At Alexandria sailing is greatly in vogue, and regattas are frequent during the summer.

Education.—There are various convent schools, which are good but mixed. It is usual to have a governess for younger children. Many people have French or Swiss governesses. In Alexandria it is an immense advantage to be able to speak French. Instruction in all foreign languages is easily obtainable.

To sum up, Egypt is a very pleasant and agreeable station with many advantages, but those who are married, especially if they have children, will find it expensive.

THE KING EDWARD VII. SANATORIUM.

By CAPTAIN G. H. GODDARD.
Royal Army Medical Corps.

This institution is the result of a gift of £200,000 made to His Majesty by Sir Ernest Cassel, and is intended "to afford accommodation for the large class of persons of slender means, in professional or other employments, for whom no provision for sickness of this kind at present exists." (H.M.'s speech at the opening ceremony, June, 1906).

Its doors are open to officers of the Services, clergymen, schoolmasters, and any member of the educated classes suffering from tubercle of the lung or throat in the very early stages of the disease, at the same time assisting to educate the public regarding the advantages of a sanatorium course both as a curative and as a preventive means of treatment.

The King Edward VII. Sanatorium is situated in West Sussex, about eight miles to the north of the South Downs, which separate it from the sea. It stands in its own grounds of 150 acres, at an altitude of 500 feet above sea level, and about eighteen miles from the coast. On the road it is six miles from Haslemere and four miles from Midhurst railway stations. Surrounding it are many fine pine woods, affording protection from wind and sun to those taking their exercise on the "measured mile" and at the proper gradient. Good moorland walks commanding fine views of the surrounding country can be indulged in by "arrested cases" ordered longer exercise.

The water supply of the Sanatorium is abundant and excellent in quality. It is collected from a series of springs rising in the
neighbouring village of Henley, and is pumped up to a reservoir on the estate capable of receiving 160,000 gallons. "The soil is the lower green sand of the lower cretaceous series!"¹ The drainage is connected with the water-carriage system of the town of Midhurst.

Flower gardens have been laid out around the building, and here employment is found for suitable cases with specially constructed light garden tools. A garden entrance facing south leads to the patients' part of the building, consisting of a central block of three floors flanked on the west by a wing for male patients and on the east by a corresponding one for women patients.

From end to end—east to west—the building measures 700 feet. All the bedrooms, one hundred in number, face the south, and measure for the most part 14 feet by 11 feet 6 inches and are 11 feet high, i.e., about 1,750 cubic feet capacity. Each has a balcony in front, so that bed and patient can, if necessary, be moved into the open air through the large double French windows which, with the fanlight over them, occupy almost the whole of the outer or south side of the room. Each bedroom door has a large window over it, hinged at its lower border and opening downwards by a special mechanical contrivance. There is a window in the passage on each landing opening into the outer air, and situated immediately opposite each bedroom doorway. All windows, doors, and fanlights have to be kept open day and night in all weathers, and thus the room is being continually flushed with air currents. (Such a word as "draughts" is, in sanatorium language, unknown).

The floors of the rooms are of wax-polished teak, and like the decks of a ship, take no damage from the pools of rain-water which frequently lie on them. All the corners of these bedrooms are rounded off in the same manner as a modern operating theatre, to prevent dust collection and to facilitate cleaning. The walls of the rooms are covered with a patent wall paper (Salubra) which can be scrubbed with hot water and soap, and thoroughly disinfected with carbolic, izal, &c. Each room is fitted with electric light and contains a hot water radiator. The bedroom furniture, restricted in amount to the least necessary for bare comfort, is made of polished birch, and is so constructed—with rounded top to wardrobe, glass stand to chest of drawers and marble slab for washing stand—as to obviate deposit of dust. A small mat for the

¹ "Souvenir of the King Edward VII. Sanatorium."—Architectural Review (no date given).—G. H. G.
bedside is all the carpet allowed, and no clothes, papers, books, &c., are permitted to lie about the rooms. The head-end legs of the bed are raised on large castors to facilitate moving, and handles about six inches long serve the double purpose of keeping the bed a proper distance from the wall, and of aiding when lifting bed and patient on to the balcony.

Each landing has four bath rooms lined with white glazed tiles, paved with "terrazzo" and containing solid porcelain baths (Doulton and Co.). On the ground floor are the hydrotherapy rooms, one for each side of the building, containing shower baths, hose pipes, the wave and spray douches. These are ordered for suitable cases, and seem to encourage that free action of the skin which is so necessary an effect to produce in all toxæmias.

