period of rest from tuberculin was given and was followed by a smaller dose than those which produced reactions. The maximum dose reached was one-tenth milligram, and this in the case of one patient only.

Method of Investigation.

We decided that the factors on which improvement or otherwise should be based must be two—namely:

1. The pulmonary condition as determined by the physical signs.
2. The general condition as determined by the weight, temperature, pulse-rate, cough, and amounts of sputum brought up daily by the patient.

These facts were all recorded daily about every patient in our series of cases, except the weight, which was taken fortnightly.

Special attention was paid to the physical signs. A systematic physical examination of every new patient was made and recorded without any information as to his history and without any reference to out-patient notes. A separate examination was made by the physician in charge of the case (Dr. Batty Shaw) in the same unbiassed way, and the two results were then compared. If any discrepancy appeared, an agreement was arrived at and the combined result recorded. Fortnightly examinations of the chest were made by one of us to note any gradual increase or decrease of signs, and prevent the fallacy of attributing a slight superimposed attack of bronchitis, etc., to the original condition. As it was noticed that after a day or two of rest in bed the physical signs tended to subside, the first examination for the comparison was not made on the day of admission. This may not seem fair, as at the end of the three months the patient in many cases was doing exercise, but it must be remembered that he had gradually worked up to this exercise and that he was doing no more than his condition was capable of; whereas several of the patients who had been working up to the time of admission had been doing more than their condition allowed and the lung was consequently very irritable. After rest of a day or two the lung in these cases had returned to what we might call its normal condition, and then a fair comparison could be made. A comparison of the relative increase or decrease of physical signs has been accepted as the only reliable clinical method of estimating the lung condition, but no one imagines the markings of physical signs to indicate the exact extent of the lesion, for *post-mortem* examination almost invariably proved the contrary.

At the end of three months each patient was examined separately by Dr. Batty Shaw and by one of us, and after a comparison of results an agreement was arrived at. The position of the apex beat and the mapping out of the cardiac dullness were found to be very important signs in the diagnosis of fibrosis, and in more than one case a distinct alteration in the position of the heart, due to fibrosis of the affected lung, was noted.

We must state further that when we report that a case showed an increase or decrease of signs at our final examination, it must be understood that the final estimate represents the end of a crescendo or decrescendo movement.

Results.

	Improved.	In statu quo.	Worse.
PHYSICAL SIGNS.			
Afebrile cases (18)—			
Under tuberculin	5	3	1
Without tuberculin	2	5	2
Intermittently febrile cases (40)—			
Under tuberculin	3	6	11
Without tuberculin	7	8	5
Febrile cases (4)—			
Under tuberculin	0	2	0
Without tuberculin	0	1	1
GENERAL CONDITION.			
Tuberculin-treated patients	13	10	8
Controls	16	9	6
WEIGHT.			
Tuberculin-treated patients (31)	Gained Weight. 20*	Lost Weight. 7	In statu quo. 4
Controls	22†	7	2

* Average gain = 7½ lb.

† Average gain = 8½ lb.

It will be noticed that in the table of results the weight statistics are recorded separately, though we have declared above our intention to include them under "General Condition." Further, it will be seen that the two records do not correspond, though we admit that the weight factor is an important one in estimating the general condition of a patient. The extreme difficulty of adding together all these varying factors—physical signs, weight, temperature, etc.—has deterred us from publishing a summary of our results under one heading. The above statistics were compared in three sections quite independently of one another, and we conclude by drawing our inferences in the same independent manner.

CONCLUSIONS.

1. With regard to the local lesion, tuberculin seems to have done good in the afebrile cases, and though it will be pointed out, perhaps, that these are the only cases suitable for tuberculin, it must be remembered that such cases formed less than 30 per cent. of our total. Tuberculin was apparently harmful to the intermittently febrile patients who formed the bulk of our series.

2. Tuberculin had no apparent effect in increasing the weight or in improving the general condition, and in both these cases the balance of improvement is on the side of the controls.

In conclusion we should like to take this opportunity of thanking Dr. Batty Shaw for his kindness in allowing us to pursue these investigations among patients under his care.

