In the cases reported here no failure to obtain muscular relaxation or analgesia occurred. Anæsthesia, though slow to appear in 3 cases, was perfect eventually in 41 cases out of the 43; in the 2 others there were muscular relaxation and analgesia of the bladder. 34 of the cases were operated on without any general anæsthesia. Nitrous oxide and oxygen were given to 4 cases for prevention of mental shock, the spinal anæsthesia being perfectly good. In 3 cases a little general anæsthesia was given during the skin incision, after which it was withdrawn and no more given. These 3 patients were completely conscious when the skin was being stitched up at the end of the operation. The skin was then completely insensitive; therefore they were cases in which the anæsthesia came on more slowly than usual. In 2 other cases a little general anæsthetic was given during the skin incision and stitching up only, none being given during the opening of the bladder or enucleation, muscular relaxation and bladder analgesia being present.

Personally I should advise anyone beginning to use this method to aim at getting anæsthesia with the minimum dose of the drug likely to produce it in the particular case, and to risk having to give a very little general anæsthetic to supplement it.

The ages of the patients in this series were—

1 case aged 94 years	...	...	...	Recovered.
1 " " 90 "	...	...	...	"
4 cases over 80 "	...	...	...	All recovered.
14 " between 70 and 80 years...	...	...	...	" "
20 " " 60 " 70 "	...	...	...	1 died.
3 " " 50 " 60 "	...	...	...	1 "

In a large majority of the cases I was asked by the surgeon to give spinal anæsthesia for special reasons, such as great age, vascular degenerations, low specific gravity of urine, emphysema, and bronchitis. Personally, therefore, I should claim this series, from the point of both surgeon and anæsthetist, as a test of average recovery to be rather an exacting than a favourable one. Of these 43 cases 41 recovered, the abdominal wound being healed and the urine passed naturally by the urethra. Two cases died.

1. Patient aged 65. At the time of operation he was suffering from uræmia. He recovered normally from his spinal paralysis and was no worse at the end of the operation than before, and remained no worse for two days, when vomiting and diarrhœa came on. The post-mortem record says: "Secretory tissues of kidneys practically non-existent."

2. Patient aged 53. He recovered normally from the spinal injection and operation. Did perfectly well for ten days, when an attack of acute lobar pneumonia (P.M.) came on and he died in a few days.

These two cases have no bearing on the question of anæsthesia. The first, as a rule, would have been a suprapubic drainage only and therefore not have got into statistics as to prostatectomy at all. The second was an accident occurring in a most favourable case for prostatectomy, and occurring too late after the operation to have anything to do with the question of anæsthesia, whether spinal or general. I have included them as I have here given all the cases in which I have used spinal anæsthesia for this operation.

There was no case of permanent sequela following the spinal injection. There are here 41 complete recoveries out of 43 cases. Taking into consideration the causes of death of the two cases that died, I would suggest that this is really a better average recovery than it appears.

I am particularly indebted to Mr. John Pardoe for being able to make this report, as the very large majority of the cases were his, including the patient aged 94, and I take this opportunity of thanking him for his help and encouragement. Neither of the two cases that died was his. My thanks are also due to members of the staff of Guy's and the West London Hospitals who have given me cases.

Welbeck-street, W.

A NOTE ON

TUBERCULIN ADMINISTRATION AND GRADUATED LABOUR.

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PATIENTS admitted to the Royal National Hospital, Ventnor, undergo the ordinary open-air sanatorium treatment with rest or systematically graded exercise according to the state of the case. A part of the accommodation of the hospital (about a fourth) is, however, set apart for prolonged treatment of selected cases by a course of graduated labour. After selection these patients are on probation for a period of not less than four weeks, and if that term is passed satisfactorily they are taken in as "workers" to the special working blocks, where they remain until they leave the hospital.

Tuberculin has been carefully administered in some of the most promising of these selected "workers" by the intensive method, either "B.E." or "T.R." Slight reactions were occasionally observed. In the rare cases of prolonged reaction the use of tuberculin was discontinued.

It has seemed desirable to the medical staff of the hospital that some definite opinion should be arrived at as to the value of tuberculin in such cases (a) in shortening the duration of treatment; (b) in increasing the ability to do work; (c) in improving the general nutrition; and (d) in ensuring better after-results. For this purpose an examination of the records of 300 patients who passed through the "working blocks" between April, 1912, and March, 1914, has been made and the after-histories of about 60 per cent. of these cases have been with some difficulty obtained.

The course of graduated labour is for convenience divided into five grades of work, but in practice there is no abrupt transition from grade to grade, and it might be more nearly accurate to speak of ten or more grades, the point to grasp being that it is not a rigid system but a flexible one, adaptable to the needs of individual cases under constant medical direction and supervision.

Disturbances of temperature are a matter of prime importance in any consideration of the progress and treatment of cases of pulmonary tuberculosis, and here they have to do with the following. 1. The primary selection of cases for the working blocks. 2. The result of the probation of selected cases. 3. The further selection of patients for tuberculin administration is determined by the absence of such disturbances. 4. Ability to do work and the rate of progress from grade to grade of work are in relation to their absence or occurrence. 5. The duration of treatment itself is very largely a question of the absence of such disturbances and of their extent and duration when they occur. They involve rest, the

cessation of work while they last, interruption of the course of graduated labour, and loss of time. The introduction, therefore, of a possible disturbing factor like tuberculin administration has to be justified by results or its employment is unwarranted.

Gain in weight if taken as an index, not as a measure, of improved nutrition is a sensitive and fairly reliable guide if considered along with other things such as the grade of work. As the observations are systematically taken their evidence is included.

