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KING EDWARD VII SANATORIUM
MIDHURST

Fourteenth Annual Report

JULY 1919 to JULY 1920

PUBLISHED AT
THE KING EDWARD VII SANATORIUM
MIDHURST, SUSSEX
1920

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KING EDWARD VII SANATORIUM MIDHURST

Fourteenth Annual Report

JULY 1919 to JULY 1920

During the twelve months ending the 30th June 1920, 316 patients were admitted to the Sanatorium, including 26 re-admissions and 7 who remained in residence too short a time to be considered in the records.

Of the 275 cases discharged 79 can be classified in Group I., 89 in Group II., and 106 in Group III. (*see* page 14); while in one case no definite evidence of pulmonary tuberculosis was obtained.

A new system has been instituted during the year, under which a bed vacated by an outgoing patient is filled again on the same day. This has avoided the waste of a day between the discharge of one patient and the admission of the next; and, although it has entailed extra work for the Staff in preparing the rooms, and sterilising the bedding, pillows, etc., it has resulted in an increase in the amount of the payments received. The demand for the beds has continued high, as shown by the fact that the average number on the waiting list per week has been—men 9·4, women 10·5.

The following changes in the Staff have occurred :—Dr. H. O. Blanford was appointed Medical Superintendent, and entered upon his duties on the 22nd September; Dr. Home Hay having resigned his post of Assistant Medical Officer, Dr. Cockill, formerly Acting Medical Superintendent, acted as *locum tenens* until the appointment of Dr. Berkeley Ash on the 30th September, and Dr. S. L. Baker was appointed Pathologist on the 11th October.

Mrs. Hatchell, who had held the appointment of Matron for thirteen years, resigned in August, and Miss Banbury, who was selected to fill her place, commenced her duties on September 2nd.

All applicants for admission living within a reasonable distance of London are examined before acceptance by the Medical Superintendent at No. 11, Chandos Street, Cavendish Square. The number of cases so examined during the year was 184, and of these the number accepted as suitable was 114, or 62 per cent., and the number rejected after examination 70,

or 38 per cent. In addition to the cases thus rejected on examination, others have had to be refused admission, on the evidence of the certificate of their own medical attendant, as being too advanced.

These figures show that greater care is needed in the selection of cases recommended or sent up for admission to the Sanatorium.

During the year the system of treatment by graduated labour combined with adequate rest has been more fully systematised at the Sanatorium. The following are the examples of some of the work accomplished in different grades :—

Grade I.—Carrying small baskets of earth. In this way 49 cartloads of soil were carried as top dressing to 2,396 square yards of lawn. Gathering lavender crop.

Grade II.—Hoeing and cleaning shrubberies and flower beds. In this way 2,420 square yards of ground were dealt with. Carrying large baskets of stones and cinders. Thus 500 square yards of road and footpath were made or mended.

Grade III.—Sweeping roads, paths, lawns and golf greens. Clipping grass banks and edges.

Grade IV.—Cutting bracken and heather for litter for pigs. Laying stone edging for flower beds. Light forking in flower beds and shrubberies.

Grades V. and VI.—Heavier forking in flower beds, shrubberies and kitchen garden. Lifting herbaceous plants; hand-carting timber, stones, bracken, etc. Tree-felling and wood sawing; trenching unbroken ground for orchards and vegetable garden. Making new roads; building a hard tennis court; rolling lawns; mowing lawns; trenching and making a new rose garden. Cutting stakes and erecting fence for new pig-run; one acre was enclosed. Felling timber, clearing ground and making new tees and greens on extension to golf links.

(Grade VI. work is similar to Grade V., but patients on Grade VI. continue until 12.30, and omit the mid-day rest hour.)

In addition to the above examples much useful work has been accomplished in the flower and vegetable gardens, and in maintaining and extending the poultry farm. In Mr. Ward the Sanatorium possesses a most capable Head Gardener, who has been of the greatest value in educating and making the best uses of what is, in most cases, unskilled material. The effect of the past year's work in undoing the unavoidable neglect consequent upon the War and in cultivating fresh

ground is very marked; and the resulting improvement in the appearance of the grounds, in addition to the therapeutic value of the work done, has a good effect upon the minds of the patients.

It is, however, well to point out that a course of graduated exercise, such as the above, cannot be looked upon in any sense as a course of education in gardening, poultry farming or other open-air work, with a view to after-employment. The function of a sanatorium is to treat and obtain the arrest of the disease, and not to teach a suitable employment; and if the two objects are not kept distinct, the result can only be disappointment to all concerned. The facts that a patient's work must be changed at least once a week, and that his clinical condition must be carefully watched and, if necessary, immediate rest prescribed lest disaster result, make it impossible to carry out any continuous course of instruction.

