

Reports of the Committee of Management and Medical Director for 1935 / Papworth Village Settlement.

Contributors

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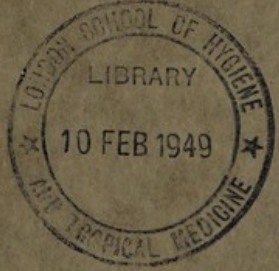
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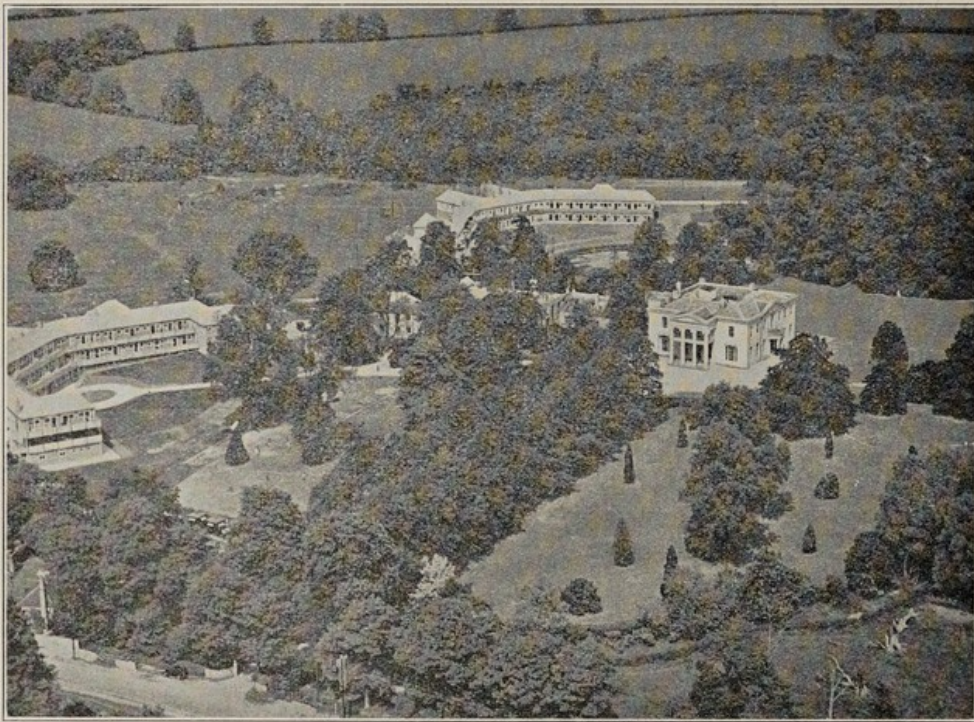
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THE PAPWORTH VILLAGE SETTLEMENT

Registered Office : PAPWORTH HALL, CAMBRIDGE

REPORT of the COMMITTEE OF MANAGEMENT and MEDICAL DIRECTOR *for 1935*

*Presented at the Nineteenth Annual General
Meeting of the Settlement, July 22nd, 1936*



AN AERIAL VIEW OF THE HUB OF PAPWORTH

To the left is the Bernhard Baron Memorial Hospital, right centre the Hall, and in the centre distance the Princess Hospital for Women.

PAPWORTH VILLAGE SETTLEMENT

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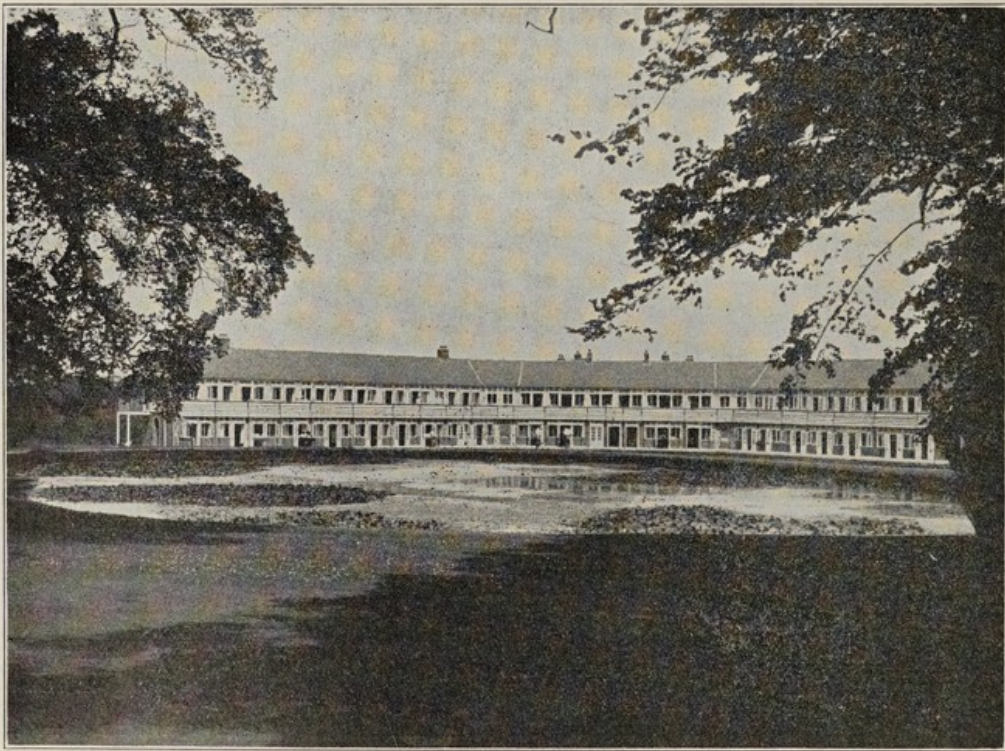
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ASSISTANT MEDICAL OFFICERS
D. MacCallum, M.B., Ch.B.
H. J. Robinson, M.D.

Stations : St. Ives, Hunts., L.N.E.R. (5 miles).
Postal Address : Papworth Hall, Cambridge.

Huntingdon, L.N.E.R. (5 miles).
Telephone : Caxton 18 & 19.

Cambridge, L.N.E.R. (12 miles).



THE PRINCESS' HOSPITAL FOR WOMEN

REPORT OF THE COMMITTEE OF MANAGEMENT FOR 1935.

