Reports of the Committee of Management and Medical Director for 1937 / Papworth Village Settlement.

PAPWORTH

1938

THE PAPWORTH VILLAGE SETTLEMENT

Registered Office : PAPWORTH HALL, CAMBRIDGE.

REPORT

OF THE

COMMITTEE OF MANAGEMENT

AND

MEDICAL DIRECTOR

FOR 1937

Presented at the Twenty-first Annual General Meeting of the Settlement, July 12th, 1938

PAPWORTH VILLAGE SETTLEMENT

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AN AERIAL VIEW OF THE HOSPITALS AT PAPWORTH

To the left is the Bernhard Baron Memorial Hospital, right centre the Hall, and in the centre distance the Princess Hospital for Women. The Surgical Block now occupies the space to the left of the Women's Hospital.

REPORT OF THE COMMITTEE OF MANAGEMENT.

During 1937 there were two events of considerable importance to Papworth. The first was the Festival Dinner, held on 20th April, when His Royal Highness the Duke of Kent, our President, presided; and the other was the Empire Conference on the Care and After-Care of the Tuberculous.

It is our pleasure and privilege to record here our deep sense of indebtedness to His Royal Highness. Thanks to him, the dinner was well attended, and it was with great enthusiasm that those present received from His Royal Highness the news of the splendid gift towards the Home for Tuberculous Nurses promised, then and there, by Sir Edward Meyerstein, to whom Papworth will ever be grateful.

This splendid Home has not yet been formally opened, but already it has been brought into use and a number of ex-patient nurses are in residence.

The next event was the Conference, which began on 3rd May, at the new Conference Hall at Overseas House and ended with a visit to Papworth on 7th May.

Those whose gifts have gone to the building up of this scheme may perhaps not realise the remarkable extent to which the Settlement has become a centre of interest for medical opinion abroad. This interest has for many years taken the form of visitors and letters of enquiry. There are few days that pass without someone from over-seas coming to visit the Settlement; and never a day without a letter from somewhere asking for information and Reports. All the visitors are welcomed and all the letters are answered willingly and with gladness. We do this because it is yet a further way in which the goodwill that prompted many to give gifts to build Papworth can be acknowledged and extended to fellow workers in other countries.

Their Majesties' Coronation was an occasion for rejoicing and thankfulness. Surely there was some way in which Papworth could humbly show thanks to Their Majesties for their gracious and unceasing interest ?

Remembering the many hundreds of tuberculosis workers in our Dominions and Colonies, a simple invitation was sent to the effect that if any could come to London at this time they would be given a sincere welcome. It was suggested that this was an occasion when workers over-seas might care to discuss mutual interests with members of the services fighting tuberculosis in this country. Further, it was suggested that this period of thanksgiving might well be used to discuss the welfare of the millions within

THE MAIN ENTRANCE TO PAPWORTH HALL, THE ADMINISTRATIVE BLOCK

the limits of the British Commonwealth who live under the shadow of the disease.

This was the form that Papworth decided upon as its token of gratitude. Thanks to the interest and enthusiasm of that pioneer of English-speaking good fellowship, Sir Evelyn Wrench, the Conference was held. Sir Evelyn gave freely of his experience and good counsel. He put staff, offices and the beautiful new Conference Hall of the Overseas League at the disposal of those interested. He came into partnership with Papworth and made the venture a practical reality.

Every anti-tuberculosis association and organisation in the United Kingdom was invited to send representatives to meet anti-tuberculosis workers from over-seas; every British Possession was invited to send a delegate. All sent freely those who could best give a picture of the tuberculosis work in their own country.

His Royal Highness the Duke of Kent was Patron of the Conference and at the first session—over which Lord Willingdon presided—the proceedings were opened by the Minister of Health (the Rt. Hon. Sir Kingsley Wood, M.P.). His address was followed by papers read by Sir Arthur MacNalty, the Chief Medical Officer of the Ministry of Health; Major - General Sir Cuthbert Sprawson, Director-General of the Indian Medical Service; Dr. R. E. Wodehouse, Deputy-Minister, Department of Pensions and National Health at Ottawa; Dr. Pringle, representing the Transvaal Chamber of Mines; and Professor Lyle Cummins, of the Welsh National School of Medicine. All these papers were of unusual interest, so that when Lord Dawson of Penn took the Chair at the afternoon session there was a large and keen audience.

Subsequent sessions were equally well attended and in every case the respective chairmen—Lord Horder, Lord Allen of Hurtwood, Lord Goschen and Professor Lyle Cummins—presided with such distinction and ability that at the close of the Conference the organisers received many warm expressions of congratulation.

The final seal of success was set upon the project by the gracious act of His Majesty's Government in holding a Reception for the members of the Conference.

Thanks to the whole hearted interest of The Minister of Health; to the help of his lieutenants Sir George Chrystal and Sir Arthur MacNalty; and to the Patronage of the Secretaries of State for the Dominions, Colonies, and India, the Conference which was conceived as a simple but useful token of good-will received the dignity which derives from high authority.

The whole of the proceedings were reported in extenso in the July, 1937, issue

THE BERNHARD BARON MEMORIAL HOSPITAL FOR MEN

of the British Journal of Tuberculosis, whose editorial on the subject summarised the results of the Conference in these terms :—

In the history of tuberculosis such a conference has never before been held, and those who were able to attend and those who have read the papers here published must have found much that is new, and can hardly fail to appreciate the importance and magnitude of the tuberculosis problem as it affects not only this country but the British Empire and indeed the whole world. So great is the problem that its very elements cannot be grasped by anyone who confines his activities to his own little sphere. There are countries or even districts where tuberculosis has been a big problem but is now under control; there are others where it is still rampant; and, again, others which are free from tuberculosis as a serious menace, but where from experience one can expect its ravages to begin. Tuberculosis as we see it in this country is a problem different in many respects from the tuberculosis in certain overseas districts, and in their turn those abroad see manifestations which are unknown to us.

The opinion that tuberculosis must be considered from the broadest possible angle has been growing apace, and a resolution was passed that there should be formed an organisation to consider the problem—an Empire gathering at which experiences and ideas could be pooled, and not one at which any one unit would take the lead. The whole object of the recent Conference was to obtain the views of all the delegates and to try to correlate the various difficulties of one community with those of another. There should be no central council or committee to dictate: such an idea is fundamentally and utterly opposed to the idea of exchange of views. What was proposed and carried unanimously by the delegates at the Conference was the idea of a representative organisation to consider and discuss the problems of tuberculosis as it affects the various units of the British Empire. This Conference was an unparalleled success, and there is little doubt but that we in England have learned from it more than we have taught.

The concluding sentence quoted here may be a surprise to some; but the truth is that it would be an error of the first magnitude to assume that this country has little to learn on the subject of tuberculosis. The Conference amply demonstrated the necessity for a pooling of knowledge and it is to be hoped that the impetus given to Imperial co-operation in this sphere will lead to an improvement in the organisation and conduct of the anti-tuberculosis campaign throughout the world.

Papworth's significance in this campaign lies in its demonstrations in the clinical

THE PRINCESS' HOSPITAL FOR WOMEN

and economic fields and in its potentialities for research. In all directions pressure is put upon the Settlement—more sufferers seek admission, more patients seek permanent employment and settlement, more avenues for profitable research open in new and interesting directions.

To meet this pressure a new Travelling Goods Factory has been put in hand and it is hoped ere long to proceed with a Preventorium, a new School, a new Men's Hostel and further Cottages; but this programme will absorb some £80,000 so that it may not be completed until 1939 or later. Meantime, so long as shortage of capital remains acute, men and women who might have settled at Papworth will be compelled to return to unsuitable home conditions, where they may very possibly spread the disease; their families will be confronted with the problem of providing for an unemployable and probably infectious invalid in their midst; and the school and laboratory accommodation at Papworth will remain insufficient.

The Papworth Hospital Guild and the Matron's Welfare Fund have continued their excellent work and the various Papworth organisations—the Horticultural Society, Boy Scouts, Girl Guides, the Sports Clubs, etc.—have maintained their beneficent activities. All concerned have worked together with their usual enthusiasm, and the Committee desire to record once again their appreciation and thanks to the donors and subscribers, to the Honorary and Executive Staffs, and indeed to all whose efforts have contributed so splendidly to the progress made during 1937.

ELIZABETH GORDON.