Artificial pneumothorax has been successfully induced during the past year in two cases. Neither was responding satisfactorily to ordinary sanatorium treatment, and one was in an advanced stage of disease. Both patients did well, and returned periodically to the Sanatorium for further treatment.

X-RAY DEPARTMENT

A valuable addition to the Sanatorium in the form of an up-to-date and thoroughly efficient X-Ray Department was opened in April 1920.

Dr. Hutcheson, First Assistant Medical Officer, has been put in charge of the Department, and Dr. Ironside Bruce makes monthly visits as Consulting Radiographer.

It is still too early to judge of the full usefulness of the Department, but in 60 cases examined to the present date the findings have been of great value. The cases dealt with were mostly those in which the sputum after repeated examinations gave negative results, and in which physical signs were indefinite, and also those in which the question of the advisability of inducing an artificial pneumothorax had arisen. Of the latter class, for instance, in a case in which physical signs were found on one side only, the advisability of inducing pneumothorax was considered, but on X-ray examination both lungs were found to be involved, and pneumothorax was not induced.

LABORATORY REPORT

On the appointment of a Pathologist in October, 1919, the laboratory, which had been closed during the War, was re-opened.

Comparatively few additions to the stock of apparatus were necessary for the full equipment of the building.

The present Report dates from October, 1919, until July, 1920.

The laboratory work has comprised :—

(1) Routine examinations of sputum for tubercle bacilli.

(2) Occasional examinations of blood, pus or other material, and the preparation of vaccines.

(3) Investigation of problems connected with tuberculosis.

1. *Routine Examinations of Sputum.*—The routine has been modified to some extent. Positive cases are examined less frequently, and more attention is being devoted to repeated examinations of negative cases.

The present routine is as follows :—

Every patient's sputum is examined as soon as obtainable after admission. Those found positive are not examined again until a few weeks before discharge from the Sanatorium; if, at this time, they yield a negative result several more examinations are made to confirm this result if possible. Those found negative are examined as frequently as possible, if necessary by sedimentation methods and, in cases which are still doubtful, by inoculation of a guinea pig.

The above procedure for the examination of the sputum of each patient before his discharge from the Sanatorium was adopted owing to the fact that a considerable number of negative tests were found to be requisite to justify the presumption that tubercle bacilli were no longer present. It is possible that, in consequence, there may be an increase in the number of cases giving a positive result on discharge from the Sanatorium. If this turns out to be the case, the increase may be apparent only, being due to the adoption of a more searching examination of the sputum. This point must be remembered when comparing present figures with those of past years.

During the period under consideration the sputum of 267 patients was examined. Of these, 188 were positive and 79 negative. The total number of specimens examined was 881.

Amongst the positive cases, tubercle bacilli were found on the first examination in 167; on the second examination, in 12; on the third examination, in 3; on the fourth examination, in 2; on the fifth, in 1; and on the seventh, in 1.

It is thus seen that, whilst in most of the positive cases the bacilli were easily found, repeated examinations were necessary in some before their presence could be demonstrated.

Up to the present time both sedimentation methods and guinea-pig inoculation have proved negative in cases in which tubercle bacilli were not found after repeated careful examinations of films stained by the Ziehl-Neelsen method.

In reporting positive results, the former method of recording them as +, ++, or +++, etc. has been discarded, since it does not convey an exact meaning and varies with the standards adopted by the worker: instead a rough average of the number of the tubercle bacilli per field of the 1/12 objective is recorded. The figures 1, 5, 10, 20, 50, 100, 200, etc., are used to indicate bacilli per field, that nearest to the number found being recorded. In cases where the bacilli do not amount to 1 per field the fractions 1/5, 1/10, 1/20, 1/50, etc. are similarly used to indicate 1 bacillus in 5 fields and so on.

2.—(a) *Examinations of Blood, Pus, etc.* were made from time to time, but none of the cases are worthy of special record.

(b) *Prophylactic Vaccine Treatment of the Staff.*—In April last there were several cases of mild influenzal infection amongst the Staff. Pfeiffer's bacillus was isolated from the naso-pharynx or sputum in eight cases. One somewhat more severe case with broncho-pneumonia, in a child of one of the porters, yielded a practically pure culture of Pfeiffer's bacillus from samples of the purulent sputum.

