After treatment for a month:

Red blood corpuscles...	...	...	3,844,000
Haemoglobin...	...	...	75 %
Faeces—			
(a) Fresh ...	...	...	0.163 % iron
(b) Dry ...	...	...	0.815 „ „

CASE. IV.—Treated with Preparation B.

Before treatment:

Red blood corpuscles...	...	...	3,042,000
Haemoglobin...	...	...	45 %
Faeces—			
(a) Fresh ...	...	...	0.0020 % iron
(b) Dry ...	...	...	0.0082 „ „

After treatment for a month:

Red blood corpuscles...	...	...	3,820,000
Haemoglobin...	...	...	76 %
Faeces—			
(a) Fresh ...	...	...	0.014 % iron
(b) Dry ...	...	...	0.048 „ „

Several estimations of the percentage of iron in the faeces were made in each case in the period of time over which the investigation extended, and in every case approximated closely to those given. Although not included in this paper, two other cases treated with Preparation A as controls gave practically identical results, both as regards the rapid improvement in the red cells, and the comparatively small average amount of iron excreted in the faeces, over and above the food iron. The striking difference in the cases treated by Preparation A from the results of treatment by the inorganic preparations of iron used seems to me worth noting. The improvement in the blood count in the latter is hardly worth mentioning, while the amount of iron passed in the stools, over and above the food iron, exceeds greatly the amount excreted in those cases treated by the organic preparations referred to.

As practically nine-tenths of the iron present in the food, or taken medicinally, are excreted by the intestinal canal, and the remaining one-tenth only, by the kidneys, it was thought permissible to disregard the latter altogether in the estimations made. As stated above, the patients were placed on a fixed dietary—Schmidt's—and from an average weight of faeces the iron content in the stools of all the patients was fairly constant before any medicinal treatment was undertaken.

Case I, treated by Preparation A, would seem to show that on an average more than half the amount of iron given per diem was absorbed, while much the same result followed in Case IV, treated by Preparation B. In Case II, treated by pil. Bland, more than twice as much iron was excreted in the faeces as compared with Case I, while in Case III, in which a standardized solution of the citrate of iron was given, a calculation shows that on an average, from the amount present in the stools, not more than one-seventh of the total iron given per diem was absorbed.

These results, therefore, and the other cases under treatment, so far as they have gone, would seem to show that small doses of the organic preparations of iron, as tested against equal doses of the most commonly used and trusted inorganic salts of iron, are absorbed in much greater proportion to the total given per diem.

The giving of very large doses of the ordinary salts of iron, judged by these results, would seem to be quite unnecessary, and may even prove injurious. The iron taken into the system, so far as we know, passes by way of the duodenum to the lymph channels, and thence to the blood stream. It is then deposited first in the spleen and later on in the liver. There it is temporarily stored, and the excess is then excreted by the epithelial cells of the colon and caecum. There is no proof, at all events, that the organism can make any immediate use of the excessive doses of the inorganic preparations of iron sometimes administered.

Further, it has been estimated that the average total iron in the human body is only about 2.5 to 3 grams, a quantity barely sufficient to make a small nail. The greater proportion of this, too, is in the form of haemoglobin. The average content of food iron on a mixed dietary, indeed, is, according to Herter, not more than one-twelfth to one-sixth of a grain, and this small quantity suffices to maintain the iron equilibrium. These facts taken together appear to me to greatly strengthen the argument for the administration of iron, preferably in some such form as Preparation A referred to in this series of cases, and in small enough doses to be efficient without disturbing diges-

tion. I am fully aware that these few cases are not sufficient in themselves to justify final conclusions, but at all events they encourage one to proceed with the investigation on similar lines, in order, if possible, to find some means of obtaining the greatest benefit from one of the most valuable, but often most abused, remedies in the pharmacopoeia.

TREATMENT OF PULMONARY TUBERCULOSIS BY MEANS OF CARBOLIC ACID INJECTIONS.

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My attention was first drawn to the value of carbollic acid in the treatment of pulmonary tuberculosis while using tuberculin. I was giving a patient the bacillary emulsion, using normal saline as diluent, but she made no satisfactory progress. Having no saline to hand, I used a 0.5 per cent. solution of carbollic acid in sterilized water. This was followed by an immediate benefit. The patient felt better; her general condition was greatly improved after a few doses, and tubercle bacilli disappeared from the sputum. I was so much impressed with this case that I resolved to try the injection of carbollic acid by itself. I have given the injections now for seven months, and in the majority of the cases the patients have received much benefit. One of the patients, who had slight but undoubted signs on admission to the sanatorium, was passed for a soldier a few days ago. In the case of another patient, whose condition for the first three weeks after admission to the sanatorium was very unsatisfactory, improvement ensued immediately after commencing carbollic acid injection, and after six months' treatment, he had gained 21 lb. in weight, and is about to commence work.