THE NEW ANNEXE TO THE BERNHARD BARON MEMORIAL HOSPITAL

REPORT OF THE MEDICAL DIRECTOR FOR THE YEAR 1937

The year 1937 saw an increased rate of progress at Papworth. It was necessary to expand in many directions, for as the facilities for the employment of the sub-standard man and woman at Papworth become more widely known throughout the land, applications for admission increase. To meet this demand, Papworth still needs the help of many donors. It does not require any charitable aid for ordinary running expenditure. But there is constant pressure to provide new accommodation; so many men and women are anxious to come to Papworth for treatment and eventually to have an opportunity to earn their living; new cottages, new workshops, new chalets are required, and without money these cannot be provided. And provided they must be, if patients now under treatment are to have any hope of becoming citizens once again—i.e., employees of the Papworth Industries resident in the village.

If the mortality rate in the village were high, and vacancies were thus created for new settlers at frequent intervals the need for fresh capital would be less acute, But, fortunately, one of the results of our scheme is that it greatly increases the " expectation of life," so that vacancies do not often occur and the village is forced to grow if it is to continue to do its job.

This process of growth is not simple. It does not only mean a few extra cottages and a few more machines. It means in the first place an organisation to secure the supply of capital in the only way now open to us—i.e., charitable gifts. It means the erection of new buildings, and the selection and purchase of new machines, all this work being controlled by the personnel trained at Papworth. It means that the sales must be increased so as to absorb the increased production, and it may mean new roads, new drainage schemes, a new school, and increased water supply, and so on. As the number of inhabitants increases, so has the entire village to increase, and this process of growth thus affects almost every department of the work.

It is interesting to observe the operation of this process and how, provided that the fundamental principles are adhered to, the scheme works out its own development. There is, however, one factor beyond our control, and that is the supply of capital.

A WARD IN THE NEW ANNEXE

Once this is supplied, Papworth can do the rest, but unless it be supplied the scheme slows down and completely loses its power to help new cases.

* * * *

I have referred to certain fundamental principles, and in past years in this report have drawn attention to them, but since many who read this may not know what those principles are it may be well to re-state them here. They have in no way been amended since the scheme began. Their application is on a larger scale than, in those early days, we dared to hope; but the principles themselves remain unchanged. They may be summarised as follows :—

1. It is useless to treat a tuberculous patient without reference to his economic situation.

(It is no good telling a working man to get light work in the open air, and plenty of good food, when he is unskilled, or his trade is one in which hard, manual work is essential).

2. The family, and not the patient alone, is the unit to be dealt with.

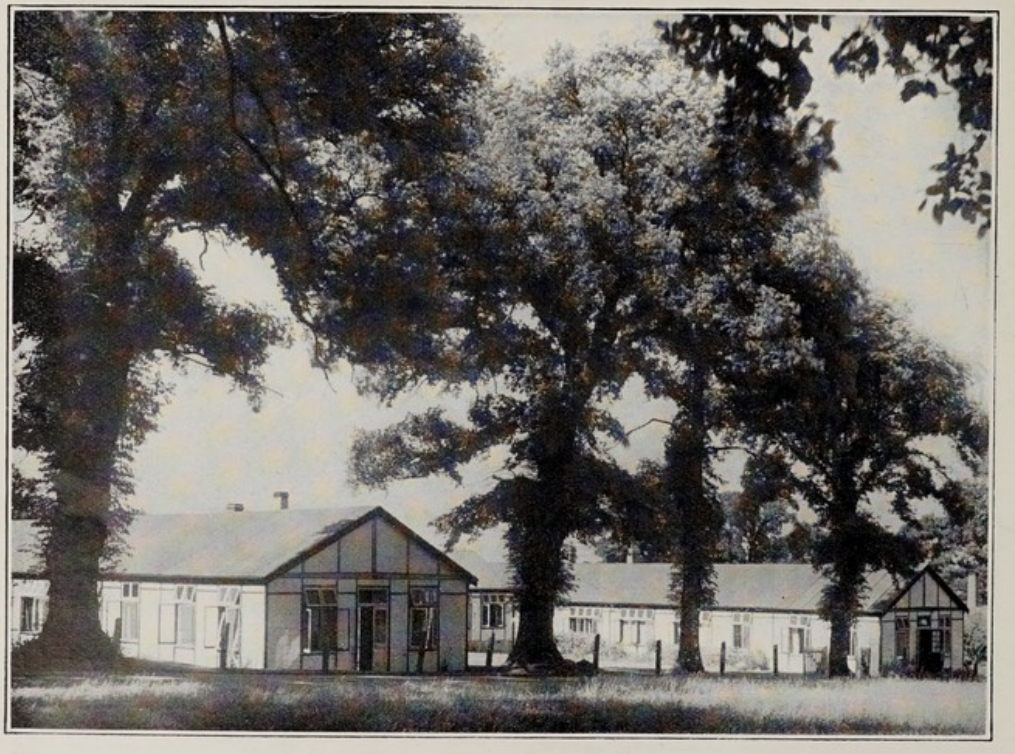
(Tuberculosis requires in most cases prolonged treatment, followed by " after-care." Patients with dependents will often voluntarily terminate treatment in sanatoria greatly to their own detriment, in order to return home so as to look after their families. To care for patients while ignoring their families is therefore in most cases a waste of money and effort).

3. Tuberculosis is a fluctuating disease, and middle or advanced cases are permanently sub-standard.

(A patient with a cavity in the lung is just as disabled as a man with an amputation. The damage is not visible, but it is there. For such a person to attempt to work on the same terms as fit men is to court disaster, because although the sputum may be negative for weeks on end, it may suddenly and without warning teem with bacilli. Thus not only is the patient liable to breakdown, his " contacts " are in danger of mass infection).

4. Permanent after-care, in circumstances enabling good wages to be earned and normal family life to be resumed, is essential for those who are rendered permanently sub-standard by the disease.

(This principle is self-explanatory and is the obvious corollary of those preceding it. It is useless to devise a scheme which excludes the possibility of normal family life, for only freaks would take advantage of it).



ST. MARY'S HOSTEL FOR WOMEN

The principles immediately following are concerned mainly with the management of industries employing sub-standard personnel.

5. Every position, from that of the General Manager downwards, must be open to a disabled man or woman, fit personnel only being introduced in positions requiring technical knowledge or physical strength when no disabled man possessing that knowledge or strength is available.

(If fit men occupy all the best jobs, it destroys irretrievably that essential enthusiasm amongst the sub-standard personnel without which enormous losses are likely to be incurred. Intelligent sub-standard folk will refuse to take advantage of a scheme under which there is no prospect of " getting on," for ambition is not killed by the disease. Show such people a chance of a new and progressive career, and they will co-operate wholeheartedly in making the scheme a success).

6. Each industrial department should be built around a personality.

(It is a mistake to force patients into new jobs if there is a possibility of their carrying on their old ones. Every department at Papworth has been built around a patient who knew, and was enthusiastic about, his own particular job. Select a good man who understands a trade, give him a reasonably free hand, show him that good results are expected, and in most cases he will " deliver the goods.")

7. No visible element of " charity " must enter into the industrial departments, each of which must be made to feel that it has only itself to depend on.

(This is vital. Let it be clearly understood that every running expense, including depreciation, must be met out of revenue from sales. Once allow the " charity " element to enter into the industrial departments and a spirit of " laissez faire " will develop and enormous losses will ensue. Furthermore, sales are hindered, and not helped, if an element of charity is introduced).

8. Hours of work must be prescribed by a medical man who must satisfy himself by physiological tests in each individual case, and when this is done should not otherwise intervene in industrial matters.

(Few medical men are trained in commerce. In general, therefore, the medical staff would be well advised not to interfere with the management and policy of the industries. The patients, and ex-patients, probably have been trained in commerce or industry, and provided that they do not overtax their physical and mental strength

THE DINING ROOM AT ST. MARY'S HOSTEL

they are best left to manage such matters themselves).

9. Industries thus constituted should not be expected to bear the cost of interest and amortisation of capital.

(If the sub-standard men could work eight hours a day at full speed, they would not be sub-standard and would be capable of holding down jobs in the outside world. The man or woman whose industrial efficiency is permanently impaired by tuberculosis—or any other accident or disability—is, however, unable to work a full eight hour day. Most of them can only work six hours a day as a maximum. As a result they cannot earn profits sufficient to meet capital charges though they can produce enough to meet every other expense—their own wages, cost of materials, management expenses and selling costs—provided that the organisation is on the right lines. It is, of course, far cheaper, and far better in every way, to provide the capital and enable sub-standard people to earn their own keep than to maintain them indefinitely in idleness.)

