It is not my intention to enter into any detailed description of these operations, but rather to describe, from an experience of some fifteen years of otological practice, their indications. This, space will not allow me to do in great detail, but those who wish to pursue the subject further are referred to my paper in the *Medical Times* on "The Indications for the Mastoid Operation," which appeared in its columns on January 17th and 24th, 1903.

Briefly put, the indications for opening the mastoid are as follows :---

A.—Acute Cases.—1. Acute middle-ear suppuration, with mastoid involvement. 2. Influenzal mastoiditis. 3. Acute middle-ear tuberculosis.

B.—Chronic Cases.—1. Caries of the tympanic walls. 2. Recurrent attacks of acute mastoiditis or acute exacerbation of a chronic mastoiditis. 3. Mastoid fistula, leading to carious bone. 4. Cholesteatoma. 5. Meatal hyperostosis. 6. Obstinate mastoid neuralgia. 7. Chronic middle-ear tuberculosis. 8. Protracted suppuration resisting other forms of treatment. 9. Vertigo occurring in the course of middle-ear suppuration. 10. Facial paralysis occurring in the course of middle ear suppuration. 11. Necrosis. 12. Bezold's mastoiditis. 13. As a preliminary step in operations for intraeranial complications.

Now, as I have said, it is in acute cases that the Schwartze operation is performed. In the ordinary uncomplicated case of acute suppuration, with involvement of the mastoid antrum, the simple opening of the mastoid, without any interference with the middle-ear, is sufficient to result in immediate relief of symptoms, and to deliver the patient from the dangers which threaten him. Packing is carried out through the post-auricular wound, and the cavity left by the operation quickly fills up from the bottom. In such a case healing may, as in one I recently performed, be complete in three weeks from the date of operation. There are, however, some acute cases in which the damage done by the suppurative process is so severe as to require something more than simple opening of the mastoid antrum. It may be that a simple acute suppuration-I am not alluding to an acute attack upon the top of a chronic suppuration-may have been allowed to go too long without surgical interference, or it may be that the nature of the disease is so destructive, as in influenzal mastoiditis and acute tuberculosis, that nothing short of a complete post-aural operation can be undertaken. As a general rule, simple opening by the Schwartze method is sufficient to deal with a case of simple acute suppuration, even when it has been neglected to such an extent as to have destroyed practically the whole mastoid process. It is only in a small minority of cases that I have found so much damage as to necessitate the performance of the complete operation. In the influenzal form of mastoiditis, on the other hand, the process is so violent that it may destroy the whole mastoid and middle ear with a rapidity which surprises those who are unacquainted with this manifestation of the disease. I know of no cases which necessitate more prompt treatment or in which delays are more dangerous than those in which influenzal suppuration attacks the ear. I have seen a whole ear destroyed by this cause in less than a fortnight from the onset of symptoms. Such cases, to be amenable to simple opening, require to be attacked promptly, as soon as the involvement of the mastoid antrum is determined. Unfortunately, partly from the non-recognition of their destructive nature, partly from patients' repugnance to anything in the nature of an operation, many of these cases are allowed to proceed to such a condition as to render the thorough clearing out of the ear by the complete operation an imperative necessity.

Similarly, the destructive nature of acute middleear tuberculosis requires to be met by the Schwartze-Stacke method.

Turning now to operation in chronic cases, it is the complete procedure which is required. Simple opening is not enough, seeing that one's aim is the obtaining of a smooth, skin-lined cavity in which further suppuration is a practical impossibility as far as human ingenuity can go. Putting aside discussion as to the symptoms which lead one to decide upon operation in any given case-a matter fully treated in the paper alluded to above-the question at the present time seems to turn mainly upon whether the grafting operation should be done or not. To my mind, the most important point lies in the thorough eradication of the disease present. If this be ensured, and a good healthy cavity fashioned, the case will heal successfully whether it be grafted or not.

In the first place, grafting necessitates a second operation. This is a thing to which many patients object. Patients, in their ignorance of modern surgery, even now regard operations to a large extent with suspicion; they certainly do not look upon them lightly. Moreover, provided one can obtain one's end as well by one operation as by two, then it is a question of no small importance whether the surgeon is justified in exposing his patient to the extra risk of a second an esthetic.

The grafting of the cavity left by the first operation is said to be a great saving of time in the aftertreatment of the complete operation. This may be so in certain cases, but, speaking generally, I think the statement is decidedly open to doubt. When one has to deal with a very large cavity—such as may be found in cases in which chronic suppuration has been very destructive, and in cases of large cholesteatoma — grafting, provided it is successful, does undoubtedly save time in the aftertreatment. The same may be said of the com-