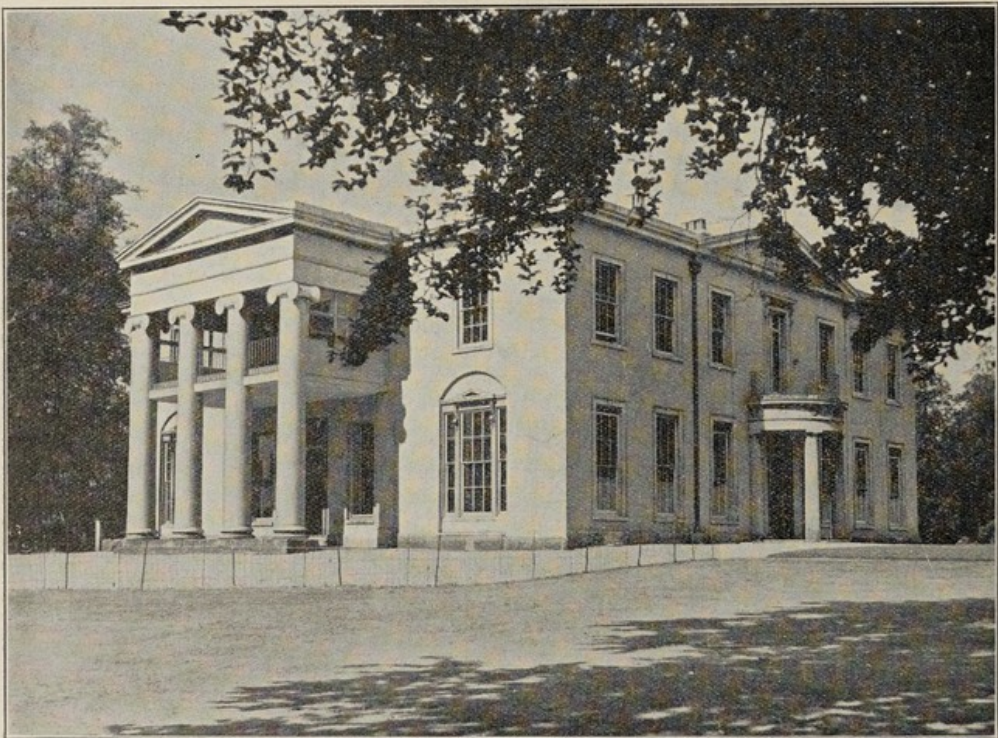


We again have the honour to record the un-failing interest of the Royal Family in the welfare of Papworth. With the rest of the country, we deeply mourn the death of our beloved King. In expressing our sincere sympathy with Her Majesty, Queen Mary, we wish to place on record our deep sense of gratitude to Her Majesty and the members of the Royal House, who, in spite of the innumerable duties of their high estate, have given generously of their time and sympathy.

Those who have studied our reports in the past have become accustomed to reading of the continual development of activities of the Hospitals and Industries. The new Hospital for Thoracic Surgery has been completed and brought into use. The design has proved very satisfactory and the Hospital has been highly commended by surgeons and physicians of international reputation. Mention has been made of the urgent need for the provision of additional accommodation for the nursing staff, including numbers of nurses from all over the country who have been wholly or partially incapacitated through contracting tuberculosis before coming to Papworth. For some time now, nurses who have been patients at Papworth have stayed on after being treated, and working a six hours day, have done very

valuable work. In the event of a further breakdown, they are given free treatment and paid full salary for a certain time. It is now proposed to build a really large hostel in which every nurse will have her own bed-sitting room fitted in a most up-to-date manner. There will also be, of course, the usual dining and recreation rooms. In the words of the Matron, this hostel would ensure that those who had contracted tuberculosis whilst serving others would be enabled (when sufficiently recovered) to earn their living in the best possible environment, and keep that independence which is so dear to the heart of every British man and woman.

Her Majesty Queen Mary, who has always taken a great interest in Papworth, has this scheme very much at heart. It was on the 17th December that Her Majesty, accompanied by H. R. H. the Duchess of Kent, attended the premiere of "The Ghost Goes West," and also saw the film "The Story of Papworth," which shows the objects and activities of the Settlement. The proceeds of the evening have been ear-marked for the new Nurses' Hostel, but much more money is necessary before substantial progress can be made. Since the scheme became known generous donations have been received from nurses in



PAPWORTH HALL: ADMINISTRATIVE BLOCK AND MEDICAL OFFICERS' QUARTERS

various parts of the country. The Committee would like to place on record their gratitude to those actors and actresses who took part in the Papworth film. They gave their valuable time and services gratuitously in aid of their less fortunate brothers and sisters.

Mrs. R. G. Edwards has been the generous founder of a fund to provide a very modern building which will be known as The Edith Edwards Preventorium, but again much more money is required before a start can be made with this building.

We have been able now to acquire a further 65 acres of land. A portion of this will be available for further housing, for, as the Industries expand, more and more accommodation is required. While it is desirable to maintain a relatively low population per acre, it is at the same time essential that the dwelling houses should be within easy walking distance of the workshops.

The Papworth Hospital Guild again shows an increase in membership and receipts. In addition to a sum of £330 which was spent on linen, blankets, etc., 209 gifts in the form of bed jackets, bed socks, hotwater bottles, etc., etc., were received. We are most grateful to the members of the Guild, who take such an un-failing and practical interest in the settlement.

Many are the calls on the Matron's Welfare Fund, and it is a pleasure to state that a larger donation than ever before has been added from the profits arising out of the sale of the Papworth Annual.

The Committee would again like to place on record their deep appreciation of the magnificent work of the Medical Director and the Matron, the medical, nursing and administrative staffs, and their thanks to the workers in the Industries, to whose loyal co-operation and enthusiastic efforts are due the continued success and progress of Papworth.

Elizabeth Gordon.



A WARD IN THE MEN'S HOSPITAL

REPORT OF THE MEDICAL DIRECTOR
FOR THE YEAR 1935.



The death of our beloved Patron, King George, early in 1936 so overshadows every event in the history of Papworth that it is difficult to write of the work done in 1935.

His Majesty was very much more than a Patron. He was a friend who took a personal interest in the welfare both of the institution as a whole, and in the well-being of individual members of our community. He constantly enquired for those of our people whom he remembered having met: and in my own conversations with him the discussions not only covered the general outlines of the scheme but entered into many questions of exact detail. Indeed His Majesty's interest was as sincere, as continuous and as informed, as that of a member of the Committee.

It is remarkable that a Sovereign should be able to spare from the press of State events so much time and thought for his tuberculous subjects. Yet so wide was the range of King George's knowledge, and so all-embracing his compassion, that we at Papworth feel his loss as that of a close personal friend. We shall miss his kindly

interest and his practical guidance more than any words of mine can express: but we are happy to think that His Majesty's concern for Papworth's welfare was shared, and is still maintained, by Her Gracious Majesty Queen Mary. In another part of this Report reference is made to a special instance of Her Majesty's favour; and it is not too much to say that but for Her Majesty's kindness on this occasion it would have been impossible for us to have proceeded with the new Home for tuberculous nurses, now in course of construction.

The year 1935 was one of balanced progress on the lines laid down by the late Sir German Sims Woodhead and myself twenty-one years ago. Experience has confirmed our conviction that treatment and aftercare cannot be divided if success is to be won.