10. Sales must govern production, since it is disastrous to manufacture what will not sell.

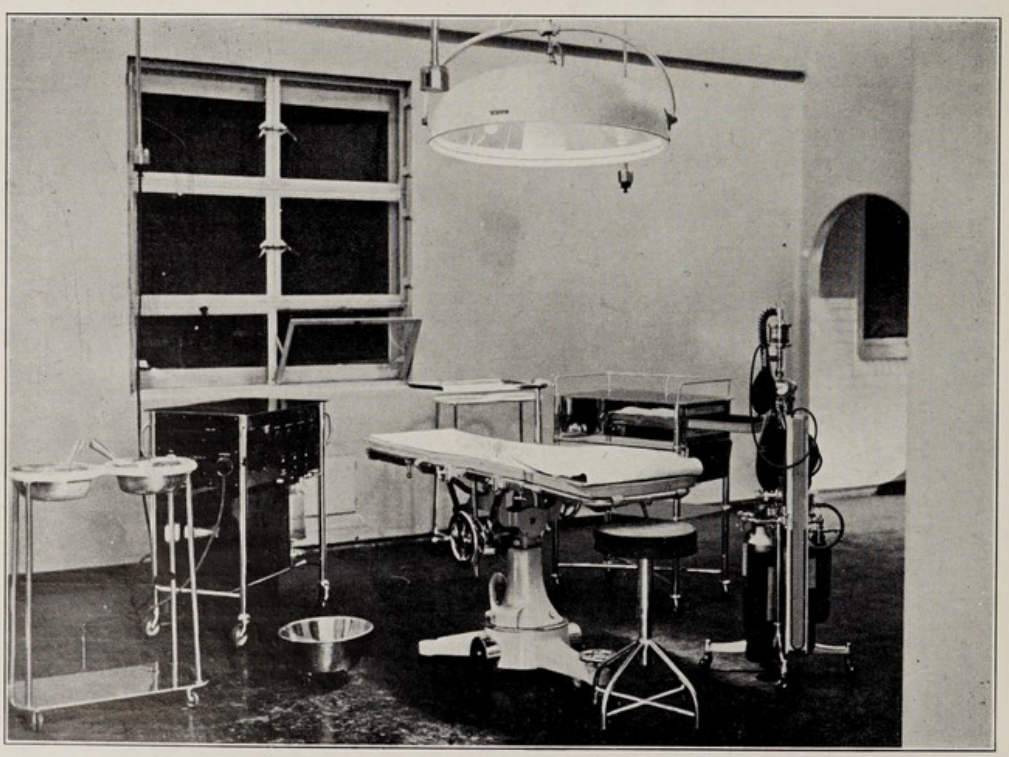
(This elementary principle is sometimes lost sight of. The whole development of any business depends ultimately upon the sales department. Therefore the goods made must be in demand, they must be of the right sort, of the right pattern and at the right price. "Arts and Crafts" are rarely any good. Few patients are skilled handicraft workers, fewer still are real artists, and hand-made articles, if not superb of their kind, are a drug in the market. The patients clearly understand this, but it is not always clearly understood by those who have charge of them).

11. Machinery compensates disability: therefore mechanise to the maximum.

(Most patients are accustomed to working with machines, or handling machine-made products. Further, machines will work just as well for sub-standard workers as for fit workers. Therefore machines should be used wherever possible to (a) minimise effort and (b) increase output and so (c) reduce costs).

12. The disabled are not brainless.

(It is too often assumed that because a man or woman is ill, he or she has no sense. In point of fact, many disabled people have lively minds and quick intelligence. Any scheme requiring their co-operation must therefore allow scope for the exercise of brain as well as body. It is a step back to the mentality of the middle ages to assume



THE OPERATING THEATRE IN THE SURGICAL UNIT

that sick people have no ability and the essence of the Papworth scheme is to allow the sub-standard men and women to use to the full their capabilities for their own benefit).

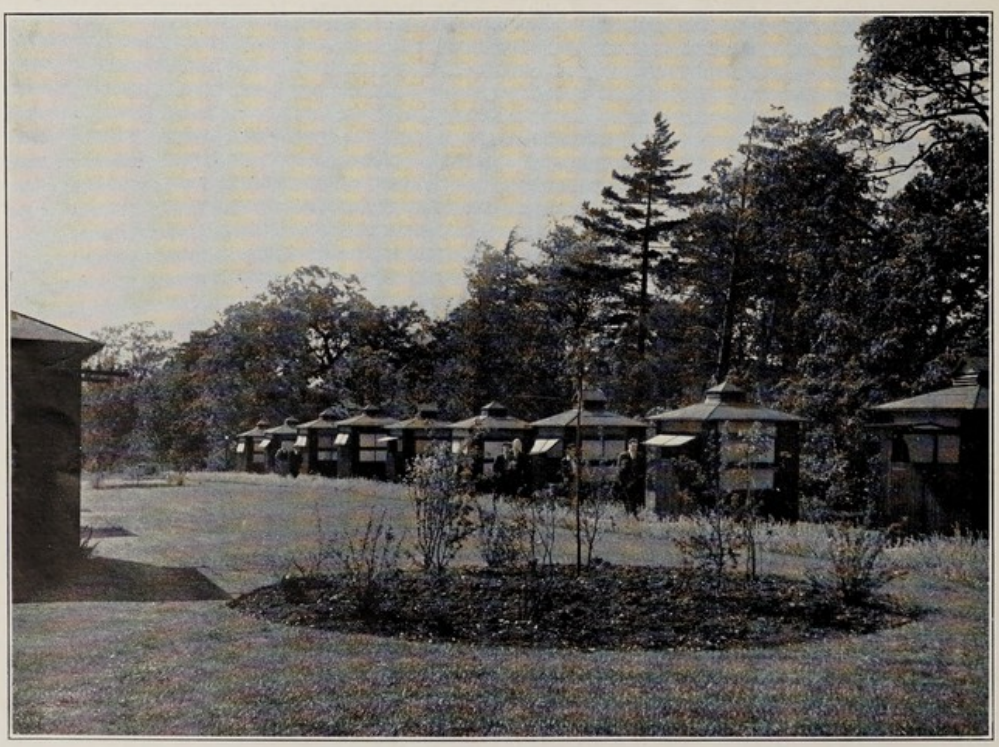
It will at once be seen that these principles represent simply the application of elementary common-sense to the needs of the patients. Unfortunately, however, they involve a departure from the traditional practice whereby things medical are apt to be dissociated from things social and things economic. The training of a medical man or woman leads to concentration upon clinical and X-ray signs; upon physical manifestations of one kind or another; upon psychological complexes explicable only in technical terms. Even if, as is often the case, a doctor realises that the condition of a patient is due very largely to wrong environmental factors, it is no part of his training to seek to alter those factors. His function is limited to prescribing and advising : and too often the advice, though excellent, cannot be taken, with the result that the prescription, even if taken fails to cure.

Papworth has endeavoured to break down this dissociation and to organise every factor to suit the patient *and his dependents*. The whole problem of tuberculosis has indeed been studied here not exclusively from the medical point of view but very largely from the angle of the personality of the patient. The consequence is that there is no conflict between treatment and environment : the one is harmonised with and therefore assists the other, to the great advantage of all concerned.

What are these advantages ? To the patient they are obvious enough. He (or she) becomes self-supporting again. There is, therefore, no anxiety neurosis engendered by the fear of unemployment, and the healing process proceeds without psychological embarrassment. His life is prolonged, and filled with normal human interests so that many of his aspirations become capable of fulfilment.

To his family the advantages are almost equally obvious. Their chance of contracting the disease is enormously reduced and they are freed from the desperation inseparable from the conjunction of poverty with a long, disabling illness. Illness leads to unemployment; unemployment to short commons; short commons to malnutrition; malnutrition to lowered resistance; and lowered resistance to the contraction of the disease. Thus may tuberculosis spread through a whole family, when the disease prevents the breadwinner from winning bread.

