always available; it should not only be encouraged but should be insisted upon.

In closing, it may be as well to note that extensive granulation-tissue as well as tertiary syphilis may either of them be mistaken for sarcoma. But the answer in the cases I have reported would be: First, that the growths were larger and harder than those produced by granulation; and secondly that they were removed, and the patients cured by operative measures only, without resorting to specific treatment—something which it is impossible to accomplish in tertiary syphilis by surgery alone. Hence both these conditions must be ruled out of the question.

OTO-SCLEROSIS AND AUTO-INTOXICATION.

By Dr. P. Cornet.

Translated by Macleod Yearsley, F.R.C.S.,
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In his communication on *otitic migraine* made to the Seventh International Otological Congress, Escat sought to distinguish the part played by certain general conditions in the ætiology of oto-sclerosis.

He considered it as the consequence of a chronic toxæmia, and in basing his theory (1) on the frequency of migraine in oto-sclerotics, (2) on the auto-toxic and auto-infectious origin of migraine, (3) on experimental researches relative to the trophic innervation of the ear by the trigeminal, he defined oto-sclerosis as "the late anatomo-pathological substratum of a physio-pathological trouble, of which migraine would be the primordial symptomatic expression." From the point of view of pathological physiology, the auricular lesions resulted from functional disturbances of the bulbar centres of the trigeminal impregnated with toxic principles in circulation in the organism.

I returned to this question last January before the Paris Society of Laryngology, and I endeavoured to show that one can almost always demonstrate in oto-sclerotics the existence of an affection modifying in some way or other the normal function of nutrition.

In the last nineteen cases of oto-sclerosis among my patients I have been able to completely examine eighteen. Among these eighteen patients, eight were aged or arterio-sclerotic subjects or showed well the arterial hypertension premonitory of arterio-

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sclerosis. There remain, therefore, ten patients suffering from true oto-sclerosis. Among these ten patients I have found in one case renal insufficiency, in one case renal insufficiency and ethylic dyspepsia, in one case hepatic insufficiency, in two cases atonic gastro-intestinal dyspepsia, in four cases various gastro-intestinal troubles with toxæmia shown by the increased amount of urinary sulpho-ethers, in one case successive pregnancies joined to a permanent gastro-intestinal toxæmia equally denoted by the increased amount of urinary sulpho-ethers.

Without granting it possible, being given the difficulties of experimenting in such matters, to scientifically settle the pathogenic part played by these various affections in the genesis of oto-sclerosis, at least the following fact remains true: In all the oto-sclerotics that I have recently studied I have proved the existence of various affections, all of which have this common character of entailing a chronic toxæmia and of determining sooner or later various organic alterations. The most frequent of these toxæmias is gastro-intestinal intoxication; but this corroborates the opinions of Escat, who, in his above-mentioned work, points out the extreme frequency of primary oto-sclerosis in all the subjects in whom the digestive canal or its adnexa contain numerous foci of auto-intoxication.

But whatever may be the pathological physiology of the affection, one does not see for what reasons the ear, one of the most delicate and vulnerable organs of the economy, should enjoy a kind of immunity in an organism impregnated with toxins, while the skin, the mucous membranes, the liver, the kidneys, or the nervous system are altered by degrees.

This hypothesis, however, accords with our actual knowledge of oto-sclerosis; *with the insidious nature of its onset* in young subjects, apparently in good health, for chronic toxæmias frequently remain latent, and to make them evident one must not be content with abstract questioning but proceed to a systematic and complete general examination; *with its frequently hereditary character*, for these toxæmias are transmitted by heredity, and nothing prevents the consideration that toxins attack an ear rendered more vulnerable from the fact of auricular attacks undergone by ancestors; *with its frequent appearance during a pregnancy*, being given the very special changes of nutrition which are produced in the pregnant woman.

Finally, this hypothesis accommodates itself to the facts of pathological anatomy. As Politzer has shown, oto-sclerosis is characterised specially by a spongy new formation in the labyrin-

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thine capsule; mucous changes are secondary. It may seem difficult to admit that an intoxication transforms a compact bone into spongy tissue. But we first note that this process of spongy transformation does not occur at the expense of the compact tissue itself, but, according to some authors, as Katz, at the expense of the periosteum, and according to others, as Siebenmann and Manasse, at the expense of the remnants of the primary cartilage of the capsule, which persist in numbers in this capsule throughout life. Consequently, the new formation is effected at the expense of a tissue susceptible of change. On the other hand, different affections of bony tissue are actually considered as disturbances of nutrition; such is the case in rickets, and the digestive troubles by which rachitic children are attacked appear to represent the starting-point of the osseous dystrophy. Dry arthritis, progressive deforming rheumatism, also admit in certain cases an auto-toxic origin; in young subjects the malady evolves on the occasion of an acute infection or of a slight intoxication of digestive origin, or is connected with thyroid insufficiency. It is not, therefore, irrational to consider that the characteristic osseous lesions of oto-sclerosis can result from an auto-intoxication. The frequency even of oto-sclerosis on the occasion of pregnancy strengthens this hypothesis; for in half the pregnant women a special modification of the cranial bones exists, which consists in the production of osteophytes formed of spongy tissue on the inner table of the cranial box. These osteophytes, the formation of which appears connected with the gravid toxæmia but which disappear with the pregnancy, can be, nevertheless, connected anatomically with the osteophytes which are formed in oto-sclerosis at the expense of the labyrinthine capsule.

STUDIES ON LABYRINTHINE SUPPURATION.

By Professor Adam Politzer.

(*Author's abstract of a communication read before the Eighth International Otological Congress, Budapest,* 1909.)

Professor Politzer bases his statements upon a large number of accurately observed clinical cases in which he has had the opportunity of histologically examining the labyrinth *post mortem*.

Owing to the short time allotted for speaking, he limits himself to the description of two marked cases, and calls attention to the

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