Thus, in the years of Papworth's existence, we have continued closely to associate medical treatment with practical, purposeful and permanent after-care. Our clinical departments have grown. We have the large Bernhard Baron Hospital which provides hospital treat-



AN EXTERIOR VIEW OF THE NEW SURGICAL UNIT

ment for all male cases on reception, and contains four pay-wards for private patients. We have the Princess Hospital for women, with its delightful view over the lake. We have another building entirely devoted to sufferers from tuberculosis of the glands, bones and joints. We have a sanatorium in which there are housed in chalets about 100 ex-hospital patients. And in 1936 we shall feel the benefit of our new 22-bed surgical unit, which is completely equipped to facilitate the study and practice of thoracic surgery.

This not inconsiderable range of buildings houses a fluctuating population of 400—450 patients receiving treatment on approved medical and/or surgical lines. Every patient capable of working, even for as little as 2 hours a day, is enabled to work. This work may be described as “occupational therapy”; but it is more than that description now implies, because patients have come to regard “occupational therapy” as a device for wasting their time and the work provided at Papworth could hardly be put in this category. In every *possible* way—and I emphasise the *possible*—the work provided in the industrial departments of Papworth resembles work in the outside world. The offices, the factories, the machines, the methods—all are according to up-to-date commercial practice. The factory employee who comes to us as a patient feels therefore “at home” in our factories. So does the clerk-patient, the typist-patient, the comp-

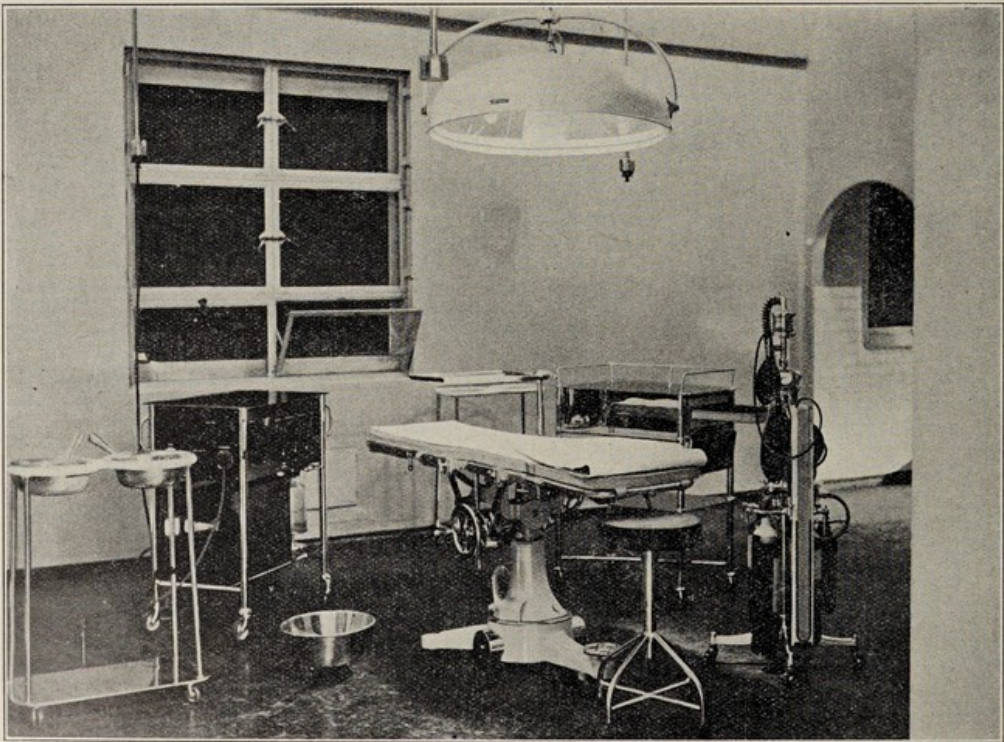
ositor-patient. Each finds real work in progress, stimulated by real orders, and by the hope of promotion. Rather more than 200 patients, on average, participated in the work of the Papworth Industries during the latter part of 1935.

When active medical and/or surgical treatment is concluded, the patient may leave, or he may become a permanent employee and settler. Large numbers of patients who should have become settlers have in the past been obliged to leave, simply because we had not the capital available to construct living and working accommodation for them. In 1935 more capital than usual became available, and more patients than usual became permanent settlers.

Any estimation of the proportion of patients suitable for settlement which does not take into account the non-medical but vital factor of finance is of course fallacious and misleading.

As the accommodation for patients has grown, so has the accommodation for ex-patient settlers. Indeed, every increase in patient-accommodation produces an additional strain upon our appeal and sales departments, since more and more permanent housing, workshops and orders are needed.

It should be unnecessary to mention anything so obvious as this; but frequent and foolish attempts are still made—often by those who should know better—to prove that village



THE OPERATING THEATRE

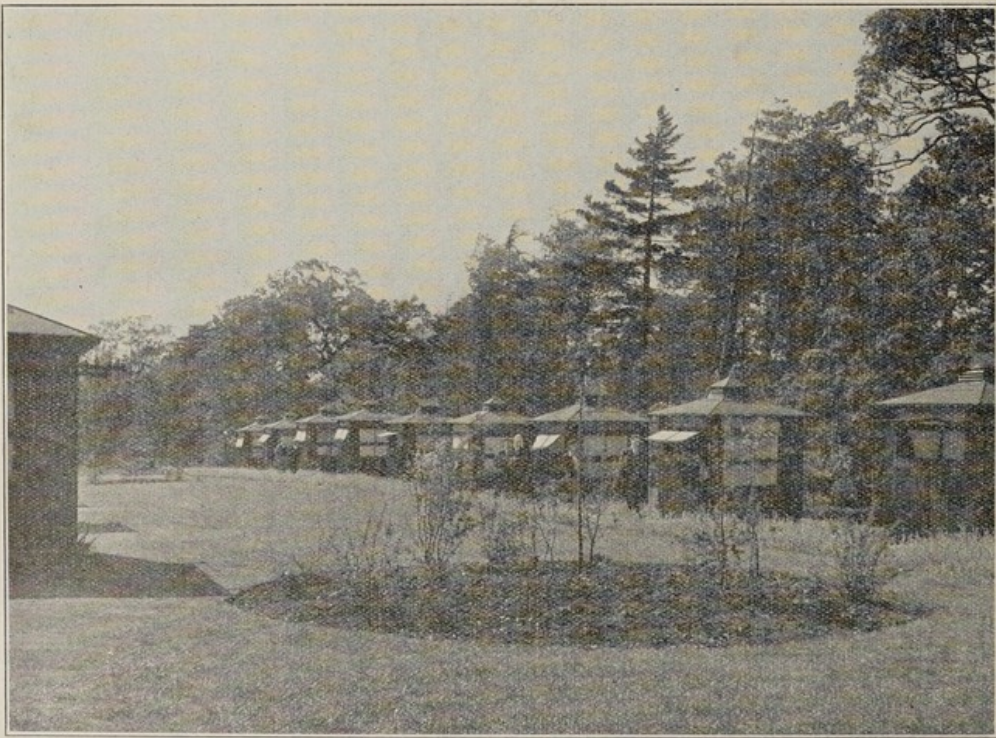
settlements are only suitable for a very small proportion of patients. During 1935 we admitted 251 patients for treatment ; we "settled" 47 ex-patients ; and we could have "settled" another 50, had capital been available. In 1936 we may "settle" only 2 or we may "settle" 100. It depends upon the supply of capital, and also upon the volume of orders. There are always plenty of would-be settlers, who from the medical standpoint are entirely suitable.

