Eleven patients were examined by the improved method, and the following results were obtained.

1. *Case B.*—A patient with catarrhal jaundice of more than two months' duration was examined three times by the salicylate method and twice by the levulose tolerance test. He had a most obvious lesion of his liver, and when first examined by the levulose test showed a very marked divergence from the normal. Some weeks later, at a time when he showed obvious clinical improvement, his levulose reaction was nearly normal. His response to the salicylate test was quite impossible to correlate with either his clinical course or the results of the levulose tests. When his illness was at its height he excreted most of the salicylate (8 a.m., 0.0045 gram; 10 a.m., 0.0023 gram; 12 noon, 0.0013 gram; total 0.0081 gram); when he was almost convalescent he only excreted 0.004 gram of sodium salicylate (8 a.m., 0.00225 gram; 10 a.m., 0.00103 gram; 12 noon, 0.00075 gram; 2 p.m., 0.003 gram). Midway between these two occasions he only excreted 0.002875 gram (8 a.m., 0.00125 gram; 10 a.m., 0.001 gram; 12 noon, 0.000625 gram).

These results would appear to bear out the authors' conclusion that the healthy liver led to the excretion of less salicylate in the urine than the diseased liver.

2. *Case W.4, C.2.*—A patient with a large liver abscess gave a very high curve with the levulose tolerance test, and, clinically, had a much enlarged and severely damaged liver. He reacted to the salicylate test by excreting 0.004 gram (8 a.m., 0.0023 gram; 10 a.m., 0.0015 gram; 12 noon, 0.0006 gram). Clinically and by the levulose test this man had more severe liver injury than Case B (1).

3. *Case M.F.*—A healthy male, who excreted 0.0075 gram of salicylate in response to the test—that is, he excreted nearly as much as "B," who had a severe liver disorder, and nearly twice as much as "W.4, C.2," who had a much more severe lesion than "B."

At this stage it was suspected that the salicylate test could not be called one of liver function proper, but was dependent for its results on some unknown individual idiosyncrasy.

4. *Case M.A., W.4, C.3.*—A patient with catarrhal jaundice only excreted 0.00448 gram of salicylate (8 a.m., 0.00195 gram; 10 a.m., 0.00116 gram; 12 noon, 0.00137 gram).

5. *Case P. H. S. W.*—The patient, who was admitted with bronchitis, excreted 0.003 gram of salicylate (8 a.m., 0.0009 gram; 10 a.m., 0.000246 gram, 12 noon, 0.0013 gram). Tested by the levulose test he gave a perfectly normal result.

6. *Case W.8, C.21.*—Admitted with ascariis infection; excreted 0.004475 gram (8 a.m., 0.000397 gram; 10 a.m., 0.0025 gram; 12 noon, 0.00052 gram; 2 p.m., 0.000458 gram).

7. *Case W.8, C.20.*—Convalescent after a mild attack of malaria, and responding easily to quinine; this patient excreted 0.00658 gram of salicylate (8 a.m., 0.00327 gram; 10 a.m., 0.00215 gram; 12 noon, 0.00116 gram).

8. *Case W.8, C.22.*—A patient with symptoms suspicious of liver abscess excreted 0.001152 gram of salicylate (3 a.m., 0.000708 gram; 10 a.m., 0.000228 gram; 12 noon, 0.000216 gram).

9. *Case M. M.*—A healthy control had taken 10 grains of aspirin (unknown to the experimenter) thirty-eight hours before beginning the salicylate test. The 6 a.m. urine already contained salicylate. The ingestion of 0.04 gram of sodium salicylate was followed by a most profuse diuresis, in this patient only, and the urinary salicylate excretion totalled 0.025 gram (6 a.m., 0.00224 gram; 8 a.m., 0.01870 gram; 10 a.m., 0.00225 gram; 12 noon, 0.00236 gram).

Even with the modifications instituted (for help in the improvement of which the author of this paper wishes to express his gratitude to Mr. A. Laird, B.Sc., of the Chemical Research Laboratory, Masjid-i-Suleiman) the colour on adding the reagent to the ether extract was often very poor. The preparation of a good standard was also a great difficulty; five attempts having frequently to be made.

The method of steam distillation of Thoborn and Hanzlik was suggested by Mr. J. Henderson, refinery analyst, Abadan. This gave a very good colour, but in my hands a yield of only 17.5 per cent.

The experiments were not carried any further, as it was obvious that the claims of the original authors were not borne out by the results attained.

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN, ESPECIALLY TONSILLECTOMY.

