In exophthalmic goitre unboiled milk, eggs, and fish should be given freely. The supply of meat protein should be controlled by the symptoms and the examination of the urine. In the complete absence of indican, and therefore of putrefactive organisms, the administration of meat aggravates the symptoms, but in the presence of indican meat will encourage the growth of the putrefactive bacteria already present. I have found that in the complete absence of indican the patient is more comfortable if all animal protein is withheld, and jelly given instead. The reason is obvious, as jelly contains no aromatic radical. In serious cases, with pulse rates of 150 or over, I have found this fact of great value. It is rare for the pulse rate not to fall below 120 if animal protein is withheld for a fortnight; in addition, the patient feels better, and the dangers of an anaesthetic will be reduced if the goitre has to be treated surgically.

Operative Treatment of Goitre.

Obviously, a case of parenchymatous goitre with no exophthalmic symptoms superadded is not benefited by removing a part of the gland unless the trachea is pressed on and the breathing interfered with. Ladies, however, are prepared to sacrifice a lot in the interests of their personal appearance. Needless to say, I am not referring to adenomatous or cystic goitres, which are obviously surgical conditions.

In exophthalmic goitre I am guided by the intensity of the symptoms, by the result of dietetic and medical treatment, and especially by the absence or presence of indican in the urine. The complete disappearance of indican, as I have already insisted, means that the chances of early improvement are remote, and if the symptoms are at all severe I advise operation. Partial thyroidectomy improves the patient for several months, as it diminishes the amount of thyroxin manufactured. The operation does not attack the cause of the disease, but the improvement in the symptoms may be enough to justify the operative risk. Both parenchymatous and exophthalmic goitre are diseases which run a definite course; the patients get progressively worse up to a certain point, and then, for no apparent reason, they improve, and ultimately get perfectly well—provided, of course, that the symptoms have not proved fatal before improvement sets in. The patients commence to improve when the intestinal flora becomes normal, and, in all probability, an acquired immunity to the suppressed organisms explains the difficulty found in re-establishing the normal flora in these cases. When the subject has been more fully investigated it may be possible, if such is really the case, to diminish or destroy this immunity. Possibly equally good results might be obtained by increasing the immunity of the body to the predominant group, as this would encourage the growth of the opposite group. It is possible that the improvement following removal of a part of the gland in exophthalmic goitre has a definite effect on the degree of immunity to the putrefactive group.

Unfortunately, bacteriology is still in a very primitive stage of development; comparatively unimportant matters have been fully investigated, such as the exact type of growth obtained on rare and complicated media, but very little interest seems to be taken in the exact chemical composition of the bodies formed by pathogenic bacteria when growing in animal tissues. When this subject is worked out, then we can hope to make a decided advance in our methods of treating the diseases caused by them.

The treatment of goitre by means of x rays is a non-operative method of destroying a part of the gland tissue, and its use should be regulated by the same considerations that govern operative treatment.

Medicinal Treatment of Goitre.

In parenchymatous goitre I doubt if any preparation does as much good as the local application of dilute mercuric iodide ointment; its beneficial results may be due to the excretion of some of the mercury into the alimentary canal. In exophthalmic goitre treatment is mainly symptomatic, and is useful in that it improves the patient's general condition and comfort; it does not cure the disease, and no one pretends that it does.

GENERAL CONCLUSIONS.

1. Exophthalmic goitre is due to the excessive absorption of tryptophane from the intestine; this in turn is traceable to the absence of the indole producers from the intestine.
2. The absence of indican from the urine indicates the absence of indole producers from the intestine.

3. In exophthalmic goitre the early disappearance of indican from the urine is of serious prognostic importance.

4. Operative surgery has a definite place in the treatment of exophthalmic goitre. Medically, much can be done by suitable dietetic measures.

5. Diffuse parenchymatous goitre is characterized by an excess of indican in the urine, suggesting an excessive destruction of tryptophane. If this excess gives place to a diminution or complete disappearance of indican, that suggests that the case is assuming the exophthalmic form.

6. Myxoedema is due to atrophic changes in the thyroid gland, which loses its capacity for dealing with the circulating tryptophane, whether that substance be excessive, deficient, or normal in amount. The disease is thus compatible with the presence or absence of urinary indican.

THE TREATMENT OF INCIPIENT PHTHISIS.

BY

WILLIAM GORDON, M.D., F.R.C.P.,

SENIOR PHYSICIAN, ROYAL DEVON AND EXETER HOSPITAL.