Unmarried settlers at Papworth live in Hostels, which resemble residential clubs. These are built on the bungalow principle, with no stairs. At present there are three : two for men and one for women. A fourth, for 40—50 more men, is an urgent need. The sales department has momentarily overtaken the appeals department, *i.e.*, the industries could absorb more patients and employ them, but their living and working accommodation is not yet available because money is lacking.

Married settlers move from their chalets into cottages, where their families join them. Even now there are those who enquire whether this is right ; and whether consumptives ought to be "allowed" to have children, or to live with them. Our experience proves two things : that most tuberculous people, given the right housing conditions, do not have large families ; and that where families already exist before there is a diagnosis of tuberculosis, no tuberculous disease need be transmitted so long as village settlement conditions of housing and

employment are provided and properly utilised. Any question of "heredity" is now generally discredited. Children of tuberculous parents may, and indeed do, encounter infection ; but even so this need not lead to disease, as our experience has amply proved. The dominating protective factors, curiously enough, are not essentially medical in character. They are good housing and good wages. Given these things—which are rarely if ever obtainable by the consumptive worker outside a village settlement—the tuberculous parent can himself prevent his children from developing tuberculosis.

Over and above these arrangements there is a Research Department. At present it is far too small ; but it is very active. It has peculiarly favourable opportunities ; for where but in a village settlement are there to be found tuberculous persons living for years under constant supervision ? And where else are there hundreds of non-tubercular contacts, all readily and continuously accessible ? In such circumstances one especially regrets the lack of money for it is appalling to think of the opportunities and to be prevented from taking full advantage of them. If tuberculosis is to be eradicated surely the questions of resistance and immunization are of paramount importance ? Yet here are we, with all the material for study ready and available, limited in our efforts by the inadequacy of funds for the prosecution of this work.



SOME OF THE CHALETS IN THE SOUTH PARK, THE SANATORIUM FOR MEN

This recital of the present extent of our scheme shows, I think, quite clearly how closely after-care is bound up with treatment and both are associated with prevention. If after-care is separated from treatment the deficiencies of one react upon the other; and no comparative statistics are of any value so long as they are based upon the fate of discharged patients living under totally different sets of conditions. In a village settlement not only are treatment and after-care interlocked, so that both pull together for the patient's benefit: comparative statistics are valuable because they are based upon known and comparable conditions.

In order that the problems of after-care should be studied on a world basis, the **Union Internationale contre la Tuberculose** some time ago appointed a special Committee for the purpose. As President of this Committee I have recently set up a Bureau which is now collecting material and information from all parts of the world. This information will be made accessible to all workers in the tuberculosis field and we are glad to observe the enthusiasm with which our correspondents are supporting these early efforts.

This enthusiasm, however, does not conceal the fact that there are wide differences of view as to the means by which tuberculosis may be conquered. Some pin their faith to thoracic surgery; others to medical measures; others to "hardening-off" patients after the conclusion of active treatment. In my view

success will not be won by any of these methods singly. Each must be applied in its proper place; and the sooner we are clear as to the way in which they must co-operate the better it will be.

Each method has its adherents. The surgeons are at least as enthusiastic as the physicians. Few are as emphatic on the subject of after-care as I am; yet if experience teaches anything at all in relation to tuberculosis it is that clinical measures are doomed to failure unless they are followed by efficient after-care. That is why Papworth has developed on its present lines. Every clinical appliance is available and the system of after-care is complete and permanent, extending, as it does in some cases, to the second generation. Such a scheme based, not upon new and untried theories but upon a wide consensus of medical opinion, ought to succeed. That it does so is not in the least remarkable. It will **always** succeed provided that the underlying principles are clearly understood and conscientiously followed.

I have often wondered why it is that medical men are so apt to concentrate on clinical questions to the exclusion of all else; why it is that they will lecture each other upon cavities and lesions which most of them understand perfectly well, yet shrink from or play with the problems of after-care. Perhaps the fault lies in the system of medical education. The medical student spends his early years immersed in a sea of facts—*anatomical, physiological*



ST. MARY'S HOSTEL FOR WOMEN, WITH ST. PETER'S HOSTEL IN THE BACKGROUND

bacteriological. He is not encouraged to look beyond ; to observe the action and interaction of human factors as a whole. His education is essentially pathological, and he knows that his examiners will take a greater interest in his bacteriological than in his sociological knowledge.

There could in my view be no greater mistake than to limit the outlook of the medical student in this way. But so long as this limitation persists we must, I suppose, expect that in confronting the problems of tuberculosis, where non-medical factors such as wages and hours, the attitude of employers, the behaviour—or misbehaviour—of wives, the rent, and so on, the medical man is baffled while his patients are lost.

After all, what is, or should be, the aim of all treatment? Is it to improve a skiagram? Is it to compare specimens? At many medical congresses these are the subjects most discussed; yet surely it is useless to hospitalize a patient if by so doing his moral fibre is destroyed. Let us not forget that the damaged organ is housed within a human organism, and that psychological derangement of that organism will undo every effect of treatment directed solely to the physical condition. In other words, let our aim be to **restore wage-earning capacity** as fully and as quickly as possible, so that the vital psychological factors, whose chemical effects we hardly understand and repeatedly underestimate, may work with us, and not against us.

A recent issue of "The Lancet" contained a paragraph so relevant to this question that I venture to quote it in full:—

"The nucleus of the whole problem lies in the mode of dealing with aggressive impulses. If these are coupled with a pleasure in constructive abilities, the result is productive work: an example of this may be seen in the gigantic undertakings in Russia to-day. If the individual cannot find satisfaction in constructive activity, for instance, if he is unemployed or is put to an uncongenial occupation, the necessary condition for the binding of the aggressive impulse to cultural ends is lacking and there is a risk of a breakdown of social relations. The political analogy is revolution, if the aggression is kept within the frontiers, or war if the aggression is projected outwards. This is the reason why in the case of an individual faced with an impending crisis it is so important that his energies should to the last moment be given a constructive outlet."