BY

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THE choice of the anaesthetic to be used for an operation of short duration on a child always presents a serious problem, especially where it is necessary that full surgical anaesthesia shall be obtained. The operation most frequently performed on young children is that of tonsillectomy by the blunt guillotine method, and, to be successful, the anaesthetic used for this operation must comply with the following conditions, especially where time is an important factor.

1. Simplicity of administration.
2. Rapid induction.
3. Full surgical anaesthesia for not less than one minute after the mask is removed.
4. Rapid return of the cough reflex.
5. Safety.

In the majority of clinics where tonsillectomies are done in large numbers ethyl chloride is the anaesthetic most commonly used, and all those who have employed it will realize its disadvantages when given by the ordinary open or closed methods. Two years ago, after reading Gwathmey's¹ figures of the decreased toxicity of all anaesthetics, including anethol, when administered in conjunction with oxygen, I began to use closed ethyl chloride and oxygen as an anaesthetic for tonsillectomies in children; and, once a technique had been evolved and the necessary dosage discovered, I adopted this anaesthetic as a routine for all short operations on children up to 12 years of age.

Ethyl chloride and oxygen is by no means a new anaesthetic, as in 1906 Rosenthal and Berthelot² reported a series of experiments on animals in which a mixture of oxygen and ethyl chloride was used; and Lotheissen³ has described his experience of five years' use of ethyl chloride narcosis by means of the simultaneous inhalation of ethyl chloride and pure oxygen, employing a modification of the Roth-Drager apparatus.

I have found that closed ethyl chloride and oxygen narcosis possesses the following advantages over the ordinary methods of using this drug.

1. Safety. In over 300 cases anaesthetized by this method not one has developed those unpleasant symptoms of syncope which are so often met with when ethyl chloride is used without oxygen.
2. Complete muscular relaxation.
3. Increased time of full surgical anaesthesia after withdrawing the anaesthetic.
4. Freedom from post-anaesthetic complications.

Apparatus Used.

I use a Guy's inhaler with the following modifications: (1) an ordinary two-gallon gas bag with a bottom tube, which is connected to an oxygen cylinder fitted with a fine adjustment valve; (2) a slightly larger phial graduated up to 8 c.cm.

Dosage.

I have found that a considerably larger dose of ethyl chloride is necessary with oxygen than without, when it is administered by the closed method—namely:

3 to 5 years of age	...	...	4 c.cm.
5 to 8 years of age	...	...	6 c.cm.
8 to 12 years of age	...	...	8 c.cm.

These doses are varied within certain limits according to the size and physique of the patient.

Technique.

All hospital cases are given a hypodermic injection of atropine forty-five minutes before operation, but this can be omitted in cases of emergency, as there is very little mucus formation with this anaesthetic.

The necessary dose is first measured into the phial and the bag half filled with oxygen. The child is then induced to bite on a Doyen's gag, and, after allowing the ethyl chloride to run into the bag of the inhaler, the facepiece is closely applied to the patient's face. Personally I use a celluloid facepiece without a rubber pad, and cover the child's face with a sheet of gamgee tissue, which has a heart-shaped hole cut in the middle for the nose and

mouth. This does not allow nearly so much leakage of gas along the gag as a rubber facepiece.

Two or three breaths are permitted with the stopcock closed, and then it is pushed over to "No valves" during an expiration, the patient rebreathing throughout the whole period of induction. After a few breaths a short period of apnoea commonly occurs, after which the respiration soon becomes regular and stertorous, whilst the pupil first contracts and then begins to dilate. As soon as full anaesthesia is reached the Doyen's gag is opened, and after two more respirations the inhaler is removed and the operation proceeded with.

In a series of thirty consecutive cases the time of induction, from the opening of the valve to the removal of the mask, varied from 49 to 82 seconds, with an average for the series of 63 seconds; whilst the period of anaesthesia from the removal of the mask to the return of the cough reflex varied from 58 to 160 seconds, with an average of 115 seconds.

Throughout the whole period of induction of anaesthesia and of operation the patient's colour remains a rosy pink, whilst, after the initial struggle when the valve is opened, the pulse is slow.

In my opinion, the hyperoxygenation reduces the probability of haemorrhage, as there is never the slightest tendency to cyanosis with its concomitant congestion.

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¹ Gwathmey: *Anaesthesia*, pp. 84, 85. ² Rosenthal and Berthelot: *Compt. rend.*, 136, 43. ³ Lotheissen: Aethylchlorid Sauerstoff Narkose, *Arch. klin. Chir.*, 1909, 91, 65.

THE DANISH TREATMENT OF ITCH.

BY

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A GLANCE at the following summary will emphasize the importance of this treatment, which cures scabies in one day.

Summary of Facts.