After-results.—It can be stated without fear of contradiction that the object of treatment in sanatoriums is not so much for patients to be able to live in a sanatorium as that they should be able to live and work outside, and that the true estimate of results must have regard to these after-histories. It has also been suggested in the course of this inquiry that a true estimate of the value of tuberculin should be based upon these after-histories rather than upon the relatively short views of results by the time of leaving.

Analysis of cases.—Of 300 patients dealt with 71 were women workers and 229 men workers. Of the women 34, or 74 per cent., were given tuberculin, while of the men 44, or 19 per cent., had tuberculin.

Duration of treatment.—Women: (a) The average period of residence of the 34 women who had tuberculin was 202·4 days; (b) of the 37 women who had no tuberculin, 148·1 days; (c) the average increase in the duration of treatment required for tuberculin cases was 54·3 days, or an increased duration of treatment of 36·6 per cent.; and (d) in relation to the stadia of the disease the increased time required where tuberculin was used was as follows: Stadium I., 43·4 per cent.; Stadium II., 28 per cent.; and Stadium III., 33·8 per cent. Men: (a) The average period of residence of the 44 men who had tuberculin was 144·7 days; (b) of the 185 men who had no tuberculin, 125·2 days; (c) the average increase in time for tuberculin cases was 19·5 days, or an increased duration of treatment of 15·5 per cent.; and (d) in relation to the stadia of the disease, Stadium I. took 14·9 per cent., Stadium II. 22·4 per cent., and Stadium III. 11·7 per cent. longer treatment than those of the same stadia who had no tuberculin.

Ability to work.—The ability to do work has been estimated first according to the average grade of work reached while under treatment. This, however, required to be associated with the duration of treatment to give a true comparison. There is therefore also given a comparison of the average increase in grade of work per diem. Women: (a) The average grade of work reached by the 34 women who had tuberculin was 1·82, while that of the 37 women who had no tuberculin was 2·25, or 23 per cent. higher; and (b) the women who had no tuberculin showed in the average daily increase in grade of work the following percentage excess compared with those who had no tuberculin: Stadium I., 75 per cent.; Stadium II., 44 per cent.; and Stadium III., 61·2 per cent. Men: (a) The average grade of work reached by the 44 men who had tuberculin was 3·30, and that of the 185 who had none 3·61, or 9·39 per cent. higher; and (b) the men who had no tuberculin had daily excess increases in the grade of work in Stadium I. of 31 per cent., in Stadium II. of 27·1 per cent., and in Stadium III. of 29·1 per cent. compared with those of the same stadia who had tuberculin.

Gain in weight.—Here also the total average needs supplementing by data as to gain in weight in relation to duration of residence, and the mean daily gain is therefore given to enable a true estimate of progress to be made. Women: (a) Average gain in weight in 37 women without tuberculin, 11·9 lb.; in 34 women with tuberculin, 6·8 lb.; the increased gain without tuberculin thus equalling 5·1 lb., or 75 per cent. (b) Average daily gain without tuberculin in excess of those with it: Stadium I., 122·7 per cent.; Stadium II., 108·3 per cent.; and Stadium III., 100 per cent. Men: (a) Average gain in weight in 185 men without tuberculin, 13·5 lb.; in 44 men with tuberculin, 12·09 lb.; the increased gain without tuberculin being 1·4 lb., or 11·6 per cent. (b) Average daily gain without tuberculin in excess of those with it: Stadium I., 51·6 per cent.; Stadium II., 29·8 per cent.; and Stadium III., 3·8 per cent.

After-results.—As the result of inquiries sent to all of the 300 patients whose cases are under consideration 189 returns were sent in—61·6 per cent. of the cases treated with tuberculin ("T." cases), and 63·2 per cent. of those treated without it ("N.T." cases). The deaths recorded were not markedly different in the "T." and in the "N.T." groups—viz., 8·3 per cent. for both in women, and 12·8 per cent. "N.T." men and 16 per cent. "T." men. The chief difference was in accordance with what might have been anticipated from the progress of these cases in the hospital. Among the "N.T." cases 79·1 per cent. of the women and 71·1 per cent. of the men were reported as "able to do their work," while of the "T." cases only 50 per cent. of the women and 56 per cent. of the men could do so. To put it another way, adding together the men and women, while of the "N.T." cases 26·9 per cent. were unfit for work or dead, of the "T." cases 46·9 per cent. were so conditioned. Upon dividing the cases into two groups—viz., those who left in the first, and those in the second half of the period—a similar difference in the after-histories in favour of those who had had no tuberculin was found in each of the groups taken separately.

Summary.—The answers which the medical staff of the hospital sought to elicit from a consideration of these cases are given for these cases, and, under the conditions mentioned, with sufficient clearness to enable a definite opinion to be formed: 1. The administration of tuberculin to selected phthisical workers does not shorten, but, on the contrary, it lengthens, the duration of treatment. 2. The use of tuberculin does not increase the ability to do work. It appears not only to delay the improvement in working ability, but it also diminishes the ultimate ability achieved by a more prolonged course of treatment. 3. So far as gain in weight and the rate of gain enable one to judge, the administration of tuberculin is detrimental to the nutrition of patients to whom it is given under these conditions. 4. The after-results in fitting patients to do their work after leaving the hospital in these cases are less favourable where tuberculin has been used than in the cases where it has not.

Tidworth.

CROWNHILL CONVALESCENT HOME, NEAR PLYMOUTH.—The annual meeting of the subscribers to this home was held recently under the presidency of Earl Morley. The medical report stated that during 1914 the patients admitted numbered 236. Lieutenant-Colonel A. B. Soltau, the honorary physician, being away on war service, the duties had been performed by Dr. E. Lawrence Fox. The financial statement was satisfactory.