In view of these events, it was decided to treat as many of the Staff as would volunteer with a prophylactic vaccine containing Pfeiffer's bacillus and other organisms commonly present in the respiratory tract.

There were about 50 volunteers. Three doses in all were given to each as follows :—

	1st Dose.	2nd Dose.	3rd Dose.
	Millions.	Millions.	Millions.
Streptococcus -	- 30	60	150
Pneumococcus -	- 25	50	125
M. Catarrhalis -	- 40	80	200
B. Influenzæ -	- 80	160	400

This vaccine was made up from a large number of primary cultures obtained during the epidemic at Portsmouth in 1918. To these were added the local strains of B. Influenzæ and M. Catarrhalis. No excessive reactions occurred, the worst being a somewhat sore arm and slight malaise. There have not been any further indications of influenzal infection amongst the Staff up to the present, nor has there been any evidence of such infections spreading to patients in the Sanatorium.

3. *Investigation of Problems connected with Tuberculosis.* (a) *Pfeiffer's Bacillus and Tuberculosis.*—During and since the recent pandemic the deleterious effect of influenza upon patients suffering from pulmonary tuberculosis has been remarked by various observers.

Although the severity and somewhat peculiar features of the late pandemic have led many observers to suspect some other organism than Pfeiffer's bacillus to be the primary cause of that disease, nevertheless no satisfactory proof of the existence of such an organism has yet been published, and the balance of probability at the present time appears to be in favour of Pfeiffer's bacillus as an ætiological factor.

It therefore seemed worth while to undertake an investigation upon the incidence of this bacillus in the sputum of patients in the Sanatorium with a view of discovering—

(1) Whether Pfeiffer's bacillus commonly infects the lungs of tuberculous patients.

(2) Whether phthisical patients are commonly chronic carriers of Pfeiffer's bacillus.

The investigation of these points is rendered more easy at the present time than formerly by the recent introduction of several excellent media for the growth of Pfeiffer's bacillus. Most of these media contain the break-down products of blood in place of the untreated blood formerly used. The medium adopted for the present investigation is that recommended by Fildes in the *Journal of Experimental Pathology*, April, 1920.

Up to the present time 85 cases have been investigated. Pfeiffer's bacillus has been discovered in eight of them, but in one case only has it been present in sufficient numbers and constantly enough to give the impression that it was playing a *rôle* different from that of the many apparently innocuous organisms almost invariably found in the respiratory tract. More extended investigation is necessary before any conclusions can be arrived at.

(b) *On the Acid-fastness of Tubercle Bacilli.*—The comparative efficiency of a large number of methods for staining tubercle bacilli was investigated by Böhm (1912).* Macalister† (1912) compared the methods of Much, Herman, and Gassis with that of Ziehl-Neelsen. These observers came to the conclusion that the Ziehl-Neelsen method was for practical purposes the best, since the few others that gave equally good results were somewhat more troublesome to carry out in practice. Both these investigators stained a series of sputums by the various methods, and estimated their relative efficiencies by the number of positives recorded to each. This furnishes a fair comparison for practical purposes in cases where there is a considerable difference in the results of the methods examined. The Ziehl-Neelsen method was used as a standard of comparison, but no indications were obtained as to the absolute value of the Ziehl-Neelsen method itself, *i.e.* the proportion of the total tubercle bacilli present which were demonstrated by this method.

It is known that the acid-fastness of tubercle bacilli in cultures is variable, the younger specimens being less acid-fast than the older. The examination of sputa stained by the Ziehl-Neelsen method reveals some degree of variability in staining amongst the individual tubercle bacilli in the preparation, and points to the fact that they are not all equally acid-fast.

It is generally recognised that it is impossible to decolourise tubercle bacilli by prolonged treatment with mineral acids, but no exact estimates of the susceptibility of the bacilli to acids appear to have been attempted.

The present investigation aims at obtaining accurate quantitative data as to the susceptibility of tubercle bacilli in sputum to the various acids commonly employed as decolourisers. The effect of sulphuric acid on tubercle bacilli stained with carbol-fuchsin was the first question taken up. The results are expressed as the percentage of tubercle bacilli decolourised in a given time by immersion in acid of a specified strength.

Since, owing to the irregularity of distribution of tubercle bacilli in sputum, it is impossible to obtain accurate results by taking an average count of the bacilli per field before and after decolourisation, a method has been devised by means of which identical areas can be examined before and after treatment by decolourisers, and individual bacilli charted on a diagram; this largely does away with the errors involved in striking an average, and gives unequivocal results.