How many revolutionaries has the medical profession made through not providing constructive outlets for the energies of the tuberculous, through neglecting sociology and concentrating on pathology? How many more are we to make before we learn the lessons so clearly set before our eyes?

I append some details regarding the various departments of the Institution.



ST. JOHN'S HOSTEL FOR MEN

MEDICAL DEPARTMENTS

(Dr. L. B. Stott)

The year 1935 was, as usual, intensely interesting and the statistics subjoined will give an impression of the increasing responsibilities of the various units. The fact that, at the end of the year, the hospital services were running with even greater smoothness than in former years, was a source of great solace to me, as I saw in it a result of the habits and methods painfully elaborated by experience.

Attendances at the Surgery numbered 12,320, of which 1,706 were casualties.

Prescriptions dispensed by the Dispensary in the Bernhard Baron Hospital amounted to 14,519.

OPHTHALMIC UNIT

1935 saw established an Ophthalmic Service under the National Ophthalmic Treatment Board. Mr. Recordon visits the Hospital at fortnightly intervals, and an endeavour is made to meet the cost of the provision of glasses from grants by Approved Societies and Local Authorities, as in the case of the Dental Unit. For reasons which need not be particularised Ophthalmic Benefit will always be a little more cumbersome than Dental Benefit. The anticipated difficulties, however, have been overcome with surprising ease, and in this Unit 79 patients have been examined and treated. Our thanks are due to Mr. Recordon for his patient co-operation.

THE DENTAL UNIT

The dental unit has continued its work as heretofore and is the subject of a separate report by the Dental Surgeon.

THE COLLAPSE THERAPY UNIT

This has continued under the control of Dr. MacCallum, who has been chiefly responsible for its correlation with the Unit for Thoracic Surgery, opened since the period under review. Artificial pneumo-thorax refills to the number of 550 have been undertaken at the meetings of this unit and this does not include refills for patients confined to bed in the Women's and Men's Hospitals.

THE EAR, NOSE AND THROAT UNIT

Although this unit is not capable of centralisation as in the case of other specialisation owing to the enforced retention in bed of the majority of the patients, much work has been done in all our hospitals and Mr. Walford has continued to see increasing numbers of ambulant patients in Cambridge and goes to considerable trouble to report findings and advise treatment.

ORTHOPAEDIC UNIT

The year 1935 also saw an extension of the Orthopaedic Unit by the establishment of a massage and electro-therapy unit carried on by Miss Willis in two sessions each week.



ST. PETER'S HOSTEL FOR MEN

DEPARTMENT OF RADIOLOGY

The work of this department continues to increase and the demand for X-ray control is ever and legitimately growing. In our special environment there is also the necessity for the maintenance of our X-ray record of the supervision of contacts and staff. Statistics of the work are as follows :—

X-ray photographs	1,417
X-ray Screen examinations	1,181
U. V. R. treatments (exclusive of portable lamp).....	109
(U. V. R. treatment taken over by visiting Masseuse in May)	
Reduced prints of X-ray photographs	189
Photographs of Pathological Specimens and Diagrams, and Lantern Slides	142

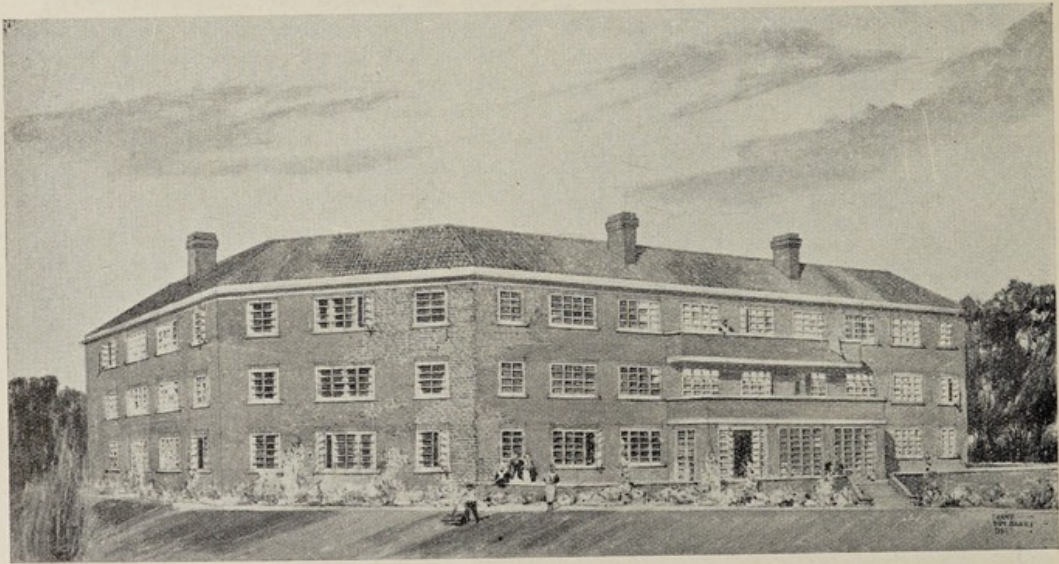
I should like to add that during 1935 no less than 133 X-ray examinations and reports were made for the Huntingdonshire County Council.

THE VILLAGE

During 1935 we lost by death one married settler. One Jubilee baby was born and thereafter the ante-natal unit suffered a temporary eclipse. No epidemic disease visited the village, and the only notification was of two children, suffering from chicken pox and scarlet fever respectively, who returned from holiday during the incubation period. In each case immediate isolation was carried out and no further cases occurred.

The exclusions from school dropped slightly but minor colds were still far too prevalent. During routine examination X-ray evidence of tuberculous reactions were noted in three children, and one temporary exclusion from school was made, but, after consultation with Dr. Paton Philip, it was considered that the finding was not such as to warrant notification. All three children remain at school in good health. One of these three was born in the Village and this constitutes the first occasion on which X-ray evidence of possible involvement has been noted in a child born in the village. This child has been the subject of a special report.

The attendances at the Clinic amounted to 1,723.



A DRAWING OF THE PROPOSED HOME FOR TUBERCULOUS NURSES. (North aspect.)

**PATHOLOGICAL AND
BACTERIOLOGICAL DEPARTMENT**

(Dr. W. Pagel)

Bacteriological Department :

The **morphological** investigations on the differentiation of inactive tubercle bacilli in cultures and tissues by means of staining methods were continued and the conclusions, drawn before, confirmed. Bacilli eosinophilic when stained with Giemsa's method were found in fluid cultures with suppressed growth of the bacilli, and also in very old and very young cultures. The findings of the inactive (eosinophilic) bacilli in inactive, especially calcified, foci of the human lung were frequently repeated.