MORE than a quarter of a century has now elapsed since the open-air treatment of phthisis was brought home again to this country by Dr. Burton-Fanning of Norwich and Dr. Jane Walker, and the time is ripe for a general stocktaking of sanatorium experience.

ENGLISH SANATORIUMS.

There is a general impression that this experience is on the whole disappointing, and recently Dr. Ernest Ward has shown that in his district working-class cases of phthisis have done better in their own homes than those sent to a sanatorium.

No one who remembers working-class consumption thirty years ago will regard open-air treatment as anything but a great advance; and since it was in sanatoriums that open-air methods were developed, no one can hold that sanatorium treatment in a general sense has failed. If there is failure in England, it must be due either to our climate or to defects in individual sanatoriums. That England is less capable than other countries of furnishing the best results is unproved, though the point needs investigation. But that individual sanatoriums are unsatisfactory is suggested by the variations which are becoming evident in the results of treatment in different localities.

THEIR HISTORY.

Bodington.—The open-air treatment of phthisis was an English discovery, first announced, in 1840, by Dr. George Bodington of Sutton Coldfield, but the English medical profession turned it down.

Görbersdorf.—Happily for the tuberculous, the German realized its value. In 1859 Brehmer opened the first open-air phthisis sanatorium at Görbersdorf in Silesia, and I would draw attention to two points about this sanatorium which have been curiously overlooked. In the first place Brehmer chose a locality almost free from indigenous phthisis. In the second place he chose a site which was exceptionally wind-sheltered.

Davos.—In 1862 Spengler of Davos pointed out that indigenous phthisis was rare amongst the inhabitants of his valley, and that such of them as had contracted it elsewhere frequently recovered on returning to their homes. In 1865 patients from Germany began to be sent to Davos and the results were eminently satisfactory. In Davos also there is remarkable wind-shelter, and this "wind-stille" has been insisted on by all competent writers as an important factor in the curative influence of the place.

Nordrach and Falkenstein.—The success of Görbersdorf led to the establishment of daughter sanatoriums in different parts of Germany. Two of these have been specially noteworthy—namely, Dettweiler's at Falkenstein and Walther's at Nordrach. Nothing could be more striking than the contrast between their sites and their fortunes. For the first time in the history of sanatoriums we come upon a disappointment. Nordrach was a success; Falkenstein has been demolished.* Falkenstein, the failure, stood high on the southern slopes of the Taunus, "well protected from north

* The reason of the closure of Falkenstein has of course to be inferred. Medically successful phthisis sanatoriums do not close down. It is noteworthy that no new sanatorium has arisen at Falkenstein and that the sanatorium for the poor, opened at Falkenstein by Dettweiler on a small scale in 1892, was afterwards moved to a very different site, in marked shelter from westerly winds, at Ruppertsheim, where it remains.

and east" (in the phrase so dear to some medical writers), but imperfectly protected from the western gales. The phthisis death rate of the neighbourhood was 4 per 1,000. Nordrach, the success, is situated in the heart of the Black Forest, at the end of a very sheltered valley, enclosed on all sides by forest-covered heights, facing south-east and with abundant sunlight, under a heavy rainfall, but on a porous, quickly drying sandstone soil, too high to be reached by the far-travelling Rhine fogs, remote from the dust of traffic and from the possible infections of neighbouring communities, and provided with numerous sheltered walks in the surrounding forest. So striking was its success that it became the Mecca of English chest specialists.

Walther.—This brings us to a very interesting personality—very fateful, as I believe, in the history of English sanatoriums—Dr. Otto Walther, "devoted to the English." We English owe mainly to him, I have little doubt, the highly interesting field of climatological inquiry afforded by the surprisingly variegated choice of sanatorium sites made in this country. For to me he gave precisely the advice that I was tired of hearing at home, having by that time discovered how incorrect it was. I visited his valley soon after 1900, and was at once impressed by the skill displayed in his own choice of locality. Walther had by no means followed the almost happy-go-lucky advice he gave to me; and Sir James Fowler has just told us that "it is clear that Otto Walther did not consider the site of his own sanatorium as of little or no importance. He visited more than 200 sites before finding one suitable!" Why, then, did he give his English visitors views so different from those indicated by his own most careful choice, without one word about shelter? One does not know. But his pilgrims went home, full of Teutonic inspiration, and sowed their sanatoriums broadcast, at immense expense, in the manner he had indicated, and have been wondering ever since why the success they looked for has hitherto eluded them!