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* Böhm: *Centralbl. f. Bakt.*, Abt. I., Orig. lxii, 1912, p. 219.

† Macalister: *Brit. Med. Journ.*, Vol. II, 1912, p. 412.

If, as is hoped, it proves possible to establish by this means definite figures as to the acid-fastness of tubercle bacilli, these will serve as a basis for comparison of the various decolourisers; they will also serve as a basis for an investigation upon the variability of acid-fastness in different strains of tubercle bacilli found in sputum.

The details of technique and the final results of the investigation will be reported on later.

(c) *Complement Fixation in Tuberculosis.*—Work on this subject has been started. The antigen at present in use consists of a fresh saline suspension of tubercle bacilli; the usual rabbit-sheep hæmolytic system is used. The test is carried out on the same lines as the MacIntosh-Fildes-Wassermann test.* By the use of small quantities of re-agents measured by Donald's drop method,† sufficient blood for quantitative tests with controls can be obtained from the patient's thumb.

It is as yet too early to report upon results.

STATISTICAL DEPARTMENT

The work of the Statistical Department has been carried out on the same lines as in previous years, with the result that the number of cases " lost sight of " has been appreciably reduced. The total number of discharged patients to date is 3,121, and the percentage of those of whom no information has been obtainable is 2·11, or 66 cases only.

Classification.—As in former Annual Reports, the Turban-Gerhardt classification has been used to indicate the clinical condition of patients on admission. This classification is taken from the official journal of the International Tuberculosis Committee :—

> I. Disease of slight severity, limited to small areas of one lobe on either side, which, in the case of infection of both apices, does not extend beyond the spine of the scapula or the clavicle, or in the case of affection of the apex of one lung does not extend below the second rib in front.
>
> II. Disease of slight severity, more extensive than Group I., but affecting, at most, the whole of one lobe, or severe disease extending at most to the half of one lobe.

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* *Special Report on Wassermann Test*, Series 14, Med. Research Com.

† Donald : *Lancet*, Vol. II, 1916, p. 423.

III. All cases of greater severity than Group II., and all those with considerable cavities.

By disease of slight severity is to be understood disseminated foci characterised by slight dulness, indefinite rough or weak vesicular, vesico-bronchial, or broncho-vesicular breathing, and fine and medium crepitations.

By severe disease: massive infiltration recognised by definite dulness, broncho-vesicular or bronchial breathing, with or without crepitations.

Cases with signs of considerable excavation, giving rise to a tympanitic percussion-note with amphoric or cavernous breathing, and numerous coarse consonating crepitations, come under Group III.

Pleuritic dulness, if only of slight extent, is left out of account; if it is considerable, pleuritis should be specially mentioned under tuberculous complications.

The following terms are used to describe the condition of patients on discharge from the Sanatorium :—

"DISEASE ARRESTED."—General health completely restored in every respect without any sign of disease of the lungs, except such as is compatible with a completely healed lesion. Sputum, if still present, free from tubercle bacilli.

"MUCH IMPROVED."—General health good. Physical signs of disease in the lungs, though much diminished, not entirely cleared up, *e.g.*, perhaps limited to a few crepitations on cough only. Tubercle bacilli still to be detected in the sputum.

"IMPROVED."—General health improved, but not restored. Physical signs of disease in the lungs, though less marked than on admission, still present.

"STATIONARY."—No appreciable improvement in the condition of the lungs or in the general health.

"WORSE."—General or local condition worse.

RESULTS OF TREATMENT *as shown by the Condition of the Patients on Discharge from the Sanatorium during the Year*

Group.	Number of Cases.	Arrested.	Much Improved.	Improved.	Stationary or Worse.	Died in Sanatorium.
I.	79	50	21	7	1	—
II.	89	21	51	15	2	—
III.	106	4	44	39	19	—
All Cases	274	75	116	61	22	—
IV.	Patients in whom no definite evidence of Pulmonary Tuberculosis was found.	Number of Cases. 1	—	1	—	—

REPORT OF THE THROAT DEPARTMENT

Of the 275 patients discharged during the year ending 30th June 1920, 268 were examined laryngoscopically by Sir StClair Thomson, with the following results :—

236 were found to be normal.

32 were found to be diseased.