On the ground floor also are two recreation rooms and two writing rooms. Use of these rooms is prohibited until after tea-time. They are provided with open fire-places for the sake of cheerfulness—the only open grates in the patients' part of the building. The corners of these rooms are rounded, and the furniture, consisting of easy leather chairs, &c., takes to pieces for washing and disinfecting. Practically the whole south side of the wall is one great window; windows also open from these rooms on to the corridor. (The dictum of "windows not being ventilators" is over-ruled at a sanatorium).

The Administration Block faces north, and consists of quarters
for the medical and nursing staff, consulting, dispensary and operating rooms, dining hall, kitchen and post-office. It is joined to the Patients' Block by a central corridor used as a lounge.

The Dining Hall is a large and lofty apartment, the walls of which are lined with Doulton's Carara ware; the floor is of York stone, which can be heated from below by a modern adaptation of the old Roman system, or hypocaust, substituting steam pipes for the open fire-places then used. Window space and cross ventilation have been well provided for; in fact, so free is the interchange of fresh air that difficulty is encountered by the kitchen staff during winter months in serving the dishes hot. The dining room is easily convertible into an entertainment hall by collecting the tables at one end to form a platform, and here concerts, &c., are held for the amusement of the patients without necessitating the inhalation of such quantities of CO₂ as is generally the case in most crowded concert rooms. At meal times the sexes sit at separate tables, meeting only in the corridor and in the grounds, where promenades à deux are strictly forbidden. The question of sanatorium friendship between the sexes, leading possibly to subsequent marriage, is one in which, doubtlessly, all directors of these institutions feel a heavy responsibility, and many have felt themselves called upon to declaim the iniquity of such marriages.

Separated from the Main Block are the pathological and research laboratories, where original investigation is being carried out, and where the opsonic index of all patients is estimated. In suitable cases injections of Koch's new tuberculin (T. R.) are given, and the results on the opsonic index carefully recorded.

The unique open air Chapel was presented to His Majesty by Sir John Brickwood. It is built in the form of the letter V with the chancel at the junction, and the two arms of the letter representing the two naves of the chapel. A gravel court is enclosed between these arms, and in this court is placed an open air pulpit for use in fine weather, when chairs for the congregation can be transferred from the Chapel to the court. In cold weather the floor of the Chapel can be heated in the same manner as the Dining Hall.

The daily routine of the Sanatorium is as follows all the year round:—

1 "Souvenir of the King Edward VII. Sanatorium."—Architectural Review (no date given).—G. H. G.
The temperature is taken and the patient called at 7.30 a.m. Breakfast in dining-hall, unless otherwise ordered ... 8.30
Rest on balcony for visit of medical officer ... ... 9.30
Exercise, or gardening, or rest, as prescribed ... 10—12
Rest on chair, or bed, in silence ... ... 12—1
Mid-day temperature ... ... ... ... ... 1 p.m.
Luncheon ... ... ... ... ... ... ... 1.15
Exercise or otherwise, as ordered ... ... ... ... ... 2—4.30
Tea in lounge ... ... ... ... ... ... ... 4.30

This constitutes the most stringent period of the day, during which the patient is expected to devote every minute to his "cure"; after tea until bed-time a certain amount of relaxation is allowed.

Evening rest-hour, on bed or chair, in silence ... ... 6—7 p.m.
Temperature taken ... ... ... ... ... ... ... 7
Dinner in dining-hall, unless otherwise ordered ... ... 7.15

Recreation.—Cards, round games, music, &c., as arranged by Patients' Games Committee, till 9.30, when all must be in their rooms. A concert is held weekly for the entertainment of patients and staff.

Lights out ... ... ... ... ... ... ... 10 p.m.

Those who prefer sleeping on the balcony of their rooms can do so. During the late winter with the thermometer down to 20° F., many patients slept out of doors with benefit.

Diet Tables.