To the general community of the healthy, the advantages are less obvious but none the less considerable. By means of the Papworth scheme, patients who would otherwise have become permanent charges upon public funds or private charity are set to work again and



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

rendered wholly or partially self-supporting. Further, their families are well protected against the disease so that additional expense in treating new cases is avoided. These represent the financial advantages; and there is this enormous personal advantage, that tuberculous people voluntarily and happily segregated at Papworth do not spread infection. **Every patient who becomes a settler at Papworth thus represents a twofold economy—a reduction in public expenditure and a reduction in public risk.**

There is yet another advantage in the scheme from the public health point of view. It provides unique facilities for the study of tuberculosis resistance factors. Here at Papworth there are over 350 patients, and more than 200 settlers, all suffering from tuberculosis; and living side by side with them are another 500 people who are free from the disease, and *remain so from year to year.*

Why ? Why is it that they do not contract the disease ? There must be a reason. We say it is because the environment is right : because everyone has a sufficiency : because the advice of the medical profession with regard to the prevention of disease can be put into practice. But there must be at work some mechanism, probably of a physico-chemical nature, which is the active focus or principle of resistance. How does that mechanism work ? Here it is, working before our very eyes—and for lack of money our efforts to discover and explain it are starved and limited.

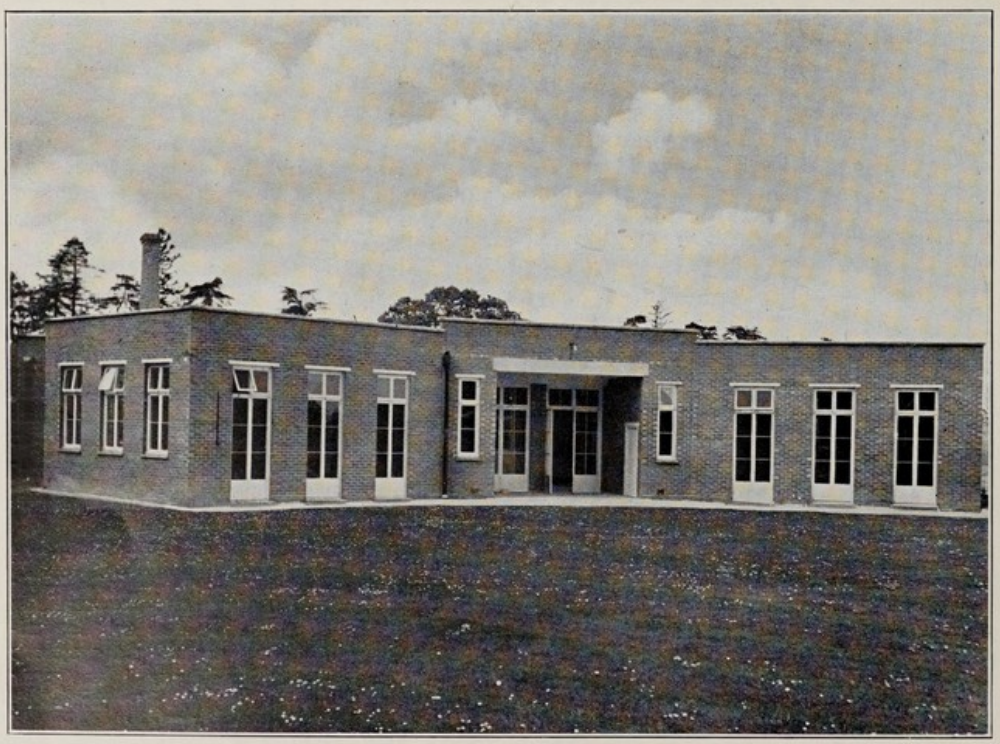
Towards the end of the year the new Home for Tuberculous Nurses was unofficially opened; that is to say, we started to admit nurses with tuberculous disease who, having had treatment, were in a sufficiently stabilised condition to take up modified duties on our nursing staff.

From that day to this applications have poured in and the Home is now being steadily filled up with women who are returning to their work under ideal conditions and are maintaining their health.

Nurses from England, Scotland, Ireland and Wales are in residence. We fear that the Home will soon be filled up and when that occurs, we hope the example set at Papworth will be followed by similar institutions in other parts of the country.

* * * *

During the past year or two the possible relationship of a " zinc diathesis " to tuberculosis resistance factors has been carefully studied, and in the course of this investigation certain most interesting suggestions have emerged. Indeed, our investigator (Dr. D. Barron Cruickshank) in his book, " Tuberculosis, Cancer and Zinc ", ventured to conclude that there may be a pathogenic bacteriophage, indigenous to the tubercle



THE DINING AND RECREATION ROOMS IN THE SOUTH PARK

bacillus, which, itself an enemy of tuberculosis, succeeds in subduing that potential disease only to cause cancer at a later date in the same individual.

In studying the biology of zinc, it was found that here was a possible clue to the curiously exact relation between the cancer and tuberculosis mortality already noted by Dr. Cherry. Every year cancer and tuberculosis account between them for 20% of the total mortality at all ages over 25. As tuberculosis declines, so cancer increases; not haphazardly but in almost precise compensation. This phenomenon powerfully suggests the existence of a link between the two diseases ; and Dr. Cruickshank felt that this link might be a bacteriophage whose activity was to some extent controlled by the zinc content of the tissues. It has been generally assumed that phages are non-pathogenic; but there seems to be no reason why some varieties should not be pathogenic. It is notorious that tuberculosis is the enemy of the young, while cancer usually attacks the middle-aged and elderly; and it is almost equally well-known that the zinc content of the tissues, highest in the embryo, falls during early years and rises in later life. Again it is known that rats, goats and dogs—all of whom are refractory to tuberculous infection but susceptible to cancer—originated in zinciferous districts, whilst guinea pigs and apes—who derive from territories where no zinc is present in the soil—are susceptible to tuberculosis but resistant to cancer. Zinc therefore appears to oppose tuberculosis but to favour cancer.

Bearing these considerations in mind, is it unreasonable to suggest that in cases where invading bacilli have been lysed by the phages, those phages lie dormant until enlivened by the increase in the zinc content of the tissues —an increase specially notable in the nuclei controlling the multiplication of cells ? The hypothesis seems to be worth further intensive study since, if correct, it means that cancer and tuberculosis are different diseases but their causative agents interlock.

* * * *

Such, then, is Papworth : a centre for medical and surgical treatment, situated in a village where some of those whose active treatment is concluded can engage in congenial work in an environment allowing the fullest expression to their aspirations and personalities; the whole organisation providing a unique field for the study of every factor bearing upon the cause and cure of tuberculosis. Its work is never-ending; each year more and more opportunities for service present themselves, and are seized whenever funds permit. The following reports of those responsible for the various departments indicate how their respective activities have developed during 1937.

THE PRINTING AND BOOKBINDING DEPARTMENT

REPORT OF THE RESIDENT MEDICAL OFFICER

(Dr. L. B. Stott).

The year 1937 saw the construction of the Annexe to the Bernhard Baron Hospital. This building constituted a long desired refinement to the administration of the medical services at Papworth. It has provided ten hospital beds for the sanatorium section, ten beds for the orthopaedic department; two beds in a completely equipped isolation block, and three rooms for the various medical officers' clinics.

Whenever we have occupied a new building we have invariably asked ourselves how we managed without it, and the new wing has been no exception; indeed, it was occupied before its evacuation by the builders. The isolation block has been used for the isolation of diphtheria and also for the accommodation of a casualty, and it is at once obvious that the casualty ward thus provided will be a most valuable addition to our Out-Patient Department.

The patient with diphtheria referred to returned from Christmas leave to develop the condition within a few days and was actually notified as suffering from an infectious disease in 1938.

VILLAGE

During 1937 there was a complete absence of infectious disease in the village and no epidemics among the children other than influenza and febrile colds, for which 35 children were furnished with certificates for the purpose of exclusion from school.

Among adults in the village the general level of health remained excellent. One married ex-Service man died; three unmarried boarders and one widower died in hospital, all from pulmonary tuberculosis. All these deaths occurred in patients who had suffered from chronic tuberculosis for many years.

Two deaths occurred among female relatives staying in the village with relations.

Four children were born in the village.

There were 6,210 attendances at the Out-Patient Department during the year, and 1404 minor casualties received attention.

THE MACHINE SECTION OF THE PRINTING DEPT.

