for the first time in her life she often became frightened at things. By the end of the fourth week she had dropped to 29 lbs., after which she regained 3 lbs., and remained at 32 lbs. for several consecutive weeks. By the end of the fifth week the tongue seemed nearly normal in size and shape. The dose was then increased to three-quarters of a tabloid daily, and by the end of the seventh week she had grown $1\frac{1}{2}$ in., and could clearly understand much better what was said to her. During December and January she took a 5-grain tabloid daily, and by the end of that time she could stand upright. Throughout February she took $1\frac{1}{2}$ tabloid daily, and by the end of that month her hair was rapidly falling out, and a new short crop taking its place. She would laugh and become quite frolicsome; she could walk about the house with a little support, but her hands began to tremble in handling food, so that she could not raise a cup properly to her mouth. Two upper central incisors had appeared. She now stopped speaking for many weeks, although throughout March she continued taking $1\frac{1}{2}$ tabloid daily.

Fig. 3.—Photographed April 5th, 1896.

On April 5th, 1896, she was again photographed, this time with very great difficulty, as she was now full of life and activity, never still for an instant, laughing or crying according to her mood. Her head had become much smaller, better shaped, and the occipital prominence had disappeared. All her long hair had fallen out, except a small tuft on each side, which was cut so as to be uniform with the new short crop; the scalp was no longer dry or scurfy. The nose was not much improved, there being very little perceptible bone, so that the whole organ could still be pressed in like indiarubber, while the bridge was still depressed. The lips were thinner and less livid, but still gaping; the tongue much smaller, but still often protruding. Most of the old teeth were still present, but two upper central incisors had come through, and many other teeth seemed to be budding on the inner side of the old stumps. She had recently coughed quite naturally for the

first time in her life. The neck was very much thinner, the submental bagginess had gone, the supraclavicular masses were much less, and the goitre greatly reduced, especially the right lobe, which was now quite small, though the left half protruded more conspicuously than ever as a spherical mass. The extra-mammary baggy swellings had gone. The lordosis, prominence of belly, and hernia had disappeared, and the child now stood erect. The skin was still dry and loose, and itched so much that she was continually scratching herself. She was much warmer, and no longer hugged the fire. She could stand and walk with slight support. Her bowels were quite regular. She had grown $3\frac{1}{2}$ inches since the treatment began. She noticed, watched, understood far more; and laughed and cried vigorously. She had every appearance of enjoying life immensely.

This case is particularly interesting on account of the rarity of goitrous, as compared with non-goitrous, cretinism in this country; also as contravening Bourneville's statement that goitrous cretins have no pseudo-lipomata, and as an instance of the inutility of dividing cretins into an endemic and a sporadic class. Though the benefit to be expected from thyroid extract cannot equal that noted in younger children, both the physical and mental improvement during the first six months have been very considerable, and there is every reason to be confident that a much greater development is still in store for the patient.

NOTES ON THE DIAGNOSIS OF LATENT ABSCESS OF THE MAXILLARY ANTRUM.

By E. CRESSWELL BABER, M.B.LOND.,

Surgeon to the Brighton and Sussex Throat and Ear Hospital, and to the Royal Ear Hospital, London.

THE cases to which these notes are intended to refer are those in which the pus escapes through the normal orifice (or orifices) of the antrum into the nasal cavity, and are characterised chiefly by a history of purulent discharge from the front or back of the nose, mostly unilateral and generally more or less fetid, and often by pain in the infra- and supra-orbital regions.

The objective signs of this disease may be divided into those which render its presence probable and those which are pathognomonic.

A. The probable signs are:

1. *The Rhinoscopic Appearances (Anterior and Posterior).*—

These include the absence of other causes producing suppuration, such as foreign bodies, suppuration of the ethmoidal cells, etc., and the presence of pus usually fetid (often with a peculiar faint, sickly odour) in any portion of the nasal cavity or naso-pharynx, but by preference in the middle meatus. There is generally some swelling of the mucous membrane at the anterior extremity of the middle meatus, and mucous polypi may or may not be present. These, if present, should be removed before proceeding to the diagnosis of abscess of the antrum.