TABLE I.—*Showing the Result of Treatment in Patients suffering from Tuberculosis of the Larynx, in whose Sputum Tubercle Bacilli* **were** *demonstrated in the Sanatorium*

——	Number of Cases.	Cured.	Improved.	Stationary or Worse.	Died in Sanatorium.	Remarks.
Group I.	—	—	—	—	—	
II.	6	1	2	3	—	3 treated with galvano-cautery. For results *see* Table III.
III.	25	3	11	11	—	
All Cases	31	4	13	14	—	

TABLE II.—*Showing the Result of Treatment in Patients suffering from Tuberculosis of the Larynx, in whose Sputum Tubercle Bacilli* **were not** *demonstrated in the Sanatorium*

Group I.	—	—	—	—	—	
II.	—	—	—	—	—	
III.	1	—	—	1	—	Treated with galvano-cautery. *See* Table III.
All Cases	1	—	—	1	—	

TABLE III.—*Showing the Result of Treatment with the Galvano-Cautery in Patients suffering from Tuberculosis of the Larynx*

Group I.	—	—	—	—	—	
II.	3	1	2	—	—	
III.	1	—	—	1	—	
All Cases	4	1	2	1	—	

A fibro-angioma was removed from the right nasal septum in one case.

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were** *demonstrated in the Sanatorium*

All Cases considered together

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	125	94	82	73	65	56	42	38	47	46	42	42	38	39	83	3
1907/08	206	—	149	129	112	94	71	72	70	70	75	72	63	59	141	6
1908/09	205	—	—	154	110	93	70	64	55	64	67	62	60	56	147	2
1909/10	192	—	—	—	138	112	90	75	69	73	71	69	60	61	129	2
1910/11	197	—	—	—	—	133	92	88	74	73	72	69	61	56	134	7
1911/12	198	—	—	—	—	—	111	95	81	76	72	68	55	54	134	10
1912/13	160	—	—	—	—	—	—	113	94	78	75	67	49	52	107	1
1913/14	177	—	—	—	—	—	—	—	118	84	86	82	75	75	102	—
1914/15	193	—	—	—	—	—	—	—	—	123	117	104	83	83	110	—
1915/16	154	—	—	—	—	—	—	—	—	—	105	93	68	65	87	2
1916/17	212	—	—	—	—	—	—	—	—	—	—	166	127	116	95	1
1917/18	184	—	—	—	—	—	—	—	—	—	—	—	118	115	66	3
1918/19	198	—	—	—	—	—	—	—	—	—	—	—	—	165	29	4

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were** *demonstrated in the Sanatorium*

Group I. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	30	27	23	21	20	20	15	14	17	17	19	18	16	18	12	—
1907/08	45	—	43	40	35	31	27	28	30	29	32	32	27	28	16	1
1908/09	28	—	—	26	23	20	16	16	12	15	15	15	15	14	14	—
1909/10	43	—	—	—	39	37	34	27	25	29	30	30	25	27	16	—
1910/11	45	—	—	—	—	41	40	31	28	30	29	30	28	25	18	2
1911/12	33	—	—	—	—	—	27	21	20	20	20	19	15	16	15	2
1912/13	15	—	—	—	—	—	—	14	14	12	11	10	9	7	7	1
1913/14	19	—	—	—	—	—	—	—	17	14	16	17	14	15	4	—
1914/15	20	—	—	—	—	—	—	—	—	16	17	16	12	13	7	—
1915/16	16	—	—	—	—	—	—	—	—	—	15	14	11	13	3	—
1916/17	24	—	—	—	—	—	—	—	—	—	—	24	22	23	1	—
1917/18	15	—	—	—	—	—	—	—	—	—	—	—	12	14	1	—
1918/19	10	—	—	—	—	—	—	—	—	—	—	—	—	10	—	—

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were** *demonstrated in the Sanatorium*

Group II. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	57	50	45	40	37	31	22	18	24	23	18	19	18	17	37	3
1907/08	85	—	69	51	56	47	32	32	31	33	35	32	28	24	57	4
1908/09	94	—	—	82	59	48	34	37	32	38	40	36	34	34	58	2
1909/10	99	—	—	—	69	59	44	38	36	36	33	32	28	26	72	1
1910/11	100	—	—	—	—	68	43	49	40	37	37	35	29	28	67	5
1911/12	110	—	—	—	—	—	65	59	49	43	41	38	34	33	70	7
1912/13	101	—	—	—	—	—	—	77	68	53	51	45	33	38	63	—
1913/14	95	—	—	—	—	—	—	—	74	54	55	54	51	50	45	—
1914/15	99	—	—	—	—	—	—	—	—	74	74	69	57	57	42	—
1915/16	71	—	—	—	—	—	—	—	—	—	54	49	35	33	37	1
1916/17	99	—	—	—	—	—	—	—	—	—	—	89	72	65	33	1
1917/18	86	—	—	—	—	—	—	—	—	—	—	—	63	65	18	3
1918/19	98	—	—	—	—	—	—	—	—	—	—	—	—	86	10	2