THEIR DIFFERING RESULTS.

Only a few sanatoriums seem, so far, to have stated after-results. Dr. Ward's results in South Devon are so strikingly the best that, although his figures are smaller, it is necessary to include them. Seeing that the critical years, in which most deaths occur, include the first four years, we had better confine our attention to his results at the end of four years. For comparison we must deal with other statistics similarly, and this limits us to Frimley Sanatorium (1914 report), Midhurst Sanatorium (fourteenth annual report, 1920), and "Tuberculosis in London" (Dr. Bardswell, *Tubercle*, 1921). I shall only consider the mortalities. Also I shall only deal with "early cases."

Dr. Ward recognizes three stages of the disease—"slight, medium, and extensive." No distinction was drawn between cases showing tubercle bacilli and cases not showing them. For comparison, therefore, we must take together, in the other statistics, the tubercle-positive and tubercle-negative cases on admission. In the Frimley report I have considered the "full-time" cases. As equivalent to Dr. Ward's "slight cases" I have taken those described as "having physical signs indefinite or in one lobe." In Dr. Bardswell's paper the "early cases" are those of the Turban-Gerhardt classification. "Almost without exception, the patients underwent treatment in a sanatorium." The patients in these three categories are almost wholly "working-class."

The Midhurst report gives tables which make it possible for one to calculate the results of all the early cases at four years after their discharge; the Turban-Gerhardt classification is used. At Midhurst a much higher class of patient is dealt with.

Comparison of Results at Different Sanatoriums.

	No. of Cases.	Percentage Dead after Four Years.
South Devon (Dr. Ward)—		
Not been in sanatorium	114	2.6
Been in sanatorium	55	11.0
Frimley	197	15.0*
Midhurst	552	20.0†
"London cases" (Dr. Bardswell)	508	31.0

* Not including 39 per cent. lost sight of.

† Three per cent. lost sight of.

Here are surely differences which call for explanation. The reports are by able men; the sanatoriums, so far as they can be identified, are well built and arranged; the patients have been under most skilled care. Then why these differences? Have the sites anything to do with them? That site may exercise an influence the history just given suggests. My own work, published in 1900 and since, strongly suggests it.

The importance of site is gradually becoming recognized. A friend, interested in the matter, has told me a conversation with one who had worked in two Scottish sanatoriums—one on the rainy west, one on the drier east—who said that the patients in the east had done much better than those in the west. Again, at a meeting of the Tuberculosis Society last year the tuberculosis officer of an important northern district told us that formerly all their phthisis patients were sent to a neighbouring seaside town, which the map shows to be exposed to practically every wind, where, as he tersely put it, "they all died," and that, in view of such results, the new sanatorium was being built inland and in shelter from rain-bearing winds.

THE NECESSARY INQUIRY.

I would submit that an inquiry into the results of all sanatoriums in this country is necessary and might be carried out somewhat as follows:

1. Early cases only should at first be considered.
2. Only cases with bacilli in the sputum should be dealt with.
3. The results should be stated for each case at the end of five years, especially the "apparent cures" and the deaths.
4. "Working class" cases and well-to-do cases should be separated.
5. For the well-to-do the results should further be compared with those at foreign sanatoriums similarly treated.

INTERIM PROCEDURE.

In the meanwhile what are we to advise when an early case of phthisis comes before us? My own strong opinion is that he should be warned sedulously to avoid the following climatic conditions:

1. The tropics, except at certain great altitudes in wind-shelter, as in some valleys of the Andes.
2. The immediate sea front (a quarter of a mile inland seems to avoid its bad effect).
3. A damp soil.
4. Impure or dusty atmosphere.
5. Deficient air supply.
6. Deficient sunlight.
7. Fog.
8. Exposure to strong, prevalent winds, especially rain-bearing winds.

We obviously would keep at home cases of acute miliary tuberculosis; acute tuberculous bronchopneumonia; acute tuberculous lobar pneumonia in its acute initial stage; pulmonary tuberculosis supervening on any serious condition rendering home treatment desirable.

Those whom we may send away we shall do wisely first to send to a well placed and well managed sanatorium in this country. If the case seems to be doing well in the sanatorium, he would probably be well advised to stay for six months or longer. When he leaves, if he be a "working-class" patient, he will be fortunate if some open-air colony, in which he can work under supervision, is open to him, such as Dr. Burton-Fanning has instituted in connexion with Kelling Sanatorium in Norfolk. If he is "well-to-do," the question arises whether England is the best place for him.

