Notes of Cases.

No.	Age.	Condition.	Other Evidence of Tuberculosis.	No. of Applications.	Time since Discharge.	No. of Relapses.	Result.
1	25	Abscess of right iliac fossa	None	Evacuation and eusol 1; oxygen 2	2 years	None	Well.
2	15	Plastic peritonitis and obstruction	Both lungs slightly	Oxygen 5	1 year	Two	Much improved.
3	22	Abscess from seventh right rib	None	Oxygen 4	1½ years	None	Well.
4	17	Abscess in neck from gland	None	Aspiration 2; oxygen 4	1½ years	None	Well.
5	4	Abscess of left iliac fossa	None	Oxygen 2	2 years	None	Well.
6	18	Tuberculous elbow with abscess	None	Aspiration 1; oxygen 1	2 years		Broke down at once.
7	25	Isoas abscess in thigh	None	Oxygen 6	1½ years		Broke down after sixth application.
8	30	Peritonitis with effusion	Advanced pulmonary	Oxygen 1			Died within few days from generalized tuberculosis.
9	9	Abscess from fifth and sixth ribs	None	Oxygen 2	1½ years	None	Well.
10	51	Tuberculous hip with abscess	None	Oxygen 7	1½ years		Broke down after seventh application.
11	11	Abscess in neck from gland	None	Oxygen 1	1½ years		Not traced.
12	18	Abscess over scapula	Marked pulmonary	Oxygen 1	1½ years		Broke down at once.
13	15	Abscess right lumbar region	None	Aspiration 1; oxygen 4	3 months	One	Well.
		Abscess left lumbar region	None	Oxygen 1	8 months	None	Well.
14	?	Plastic peritonitis	None	Oxygen 2			Died from faecal fistula.
15	27	Abscess left lumbar region	Right lumbar sinus	Oxygen 2	10 months		Broke down, but patient much better.
16	27	Psoas abscess in left thigh	None	Oxygen 1	1 year		Broke down soon after.
17	11	Tuberculous hip with abscess	None	Oxygen 1	1 year	None	Well.
18	20	Abscess from sacro-iliac joint	Lupus of face	Oxygen 2	1 year	None	Well.
19	27	Abscess right buttock	None	Aspiration and iodiform 1; oxygen 1	6 months	None	Well.
20	25	Abscess from sacro-iliac joint	None	Aspiration 1; oxygen 1	4 months		Broke down two months later.

Note.—No. 13 represents two separate conditions treated at different times.

Summary of Results.—Well, 10; improved, 2; failures, 6; died, 2; not traced, 1.

Conclusions.

Although our results have not equalled those related by Rost, the method appears to us distinctly helpful, and worthy of further trial.

It should be noted that the cases recorded were in no way selected except that no case with a sinus was treated, and all the patients returned to their homes, often to convalesce under very adverse conditions. The procedure is as simple as any other method and can be used in out-patients. There are no unpleasant sequelae.

As there are many disappointments in the treatment of tuberculous abscesses, an extended trial of this oxygen method is worth pursuing.

MacLeod and Gordon have shown that some organisms do produce inhibitory substances in the presence of excess of oxygen. May it not be possible that the tubercle bacillus, whether in an abscess or in the lung, can produce under the same conditions an inhibitory substance? This leads one further to ask the question, Is it herein that lies the efficacy of sanatorium treatment of tuberculosis?

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TREATMENT OF BILHARZIASIS BY ANTIMONY TARTRATE.

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IN the *JOURNAL* of February 26th, 1921, we gave notes on 1,000 cases of bilharziasis treated by antimony tartrate in the C.M.S. Hospital, Old Cairo, which was the first report in the medical press of this mode of treatment on a large scale. By the end of 1923, 4,600 individuals had been thus treated, and with this amount of material on which to base our conclusions we feel that a few additional notes may be of value to those interested in this subject.