1. This treatment has stood the test of time (1912-1929).
2. Certain cure is attained within twenty-four hours.
3. The treatment is ambulatory.
4. The cost of the ointment is not great.
5. Relief is rapid.
6. One single inunction suffices.
7. If made as directed the ointment will never produce any alkaline cauterization of the skin; and if used as described below no toxic symptoms will ever be manifest.
8. The hydrogen sulphide gas given off, which is the most active principle, will tarnish certain metals badly.

The prescription is complicated, and its preparation requires care and practice to ensure a perfect result. Marcussen discovered the cure in 1911, and Ehlers tried it, and made it known in 1912. Marcussen makes up the preparation as follows:

I. 1 kg. of sublimated sulphur is dissolved by heating it gently in 1 kg. of a 50 per cent. solution of potassium hydroxide, a clear yellow solution resulting.

II. 225 grams of vaseline and 225 grams of water-free lanoline are mixed with care, no heat being used.

III. To this mixture 375 grams of the solution of sulphur in potash lye (see I) is added.

IV. Fresh zinc hydroxide is prepared by mixing 28 grams of ZnSO₄ and 40 grams of a 20 per cent. sodium hydroxide. Then this is added to the ointment.

V. Liquid paraffin is added to make a total weight of 1,000 grams.

VI. 5 grams of benzaldehyde is added to check the somewhat disagreeable smell of sulphuretted hydrogen.

Remarks.

Ehlers and Marcussen state that whenever the ointment comes into contact with the skin it produces hydrogen sulphide, the "high" sulphides of potassium being the active principles upon which its activity depends. The adult mite is slain within half an hour of exposing the affected area of skin to this most powerful weapon. The eggs have more resistance, but in spite of this they are

killed within the allotted time for cure. Although it is advisable to disinfect the clothes, Lomholt of Copenhagen states that this is not necessary. The odour is unpleasant, but does not last much more than an hour.

The Procedure in Treatment.

The treatment is carried out in seven stages.

1. The patient takes an ordinary cleansing bath.
2. He then wipes himself thoroughly dry.
3. He applies the ointment to the whole of the body, except the head, by gentle rubbing only. Someone will assist him in anointing the back.
4. He waits for twenty minutes, to allow the application to soak in.
5. He then goes to bed, or does otherwise.
6. The next day, twenty-four hours after receiving the application of the ointment, the patient receives his second bath.
7. He puts on fresh underclothing, and walks away cured.

Notes on the Treatment.

Every patient speaks of its rapid soothing properties. No relapses have been reported in the last seventeen years, during which time many physicians have kept a watchful eye on the results of the treatment. Every day we get several new cases of itch, and these are cured before the next batch come in on the morrow. The economic aspect of this treatment speaks for itself.

In a typical case the patient said that within an hour his suffering from intolerable itching ceased, and within a day his disease was no more. Needless to say, we use this as a routine treatment for scabies. Other skin diseases have been treated with this application, but without any striking results; so at present, after its successful employment for seventeen years, it should be described as essentially the treatment of scabies or itch.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACTINOMYCOSIS OF THE TONSILS.

ACTINOMYCOSIS of the tonsils is a rare condition. For this reason I venture to report the following case.

Miss X, aged 19, was seen by me at the hospital in the early part of last year. She had been sent by her doctor for an opinion about her throat, which had been troubling her for some time. Examination revealed somewhat enlarged faucial tonsils, with a whitish fungus-like growth projecting out of almost every follicle. In addition, there were similar patches on the base of the tongue and lingual tonsils. The glands in the neck were not enlarged, and the patient did not feel ill. Palpation of the tonsils revealed the fact that they were very hard, and that the surface was rough—just like the surface of a nutmeg grater.

I provisionally diagnosed the case as being probably due to involvement by a streptothrix, and advised that the faucial tonsils be removed and that the other patches be curetted. I subsequently performed the operation as suggested, and sent the tonsils for microscopical examination, when it was found that the condition was due to actinomycosis.

The faucial tonsillar bed healed perfectly, and has remained quite healthy and free from recurrence. I had to use an electric cautery on the patches on the base of the tongue and lingual tonsils to clear up the condition in that situation. It is now quite free from patches and in a healthy state.

The operation was performed in May, but the patches which were cauterized did not disappear until about one month ago. I have had the girl examined for foci in other parts of the body. The result of such examinations has always been negative. Potassium iodide has been administered during the whole of the treatment.

During the summer of 1928 Miss X, who lives in a country district, used to take walks in the fields and pick up pieces of straw and grass and chew them. In my opinion this is the source from which she has been infected.

Interesting points in this case are: (1) that the tonsils and base of the tongue only were affected, the teeth are perfectly normal; (2) that there has been no apparent systemic infection; (3) that as a result of treatment the disease has apparently been eradicated.

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