would not be satisfied that everything had been done to improve hearing until their membranes had been perforated.

The case of a lad with unilateral deafness associated with adenoids, which, while pressing firmly upon the tubal orifice of the deaf side, were separated by a sulcus from the tubal orifice of the other side, lends support to this view. The adenoids were found to be of very dense consistence, and the ear of the side against whose Eustachian tube they pressed was in a condition similar to those of the deaf-mute brothers. The other ear had half of natural hearing. This ear improved to normal quickly after removal of the adenoids ; the other ear hardly improved at all, although its Eustachian tube recovered its normal patency. His perception for bone-conduction was excellent. He had been deaf on that side as long as he could remember.

It seems to me that these cases point very decidedly to the importance of examination of the naso-pharynx in very young children who show signs of deafness or of being mouth-breathers, as the removal of adenoids in infancy may prevent them from becoming incurable deaf-mutes, not to speak of preventing the other dangers which are run by mouth-breathers. The youngest child from whom I have removed adenoids was aged seven months ; they were numerous, but were easily removed by the unarmed finger-nail.

ABSTRACTS.

DIPHTHERIA, &c.

Anfrecht (Magdeburg).—*An Early Fatal Complication of Diphtheria.* "Therap. Monats.," March, 1894.

If diphtheritic patients die during the first days of the disease, without a progressing bronchial diphtheria, the cause is generally parenchymatous nephritis. Therefore the urine should be examined in all cases for albumen or decrease in amount, especially in cases in which the mind is

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