Patients suffering from bilharzial disease have been attending the Old Cairo Hospital since its earliest days, and various methods of treatment, mostly palliative, were used till June, 1919, when the injection of antimony tartrate was first started. Since that time we have been treating over 1,000 cases a year, the numbers being as follows:

1919 (June to December)	...	...	...	...	370
1920	...	...	...	...	1,143
1921	...	...	...	...	1,087
1922	...	...	...	...	1,051
1923	...	...	...	...	1,004

The year 1920 was the first settled year after the war and local riots, and general conditions were good and cotton at a high price. The slight decrease in numbers in subsequent years is due to the fact that the Government has been doing a considerable amount of work in the treatment of bilharziasis. In reality, the fact that the record of bilharzia admissions has kept almost constant shows the favour with which the treatment is received, for during these years our other departments, particularly that of ankylostomiasis, show a much bigger proportional drop in numbers.

Sodium antimony tartrate is now used for injection as it is thought to be less toxic than the potassium salt. For adult males, 1 grain is the initial dose, increased by 1/2 grain each injection up to 2½ grains, which is the maximum dose. The injections are given daily for six days, and then on alternate days. Weak patients and women and children take proportionately smaller doses. The regular number of injections is twelve, which at full doses makes a total of 27 grains, but this depends on the results of microscopical examinations. Unless there is some contraindication we continue the course until only "dead" eggs are reported.

Statistics.

Cases dealt with at Old Cairo in which the urinary tract is infected with bilharziasis have always greatly

preponderated, but we find that the proportion of rectal cases is increasing.

		Urinary Cases.	Rectal Cases.
1920	...	81%	19%
1921	...	79%	21%
1922	...	74%	26%
1923	...	73%	27%

A certain number have the double infection, the disease being present both in the urinary tract and in the rectum. Moreover, in quite a number of cases both types of eggs—terminal spined and lateral spined—are found in the urine; and again both types in the rectum.

In our first 1,000 cases we found that a large proportion of the patients would not persist in the treatment, and we estimated that 20 per cent. of those who commenced gave up the course before they had received six injections. Fortunately this proportion has been steadily reduced as follows:

In the first 1,000 cases	20%	took less than 6 injections.
During 1920,	7.9%	took less than 6 injections.
" 1921,	7.1%	" " " "
" 1922,	5.7%	" " " "
" 1923,	4.9%	" " " "

So that now the proportion of patients who give up before they have really made adequate trial of the treatment is less than one in twenty; among them are a certain number we are obliged to recommend to discontinue the course on account of contraindications. It is, however, still difficult to induce some of the patients to continue treatment to the stage when they can be pronounced cured. In urinary cases the term "cured" signifies that only dead eggs have been seen in several examinations on consecutive days. In rectal cases patients are pronounced cured when they have finished the prescribed course—that is, twelve injections, totalling 27 grains, for strong adults, and a proportionately smaller amount for others.

We find that approximately 60 per cent. of our patients persist to the end of the treatment, both in rectal and urinary cases. Undoubtedly quite a large number of those who are not passed out as cured are really so in point of fact, but they do not wait to give us the chance of proving the fact conclusively by microscopic examination. Many of these latter take all but the last dose, or may even have taken a sufficient amount of the drug, but will not wait for the final examination. The chief reason for this is that, feeling so much relief, they consider themselves cured, and will not always listen to advice. Two factors that help considerably in preventing the majority of our patients from abandoning the course of treatment are: first, that nearly all these cases are treated as resident in-patients, some of them taking beds, but most of them lying on mats in our large open-air pavilion wards, specially kept for these and for ankylostomiasis cases; and, secondly, that most of them pay a fixed fee, which includes the cost of accommodation and food for the full time, and thus many prefer to remain in order to get their money's worth. Certainly the work can be carried on much more satisfactorily in every way with in-patients than with out-patients.