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were** *demonstrated in the Sanatorium*

Group III. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	38	17	14	12	8	6	5	6	6	6	5	5	4	4	34	—
1907/08	76	—	37	28	22	18	12	12	9	8	8	8	7	7	68	1
1908/09	83	—	—	40	31	22	13	12	11	11	12	11	11	8	75	—
1909/10	50	—	—	—	25	16	12	10	8	8	8	7	6	5	44	1
1910/11	52	—	—	—	—	17	9	8	6	6	6	4	4	3	49	—
1911/12	55	—	—	—	—	—	19	15	12	13	11	11	5	5	49	1
1912/13	44	—	—	—	—	—	—	22	12	13	13	12	6	7	37	—
1913/14	63	—	—	—	—	—	—	—	27	16	15	11	10	10	53	—
1914/15	74	—	—	—	—	—	—	—	—	33	26	19	14	13	61	—
1915/16	67	—	—	—	—	—	—	—	—	—	36	30	22	19	47	1
1916/17	89	—	—	—	—	—	—	—	—	—	—	53	33	28	61	—
1917/18	83	—	—	—	—	—	—	—	—	—	—	—	43	36	47	—
1918/19	90	—	—	—	—	—	—	—	—	—	—	—	—	69	19	2

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were not** *demonstrated in the Sanatorium*

All Cases considered together

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	24	23	20	19	19	18	15	14	16	18	19	21	21	19	3	2
1907/08	51	—	49	47	45	40	33	34	35	37	40	39	38	37	12	2
1908/09	66	—	—	57	45	41	33	47	40	38	40	44	43	44	19	3
1909/10	59	—	—	—	54	49	44	48	42	47	49	49	43	43	13	3
1910/11	48	—	—	—	—	42	32	38	37	40	38	37	34	34	13	1
1911/12	48	—	—	—	—	—	36	32	36	34	36	36	29	31	14	3
1912/13	31	—	—	—	—	—	—	29	28	25	28	28	24	26	4	1
1913/14	41	—	—	—	—	—	—	—	37	31	37	36	33	35	5	1
1914/15	35	—	—	—	—	—	—	—	—	28	30	29	31	24	9	2
1915/16	59	—	—	—	—	—	—	—	—	—	53	51	47	47	11	1
1916/17	58	—	—	—	—	—	—	—	—	—	—	56	53	53	4	1
1917/18	117	—	—	—	—	—	—	—	—	—	—	—	108	105	9	3
1918/19	119	—	—	—	—	—	—	—	—	—	—	—	—	115	2	2

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were not** *demonstrated in the Sanatorium*

Group I. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917	1918.	1919.	1920.		
1906/07	16	16	14	14	14	13	10	10	11	13	13	15	15	14	1	1
1907/08	31	—	30	30	29	25	23	23	22	24	26	25	24	24	6	1
1908/09	39	—	—	36	28	27	19	31	25	23	25	28	27	28	8	3
1909/10	42	—	—	—	39	36	32	36	30	34	35	35	32	33	6	3
1910/11	37	—	—	—	—	33	25	30	29	31	29	29	27	27	9	1
1911/12	26	—	—	—	—	—	22	22	23	20	21	21	20	20	6	—
1912/13	19	—	—	—	—	—	—	18	17	16	18	17	14	15	3	1
1913/14	28	—	—	—	—	—	—	—	26	21	28	27	25	26	1	1
1914/15	17	—	—	—	—	—	—	—	—	13	15	14	9	13	3	1
1915/16	32	—	—	—	—	—	—	—	—	—	31	32	29	29	2	1
1916/17	34	—	—	—	—	—	—	—	—	—	—	33	31	33	1	—
1917/18	51	—	—	—	—	—	—	—	—	—	—	—	47	48	2	1
1918/19	35	—	—	—	—	—	—	—	—	—	—	—	—	34	—	1

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were not** *demonstrated in the Sanatorium*