COLLAPSE THERAPY

The number of patients receiving artificial pneumothorax treatment has increased so much that all medical officers now share in the work. The number of re-fills given during the year amounted to 1,320, excluding those given to patients confined to bed.

EAR, NOSE AND THROAT UNIT

This unit has again had the advantage of Mr. Walford's constant help. He made two visits to the institution in addition to his weekly clinics at Addenbrooke's Hospital where he has seen all ambulant cases.

ORTHOPAEDIC UNIT

Mr. Butler, Dr. MacCallum and Miss Willis have co-operated in this unit and Dr. Marienfeld has supervised the new beds added to the top floor of the men's hospital.

OPHTHALMIC UNIT

Mr. Recordon has attended the Bernhard Baron Hospital at intervals and attended fifty patients.

THE LEATHER TRAVELLING GOODS FACTORY

DEPARTMENT OF RADIOLOGY

Bernhard Baron Memorial Hospital

X-ray Photographs	1,122
Screen examinations	2,167

Included in the above figures are—

148	photographs for	Hunts. County Council.
60	,,	of hospital and general staff.
82	,,	of children of school age.

Reduced prints of X-ray photographs	418
Photographs for Advertising (Industrial photography)	200
Prints from above	800

The great majority of the industrial work was taken over in November by the newly formed Industrial photographic department, under the direction of the Industries.

Surgical Unit, Vaughan X-ray Dept.

X-ray photographs	204
Screen examinations	354

THE SURGICAL UNIT

Since the death of Mr. H. P. Nelson, the operative work has been carried out by Mr. J. B. Hunter and Mr. R. C. Brock, with the assistance of Mr. T. Holmes Sellors at times.

During the year the following operations were performed :—

Phrenicectomy	5
Thoracoplasty (on 8 patients)	12
Thoracoscopy	7
Bronchoscopy	4
Extra-pleural pneumolysis	3
Rib-resection	3
Miscellaneous	9

At the beginning of the year a cyclopropane and oxygen machine (Brompton Hospital pattern) for anaesthesia was installed, and has been very satisfactory.

Several excellent results have been obtained with thoracoplasty, especially with that type of case showing chronic fibro-caseous tuberculosis with a medium-sized cavity in one upper lobe and in which artificial pneumothorax had failed owing to adhesions. Another patient had had a left-sided artificial pneumothorax abandoned two years previously on account of hydro-pneumothorax, and ever since that time had been a bed-ridden invalid with continuous cough, sputum and haemoptysis. She had a total thoracoplasty in the summer of 1937 and is now (February 1938) greatly improved in general health, has but a trace of cough and sputum, which is negative for tubercle bacilli, and has begun to do a little work on the special staff.

Thoracoscopy continues to be done by the double puncture technique, as this gives very satisfactory results.

THE NEW TRAVELLING GOODS FACTORY

REPORT OF THE DENTAL DEPARTMENT

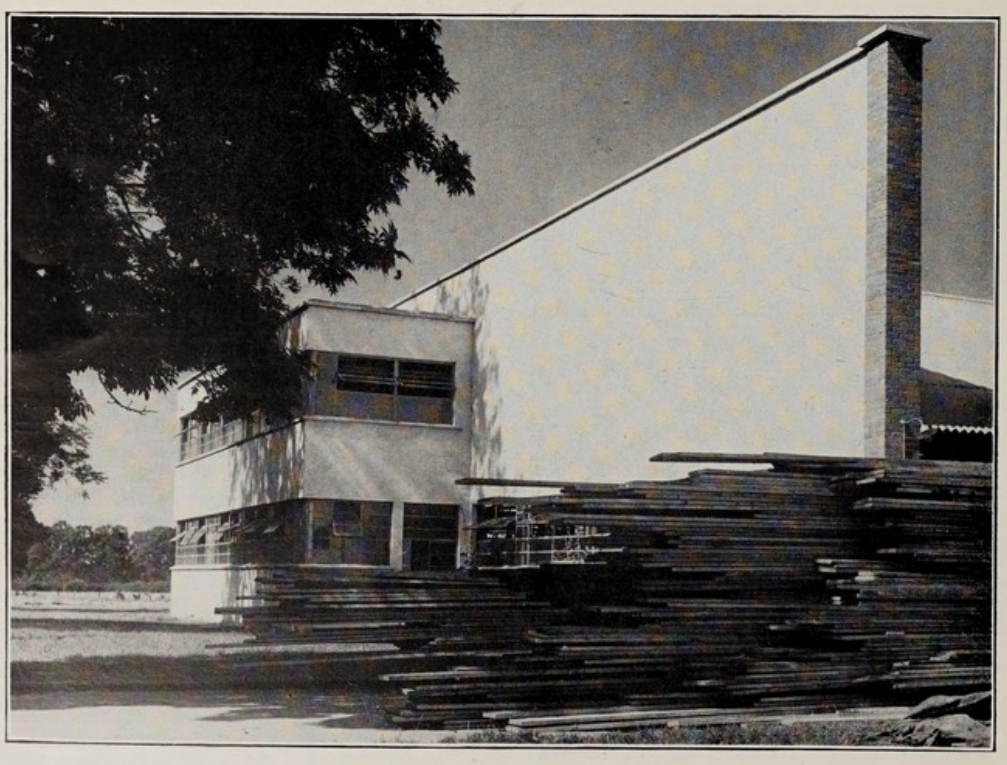
(Mr. W. B. Grandison).

Number of Sessions (two special sessions included)	48
Number of Attendances (plus children for Vitamin C research)	941
Number of Fillings	225
Extractions	815
Scalings	52
Teeth treated with Nitrate of Silver	102
Cauterisations	26
Dentures supplied	91
Denture Repairs	30
Other Operations	161

In all operations necessitating either filling or extractions, anaesthetics are used, generally regional anaesthesia because of the satisfactory nature of the material which both eliminates pain and permits of a careful and slow extraction. This latter is particularly valuable in the case of difficult teeth, which are by no means infrequent in patients showing improvement in health, due no doubt to deposition of calcium in the bones surrounding the teeth. General anaesthetics are, on occasions, employed and these take the form of gas and air and oxygen or Evipan. Evipan, curiously enough, is very popular with patients. I say "curiously enough" because in our short experience, one has the impression that "never again" would be the answer to any question raised. In most, if not all cases, recovery is very slow indeed, but the sensation caused by the drug together with the fact that any pain is out of the question must be the reason for its popularity. Evipan, however, lowers blood pressure considerably and in consequence cannot be without danger. Nitrous oxide, on the other hand, increases blood pressure and in consequence could also be a source of danger, so much so that medical recommendation is an essential to its use.

Research is being carried out into the effects of Vitamin C, not only on the teeth and associated parts, but also in the general health of some 20 children who have their homes in the village, and one or two comments may not be out of place now. Lady Mellanby established that Vitamin D administered during the developmental stage of a tooth will improve the structure of the enamel, and, further, even when a tooth has erupted, the progress of dental caries is definitely retarded. We cannot yet make any such claim regarding Vitamin C but the gums and mucous membranes generally appear to be improved by its administration. Again it has been noted that the children appear to have more vitality, escape colds apparently and in general appear to offer a greater resistance. The experiment has just over one year yet to run and it is hoped that facts will emerge which, be they positive or negative, will be interesting.

Dr. Cruickshank has been supplied with many teeth both of healthy and tuberculous patients, and his analysis of these teeth has produced a table in graph form which is by no means without interest and importance.



A VIEW OF THE CABINET-MAKING DEPT.

REPORT OF THE PATHOLOGICAL AND BACTERIOLOGICAL DEPARTMENT

(Dr. W. Pagel).

I. Bacteriological Department

(1) The studies on the type of the tubercle bacillus occurring in sputum, urine, pleural effusion, pus, etc., have been continued. Two cases of bovine tuberculosis, one pulmonary and one intestinal were detected.

(2) The suitability of various culture media and methods for recovering the tubercle bacillus from human material was examined.

II. Serological Department

Investigations on the ability of the serum to retard the growth of tubercle bacilli in vitro were continued with special regard to the role played by clinical activity and to the question whether the bactericidal power is due to a specific antibody. The number of examinations has been greatly increased and almost all extrapulmonary cases in the institution have now been examined in conjunction with a clinical survey made by Dr. Marienfeld. In addition, the bactericidal power of the blood of tuberculous and normal children was examined in conjunction with Dr. Norah O'Leary, first at Highwood Hospital, and then at the Cleaver Sanatorium, Heswall, near Liverpool.