A NOTE ON SIXTY-THREE SUCCESSIVE CASES OF ENTERIC FEVER TREATED WITH VACCINES.

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DURING the past year and a half I have been responsible for the vaccine-therapy of 63 cases of typhoid fever. Although so small a series is of little statistical value its publication may interest those at least who wish to collect lists of such cases from as wide a field as possible, since this is the first series published from Mauritius.

From 61 of the 63 the causative organism was isolated, either from the blood (58) or from the faeces (3). All the cultures made from the two remaining cases were negative, but there is little doubt as to the diagnosis.

I have been accustomed to classify the cases as "favourable" and "unfavourable." The former class being those coming under vaccine treatment not later than the tenth day of the disease; and the latter those in which treatment was delayed until the fourteenth day of the disease, or later. No doubt this division is somewhat arbitrary, but some such classification is necessary. It may be mentioned that the date of onset of any febrile infection can usually be determined much more readily here than at home, owing to a pronounced Mauritian weakness for taking temperatures on every possible occasion.

Of the 63 cases under review, 45 belong to the "favourable" class, and 11 to the "unfavourable." They were average examples of the variety of enteric fever endemic in the colony, which resembles that found elsewhere. Some, however, believe that in Mauritius the disease tends to run a longer course than at home—possibly the septicaemic stage lasts longer—certainly, in my experience, the causative organism can readily be isolated from the blood at a period of the disease when, according to home teaching, cultures are likely to be negative. Thus I was successful in isolating the bacillus from the blood in 12 out of 14 cases between the fourteenth and twenty-fourth days of the disease.

The age of the patients in this series varied from 18 months to 70 years, and they usually came under observation as undiagnosed cases with febrile symptoms. The routine procedure was then an immediate blood culture. If the symptoms suggested possible enteric fever, an injection of a stock typhoid vaccine was given at the same time.

If the cultures showed *B. typhosus*, an autogenous vaccine was prepared without delay, with which the patient was treated subsequently. It appeared advisable

to treat a few cases which presented symptoms of profound toxic poisoning with a stock vaccine prepared from an old and very avirulent strain, but the great majority of the cases received autogenous vaccines. The disparity in numbers between the two groups is too great to allow of any comparison of results.

Mortality.

There were two deaths in this series—a percentage mortality of 3.1. The “favourable” and “unfavourable” groups supplied one death each.

The patient belonging to the former class came under treatment on the third day of the disease; he appeared to be progressing most satisfactorily, when he suddenly developed acute bronchopneumonia, and died of this complication two days later.

The other fatal case had already had several haemorrhages before coming under treatment—about the fifteenth day of the disease. She appeared to react neither to her own infection nor to the vaccine, which was administered most cautiously. She had several other haemorrhages, one of which terminated fatally.

Complications.

With the exception of the fatal attack of bronchopneumonia mentioned above, all the complications and relapses were confined to the 11 late cases. Three of this group suffered from haemorrhage subsequent to coming under treatment; of these, one—the second fatal case—had had haemorrhages previously, as already noted. In another the single haemorrhage occurred only the day after treatment was begun.

Two cases suffered during convalescence from localized staphylococcus infections; these can hardly be considered typhoid complications, since they might occur with equal readiness in any other debilitating condition. These complicating infections yielded to autogenous staphylococcus vaccines. There were no other complications.

The “unfavourable” group supplied the only two relapses that occurred. Two of the cases were pregnant, but both passed through the attack without mishap.

Results.

The results in the cases under treatment early were most striking. There is no doubt that the disease was rendered definitely milder, and most of the patients progressively improved from their first or second injection. Three showed a constant and progressive fall of temperature after each injection, but this marked sequence was not a usual feature. The most striking point was the absence of symptoms other than the pyrexia; the headache, lumbar pains, abdominal distress, etc., disappeared, and the patients felt well and slept well; they did not look ill. In the words of one Mauritius practitioner, “My vaccinated enterics give me no anxiety.”

From such small numbers it cannot be said that the disease was distinctly cut short, although there seemed to be clinical evidence of this in several instances; certainly the period of convalescence was markedly shortened owing to the mildness of the course and the freedom from distressing symptoms and complications.