2. *Fränkel's Symptom*, that is, the flow of pus into the nasal cavity on hanging down the patient's head, at the same time turning it so that the suspected antrum is uppermost. The nasal cavity must have been previously very carefully cleaned with wool mops. The pus which runs out is generally seen at the front part of the middle meatus, but may appear at almost any point in the nasal cavity, for example, in the inferior meatus or between the middle turbinated body and the septum. It is to be noted, however, that pus from the frontal and ethmoidal sinuses may also find its way into the nose when the head is held in this position.

3. *Transillumination of the Superior Maxillary Bones by an Electric Lamp Placed in the Mouth.*—The part to the translucency of which especial attention should be directed is the outer half of the infraorbital region. When this region appears darker on one side than on the other it adds probability to the existence of an abscess on that side. Darkness is, however, often present without an abscess being there, and cases have been recorded in which transillumination showed no darkness, although there was an abscess in the antrum.

4. *Accessory Symptoms* are slight tenderness on firm pressure

over the cheek, redness and tenderness of the upper gums, bulging of the inner wall of the antrum into the nasal cavity, etc.

B. Certain Signs.—The only pathognomonic sign is demonstration of pus in the cavity itself. This is possible by three methods: (1) Probing the natural orifice of the sinus through the middle meatus, a proceeding which has not been very successful in my hands; (2) puncture through the alveolus of an extracted tooth; (3) puncture through the inferior meatus of the nose.

Having had one's attention drawn to the probability of the presence of an empyema of the antrum by several of the probable signs above mentioned, especially the first three, further steps are necessary to clear up the case. If the symptoms are very distinct, particularly the presence of foetid pus and Fränkel's symptom, combined with dulness on transillumination, and the existence of a decayed first molar on that side, it may be advisable, in order to avoid a second operative procedure, to make a puncture through the alveolus after extraction of the tooth, and aspirate, blow, or syringe through at once; but in other cases, certainty is best arrived at by exploratory puncture through the inferior meatus. This is a method which I have found very useful; it was advocated as long ago as 1889 by Moritz Schmidt,¹ who employed a hollow curved needle attached to a hypodermic syringe. After trying this, and finding that it gave insufficient power, I had a hollow curved needle attached to a firm handle made, but within the last few months I have given this up in favour of a straight trocar and cannula such as is used by Grünwald,² finding this more satisfactory, as it would penetrate when the curved one would not.³

The method of employment is as follows: The nasal cavity having been very carefully cleaned with wool mops, especially in the region of the hiatus semilunaris, a long-shaped wool pellet soaked in 20 per cent. solution of cocaine is tucked well into the inferior meatus. After its removal the trocar, which has been previously carefully sterilised, is introduced, under good illumination, into the inferior meatus (at its upper part) until the point occupies about the junction of the anterior and middle third of that canal. By turning the butt end of the trocar sharply towards the septum, and making pressure on the instrument in a horizontal direction, it penetrates, with more or less ease, into the antrum. The trocar is then removed, leaving the cannula *in situ*. A small aspirating syringe is next fitted to the cannula, and suction made, the point of the cannula being at the same time tilted in a downward direction. If this fails to give pus, I employ Grünwald's plan of attaching a rubber bag to the cannula, and blowing air through it, whilst at the same time the region of the middle turbinated body is inspected through a speculum, so that any discharge blown out of the antrum can be seen. If there be any liquid in the antrum a moist bubbling is also heard by the surgeon. A positive result may be obtained by this method when aspiration alone fails to yield any discharge.

A further manoeuvre, of which I have not had much experience yet, but which I think may be of service, is to aspirate after some air has been blown into the cavity; the air having made an emulsion with any pus present may facilitate its aspiration, when the point of the cannula did not reach below the level of the pus in the first instance. Aspiration may also be facilitated, I have found, by tilting the head well back, so that the point of the trocar occupies the lowest part of the antrum. No liquid is introduced into the antrum.

I have employed this method 26 times since last July, when, through the kindness of Dr. Grünwald, I became acquainted with it.⁴ In no instance in these 26 punctures have I failed to enter the antrum. In one case where the curved instrument was unsuccessful, the straight trocar entered easily. I have seen no bad results from the exploration. Once, some years ago, the syringe on aspiration filled with blood, but no symptoms ensued, although I saw the

patient three months afterwards. In the majority of the 26 punctures (17 of which have been in hospital practice) the result has been negative, but this is because in clear cases I have often proceeded directly to the opening through the alveolus.