Other serological tests for tuberculosis have been carried out occasionally. Specimens were also sent by Dr. Clifford Hoyle, of Brompton Hospital, and Dr. Robert Steen, Trinity College, Dublin.

III. Morbid Anatomical and Histological Department

34 necropsies, mostly on cases of tuberculosis were performed and followed up by careful histological examination.

Special attention was paid to the pathogenesis of the individual case by careful search for old lesions and comparison of the anatomical findings with series of skiagrams. The material offered an opportunity for special studies in conjunction with Dr. Simmonds of Clare Hall on the peculiar lung lesion found in extrapulmonary tuberculosis, such as the protracted miliary tuberculosis restricted to the cortico-pleural parts of the lung and the haematogenous spread with emphysema; moreover the anatomy of early lesions outside the apex of the lungs was studied and in addition pulmonary diseases other than tuberculosis, e.g., bronchal carcinoma and pulmonary abscess with metastasis in the brain were investigated.

In all necropsies the micro-organisms in the organs, especially the spleen, were recovered by cultural methods and examined.

The question of the true anatomical nature of Epituberculosis was approached in conjunction with the late Dr. R. H. Fish, Physician to the Middlesex County Hospital, Harefield. The conclusion based on examination of new suitable material was that Epituberculosis i.e., a lesion subject to absorption without

THE ASSEMBLY SHOP: CABINET-MAKING DEPT.

caseation and liquefaction is due to a genuine tuberculous tissue reaction and not simply to atelectasis; epituberculosis may be combined with it, however, or atelectasis may cause the wrong clinical impression of Epituberculosis. Its underlying process consists in the formation of tuberculoid granulomata without caseation and tubercle bacilli. Experimental evidence was adduced for its interpretation as the reaction of allergic lung tissue towards the aspiration of dead or a few living tubercle bacilli occurring, e.g., after eruption of a tuberculous focus (pulmonary or glandular) into a bronchus.

We wish to acknowledge our indebtedness to Drs. F. A. H. Simmonds and G. G. Kayne for further most interesting material sent from Clare Hall for anatomical and histological investigation and to Dr. Dorothy Price, Physician to St. Ultan's Hospital, Dublin, to whom we again owe thanks for some precious specimens of tuberculosis in children.

IV. Experimental Pathology

(1) Work on the tissue reaction of various species towards the tubercle bacillus in tissue cultures as an expression of natural resistance was started in conjunction with Strangeways Research Laboratory, Cambridge, where the investigations are being carried out by Dr. Magda Pagel-Koll under the supervision of Dr. Honor B. Fell, to whom we wish to convey our grateful thanks for placing the facilities of her institution at our disposal.

(2) The experiments on the reproduction of the early lesion in adult human pulmonary tuberculosis have been continued. Special efforts were made to substitute the preparation of the animals with specific antigens by various non-specific agents, particularly peptone meat broth.

(3) The experiments on dissociation of hypersensitiveness and immunity have been continued. From the first results, the conclusion could be drawn that both phenomena are dissociable, i.e., that it is possible and desirable to produce immunity without hypersensitiveness. The same has been shown to hold good after variation of strength and virulence of infection. Moreover, attempts have been made at suppressing hypersensitivity and increasing immunity still more. This has been achieved by combining vaccination with heat-killed bacilli, with a treatment with various non-specific substances.

(4) Studies on experimental pathology and histology of allergic reactions other than tuberculosis have been continued in conjunction with Dr. Paul Kallos of the Institute of Medical Research, Stockholm. Arthus' phenomenon of local protein hypersensitivity, eosinophilic infiltration, myocarditis, muscular rheumatism, atherosclerosis and related conditions have been experimentally produced and investigated in various directions.

(5) The histological aspects of atypical tuberculosis in small experimental animals were studied, the material being kindly provided by Dr. A. Stanley Griffith (Medical Research Council and University of Cambridge). It was concluded that certain acidfast bacilli avirulent for the guinea-pig and rabbit may cause tissue reactions with the typical histological character of tuberculosis including caseation, provided that large numbers of the organisms are administered. The tissue re-

OFFICES OF THE CABINET-MAKING DEPARTMENT.

actions in guinea pigs and rabbits were compared with those obtained in mice, voles and goats with the same strains of acid-fast bacilli.

V. Demonstrations. The results of the studies outlined above were demonstrated in three meetings at Papworth Hall, which were attended by scientists, pathologists, doctors and students from Cambridge, Huntingdon, St. Ives and London. A large number of specimens, diagrams and lantern slides were shown, and a discussion on the clinical and scientific aspects of the subjects held.

Dr. Pagel was invited to read a paper on "Evolution of Tuberculosis in Man" before the Paedriatic Club at the Royal College of Physicians, Dublin, in October 1937. The paper met with particular interest by a large number of colleagues in Dublin, and several extensive discussions on the subject were held under the expert guidance of Dr. Dorothy Price.

VI. Scientific and routine examinations

Microscopical preparations	4,027
Bacteriological cultures	1,295
Animal injections	2,599
Bactericidal tests	300
Kahn tests	10
Blood counts	2
Widal tests	8
Blood groupings	12
Throat swab cultures	34
Urine cultures for tubercle bacilli	11
Sputum cultures for tubercle bacilli	50

VII. Photography

A list of the work done will be found in the tables. This list does not include the large number of diagrams and graphs prepared during the year for the illustration of original papers, etc.

Negatives	303
Photomicrographs	262
Lantern slides	362
Prints	1,171
Colour films	20

VIII. Papers published in 1937

(by W. Pagel).

Experimental Studies on Asthma Bronchale (with P. Kallos) *Acta Med. Scand.* 1937. xci. 292.

Reactivation of a Tuberculous Focus by Micro-Organisms other than the Tubercle Bacillus. *Lancet*, 1937, i, 1279.

Experiments on "Dissociation" of Allergic Hypersensitiveness and Immunity. *J. Path.& Bact.* 1937, xliv, 643.

Vitamin C and Infection. Influence of Infection on the Vitamin C Content of the Tissues of Animals (with J. L. Harris and R. Passmore). *Lancet*, 1937, ii, 183.

Immunity in Tuberculosis, *Therapie der Tub.*, 1937, ed. by Berberich and Spiro (Sythoff, Leiden), i, 105.

Pathogenesis, Morphology and Allergic Genesis of Healing Processes in Tuberculosis. *Ibid*, 137.

Anatomical and experimental findings as a result of Therapy, *Ibid*, 171.

Chronic Disseminated Tuberculosis (with F. A. H. Simmonds) *B.M.J.* 1937, ii, 556.

Evolution of Tuberculosis in Man. *Irish Journ. of Med. Sci.* 1937, 735.

(by F. Boot).

The Use of Oxalic Acid for the Cultivation of Tubercle Bacilli. *Lab. Journ.* 1937, vii, 588.

THE NEW MACHINE SHOP, CARPENTRY DEPARTMENT

REPORT OF THE BIOCHEMICAL DEPARTMENT

(Dr. D. B. Cruickshank.)

Routine Diagnostic Examinations

Such examinations, the general scope of which will be gathered from the tabular summary of the year's work, continue to form a considerable proportion of the duties.

Research Programme

(*a*) *Zinc.* In November 1936, Sylvester and Hughes introduced a new technique of micro-zinc analyses which offered decided advantages over the older methods. All work this year has been with this new method which brings such analyses within the scope of straight-forward laboratory routine. As applied to teeth the results are in quantitative agreement with the earlier analyses done in this laboratory, and it has now become possible to make a comparison of the zinc content of teeth from normal and from tuberculous subjects. The results so far obtained are in accordance with those demanded by the zinc hypothesis viz., that in tuberculosis there is an (hypothetical) defence mechanism which takes the form of an elevation of the tissue zinc levels.

(*b*) *Vitamin C.* Some experiments commenced last year have now been completed. Estimation of the urinary output of Vitamin C in 59 persons suffering from pulmonary tuberculosis and of 14 control subjects show that where the vitamin C intake is uncontrolled there is no significant difference between the average daily excretion of the "active febrile" "active and afebrile," "quiescent" and "normal control" groups. The coordination of this observation with earlier work on the same disease where the intake of vitamin C was standardised and where significant differences were observed, rests with the demonstration that in the Papworth series there existed a compensatory intake of Vitamin C correlating closely with the clinical condition of the subjects, being greatest for the "active febrile" group and least for the "normal controls."