Group II. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge.													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	7	6	5	5	5	5	5	4	5	5	6	6	6	5	1	1
1907/08	18	—	18	15	14	13	10	11	12	13	13	13	13	12	5	1
1908/09	25	—	—	20	16	13	14	15	14	14	14	15	15	15	10	—
1909/10	15	—	—	—	13	11	10	10	11	12	12	12	9	9	6	—
1910/11	10	—	—	—	—	8	8	8	8	9	9	8	7	7	3	—
1911/12	20	—	—	—	—	—	14	9	12	13	14	14	8	10	7	3
1912/13	9	—	—	—	—	—	—	9	9	7	8	8	8	8	1	—
1913/14	11	—	—	—	—	—	—	—	9	9	8	8	7	8	3	—
1914/15	14	—	—	—	—	—	—	—	—	13	13	13	10	9	4	1
1915/16	23	—	—	—	—	—	—	—	—	—	19	16	15	16	7	—
1916/17	24	—	—	—	—	—	—	—	—	—	—	23	22	20	3	1
1917/18	59	—	—	—	—	—	—	—	—	—	—	—	55	51	6	2
1918/19	71	—	—	—	—	—	—	—	—	—	—	—	—	68	2	1

Table A.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were not** *demonstrated in the Sanatorium*

Group III. considered separately

Year of Discharge.	Number Discharged.	Number reported "Well" or "Alive" in each successive year after Discharge													Number Dead in 1920.	Number lost sight of in 1920.
		1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.		
1906/07	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	—
1907/08	2	—	2	2	2	2	0	0	1	0	1	1	0	1	1	—
1908/09	2	—	—	1	1	1	1	1	1	1	1	1	1	1	1	—
1909/10	2	—	—	—	2	2	2	2	1	1	2	2	2	1	1	—
1910/11	1	—	—	—	—	1	1	0	0	0	0	0	0	0	1	—
1911/12	2	—	—	—	—	—	1	1	1	1	1	1	1	1	1	—
1912/13	3	—	—	—	—	—	—	2	2	2	2	3	2	3	0	—
1913/14	2	—	—	—	—	—	—	—	2	1	1	1	1	1	1	—
1914/15	4	—	—	—	—	—	—	—	—	2	2	2	2	2	2	—
1915/16	4	—	—	—	—	—	—	—	—	—	3	3	3	2	2	—
1916/17	0	—	—	—	—	—	—	—	—	—	—	0	0	0	0	—
1917/18	7	—	—	—	—	—	—	—	—	—	—	—	6	6	1	—
1918/19	13	—	—	—	—	—	—	—	—	—	—	—	—	13	0	—

Table B.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were** *demonstrated in the Sanatorium*

Condition on		Discharged during the Year													Condition in 1920
Admission	Discharge	1906/07	1907/08	1908/09	1909/10	1910/11	1911/12	1912/13	1913/14	1914/15	1915/16	1916/17	1917/18	1918/19	
Group I.	Disease arrested	11	14	12	10	9	8	4	5	5	7	12	3	3	Alive.
		5	9	2	3	2	5	3	2	4	1	—	—	—	Dead.
		—	—	—	—	—	1	1	—	—	—	—	—	—	Lost sight of.
	Much improved	6	11	2	14	15	7	3	8	7	4	9	9	6	Alive.
		7	5	9	9	12	9	3	1	2	2	—	—	—	Dead.
		—	1	—	—	1	1	—	—	—	—	—	—	—	Lost sight of.
	Improved	—	2	—	2	—	—	—	1	—	—	2	1	1	Alive.
		—	1	1	2	1	—	—	—	1	—	—	—	—	Dead.
		—	—	—	—	1	—	—	—	—	—	—	—	—	Lost sight of.
	Stationary or Worse	1	1	—	1	1	1	—	1	1	2	—	1	—	Alive.
		—	1	2	2	3	1	1	1	—	—	1	1	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
Group II.	Disease arrested	5	1	10	10	10	13	13	11	12	4	9	4	8	Alive.
		1	2	2	3	4	6	10	4	2	2	1	—	—	Dead.
		—	—	1	1	3	2	—	—	—	1	—	1	—	Lost sight of.
	Much improved	10	21	18	11	13	13	16	29	34	19	46	45	61	Alive.
		21	23	18	33	36	31	21	21	20	17	19	8	4	Dead.
		1	4	1	—	2	1	—	—	—	—	—	2	—	Lost sight of.