Method.

Dose.—0.1 to 0.2 c.cm. of a 1 per cent. solution of pure carbollic acid in sterilized water. One hypodermic injection is given each week.

Site of Inoculation.—Between the shoulders.

Sterilization of the Syringe.—Drawing olive oil into the barrel at a temperature of 150°. This is Wright's method.

Sterilization of the Patient's Skin.—One drop of lysol is placed on the skin at the site of inoculation, and the needle is plunged through the drop.

The following points have been carefully noted in examining the results of these cases: Weight, temperature, sputum, physical signs, and the general condition of the patient.

Weight.—Twenty-five patients gained weight; seven lost weight, but only a small amount. All the patients who lost weight were suffering from advanced disease.

Temperature.—In no case was the temperature affected.

Sputum.—In 16 cases the sputum disappeared, in 2 cases it was increased in amount, and in all the others it was appreciably lessened. In 1 case tubercle bacilli disappeared from the sputum.

Physical Signs.—In 9 cases the physical signs entirely disappeared, and with the exception of 7 they were markedly diminished in the others. The general condition of all but 5 was much improved.

Results.—One of the patients is now working as a commercial traveller. A second has just been passed for a soldier. A third is working for one of the local daily papers. A fourth is working part time. Three other men are about to commence work. Many of the women patients are now doing their household duties.

Conclusions.

I have come to the following conclusions from these cases:

Early cases treated by this method give the best results.

The weight is increased regularly each week.

The appetite is much improved.

The physical signs are diminished, and in some cases entirely disappear.

The amount of sputum is lessened.

As all these cases were treated at first at the sanatorium, it might be said that the improvement was due to the ordinary sanatorium treatment. I have had patients treated on the ordinary sanatorium lines with marked benefit, but the benefit has been more marked when carbollic acid has been given as well.

The following are notes of three cases showing the value of the treatment:

CASE I.—M. B., aged 18. History of haemoptysis. No family history. Impaired note and râles at the right base. V. Pirquet's test definite. After fourteen weeks' treatment the râles had entirely disappeared. Increase of 15 lb. in weight. Has enlisted as a soldier.

CASE II.—F. B., aged 18. History of loss of weight and cough. Brother had pulmonary tuberculosis. Impaired note and weak breathing at the right apex. Apical percussion change above the right clavicle. Von Pirquet's test positive. Gained 7½ lb. in nine weeks. He is now working as a commercial traveller.

CASE III.—A. R., aged 40. Flattening, diminished movement and impaired note over the right side of the chest. Tubercle bacilli in the sputum. Râles over the right side of the chest. There was no improvement for a few weeks, and he was steadily losing weight until carbolic acid was given; he then immediately began to improve and gain weight. Before he left the sanatorium he was looking after the greenhouses and acting as postman. This is one of the advanced cases which received benefit from the treatment.

In conclusion, I would like to thank Dr. Woodcock and Dr. Watson, honorary physicians to the Leeds Sanatorium for Consumptives, for allowing me to publish these cases.

A REPORT ON FIFTY CASES OF TRACHOMA TREATED WITH CARBON DIOXIDE SNOW.

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FROM time to time various skin affections, warts, rodent ulcers, etc., new growths, such as naevi and other cutaneous affections, have been reported in the JOURNAL as cured by means of the application of carbon dioxide snow. I now report a series of 50 cases of trachoma which have been treated by me at the Tung Wa Hospital, Hong Kong, with the same remedy. The cases are all Chinese. In addition I have treated a number of cases in private with equally successful results. My attention was first called to this method by Mr. Bishop Harman, who exhibited a case he had treated, at the last annual meeting of the British Medical Association (July, 1910). The case he then showed was completely cured, the conjunctiva exhibiting a smooth cicatricial appearance with no trace of the disease beyond the scarring inevitable in the process of cure when the disease has persisted for any length of time.

Method of Procedure.