The methods of culturing tubercle bacilli were improved and the influence of the addition of blood serum to fluid culture media was studied.

A new simple method of **emulsifying** tubercle bacilli under sterile conditions was designed.

The dependence of **cultural morphology** upon the **ph** was examined.

Serological Department :

The total number of examinations of the **bactericidal power** of the human blood serum towards the growth of tubercle bacilli was greatly increased (to about 250 cases) and in the majority the result was consistent : suppression of the growth in cases of common isolated bronchogenic tuberculosis of the adult, retardation or suppression of the growth in cases of chronic generalisation and hematogenous pulmonary tuberculosis. The application of the method for differential diagnosis of the hematogenous lesion was studied.

Repetition of the bile-test in a great number of cases demonstrated its advantages for the estimation of activity and anatomical extension of the lesions in cases where other methods failed. The clinical value of Weltmann's coagulation test and Meinicke's specific test for active tuberculosis was examined, the latter in about 200 cases.

Morbid anatomy and histology

40 autopsies mostly on cases of tuberculosis were performed and followed up by careful histological examinations of the lesions. Special attention was paid to the pathogenesis of the individual cases, that is to say a search was made for the primary lesion, postprimary hematogenous outspreads and the development of the early lesion of the bronchogenic phthisis. The problems of histogenesis of tuberculous lesions—especially of caseation and liquefaction and of the healing processes—were studied.



THE PRINTING AND BOOKBINDING DEPARTMENT

Among the cases observed was one of spontaneous cavity healing ; another of funnel chest with peculiar involvement of the heart leading to special circulatory troubles which, like the congenital pulmonary stenosis, favoured the development of pulmonary tuberculosis ; and one, a case of miliary silicosis without the history of typical occupational silicosis, had to be examined for evidence of accompanying tuberculosis. Other work included the study of unusual forms of primary infection of the adult and of hematogenous generalisation (*e.g.*, with the formation of large tuberculous liver abscesses) ; the pathology of extrapulmonary tuberculous calcification, the pathogenesis of pulmonary hemorrhage due to allergic hypersensitiveness and traumatic lesions and the hematogenous forms of intestinal and laryngeal tuberculosis.

Experimental pathology

A comprehensive attempt at reproducing early foci (precocious infiltrations) of pulmonary tuberculosis of the adult was made by means of reinfection on allergic rabbits, on the exogenous and endogenous way (intratracheal and intravenous reinfection). These experiments allowed at the same time a study of the allergic conditions leading to the special forms of chronic hematogenous generalisation in man (such as limitation and resorption of miliary outspreads—"Miliaris discreta" and "Fibrosa densa"—hematogenous emphysematous

tuberculosis, corticopleural outspreads, stamped cavities, etc). These studies are still progressing.

The problem of dissociation of hypersensitiveness and immunity was studied on a large scale by means of vaccination of guinea-pigs with various forms and products of tubercle bacilli. We studied the influence of the administration of non specific vaccines, bacterial products, chemical substances such as Calcium gluconate (Sandoz), lipoids, etc., on the development of the primary lesion and on the generalisation and the allergy after virulent infection. The differences of the specific and non specific influences were established with special reference to the relations of hypersensitiveness and immunity. These studies continue.

Model experiments as to the question of the role of the tubercle bacillus in tuberculous liquefaction were designed, and the development of liquefaction, and hence cavitation, was shown to be due to the decisive influence of the increase of tubercle bacilli in the tissues of hypersensitive animals. The importance of these experiments is emphasised by the fact that tuberculous foci do not usually produce clinical disease until they are liquefied. Hypersensitiveness of tuberculous animals to antigens other than the tubercle bacillus and its products ("Heteroallergy") was established



A VIEW OF THE PRINTING MACHINES.

by the findings of an early formation of tubercle like granulomata in the tissues of tuberculous animals after administration of certain non specific substances. The influence of the virulence of various strains of tubercle bacilli on the tuberculous hypersensitiveness after intracutaneous reinfection of tuberculous animals (Koch's fundamental experiment) was examined.

Demonstrations

The results of the studies outlined above were demonstrated in three meetings at Papworth Hall which were attended by pathologists, scientists and doctors from Cambridge, Huntingdon, London and Birmingham. A great number of lantern slides, graphs and specimens were shown, and a discussion of the clinical and scientific aspects of the problems held.

Dr. E. Weichherz, director of the bacteriological and serological department of the municipal hospital Bulovka at Prague spent a working holiday at the Sims Woodhead Memorial Laboratory in order to study the pathology of the evolutionary forms of hematogenous tuberculosis and the serological conditions of tuberculosis. He also studied the material available relating to intestinal tuberculosis limited to the appendix.

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Papers published in 1935 :

These include :

- Boot, F., A method for emulsifying tubercle bacilli. *Monthly Bulletin of the Pathological and Bacteriological Laboratory Assistants Association* 1935, II, 35.
- Pagel, W., The bactericidal power of the blood serum as a means of differentiating a certain type of pulmonary tuberculosis. *Tubercle March*, 1935, 256.
- „ On allergy and immunity. *Acta Medica Scandinavica* 1935, LXXXIV, 422.



THE ASSEMBLY SHOP: CABINET MAKING DEPARTMENT

- Pagel, W., On the endogenous origin of early pulmonary tuberculosis. The anatomic views of its clinical diagnosis. *American Journal of the Medical Sciences* 1935, CLXXXIX, 253.
- „ Funnel-chest and pulmonary tuberculosis. *British Medical Journal* 1935, I, 922.
- „ The production of Koch's phenomenon with various strains of tubercle bacilli. *Journal of Pathology and Bacteriology* 1935, XLI, 89.
- „ Religious motives in the medical biology of the XVIIth century. *Bulletin of the Institute of the History of Medicine, (John Hopkins University)* 1935, III, 97-312.

BIOCHEMICAL DEPARTMENT

Dr. D. B. Cruickshank

The studies on zinc continue and the results of the preliminary analytical survey of the literature are now in manuscript form. Towards the end of the year, apparatus for the micro-determination of zinc was installed and work with this has commenced.

Numerous observations and measurements were made on factors governing blood sedimentation; these continue. Special apparatus has been designed and constructed to further this particular research.

In the course of the year the following publications were produced.

- (a) "The Value of the Triboulet Reaction in Intestinal Tuberculosis," Robinson, H. J., and Cruickshank, D. B. (*British Journal of Tuberculosis* 1935, XXIX, 164).
- (b) "The Influence of Pasteurization upon the Vitamin C, Iodine and Phosphatase Content of Raw Milk," Grandison, W. B., and Cruickshank, D. B., (*British Dental Journal*, 15th March, 1935).

It may be of interest to note that an elementary course of instruction in Bacteriology etc., was conducted for one of the Sisters who intends taking her Diploma in Nursing.