	Improved	2	1	6	7	3	5	6	6	2	8	5	11	11	Alive.
		9	14	20	18	10	14	14	6	7	6	6	4	5	Dead.
		1	—	—	—	—	2	—	—	—	—	—	—	1	Lost sight of.
	Stationary or Worse	—	1	—	1	2	2	3	4	9	2	5	5	6	Alive.
		6	18	18	15	17	19	18	14	13	12	7	6	1	Dead.
		1	—	—	—	—	2	—	—	—	—	1	—	1	Lost sight of.
Group III.	Disease arrested	—	—	—	—	—	2	1	—	—	—	—	—	—	Alive.
		—	—	2	—	—	—	—	1	—	1	1	—	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Much improved	3	4	4	4	2	—	1	4	6	16	19	21	43	Alive.
		7	15	6	7	9	6	5	5	14	7	15	15	5	Dead.
		—	1	—	—	—	1	—	—	—	1	—	—	1	Lost sight of.
	Improved	1	3	3	1	—	1	2	2	3	2	4	6	17	Alive.
		10	20	26	17	17	13	9	8	16	12	22	15	5	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Stationary or Worse	—	—	1	—	1	2	3	4	4	1	5	9	9	Alive.
		17	33	41	20	23	30	23	39	31	27	23	17	9	Dead.
		—	—	—	1	—	—	—	—	—	—	—	—	1	Lost sight of.
	Summary	39	59	56	61	56	54	52	75	83	65	116	115	165	Alive.
		83	141	147	129	134	134	107	102	110	87	95	66	29	Dead.
		3	6	2	2	7	10	1	—	—	2	1	3	4	Lost sight of.
	Total -	125	206	205	192	197	198	160	177	193	154	212	184	198	

Table B.—Statistics of Ultimate Results

Cases in the Sputum of which T.B. **were not** *demonstrated in the Sanatorium*

Condition on		Discharged during the Year													Condition in 1920
Admission	Discharge	1906/07	1907/08	1908/09	1909/10	1910/11	1911/12	1912/13	1913/14	1914/15	1915/16	1916/17	1917/18	1918/19	
Group I.	Disease arrested	12	21	25	30	26	19	12	6	6	28	19	38	25	Alive.
		1	4	7	5	9	6	1	—	1	2	1	2	—	Dead.
		1	1	3	3	—	—	1	—	—	—	—	1	1	Lost sight of.
	Much improved	2	3	2	2	1	—	—	18	5	1	14	8	8	Alive.
		—	1	1	—	—	—	2	1	2	—	—	—	—	Dead.
		—	—	—	—	—	—	—	—	1	1	—	—	—	Lost sight of.
	Improved	—	—	1	—	—	1	—	2	2	—	—	2	—	Alive.
		—	1	—	1	—	—	—	—	—	—	—	—	—	Dead.
		—	—	—	—	—	—	—	1	—	—	—	—	—	Lost sight of.
	Stationary or Worse	—	—	—	1	—	—	3	—	—	—	—	—	1	Alive.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Dead.
		—	—	—	—	1	—	—	—	—	—	—	—	—	Lost sight of.
Group II.	Disease arrested	3	6	6	4	4	3	3	1	1	9	8	15	26	Alive.
		1	2	2	2	2	3	1	1	—	3	1	2	—	Dead.
		1	—	—	—	—	3	—	—	—	—	—	2	1	Lost sight of.
	Much improved	2	5	3	4	2	—	2	3	8	3	8	27	32	Alive.
		—	2	6	4	1	1	—	1	2	2	2	1	1	Dead.
		—	1	—	—	—	—	—	—	1	—	1	—	—	Lost sight of.

	Improved	—	1	5	—	—	1	1	3	—	—	3	6	6	Alive.
		—	—	—	—	—	—	—	1	1	1	—	2	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Stationary or Worse	—	—	1	1	1	—	2	1	—	4	1	3	4	Alive.
		—	1	2	—	—	—	—	—	1	1	—	1	1	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
Group III.	Disease arrested	—	—	—	—	—	—	1	—	—	—	—	1	1	Alive.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Much improved	—	1	1	1	—	—	2	1	1	1	—	4	6	Alive.
		1	1	1	—	—	1	—	—	—	—	—	1	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Improved	—	—	—	—	—	1	—	—	1	1	—	1	2	Alive.
		—	—	—	1	1	—	—	—	—	1	—	—	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Stationary or Worse	—	—	—	—	—	—	—	—	—	—	—	—	4	Alive.
		—	—	—	—	—	—	—	1	2	1	—	—	—	Dead.
		—	—	—	—	—	—	—	—	—	—	—	—	—	Lost sight of.
	Summary	19	37	44	43	34	31	26	35	24	47	53	105	115	Alive.
		3	12	19	13	13	14	4	5	9	11	4	9	2	Dead.
		2	2	3	3	1	3	1	1	2	1	1	3	2	Lost sight of.
	Total -	24	51	66	59	48	48	31	41	35	59	58	117	119	

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