Estimations of vitamin C excretion were also undertaken in connection with the Dental Research which is described elsewhere in this report.

(*c*) *Poultry Research.* This research is an interesting example of what can be done by co-operative research within the settlement and of the fruitful results obtainable from comparatively transitory assistance of casual staff. The research was suggested by Mr. Marshall, technical advisor to the Incubator department and conducted in this laboratory, the major part of the routine of the investigation falling to Mr. Hughes, a temporary member of the laboratory staff. It has been possible to demonstrate a hitherto unexpected function of the "cuticle" of eggs which plays a major role in the control of moisture losses—a vital function of chick development.

(*d*) Assisting Dr. Pagel in certain animal experiments.

THE ASSEMBLY SHOP, CARPENTRY DEPARTMENT

Ancillary activities

(*a*) *Milk.* As usual routine examination of the milk supply has been carried out. This was extended to a small piece of original research on the possibility of changes occurring in the phosphatase content of the pasteurised milk after storage in churns. It was shown that such changes did not occur. The point is one of considerable importance as the absence of these changes makes it legitimate to apply the phosphatase test (for efficiency of pasteurisation) to churn samples as received at Papworth.

(*b*) *Industries.* Occasional demands are made on the services of the laboratory for special tests; e.g., moisture content of wood, composition of paints, suitability of varnishes, ventilation of hen coops, etc. It is a curious fact that only in last year's report I suggested that " this aspect of the laboratory's activities might be usefully augmented if opportunities of increased staffing permit." Such an opportunity did arise during the current year and an account of a special piece of work undertaken will be found above under Research Programme.

Publications

(D. B. Cruickshank.)

1. The Natural occurrence of Zinc in Teeth. II—Some General Considerations. *British Dental Journal*, 1937, Oct. 1st.
(A paper read to the Public Dental Officer's Group on the occasion of their visit to Papworth on July 31st, 1937 during the Annual Meeting of the British Dental Association).

2. The Function of the Cuticle in Relation to the Porosity of Eggs. (with W. Marshall). *Journal of Agricultural Science*, 1938, 28, 24.

3. Histidineuria in Tuberculosis and the Application of the Kapeller-Adler Test for Pregnancy in Tuberculous Subjects, (with L. B. Stott). *Papworth Research Bulletin*, 1937, No. ii, vol. i, 81.

4. Tuberculosis, Cancer and Zinc : Chap. V. Therapeutic Implications, *ibid*, 122.

5. Zinc Content of Teeth in Tuberculosis, (Interim Results), *ibid*, 61.

6. Some Remarks on Vitamin C in Tuberculosis (with L. H. Feaver), *ibid*, 88.

Interdepartmental Memoranda, etc.

1. Annual and Interim reports on Milk Supply.

THE NEW VILLAGE STORES

Routine Examinations

Urines	799
Sputa	2,486
Urines) Examined for County (	1
Sputa) Office, Huntingdon (	87
Glucose in Urine, quantitative	19
Urinary Histidine	39
Blood Urea	6
Blood Sugar	14
C.S.F.	1
Blood counts etc.	14
Stomach contents	1
Other	85

Special Chemical Examinations

Vitamin C Urinary output	605
Vitamin C Urinary output (for Mr. Grandison's Dental Investigation)	76
Water Hardness (Softening Plant)	10
Milk (Phosphatase Test)	150
Zinc in Teeth	125
Other Zinc (Controls, Urine Faeces etc.)	155
Eggs (see " publications ")	122
Miscellaneous Analyses (Food, Drugs, Industrial material, etc.)	19

THE SIMS WOODHEAD MEMORIAL LABORATORY, SEEN FROM THE SURGICAL BLOCK

DEPARTMENT FOR CLINICAL AND INDUSTRIAL PHYSIOLOGY

(Dr. E. Brieger).

1. Industrial Physiology

This department has been established only recently after preliminary studies have been carried out during previous years. The department is now satisfactorily equipped with a complete gas-analytic laboratory, provision has been made for the use of the closed circuit method (fitted with a new type of spirograph), and the Krogh Ergometer has been installed for the performance of muscular work.

(*a*) *Routine Work.* Routine work has been carried out since January, testing all patients who are able to take exercise on admission. The aim is to establish for each patient a physiogram which gives an adequate picture of the patient's condition, prognosis, physical efficiency and mental ability. The physiogram is in the form of a tabulated chart which can be read easily by non-medical persons and is a document which can be produced at different intervals to demonstrate any change in the condition and efficiency of the patient concerned. This will give the Industries reliable information as to the patient's capacity.

(*b*) *Special Investigations.* Investigations will be carried out to analyse the environmental conditions of work in the Industries with the object of finding the optimum of conditions. A comparison between a unit method and radiator method of heating has been carried out in co-operation with the Building Department of the Papworth Industries.

(*c*) *Research.* Different lines of research will be followed. The affect of work on carbohydrate metabolism will be further investigated with the object of evolving the best use of carbohydrate in nutrition. The analysis of fatigue in tuberculous workers so far as physiological deficiency is concerned will be another line of investigation.

2. Clinical Physiology

Clinicians more and more appreciate the value of physiological tests before and during surgical treatment. Although decisions regarding surgical treatment should depend entirely on clinical reasoning the success of treatment may depend very largely upon the physiological efficiency of different functions. The choice of method and the extent of the surgical operation may be guided to some extent by physiological tests. (Vide *Klin. Woch.* 1933, No. 4, p. 153. E. Brieger).

THE NEW ESTATE, PENDRAGON HILL, FROM THE NORTH

(*a*) *Routine*. Here again the department has supplied the medical officer with valuable information for each case submitted to surgical treatment and a report is handed to the medical department giving the result of the tests.

(*b*) *Research*. There are many research problems undergoing investigation at the present time including (1) the investigation of the composition of the alveolar air in tuberculous patients by a fractionate analysis, in order to demonstrate the varying extent to which the diseased lung takes part in ventilation; (2) the analysis of pneumothorax gases in the different forms of pneumothorax in continuance of previous experiments reported in *Beitr. z. Klin. d. Tub.* 74. 6. 647, and *Verh. d. Deut. Ges. f. innere Med.* xliv Congress Wiesbaden 1932.

Publications

(by E. Brieger)

After-Care and Rehabilitation, *Brit. Journ. Tub.* 1937, xxxi, No. 4 (Special Supplement).

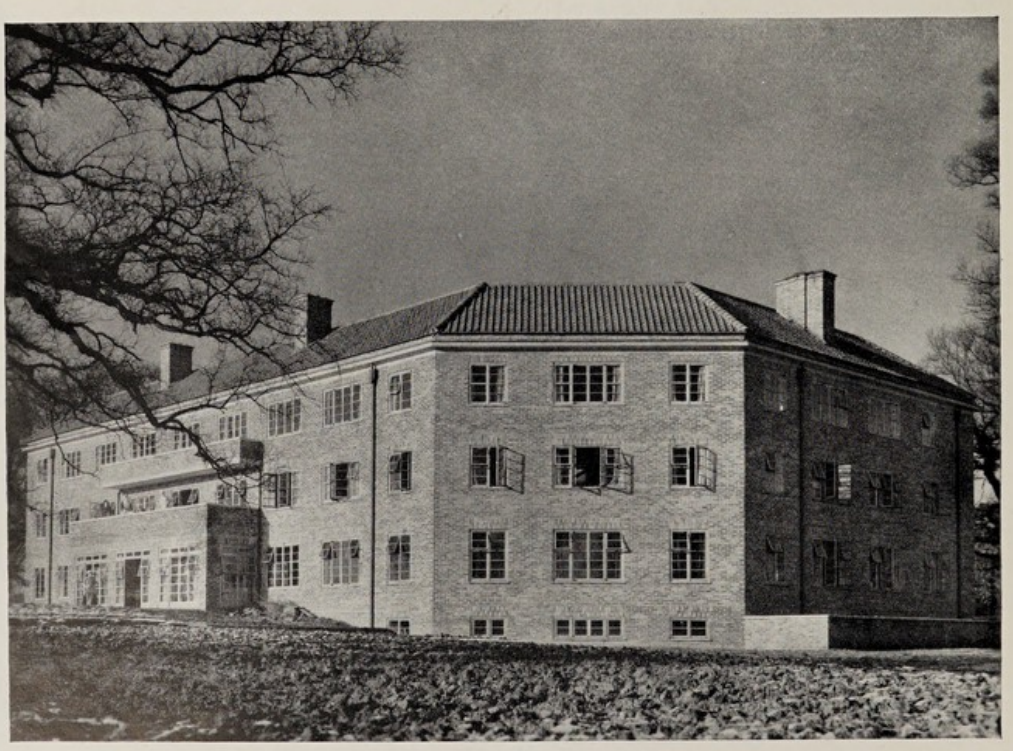
The Sociological Implications of Industrial Physiology When Applied to Industrial Workers, *Papworth Research Bulletin*, 1937, i, No. 2, 116.