MACHINES IN THE CABINET MAKING DEPARTMENT

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DENTAL UNIT

Mr. W. B. Grandison

There is still evidence that patients who are resisting tuberculosis acquire a temporary immunity to dental caries, and the contrary, namely, that patients who have an active and progressive pulmonary tuberculosis show marked decalcification in the enamel of teeth.

During the year 1935, 50 sessions were held and the number of attendances of patients was 1,001, or an average of approximately 20 each session. It is both pleasing and gratifying to point out that of this number of attendances a reasonable number was from the village itself, and contained a greater number of children than heretofore. The number of teeth extracted during the year 1935 was 786 and in this connection it is worthy of comment that by far the majority of extractions are performed by means of the regional method of anaesthesia.



THE PORTABLE BUILDINGS DEPARTMENT

This, I find, gives the maximum benefit to patient, time to the dentist (an important point when it is understood that profound calcification is present in patients definitely improving as a result of their stay with treatment in Papworth), and satisfaction to the patient. Nitrous oxide and oxygen together with Evipan have been used, but, rightly or wrongly, I feel that no general anaesthetic meets with the same approval with my medical colleagues as does the local anaesthetic, and of course I am more than satisfied with the results obtained.

Fillings number 271, and these too, almost without exception, have been inserted in permanent teeth, regional anaesthesia having been employed likewise.

79 dentures have been given, varying in character according to the number of missing teeth from full dentures to partial dentures (upper and lower) and 34 dentures have been repaired.

103 visits to ward patients have been made and other operations (scaling, gum treatments, temporary dressings, silver nitrate applications and so on) number 112.

On occasions, radiograms have been necessary in order to assist diagnosis and I am grateful to Dr. Stott for either carrying out this work himself or inviting the co-operation of others for the same purpose.

PAPWORTH INDUSTRIES 1935

(Mr. B. Tallyn, General Manager).

Net Sales :

The net sales for the past 5 years have been as follows :—

1931.....	£71,927	} Total...£424,305
1932.....	£72,115	
1933.....	£88,124	
1934.....	£85,551	
1935.....	£106,588	

showing a net increase of nearly 50% in five years.

Purchases :

In the same period the purchases of raw materials have been as follows :—

1931.....	£36,624	} Total...£228,658
1932.....	£37,111	
1933.....	£48,031	
1934.....	£47,098	
1935.....	£59,794	

Wages :

Wages (less Training Grant) :—

1931.....	£20,664	} Total...£113,387
1932.....	£19,989	
1933.....	£22,595	
1934.....	£22,598	
1935.....	£27,541	



THE LEATHER TRAVELLING GOODS DEPARTMENT

During 1935 the Industries paid wages for the Jubilee holiday and also for a half day on the occasion of the annual Flower Show, the total for the two days being nearly £150.

Personnel :

An average week during the latter part of the year showed that the personnel (patients and employees) had increased to 491, of which 404 were men and 87 women.

47 patients were "settled" in 1935.

Bad Debts :

Bad debts at £228 represented 2% of turnover.

Government Insurances :

The following were Papworth Industries' 1935 contributions towards National Health, Unemployment, and Pension Insurances:—

Employer's contribution.....	£	914
Employees' ,, 	£	852

£1,766

In studying these figures it should be borne in mind that employment is guaranteed to Papworth people, and they are not stood off to become charges on the Unemployment funds in times of difficult trade.

Stocks :

With an increase of nearly 50% in turnover stocks have declined in five years by £4,886.

Motor Vehicles :

During the year we exchanged the Bedford Truck for a 3-ton Commer thus having two of the latter forward control vehicles. We also exchanged the two cars run by the northern Travelling Goods Representative and by our Incubator Expert.

Five of our vehicles during the year covered approximately 130,000 miles using nearly 9,000 gallons of petrol contributing in the process £300 in petrol tax.

General :

All departments have participated in the increase in sales, in particular the Cabinet Department. Housed in new and extended premises about midway through the year, the sales of this Department for the second six months of 1935 were only £600 less than the sales for the whole twelve months of 1934.

Travel goods were supplied during the year to customers in Germany, France, Italy, Canada, the United States, and South Africa as well as in this country. Nearly 30,000 pieces of luggage were supplied.

Nearly £2,000 was spent in the Printing Department in order to bring it more up-to-date in the new premises into which it moved in the first half of the year, and the expansion of turnover which was anticipated is already apparent. The personnel has more than doubled and the department now employs over



EXTERIOR OF A PAIR OF HOUSES OF A TYPE NOW BEING BUILT

60 persons of whom about one-third are women. One object of the expansion of this department was to absorb female labour and the results have so far been encouraging.

Well over a quarter of a million eggs were produced on the poultry farm, and the sales of the Upholstery Department established a record.

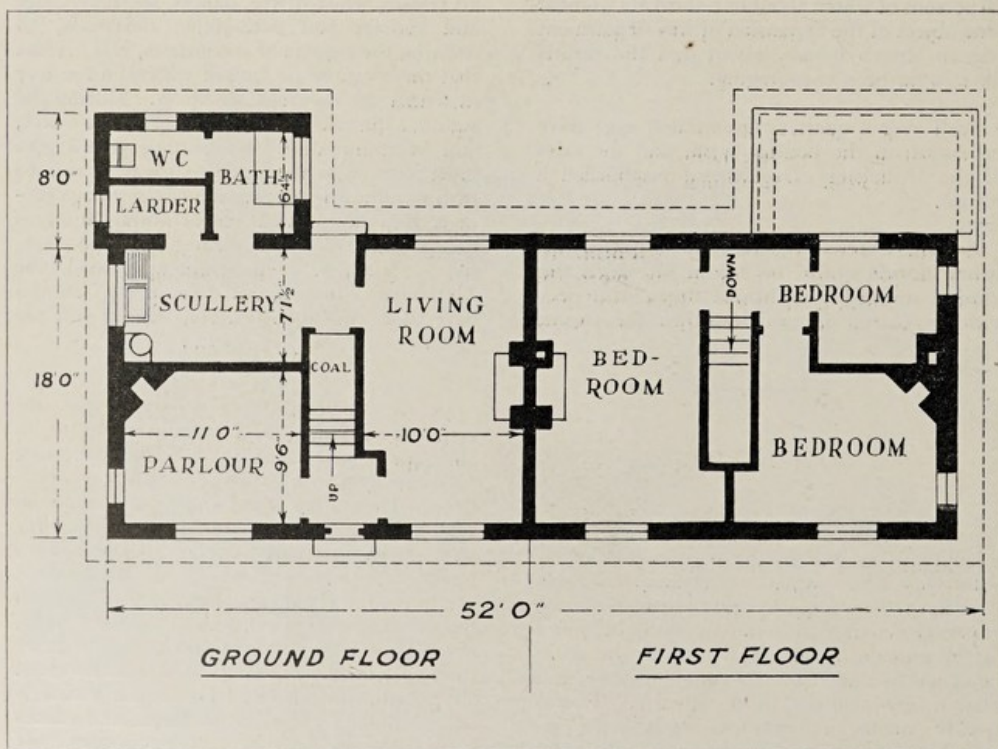
Further extensions are very essential and more hands could be taken on were the capital available to house them and provide working accommodation for them.