In England, I would advise some locality where phthisis is known to be uncommon and where climatic advantages, including shelter, seem to account for its rarity.

We must not lose sight of Dr. Theodore Williams's remarkable figures published in 1894. Dealing with "first stage" cases, "affecting one lung only," we may arrange them in tabular form, thus:

Percentages of "Arrest."

"High altitudes" (mainly Swiss)	63
Sea voyages	17
Riviera and South Europe	7

Of "high altitudes" he wrote: "The most surprising feature is the large figure of absolute arrests, which not only were far more numerous than in other climatic results, but were more complete."

I think it may fairly be said that early cases—young, vigorous, uncomplicated, with little or no fever, however

beginning (so long as haemoptysis has ceased)—will get their best chance at Davos, or at some other Alpine station with the climatic conditions of Davos—namely, pure, still, dry, cold, diaphanous, and diathermic air.

Unsuitable early cases for the high Alps are: acute cases, nervous, irritable people, elderly people, chilly people, most laryngeal cases, and those with much emphysema, with heart disease, or with albuminuria.

In choosing other foreign climates than Switzerland we must not forget that Australia, New Zealand, the Cape, Canada, and the United States no longer admit cases of active tuberculosis.

This leaves us a rather narrow choice. Sea voyages are by no means a safe prescription, particularly if they cross the tropics. The Riviera does not appear to give better results than can be obtained in England. Egypt at the present moment does not suggest itself as desirable. Las Palmas in Grand Canary has given good results; its climate should not be confused with the quite different climates of Orotava in Teneriffe and of Madeira. South-eastern Spain and the desert behind Algiers are still advised. In sending phthisical patients long distances their travelling powers must be considered, as well as the luxuries of travel and accommodation which they are prepared to allow themselves; also, and very important, the medical skill available in the health resort decided on. In the light of home sanatorium results all these localities will require consideration.

CONCLUSION.

To conclude, I would like to leave it clear that, from the foregoing comparison of open-air results, I claim to draw no final inference. They are too few, the definitions of "early" are too various, and the absence of uniform finding of tubercle bacilli renders the diagnoses too uncertain. *What I do claim, and claim strongly, is that they constitute a case for immediate investigation.*

ACUTE PUERPERAL INVERSION OF THE UTERUS.

BY

C. S. LANE ROBERTS, M.S., F.R.C.S.,

CHIEF ASSISTANT AND TUTOR, WOMEN'S DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL; PATHOLOGIST AND REGISTRAR, SOHO HOSPITAL FOR WOMEN.

THE two cases of puerperal inversion here recorded were recently met with in hospital practice, and are published by Dr. Croft's permission.

CASE I.

A. L., aged 21, 2-para (the first being a miscarriage), a healthy woman with strong abdominal muscles, had a normal first and second stage, the latter lasting two hours; twenty-five minutes later the uterus was grasped to see if the placenta had separated, and as it was uncertain whether separation was complete control and pressure were maintained on a well contracted fundus, and the patient of her own accord bearing down, part of the placenta appeared at the vulva. During this time there had been no excess of haemorrhage: the sister in charge then said the hand on the abdomen seemed to lose the uterus, and the emerging placenta was gradually followed by the completely inverted uterus, the whole appearing slightly larger than a foetal head, with part of the placenta separated but quite two-thirds remaining attached to the uterus, which accounted for the uncertainty of separation and the slight haemorrhage only. At once the parts were surrounded with hot sterile towels and the best available antishock treatment instituted.

Thirty minutes later (that is, fifty-five from delivery) I saw the case, finding the degree of shock markedly progressive, the patient looking extremely ill, with deep sighing respiration and almost imperceptible pulse. The inverted structures were not examined, but the abdomen gave no uterine swelling whatever, so that the condition was evidently one of complete uterine inversion. It was decided to leave the uterus *in situ*, with the placenta attached to avoid superimposing any haemorrhage on the prevailing shock. The antishock treatment was continued, though no morphine, no pituitrin, and no intravenous medication were administered, subcutaneous saline, hypodermic camphor, and ether being given.

