obtained. In some instances it was only with the greatest difficulty that the patient was made to recall the evidence of a previous involvement of the lung; so that it is, perhaps, fair to assume that others may have had mild forms of tuberculosis which had escaped their memories altogether, especially as most people are glad to forget such occurrences. My own limited experience would lead me to believe that it is in the mild cases of phthisis with a tendency to latency, that kidney involvement is most likely to occur. Or, is it that people with advanced phthisis are not apt to pay much attention to their kidneys?

CONCLUSIONS.

1. Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily.
2. It is usually at first unilateral.
3. Medical or climatic treatment is unsatisfactory in most cases.
4. The ideal treatment is early nephrectomy, provided there is one sound kidney.
5. Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation.
6. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy and can seldom be cured without it.
7. The demonstration of tubercle bacilli in the urine often fails.
8. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal in time.

KERATOSIS OBTURANS.*

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The formation of epithelial plugs of considerable size must be counted among the rare diseases of the ear. In my practice, private and hospital, extending over more than a quarter of a century, I have met with only two cases. The literature of the subject also confirms their rarity. They would appear to be allied in nature to cholesteatomata, described by Mueller and Virchow as pearl tumor, possessing a well marked wall with contents of hornified or epidermized cells arranged in layers like an onion. The same description applies to the tumor described by Habermann as occurring in the mastoid antrum, many examples of which are recorded. In the cases which I report there did not appear to be any middle ear involvement in so far as epithelial growth was concerned, though there was a history of previous suppurative trouble in both. Further, the removal of the growth from the external auditory canal entirely relieved the symptoms. According to Brühl and Politzer desquamative inflammation of the external auditory canal is either idiopathic or the result of chronic hyperemia. Microscopically the epithelial layer is found to be atrophic and the stratum corneum thickened; the latter is covered with successive wavy layers, consisting of large polygonal horny cells of squamous epithelium without nuclei. In places the cuticle shows round-cell infiltration. The hair follicles are dilated and filled with horny cells.

In one of these cases the growth was of many years' duration and was attended by mental symptoms, loss of memory, difficulty in fixing the attention and following a train of thought, all of which were relieved by the removal of the growth. Ear cough was also present. The other case presented some of the symptoms of acute mastoiditis except that the pain was referred chiefly to the temple and anterior wall of the canal. There was tenderness of the mastoid, but little or no swelling, and an absence of that sickening pain produced by deep steady pressure. In one case the course was exceedingly slow, in the other, acute.

CASE REPORTS.

CASE 1.—*History.*—J. C., aged 45, farmer, consulted me Oct. 3, 1895, for deafness of long standing. He did not remember when he had heard well with his left ear. Of late there had been some pain, tenderness, and a feeling of weight in the ear.

Examination.—The ear was apparently filled with wax. Hearing: H. R., 20/40; H. L., pressure.

Treatment.—After syringing for some time without much effect, patient was given a solution of soda bicarbonate and instructed to go home, fill the ear, soak it thoroughly, and return next day. He did so and again the ear was syringed to little effect. Peroxid of hydrogen was given with instructions to use it frequently. This and syringing were continued for five days, little coming from the ear save small masses of epithelial scales, when a larger plug appearing to be loose I moved it with forceps.

I continued to do this for three or four days more, when the remains of the drumhead came in view. It was ulcerated, as were the walls of the canal in places. The bony canal was dilated to double its normal size. The parts were irrigated with weak bichlorid solution and swabbed with 2 per cent. solution, nitrate of silver, and healed readily.

The mental symptoms of which he complained, giddiness, loss of memory, difficulty in fixing the attention, and dulness, were completely relieved.

CASE 2.—*History.*—B. F., aged 36, clerk, had acute suppuration following scarlatina, twenty years ago. He made a good recovery, but from time to time during the intervening years he was subject to acute or subacute attacks of inflammation of the middle ear. On Jan. 11, 1906, he presented himself, complaining of what seemed to be a threatening attack of mastoiditis. He had severe pain in the region of the mastoid, redness, but no considerable swelling. The pain was referred to the middle ear and anterior wall of the external auditory canal rather than to the mastoid itself, and was worse at night. The parts were very sensitive to the touch, but the severe sickening pain produced by deep pressure over the mastoid, common in mastoiditis, was absent.

Examination.—The external auditory canal appeared to be plugged with wax, which syringing did not remove.

Treatment.—Any attempt to remove the plug with forceps and curette was attended by so much pain that I was forced to desist. Leeching and douching with hot solutions of bichlorid of mercury were ordered. The pain was controlled by ovoids of cocoa butter, each containing 1 gr. of opium. Temperature ranged from 99 to 102, with an evening rise. These symptoms continued for several days and I had about concluded to open the mastoid when the symptoms ameliorated. The following day considerable masses of epithelial scales came away and a loose mass lying in the external auditory canal was removed with the forceps. The walls were dilated and denuded of epithelium in places, as was the drumhead. Under continued douching and local application of nitrate of silver the parts healed. Hearing, H, 2/40.

Apart from the formation of an immense epithelial plug this case is interesting from the presence of symptoms so analogous to mastoiditis that a diagnosis was difficult. The fact that the anterior wall of the canal was swollen and tender as well as the reference of the pain to the middle ear and the absence of swelling of the mastoid, together with the absence of bulging of the wall of the canal, made me hesitate to operate, and the result justified my delay.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

DISCUSSION.