SOCIAL LIFE

The social life of Papworth continues to expand to meet the ever-growing need of its inhabitants, as well as the patients in the institution. The simpler arrangements of early days have given place to more organised forms of social activity, in common with the trend of the outside world. Listening to the wireless concerts and news is a common-place, and plays a very great part in its daily life. Twice-weekly cinema performances are looked upon as essential during the winter months, and when it is realised that there are billiards league matches, horticultural society meetings,

art classes, whist-drives, dances, social evenings and concert and pantomime rehearsals, all drawing their quota of enthusiasts, it is evident that there can be no lack of variety in the way in which the evenings are spent. During the summer the cricket and tennis clubs are active, and in addition the two putting greens give great pleasure, while for those of a more serious turn of mind the preparation of the village gardens for the Annual Horticultural Show is responsible for much healthy and remunerative occupation. The Catholic Chapel, the Methodist Church and the Parish Church have their mid-week services, and patients are given every facility to attend.

In all these directions, I have borne one principle in mind, and that is to create an atmosphere of ownership and companionship such as exists in a large village or small town. Herein we differ from the mushroom satellite dormitories of our great cities; they lack a community of interests and that deep feeling of citizenship without which there is a gap in the life of the inhabitants. At Papworth the growing civil spirit, first aroused by clubs, then by societies, religious and secular, then by the larger feeling of being a citizen of no mean city, eradicates once and for all the demoralising influence of institutionalism, and makes it possible to provide that environment of which I have spoken and on which I have laid stress from year to year.



INTERIOR PLAN OF HOUSES

Our thanks are due to the following who so kindly provided entertainment during the year in the Village Hall.

Pye Radio Sports Club (Social & Dramatic Section).

Princess Hospital Concert Party.

Stock Exchange Dramatic & Operatic Society (for a splendid performance of "Libel").

Central Boys' School, Cambridge.

The Enthusiasts Concert Party.

The Papworth Players (for the pantomime)

The "Papworth Annual" Committee (for the Magazine Concert).

New developments during the year were the monthly meetings of the Nursing Association, at which interesting talks were given to wives of the members on the problems of the home, and the inauguration of a series of monthly lectures on art by Mrs. Shore. These latter were usually illustrated by lantern slides and were much appreciated.

The most outstanding social event of the year, of course, was Jubilee Day, when all Papworth combined to make merry. Various Committees were formed to raise funds and organise events, and from the mixed cricket match in the morning to the Scouts' beacon at 10 o'clock at night, there was not a dull moment.

Such in very brief outline is a resume of Papworth for 1935. My thanks are given in no small measure to all those whose work has made the success of another year possible ; to Matron for unfailing enthusiasm, to Dr. Stott and the other members of the medical staff for intense interest in all medical and departmental problems and to the staff of the Industries for loyal co-operation, and finally to all the members of the Committee who with unfailing courage have come with me further out into the uncharted sea of the social, economic and medical aspects of the tuberculosis problem.

PENDRILL VARRIER-JONES.



THE SIMS WOODHEAD MEMORIAL LABORATORY

*The Matron acknowledges with grateful thanks gifts for Patients
received during 1935 from the following:—*

THEIR MAJESTIES THE KING AND QUEEN.

Anonymous.	Miss Kitton, Norwich.
Lady Allbutt, Cambridge.	F. E. Langerman, Esq., Eltringham.
Mrs. Ashton, Brentwood.	Miss Lloyd, Cambridge.
Mrs. Askwith, Cambridge.	Mrs. Longland, Cambridge.
Mrs. Austin, Abbey Wood.	Miss Lukyn-Williams, Cambridge.
Mrs. Banister, Grantchester.	Mrs. Marriage, London.
Miss Bennett, Histon.	Miss C. C. V. Matthews, Worthing.
J. H. Bigg, Esq., Ely.	Sir Frederick Milner Fund.
Mrs. Bloodworth, Grantham.	Miss Osborn, Northampton.
Boots Library.	Oxford & St. George's Club, Bernhard Baron Jewish Settlement, London.
Mrs. Bowen, Great Chesterford.	Mrs. E. M. Parker, Westcliff-on-Sea.
British Red Cross Society & Order of St. John.	H. W. Pavelev, Esq.,
Mrs. Brown, Warboys.	Miss M. A. Peake, Hatch End.
Lady Langdon Brown, Cambridge.	Miss Barbara Penman, Wisbech.
Lady Burgoyne, Sandy.	Miss Pertz, Cambridge.
Miss Cobbett, Cambridge.	Mrs. Priestley, Offord D'Arcy.
Miss Cochran, St. Neots.	Mrs. Rain, Cambridge.
Miss Cresswell, London.	Mrs. Rolleston, London.
Mrs. Cronin, Cambridge.	Mrs. Shearman, Cambridge.
Mrs. Davies, Cambridge.	Mrs. Sheldrick, Thriplow.
Davis' Feather Mills Ltd., Whitechapel.	Mrs. Slater, Cambridge.
Mrs. Doulton, Surbiton.	Mrs. Smith, Epping.
Miss Everitt, London.	Miss Spencer, Cambridge.
H. Faircloth, Esq., London.	Miss Streeter, Papworth.
Miss Faulkner, Scarborough.	Capt. W. Sykes, Grantchester.
Mrs. Few, Cambridge.	Miss Taylor, Cambridge.
Miss Goodwinn, Papworth.	Miss Thacker, Cambridge.
H. Guillemard, Esq., Cambridge.	Miss E. Tozer, Cambridge.
Mrs. Harding, Bristol.	Mrs. R. Tritton, London.
Mrs. C. R. Harris, Rugby.	Col. W. H. Turton, Clifton.
Mrs. Highton, Quorn.	Mrs. Twamley, Sudbury.
Mrs. Hockey, Cambridge.	Mrs. Verrinder, Cambridge.
Miss Hunt, Somercotes.	Mrs. Webber, Shepreth.
Mrs. M. H. Jennings, Sutton.	Mrs. Wells, North Wembley.
Miss Jenyns, Cambridge.	Mrs. R. Whipple, London.
Miss Johnson, Cambridge.	Miss Winearls, Kings Lynn.
H. G. Johnson, Esq., Budleigh Salterton.	
T. R. H. The Duke & Duchess of Kent.	



A VIEW OF THE SOUTH END OF THE VILLAGE