Grünwald recommends repeated puncture when the result is negative and the symptoms are marked, on the supposition that the cavity sometimes contains pus, at others not. I have not yet done this, although it may on occasion be necessary. I have always found local anaesthesia sufficient for what does not seem a really painful proceeding, but it could be done under gas if necessary.

There are other points which might be gone into, such as the comparative value of the probable signs and the differential diagnosis of abscesses of the various sinuses.⁵ It will suffice to say here that in cases of evident ethmoidal empyema the diseased parts of the ethmoid (at any rate as far as they cover the hiatus semilunaris) must be cleared away first before an exploratory puncture of the antrum is made, otherwise if a small quantity of pus is blown out by this method, one may still be in doubt as to which of these two sinuses it was in. The determination, in any given case, of what point the discharge comes from is often so fraught with difficulty that any simple method which assists in forming a definite diagnosis is to be valued. I have therefore brought this method forward, leaving further details of the subject for a future occasion.

A CASE OF ACTINOMYCOSIS OF THE ORBIT, WITH A SUMMARY OF SEVEN OTHER CASES OF ACTINOMYCOSIS.

By W. B. RANSOM, M.A., M.D., M.R.C.P.

Physician to the General Hospital, Nottingham.

THE following is the seventh case of actinomycosis recognised during life in the Nottingham district within the last six years. It is possible that more cases may have occurred, but in these seven I have had the opportunity of observing the spherules of the ray fungus, either in the pus discharged or in tissues removed by operation.

The frequency with which this so-called rare disease has of late been met with in this district appears worthy of record, and I therefore append to the report of this last case a list of the others, details of which have been kindly supplied by the gentlemen under whose care they were.

Mrs. W., aged 32, an inhabitant of Nottingham, was first seen by me in consultation with Dr. Hunter on November 1st, 1894. She had then been suffering for six weeks from intense pain in the right temple and eye, and for the last week there had been slight ptosis and some limitation of the movements of that eyeball.

Until the present illness, the patient had enjoyed good health, and there was nothing in her personal or family history to suggest syphilis or tubercle. In the July previous, she had been confined of a healthy child, and had afterwards gone to stay with friends in the country near Newark, where, as we learnt afterwards, she had assisted at the harvest.

Six weeks before the date of my visit, she had been suddenly seized with severe pain in the right eye, and this pain had continued ever since. She had all the teeth in the right upper jaw drawn without relief to the pain. As Dr. Hunter did not see her at that time, we do not know what was the condition of the teeth, but Mrs. W. said herself that they were not particularly bad, and was not inclined to attribute her pain to them.

On November 1st, Mrs. W. appeared pale and worn with suffering, but her mental faculties were intact. She complained of intense pain in the right eye and temple, and there was cutaneous hyperaesthesia all over the scalp, but none on the face. The temple could not be tested in this respect, owing to the application of a blister.

The right eyelid drooped slightly, and the movements of the right eyeball were somewhat limited in all directions, but it was not more prominent than the left. The pupils were equal, both fundi were normal, and the tension of both bulbs appeared normal. Nothing abnormal could be found in the ears, nose, or jaw.

On November 9th, there was distinct bulging forward and some redness of the right eyeball, but no enlargement of veins, no iritis, and no change in the fundus or media. Vision good. The diagnosis was now made of retro-orbital inflammation or growth, and an exploratory operation suggested. The patient was seen soon after by two surgeons on two separate occasions, but by this time there was such marked bulging of the temporal fossa that they both considered the case one of sarcoma and unsuitable for operation.

I did not see Mrs. W. again until the beginning of January, 1895, when Dr. Hunter sent her to see me at the hospital. In the interval she had had much morphia and some iodide of potassium and mercury. The

¹ Diagnosis and Treatment of Diseases of the Antrum of Highmore, *British Journal of Dental Science*, March 1st, 1889.

² *Die Lehre von den Nasenerkrankungen*, 1896, second edition, p. 192.

³ The trocar is 11 centimetres long and 2 to 2½ millimetres thick (Down Brothers, London). It is therefore thicker than Lichtwitz's.

⁴ My previous punctures, without the blowing through, date from 1889.

⁵ The chance of a tumour being present must also be taken into account.