Fifteen minutes later (that is, seventy from delivery) the patient appeared moribund, the pulse being quite imperceptible; so, as (1) her condition seemed hopeless, (2) she had not reacted to antishock treatment given for forty-five minutes, but had become steadily worse, (3) the husband had been sent for, (4) the apparatus was ready for an instant blood transfusion, it was decided to risk replacing the uterus. Accordingly the placenta was peeled off the uterus, very little haemorrhage occurring; the uterus was quite easily replaced through the relaxed cervix, and a hot intrauterine douche given; no pituitrin was administered as there was no bleeding of any account, and infec-

tion of this drug has been followed by reinversion. It was difficult to decide on the immediate effect of the replacement, as the general condition seemed so bad, but it appeared still further to deepen the shock, so that the case became quite hopeless.

Ten minutes later (that is, eighty from delivery) the husband arrived, so that transfusion was immediately performed of 22 ounces; the patient's colour slowly returned, and her condition improved.

The puerperium was apyrexial, and the lochia normal; on the fourteenth day vaginal examination showed the uterus a little bulky, but otherwise normal in shape, consistence, mobility, and position, so that the patient was discharged the same day.

CASE II.

A. H., aged 22, one previous child, had a difficult labour (forceps delivery) and severe *post-partum* haemorrhage. She got up on the tenth day and seemed quite well till the sixteenth day, when during the act of defaecation she felt her "womb drop"; the doctor sent for made a diagnosis of uterine inversion. The patient was admitted to hospital on the seventeenth day under Dr. Croft. Under an anaesthetic the vagina was found to contain a sloughy-looking mass, corresponding in shape and size to the inverted fundus of the uterus; the body of the uterus was not felt on bimanual examination. Manual replacement was found difficult owing to the rigidity of the cervix—the operation took close on forty minutes; it was followed by an intrauterine douche and iodoform pack; the chief difficulty, Dr. Croft said, was to start a dimpling of the uterine wall.

The puerperium was not eventful, and vaginal examination on the fourteenth day disclosed the body of the uterus normal and the cervix closed.

In the first case the result would certainly have been fatal had it not been possible to do blood transfusion. Owing to the lack of response to the antishock treatment, it seemed that there was nothing to be lost by risking replacement of the uterus, but the effect was apparently to deepen the shock as far as could be discerned with the patient in so precarious a way.

The ideal treatment would appear to be immediate blood transfusion with later replacement of the uterus. If blood is not available it would be worth while to try gum acacia solution, but saline seems useless if not harmful in certain cases.

Reference might be made to a case reported by Dr. Barris¹ of blood transfusion in a case of uterine inversion in which, two hours after delivery, the midwife tried forcibly to express the placenta and made traction on the cord, with the result that the patient felt something come down, and was admitted to hospital eleven hours later with the fundus inverted inside the vagina; the immediate treatment with pituitrin and a vaginal douche was directed to the prevention of shock. Two days later the first blood transfusion of 100 c.cm. was performed, and twenty-three days after that a second of 600 c.cm. Reposition of the uterus was done in the seventh week with an Aveling repositr, as there had been local sepsis and Carrel treatment had been called for.

The second case falls more into line with the series published in 1920 by Dr. Spencer, of which the first three cases were admitted with the inversion on the fifth, nineteenth, and twenty-second days, reduction taking place on the sixteenth, fortieth, and twenty-second days respectively, though in each it was uncertain when the actual inversion occurred; the next two cases occurred nine months, and two years and eight months, after labour; the last four being associated with tumours, and appearing seven, twelve, thirteen, and twenty-five years after labour, reduction in each case being effected by Aveling's repositr.

REFERENCE.

¹ *Transactions of the Royal Society of Medicine*, January, 1921.

DR. HUBBARD, director of public health education of the New York Department of Health, has recently published statistics which appear to show that since the last year before the prohibition law took effect there has been a constant increase in New York in the number of arrests for drunkenness, the number of deaths due to wood alcohol poisoning, and the number of persons admitted to hospital suffering from acute alcoholism. During last year 5,624 persons suffering from acute alcoholism were admitted to Bellevue and King's County hospitals, as compared with 3,345 in the preceding year. In 1922 the number of deaths from alcoholism was 295, as against 141 in 1921. The number of deaths, however, is smaller than it was in the years preceding prohibition; in 1916, for example, 690 persons died in New York from alcoholism; the low-water mark was reached in 1920, when there were 127 deaths, but since that time there has been a rapid increase. The number of arrests for drunkenness in New York in 1922 was 7,866, as against 6,233 in 1921.