These remarks apply especially to the “favourable” group; the advantages of vaccine treatment in the late cases were much less marked, and sometimes there was no appreciable benefit whatever. In spite of the small actual numbers, the distribution of deaths, complications, and relapses in the 11 late cases and the 52 others respectively, is significant. In no case did the treatment cause any appreciable ill effects.

Dosage.

The dosage varied with the age and condition of the patient, but for well-built adults the initial dose was usually from 150 million to 300 million. Increasing doses were given at two or three days' interval. In two cases only was the dosage controlled by opsonic observations. The largest dose given to any patient in this series was 1,500 million.

Of the 63 cases of enteric fever, 7 were treated in the military hospitals, and I am indebted to superior authority for permission to include these; my thanks are due to several Mauritius practitioners for permission to include the remaining 56. These latter were regarded largely in the nature of test cases, and were discussed from time to

time at the meetings of the medical society. The results obtained were considered so satisfactory that vaccine therapy is being adopted in the civil hospitals, and generally throughout Mauritius, as routine treatment for enteric fever.

Paratyphoid and Other Infections.

A smaller series of paratyphoid fevers was treated during the same period on similar lines; with one exception all these cases ran a mild course, and there were no deaths.

Amongst the cases regarded as possibly enteric fever until the result of the blood culture became evident may be mentioned—streptococcal endocarditis (one case); septicaemia due to *B. coli communis* (two cases), to *B. lactis aerogenes* (one case), to a bacillus of Group “G,” subgroup “m,” variety 14* (one case), and to a bacillus of Group “H,” subgroup “d,” variety 14* (one case). In the limited literature available I can find no record of the two last-named organisms having been isolated from the blood before. However this may be, their occurrence is probably sufficiently rare to deserve mention.

HERNIA OF THE UTERUS, VAGINA, AND FALLOPIAN TUBES IN A BOY.

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THE following case is recorded, first because it is a very good example of “hermaphroditism” in a boy of 14, and secondly because it illustrates what must be excessively rare contents in the hernial sac of a male.

Virchow in 1872, Boddaert in 1875, Marchand in 1883, and others at a later date have reported cases of reduplication of the genitalia.

There is a specimen in St. Bartholomew's Hospital of a man aged 44. He had the normal conformation of a man with a beard and a full sized penis. He was married, and is said to have had two children. The bladder and external organs of generation were those of a man in whom neither testis had descended into the scrotum. Internally the uterus masculinus and vagina were unusually developed. The uterus, which was nearly the size of that of an adult female, lay between the bladder and rectum, and was enclosed between two layers of peritoneum to which on either side of the uterus were attached the testes.

At a meeting of the British Medical Association in London in 1895 the internal organs of a child who died after operation for inguinal hernia were shown. There was a normal bladder with prostate gland. Projecting backwards were a vagina, uterus, and broad ligaments, round ligaments and Fallopian tubes, with testes in the position of the ovaries.

On May 16th we operated at the Bingley Cottage Hospital on a boy aged 14 years, Dr. Dixon giving the anaesthetic.

The boy was the youngest of a family of eight children. The oldest child is a male; the others are all girls. None of them exhibit any unusual anatomical condition. In addition to the living family the mother had four stillbirths, the first at full time, when both the child's feet were deformed, and three at three months.

The mother said that the boy had always been “boyish” in his ways and habits, fond of boxing and other athletic pursuits. About his sixth year he developed enuresis, which had continued to the present time, but was always most marked when he had discomfort in the region of the hernia. His voice began to break about a year ago, and at the same time he complained of pain in the nipples; the mother found a swelling, which she described as hard and lumpy and the size of a pigeon's egg, round each nipple. As this was only noticed for two or three days, she did not take him to see a doctor. A few months later there was a recurrence of the condition, which lasted less than twenty-four hours; it had not recurred since. Until the hernia began to trouble him he never had occasion to see a doctor.

* Classification of “bacilli which neither ferment lactose, nor liquefy gelatine,” as in Local Government Board Report, 1911-12, etc.