DR. A. E. CROCKETT, Boston, said that most of the cases he has seen have been secondary to a suppurative process in the middle ear. He recalled one patient who had recurrent keratosis filling the canal and completely denuding the periosteum from the inner wall; recurring about once in two years. So far as his experience goes, the disease has been difficult to handle because it is difficult to remove the plug, and the slightest manipulation is exquisitely painful to the patient. He has been accustomed to rely on the hook known as the stapes hook, rather than syringing. He mentioned an unfortunate case at the Boston Eye and Ear Infirmary which was syringed for a long time, the plug swelling instead of being removed, and in which there was infection and swelling of the plug, and mastoid disease resulted and also a posttonsillar abscess. Ever since he has been afraid to syringe unless he was sure that he could remove the plug at one sitting.

DR. C. J. BLAKE, Boston, said that one feature in connection with these epithelial plugs, the keratosis obturans of Wreden, is the lardaceous degeneration of the center of the epidermal plug. Such a plug is hard to deal with, the lardaceous mass offers no hold for forceps or hooks, and it is difficult to peel away the firmer epidermis from the wall of the canal. Under these circumstances the conversion of the lardaceous center of the plug into soap by applying caustic potash on a cotton-tipped probe works well. The external auditory canal, on the hither side of the plug, should be smeared with oil, the cotton-tipped probe with the potash put into the center of the mass, the resultant soap syringed out and this repeated until the lardaceous core has been removed. It is then easy to break up the epithelium with forceps to extract it.

ACUTE AND CHRONIC SUPPURATION OF THE EAR AND NOSE THE DIRECT CAUSE OF FACIAL ERYSIPELAS.*

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SAN FRANCISCO.

1. Why should we have erysipelas especially confined to the face?

a. Because it is nearest the seat of infection.

b. Because the secretion of pus produces an abrasion of the mucous membrane or skin and then an inoculation follows.

c. The inoculation is also made by the handkerchief, but I think more particularly by the finger.

C. W. Major[1] reports 4 cases of facial erysipelas in which he says he thinks that the erysipelas was dependent on pathologic conditions of the nose. In 3 there was hypertrophic rhinitis; in 1, a child, chronic congestion. O. J. Stein[2] reports a case of suppuration of the antrum of Highmore followed by an attack of erysipelas, and says that many cases of erysipelas are due to unrecognized nasal conditions. Jannson,[3] in an extensive article, claims that erysipelas originates from various inflammatory conditions of the nasal mucous membrane. Howard[4] reports a small abscess in the nose as the cause of erysipelas. I have 3 such cases. Marcier and Bellevue[5] report a case of acute empyema, which was followed by facial erysipelas in a few days. They say that they believe it was due to the inflammation of a sinus. In a discussion of the former case, Bessonnet states that he has seen erysipelas follow acute rhinitis.

Coakley[6] believes erysipelas is rarely a primary affection, but is usually secondary to erosions of the face, the necrosis of the ethmoidal labyrinth. In the transactions of the American Laryngological Association, 1903, page 72, J. H. Falow speaks of erysipelas originating from nasal affections. Dr. Able Johnson, San Francisco, has seen 4 cases of erysipelas in European clinics. In 2 he was able to demonstrate pus in the nose; 2 followed surgical interference, 1 for extensive removal of polypi accompanied by pus, one following the removal of the inferior turbinate in which pus was not demonstrated. Dr. Albert Houston, San Francisco, has seen 2 cases follow surgical operation of the nose for the removal of polypi. In the Vienna Nose and Throat Clinics I have seen 3 cases of erysipelas develop while the patients were under treatment. The interval between these cases was long. I do not remember whether pus was present or not.

von Bergman and Buel[7] say that erysipelas is occasionally seen after operations on the face, and that with modern technic it has not been entirely banished, as in injuries; the infection is derived from opening the facial cavities with their chronic inflamed mucous membranes. J. A. White[8] reports a case of mastoid operation that was followed in eight days by erysipelas. H. Holbrook Curtis, discussing White's paper, said he had a similar case. Charles W. Richardson, in the same discussion, reported 3 cases, but considered it was from severe scrubbing of the operative field, as in all his cases the inflammation began outside of the operative area.

Vacher[9] reports a case of acute otitis of two weeks' standing, which was followed by erysipelas and a mastoid operation later. I am personally familiar with 1 case of erysipelas following a mastoid operation in a brother practitioner in San Francisco. I also observed 3 cases of erysipelas following mastoid operation, 1 in Halle and 2 in Vienna.

2. Why should we have more than one attack of facial erysipelas?

a. Because the source of infection is practically never eliminated without operation.

b. The reason erysipelas follows operations is explained by the fact that you open a field for direct infection.

Luc[10] reports operating a case of empyema of the antrum of Highmore, which was followed by erysipelas. This patient had facial erysipelas with abscess formation nine months before the nasal affection was diagnosed. Hajek[11] reports the case of a patient with empyema of the antrum of Highmore who had had facial erysipelas once a year for the last five years. Two years following operation the patient has not had an attack.

Hall and Tilly[12] state that in cases of recurrent erysipelas of the face the pharyngeal tonsil was apparently the starting point of the disease, and add that it is well known that the nose especially when affected by chronic rhinitis frequently gives rise to facial erysipelas. Mc-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

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4. American Practice and News, Louisville, 1887, No. 3, p. 262.
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6. "Diseases of the Nose and Throat," New York and Philadelphia, 1901.
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10. La France Médicale, 1891, xxxviii, p. 307.
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