We have not changed our opinion as to the amount of the drug required to effect a cure in an average case, which is found to be between 20 and 30 grains, generally nearer 20 than 30 grains. Our experience is that a failure only occurs when some condition, such as weakness, loss of appetite, persistent cough, contraindicates continuance of the course; this is not a failure of the drug. No cases have been recorded at Old Cairo where the patient continued taking the full course and yet failed to be pronounced "cured" according to the above standard. There are, however, a certain number of cases which must be pronounced failures in another sense, in that though the drug apparently kills all the eggs and worms, yet the patient may not get relief from his symptoms. Particularly does this obtain in some late cases of the disease with great thickening of the bladder easily palpable above the pubes.

Mortality.

As previously reported, out of the first 370 cases in 1919, 6 died while taking the course (16 per 1,000), and there were altogether 10 deaths out of the first 1,000 cases. In 1921 there were 7 deaths (6.4 per 1,000), and in 1922 the

same number (6.6 per 1,000); in 1923 only 5 patients died (4.9 per 1,000). These numbers include all deaths that could in any way be attributed to the antimony, though it is by no means certain that all were caused by it, for we have had more than one case of sudden death in a bilharzia patient who had not yet started the course nor taken any antimony injection. The deaths nearly all occurred suddenly as in the first series, none immediately after an injection. The great majority of them were young adults or boys. Exactly half of those who died were rectal cases. The amount of antimony taken was quite small, the average being 11.6 grains.

Method.

Few changes have been made in the technique fully described in our previous article. We have now trained two senior orderlies, young Egyptians, to give the injections. This they do quite safely at the rate of 60 to 80 an hour. A bad arm through missing the vein is almost unknown.

Complications.

The large majority of the patients are also suffering from ankylostomiasis, which disease is treated concurrently with bilharziasis. Complications due to the disease itself, chiefly vesical calculus and perineal and rectal growths, are very frequent. More than ever do we see the benefit of combining the medical and surgical treatment of these complaints. We now make a rule that no case of perineal urinary fistula or rectal papillomata due to bilharziasis shall be operated upon until the patient has had a certain number of injections, usually about six. As a result the surgical conditions improve far more rapidly after operation than was formerly the case.

CONCLUSIONS.

1. The considerable numbers continuing to apply for treatment prove its popularity and efficacy.
2. There is a notable increase in the number of rectal cases applying for treatment, these amounting to more than one in four of the total number.
3. The patients are more willing than formerly to take a full course of injections, and only one in twenty gives up before he has received six injections, instead of one in five as formerly.
4. Treatment among in-patients is far more satisfactory than among out-patients, and charging a moderate fee is an incentive to complete the course.
5. The mortality among patients taking the course has been reduced by half, and is now only 4.9 per 1,000.
6. Insistence on a course of injections for those undergoing surgical treatment for bilharzial conditions enormously enhances its success.

Memoranda :

MEDICAL, SURGICAL, OBSTETRICAL.

RHEUMATISM AND ERYTHEMA NODOSUM.

IN further support of the view that there is a relation between rheumatism and erythema nodosum, the last three cases I have met with may be of interest; I examined each case thoroughly for hereditary predisposition or signs of tuberculosis, which disease, some say, is associated with erythema nodosum. In none of these cases was there any suspicion or sign of tuberculosis, although this disease is very prevalent here.

CASE I.

A young woman, aged 21, had an erythematous eruption on the front of both legs, consisting of bright red oval patches, tender to the touch. The temperature was 100° F. On the following day both knees and one ankle became swollen and the throat was inflamed and painful; the temperature was 101° F. During the succeeding fortnight the pains kept "fitting" from joint to joint, whilst the eruption on the legs gradually darkened in colour, became less tender, and disappeared within a week. She gave a history of periodic attacks of rheumatism and sore throat, but never of a similar eruption.

CASE II.

A girl, aged 15; when seen was confined to bed with pains in knees and shoulders. The temperature was normal. The front of both legs was covered with scarlet-red elongated tender patches.