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>A (for men)</th>
<th>B (for women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porridge (cooked)</td>
<td>4 ozs. (with milk)</td>
<td>Porridge (cooked)</td>
</tr>
<tr>
<td>Bread</td>
<td>2</td>
<td>Bread</td>
</tr>
<tr>
<td>Butter</td>
<td>1/2 oz.</td>
<td>Butter</td>
</tr>
<tr>
<td>Eggs</td>
<td>1</td>
<td>Eggs</td>
</tr>
<tr>
<td>Bacon or Tongue or Ham or Brawn</td>
<td></td>
<td>Bacon or Tongue or Ham or Brawn</td>
</tr>
<tr>
<td>or Fish</td>
<td>... 1 oz.</td>
<td>or Fish</td>
</tr>
<tr>
<td>Tea, Coffee or Milk or Marmalade or Jam</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
G. H. Goddard

Luncheon.

<table>
<thead>
<tr>
<th>A (men)</th>
<th>B (women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>½ pint</td>
</tr>
<tr>
<td>Bread</td>
<td>2 ozs.</td>
</tr>
<tr>
<td>Butter</td>
<td>½ oz.</td>
</tr>
<tr>
<td>Pudding</td>
<td>5 &quot;</td>
</tr>
</tbody>
</table>

(Choice of milk or suet pudding)

Potatoes
Vegetables
Cheese
Salad
Biscuits

Afternoon tea not compulsory.

Dinner.

<table>
<thead>
<tr>
<th>A (men)</th>
<th>B (women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>½ pint</td>
</tr>
<tr>
<td>Bread</td>
<td>2 ozs.</td>
</tr>
<tr>
<td>Butter</td>
<td>½ oz.</td>
</tr>
<tr>
<td>Pudding</td>
<td>5 &quot;</td>
</tr>
</tbody>
</table>

(Choice of milk or suet pudding)

½ pint of milk either at 7 a.m. or noon, and at 10 p.m., in addition to above meals, thus making 3 pints of milk taken during the twenty-four hours, including ½ pint contained in milk puddings.

The exact amounts of the various foodstuffs are weighed out in the serving-room before being taken to the Dining-Hall.

The above form the standard diets which are, however, modified in individual cases when necessary. No alcohol is prescribed unless considered essential, and then, as a rule, only to patients in bed. No raw meat is given. Tobacco smoking is strictly under medical supervision and is not allowed in the building. It will be seen that the practice of continuous overloading of the stomach, so prominent a feature of the original Nordrach treatment, is not in vogue here. A diet is selected having a high nitrogenous value, and to this is added a large amount of fat as contained in butter, in milk, and in suet puddings, bacon, &c. Consequently the patients undergoing this régime appear rather to be athletes in training than the gross figures so often seen in sanatoria. No routine medicines are given: no cod liver oil or malt. The only drugs in use being a few aperients and digestives—rhubarb and soda, cascara, &c.

The four essentials of treatment are: rest, fresh air, careful dieting and exercise at stated hours, at a regulated pace, a definite distance, and at the proper gradient. This last essential is only ordered when the patient is becoming apyretic, and in these cases test temperatures are taken to note the fall after exercise, e.g., a patient convalescent with quiescent disease is ordered to walk three
miles in an hour, to take his temperature immediately on return and then after an hour's rest. *Per rectum* it should register not more than 100°—100·5° F. after exercise, and should fall to normal after one hour's recumbent rest. The apyrexial consumptive runs a constantly normal daily curve: 1 97° F. at 7.30 a.m., 98° to 99° at midday and at night. The temperature chart, opsonic index and general condition of the patient give the chief indications as to whether exercise may be permitted or not. Mouth and axillary temperatures are discarded as being useless while patients are exposed to moving currents of cold air, and in place of them rectal readings are taken by the patient. The fallacy in rectal thermometry is that after exercise there is a physiological rise of temperature, which, however, subsides after rest. In those cases where fistula or other anal trouble is present the temperature of the urine stream is recorded. A patient having a consistently normal temperature is gradually worked up to ten or twelve miles exercise a day, while fever cases are kept strictly at rest, and those with slight fever are allowed only short strolls which are soon stopped if it is found to raise the temperature. All running exercises, games involving severe arm work, dancing, &c., are forbidden; but rope quoits, croquet, and, for certain "arrested" cases, garden golf are permitted. Cycling is discouraged. A feature of the treatment at the King Edward VII Sanatorium is the employment of patients on light gardening. Even haemorrhage cases, judiciously selected, experience no ill-effects from this useful open-air employment.

**Hæmoptysis.**—Calcium lactate is employed with aperients in the slight cases. In severe cases a minimum diet is enforced for three days, together with ice, purgatives and morphia.