Chemotherapie der Tuberkulose, *Therapie der Tub.*, 1937, ed. by Berberich and Spiro (Sythoff, Leiden), i, 258.

Klimatische Behandlung, *ibid*, 282.

Diatotherapie, *ibid*, 289.

Arbeitstherapie, *ibid*, 305



THE NEW HOME FOR TUBERCULOUS NURSES

PAPWORTH INDUSTRIES

Mr. B. Tallyn, *General Manager.*

It is gratifying to note that the Industries were able to maintain the steady progress which they have shown for the past five years, despite the fact that rising costs were coupled with very protracted deliveries of raw materials, and during the year the turnover reached the sum of one million pounds, the result of twenty-one years of trading. Personnel, of course, has increased. 43 patients were permanently settled during the year, bringing the total number employed to 210. Of these, 62 have been employed for over ten years, and just over half of this number have been with us for fifteen years.

It has been our policy to advance on the most modern lines and all the machinery now purchased is provided with self-contained electric motors, which allows for its more convenient installation and has eliminated an immense amount of manual labour. In 1937 over 100 machines and appliances were operated daily, over 100,000 units of electricity being consumed during the year.

At the present time a new Travelling Goods factory is being built which will give 30,000 square feet of workshop space, and when this is completed it is hoped that the extension of mass production and repetition work will greatly assist in an increase of opportunities for the employment of ex-patients.

As a matter of interest the Travelling Goods department during the year made over 30,000 pieces of luggage, which if placed end to end would stretch over 150 miles. Nearly 3,500 cow hides, 2½ million rivets, 30 tons of compressed fibre and four miles of linings were used throughout the year.

In the hardwood goods section considerable headway has been made and many more large purchasing authorities and hospitals have been added to our list of satisfied customers for hospital and institutional furniture.

Great progress was made during the year in the Printing Department. New machinery has been installed and the Department might well claim to be the most highly mechanised unit. Mechanisation, experience has taught us, is the only successful way of economically employing a disabled and unskilled personnel. During the year some 400,000 books were ruled, printed and bound.

A very important event during the year was the opening of the new Village Stores. The aim of the management has been to provide a thoroughly competitive and comprehensive service, and the new building provides practically everything which is normally required in a large village such as Papworth, besides housing the Papworth Everard Post Office. The building of this

THE LOUNGE OF THE NEW NURSES' HOME

Store was done under the direction of our own Building Department, which was started many years ago in pursuance of our ideal to be as self-contained as possible.

During the year the Building Department was responsible for the completion of the new Home for Tuberculous Nurses, the Bernhard Baron Hospital extension of 22 beds, and 9 pairs of cottages, whilst it was also engaged on the new Travelling Goods department and an extension to the Carpentry department. The labour for the heavy manual work is engaged from outside sources, but the department has a nucleus of 12 ex-patients.

In conclusion I am happy to report that a very good spirit prevails between the workers and the management. There is no doubt that this is largely owing to the great help rendered by the personal interest of the Managing Director and the members of the Committee, without which it would have been impossible to report such progress.

SOCIAL LIFE IN THE VILLAGE

It is an illusion often held by those who live in towns that the life of the country dweller must be dull and boring in the extreme, and that our villagers are not exempt from this state of affairs. A brief study of the activities of a normal family during the winter months will quickly dispel that illusion; to be replaced by the thought that whereas in the town one pays for one's amusement, in the country one makes it, thereby obtaining much more enjoyment without so much expenditure. Here is a typical week in November :

Monday. Eldest daughter—Social Club. Second daughter to rehearsal of pantomime.

Tuesday. Table-tennis tournament. Son to Scouts' meeting; father to billiards match.

Wednesday. Youngest daughter to Girl Guides' meeting; second daughter to rehearsal.

Thursday. Cinema show in Village Hall. All the family go.

Friday. Social Club, and rehearsals of pantomime. Son to Scouts' meeting.

Saturday. Dance in Village Hall, attended by mother and eldest daughter.

On Sundays, of course, there are the usual morning and evening services in the Parish Church and the Methodist Church (which also holds Sunday School in the afternoon) and morning service (fortnightly) in the Catholic Church. Here I would like to pay tribute to the work of the Rev. G. D. Shenton, our chaplain, whose visits to the wards are so much appreciated.

The great social event of the summer was the West Cambs. Flower Show, opened by Viscountess Hinchingbrooke on July 22nd.

EXTERIOR OF A PAIR OF HOUSES OF A TYPE NOW BEING BUILT ON PENDRAGON HILL

Blessed by fine weather, the show was a splendid success and brought many visitors to the Settlement. As a means of stimulating the interest of the villagers in their gardens, it has very great value, and provides much useful and pleasurable employment of their leisure.

All the clubs and societies in the Village flourish exceedingly and there is yet another newcomer, a Social Club for the young people of the village under 25 years of age. Last year's new formation, the Table Tennis Club, was successful in winning the Hunts. County Championship. Three members of our Scout Group attended the International Jamboree in Holland, forming part of the Cambridgeshire contingent.

There seems to be a revival everywhere of the desire to entertain, and be entertained by living artistes, as witness the growth of the village drama and Little Theatre movements, and Papworth is no exception to this. Stimulated by the visits of the Barclays' Bank A.D.S., and the Spring Grove Townswomen's Guild, the Social Club have formed a dramatic section, which is working hard at play production. The Papworth Players again gave their annual pantomime, "Dick Whittington and His Cat."

Coronation Day showed the unity of the Settlement in a remarkable way, everyone responding to the spirit of the day. Comic cricket matches, decorated cycle parades, sports, tea on the lawn, cinema show and dance—all were enjoyed to the full. The bed patients had a competition for the best decorated ward, special dishes for dinner, special cakes for tea, and everyone had a Coronation cup and saucer or beaker.

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Once again, in closing my report, I wish to express my thanks to all those kind friends who have gone to considerable trouble to help Papworth in an extra-ordinary number of ways.

To the Matron, Miss Borne, and to Dr. Stott, I take the opportunity of expressing my thanks for the unfailing help and support they have given me, and for their unremitting attention to the requirements of the institution. To the nursing staff for arduous duty well performed, and to the medical and administrative staffs, I offer my thanks.

To the General Manager and the employees of the Industries who have worked so loyally throughout the year I offer my congratulations on their efforts to keep the Industries on the right road in the employment of the tuberculous.

The help of the Honorary Staff has been invaluable throughout the year and I am most grateful to them for their support.

Lastly I desire to express my grateful thanks to the Committee, whose help has been so valuable and becomes increasingly so from year to year. With their support I am sure the future may be faced with the utmost confidence.

PENDRILL VARRIER-JONES.

Matron wishes to add her special thanks to the many friends of Papworth who have so generously and continuously contributed to the welfare and pleasures of the sick and well people of Papworth, by the giving of their time, thought, talent and money for the year 1937 *and for the previous twenty years. Every appeal has had a ready response and Matron is deeply grateful to:*

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Allen, Miss, Peterborough.
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To this list must be added many anonymous donors whose gifts are also much valued and appreciated.

It has been suggested that Matron should tell people what she wants, and, acting on this advice, the following are often asked for, via the Welfare Fund:
A Hospital Chapel; a music room for community practice; a hard tennis court; a garage for the nursing staff; a tiny-tots play room for mothers' "afternoon out"; a village reading room.

Printed at Pendragon Press,
Papworth Everard,
Cambridge.