The snow is collected from a 28-lb. cylinder of the liquefied gas by means of a Prana cage. The cage is then detached from the cylinder and the snow is rammed down tightly into the cylindrical mould attached to the cage; I then hammer down the snow in the mould to compress it as much as possible, and to facilitate subsequent shaping of the resulting pencil. The pencil is now extruded with the stick provided for the purpose, and subsequently shaped with a blunt knife into the form of a sharpened pencil, the sloping point being made as long as possible, but thick enough to avoid fracture when applied to the everted conjunctiva. This is an important point, as considerable pressure has to be applied to secure the maximum of efficiency. The surgeon stands behind the patient and everts the lids in the ordinary way; holding the lids everted with the fingers of the left hand, he takes up the pencil of snow with the right hand and applies it to the conjunctiva, taking care to avoid contact with the cornea, and at the same time directing the patient to look down as much as possible, so that the snow may be applied to the transitional fold of conjunctiva in the fornices. After treating the fold of transition the snow is applied to the tarsal conjunctiva, an interval being allowed to elapse so that the effect may pass off from the fornices before applying any pressure on the tarsal conjunctiva. The reason for this will be easily appreciated by the surgeon should the patient inadvertently raise the eyeball; the cornea is then apt to come into contact with the excess of snow deposited. Pain immediately ensues, and blepharospasm naturally follows, markedly exaggerating the discomfort of the patient. In the same way, after applying the snow to the tarsal conjunctiva, an interval is allowed to elapse before replacing the everted lid.

At the first application the snow is applied to each part for fifteen seconds; later, when the patient is accustomed to the treatment, for as long as twenty, twenty-five, and thirty seconds. The pain caused passes off at the end of two minutes, and is infinitesimal compared to the pain caused by bluestone, silver nitrate, and such like caustics. The disease is considerably shortened in its course, and the resulting scarring is considerably less than when other caustics have been used. In the following series of cases the applications were made once weekly. Provided Bowman's membrane is intact, pannus and corneal ulceration clear up rapidly in the majority. The worst cases to treat are those of acute trachoma, with much oedema of the lids and conjunctivae and much purulent secretion. The cases which respond most rapidly are those which have already become chronic, with slight discharge, and with slight scarring—that is to say, those cases in which Nature has already attempted a cure. Of the papillary and granular types of the disease, the latter is, in my experience, the more readily amenable to the treatment with snow.

Amongst the cases treated was one of typical xerosis, which improved considerably, the dryness of the cornea having now completely disappeared. Hitherto this condition has been quite intractable as far as treatment is concerned, and, while it may be considered somewhat rash to draw conclusions from one case, perhaps other observers may be able to report further on this hopeless sequel to trachoma.

I append a list in brief of the cases treated.

Table of Cases.

No. of Case.	Description.	No. of Applications.	Result.
1	Acute papillary, much congestion of conjunctiva, cornea clear	15	Cure.
2	Chronic, slight discharge, scarring commencing	5	Cure.
3	Incipient, follicles in fornices only	5	Cure.
4	Acute papillary (vide Case 1)	15	Cure.
5	Incipient (vide Case 3)	7	Cure.
6	Chronic, pannus, and corneal ulceration	16	Cure.
7	Ditto	12	Cure.
8	Incipient (vide Case 3)	8	Cure.
9	Chronic, pannus	8	Cure.
10	Chronic, corneal ulceration	8	Cure.
11	Chronic, granular, corneal ulceration	9	Cure.
12	Chronic, papillary, corneal ulceration	15	Cure.
13	Chronic, granular, scarring, nebulae on cornea	11	Cure.
14	Chronic	4	Did not continue.
15	Chronic, granular, pannus	10	Cure.
16	Acute papillary	17	Cure.
17	Chronic, encysted follicles, expression of upper lid	7	Cure.
18	Acute velvety	9	Cure.
19	Chronic, granular, nebulae	8	Cure.
20	Chronic, papillary	12	Cure.
21	Chronic, scarring advanced	4	Cure.
22	Ditto	5	Cure.
23	Follicles confined to fornices, some ulceration of right cornea	11	Cure.
24	Chronic, granular, complete pannus in left eye causing blindness; partial pannus in right eye	15	Vision of right eye saved; lids cured.
25	Chronic granular	10	Cure.
26	Incipient	6	Cure.
27	Chronic, granular, pannus	12	Cure.
28	Chronic, scarring advanced	4	Cure.
29	Ditto		Cure.