**Prophylactic Measures.**—Regarding prophylactic precautions taken to prevent contamination of soil and building, each patient carries during the day-time an aluminium sputum flask (Deitweiler), which is disinfected daily in the sputum room by a porter specially trained. The sputum is placed in a cylinder and subjected to a temperature of 282° F. for fifteen minutes and is then allowed to pass into the drainage system. At night an ordinary sputum mug is placed by the bedside. Paper serviettes are used for meals and burnt afterwards. Linen handkerchiefs are allowed but are boiled after use. Plates, knives and forks are placed in boiling water and

1 "The Consumptive Working Man" (published by the Scientific Press), by Noel Dean Bardswell, M.R.C.P.Lond., M.D.Edin.
soda after being used. The cutlery, &c., of the staff are kept separate from that of the patients. Weekly lectures are given to the patients by the Medical Superintendent on the after-treatment of the disease, &c.

That a sanatorium course of treatment imposes considerable hardship during the winter months upon those undergoing its strict open air régime no one can deny; still, at the institution described, and doubtless in other similar places, such hardship is reduced to a minimum compatible with the open-air existence which it is essential that a consumptive patient should lead. As Major Carter, R.A.M.C., has pointed out, it is important that a patient should go to a sanatorium as soon as his disease is diagnosed, and, if he wishes to live in England after taking his "cure," he should undergo that cure in England.

Plea for the Soldier Consumptive.—Is such treatment worth while is the question often asked? Do not "cured" cases frequently, if not always, relapse? The insurance companies in Germany have answered this question by erecting sanatoria for the treatment of their clients. Should not something of the kind be done for the consumptive soldier, so that at least he may be educated in the mode of life he should lead before he is cast back into civil occupation to swell the number of unfortunates whom no general hospital will receive and who, for the most part, obtain their advice and medicine after waiting for hours in the polluted atmosphere of an out-patient department?

Application for admission to the King Edward VII. Sanatorium must be made to the Medical Superintendent, accompanied by two certificates from householders certifying that the patient is not possessed of sufficient means to enable him to pay the four or five guineas a week charged in private sanatoria (the fee charged at Midhurst is two guineas weekly for each of the 100 beds). There must also be filled in a medical certificate signed by the practitioner attending, certifying that the patient is suffering from an early stage of the disease, and that it is a case likely to derive benefit from a sanatorium course of treatment.

The above is but a brief description of an institution founded for the relief of a complaint which, under the old method of treatment, succumbed to stuffy rooms, over-clothing, slop diet and horrible cod liver oil, but which, in suitable cases, may be per-

1"The 'Cure' of Phthisis," by Captain (now Major) J. E. Carter, JOURNAL OF THE ROYAL ARMY MEDICAL CORPS, April, 1904.
manently cured under the new treatment. As the Royal Founder has remarked—"If curable, why not cured?"

The writer begs to tender his grateful thanks to Dr. Noel Bardswell, Medical Superintendent at Midhurst, for kindly giving him the necessary facilities for writing this article, and to Mr. W. E. Bowen for his excellent photograph.

Reviews.


We have received these books, which will prove useful to readers of medical literature in French and German.


The greater part of this book is taken up with an article on the "Causes and Treatment of Syphilis in the Army." Chief among the former is quoted "the lenient view which is taken of syphilis, not only by the combatant officer but also by the medical," and one is tempted to ask what qualifications the author possesses for making such a statement, one which is at once as grave as it is untrue. My experience is that the combatant officer takes a far more serious and intelligent view of syphilis than men of his own class in civil life, and that this has helped materially to the successful treatment of the disease in the Army; as regards the medical officer, the remarks made can, and ought to be, passed over with the contempt they deserve, bearing in mind the brilliant results which have followed his efforts to deal with syphilis, as compared with his confrère in civil life.

The description of the inunction method is, to say the least, antiquated; in fact, such as is carried out ordinarily in England, happily not in the Army.

One would like to know since when has it been decided that mercury is useless in late syphilis?

* A propos of the intramuscular method, the author is much behind the times as to its technique and the preparations in use, and the one of mine which he quotes, I have long since abandoned for a more suitable preparation.

Suggestions are made as to the systematic treatment of syphilis in the Army, and here again the author is out of date, as this system has been carried out in the Army for some years.
The King Edward VII. Sanatorium

G. H. Goddard

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